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MITIGATING CATASTROPHIC EVENTS THROUGH EFFECTIVE MEDICAL RESPONSE

HEARING

BEFORE THE

SUBCOMMITTEE ON PREVENTION OF NUCLEAR AND BIOLOGICAL ATTACK

OF THE

COMMITTEE ON HOMELAND SECURITY HOUSE OF REPRESENTATIVES

ONE HUNDRED NINTH CONGRESS

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MITIGATING CATASTROPHIC EVENTS THROUGH EFFECTIVE MEDICAL RESPONSE

Thursday, October 20, 2005

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON HOMELAND SECURITY,
SUBCOMMITTEE ON PREVENTION OF NUCLEAR AND BIOLOGICAL ATTACK,
Washington, DC.

The subcommittee met, pursuant to call, at 1:03 p.m., in Room 1310, Longworth House Office Building, Hon. John Linder [chairman of the subcommittee] presiding.

Present: Representatives Linder, Dent, Langevin, and Thompson, ex officio.

Mr. LINDER. The hearing will come to order. We are going to be very short on this end of the bench, because we finished voting an hour ago and everybody is on airplanes already, I suspect.

I would like to welcome and thank our witnesses for appearing before this subcommittee today.

There is an inordinate amount of attention focused on what went wrong during Hurricane Katrina. Today, instead, we are here to discuss what we must get right to prevent, mitigate and respond to a catastrophic biological or nuclear incident.

As tragic as the loss of life was during the Katrina storm, imagine for a minute the consequence of a nuclear or bioterrorism event. The Atlantic Storm exercise showed us that a covert attack on key transportation hubs with smallpox can result in possibly 660,000 cases worldwide in just 30 days. A 10-kiloton nuclear device detonated near the U.S. Capitol can result in 15,000 instant deaths and another 15,000 injured.

Can our current medical response capabilities meet this challenge?

In 1979, President Carter established FEMA to centralize Federal emergency functions. Five years later, the National Disaster Medical System was created within HHS to provide medical and related services in the event that a disaster overwhelms the local medical emergency capabilities.

In the Homeland Security Act of 2002, NDMS was transferred to DHS and at present functions under the management of FEMA. Twenty years since their creation, both of these entities played a significant and crucial role in response to Hurricane Katrina.

In December 2004, the Department of Homeland Security launched its National Response Plan, designed to coordinate the Federal Government's efforts to prepare for and respond to a catastrophic event. Under the NRP, DES would take the overall lead

for responding to such events, with HHS tasked with coordinating the response of the public health and medical sectors. As the events of Katrina also highlighted, the Department of Defense played a vital role in providing both logistical and medical asset support for the victims.

We have rearranged the deck chairs, come up with new plans, and Congress has committed substantial financial support to both Federal and local agencies. My question to you is very simple: Are our medical responders better prepared to mitigate a truly catastrophic terrorist event?

I can assure you that while Mother Nature often gives us warning, we will not receive fair warning from terrorists. We will not have the luxury of "predeploying" our medical assets and personnel.

It is often said we have to use an all-hazards approach to any catastrophic event. I do not buy into this notion. There are unique requirements for both mitigating and responding to a nuclear or biological event. We cannot continue to rely on lessons learned because terrorists continue to plot and plan against us. It was my impression that the lessons learned occurred almost 4 years ago on September 11th.

I look forward to your testimony, because each of you represents boots on the ground and not the bureaucratic apparatus. Your insights will be valuable to members of the subcommittee in constructing legislation to fix problems.

I recognize the ranking member of the subcommittee,

Mr. Langevin of Rhode Island, for the purpose of making an opening statement.

PREPARED STATEMENT OF HON. JOHN LINDER

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I look forward to your testimony, because each of you represent boots on the ground and not the bureaucratic apparatus. Your insights will be valuable to members of the subcommittee in constructing legislation to fix the problems.

I now recognize the Ranking Member of the Subcommittee, Mr. Langevin of Rhode Island, for the purpose of making an opening statement.

Mr. LANGEVIN. Thank you, Mr. Chairman.

I would like to thank our witnesses for being here and for your service to our Nation. We are all truly grateful. You all have a wealth of experience in providing medical care during catastrophes, and we welcome your testimony here today.

In our country, medical responders come from all sectors of society, from local hospitals and public health agencies, private care facilities, local first responder departments, State and Federal agencies, the military and volunteer organizations.

As the recent hurricanes in the gulf coast have shown us, coordination of all these different entities is very complicated, but the failure to do so leads to confusion and ineffectiveness, and in some cases can be the difference between life and death. One of the responsibilities of this committee is to provide oversight of programs such as the National Disaster Medical System to ensure that it functions correctly.

Members of this committee have heard many accounts from members of DMAT teams that organization and mission assignments in various situations have been confused and, in some cases, nearly absent. Dr. Freeman's testimony tells the story of her colleague and fellow Massachusetts DMAT member, Dr. Tim Crowley, who was so frustrated and disturbed by the failure of the leadership of his team while deployed to Louisiana for Hurricane Katrina, he resigned upon returning to Massachusetts.

Dr. Freeman recounts her own experience with a similar lack of leadership, sense of mission and logistical support during a DMAT deployment when she volunteered to provide medical response capabilities to the G8 Summit last year.

I have also been asked by my colleague, Representative DeFazio of Oregon, to submit for the record a letter that he received from the team leader of the Oregon disaster medical team. The letter details many problems the team faced during its deployment after Hurricane Katrina.

Mr. Chairman, I would ask unanimous consent that it be placed in the record.

Mr. LINDER. Without objection.

[The information follows:]

NDMS AFTER ACTION REPORT

Team:
IMSURT E

Mission:
Hurricane Katrina

Mission Dates:
9/3/05—9/18/05

Submitted by:
Timothy Crowley

E-mail: ***Tcrowley@mah.harvard.edu*** ..... Phone: ***978–443–0808***.

Date Submitted: ***10/5/05*** .... Reviewed by: ..... Date Reviewed:

Instructions:

Please include both constructive criticism and positive feedback where appropriate. Do not include security-sensitive issues or personal comments.

"Impact" refers to "how did this impact your mission": 1-none, 2-minor, 3-moderate, 4-significant, 5-critical.

"Effect" refers to "how effectively was this topic/issue handled": 1-very well, 2-good, 3-acceptable, 4-poor, 5-failure.

Under "Discussion/Description", please include any meaningful comments for the corresponding topic or issue. What worked well, what didn't, etc. Recommendations are strongly encouraged but not required.

If you have additional feedback, feel free to duplicate the form or attach additional pages or documents as required; refer to the number of the Topic/Issue (e.g., 2a) in your attached documents.

Using the "Save As" command, title the document with the mission name and team identifier (e.g., IVAN–CA1, Katrina-VMAT2, etc.). Secondary deployments to the same mission should also be identified (e.g., IVAN–CA1b).

Once completed, please email copies to:
Team Program Manager
Team Regional EC
FEMA–NDMS–PUBS–WG@dhs.gov

Topic/Issue	Impact	Effect	Discussion/Description	Recommendation/Action	FWG
1. **Situation** Deployed as: a. Full team of ***37*** b. Strike/Augmentation team of ***11*** c. Individual ☐ d. Describe mission assignment	0	0	We were supposedly deployed as a specialty team to set up a field hospital similar to our mission in Bam, Iran. It turned out much different. We ended up either sitting in Baton rouge waiting for a mission for several days (while teams in the field, we later learned were begging MST for help) We were then finally deplyoed to the Airport and ultimately divided into strike teams to assist the DMORTs, cruise ship and West Jeff. Hospital sites. Some were left at the airport (after all evacuations were shut down and there was NO BUSINESS for us to be there.	.....	

2. Alert & Notification a. Initial alert or organization b. Notification Process	5	5	We were notified ONE WEEK after the hurricane and after the most critical events where we could have made an impact, had already transpired-(the disasters at the convention center and the airport and the Superdome.	.....	
3. Deployment a. Timeliness b. Method c. Preparedness	5	5	We were sent to Houston in several groups over an extended period of time which, by the time everyone was there and accounted for, required an overnight in a hotel, thus wasting another day and money. We then had to travel 250 miles in a convoy which took up the next day.	.....	
4. Response a. Mission execution b. Local staging execution	5	5	As noted above, when we got to Baton Rouge there was no organization and no mission for the multiple teams waiting there despite what we learned later, that teams in the field such as the teams at the Airport and West Jeff were pleading for help. I confirmed this myself when I was tasked to demobilze 190 DMAT personell myself at the ariport on 9/8/05. Everyone told the same story. This was repeated when we arrived at our strike team missions and repeated again when we called for help and were told by MST that there were no assets to send us. When out relief finally came we learned, again, not to our surprise, that the teams relieving us had been sitting on their butts for days wiating and asking for missions. This was a TOTAL FAILURE in the MST system and NDMS to deliver the assets and resources to the areas of need.	.....	

Topic/Issue	Impact	Effect	Discussion/Description	Recommendation/Action	FWG
5. Incident Command a. Unified command (JMT) b. Group Supervisor (a.k.a. DMAT liaison or LNO) c. Local interface (e.g., local govt or hospital command & control) d. Your team/unit command) e. Establishment of priorities	5	5	This is a complicated question to answer since we had so many locations and interactions with leadership personell at various levels. The best experience I had was at West Jeff. where Tom Lowe (?sp) the team commander of NY–Minnesota, also performed at the highest level. The other outstanding performance to be commended was the JIOC under the command of Col. Petrenko which I was privileged to be part of when I was made Medical Director of the Airport. (I previously had been made Supervising Medical Officer for Imsurt East when Dr. Briggs was brought up to the MST due to illness of that director. I ultimately was made Acting Medical Director for the whole 3 state region when Briggs returned to Boston, although I remained at West Jeff due to lack of coverage for the night shift. I mention this not to blow my own horn but to explain that I may have had a unique exposure to the deployment because of all the various posts held and the demobilization of several of the DMAT teams who were able to relay their stories to me. The rest is pretty ugly. As Medical Director at the Airport, I had the unfortunate experience to be under the command of H. James Young. His judgement, knowledge and overall command decisions wre nothing short of abysmal. Example—As anyone whoever worked in such a deployment knows, different teams members have different skills, Some do logistics, some commo, etc. Rather than ASKING the staff at the airport who did what, he just named people randomly to positions with the expected results. He also kept several people on our team manning a medical clinic long after the airport had any need and while the military had set up a full medical facility and despite pleas from myself and our team commander to release the team members to where the need was. Finally, there was a mission at the cruise ship which was also closed and despite this, MST in Baton Rouge refused to release the docs there to help at West Jeff where the teams were getting slammed and asking for help. I never learned what sort of politcal agenda or just plain incompetance or stupidity was behind these decisions, but they were disgraceful.	.....	
6. Communications a. Within your response unit b. Within the incident scene c. Interagency d. Standardization & compatibility with local resources	4	4	First, our intra-team commo. was excellent. Commo to MST (for whatever good it did) was poor. The communications under the auspices of the JIOC at the airport was superb. The morning briefings were crisp, to the point and very efficient. The JIOC was the quintessential example of Interagency cooperation and effectiveness and should serve as the "model" for future national responses to disasters, in my opinion.	.....	

7. Logistics a. Identifying logistics needs b. Resupply process c. Staff housing, feeding, etc.	31	1	Supply and housing all were quite acceptable. The U.S. Forest Service did a fantastic job at the airport with their meal and shower units.	.....	
8. Personnel a. Staffing and shift procedures b. Personnel accountability c. Stress management d. Life safety	1	1	My team experience on this account was excellent. I will relate that accountability on some of the demobilizing teams I interviewed at the airport was, in some cases, nonexistant. I can't recall which teams were lacking in this regard unfortunately—they all kind of ran together.	.....	
9. Plans/Training/Preparedness a. Adequacy of plans b. Execution of plans c. Adequacy of training program for the mission d. Adequacy of pre-planned equipment (e.g., basic load) for the mission	5	5	Strong feeling about this area. In my view all teams should have their caches and equipment loaded on trucks or pallatized in a form that allows for roll-on deplyoment to a military aircraft- C–130, C–17 or C–5, if necessary and be flown point to point ASAP when the need arises. They sould have a small contingent of military units deployed along side for security. Sites for DMAT units and field hospitals should be preselected across the country as part of national contingency planning OR the local field commanders should be given the authority to set up shop at sites selected in conjunction with local authorities. Disaster teams, in that scenario could deploy within 6 hours and be anywhere in the country in 12 hours and be up and running within 24 hours, at most, from the time of activation.	.....	
10. Demobilization a. Notice b. Team member travel c. Transportation of cache d. Cache inspection/resupply e. Financial concerns including reimbursements payroll, etc.	5	5	This was one of the most annoying parts of the deplyoment. At the end, our whole teams was AT AN AIRPORT. We were in New Orleans and were made to go to Baton Rouge, in a convoy, to HAND IN PAPERS. Nothing else was done there. The physcial exams and mental health checks were DONE. We were then sent to Houston to stay over night at the expense of the taxpayer and had flights arranged to Ohio and then on to Boston to arrive on the 15th day of the deployment at midnight. There were 27 openings on the flight to Boston from New Orleans Airport hat Saturday at 9 AM and 40 opening on the flight at 12:30. The whole National Travel service scam should be abandoned and the teams should be allowed to book their own flights and send the damn paperwork in later. The main problemn with this agency is that it is too concerned with politics and bureaucracy and too little with getting the medical resources to the areas of need expeditiously.	.....	

Topic/Issue	Impact	Effect	Discussion/Description	Recommendation/Action	FWG
Conclusion:	The whole NDMS concept needs to be rethought. The current management team and disaster response, as I stated above, is completely dysfunctional. What is more worrisome is that this was a response to a disaster that we had fair warning of. I believe it has exposed a significant vulnerability to a sudden mass casualty event such as an earthquake or terrorist attack with NBC agents. Competant contingency planning and refocusing the efforts of the agency on getting the resources to the areas of need are essential to success of its overall mission and to the security of the nation.				

Mr. LANGEVIN. I feel strongly that the National Disaster Medical System can and should be an important asset to help treat injuries and provide aid in times of crisis. We must ensure that this incredible resource is not squandered. The members of the medical community who volunteer to be a part of this effort are highly motivated and highly skilled. We must ensure that those skills and that motivation are harnessed to the maximum possible effect.

Now, I am disturbed by the numerous reports of botched leadership, lack of a defined mission and an emphasis on bureaucratic functions, such as filling out paperwork when citizens are in distress and time is of the essence.

I am further concerned that in close analogy to the stories we heard about our troops in Iraq not being properly equipped, the members of these teams were not provided with the equipment that they needed to do their jobs.

Now we have a lot of ground to cover here, and I am anxious to explore these issues with our witnesses. I do want to thank you all for being here, and I certainly look forward to your testimony.

Thank you, Mr. Chairman, and I yield back.

Mr. LINDER. We will now turn to our witnesses. Dr. Alson is Associate Professor of Emergency Medicine at Wake Forest University School of Medicine. He was also the commanding officer of North Carolina's DMAT team that was deployed during Hurricane Katrina.

Dr. Richard Bradley is Medical Director of the Emergency Center at Lyndon B. Johnson General Hospital in Houston and is a member of the Texas Urban Search and Rescue Team. He was deployed during both Hurricanes Katrina and Rita.

Dr. Donald Thompson is a colonel in the U.S. Air Force and is a Senior Research Fellow at the National Defense University.

