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THE DECLINE OF THE NATIONAL DISASTER MEDICAL SYSTEM

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EXECUTIVE SUMMARY

This report examines a crucial component of the nation's emergency response system: the National Disaster Medical System (NDMS). NDMS has the primary responsibility for providing emergency medical care after a national disaster. In recent years, however, a combination of poor management, bureaucratic reshuffling, and inadequate funding have crippled the capacity of NDMS to provide an effective medical response to disasters.

This examination of NDMS — and the Disaster Medical Assistance Teams (DMATs) that form its core — is based on internal reports prepared by the Department of Homeland Security and the Department of Health and Human Services, a review of "after-action" reports filed by DMATs, and interviews with current and former officials. These reports and sources depict an agency that was struggling in 2002, saw its effectiveness plummet after its transfer to the Department of Homeland Security in 2003, encountered troubles responding to the hurricanes in Florida in 2004, and experienced major lapses in its response to Hurricane Katrina in 2005.

As it is currently constituted, NDMS cannot respond rapidly or effectively to major disasters. This jeopardizes the nation's ability to provide timely emergency medical care in response to a major disaster like Hurricane Katrina. Although individual doctors and emergency response personnel serving on DMATs often work heroically under adverse conditions, their individual efforts cannot overcome the systemic problems undermining NDMS effectiveness.

Key findings of the report include the following:

- **Administration officials were warned about NDMS deficiencies as early as 2002.** An internal HHS report in 2002 identified major gaps in the medical readiness of NDMS, including poor management practices, inadequate funding, and a lack of relevant doctrine and standards.

- **The transfer of NDMS to the Department of Homeland Security in 2003 further undermined NDMS effectiveness.** Prior to 2003, NDMS was part of the Department of Health and Human Services, where it was headed by the Assistant Secretary for Public Health Emergency Preparedness who reported directly to the Secretary. After passage of the Homeland Security Act, NDMS was transferred to the Department of Homeland Security, where it is now run by an official four levels below the Secretary. According to one Homeland Security source, "Here in DHS almost everyone is in law enforcement, and as a result, the right thing to do for medical support and operations is not understood. It is just lost." Since its transfer to DHS in 2003, the budget of NDMS has been frozen, millions of dollars of NDMS funding have been

siphoned off to support "unidentified services," and NDMS has lost two-thirds of its staff.

- **"After-action" reports from the 2004 hurricane season documented serious breakdowns in planning, supply management, communications, and leadership.** Problems included deployment of teams with inadequate staff and supplies. Some response teams lacked essential drugs and equipment such as antibiotics, pain medications, and IV fluids. Others experienced communication failures.

- **Two internal reports in 2005 raised more alarms about the capabilities of NDMS.** A 2005 report prepared by the medical advisor to former DHS Secretary Tom Ridge concluded that "the nation's medical leadership works in isolation" and "its medical response capability is fragmented and ill-prepared to deal with a mass-casualty event." A 2005 report prepared by HHS concluded that NDMS suffered from poor coordination with other federal agencies and a lack of adequate tracking and communication systems.

- **When Hurricane Katrina struck the Gulf Coast, NDMS was unprepared to respond.** An after-action report from an Oregon-based disaster medical team revealed fractured oversight and constant breakdowns in communication between medical teams and FEMA officials. Among other problems, the report cited "considerable friction" and "lack of trust" between responders and federal managers at the New Orleans Airport, which "compromise[d] the efficiency of operations" and undermined patient care. Doctors who served in the response described inadequate supplies of essential medicines and equipment, as well as a lack of preparation for the shelter conditions resulting from the mass evacuation.

The findings in this report indicate that the United States does not have an effective national capacity to provide emergency medical services after a major disaster. Transforming the capability of NDMS to meet the demands of its mission will require fundamental reforms, including an increase in funding, establishment of strong medical leadership, and clear internal control over medical assets.

I. BACKGROUND

The National Disaster Medical System was formed in 1984 as part of the Public Health Service. Its original mission was to support state and local health agencies during natural disasters and to provide back-up support to Department of Defense and Veterans Administration medical systems during times of overseas conflict.[1] In recent years, its mission has expanded to include providing the national medical response to a terrorist attack and pre-staging for "National Security Special Events" such as political party conventions.[2]

The system is a partnership of federal, state, and local governments and health care providers. At the core of NDMS are the Disaster Medical Assistance Teams (DMATs), regional teams of doctors, nurses, and other health professionals.[3] DMATs are typically sponsored by local entities such as hospitals and universities. The personnel who serve on DMATs are paid by the federal government for the time that they are federally deployed. The teams must find other funding sources or ask their personnel to volunteer for the additional time necessary to train, prepare, and maintain readiness.[4]

DMATs deploy to disaster sites with equipment "caches." These caches are supposed to contain essential medical supplies, such as antibiotics, pain medications, IVs and ventilators. The supplies and equipment used by DMATs during federal deployments are supposed to be paid for by the federal government, but the system lacks clear written policies on this issue.[5]

The Homeland Security Act moved NDMS into the newly formed Department of Homeland Security (DHS).[6] Prior to that, the system was located in the Department of Health and Human Services (HHS), where it was headed by the Assistant Secretary for Public Health Emergency Preparedness.[7] This Assistant Secretary reported directly to the Secretary of HHS.

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[1] Congressional Research Service, *An Overview of the U.S. Public Health System in the Context of Emergency Preparedness*, 46 (Mar. 17, 2005); Dr. Edward Brandt et al., *Designing a National Disaster Medical System*, Public Health Reports (Sept.-Oct. 1985).
[2] National Disaster Medical System (online at http://www.oep-ndms.dhhs.gov/) (accessed Nov. 4, 2005).
[3] *Id.*
[4] *Id.*; *The Three Faces of NDMS*, Homeland Protection Professional, 31 (Aug. 2003).
[5] Stephen T. Orsino, NDMS Conference, AO Training, *General Law Topics* (April 30, 2005).
[6] Homeland Security Act of 2002, 6 U.S.C. §312 *et seq.*
[7] Public Health Security and Bioterrorism Preparedness and Response Act of 2002, Pub. L. No. 107-188 (2002).

II. PURPOSE AND METHODOLOGY

Since Hurricane Katrina struck New Orleans, national attention has focused on the inadequate response of the Federal Emergency Management Agency. Much less attention has been paid to another crucial component of the nation's emergency preparedness: the National Disaster Medical System.

This report, which was prepared by the Special Investigations Division at the request of Rep. Henry A. Waxman, Rep. Bennie G. Thompson, and Rep Charlie Melancon, examines the current capabilities of the National Disaster Medical System. In the course of the investigation, Special Investigations Division staff obtained access to a series of internal reports on NDMS, including: an internal HHS report issued in 2002 on gaps in NDMS capability; an internal DHS summary of "after-action reports" prepared by NDMS teams that responded to major hurricanes in 2004; an internal HHS report issued in 2005 on the medical response to two major 2004 hurricanes; and an internal DHS report on federal medical readiness prepared by a special medical advisor to the Secretary. With the exception of portions of the DHS report on medical readiness, none of these documents has been reported on previously.

The Special Investigations Division also interviewed current and former officials with knowledge of NDMS.

III. THE 2002 HHS REPORT

Three years ago, an internal report prepared for HHS discovered major gaps in the readiness of NDMS.[8] Although Department officials had estimated that 70 DMATs were ready and available, the report found only 29 were operational.[9] Among those 29 DMATs, only 16 could meet the staff and supply requirements to deploy a full team in response to a national disaster.[10] In addition, the report found that although the nature of DMAT deployments had changed, managers had developed no new standards to evaluate teams' readiness for these missions, making assessment impossible.[11]

Based on a review of administrative data and extensive team interviews, the report identified three major problem areas.[12] First, the review found that NDMS "lacks sufficient doctrine and policy guidance. The few standards and guidelines that do exist are often not relevant to the current missions that NDMS response

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[8] The CNA Corporation, *Assessing NDMS Response Team Readiness: Focusing on DMATs, NMRTs, and the MST* (Oct. 2002).
[9] *Id.* at 25.
[10] *Id.* at 1 – 3, 25.
[11] *Id.* at 1 – 5, 92.
[12] *Id.* at 8 – 9.

teams are asked to fulfill."[13] Second, the report faulted management practices, noting that the system "shows strong preferences for which teams it chooses to deploy" and that these preferences were based not on readiness, but on how "connected" the teams were to those making the deployment decisions.[14] Since the teams "need to feel that they are a part of the system and that they have an opportunity to use their skills," the report concluded that preferential deployment "chips away at readiness" and created problems with morale and recruitment.[15] Third, the report found that NDMS lacked the data and tracking systems necessary to evaluate its own readiness, which in turn prevented meaningful feedback and improvement within the system.[16]

The review identified further deficiencies in the areas of communications, training, and transport but could not fully assess readiness, since the system "does not have any documented standards for these resources and does not track or assess these capabilities."[17] The report also described "easily discernable tensions" between response teams and members of the Management Support Teams (MSTs), special teams charged with providing on-site direction and logistical support to medical teams during a deployment. These tensions were caused by a lack of training and relevant experience among MST personnel, as well as differences in the command and control structures used by the two groups.[18]

The report's conclusions raised concerns about the future effectiveness of NDMS. Although the report found "a very significant reservoir of capability that is available to respond in an emergency," it also found that severe deficiencies in the system were hindering that capability and compromising medical readiness.[19] To maintain current capabilities and counter deficiencies, the report recommended major changes to NDMS doctrine and standards, management practices, and performance assessment.[20]

IV. THE TRANSFER OF NDMS TO DHS

A major change involving NDMS occurred in 2003, when the agency was moved from the Department of Health and Human Services and placed in the Department of Homeland Security. This transfer was mandated by passage of the Homeland Security Act in November 2002.[21] The Bush Administration, which proposed the

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[13] *Id.* at 87.
[14] *Id.* at 50.
[15] *Id.* at 50 – 51, 91.
[16] *Id.* at 91.
[17] *Id.* at 33 – 34.
[18] *Id.* at 70 – 72.
[19] *Id.* at 1 – 5.
[20] *Id.* at 87 – 92.
[21] Homeland Security Act of 2002, 6 U.S.C. § 312 *et seq.*

transfer, argued that moving NDMS out of HHS would allow integration of federal emergency medical response assets with the preparedness and intelligence functions of the new Department of Homeland Security.[22]

At the time that the Homeland Security Act was under consideration by Congress, many experts expressed concern that moving NDMS would interfere with existing relationships between federal, state, and local personnel or would create problems of coordination among the federal agencies involved in providing emergency medical response. Edward Plaugher, Executive Agent of the Washington Area National Medical Response Team, warned that "long-range relationships have been developed [among federal, state and local authorities], and they are vital to the success of the program. … Sacrificing any part of this long-term relationship building and seamless response" in the transfer to DHS would be a "giant step backward."[23] Similar warnings came from Janet Heinrich, then-Director of Health Care and Public Health Issues at the Government Accountability Office, who expressed concern that "the lines of authority of the different parties in the event of emergency still need to be clarified" beyond what the Administration had proposed.[24]