Dr. Jenny Freeman is President and CEO of Hypermed, Inc., and a member of the Massachusetts DMAT team.

Thank you all for being here.

Mr. LINDER. Dr. Alson.

I would ask you to keep your comments as close to 5 minutes as you can.

STATEMENT OF ROY L. ALSON, PhD, MD, FACEP

Dr. ALSON. Thank you, Chairman Linder and members of the committee. Good afternoon, and I appreciate the opportunity to speak.

My name is Dr. Roy Alson. I am an Associate Professor of Emergency Medicine at Wake Forest University School of Medicine, and I am here representing the American College of Emergency Physicians, the specialty of emergency medicine and the personnel disaster medical assistance teams of the National Disaster Medical System.

I currently serve as the commander of DMAT NC–1. I have been in the NDMS since 1989. I have had the privilege of leading an extraordinary group of people on multiple responses, including, recently, Hurricane Katrina.

We have been extremely lucky in this country. We have yet to face a truly catastrophic medical event. This is not to diminish 9/11, Rita or Katrina to those who were involved victims; they are

catastrophes. But compared to the casualties suffered in the recent earthquake in Pakistan, the 1976 Tangshan earthquake or the tsunami, we have not had the number of victims. Our events that we have had have taxed our medical systems because of disruptions of infrastructure, but our response systems at the local, State and national level have eventually met those needs.

Was our response perfect? No, it may never be. Can we do better? Yes. And many lessons have been learned.

It remains only a matter of time before we face a truly catastrophic event in this Nation. It may come in the form of a terrorist attack, using biologic or radiologic weapons; it may be a natural disaster or even the looming pandemic from avian flu that now faces us.

To deal with the consequences of a medical disaster, there are certain requirements that need to be in place. There must be facilities to give care, there must be personnel to provide that care, and there must be supplies for those personnel to use. All of these items can be greatly affected by the event that has taken place, and it may take additional time to bring in replacements.

Also, we have to have the ability to move injured and other victims from the impact area to other portions of our country, where they can receive definitive care.

Consequently, at a time when a community has increased demands for medical care, the ability of that community to provide care is compromised by the very event that caused it. Complicating this picture is the current nature of medical care in our country.

All of us practice in competitive environments. Emphasis is on cost containment and efficiency. Many facilities operate near capacity. Supplies depend on just-in-time delivery. Thus our ability to surge in the presence of large numbers of casualties is compromised.

We have, in the past, since September 11th, funded heavily the decontamination capabilities, the first responders. We may have saturated that market in funding. We need to look at where we are going to send the people they have deconned. Do we have that surge capacity? Currently, it is limited. Options for providing that definitive care remain bringing in more beds, such as portable field hospitals, setting up alternate care facilities or evacuation of victims. These are not mutually exclusive, but are part of a coordinated approach.

Catastrophic events rapidly overwhelm the local system and produce casualties that exceed their capacity. We have to harden the locals to handle the first period of time after that disaster. This is something that was apparent in most recent disasters. We have to give them the capability, as it will hold the fort until outside support comes.

The other thing we have to realize is that the mission of bringing these facilities in and distributing patients around the country has been the very mission that the NDMS was created for in the 1980s. Katrina was the first time we tested the evacuation piece; we have learned a lot of lessons. That portion needs additional support. It needs to be more robust, because such evacuations are resource-intensive.

We also, as I said, have to have the ability to bring in medical support. We currently have the DMATs and the NDMS; HHS has other assets, and there are many other local and other agencies that have come in. We need to look at the continued development of things such as the Federal Medical Contingency Stations originally proposed by NDMS and DHS. We have to expand the capabilities of recruiting volunteers when they offer their services. We saw large numbers in this event with many people complaining about the red tape.

ESAR–VHP, the Emergency System for Advance Registration of Volunteer Health Care Personnel, is there to handle the registration. We need to also train them in responding.

In my summary then, our catastrophic medical response must include hardening the local infrastructure, a coordinated Federal response, ideally under a single agency with committed medical logistic support. We also have to make the process of bringing the Federal assets in easier. We depend now, through the National Response Plan and the Stafford Act, on the request of the State to bring the assets. For certain types of catastrophic events, the Federal Government needs the ability to launch those assets and put them in place before we get the request from the State.

Lastly, the programs must be sustained. Equipment and personnel have been gathered and put in place, but it takes time, and we must maintain them, and that takes additional funding.

It is not "if" we have a catastrophic event, but "when." I again thank you for the opportunity to speak. I want to assure the American people and this committee that when such an event happens, the medical and response communities will do our best for our fellow citizens.

Thank you very much.

Mr. LINDER. Thank you, Dr. Alson.

[The statement of Dr. Alson follows:]

PREPARED STATEMENT OF ROY L. ALSON, PHD, MD FACEP

Chairman King and Members of the Committee; good afternoon and thank you for inviting me to speak before the committee. My name is Dr. Roy Alson. I am an Associate Professor of Emergency Medicine at Wake Forest University School of Medicine. I am very pleased to be here representing the American College of Emergency Physicians, the specialty of Emergency Medicine and the response personnel of the Disaster Medical Assistance Teams (DMATs) of the National Disaster Medical System (NDMS) which is part of FEMA. I currently serve as the Commander of DMAT NC–1 and have been active in the NDMS since NC–1 was formed from our local team Special Operations Response Team, in 1989. I have also previously served as the executive officer of the NMRT–E which is a chem-bio response team for the NDMS. I have had the privilege of leading the DMAT on numerous responses beginning with Hurricane Andrew and most recently with Hurricane Katrina.

Background

We have been extremely lucky in this country. We have yet to face, in recent memory, a truly catastrophic event, from a medical point of view. This is not to diminish events such as 9/11 or even Katrina and Rita. For those who suffered from these, they are catastrophes. Thousands died and hundreds more injured. But when compared to events such as the 2004 Tsunami or the recent Pakistani earthquake or the Tangshan earthquake of 1976 which killed 240,000 and left another 200,000+ injured in just one city, our recent major disasters have not generated the massive numbers of victims needing acute and long term medical care. Our events have taxed our medical systems because of the disruptions to infrastructure, but our response systems at the local, state and national level have met those needs. Was our response perfect? No, but it never will be. Can we do it better? Yes and many les-

sons have been learned and continue to be studied from both this year's storms, the 2004 season in Florida and Hurricane Allison in 2001.

The fact remains that it is only a matter of time until we face a truly catastrophic medical event in this nation. It may come in the form of a terrorist attack, using biological or radiological weapons; it may be a natural disaster such as a massive earthquake in the central US or Pacific Coast or it may be the threat now looming in front of us of a pandemic such as Avian Flu.

To deal with the medical consequences of a disaster, certain things are needed. Some are common to all events and some are specific and determined by the type of event. These needs are identified and categorized as the Emergency Support Functions (ESF's) as listed in the National Response Plan. ESF 8 is the Health and Medical Component of the Plan, but it does not stand alone, as appropriate shelter, and food and water all have significant impact upon the public health following a disaster.

In order to provide this medical care after a disaster there are certain absolute requirements:

- There must be facilities to give care. However during a disaster these sites may be damaged or destroyed, as we saw after Katrina and Allison, where flooding shut many hospitals. Much of day to day medical care is provided in physician's offices and clinics. These too are often rendered inoperable after disasters.
- There must be personnel to provide the care. In the affected community, medical and response personnel can become victims themselves. They may not be able to reach the facilities that remain operational or they may have chosen to evacuate the area.
- There must be supplies and medications for the care givers to treat patients with. These may be destroyed by the event and after the event; it can take time to bring them in.
- The ability to move victims from the impact area to other non affected areas of the country, thus reducing the burden on the medical infrastructure also needs to be a consideration.

Consequently, at a time when a community has increased demands for medical care, the ability of that community to provide care is compromised by the event that created the demand. Complicating this picture is the nature of medical care in the US today. All of us practice in a highly competitive environment, with an emphasis on cost containment and "efficiency". As a result many medical facilities operate at near capacity and supply inventories are kept as low as practical, depending on "just in time delivery systems". Our ability to "surge" in response to disasters or epidemics is thus further hampered.

Furthermore, cooperation between hospitals and other components of the healthcare system is needed for locally based disaster response to work. Such groups are often reluctant to share information, such as bed availability, for fear of providing competitors with key information. We hear over and over in disasters about the importance of information exchange and cooperation. We have begun the process of addressing the need for Surge Capacity and Capability through various initiatives such as grants from the Health Resources and Services Administration. This support is essential if we are to be successful. It is also primarily a local and regional responsibility to develop and operate these "surge" programs.

WMD versus Natural Disasters

September 11 provided us as a nation with the impetus to begin to address many disaster medical issues. We have committed large amounts of funds to train and equip local communities and "First Responders" and more recently the hospitals as "First Receivers". A condition of receiving these funds the adoption of Incident Command, which places all responders at the same table and we have supported the acquisition of interoperable communications. The emphasis has been on equipping Fire and other responders to deal with WMD events and we have purchased large quantities of decon supplies and stockpiled necessary medications to treat exposures to WMD agents. As an aside, portions of the Strategic National Stockpile were activated for Hurricane Katrina and were a valuable asset in supporting both Federal and State Response assets in the impact area. The SNS lacks many of the day to day medications and supplies needed by healthcare facilities and this needs to be rectified.

While we have heavily funded decon and rescue I do wonder whether we have "saturated the market" regarding the "decon" portions of our response. Once we have decontaminated or rescued victims, we still need to move them to medical facilities, yet last year only 4% of the Homeland Security funds went to ready EMS agencies (per the Advocates for EMS group sponsored by NAEMSP and NASEMSD).

We need to be certain we have the assets in place to move the patients. Additionally, as mentioned above, we need to put in place the ability to provide definitive medical care for the victims of an attack. After victims have been decontaminated following a nuclear attack, where do they go?

As previously stated, the ability of most medical systems to surge is limited by the existing economic pressures of medicine. Options for definitive care are thus to bring in more "beds", such as field hospitals (equipped with negative pressure capability for pandemics or biologics), establish alternate care and outpatient facilities for those whose conditions allow and arrange for evacuation of those victims who can travel. These are not mutually exclusive, but rather are part of a coordinated abpproach. The evacuation of victims with medical issues from Katrina was the first time we have really tested this portion of the system. It was challenging, but it did id give us the opportunity to see the strengths and weaknesses of the concept which will help guide improvements in the system.

Hospitals and other medical facilities need support to be able to expand capacity on short notice. Retrofitting facilities to increase the available number of negative pressure rooms, which decreases the risk of spread of biologic agents is an expensive proposition and one which the medical facility is not able to recoup from patient charges. Hospitals will also need increased staff to care for these additional patients as well as staff to man "alternate care facilities" in the community. Medical personnel from outside the impact area will be needed and plans for credentialing and moving these personnel must be in place and coordinated between the various Federal, State and Local agencies. Recent events to which we have responded show that there is a need for better coordination of many types of response assets.

We need to take an "All Hazards", approach to disasters and as we identify needs, fund the necessary programs to correct those needs. For example funding needs to be directed to "hardening" the local responses. This works for both natural and WMD events, as Federal and other outside help still require time to arrive after a major disaster. In fact, it can take several days for certain types of assets to be setup and running. This is not because of ineptitude, but simply that it takes time to move assets, identify needs and get the personnel and equipment in place, often in an environment were movement is restricted due to damaged or blocked roads and limited helicopter and other resources. Lastly under current rules, Federal assets, for the most part, can only be committed upon request of the local or state authorities. Maybe it is time to review how we commit these assets.

It is crucial that local medical assets to have the capability to begin caring for the immediate victims and to have the necessary supplies in storage to support operations for the first several days. This includes medical supplies, equipment to expand the number of available beds, establish alternate care facilities and maintain existing medical care. This concept has long been advocated by Dr. Carl Schultz, at U Cal Irvine, as part of the local planning for the "big" earthquake, based upon the experiences with earthquakes along the San Andreas.

We must also remember that a response to a Catastrophic event is a long term response. For natural disasters, many of the injuries happen during or in the immediate post event period. Long term medical needs are the result of the regularly occurring problems in the community, often exacerbated by lack of access to care. In a Biological or Nuclear event, the medical demands arising from the event can actually grow with time, given the time course of radiation illness or the continuing spread of the biologic agent. Thus Catastrophic medical response must also be scaleable and flexible in design.

In addition, we must also look to the psychological aspects of a nuclear or biological attack. Natural disasters produce many such issues, primarily in the immediate victims and responders. A terrorist attack can impact not only those in the immediate area but also at great distances. All across our nation, people were affected by the events of 9/11. Another such event will have the same or perhaps greater effects. Response capability for this issue exists within present day response systems, but the needs after such an attack must be estimated and the assets developed to meet that need.

Federal Medical Disaster Response

Let us now turn to the Federal Medical Response to disasters. While many agencies play roles in this and Health and Human Services is the Lead Agency for ESF–8 under the NRP, the National Disaster Medical System has been and remains the Federal Government's primary rapid civilian medical response to disasters. Begun in the mid-80 the mission of the agency is (taken from the web site) . ."to design, develop, and maintain a national capability to deliver quality medical care to the victims of—and responders to—a domestic disaster. NDMS provides state of the art

medical care under any conditions at a disaster site, in transit from the impacted area, and into participating definitive care facilities."

The teams are composed of medical and support personnel who on notice as short as 6 hours, leave their primary jobs or close their medical practices and respond to provide medical care in disasters. We at the NDMS are the "tip of the spear" for Federal Medical Response. There are approximately 9000 of these responders all over the US (A list of teams and assets is Attachment 3) and while there are many issues and problems with how the system works, it is important to note that it does work. 19 NDMS DMAT's and other NDMS teams were pre-staged for Katrina, and as the storm passed, they along with the USAR Task Forces, began moving, into the impact areas. By the day after the storm, teams were providing medical care and continue to do so today. The mission is still ongoing, with personnel staffing hospitals and clinics destroyed or rendered inoperable by the storms as we speak. (Attachment 2 lists patient services by NDMS personnel as of As of 10/13/05).

Like many issues in response, much of the NDMS problems are related to funding and support. Full time NDMS staff numbers about 50. They are stretched thin on a daily basis and during a disaster deployment; I am amazed they do not snap. Much of the problems in the field, for us as teams, stems from agency's lack of an intrinsic medical logistics support system. FEMA logistics has shown on the last 3 deployments a great inability to deliver medical supplies in a timely manner.

The emphasis and design of the team equipment and operations is heavily geared towards acute care, yet many of the missions, including those ongoing, have a strong primary care component. Often what is needed after the acute phase (often handled by local and state response) is to back fill and replace local medical assets destroyed by the disaster. Many of the physicians involved in this program, including myself, feel that a stronger medical presence in the operation of the agency will help correct some of these issues and balance the current emphasis on "rescue" type activities with the provision of "medical care".

I believe the public and much of Congress thinks of dramatic rescues and surgery taking place in "MASH" like tents, when they think of Disaster Medicine. That is but one component of the entire picture. This early phase acute care is an important one and I must again stress the importance of having local communities and regional assets trained and equipped to deal with this in the first few days post event as well as the importance of having rapidly deployable medical elements to get on-site and begin care. This must be followed by a rapid response of outside help to relieve the locals and expand the capabilities. The other portion of the Disaster Medicine equation is the replacement of the community's medical infrastructure to handle the "day to day" needs that are no longer met. People still have heart attacks and babies still get born. Not perhaps as exciting as the other aspect, but just as important.