Senior Administration officials dismissed these concerns about inter-agency coordination and conflicting authority. Then-Deputy Secretary of Health and Human Services Claude Allen stated: "We don't anticipate it [the move] would create problems in terms of the ultimate function" of NDMS, medical readiness.[25]

As signed into law, the Homeland Security Act of 2002 removed NDMS from HHS.[26] Under the new organization, NDMS is now one section within the Federal Emergency Management Agency (FEMA), which is part of the Emergency Preparedness and Response Directorate of DHS.[27] NDMS is overseen by the NDMS Section Chief. The NDMS Section Chief reports to the Operations Branch Chief, who reports to the Response Division Director, who in turn reports to the Director of FEMA, who as Under Secretary for Emergency Preparedness

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[22] House Committee on Energy and Commerce, Subcommittee on Oversight and Investigations, Testimony of Deputy Secretary of Health and Human Services Claude Allen, *Creating the Department of Homeland Security: Consideration of the Administration's Proposal*, 107th Cong., 64 (June 25, 2002) (H. Rept. 107-113).

[23] House Committee on Energy and Commerce, Subcommittee on Oversight and Investigations, Testimony of Edward Plaugher, *Creating the Department of Homeland Security: Consideration of the Administration's Proposal*, 107th Cong., 102 (June 25, 2002) (H. Rept. 107-113).

[24] House Committee on Energy and Commerce, Subcommittee on Oversight and Investigations, Testimony of Janet Heinrich, *Creating the Department of Homeland Security: Consideration of the Administration's Proposal*, 107th Cong., 71-77 (June 25, 2002) (H. Rept. 107-113) (at the time of the hearing, the Government Accountability Office was known as the General Accounting Office).

[25] Testimony of Claude Allen, *supra* note 21 at 64.

[26] Homeland Security Act of 2002, 6 U.S.C. §312 *et seq.*

[27] National Disaster Medical System (online at http://www.oep-ndms.dhhs.gov/) (accessed Nov. 4, 2005).

and Response is one of five undersecretaries reporting to the Secretary of Homeland Security.[28] In effect, NDMS is separated from the Secretary of Homeland Security by four levels of bureaucratic review.

Since the transfer, the annual budget of NDMS has been frozen at $34 million. Of this amount, however, $20 million has been diverted to "unidentified services."[29] In the proposed fiscal year 2006 budget, the White House again requested flat funding for the system.[30]

DHS officials did not respond to requests for further information on the NDMS budget, but agency documents provide additional detail about the diversion of NDMS funds. In 2005, the $20 million diverted from the NDMS budget was allocated to "Enhancing Biodefense," specifically "planning and exercises associated with medical surge capacities."[31] Increasing "surge capacity" relates primarily to increasing hospital bed availability in a national emergency, not the provision of emergency medical care to victims at or near a disaster site.

The transfer of NDMS and the budget diversions have taken a significant toll on NDMS. In 2005, NDMS had only one third of its previous staff.[32] And other offices within DHS took much of the system's furniture and supplies.[33]

V. THE 2004 AFTER-ACTION REPORTS

In the 2004 hurricane season, NDMS faced its first major challenge since moving to DHS. During August and September 2004, the system sent 35 DMATs to respond to four major hurricanes in Florida, South Carolina, and other East Coast

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[28] DHS Department Organization Chart (online at http://www.dhs.gov/interweb/assetlibrary/DHS_Org_Chart_2005.pdf) (accessed Nov. 4, 2005); Congressional Research Service, *Organization and Mission of the Emergency Preparedness and Response Directorate: Issues and Options for the 109th Congress* (Sept. 7, 2005).

[29] Department of Homeland Security Emergency Preparedness and Response, *Justification of Estimates Fiscal Year 2006*, 65; *Biodefense Spending Misses the Mark, Says FP Expert*, FP Report (Mar. 2004) (online at http://www.aafp.org/fpr/20040300/6.html); *NDMS Suffers Culture Shock*, Homeland Protection Professional, 22 (Apr. 2005).

[30] Office of Management and Budget, *FEMA Funding, FY 2001 – FY 2006* (Oct. 4, 2005).

[31] Department of Homeland Security, *FY 2005 Budget in Brief* (Feb. 2, 2004) (available at http://www.dhs.gov/dhspublic/display?content=3133) (accessed on Nov. 1, 2005); House Committee on Appropriations, Homeland Security Subcommittee, Testimony of Michael D. Brown, Under Secretary, Emergency Preparedness and Response Directorate, FEMA, DHS, *Emergency Preparedness and Response* (Mar. 24, 2004).

[32] DHS, *Medical Readiness Responsibilities and Capabilities: A Strategy for Realigning and Strengthening the Federal Medical Response*, 6 (Jan. 3, 2005) (hereinafter "DHS Medical Readiness Report").

[33] *DHS Medical Readiness Report, id.*; *Biodefense Spending Misses the Mark, Says FP Expert, supra* note 27; *NDMS Suffers Culture Shock*, *supra* note 27 at 22; Interview of Dr. Jake Jacoby by Minority Staff, House Committee on Government Reform (Sept. 26, 2005); Interview of Dr. Jonathan Jui by Minority Staff, House Committee on Government Reform (Oct. 4, 2005).

and Gulf Coast states. These teams provided "after-action" reports that were summarized in a May 2005 document entitled *2004 Hurricane AARs*.[34] This summary of the after-action reports describes serious problems with planning and logistics, supplies, and communications.