CATASTROPHIC EVENTS

These are events that rapidly overwhelm the system and in terms of medical issues produce casualties that exceed the ability of local and state resources to provide care. When local and state assets cannot handle the demands, the role of the Federal Government's response is to provide them the support and personnel to manage the problem. The mechanism by which this happens either after the event or in anticipation of certain high risk types of events is outlined in the NRP and I will not review these in detail. There is also a Catastrophic Incident Annex to the Plan, which further defines assets and Federal Capabilities involved in the response.

To deal with the medical needs, as was said earlier, one needs to have facilities, personnel and equipment, all of which can be adversely impacted by the event. In addition, once stabilized, patients will likely need to be moved from the impact are to definitive care at medical facilities elsewhere. This mission: of bringing in medical facilities and personnel and distributing injured to medical facilities around the country is the mission which the NDMS was created in the 1980's. Besides developing medical response teams, the NDMS recruited hospitals around the nation, who would make beds available to care for victims of disasters or soldiers returning stateside for further care.

As was said above, "excess" bed capacity in the US is low. For most of our disasters, the number of victims was relatively low and the transfer of patients to open more bed space or provide definitive care has not been needed. It was however needed during Katrina. The movement of patients requires the support of NDMS partners including DOD and VA and does require time to ramp up. Katrina showed that it can and does work and this program requires continued support.

During a true catastrophic event the number of patients to be moved can easily number in the thousands, since one way to increase surge capacity in a community

is to move existing patients out of the area for continued care. But moving or evacuating patients may be much more difficulty than it first appears. Such evacuations are resource intensive and the air frames available for such activities are limited and may be committed to military operations. Similar limitations on availability of ambulances may result from the response demands to the disaster. Funding for additional transport assets must be included in catastrophic medic planning.

The other arm of post catastrophic event care is to bring in additional, portable medical facilities. I have been serving as one of many subject matter experts on a working group that is developing this type of facility, the "Federal Medical Contingency Station-Type I". This project has been designed by Dr. Lew Stringer and Capt Gary Sermones, USPHS (ret), at NDMS. As proposed, the:

"FMCS (I) provides hospital care capability during an emergency response by augmenting the local or community health care system with additional or replacement hospital facilities. In addition to declared national emergencies, FMCS (I) can support a continuum of state public health missions. One such mission would be to replace a local hospital if it becomes non functional due to contamination or destruction. Based on this scenario the hospital unit can be deployed to support the community hospital needs by providing up to 250 patient ED visits/24 hours, 12 ICU and 252 medical/surgical inpatients as well as up to 25 operative procedures/24 hours. The units will be fully staffed with NDMS healthcare professionals."

The prototype and project development for this unit was funded in FY 2005. The funding of $10 M to receive, equip the facility and carry out training, evaluation and design revision, as well as maintain the units was removed from the FY 2006 budget by the Senate. While I have a bias as to the importance of the project, since I volunteer my time to help with it, I believe that it is important for this to go forward. It allows us to rapidly bring into the affected those 3 key things I mentioned as essential to disaster medical care: Facilities, Personnel and Supplies.

Personnel issues must also be addressed. We have about 9000 personnel in the NDMS and in the ongoing response to Katrina; this resource was taxed to the maximum. Our day to day employers have been supportive and USERRA status for the NDMS has helped greatly, but it does become hard on the personnel's primary agency or hospital or private practice to be without them for long periods. During major disasters large numbers of medical professionals of all levels step forward to help, as we saw in the recent Hurricanes. It will be the same with any other catastrophic event. We will need these personnel and must find a way to effectively tap this resource should we have a true catastrophic, Biologic or Nuclear event.

Licensure and liability concerns have always been an issue with these volunteers and these hurricanes were no exception. There was much complaining about the "red tape". Emergency System for Advance Registration of Volunteer Health Care Personnel (ESAR–VHP) will help reduce some of this. However, ESAR–VHP only credentials personnel. . . *it does not train them.* Just because someone has a license or credential as a medical provider does not mean they are able to function in an environment they have never been in and which is very different from their day to day practice. I believe that ESAR-VHP needs additional funding to provide some basic disaster medical response training to those participants, especially to deal with infectious and communicable disease issues seen with biological agents. We will need the manpower.

This same type of training needs to be made available to Medical Reserve Corp volunteers as well. An excellent opportunity to provide this type of training in a realistic setting is to use these Medical Volunteers to assist with patient care in the continuing portions of a response to natural disasters such as NDMS has ongoing now in Jefferson and St. Bernard's Parishes in Louisiana. In a pandemic event, the demands for primary care, health screenings and similar services will rise dramatically. The ability to feed in additional medical personnel is important to maintain quality of care. The process must be worked out in advance.

This brings up the topic of coordination of medical response efforts at the Federal level, as MRC and ESAR–VHP are under the umbrella of HHS. Many agencies are involved in preparing for and responding to disasters and their medical consequences. FEMA and the NDMS have such programs, as does HHS and Public Health, to name a few. In order to reduce wastage and duplication of effort, as well as improve coordination before the event and in the field, I believe that all of these should reside under a "single roof". To be honest, I do not know whose roof that should be but I do feel that the purpose of this agency is to coordinate and provide the Federal Medical Response to disasters. I also believe that as we are talking about the provision of medical care, there must be active medical oversight and input as a key component of the process.

Furthermore, the agency that oversees these programs must have some flexibility to deal with response and other issues. Many of us in the medical community find

the inflexibility and slavish devotion to rules and regulations we encounter with FEMA to be counterproductive to disaster response. Personnel tasked with specific responsibilities should not have to worry whether their decisions made during events will be second guessed afterwards, in the comfort and safety of headquarters by accounting and legal personnel. In addition, the response must have a dedicated medical logistical group, solely tasked with supporting the medical assets, both in the field and during the planning and preparation phase. Under current FEMA and NDMS operations, support of team medical needs has been less than stellar.

Lastly I must ask this body and the American public to be realistic in their expectations of what will happen after a major disaster. Federal medical assets will be coming. We are not going to be there as soon as the smoke clears. Personnel must be mobilized and they and equipment moved. Assessments of needs must be done to determine what is needed and where and then those assets sent in and setup. That is not going to happen in just a few hours, but realistically may take several days.

To summarize my remarks, recent natural disasters, which are as close to a catastrophic event as our system has faced, severely taxed our capabilities. Our existing disaster medical response assets at Federal, State and Local levels did meet the challenge. We have learned much from these events and can apply those lessons to dealing with the medical aspects of a future Biological or Nuclear related attacks or a catastrophic natural disaster.

Our catastrophic medical response plan must include:

1. Equipping, training and hardening local medical infrastructure and rescue assets so that they remain functional after the event, with adequate supplies to operate in the immediate post event period.
    a. Provide the funding and support to enable surge capacity at the local level to deal with the influx of victims following such catastrophic events.
    b. Provide adequate decontamination capability
    c. Provide adequate medical supplies and pharmaceuticals in storage to support the initial "local" phase.
2. The Federal Catastrophic Medical Response must be scaleable, flexible and rapidly deployable, with trained personnel. This response must have its own dedicated supply chain that can support the operation consistently.
    a. The Federal response must be coordinated such that multiple agencies are not duplicating the efforts in advance and during the event and the there is consistency in how the program and response is run.
    b. While a number of options exist to accomplish this, the NDMS is currently the best positioned of the Federal medical response agencies to carry out this mission and needs to be supported.
    c. The Federal Response to an event must be "long term" as Biological and Nuclear events have long term medical consequences
3. During a Catastrophic Event such as a terrorist attack with an IND or, if we have advance warning, such as in a Category 5 Hurricane, the Federal Government must have the authority to mobilize and engage assets, without waiting for the request from the local officials.
    a. Eliminate the requirement, during Catastrophic Events, which under the Stafford Act, has the states paying for up to 25% of the response cost for Federal Assets. The question of how the state can come up with the funds may serve as an impediment to asking for Federal help.
    b. Federal Response assets of all types need the authority to engage and carry out their respective missions during a Catastrophic Event, without waiting for local or state requests. This will shorten Federal Response times and bring more assets to bear on the event. This is a major change from the current National Response Plan and Stafford Act.
4. Federal Disaster Medical Response for all types of events needs to be under a single agency umbrella, to eliminate duplication of effort and improve communication
5. Lastly, our response programs MUST be sustained. We have bought large amounts of equipment and supplies and distributed them or stockpiled them. These items require maintenance and even periodic replacement. Personnel must be trained and retrained. Otherwise they and the equipment lose their effectiveness. The Civil Defense Packaged Disaster Hospitals of the 1950'–60's all rotted in storage, for lack of support money. Congress must continue to support these efforts, not only today, but in the future.

It is not if we will have a catastrophic event, but when. I again thank you for the opportunity to speak and I assure you and the American people that when such

an event happens, and we pray it does not, the Medical and Response communities will be there and will do our best for our fellow Citizens. Thank you

Attachment 1: Summary of Federal Medical Contingency Station

Department of Homeland Security/Federal Emergency Management Agency (DHS/FEMA) is developing two Prototype Field hospitals which will be called Federal Medical Contingency Stations (FMCS) type I in 2005.†ne will have its own sheltering and support system and the second will require a building to be placed in. Both will have a one hundred forty (140) bed capacity, Emergency room, Lab, X-ray, Pharmacy, Central Supply/Processing, Operating rooms, Post Operative Unit, Labor and delivery and intensive care units. The two Split field hospitals could be combined as a single fixed or mobile 270 bed facility.

These two facilities will be staffed by the National Disaster Medical System (NDMS), now under DHS/FEMA. These Medical response teams will begin training and exercising with the FMCS Type I units in 2006 after the units are packaged. . .The exact locations that the *two* medical units will be stored and maintained have not been determined at this time. Funding to maintain, train and evaluate the units is in the requested FEMA 06 budget under Medical Surge Capacity.

DHS and HHS have been collaborating closely for many months on the design and operational issues for the Type I units.

ATTACHMENT 2: LISTING PATIENT CONTACTS SINCE START OF OPERATIONS AND CURRENT PERSONNEL DEPLOYED BY NDMS, BASED UPON FEMA REGION

HURRICANE KATRINA

NDMS RESOURCE STATUS REPORT

UPDATED: 10/14/05–0700

REGION IV: Through Reported Operational Period: 10/13/05: 0700–1900
—Total Patients Treated = 16,477
—Total Number of Personnel in the Field = 75

REGION VI: Through Reported Operational Period: 10/13/05: 0700–1900
—Total Patients Treated = 40,995
—Total Individuals Immunized = 59,917Total Number of Personnel in the Field = 383

HURRICANE RITA

NDMS RESOURCE STATUS REPORT

Updated: 10/14/05—0700

REGION VI: Through Reported Operational Period: 10/13/05: 0700–1900
—Total Patients Treated = 9,074
Total Number of Personnel in the Field = 49

ATTACHMENT 3:

National Disaster Medical System Response Teams

22 Disaster Medical Assistance Teams
(Fully Operational/Operational)
33 Disaster Medical Assistance Teams
(Augmentation/Developmental)
4 National Medical Response Teams / WMD
5 Burn Teams
2 Pediatric Teams
1 Crush Medicine Team
3 International Medical / Surgical Teams *
3 Mental Health Teams
3 Veterinary Medical Assistance Teams
11 Disaster Mortuary Operational Response Teams (1 WMD)
10 National Pharmacist Response Teams
10 National Nurse Response Teams
1 Joint Management Team
* Includes 1 under development

Dr. Bradley.

STATEMENT OF RICHARD N. BRADLEY, MD

Dr. BRADLEY. Chairman Linder, Ranking Member Langevin, Mr. Thompson, thank you very much for the opportunity to address you today.

I do represent the University of Texas Health Science Center at Houston, and through a contract with FEMA, I serve as the medical team manager on the Texas Task Force One Urban Search and Rescue team. I did deploy to Hurricane Katrina and several other incidents with them. However, the testimony I am providing today is my own, and I am not testifying on behalf of FEMA or the Urban Search and Rescue program or Texas Task Force One.

The primary mission of an urban search and rescue team is to rescue people from collapsed buildings. Thus, urban search and rescue teams would be useful in the medical response to mitigate catastrophic events. Specifically, they would have a specific role in the medical response to a nuclear attack. Since building collapse would be likely, urban search and rescue personnel would search for trapped victims and provide lifesaving care until the medical team extricated them and turned them over to other medical care providers. The teams are trained in the medical care of radiation victims, and the medical members on the team know how to limit their radiation exposure and deal with contamination.

A terrorist attack involving biological weapons would present an entirely different scenario. While it is reasonable to consider that such an incident may involve thousands of people needing medical care, we would not expect there to be any collapsed buildings or anyone in need of rescue.

While an urban search and rescue task force does have 70 highly trained members, the general level of medical training is that of the emergency medical technician. A full task force has only two physicians and four paramedics. Now, while the National Disaster Medical System does credential these providers as Federal health care providers, the Urban Search and Rescue system has neither designed nor equipped their teams for handling large numbers of casualties.

The treatment priorities for Urban Search and Rescue medical personnel are, first, injured or ill Urban Search and Rescue members; second, trapped victims; third are search dogs; and finally other disaster victims at the incident scene. The six people on our team are not equipped to operate independently. We depend on the rest of our team for command, logistical and support functions. Thus, while total activation of the Federal Urban Search and Rescue system would provide approximately 6,000 highly trained personnel to FEMA, they would be of minimal benefit in the medical response to a terrorist attack using biological weapons.

In addition to direct medical care, the impacted community would need services such as laboratory detection, quarantine, isolation, disease control, disease tracking and mass vaccination. It is really hospitals and health departments that are the best providers of these services.

So, Mr. Chairman, to answer your question, we are better prepared, the FEMA Urban Search and Rescue team, for handling the medical aspects of a biological and nuclear attack, specifically a nu-

clear attack, as long as it is within the program that we were designed for, which is rescue and medical care of trapped people.

Beyond the Urban Search and Rescue aspects, there are some other things that we could do to improve our preparedness to deal with the medical impacts of a catastrophe.

We know that everything begins locally. It is the local emergency manager who is responsible for coordinating the disaster response. There are a lot of resources that he or she will need and has direct control over, such as fire, police or EMS, but there are other resources that he does not have correct control over, such as hospitals and doctors. This is a significant challenge for him. He is responsible for ensuring that hospital care is capable, but has no authority over the hospitals to compel them to respond.

I suggest that we consider developing a template for a memorandum of agreement between the emergency manager and the hospital, and this agreement could address a number of things, including specific response options for each hospital, who would have the authority to initiate those response options, and then how those response options would be paid for. Then, of course, once all the local community assets have been deployed, the emergency manager is going to look for help from the State and Federal Government.

We know that the Federal government, the State government is not going to respond until the local emergency manager calls for it. But I would like to consider the possibility of sending in an advisor right away, even before the resources were requested, someone who can help the local emergency manager understand what Federal resources are available and help him tailor his request, because often the emergency manager may not know exactly what the details are of each Federal asset that could come.

So we are better prepared now in the Urban Search and Rescue realm, but I look at how we can support hospitals and support the local emergency manager more fully in terms of tailoring his or her requests.

Mr. LINDER. Thank you, Dr. Bradley.

[The statement of Dr. Bradley follows:]

PREPARED STATEMENT OF DR. RICHARD N. BRADLEY

Chairman Linder, Ranking Member Langevin, and other distinguished Subcommittee Members, thank you very much for the opportunity to address you today. My name is Dr. Richard Bradley. I am the Medical Director of the Emergency Center at Lyndon Baines Johnson General Hospital in Houston, Texas, and an Associate Professor of Emergency Medicine at The University of Texas Health Science Center at Houston. The UT Health Science Center at Houston is the most comprehensive academic health science center in the Southwestern United States. We are educators, students, physicians, researchers, dreamers, explorers, and inventors. We have six schools, several institutes, a psychiatric hospital and a multi-specialty group practice—all focused on improving health and preventing disease through education, research and clinical service. We work for our patients, our community and for humanity. Our institution, its faculty, health professionals and staff were heavily involved in Katrina recovery and relief efforts both in Louisiana and in Houston. We provided health care for evacuees; advised elected and appointed officials in all jurisdictions about public health and recovery efforts; and assisted people in need in many other areas. I am proud to be a member of the faculty because our leadership and my colleagues responded quickly and with enormous compassion.

I also serve the University as the Associate Director for Emergency Medical Services Preparedness at our Center for Biosecurity and Public Health Preparedness. The center educates the frontline public health workforce, medical and emergency

responders, key leaders, and other professionals to respond to threats such as bioterrorism, emerging infectious diseases, and other emergencies affecting our communities.

Through a contractual relationship between the university and the Federal Emergency Management Agency (FEMA), I serve as a Medical Team Manager with Texas Task Force One, a FEMA Urban Search and Rescue (US&R) team. I have deployed to several incidents with this team, most recently to Hurricane Katrina, where our team performed hundreds of rescues in New Orleans. Based on my first-hand experience as an emergency physician working with the US&R team, along with experience from participation in other disaster responses, I have formed several opinions regarding the importance of effective medical response in mitigating catastrophic events. However, the testimony I am providing today is my own—I am not testifying on behalf of the FEMA US&R program or Texas Task Force 1.

FEMA US&R Teams are Prepared to Respond to Nuclear Attacks

US&R involves the location, rescue, and initial medical stabilization of victims trapped in confined spaces. Structural collapse is the most common cause of victim entrapment. Additionally, transportation accidents, mines and collapsed trenches may entrap people. US&R is considered a "multi-hazard" discipline, as it may be needed for a variety of emergencies or disasters, including earthquakes, hurricanes, typhoons, storms and tornadoes, floods, dam failures, technological accidents, terrorist activities, and hazardous materials releases. The events may be slow in developing, as in the case of hurricanes, or sudden, as in the case of a nuclear attack.[1]

There are currently twenty-eight US&R teams in the United States. Each team can deploy in either a 'heavy' or a 'light' configuration. In the heavy configuration, the team deploys with seventy people, all trained to at least the technician level in their area of specialty. These specialties include high angle rope rescue, confined space rescue, technical search, weapons of mass destruction (WMD) and hazardous materials operations, defensive water rescue, medical care and communications. Each task force is capable of operating round-the-clock, is completely self-sufficient for the first 72 hours, and can sustain operations for up to ten days.[2]

A terrorist attack involving nuclear weapons would likely create a situation with multiple casualties. Damage to structures may trap numbers of people. Responding personnel would need to monitor and control exposure to radiation and control contamination.

The US&R system could be part of the medical response to this scenario. In the past few years, all of the members of the system have completed training in WMD and hazardous material operations. In particular, the medical personnel on the team have training and certification in handling these types of casualties. The teams carry equipment to detect radiation and monitor personal exposure. They are also prepared for contamination avoidance and control.

US&R Teams are Not Appropriate for Response to Biological Attacks

A terrorist attack involving biological weapons would present an entirely different scenario. While it is reasonable to consider that there may be thousands of people needing medical care, and a complete overload of local medical resources, there would be no collapsed buildings and no one in need of rescue.

While a US&R Task Force does have seventy highly trained members, the general level of medical training is that of emergency medical technician. A heavy task force has only two physicians and four paramedics. While the National Disaster Medical System does credential these individuals as federal health care providers, the US&R system has neither designed nor equipped these teams for handling large numbers of casualties.

The treatment priorities for US&R medical personnel are first, injured or ill US&R team members, second, entrapped victims, third, the team's search dogs, and finally, other disaster victims. The six medical personnel are not equipped to operate completely independently of the remainder of the task force—they depend on other task force personnel for support in the logistical, planning and command areas.

Thus, while total activation of the federal US&R system would provide approximately 6,000 highly trained personnel to FEMA, they would be of minimal benefit in the medical response to a terrorist attack using biological weapons. In addition to direct medical care, the impacted community would need services such as laboratory detection, quarantine, isolation, disease control, disease tracking and mass vac-

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[1] FEMA. About US&R. [Online]. 2004 [cited 2005 Oct 13];[1 page]. Available from: URL:*http://www.fema.gov/usr/about.shtm*

[2] FEMA. Typed resource definitions: search and rescue resources. [Online]. 2005 [cited 2005 Oct 13];[41 pages]. Available from: URL:*http://www.fema.gov/pdf/nims/508–8_search_and_rescue_resources.pdf*

cination. Hospitals and health departments are the best providers of these services. If a community needs federal medical assistance after a biological attack, Disaster Medical Assistance Teams (DMAT's), and assets from organizations such as the Veteran's Administration, The United States Public Health Service, the National Guard and other Department of Defense medical assets are much more appropriate.

Command and Control of the Local Medical Response

Effective medical response to a disaster begins locally and the official ultimately responsible is the emergency manager. This individual is usually the mayor or city or county manager, who, as the local chief executive officer, is responsible for public safety and welfare. He or she directs the response to the disaster by assessing the needs and assigning resources to meet those needs. The emergency manager must commit all appropriate local resources and mutual aid before requesting state, federal or military assistance.[3, 4]

*ERR13**ERR14*Many of the resources that the emergency manager needs to deal with the disaster are those that he or she has direct command over, such as fire, police, EMS, public works, waste management, etc. There are other resources that he or she needs but does not have direct authority over, such as hospitals and doctors. These are critical resources because ultimately, the emergency manager is responsible to ensure that all victims get the medical care they need. This is a significant challenge for the emergency manager: he or she is responsible for ensuring hospital care is available but has no authority over the hospitals to compel them to respond.

To complicate this further, even though federal law does require hospitals and emergency departments to treat anyone with a medical emergency, it does not require them to do anything to augment their capacity to respond when a disaster strikes. As a result, many hospitals faced with a nearby disaster will manage the overflow as the do on any other busy day. This means that when the in-patient beds and intensive care units are full, patients will backup in the emergency department.

As local hospitals become overloaded, emergency managers will need hospitals outside the immediate disaster zone to accept patients in transfer. These hospitals are only required to accept transfer patients if they have the capacity to care for them. The issue here is that the receiving hospital defines its capacity without external validation. It is under no obligation to call-in extra staff to create surge capacity during a disaster.

It is clearly in the public interest to address this problem at a national level. One possible solution would be to encourage local governments to develop memoranda of agreement (MOA) with the hospitals in their area. The MOA should specify several things. First, working collaboratively, each hospital and the local government should develop a number of specific response options they could invoke in time of disaster. Some options would be general, such as agreeing to cancel all staff time off and have all available clinical personnel work twelve-hour days, seven days per week for up to ten days. Other options would be specific, such as tasking the hospital to turn its day surgery center into a ten-bed intensive care unit. The MOA would give the emergency manager the authority to request hospitals to initiate any or all of these emergency actions. It should also allow the emergency manager to send field observers to each hospital to determine the actual situation and workload during a disaster.

The MOA should also address reimbursement for hospitals and physicians. During and after a disaster, they should continue to bill patients for care they provide. This is appropriate, since, in many cases, third-party payers have financial responsibility for medical care. However, many individuals who require medical assistance after the disaster will not be able to pay for it. Furthermore, hospitals and physicians will experience unusual expenses. Most of these expenses will be overtime pay, but they may also include the cost of renting or purchasing extra equipment. Government agencies that request hospitals and physicians to respond to the disaster should compensate them for a potion of these unusual expenses. The MOA should specify the reimbursement rate for each response option that the emergency manager may request.

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[3] U.S. Dept. of Homeland Security. National response plan. [Online]. 2004 [cited 2005 Oct 18];[114 pages]. Available from: URL:*http://www.dhs.gov/interweb/assetlibrary/NRPbaseplan.pdf*

[4] While the emergency manager is ultimately responsible for all disaster response, he or she generally delegates many emergency response functions. Most jurisdictions will have a health officer or other individual pre-designated to exercise emergency public health powers. In many cases, this should be the individual directly responsible to the emergency manager for medical and hospital issues.

There are many advantages to this proposal. Each hospital and its entire staff will be able to plan for and train to the exact requests they may receive during a disaster. Emergency managers will gain an understanding of the extent of the emergency medical resources available in their community and will know when all of these resources have been committed. This is a critical step in understanding when it is time to ask for state or federal assistance. Finally, the MOA will create a process to track and validate requests for reimbursement. Government officials will be able to know the cost of the medical response in real time. I urge our national leaders to consider requiring the existence of such an MOA as a pre-requisite to full federal reimbursement for disaster medical expenses.

Defining Health and Medical Resources

As hospitals and communities respond to meet the needs of the disaster, they may need to request additional medical resources. Medical response will be more effective when there is consistent use of standard resource definitions. Whether the need is for a cardiac monitor or a disease control team, everyone who deals with resource requests must share the same definition of the resource. The solution is to include hospitals and other medical personnel and teams into the national resource typing system. Resource typing is designed to enhance emergency readiness and response at all levels of government through a comprehensive and integrated system that allows jurisdictions to augment their response resources during an incident. Specifically, it allows emergency management personnel to identify, locate, request, order, and track outside resources quickly and effectively and facilitate the response of these resources to the requesting jurisdiction.[5] The National Incident Management System (NIMS) has already developed specific definitions of 120 different types of resources, covering assets as diverse as 'small animal sheltering team' and 'crawler cranes.' The typed resource definitions already include some health and medical resources, but these are currently limited to the response teams that have performed so well during past disasters, such as DMAT's and Disaster Mortuary Assistance Teams.[6]

I would like to commend the leadership at FEMA for their foresight in establishing these resource definitions. They are continuing to refine and expand them and are inviting input from the emergency response community as they proceed. I strongly encourage my health and medical colleagues from around the country to provide expert suggestions and comments to FEMA during this process.

Requesting State and Federal Medical Assistance

As the Emergency Manager determines that local and mutual aid medical resources are fully committed, he or she will begin to request resources from the next higher political authority, usually the state. The state, in turn, fills resource requests as best it can, and then requests assistance from the federal government.

Officials at the state and federal level may face the temptation to question some resource requests coming from the local emergency manager. It is clearly possible that some requests may not be practical, and others might be unreasonable. However, state and federal officials should not spend an unreasonable amount of time to approve reasonable requests simply because independent verification of the need is not available.

I have personally seen what a good job our federal disaster officials can do with these requests. After Tropical Storm Allison hit Houston in 2001, I was assigned to the Emergency Medical Services desk in the City of Houston's Emergency Operations Center. We were beginning to understand the significant impact that losing six major hospitals would have on our city. Due to the nature of the storm, the rest of the country did not yet have any idea of its severity. Our initial request for medical support was for four DMAT teams and twenty ambulances. Soon after I submitted this request through channels, I was on a conference call with the senior leadership of the National Disaster Medical System (NDMS). I recall one of the federal participants on the call questioning the severity of the situation in Houston, and suggesting that it would be a good idea to wait and send a federal representative to Houston to validate the need before sending assistance. The NDMS leader on the call responded, "No. If Houston says they need it, that is good enough for me. We will send them what they are asking for." Any local official who deals with the medical consequences of a disaster expects and appreciates responses like this.

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[5] The NIMS Integration Center. Resource typing. [Online]. 2005 [cited 2005 Oct 16];[2 pages]. Available from: URL:*http://www.fema.gov/pdf/nims/resource_typing_qadoc.pdf*

[6] FEMA. Typed resource definitions: health and medical resources. [Online]. 2005 [cited 2005 Oct 17];[13 pages]. Available from: URL:*http://www.fema.gov/doc/nims/508-5_health_medical_resources.doc*

Under the National Response Plan, federal officials do not send resources to a disaster until requested by local officials.[3] However, this should not prevent federal disaster officials from sending advisors in to the disaster area immediately after the incident has occurred. These advisors could work with teams that perform rapid needs assessments. They could then assist the local and state officials with determining exactly what the needs are. The advisor could also counsel the emergency manager and his or her staff to help them determine what state or federal resources would best meet their needs.

Conclusion

We can mitigate disasters through effective medical response. In relation to a nuclear attack, US&R teams are clearly a vital part of the nation's response capability. In contrast with this, the US&R system would probably not be a key part of our medical response to a biological attack.

Looking beyond the US&R system, effective medical response will require efforts to develop new resource definitions in the hospital and medical area. Using these definitions, each hospital should work with local government to determine a list of actions that it could take to expand its ability to care for patients during a disaster. They should formalize this with a written agreement that has provisions for assigning activation authority to the emergency manager while guaranteeing reimbursement for some of the unusual expenses that they would incur.

As emergency managers are deciding what to request from their hospitals, they must also decide what to request from state and federal government. Since, in many cases they may not have a complete picture of their current medical needs, and they may be unfamiliar with all of the federal medical resources available, federal advisors should be available early after a disaster occurs to guide them in making the correct decisions.

Thank you very much for this opportunity to speak with you regarding such an important topic.

Mr. LINDER. Colonel Thompson.

STATEMENT OF COLONEL DONALD F. THOMPSON, MD, MPH&TM, SENIOR RESEARCH FELLOW

Colonel THOMPSON. Mr. Chairman and members of the committee, thank you for the opportunity to discuss how to improve our domestic response capabilities.

I am a physician at the Center for Technology and National Security Policy at the National Defense University, and I am working on several studies examining terrorism, public health emergencies such as SARS and pandemic influenza, and natural disasters such as hurricanes and earthquakes.

Katrina exposed systemic problems in local, State, Federal and military response coordination. For an effective response, there must be coordinated planning between these levels of government that incorporates the private sector, volunteer and faith-based organizations and academic institutions. Each agency must understand its roles and responsibilities, its capabilities and limitations, and from whom it will obtain additional resources when its capabilities have been overwhelmed. We are destined to continued haphazard responses until we get this right.

There are three broad areas that are essential to improved national preparedness: first, requirements-based mass casualty planning; second, working across institutional cultures of response agencies; and third, learning coordinated crisis management decision-making. A significant deficiency lies in resolving problems that are too big for or beyond the jurisdiction of State and local agencies and are beyond clear Federal control. My written statement describes these areas in detail.

The Federal Government has a leadership role in developing preparedness principles, implementation strategies, and opportunities

to test and exercise local plans. Perhaps most critical, though, is that funds should be provided with strings attached to cajole local and State agencies to develop interconnected regional plans. To paraphrase General George Patton, The best plan is useless if executed too late. Successful decision-making must be demonstrated in staged crisis management exercises that proceed to the point of failure, so all deficiencies can be identified and corrected.