A. Inadequate Planning and Logistical Support

According to the after-action reports, many teams experienced poor planning and inadequate logistical support that hindered their operations. Teams from Florida and Alabama reported that they needed more staff in order to cover 24-hour operations.[35] Michigan, Minnesota, and Ohio teams noted that they were unprepared to care for "special needs" patients during shelter operations. They called for better planning on how to treat elderly and chronically ill patients and how to co-mingle such patients with family members.[36] Those serving on a management support team in the response to Hurricane Charley, which struck Florida in August 2004, reported that NDMS officials had tasked some logistics personnel to work extended shifts, resulting in unsafe conditions.[37]

Deployment and travel plans were also a problem. FEMA ordered a team from New Mexico to deploy without its cache of medical supplies, causing difficulties when it arrived to join operations.[38] Poor planning delayed a California team when a rental company asked for a large personal deposit on transport vehicles and the team's flight had inadequate freight capacity to move the load, forcing them to leave members behind to escort the gear.[39]

B. Inadequate Supplies

The after-action reports also reveal that FEMA deployed many teams without adequate medical equipment and drugs. In the case of two teams from North Carolina and Ohio, FEMA had ignored earlier requests to restock supplies.[40] Nine separate teams complained of deficient or unavailable medical caches, while all caches that were delivered directly by FEMA were incomplete.[41] Pharmaceuticals were a major problem: Florida and New Mexico teams reported insufficient pain medication, antibiotics, tetanus, and IV fluids. Michigan and Minnesota teams emphasized that their caches lacked supplies necessary to conduct shelter operations, such as wheelchairs, oxygen machines, a safe power supply, and pads for elderly and bed-ridden patients using cots.[42]

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[34] William L. Devir, FEMA, NDMS Conference, *2004 Hurricane AARs* (May 3, 2005).
[35] *Id.*
[36] *Id.* at 24.
[37] *Id.* at 4.
[38] *Id.* at 21.
[39] *Id.* at 22.
[40] *Id.* at 14.
[41] *Id.* at 17-19.
[42] *Id.* at 24.

C. Inadequate Communications Systems

Teams also reported a host of communications problems. Teams from Massachusetts, Michigan, New Mexico, Ohio, and California stated that FEMA forced them to rely on failed and inadequate communications equipment, causing problems in coordinating among team members, other response personnel, and management officials.[43] Two of these teams were forced to use personal cell phones to accomplish their missions but then were refused reimbursement by FEMA.[44]

Many of these problems were conveyed directly to NDMS management. Yet team members reported that they saw little or no improvement in response.[45]

VI. THE 2005 DHS REPORT ON MEDICAL READINESS

Urgent warnings about weaknesses in NDMS were set forth in an internal January 2005 report on federal medical readiness. The report was written by Dr. Jeffrey Lowell, Senior Medical Advisor to Tom Ridge, who was then the Secretary of Homeland Security. Dr. Lowell's report evaluated medical preparedness within the Department of Homeland Security and focused extensively on NDMS.[46] The full 103-page report has not previously been disclosed.[47]

This report found that "the nation's medical leadership works in isolation, its medical response capability is fragmented and ill-prepared to deal with a mass-casualty event, and … DHS lacks an adequate medical support capability for its field operating units."[48] Looking specifically at NDMS, Dr. Lowell found that the system:

- Lacked the medical leadership and oversight "required to effectively develop, prepare for, employ, and sustain deployable medical assets";[49]
- Lacked sufficient funding, staff, and control over medical assets to achieve its medical mission;[50]
- Relied on an overtaxed volunteer network to meet increasing demands outside the system's original purpose and experienced "critical shortfalls in doctrine,

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[43] *Id.* at 10.
[44] *Id.*
[45] *Id.*
[46] *DHS Medical Readiness Report*, *supra* note 31.
[47] On September 26, 2005, the Associated Press reported on Dr. Lowell's review and released a portion of report. *Review Warned of Medical Gaps Before Hurricanes*, Associated Press (Sept. 26, 2005).
[48] *DHS Medical Readiness Report*, *supra* note 31 at 2.
[49] *Id.* at 6, 6-3.
[50] *Id.* at 2, 3, 6.

training, logistics support, and coordination" with other emergency responders and federal agencies.[51]

Dr. Lowell found that "NDMS is losing functional effectiveness under FEMA's inflexible and inappropriate management for medical response circumstances."[52] As a result, he concluded that NDMS "is no longer capable of supporting the new demands being placed on the system" and warned that "immediate attention is required to revitalize a degrading system."[53]

As part of the investigation into NDMS, Dr. Lowell and his staff interviewed dozens of NDMS officials, including many members of medical response teams. He was told of serious problems inside the agency. For example:

- One official stated: "Here in DHS almost everyone is law enforcement, and as a result, the right thing to do for medical support and operations is not understood. It is lost."[54] Another reported: "We just put together a catastrophic incident plan. It's just a plan. But do we have the capability of carrying out the plan? No."[55]

- Others stated: "Right now, we're in a crisis. Some teams are being evicted (DMAT teams) from warehouses — where all their stuff is stored … because FEMA hasn't paid the bills. … In California, one team leader put the whole team's expenses on a personal credit card so they could get their mission done. It was $11,000 — so the team would have what they needed, and he couldn't get paid back."[56]

- Officials also stated: "There are no nationwide protocols on what to do or how to do it. … In FEMA, rules take priority over getting the job done. … We are the glue that is supposed to facilitate communication and coordination [but] there is no system in place at this point in time. … Morale is awful. We have lost about 10% more professionals than in any other time in history."[57]