Opportunities for senior leaders to learn about crisis decision-making in such realistic environments are almost nonexistent. Some are suggesting that the Defense Department assume more responsibility in the case of domestic disasters, but a more appropriate role might be more proactive engagement in the planning process. As Katrina lessons are analyzed, we must identify the mechanism by which military medical, logistics and response planners may engage in planning at the appropriate Federal, State and local levels. Such a forum should be cosponsored by the Departments of Homeland Security, Health and Human Services and Defense. If these agencies work together to develop effective plans that incorporate public, private and volunteer resources, the risk of terrorism and the impact of natural disasters will be reduced and the homeland security will indeed be more secure.

Mr. Chairman, I request my complete statement be included in the record.

Mr. LINDER. Without objection.

Colonel THOMPSON. I thank you for the opportunity to appear before you, and will be happy to answer your questions.

Mr. LINDER. Thank you, Colonel Thompson.

[The statement of Colonel Thompson follows:]

PREPARED STATEMENT OF COLONEL DONALD F. THOMPSON

Mr. Chairman and members of the committee, I thank you for the opportunity to appear before you and discuss ways to improve domestic medical response capabilities within the United States. I am a physician and a Senior Research Fellow in the Center for Technology and National Security Policy at the National Defense University, and am working on several studies examining preparedness for and response to terrorism, public health emergencies such as Severe Acute Respiratory Syndrome (SARS) and pandemic influenza, and natural disasters such as hurricanes and earthquakes. I would like to share with you some common themes I have identified that suggest opportunities for improving our nation's ability to respond to such catastrophes.

Katrina exposed systemic problems in local, state, federal, and military response coordination, problems that will be much more severe and have much more negative outcomes in the event of a terrorist attack in multiple cities. The strained medical response when there were only a few dozen serious injuries as a direct result of the hurricane shows that there is much to be done to prepare for a terrorist incident that suddenly produces hundreds or thousands of casualties in multiple locations. This underscores the importance of coordinated preparedness planning between these levels of government that incorporates the private sector, volunteer and faith-based organizations, and academic institutions. It is crucial for response agencies at each level to understand their roles and responsibilities, their capabilities and limitations, and from whom they will obtain additional resources when their capabilities have been overwhelmed. We are destined to continued haphazard responses until we get this right. While this discussion focuses on mass casualties, the principles apply in the law enforcement, logistics, evacuation, recovery, and communications areas as well.

Difficulties in responding to a catastrophic event are particularly apparent and challenging in the medical and public health areas, when a coordinated civil-military response will likely be needed for an incident that produces significant casualties. There is no health care "system" in the United States; there is instead a vast collection of public and private institutions, agencies, and individuals that deliver

healthcare services, only a small portion of which are provided by local, state, and Federal authorities. Civilian referral hospitals are largely unprepared to handle the large patient load from a catastrophic event. Hospitals are often filled to capacity, have few isolation beds for contagious infections, and have insufficient staff to handle a large influx of patients. If an attack involved the real or perceived threat of biological or chemical weapons, civilian hospitals might refuse to take contaminated or contagious casualties altogether.

Needs to Improve National Preparedness

There are three broad areas that are essential to improve national preparedness: requirements-based mass casualty planning, learning to work across institutional cultures of response agencies, and learning coordinated crisis management decision-making. In the coming weeks, analysis of the local, state, and federal response to Katrina will yield details about—and insights into improving—these elements, so only a brief description of them is necessary at this point.

T3Requirements: Comprehensive planning for a mass casualty response must start with defining requirements, identifying capabilities needed to meet them, and then linking particular units or personnel to particular needs in specific locations. Policies and procedures must be developed to task particular resources for an actual mission, reimburse all associated costs, and backfill the unit or personnel for whatever it was involved in when tasked.

It is difficult to predict the types and numbers of casualties from a conventional explosion, a communicable biological weapons attack, release of a chemical agent, a nuclear weapon detonation, or a radiological dispersion device where a conventional explosive has been contaminated with radioactive material. Numbers of casualties would depend on whether the explosion or release takes place indoors or outdoors, in a densely populated area, in or near a mass transit system, or at the busiest time on a weekday. These complexities are the first order effects of the attack—the victims directly injured, exposed, or contaminated by the event.

Complexities increase exponentially through second and third order effects, the unintended consequences of the event. People exposed to radiological material or anthrax spores will track the material on their shoes and clothes, endangering more. Those fleeing an incident area may move into a more hazardous zone. Persons exposed to a covert release of a communicable biological agent such as smallpox, plague, or influenza will depart the initial area of exposure and travel to their homes, school, work, or around the world on commercial air flights while incubating an infection. They become a risk to others and cause secondary cases as person-to-person transmission takes place.

These types of complexities, especially those that deal with how people might respond in a crisis, cause many officials to move such requirements planning into the "too hard to do" box. In actuality, however, much supportive work has been done in social network analysis and adaptive response that sheds light on likely human behaviors. Well worded, timely messages from appropriate opinion leaders often lead to desired behaviors. The challenge that faces the nation, though, is who should identify this supportive work, develop and test solutions, and integrate strategies into response plans at all levels? From the local, state, federal, and military perspective, this is indeed too hard to do, because so much complex coordination is required. All-inclusive answers to these and additional questions must be developed in a setting that mirrors the likely response to an incident.

Capabilities: Capabilities that are available at each level of response must be identified and compared with the likely requirements. Since mass casualty response begins with local emergency medical response, hospital emergency departments, and emergency management agencies, the capabilities in each of these local sectors must be clearly described. Next, response capabilities at the state level must be identified. These are often limited to National Guard resources under control of the Governor, as well as state law enforcement resources. Few states have significant medical response resources, though public health laboratories are essential in supporting a response to a natural pandemic or a biological terrorism agent. Finally, capabilities of various federal agencies must be defined. Dangerous assumptions are often made that because a particular local, state, or federal agency has a specific capability in its day-to-day mission, that agency could provide the same capability in the event of a national disaster.

Close Capability Gaps: As capability shortfalls are identified, responsible authorities in response agencies at all levels must develop plans for closing these gaps. Comprehensive plans include the required capability, the point in the evolution of the crisis when it is required, where the resource to meet this capability can be obtained, who must authorize the request, who must approve its fulfillment, who will reimburse associated costs, how the capability will be replaced when it goes to the

requesting location, and when it will be released to return home. The most efficient surge capacity plans consist of obtaining capabilities from neighboring areas through mutual aid compacts. These agreements are used every day as police and fire response units move across jurisdictional boundaries to meet short-term surge needs.

Coordinated procedures and protocols for closing gaps beyond fire and emergency medical services are rarely in place for regional and multistate mass casualty incidents because few jurisdictions have had to develop them. The hurricane-prone Atlantic and Gulf Coasts and earthquake-prone California are usually exceptions, but by and large the United States is not ready for a national mass casualty response to a major incident.

Planning Deficiencies

National all-hazard mass casualty planning for acts of terrorism, natural disasters, and public health emergencies includes three primary components, of which only the first two are being addressed. The first component is local and state response planning, which varies in quality according to the local community's experience and resources. For a terrorist attack such as the 2001 anthrax letters on the East Coast, an efficient response must consist of integrated, coordinated planning between all response sectors: public health, emergency medical services, fire, law enforcement, hospital-based emergency departments, private sector healthcare delivery, local emergency management agencies, local elected officials, military installations, public and private sector businesses who would provide food, water, utilities, communications, and transportation, local volunteer organizations, schools, faith-based organizations, and the news media. Such comprehensive local planning is rare. Furthermore, Katrina showed that even when plans are in place, they must be promptly executed. Local leaders cannot afford to wait for the Federal Government to provide an initial response.

The second component is planning for a Federal response, when states may approach the Federal Government through the Department of Homeland Security seeking Federal financial aid and response assets. Real Federal medical resources are limited, though, and primarily consist of small deployable medical teams from the National Disaster Medical System. Planning for Federal alternate hospital facilities is underway, but integration with actual local and state response capabilities has yet to be accomplished. These facilities will provide bed space to care for non-emergency hospitalized patients, so existing hospital space can be reserved for new, more seriously injured casualties. Katrina showed that staffing requirements for these facilities cannot be met from Federal sources. A senior National Disaster Medical System official underscored this deficiency when he reported in a 2004 Institute of Medicine workshop that a catastrophic disaster would require an additional 20,000 healthcare professionals beyond what could be provided by the Federal government. Catastrophic mass casualty planning is beginning at the federal level, but more important is the need to build interoperable state, regional, and federal response plans for smaller, more likely events.

The third component, not currently being addressed, is planning for a national response where problems are addressed that are too big for, or beyond the jurisdiction of, state and local agencies, and beyond clear Federal control. This type of planning often includes working with organizations and institutions that operate at the border between state and society, such as private sector businesses, volunteer organizations, faith-based organizations, national professional societies, and academic institutions. Such groups are not part of any formal governmental structure, but play a crucial role in society, providing essential support and cohesion. As Katrina demonstrated, involvement of these groups is essential to disseminate information via trusted local opinion leaders, to identify volunteers to assist in a mass casualty response and to maintain trust in local, state, and Federal authorities.

The Federal Role in Mass Casualty Planning

The Federal Government has a leadership role in all three of these planning components. Federal agencies must support local and state agencies by providing principles for preparedness, goals and objectives, strategies for implementation, and opportunities for testing and exercising local plans. Perhaps most critical is the provision of funding with strings attached to cajole local and state agencies to develop interconnected regional plans.

Federal agencies must identify resources that are likely to make a difference in a local or regional terrorist or mass casualty incident response. A chemical, nuclear, radiological, or biological attack may call for the immediate deployment of capabilities that no local or state government can afford to maintain. National sources of hospital beds and medical equipment may be necessary, but identifying sufficient healthcare professionals and providing them and the hospitals in which they deliver

emergency care with licensure and credentialing standards and liability protection is a much more crucial federal task. Prompt response actions are often hindered by built-in delays as requests for assistance flow from local to state to federal officials, so action thresholds for requesting additional help should be established in advance.

The Federal Government must create an environment in which best practices can be developed and tested. Alternative models for national solutions should be prototyped and fine tuned in a multistate region, then provided to state and local governments for adaptation to local needs. These models should include sources, organization, and management of healthcare professionals; credentialing, training, and personal protective equipment; and liability protection and reimbursement. Tools should be provided to maximize existing hospital bed space and to create alternate facilities, transport casualties to regions with excess capacity, and identify funding sources for local hospital preparedness. National professional medical and legal societies should be engaged to discuss mechanisms of triage and the graceful degradation of the quality of emergency care that will take place in the face of mass casualties.

Organizational Barriers to Coordinated Planning

The rate-limiting step in coordinated planning is the requirement to work across bureaucratic, organizational, and professional barriers. Communication and coordination barriers thwart communication horizontally, with like agencies at the same levels of government, and vertically, when proceeding up or down the chain of command. Organizational cultures become barriers when moving across agencies or business sectors; the resulting bureaucratic obstacles and inefficiencies seem to be ubiquitous and can be overcome only with sustained effort.

Crisis Decisionmaking

To paraphrase General George S. Patton, the best plan is useless if executed too late. The best confirmation that planning and preparedness efforts are adequate is to demonstrate successful decisionmaking as a plan is executed in a staged crisis management exercise. Such tests must intentionally focus on cross-jurisdictional crisis communication.

None of these steps can happen, however, until the basic coordinated planning described above takes place. For Katrina, a massive Federal response in less than 72 hours was widely criticized due to a lack of understanding that the first response is necessarily a state and local responsibility.

Current Deficiencies

Much positive work has been accomplished in the four years since September 11 and the subsequent anthrax attacks, but much remains to be done. For example, planning and training efforts are largely intra-agency rather than interagency. Federal funding supports this stove-piped approach rather than requiring cross-sector planning. Exercising of plans is rare, and the few that are exercises usually stop well before the point of failure, so true capabilities and limitations are rarely identified and corrected. Opportunities for senior leaders to learn about crisis decisionmaking in a realistic environment are almost nonexistent. There is little evidence of integration between local-state planning and federal planning. Catastrophic mass casualty planning certainly needs to be done at the federal level, but more important is the need to build interoperable response plans between the state, regional, and federal levels.

A national target for preparedness for combating terrorism has been proposed by the Gilmore Commission and applies equally to any domestic emergency:

Preparedness for combating terrorism requires measurable demonstrated capacity by communities, states, and private-sector entities throughout the United States to respond to acute threats with well-planned, well-coordinated, and effective efforts by all of the essential participants, including elected officials, police, fire, medical, public health, emergency managers, intelligence, community organizations, the media, and the public at large.

The tangible need for the United States is integrated, coordinated, all-hazard response planning. All requirements, capabilities, and potential sources must be considered and courses of action developed to close gaps. Plans need to be developed and realistically exercised, then improved, and exercised again. Training then must be developed that supports integration of these plans into day-to-day actions at every level.

Some are suggesting that the Defense Department should assume a greater role in responding to such domestic disasters, but a more realistic role might be proactive engagement in this planning process. The military possesses several core competencies that directly support mass casualty planning. These were brought out in the Defense Science Board 2003 Summer Study on DOD Roles and Missions in

Homeland Security and include training, experimentation, and operational-level planning and execution. The need persists, though, as Katrina lessons are analyzed, to identify the mechanism in which military medical, logistics, and response planners may engage at the appropriate Federal, state, and local levels. Military planning for civil support will be ineffective if it is not carried out with all the agencies involved in a response. Engagement at the Federal interagency level is important but insufficient. It is incumbent on leadership to create the national forum in which functional, effective mass casualty preparedness planning can occur across artificial bureaucratic barriers.

Such a mass casualty planning forum should be cosponsored by the Departments of Homeland Security, Health and Human Services, and Defense, but must address local and state needs first. Its charter should be to support the development by states of local, state, and regional mass casualty preparedness and response plans, rather than simply Federal response plans. It must include private sector and volunteer capabilities, and must engage local and national medical associations. In the wake of Hurricane Katrina, this forum could initially focus on the various tasks associated with evacuation of the Gulf Coast, alternatives available when local resources and infrastructure are completely overwhelmed, and the preparedness and response steps necessary to minimize the consequences of a future natural disaster or terrorist attack in this region. If an earnest effort is made to develop effective plans that incorporate public, private, and volunteer resources, the risk of terrorism and the impact of natural disasters will be reduced and the homeland will indeed become more secure.

Mr. Chairman, this concludes my prepared statement. With the Committee's permission, I request my formal statement be submitted for the record. Mr. Chairman and members of the committee, I thank you for the opportunity to appear before you and I will be happy to answer any questions that you may have.

Mr. LINDER. Dr. Freeman.

STATEMENT OF JENNY E. FREEMAN, MD

Dr. FREEMAN. Good afternoon. Thank you, Chairman Linder, Ranking Member Langevin and members of the committee.

My name is Jenny Freeman. I am here today to discuss an issue which is important to me and, I believe, affects every American, that of the ability of the government to respond appropriately to protect our citizens in a time of disaster.

My comments come today not only as those of a concerned citizen or as one who has trained and been part of the mission and preparedness process of the NDMS, but more importantly, as one who has actually served on a real deployment. I believe that this provides me with a perspective I could not have obtained either by listening to the experiences of others or by participating in a mythical demonstration or a training exercise.

I am a pediatric cardiac surgeon by original training. In that process, I was trained by physicians who stress both medicine and systems analysis. I understand how important it is to develop a system that is automatic so that in a critical situation, the system would have a strong foundation for work and provide the best patient care.

I have started several surgical programs, run a surgical practice and founded three businesses, two medical device companies and a Wall Street health care research analysis firm. I continue today to practice medicine, supporting two understaffed area hospitals. I have included my biosketch and CV in the record.

Relevant to my input here, I have provided charity services in Nigeria and the Philippines, served on the Defense Science Board Task Force on Defense Against Biological Weapons, chaired by George Poste and Michael Hopmeier in 2000, and became a mem-

ber of the International Medical and Surgical Response Team East in 2003.

Under the auspices of that team, I was deployed to help fill out physician requirements for the Georgia–3 DMAT team in the G8 Summit in June of 2004. My written testimony revolves around what I personally observed during the G8 deployment. I have included excerpts from the journal that I kept there, as well as the after-action report of Tim Crowley, which Mr. Langevin mentioned in his opening remarks and I don't need to repeat here.

I remain on the team, unlike Mr. Crowley—Dr. Crowley, although after this testimony, I may never be chosen to deploy again. To date, I have trained with the team for 2 years, have been part of the ready team for missions including Pakistan, Katrina and Bam, Iran, and actually deployed for support of the G8 mission in Georgia in 2004. I believe that this direct experience allows me to draw a number of conclusions based on real observation, given my previous experiences. This may provide input different from what you may receive from those who have merely studied, but never been part of a real event.

I was concerned from the time I received predeployment briefing materials to the G8 and I began a journal my first night. The first paragraph reads, June 6, 2004: "Based on my first night at the MACC sick call station, it became apparent that it would be useful if I had a better understanding of the mission of this particular facility, a specified set of goals and objectives," and it goes on from there. Four days later I left with no better information or understanding. I believe that this represents a microcosm of the bigger picture, unfortunately.

First and foremost, from what I have seen, I believe that there was a nearly complete lack of understanding of the role of the DMAT in the natural disaster process, and that stems from an even greater problem at the very highest policy levels as to the role of the Federal Government in responding to disaster.

While I admit that my observation comes from one who is not at the policy level, it has sadly been borne out by the abject failure of our Nation at almost all levels to effectively respond to the recent events surrounding Katrina, to the Chiron influenza vaccine debacle last year, and to what I see as the obvious lack of preparedness for the possible emergence of avian flu that we should be addressing now. In my mind, we are still sorely underprepared for the H5N1 flu strain despite long-standing predictions and even the Chiron wake-up call.

These flus and hurricanes that I mentioned are examples of known cyclic events that we could be well prepared for, yet we have not been able to develop a proactive plan to mitigate the events of such expected disasters. In my mind, this bodes extremely poorly for the greater unknowns we might face in a bioterrorism scenario.

Due to this fundamental lack of clear mission and set of goals, the medical response system was unable to effectively plan and execute even a scheduled mission such as the G8. I am not sure that any NDMS mission has ever been optimally conducted. I wish to note most strenuously, this is not due to the failing of dedication or professionalism at the operational level, but primarily due to a

lack of direction and guidance from the very highest levels of Homeland Security and medical preparedness. My colleagues and I have dedicated considerable time and effort, taking tolls on both professional and personal lives in order to support this truly laudable mission; however, we have been let down and not supported by these efforts.

I believe, based on my discussion and discussion with colleagues, that many of the following are fundamental issues that must be addressed. There is a genuine need and role for the NDMS in responding to a disaster, and it is the role of the Federal Government to provide the guidance, support and impetus for this mission to occur.

Number two, any response to a disaster is not just a medical response, but is instead a combination of many factors, including logistics, management, training, transport, security, many things. To respond effectively, it is necessary that all of these factors be considered systemically, not as isolated bits and pieces. In my opinion, such an important system must be tightly structured and staffed, at least in greater measure by professionals and not relegated solely to a volunteer-based organization or volunteer fire department.

Until we have a clear, rational and accurate guidance as to what we as medical professionals will be required to prepare and train for, we will all act as individuals doing the best that we can in an extremely suboptimal manner. The result will continue to be significant injury and death to the people that, as a physician, it is my job to treat.

The recent focus on standardization of medical care through evidence-based medicine has helped physicians transcend the responses of individuals acting on isolated experiences, and this has dramatically improved the outcomes. Similar structure and standardization will be required to improve our track record at disaster management.

Four, while the political one-upmanship considering the result of Katrina and past disasters is certainly entertaining and results in higher viewership on the nightly news, until a realistic objective and undoubtedly painful review at all levels of our national response to disaster is done, this is nothing more than a sideshow, circuses for the masses.

If my last comments seem frustrated, they are, I have dedicated my life from the time I first took the Hippocratic Oath until today to saving lives, as has probably everyone here on this panel. I see here the potential to save very many lives thwarted by an inadequate and failing system.

I wish to close with a personal note. I have two children. They will someday, I hope, have the opportunity to start families and raise children of their own. I hope they never have to face a disaster such as the poor victims of Katrina or the people of Pakistan, if they are involved in a disaster. However, I sincerely hope that our Nation is better prepared to face it and protect them than it has been to date. I, as a mother, physician and citizen, charge you with the responsibility of leading us to a better state of preparedness.

Again, thank you for the opportunity to testify. I am prepared to take any questions.

Mr. LINDER. Thank you, Dr. Freeman.

[The statement of Dr. Freeman follows:]

PREPARED STATEMENT OF JENNY FREEMAN, MD, FACS, FACC

Good afternoon. Thank you Chairman Linder, Ranking Member Langevin, and members of the committee. My name is Jenny Freeman and I am here today to discuss an issue which is important to me, and affects every American: that of the ability of the government to respond appropriately to protect our citizens, in time of disaster. My comments today come, not just as those of a concerned citizen, or as one who has trained and been part of the mission and preparedness process of the National Disaster Medical System, but most importantly, as one who has actually served as part of a real deployment. I believe this provides me a perspective I could not have attained either by listening to the experiences of others or by participating in mythical demonstration or training exercises.

I am a pediatric cardiac surgeon by original training. In that process, I was trained by physicians who stressed both medicine and systems analysis. I understand how important it is to develop a system that is "automatic" so that in a critical situation, the system would have a strong foundation to work and provide the best patient care. I have started several surgical programs, run a surgical practice, and founded three businesses, two medical device companies and a Wall Street healthcare research analysis firm. I continue today to practice medicine supporting two understaffed area hospitals. I have included my biosketch and CV in the record.

Relevant to my input here, I provided services in charity settings in Nigeria and the Philippines, served on the "Defense Science Board Task Force on Defense against Biological Weapons chaired by George Poste and Michael Hopmeier in 2000 and became a member of the International Medical and Surgical Response Team East in 2003. Under the auspices of that team, I was deployed to help fill out physician requirements associated with the deployment of the Georgia-3 DMAT team to the G–8 summit in June of 2004.

My testimony revolves around what I personally observed during the G–8 deployment. I have also included in written testimony excerpts from a journal that I kept there as well as the after action report of Tim Crowley, a respected physician colleague, who described his experiences, during his deployment in the aftermath of hurricane Katrina. As a thoughtful and competent physician who wound up in a command position, the disorganization that prevented him from providing useful patient care was highly problematic. Over and over again he saw physician and medical resources squandered—his team remained in Baton Rouge being told there was no mission while the staff at the key West Jefferson location were crying for help. When they finally got to West Jeff and in turn asked for assistance the same sad story was repeated with other teams and team members being held at irrelevant locations with nothing to do. I should note that, upon Dr. Crowley's return from the Katrina operation, he resigned from the ImSURT/DMAT team in disgust at the lack of preparation, organization and mission knowledge demonstrated by the management structure of the NDMS system.

I remain on the team, although after this testimony I may never be chosen to deploy again. To date, I have trained with the team for two years, been part of the ready team for missions including Pakistan, Katrina and Bam, Iran and actually deployed for support of the G8 meeting in Georgia, June, 2004. I believe that this direct experience allows me to draw a number of conclusions which are based on real observation. This may provide input different from that many of you may receive from those who have merely studied, but never been part of, a real event.

I was concerned from the time I received briefing materials before we even left for the G8 and I began a journal my first night. The first paragraph reads as follows: June 6, 2004: "Based on my first night at the MACC sick call station, it became apparent that it would be useful if I had a better understanding of the mission of this particular facility, a specified set of goals and objectives, a clearer understanding of protocols under which to operate, a list containing primary and secondary contact information, a better understanding of available resources and as much of a secondary action plan as could be disclosed. If I had these things, I believe that I would be able to be a better resource to FEMA/NDMS." Four days later I left with no better information or understanding. I believe that this represents a microcosm of the bigger picture.

First and foremost, from what I have seen, I believe that there is a nearly complete lack of understanding of the role of the DMAT in a national disaster and that this stems from the even greater problem at the very highest policy levels as to the role of the Federal Government in responding to disaster. While I admit that my observation comes from one who is not at the policy level, it has sadly been born

out by the abject failure of our nation, at almost all levels, to effectively respond to the recent events surrounding Katrina, to the Chiron debacle surrounding influenza vaccine last year, and what I see as the obvious lack of preparedness surrounding the possible emergence of avian influenza that we should be addressing now. In my mind we are still sorely under-prepared for the H5N1 flue strain despite longstanding predictions and even the Chiron wake up call. These flues and hurricanes that I mentioned are examples of known cyclic events that could be well prepared for yet we have not been able to develop a proactive plan to mitigate the effects of even such expected disasters. In my mind this bodes extremely poorly for the greater unknowns we might face in a bioterrorism scenario.

Due to this fundamental lack of a clear mission and set of goals the medical response system was unable to effectively plan and execute even a scheduled mission such as the G8. In my mind, it is unlikely that ANY NDMS mission has ever been optimally conducted. I wish to note, most strenuously, that this is not due to a failing of dedication or professionalism at the operational level, but primarily due to a lack of direction and guidance from the very highest levels of homeland security and medical preparedness. My colleagues and I have dedicated considerable time and effort, taking tolls on both our personal and professional lives, to volunteer to support this truly laudable mission; however we have been let down and not supported in these efforts.

I believe, based on my experience, and discussion with colleagues that of many that the following are fundamental issues that must be addressed;

1. There is a genuine need, and role, for NDMS in responding to a disaster, and it is the role of the Federal Government to provide the guidance, support & impetus for this mission to occur.

2. Any response to a disaster is not just a *medical* response, but is instead a combination of many factors, including logistics, management, training, transportation, security, etc. To respond effectively, it is necessary that all of the factors be considered systemically, not as a variety of isolated bits and pieces. In my opinion, such an important system must be tightly structured and staffed at least in greater proportion by professionals and not relegated solely to a volunteer based organization.

3. Until we have clear, rational and accurate guidance as to what we, as medical professionals, will be required to train and prepare for, we will all act as individuals, doing the best we can in an extremely suboptimal manner, and the result will continue to be significant injury and death to the people as a physician it is my job to treat. The recent focus on standardization of medical care through evidence based medicine has helped physicians transcend the responses of individuals acting on isolated experiences and this has dramatically improved outcomes. Similar structure and standardization will be required to improve our track record at disaster management.

4. While the political one-ups-man-ship concerning the results of Katrina and past disasters is certainly entertaining and results in higher viewer ship on the nightly news, until a realistic, objective, and undoubtedly painful review of all levels of our nation's response to disaster is done, this is nothing more than a sideshow providing circuses for the masses.

If my last comments seem frustrated, they are. I have dedicated my life, from the time I first took the Hippocratic oath, until today to saving lives. I see here the potential to save very many lives thwarted by an inadequate and failing system

I wish to close with a personal note; I have two children. They will, some day I hope, have the opportunity to start families and raise children of their own. I hope they never have to face a disaster such as the poor victims of Katrina, or the people of Pakistan, must today. If they are involved in a disaster, however, I sincerely hope that our nation is better prepared to face it, and protect them, than it has been to date. I, as a mother, physician and citizen, charge you with the responsibility of leading us to a better state of preparedness.

Again, thank you very much for this opportunity to testify and I am prepared to take any questions you may have.

Memo, June 6

Based on my first night at the MACC sick call station, it became apparent that it would be useful if I had a better understanding of the mission of this particular facility, a specified set of goals and objectives, a clearer understanding of protocols under which to operate, a list containing primary and secondary contact information, a better understanding of available resources and as much of a secondary action plan as could be disclosed. If I had these things, I believe that I would be able to be a better resource to FEMA/NDMS.

On arriving at the MACC sick call station, we noted that there were no drugs at all and some discrepancy with supplies. Over the course of the night we received

drugs which were "left over" from the Epworth facility. We initially noted a very significant shortfall between what was here and what would be necessary to implement effectively the level of care that we could provide with the other equipment we had, such as intubation equipment. We had drugs that could be used to paralyze a patient but no sedation to make it tolerable, we had a lidocaine drip, but no injectable lidocaine with which to primarily treat an arrhythmia, etc. We certainly were not fully equipped to perform as a unit providing ALS level care,.

It soon became apparent, however, that there were deeper issues relative to understanding what the actual mission of this clinic was and what level of care that we were expected to be able to provide, either now or under other potentially adverse circumstances. It also became clear that we did not have adequate information as to what protocols we were supposed to follow. We had little contact information. There were numbers given out in the briefing, but I had written those on the map that was handed out at the meeting, which I had left in the car presuming incorrectly that any important numbers that I needed would be provided in the sick call area or be in our packets. We had the Brunswick Hospital address and driving instructions to tell patients how to get there, but no telephone number or protocol as to how to get patients into the Emergency Room or potentially out—patient clinic environment.

Some other questions that arose here and in discussions with other physicians at Epworth included:

Who exactly do I call and for what? Is there a back up number if the original one is unreachable?

How do I transport out patients that require further or more extensive care from the clinic?

How hard will it be to get ambulance services? now? later in the week?

What are the criteria for strike team mobilization?

What are the criteria for the strike team to take care of patients on site, vs bring back to strike team facilities vs send to hospital?

If the strike teams have supplies to care for one or two people is that sufficient?

Over night, we did speak with Ron from MST who was helpful in sending over additional drugs, and asked us to take an inventory and find out what we needed in terms of drugs or supplies that were not there. I said we could do that, but really I needed to know what level of care we were expected to provide first in order to do that adequately. He deferred the system related questions until the morning. Shortly thereafter Stanley Krol of NDMS came in to introduce himself and we discussed this with him as well.

I presume that is the intention for the Medical Strike Teams to provide ALS level care, but it seems not to be so for the sick call clinic. Clearly a full list of medications and supplies required for us to do our job will depend on the expectation set and mission of each facility or each team. If standard ALS level care is expected, we are including a list of drugs that should be available. Please excuse the formatting, but it was copied from an adobe file and I cannot correct easily tonight. Supplies as found on a standard EMS truck would be adequate should the mission be to either provide now or have the capability to provide ALS level services. Such would include emergent chest decompression equipment, large bore IVs, saline flush materials, a burn kit, burn medications, trauma dressings, more than the 2 bags of saline that we have now etc.

After discussion with Mr. Krol, we are going under the interim guidelines of serving merely as a triage facility and not actually attempting to treat any patients that require more than what could be undertaken at a doctors office. Unfortunately, however, we still do not have prescription pads either, so even though there is a licensed physician here, unless we have a way to call in prescriptions that has yet to be described we are unable to provide that function either.

Please understand that I clearly appreciate the complex nature of this entire event and that this is really only a very tiny part of the whole picture, but also please understand that I am trying to fulfill my responsibility to my potential patients and need to ask for further guidance in order to do so.