Dr. Lowell called for a "radical transformation" of NDMS.[58] He recommended immediate appointment of strong medical leadership, development of clear mission objectives, and substantial investment in the medical resources, infrastructure, personnel and materials necessary to carry them out.[59] Without these changes, the report warned, "the nation's only federal emergency medical

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[51] *Id.* at 6, 6-2, 6-8.
[52] *Id.* at 5-9.
[53] *Id.* at 2, 6-9.
[54] *Id.* at 5-11.
[55] *Id.* at 5-2.
[56] *Id.* at 5-9, 5-10
[57] *Id.* at 5-5, 5-10, 5-17, 5-20.
[58] *Id.* at 6-8.
[59] *Id.* at 6-3 – 6-8.

response system will continue to degrade and will not achieve the response level required by the National Response Plan … and the National Incident Management System."[60]

Dr. Lowell emphasized that the system could not fulfill its mission without dramatically increased funding. Implementing the report's recommendations, he concluded, "will require a substantial resource investment, for both personnel and material," including funding for "the development, recruitment and support of both a full-time and reserve medical corps … [and for] fixed and portable facilities and medical equipment, and supplies."[61]

For fiscal year 2005, Dr. Lowell recommended immediate new funding in the amount of $4.11 million to establish a core of strong medical leadership at DHS, including high-level managers with medical expertise and a dedicated medical logistician for NDMS.[62] For fiscal year 2006, the report recommended $217.46 million in new funding, over and above the current NDMS budget.[63] The recommended 2006 budget included $22.5 million for 150 new staff positions at NDMS, $75 million for specialized mobile treatment facilities, and $100 million for NDMS supplies, equipment, and training.[64]

Before finalizing his findings, Dr. Lowell shared the draft report with Michael Brown, who was then the Director of FEMA. According to Dr. Lowell, Mr. Brown attacked the report and told Dr. Lowell that he should not present the report to Secretary Tom Ridge.[65] Dr. Lowell said that Mr. Brown angrily rejected the report's conclusions and recommendations.[66] According to Dr. Lowell, however, Secretary Ridge, who had hired Dr. Lowell to prepare the report, welcomed its findings and recommendations.[67]

Secretary Ridge left his post on February 1, 2005. Dr. Lowell resigned from his position as Senior Medical Advisor at the end of that month. As a result, the Department was without a chief medical officer until Dr. Jeff Runge took office in mid-September, after Hurricane Katrina struck.

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[60] *Id.* at 6-3.
[61] *Id.* at 6-4 – 6-5.
[62] *Id.* at 8-1 – 8-3.
[63] *Id.* at 8-1.
[64] *Id.*
[65] Interview of Dr. Jeffrey Lowell by Minority Staff, House Committee on Government Reform (Oct. 3, 2005); *Review Warned of Medical Gaps Before Hurricanes*, Associated Press (Sept. 26, 2005).
[66] *Id.*
[67] *Review Warned of Medical Gaps Before Hurricane*, *supra* note 65.

VII. THE HHS REPORT ON HURRICANES FRANCES AND IVAN

An internal HHS report issued in February 2005 also warned of gaps in NDMS capability.[68] That report examined the federal health and medical response to two major hurricanes in early September 2004, in which NDMS had deployed four DMATs and several specifically needed personnel.[69] The report was commissioned by the Office of the Assistant Secretary of Public Health Emergency Preparedness within HHS and therefore focused primarily on the performance of HHS personnel and resources.[70] As a review of the overall federal medical response, however, the report also examined actions by HHS partners, including NDMS, to the extent that they interacted with HHS.[71]

The report identified several weaknesses in the response that involved NDMS. One major problem stemmed from the relationship between NDMS and HHS: "The response to these hurricanes shows that the separation of NDMS from HHS has adversely impacted the coordination of ESF#8."[72] "ESF#8" stands for "Emergency Support Function #8 — Public Health and Medical Services" and refers to the health and medical component of federal disaster response.[73] The report stated that the necessary transfer of responsibilities from NDMS to HHS during the response "was a difficult process that was complicated by a poor working relationship between HHS and NDMS."[74]

In addition, DMAT members interacted very little with other personnel: "NDMS teams usually planned and executed activities on their own and were not well integrated into the overall ESF#8 response."[75] The report concluded that "[b]ecause it is a critical health and medical resource, NDMS should become a part of HHS again."[76] At a minimum, the report recommended, "HHS should work with NDMS to unify the management of ESF#8."[77]

The report emphasized that another major gap in NDMS readiness was the lack of team experience and training in providing care to special needs patients in a shelter operation. Noting that teams had no experience in setting up and operating a shelter, the report further observed that "DMATs are designed to respond to mass casualty incidents by providing emergency care under austere conditions.

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[68] The CNA Corporation, *Hurricanes Frances and Ivan: Improving the Delivery of HHS and ESF#8 Support* (Feb. 2005).
[69] *Id.* at 8, 11.
[70] *Id.* at 10.
[71] *Id.*
[72] *Id.* at 25.
[73] DHS, *National Response Plan, Public Health and Medical Services Annex* (Dec. 2004).
[74] *Id.* at 54.
[75] *Id.* at 48.
[76] *Id.*
[77] *Id.*

Caring for special needs patients is a much different scenario."[78] In its recommendations, the report stated that federal responders were "likely to see future requests to operate special needs shelters" and concluded that "HHS and its ESF#8 partners need to address how to handle similar requests in the future."[79]

VIII. THE FLAWED NDMS RESPONSE TO HURRICANE KATRINA

Against this backdrop, Hurricane Katrina struck the Gulf Coast in August 2005. As described in an after-action report, interviews with DMAT physicians, and other accounts, NDMS had been severely degraded and was unprepared for this devastating national disaster. Despite the often-heroic efforts of team personnel, the medical response was hindered by poor planning, inept logistics oversight, deficient and delayed supplies, and failed or inadequate communications systems.

A. Oregon DMAT After-Action Report

The Special Investigations Division requested and obtained a copy of an after-action report from a DMAT team from Oregon.[80] The report was prepared by the Oregon-2 DMAT, which was formed in 1999 and has participated in five major NDMS deployments.[81] On August 30, 2005, the team was activated to respond to Hurricane Katrina. On August 31, its team of 33 professionals, including doctors, nurses, pharmacists, emergency medical technicians, and logistics and communications personnel deployed to the region.[82] On Thursday, September 1, the full team arrived at the New Orleans International Airport for a mission that lasted through September 10.[83]

In its after-action report, the team described the scene at the New Orleans Airport as "extremely chaotic" and reported that the unstructured medical operation there was severely hindered by poor planning, ineffective management, and regular breakdowns in communication.[84] The report found that NDMS was not adequately prepared to serve in the "first response role" that it was asked to fill in New Orleans.[85] Because the system "is built upon an older model of responding

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[78] *Id.* at 53, 55.
[79] *Id.* at 59.
[80] Oregon-2 DMAT, *Hurricane Katrina — After Action Report, OR-2 DMAT: New Orleans Airport August 31 to September 10, 2005* (Sept. 25, 2005) ("Oregon AAR").
[81] Oregon Disaster Medical Team (online at http://www.odmt.org/index.html) (accessed Oct. 14, 2005).
[82] The team initially deployed with 35 members, but two team members were forced to stay behind to escort the team's supply cache when FEMA denied air transport.
[83] Oregon AAR, *supra* note 80.
[84] *Id.*
[85] *Id.*

to an incident 48 to 72 hours post-event," the team lacked adequate communications systems, supplies, and staff.[86]

According to the after-action report, NDMS did not adequately assess the facility and the situation before deploying teams.[87] Managers failed to establish any organized internal command and control structure once teams were at the airport.[88] The overwhelming demand for patient care and extreme lack of resources were compounded by the mistakes of area FEMA/NDMS managers who had no training in logistics oversight or emergency medical response. Ultimately, the report concluded, "management decisions were being made that were not based on the best interests of the patients."[89]

NDMS management officials forced team members to make individual travel arrangements to Houston, which was the initial reporting location. Because of this requirement, team members arrived in Houston over an 18-hour period, which delayed the entire team's departure for New Orleans.[90] During travel to New Orleans, team members communicated with other teams at the airport who stated that the Oregon-2 DMAT was urgently needed due to the overwhelming number of patients. Yet managers insisted that the team report to Baton Rouge first. Once there, the team was held up by a management official for nearly two hours. At one point, this official threatened to take the team off of the mission and order them not to go.[91]

Throughout the deployment, the team reported "considerable friction" with NDMS management officials. The after-action report stated that "an 'us and them' attitude was prevalent. … The friction … has been ongoing for quite some time. This continues to compromise the efficiency of operations due to a lack of trust between both parties."[92]

At the airport, there was little or no communication between on-site management officials and those in Baton Rouge, which left team members unaware of the status and timing of patient arrivals and unable to communicate urgent needs.[93] The operation also lacked the infrastructure to track patients and resources.[94]

Supplies were a major problem. When the team deployed, NDMS managers refused to transport the team's cache by air, which caused a five-day delay in the

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[86] *Id.*
[87] *Id.*
[88] *Id.*
[89] *Id.*
[90] *Id.*
[91] *Id.*
[92] *Id.*
[93] *Morning Edition*, National Public Radio (Sept. 14, 2005).
[94] AAR, *supra* note 80.

cache's arrival.[95] Without its own cache, the team relied on outdated and deficient caches that lacked critical medical equipment, such as ventilators.[96] NDMS managers failed to fill orders for essential drugs through four days of urgent requests, insisting on faxed supply forms when the teams had no fax machines.[97] Ultimately, the critical drugs and medical supplies arrived only when the U.S. Air Force and a private organization stepped in to help.[98]

B. Interviews with DMAT Commanders and Physicians

The problems described in the Oregon after-action report were confirmed in interviews with three team leaders and doctors who were deployed to the airport and the Superdome: Dr. Jake Jacoby, Emergency Physician and Team Commander of California-4 DMAT; [99] Dr. Jonathan Jui, Medical Director of Emergency Medical Services in Multnomah County, Oregon and Deputy Team Leader of Oregon-2 DMAT;[100] and Bill Engler, Team Commander of Washington-1 DMAT.[101]

Dr. Jacoby and Dr. Jui reported that teams at the airport lacked basic supplies to treat predictable post-disaster medical conditions. They also stated that prior requests for restocking of team caches had been ignored or denied by NDMS managers and that their teams "almost always deploy with an insufficient cache."[102] All team members reported making urgent requests for food, water, and medical supplies in the first days of the operation, without success. By the time sufficient quantities of food and supplies were delivered by the U.S. Air Force and Forest Service, team members had begun to give away their own rations to patients and evacuees. According to team commander Bill Engler, "we were down to one meal a day." "If not for the military and the Forest Service," he stated, "I don't know how many people would have died."[103]

These team members also reported failures in communication systems that left them isolated. Cell phones supplied by NDMS failed because they depended on local infrastructure and the agency had not provided adequate satellite phones or other back-up means of communication.[104] In one case, team members tried for days to reach a logistics official through official channels, with no success.