Addendum

June 10

On the morning of June 6, I passed this letter on through the "Chain of Command". I thought that I would jot down some further comments from the next few days to describe the follow through and consolidate my thoughts. Essentially, nothing changed, we never learned our mission, we got a few random drugs and supplies. I discussed this with Dr. Stringer on June 8 when he came over to make sure a form was filled out properly and e-mailed the letter to him at his request that

night. I never heard back from him. On June 9, I met Gary Sirmons who asked that I forward it to him as well. I also made copies of the packet of information that was provided in a manila envelope for the MACC sick call clinic (which included the preliminary materials furnished to us over the web before we were deployed), a list of what the Georgia 3 team was told to bring and what they actually did bring and whatever random papers that were sent to give us instructions and had been taped on the wall. I also wrote a somewhat rambling set of journal type observations of the occurrences and my impressions..

Fortunately, we only saw a dozen patients or so the whole time, and the most complex problems treated were hypertension and headache for a week which we sent to a local hospital for evaluation and prescription of antihypertensive medication and helicopter pilot with an infection around the finger nail that I drained by using an 18 gauge needle to slice the skin instead of the scalpel that we did not have. We had no packing material (would have liked 1/4 inch gauze) so made a small wick from the sterile covering of an eyepad which had approximately the right dimensions and characteristics). I only did this because given his demeanor, I did not believe that he would go elsewhere to get this done.

Throughout this experience I was treated on more that a few occasions like I was an idiot or like I was being refractory and not cooperative. Or that I wasn't a real Emergency, EMS, FEMA, NDMS kind of person, but more like a silly ivory tower surgeon that wanted everything handed to them on a silver platter or like a stupid blonde who couldn't figure out what to do or like someone who was just not trying to be cooperative; or that I was not of "the right stuff"; or that I didn't know how to ""rough it"" and "just do what has to be done". As it turns out, I have quite a bit of experience making do at Bellevue in NYC in the 70s and 80s, in Nigeria, in the Philippines and at new cardiac programs that I had started—and I have seen the deficiencies in patient care and outcome in those environments (see my attached CV). But it did not seem necessary in this kind of situation to have to improvise or to settle for a substandard environment, with months of planning and millions of dollars spent in preparation and in the United States of America, optimizing the care of the support staff assembled at a high risk event and also being available for an unlikely but possible critical situation. I have also seen the benefits of ""institutional knowledge as developed by John Kirlkin in the 1960s–1980s as he built the University of Alabama at Birmingham from scratch into one of the premier cardiac surgical programs in the world at that time, or second hand in talking to the Israeli's about the system they have developed of conducting well orchestrated medical operations and of training physicians to have the operational and leadership experience to handle both missions and medical infrastructure necessities.

In all of this I have no personal interest, no axe to grind, no program to promote. I am merely a volunteer deployed for the first time on such a mission with the opportunity to provide some (nearly) external review. I believe from what I saw, that the system is severely inadequate to meet even simple challenges adequately let alone potential WMD scenarios. Despite what I thought to be completely inadequate oversight and delivery of a functional operational plan by Dr. Stringer, I believe that the system that permitted this level of performance to exist without correction is far more worrisome.. As a single unknown voice, I realize that it is highly likely that my input will be discarded, but I believe also that it is my obligation and responsibility to at least express my opinion in case it can provide insight that might effect positive change. If it would be of any use, I would be happy to provide further information.

Events recaptured between June 6 and June 10, 2004

On June 6, when I arrived I asked if we had gotten any information about our mission or any thing else had been provided. I said again that we really needed what was on a medic truck if we were supposed to function at that level or that we needed to be told at what level we were expected to be able to function. The response from the other staff was that we just needed to make do with what we had and that it was always like that. . . I was told when I asked about mission and objectives that we had received some papers which were now taped to the wall. There was a paper Entitled G8 Medical Coverage with a variety of names and phone numbers and teams different from those that I was familiar with, none of which I recognized and no indication of what to do with this information (as of June 10 I still have no clue who they are or what I should do with the information despite asking many people). On the wall I still could see the MST info I had scribbled on the sheet of NDMS coordinators that Stan Krol had given me the night before. There was still no information about who to call if a patient was to be transferred out emergently and I still had the naïve question that given the security measures outside if 911 would work the same way in this environment or a more problematic

scenario. I continued to go with my original plan to call 911 if there were any serious problems (for lack of any better information). Later that night I was called by MST and told to identify the Fire Response person from somewhere inside the complex so that if I needed to send someone out I would know how to get a hold of him because he would in fact be the one to help me do that and arrange things. On the Georgia side of the complex I asked for that person and was told that there was no one there in that capacity that night, but was referred to the EMS representative. The EMS rep had a colleague of his help me who had come from another facility which had been evacuated because of a bomb scare. He came back and told me I should call 911 and that he had spoken with the local EMS and told them where the medical facility was within the complex so they should be able to come over. At least I had an answer for that. Later I was told that those people (fire and EMS response) should be strictly involved in the large logistical process and in no way should be involved in individual patient care.

There was another sheet on the wall labeled "Response Objectives" I have copied it below verbatim with questions that arose on first perusal along side in red.

Incident Name: G–8 at Epworth Date Prepared: 6/6/200 Time Prepared 940 **what about MACC clinic where I was—**

was it the same mission?

4. Operational Period (Date/Time) 0800 thru 2200 June 6, 2004—**page began with 4 no indications of 1–3 were thos important points?**
what about times other than 0800—2200 June 6?

5. Overall Incident Objectives
   Provide Safe Work Environment for all team members
   Treat all patients as per protocol—**What protocol?**
   Observe all HIPAA regulations
   Prepare Strike Teams for Immediate response
   Obtain needed Shortfalls from Logistics—**Shortfalls from what list and serving what mission?**
6. Objectives for specific Operational Period:
   Team Safety
   Best possible patient care—**What is this???**
   Maintain team morale during entire period
   Maintain adequate rest periods for all team members
   Maintain inventory—What inventory are we supposed to have?
   Promote communication with team and MST

Provide ongoing education

7. Safety Message for Specific Operational Period
   Follow all instructions given—all safety briefings
   Buddy System at all times
   In/Out Board
   Standard Precautions during patient treatment
8. Weather: See Attached Weather Sheet

As you might suspect, this is not what I had been hoping for. While particular immediate incredulous responses to this paper are noted in red above, the big picture remained that there was no indication of what level of care we were supposed to provide, expected protocols to follow or ways to adjust standard care to this slightly (but potentially significantly) unusual environment. We did get several other random medications—a vial of morphine, a few doses of injectable valium and some vicodin. Some pancuronium to paralyze a patient for a longer period of time and propranalol, no longer the beta blocker of choice, but better than nothing.

I did not bother calling again or agitating, or going crazy trying to figure out what I might want. I just went by what I had decided for myself the first night—to treat this as having no more capacity than somewhere between a high-school nurses station and a standard doctor's office and to send anything else out to the hospital by either private transport or ambulance. So I did not inventory things or try to prepare for a variety of circumstances that I might envision occurring. I was disconcerted however to hear the others on days talking about intubating people if we had to etc, now that we had morphine. I said one morning (I think it was the 8th) that I wished we had what was on an EMS truck as a nice model if people expected us to provide ALS level care. The response from my relief was that we had most of what we needed and it was "always like that" "you just gotta make do with what ya got". I asked if there were any large bore IVs if we needed them and asked what about anything to decompress the chest if someone had a pneumothorax—that there was not a pneumo kit or even a large bore IV. I was told that there was a chest tube—I said but no pleurivac suction—the response was that there was a chest tube in one box with a Heimlich valve (which just lets air go out and not suck back in).

It was only two days later that I found out that we had no scalpels at our place and that there was one at Epworth that they wanted to keep for themselves. Hard to put in a chest tube with no scalpel!! To me that also meant that I could not paralyze anyone to intubate them because I could not perform a tracheotomy if intubation was impossible. In one way this is all trivial detail, but it is merely meant to demonstrate the cascade that occurs from inadequacies.

On June 7 I was told that I needed to fill out a full record for every patient that came through, including those that just wanted two tyelenol because they had left their bottle in the car or cepacol throat lozenges because of a sore throat. I said that that was probably not what was intended, and perhaps OTC meds could just be dispensed and written in the med distribution log. I was told absolutely not. I asked if we could question that in the morning and I was told yes, but could I please just fill out paperwork on everyone. No other word ever came back. Several people left over the next few days without registering, saying that they would get meds elsewhere if they had to stay for the questions.

On the evening of June 8, I was asked if I could fax over the patient demographic sheet to MST. I said I had never seen such a sheet and that we had faxed over the patient log for the full 24 hours the night before along with the medications used so the drugs could be restocked. I did not collect the information for this new form and it was not obvious from the forms that I saw that we had been filling out i.e. the patient and medication logs. I said I really didn't know about the patients that had been there during the day, but some info was on the other forms. I asked if I could fax those forms that had been filled out from the day shift instead and they could take what info that was needed. That did not seem to be a viable solution. I was told to find the new form. I could not. I told MST that they would need to fax it to me and that was done. When I got it, it had several categories that I did not know how to fill out—one that asked for state federal or local—I did not know where to put the air national guard (was it federal or state or some of each) and one patient had no record of branch of service or any other job description. Also I did not know the disposition of the patients from the log (whether they were sent out to go to the hospital or just back to work). Perhaps more importantly if this was to be used for epidemiological reporting and surveillance purposes, there were CDC categories. Because I had not seen the patients, I did not know the CDC designation. There was a category for cough, but I had URI written down. Did that count or not? I said I would do what I could but that I doubted it would be complete. I was speaking at first to the MST on duty and then Steve Allen who finally said I needed to talk to Dr. Stringer.

Dr. Stringer called me and started to try to be aggressive about my not wanting to fill out the form—I told him all of the above again and that I would have no problem doing that for our shift, but for the previous one, I would do what I could but I continued to have some confusion as described and it would not be complete because I could not find some of the data. I also asked if he had gotten my letter and he said no he had not—and expressed annoyance that it had not been passed along, blaming those who should have done so and saying he did not understand why they had not. I told him that there were really some issues regarding what our mission was supposed to be, what our objectives were aside from providing best possible care and what we had to work with. He said he had been struggling all day with the fact that he had been working on all of this since September but still none of the drugs that he had ordered for the units had been delivered. He said that he understood that was a problem but that I should have gotten most of what I needed by now and I should list what I was missing. I brought it back to not knowing what I needed until I was told what I was supposed to be DOING. He said that he had had little rest for a few days but all that would get sorted out.

I then went about the task of filling out the requested form and had most of it done except for places where I did not know the actual answer I wrote in comments (i.e. 3 Air National Guard and 1 Georgia Air National Guard not knowing whether they were in some way different i.e. the question of being State or Federal) and URI next to section for cough. I was surprised about a half an hour later to see Dr. Stringer walk in. He walked in and sat down. He looked tired. He asked how everything was. I started again to discuss that we really were kind of a mish-mosh—with no mission—and that we had some equipment and supplies, but were we supposed to be working at the level of a high-school nurses station, a BLS ambulance, an ALS EMS vehicle etc. He mentioned quite critically, almost angrily, that he had been by during the day and no one told him there was a problem at all. I could not figure out weather he was being critical of the day people for not telling him or me for not just pretending everything was as it should be.

Instead he was focused on the form and started to complain about why I had not gotten the form from the day shift. I replied "You mean the form that I had never

seen before and didn't know about until I was told to find it? I asked how I was supposed to request something that I did not know existed and wasn't that a Catch 22. Dr. Stringer sheepishly agreed that was a problem, but then rebounded quickly, said it was in our packets, and got more aggressive again. I said quite firmly that it was not. I handed him the packet. He shuffled through it and kept commenting that things weren't stapled and no wonder we couldn't find anything. I said we had to undo some of the staples the first night to Xerox patient care forms because they were our only copies, but that a lot of things had not been stapled to start with. He kept looking for the form of interest, but finally gave up when he could not find it either. He also said that the designation for all of the agencies as federal or state were in there in the briefing he had sent out ahead of time, and didn't I get that since I was supposed to have gotten that from my POC. I said I had gotten the briefing, but it did not have information identifying the acronyms of different branches of the service. He said they did but when I handed him the briefing he dropped the subject. Again I said they were not—and he could not find them either. I said there were no contact numbers for MST or for ambulance service or anything either and he said they were only just recently available. I said they could have been provided to the clinic in a binder on site or some such. I bit my tongue in terms of saying that his packet basically had no really useful operational information, but rather described things such as how I should not shake hands with anyone who did not shake hands with me first. He also mentioned that he had put some information as to mass casualty in there so everyone would know what to do. I have a copy of the entire packet if anyone is ever interested. In my mind it is rambling and sorely insufficient.

I then went back to the discrepancy about the equipment supplied and the drugs provided. I mentioned that really I would have to treat this environment like a glorified nurses station because of the lack of a full compliment of equipment and supplies to provide a higher level of care, and that I was concerned that others might fall into the trap of administering medications and performing procedures thinking they had the right equipment and supplies and get into trouble when the full armamentarium they were used to for that level of care was not present. I threw out the example that I certainly would not feel comfortable intubating someone, but would wait for the local EMS to arrive with all of their equipment, supplies and drugs. In front of me and my co-worker, Dr. Stringer brought down his voice and said—"Don't tell anyone, it would be bad if you did, but the EMS here is very weak—and we have people here—secret service people and all—it costs a lot of money to train them they are very valuable and I don't want those guys to get into trouble—just intubate someone if you have to". I asked "because the local guys can't intubate and it costs a million bucks to train a Navy Seal and that kind of thing?" and he just nodded and said "You know, just do the right thing." I said that we were not fully equipped to do that and he said to do what I could.

It seemed like his main objective in coming over to our place was to fill out this form—he actually sat and reviewed it and made sure it was filled out and filled some of it out himself. I said repeatedly that more than anything we needed an understanding of the level of care that we were supposed to be able to provide and under what circumstances, routine, difficulty in transportation because of traffic or other similar issues, but that received far less attention. I asked also about filling forms for every one that came in—even for OTC meds. He was vague but basically said, just do what's right. I mentioned that we had been filling out the medication logs faithfully so that we could feed into the restocking procedure correctly. He appeared puzzled and didn't know what I was talking about. There was no such mechanism to restock supplies based on usage. Rather if we "got low" or ran out of something we should call MST. He asked me to fax the form over. Then he left.

Later that night I was called up by MST and asked if they could fax me a form to take to Stan Krol. I said sure. It was a similar form to the one Dr. Stringer was so interested in but a summation of all sites instead of just ours. I took it to Stan in the main big room on the federal side and told him that Dr. Stringer had been by. He asked how that went and I merely shrugged and smiled and told him to come by some time.

On June 9, Stan Krol and Gary Sirmons came by the MACC clinic. I was reading on a cot and sat up to talk. Stan asked if anything got better after Stringer came by. I said no and described Stringer's visit and the core problem again in moderate detail. Gary asked me to send a copy of the letter I sent to Stringer.

On June 10 at 8 pm I got called and asked if I had been told by the day shift what we were doing. I said no I had heard nothing from them, but earlier in the day I was told that the plans had changed and that we were going to have to work overnight instead of leaving at 10PM as I had heard the previous night. She said no, that we were done at 10, and we should pack up, but that Epworth would be

staying open. I said that I had asked specifically because I had wanted to leave on a 6AM flight and had been told that the clinics were open until noon. She said she would check. She called back and said that we should leave up one station (and leave one of the three cots) but pack up everything else—once again I ask, one station to do what?