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[95] *Id.*
[96] *Id.*
[97] *Morning Edition*, National Public Radio (Sept. 14, 2005).
[98] *Id.*
[99] Interview of Dr. Jake Jacoby by Minority Staff, House Committee on Government Reform (Sept. 26, 2005).
[100] Interview of Dr. Jonathan Jui by Minority Staff, House Committee on Government Reform (Oct. 4, 2005).
[101] Interview of Bill Engler by Minority Staff, House Committee on Government Reform (Oct. 25, 2005)
[102] Interviews of Dr. Jake Jacoby, Dr. Jonathan Jui, *supra* notes 99 and 100.
[103] Interview of Bill Engler, *supra* note 101.
[104] Interview of Dr. Jonathan Jui, *supra* note 100.

Agency radios were not interoperable with state and local authorities or local emergency services. Until the Forest Service supplied interoperable radios, teams were completely unable to reach their own members, other agencies, and on-site security personnel.[105]

At the airport, Commander Bill Engler was pulled away from his own team to serve as one of two staff on the Management Support Team. He stated that during a normal deployment, the MST consists of at least 24 people. With so few staff, he reported, the MST was unable to keep track of team members or rotate teams out for critical rest periods.[106]

Many team members reported that NDMS managers handle these problems by forbidding team personnel to talk to anyone outside the system without going through the agency bureaucracy. Dr. Jui stated: "There is a real gag mentality imposed by FEMA about talking to the press or to Congress. To be honest, I saw people die, and I don't really care if my comments are made public."[107] Another doctor who deployed after Hurricane Katrina asked not to be identified for this report, fearing retaliation by management officials. "If I say too much," the doctor stated, "my team will never get deployed again."

C. Other Accounts

The problems described in the Oregon after-action report and the interviews with the Oregon physicians appear to have hindered the operations of many other DMATs. According to other accounts:

- A DMAT from Rhode Island was ordered to drive from city to city without a mission, while makeshift hospitals treating thousands of patients struggled to operate with inadequate staff.

- Medical teams sent to the Superdome had no communications, inadequate supplies, and minimal security. In the first few days after the storm, a single New Mexico team and then a replacement team from California tended to the medical needs of tens of thousands of evacuees, fearing for their own safety and struggling to provide care with inadequate resources.[108] One doctor recalled: "People literally were dying all around us, but we couldn't do anything about it."[109] On September 1, after a National Guard officer was

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[105] Interviews of Bill Engler, Dr. Jake Jacoby, Dr. Jonathan Jui, *supra* notes 99, 100, 101.
[106] Interview of Bill Engler, *supra* note 101.
[107] Interview of Dr. Jonathan Jui, *supra* note 100.
[108] *Aggie Update: A Publication from the University Alumni Office*, New Mexico State University (Oct. 2005); *Marin Doctor Tells of Chaos*, Marin Independent Journal (posted online Sept. 16, 2005), (online at http://forums.sccm.org/shwmessage.aspx?ForumID=24&MessageID=644) (accessed Oct. 21, 2005).
[109] *Nurse Relives Terrors of New Orleans*, Argus Courier Online (Sept. 14, 2005) (online at http://www.arguscourier.com/news/news/markweston050914.html).

shot and a California doctor was robbed, federal officials ordered the team to get out "quickly and quietly."[110] The team abandoned nearly half a million dollars in equipment and left the building in small groups, with no protection from the National Guard or other security officers.[111] Yet a Rhode Island DMAT was deployed to the Superdome the very next day. With only one team providing essential care from that point on, one Rhode Island doctor reported that he worked for over 70 hours without sleep, stepping through garbage and human waste to treat patients.[112]

- During the disaster, urgent requests for pain medication, IV lines, catheters, and other equipment were held up for days.[113] Without ventilators, patients who needed help breathing were "hand bagged" by team members using manual resuscitation masks, in one case for 35 hours.[114] A Texas doctor stated, "We were so short on wheelchairs and litters we had to stack patients in airport chairs and lay them on the floor."[115] The Strategic National Stockpile contains large quantities of medicine and medical supplies to be used during a public health emergency in which local supplies are exhausted.[116] The stockpile is designed so that supplies can reach any state within 12 hours, yet supplies from the stockpile did not begin arriving until three days after the hurricane struck, and even then were insufficient.[117] At the same time, some officials turned away donated supplies, citing FEMA policies against the use of non-FEMA materials.[118]

IX. TRANSFORMING NDMS

Earlier this year, Homeland Security Secretary Chertoff conducted a review of the Department's structure and operations and proposed significant changes to its organization.[119] Under the Department's new "Six-Point Agenda," Secretary Chertoff plans to create an Undersecretary for Preparedness, which will include

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[110] *Marin Doctor Tells of Chaos*, *supra* note 107.
[111] *Id.*
[112] *Barrington Resident Shares New Orleans Experience*, East Bay Newspapers, (Sept. 30, 2005).
[113] *Morning Edition*, National Public Radio (Sept. 14, 2005).
[114] *Going Back for More*, *supra* note 57.
[115] *Physicians' E-mails Document Post-Katrina Horrors*, Government Health IT (Sept. 12, 2005).
[116] Centers for Disease Control and Prevention, Department of Health and Human Services, *The Strategic National Stockpile — What It Means to You* (http://www.bt.cdc.gov/stockpile/) (accessed Nov. 1, 2005).
[117] *Id.*; *HHS Ships Medical Supplies, Opens 'Medical Shelters' at Military Bases*, Associate Press (Sept. 1, 2005); Interview of Dr. Jonathan Jui, *supra* note 100
[118] *In the wake of Katrina: A surgeon's first-hand report of the New Orleans Tragedy*, Medscape General Medicine 7(3) (Sept. 19, 2005).
[119] DHS, *Department Subcomponents and Agencies*, (online at http://www.dhs.gov/dhspublic/interapp/editorial/editorial_0515.xml) (accessed on Oct. 14, 2005).

the Chief Medical Officer (CMO).[120] Under the reorganization, however, NDMS will remain within FEMA. It will not be overseen by the Chief Medical Officer.[121]

The Secretary's proposed changes do not appear likely to improve the capabilities of NDMS. Contrary to the recommendations of Dr. Lowell, the Chief Medical Officer would not provide medical leadership within NDMS or give teams control over their medical assets. Instead, the CMO will reside in a separate preparedness division and NDMS will continue to lack integrated medical oversight.

Recent statements by the new CMO, Dr. Jeff Runge, also suggest that the Administration does not plan to provide NDMS with the increased funding and support necessary to fulfill its mission. The 2005 DHS report on medical readiness recommended large increases in NDMS funding. But in a September interview with the Associated Press, Dr. Runge said that he would like to improve the federal medical response by "creating a network of trained volunteers" and will seek an "economical way to harness the enormous volunteerism among medical professionals."[122] He added: "The taxpayers already have a burden to supply a lot of these assets and we need to make sure that we don't overtax them for that purpose and yet have access to people who could actually kick in in times of need."[123] It is unclear how such a network would resolve the problems faced by NDMS.

As part of this report, the Special Investigations Division interviewed independent experts about ways to improve the medical capabilities of NDMS. Three measures were most frequently recommended: establish strong medical leadership, restore command and control over medical assets, and provide adequate and stable funding. None of these three appears to be currently contemplated by the Administration.

A. Strong Medical Leadership

According to independent experts, the nation's disaster medical system must be run by a medical official qualified in disaster medical response. In an interview, Jerry Hauer, former Acting Assistant Secretary of Public Health Emergency Preparedness at HHS, stated that one expeditious way of ensuring such leadership would be to transfer NDMS back to HHS where it could be overseen by a new Deputy Surgeon General. Such a move would ensure that the medical mission of

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[120] DHS, *Department Six-Point Agenda*, (online at http://www.dhs.gov/dhspublic/interapp/editorial/editorial_0646.xml) (accessed on Oct. 14, 2005).
[121] *Id.*
[122] *New DHS Medical Chief Seeking Volunteers*, Associated Press (Sept. 24, 2005).
[123] *Id.*

NDMS is integrated within the agency that oversees all other medical preparedness and response activities at the federal level.[124]

Dr. Lowell, the former Senior Medical Advisor to the Secretary of Homeland Security, described an alternative structure for achieving the same goal: retain NDMS within the Department of Homeland Security under the direction of a newly established Assistant Secretary for Medical Readiness. As the Lowell report recommended, this Assistant Secretary could oversee NDMS with a singular focus on medical response capability.[125]

B. Command and Control over Medical Assets

Another key reform is to ensure that the medical leadership of NDMS has control over the system's medical assets and operations. In recent years, the separation of medical expertise from command authority has meant that the mission critical needs of medical teams were delayed or denied by bureaucratic interference. The effects were evident in the response to Hurricane Katrina: medical teams were deployed with inadequate personnel and supplies, sent to the wrong locations, separated from their equipment, and refused additional supplies. According to experts in providing emergency medical care, NDMS leadership must be given control over medical assets and operations to ensure that decisions are made in the best interests of patients and with the urgency that an emergency medical response requires.[126]

C. Adequate and Stable Funding

The third critical component of restoring our nation's disaster medical system to full capability is to ensure adequate and stable funding. Dr. Lowell's report estimated the costs of establishing an Office of Medical Readiness to be $221.57 million over two years. These estimates were in addition to the existing NDMS budget, which has remained flat at $34 million since the transfer to DHS.[127] The report noted that these additional costs "would be off-set with a much higher level of readiness and subsequent ability to meet health care needs" in a national crisis.[128]

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[124] Interview of Jerry Hauer by Minority Staff, House Committee on Government Reform (Sept. 23, 2005).

[125] *Medical Readiness Responsibilities and Capabilities: A Strategy for Realigning and Strengthening the Federal Medical Response*, *supra* note 32 at 3.

[126] Interviews of Dr. Jeffrey Lowell, Dr. Jonathan Jui, Dr. Jake Jacoby, and Jerry Hauer, *supra* notes 64, 99, 100, 124.

[127] *Medical Readiness Responsibilities and Capabilities: A Strategy for Realigning and Strengthening the Federal Medical Response*, *supra* note 32 at Appendix 8.

[128] *Id.* at 6-4.

On September 8, Congress approved emergency funding to support hurricane response efforts, including $100 million for NDMS.[129] Yet it does not appear that this money will be used to strengthen the capacity of NDMS. Administration officials have indicated that the additional NDMS funds will be used to cover continuing health care costs incurred by storm evacuees.[130]

VI. CONCLUSION

The National Disaster Medical System is an essential component of the nation's emergency preparedness. It bears the primary responsibility for emergency medical response in a national disaster. But as documented in a series of internal reports since 2002, the system's effectiveness has been eroded by mismanagement, bureaucratic reshuffling, and inadequate funding. Restoring the effectiveness of NDMS will require major reforms, including strong medical leadership, internal control over resources, and greatly increased funding.

[129] Second Emergency Supplemental Appropriations Act to Meet Immediate Needs Arising From the Consequences of Hurricane Katrina, 2005, Pub. L. No. 109-62.
[130] Centers for Medicare and Medicaid Services, *Summary of Federal Payments Available for Evacuee Care*, Nov. 29, 2005.