We were told just to pack everything randomly in the containers that we had because the Ga3 team had unpacked their usual tightly organized and inventoried boxes to just bring what Dr. Stringer had required (with strict instructions to bring no more) so there was no organization coming in and none required going out. When the Ga3 team came at 3 AM to pick up "all but one station", they told us that if we needed anything we should call them since MST had been gone since 10PM and would not be back until the morning.

Of note, given circumscribed requests, the support people were very helpful and responsive in attempting to fulfill them. Under proper direction their efforts would have been more productive.

Mr. LINDER. Some provocative comments by each of you.

We had a hearing, I think it was yesterday, of the governors who pleaded that we not federalize these things. I am hearing here a stream that we can't have an effective system unless it is top-down driven.

Dr. Alson, I think you said the Federal Government needs the ability to launch assets before we even hear from the State. That is not the way we have operated in the past. Would you expand on that?

Dr. ALSON. Yes, sir.

As was seen in the events in Katrina, often an experience in several of the other hurricanes—I will speak to my own State; in North Carolina it was Floyd. The event happens in your community, and it very quickly overwhelms the capabilities. Much of the effort is often devoted to the immediate things of rescue, whether it is pulling people out of the floods or starting the search and rescue operations before USAR arrives.

In many areas the State, local and emergency management officials are not capable of taking the information that comes in dribs and drabs and processing it. We have to wait, for example, for the request to send Federal help, at which point we begin to send in teams to carry out the assessments. We need the ability to put them in and begin that process—often when needs are identified, being able to go to the folks and say, We have these assets here, we are ready to use them for you; or if the need is there, even begin to use them.

Mr. LINDER. When Floyd came to North Carolina, were FEMA people on the ground in the planning stages of that? Because they are routinely—Governor Bush—

Dr. ALSON. Yes, there were FEMA people out in the area. There were also State people.

Our team was deployed as a FEMA asset into the staging, into the immediate area, but I ended up in one particular county working where, quite frankly, a medical assessment was nonexistent. They were concentrating on one, rescue, and two, providing food and shelter, and had yet to conduct a medical assessment of needs that they had in the community.

Mr. LINDER. Dr. Freeman, you said that DHS should do a better job of providing leadership and guidance. Most of the medical expertise we have seems to be in HHS rather than DHS. Would HHS be more competent to guide these teams than DHS? What is your opinion on that?

Dr. FREEMAN. I am not at the level to make that decision. I mean, I can give you reports from the field. I can give you a potential analysis of a system failure. In terms of understanding the resources in those difference organizations, I am not the one.

Mr. LINDER. Dr. Bradley, you commented that the local emergency manager does not have any authority over universities or hospitals. Should they?

Dr. BRADLEY. Yes, sir.

I don't think they should have authority over the hospitals on a routine basis. However, my recommendation is that the hospitals and the local government enter into this MOA—that during a time of a locally declared emergency, the emergency manager would have agreed-upon authority to direct the hospital to implement specific actions that have already been agreed to in the MOA.

One of the advantages of that is that would not only tell the hospital what to do, the hospital could train for those, knowing exactly what they could ask for. Also, if there was reimbursement, that would make tracking the reimbursement a much more simple process because hospitals could say, we are clearly responding to this task from the local official.

Mr. LINDER. Colonel Thompson, you said that we should have requirements-based mass casualty planning. If you don't know what kind of casualty is coming, how do you figure out the requirements for planning it?

Colonel THOMPSON. Sir, the way the Defense Department tends to handle these is, they do a worst-case scenario, a best-case scenario and then a scenario in between, so that you will have a situation where you will have a number of casualties, but perhaps not something that is at the catastrophic level. Then you will take something at that time catastrophic level and plan for all kinds of contingencies there. Then you will go down the center and plan for a contingency that is more in between those two extremes.

Mr. LINDER. Dr. Alson, you concerned yourself with the fact that the evacuation piece needs to be reexamined for getting people out. Did the evacuation piece work at all for Katrina?

Dr. ALSON. I have no direct knowledge or involvement of that particular portion in my response to Katrina. I was running a field hospital in the Gulfport area, and any patients we had to move, we moved into the local hospital. But it is my understanding, in talking with other individuals, the component did work; that it is still going to require some additional effort, because this is the first time it was attempted. It does involve a partnership of many, many agencies, not just DHS.

Mr. LINDER. Thank you. My time has expired.

Mr. Langevin.

Mr. LANGEVIN. Thank you, Mr. Chairman.

Again, I want to thank our witnesses for their testimony today.

Let me start, if I could, with Dr. Freeman, as you and I have both mentioned in our opening statements you have had members of your team that were deployed to Katrina. At this point, I would like to give you the chance to elaborate on that.

Can you give us some examples of what they saw? In particular, I would like you to establish a time line of the Massachusetts DMAT team deployment. When were they called, and what was the

sequence of events of their deployment? Put simply, where did they go, at what time, and what did they do?

I will preface my remarks, too, before I turn it over to you, Doctor, that I have a good friend who is an emergency room physician. He is also part of a DMAT team, was deployed down to Louisiana and found everything, in particularKn chaos, obviously, but they didn't have a place for the docs to go at least to the hospital, they really weren't wanted, they were kind of in the way. So it was poor utilization of resources.

That just can't happen. We have to utilize the talents of these people who are deployed to the greatest degree possible where they are needed and not, obviously, underutilize them.

I will turn it over to you for your comments.

Dr. FREEMAN. With the caveat that I was not at Katrina, understanding that I was going to be here today, I did speak with some of my colleagues, including Tim Crowley, who is a family practice guy in Boston, in the Harvard system, another physician, Neel Sunder, who is an anesthesiologist at Mass General, and some other folks who did not wish to be mentioned—Peter Pillitteri, who was not at Katrina but who was involved in passing out medications after the anthrax scare and the anthrax exposure for the postal workers in New York.

But in speaking with Dr. Crowley, Dr. Sunder, et cetera, and the other ones who wish to remain unnamed, I really got a sense that there was a significant amount of disorganization. I can give you a few quotes, if you would like.

You know—at least talking to Dr. Crowley, I think that, you know, his concept was that the physician and medical resources were squandered. His team remained in Baton Rouge. He had been promoted through a variety of medical illnesses and departures, et cetera, higher and higher up the chain, and he had never had a command position before.

But his team remained in Baton Rouge. They were told there was no mission, while there was staff at the West Jefferson location that was crying for help. When they finally got to West Jefferson and, in turn, asked for assistance, the same story was repeated with other teams and other team members being held at irrelevant locations with nothing to do. I think that was part of the things that made Dr. Crowley leave the team.

You know, talking to Dr. Sunder, who is a very mild-mannered and very gentle kind of physician, he was disturbed, you know. He really felt that—think his quote was, There was a disconnect at every level. That was one quote. The other was, He had never seen such a well-trained group of people—I am sorry, never seen such highly talented personnel used so poorly.

If you want to go back to a time line, which I believe I have somewhere here, I think that what was—what happened was that we were put on alert on the 27th of August and that the team was deployed on Friday, September the 2nd. These folks said they watched the news with increasing disturbance throughout that time period. I knew I couldn't go, so I was in a different frame of mind.

They traveled on Saturday, the 3rd of September. They got to Houston on Sunday, the 4th of September. They got to Baton

Rouge on Monday the 5th of September, and then they stayed there for basically 3 to 4 days, being told there was nothing to do before they finally deployed out to West Jefferson Hospital. I think those were the—again, I wasn't there.

I can't speak to that from personal experience, but those are the conversations I had with my colleagues.

Mr. LANGEVIN. It sounds like that experience reflects the experience of the emergency room I mentioned, that our DMAT team and his DMAT team had as well. It is problems that we need to correct.

I know that my time has expired so I will not ask another question as yet, but if there is a second round.

Mr. LINDER. I would like to follow up on that point.

Dr. Alson, you were actually on the ground. Did you have the same experience?

Dr. ALSON. Mr. Chairman, I was very fortunate. I had a very different experience. I had been the team commander, as I said, in NC–1 for several years and before that served as the XO of that for a number of responses, including the G8.

We were predeployed on the Sunday before the storm. We were quartered in the Memphis area, along with a number of other teams, DMATs, VMATs and DMOG. We were actually deployed into the impact area beginning on Tuesday. We had to wait for the storm to pass, so we didn't end up with the trucks on the side of the road. We staged at Hattiesburg that night.

Wednesday we were set up at the Memorial Hospital in Gulfport, where we operated basically an overflow for their emergency department. I believe we saw in the range of 1,200 patients before that operation was closed.

In terms of the entire operation, it is my understanding that as of the 18th, NDMS has had a total of 126,000 patient contacts throughout the system. That includes approximately 59,000 people that were treated, plus an additional 60,000 immunizations that are given.

As I said before, we could probably have gotten our responses up faster, and we certainly feel that we need to improve that. We are certainly talking to many of our friends, stories about issues where teams are assigned and not assigned. But part of it is—the term the military uses, "the fog of war." There is a lot of information flying, much of it is good, much of it is not good. It is a very frustrating thing for medical professionals.

My team members will tell you my blood pressure often goes sky high when I deal with some of these. But the ultimate goal for all of us is to go out and do the mission.

As I said, I have been very fortunate. I have not had some of those kinds of horrible experiences that some of my colleagues have faced.

Mr. LINDER. Thank you.

Mr. Thompson.

Mr. THOMPSON of Mississippi. Thank you very much,

Mr. Chairman and Ranking Member. I appreciate the testimony of the witnesses, as well as the job that all of you do.

Some have said, rather than having perhaps an all-volunteer operation, it might be better if we had a paid system of response. Give me your thoughts on that, individually.

Dr. ALSON. Mr. Thompson, thank you.

I believe that in order to achieve a very rapid response, it may be necessary to have some paid, full-time personnel and full-time teams prestaged throughout the country so that the initial wave can be brought in in a very rapid manner. The other advantage you would have in such a group would be the ability to maintain the levels of training, as well as maintenance of equipment, that is often challenging when dealing with a volunteer, part-time group, as we see.

But I also believe that when faced with a catastrophic event, we as a nation cannot afford to employ on a full-time basis the number of personnel necessary to respond to such an event. We are going to have to utilize our volunteers.

We have a nation whose history is flush with examples of volunteerism, beginning back in our colonial days, and it is part of the American character.

Switching to the fire side of the house, we are really the only nation on the planet were the majority of fire services are provided by volunteers. This is part of what we do and who we are.

I believe we have to incorporate both segments, make sure that they are appropriately equipped with the necessary equipment and have the appropriate training under a coordinated response plan.

Mr. THOMPSON OF MISSISSIPPI. Dr. Bradley?

Dr. BRADLEY. Sir, I am not an expert on the entire Urban Search and Rescue system, but speaking about the medical component of Urban Search and Rescue, each team deploys with six medical professionals. So far in my experience, we have done a very good job with the six people we have. Of course, we all become paid FEMA employees during the duration of our deployment.

We have been able to make our 6-hour, out-the-door deployment every time. I don't know of a single time when our team has not made their 6-hour deployment window, so we get moving pretty quickly.

Mr. THOMPSON of Mississippi. Colonel?

Colonel THOMPSON. Sir, I believe—like you, I was a volunteer fireman many, many years ago. Our fire department put quite a bit of effort into organization and training and recruitment. Different disasters call for different kinds of logistics, different kinds of communications expertise.

I think it will be necessary. I think it is appropriate to consider that you may need to have some people who are paid to do this full time, but I think even more so the need is to figure out a system to recruit and train and organize volunteers who can then come out for 1 to 2 weeks at a time. I am not sure that the Nation can afford to have a vast number of people who are paid just to handle this.

Mr. THOMPSON of Mississippi. Dr. Freeman?

Dr. FREEMAN. I guess I would take it one level further back. I think before you start to decide these operational kinds of issues, you need to understand what the needs are of the system, you know, what really are the scenarios, what is the big picture of what the requirements are going to be.

It was the same thing that I faced at that time, G8. There was no obvious definition of the mission. So if you really understood or understood the overall requirements, then you could take that—

what you needed. You could look at what the DMAT provided. You could take out of that DMAT–NDMS system what was useful. You could discard what was not. You could fill in the rest.

I think that whether it comes out—in my mind, there should be a greater infusion of a nonvolunteer staff. But exactly where that falls in the spectrum needs to fall out of a real systems analysis of the need, not somebody's opinion.

Mr. THOMPSON OF MISSISSIPPI. Thank you.

One of the other comments I would like to talk about is the notion of how do we have a support system.

Dr. Alson, you made it to Hattiesburg by Tuesday, and down on the coast on Wednesday. I talked to a lot of friends who were first responders and other people who, by Wednesday still could not talk to each other; the communications system was still down• number of things you would assume that first responders would absolutely have to have in order to do a good job.

Did you hear any of these comments about the lack of assets available to first responders?

Dr. ALSON. I did not directly hear any of those issues in terms of assets, other than that, as in many disasters, communications were indeed a challenge. It has been on most of them— I am afraid for the foreseeable future, will continue to be one of those issues that we struggle with. There are certainly efforts being made to improve upon it.

But when you are talking about having to develop a communications plan that crosses so many different agencies in so many different spectrums, it does present a challenge.

Our immediate interaction, once we got into the Gulfport area, was directly with the hospital. The other interaction I had was with the local EMS service, which had been augmented. There was a private provider that brought in assets from elsewhere in the country. So the two groups I directly dealt with did not have major supply issues or asset issues.

There were some issues dealing with some of the special needs populations in the community, and I think some of that was related more to the lack of the local EOC being able to obtain the assets to support the need that they had across the spectrum. It was recognized they were attempting to do it, but they did not have them immediately available to them. Those eventually did arrive.

Mr. THOMPSON of Mississippi. Thank you, Mr. Chairman.

Mr. LINDER. Colonel Thompson, the National Disaster Medical System was created in the middle of the Cold War, 1984. Is it still applicable? Do they have different challenges to face?

Colonel THOMPSON. Sir, I do think that we do indeed have different challenges. The National Disaster Medical System was developed for two reasons: at the time. It was to provide teams that could deploy for natural disasters, and then to provide casualty care for military casualties who were coming back from a major war in Europe. That assumes 30 to 60 days' advance notice, an opportunity to reorganize the—or to build the support and distribution system for those casualties here in the United States.

Things have changed significantly in the last 20 years. Not only are expectations greater that we will respond to these faster, but the number of hospital beds has decreased significantly. Just in the

last 5 years, I believe in-patient beds have decreased another 5 percent, and that is after a very large decrease back in the late 1980s and early 1990s.

So I think that there are certainly components of the National Disaster Medical System that make sense, but I think it is necessary to look at how they mesh with the needs of today.

Mr. LINDER. Dr. Alson, you talked about surge in your opening statement, surge capacity. Do we have surge capacity?

Dr. ALSON. It, I think, very much depends on the community and the country right now, Mr. Chairman. I also think that there are initiatives being put forth, a component, for example, of committees receiving funds from HRSA that begin to work on a plan.

I know that in North Carolina we have put together a network where we can now track bed availability on a daily basis across the entire State, using a computerized system.

Mr. LINDER. Is that voluntary reporting?

Dr. ALSON. It is currently voluntary reporting, but it is essentially a component of receiving HRSA funding for the other preparedness issues, for WMD and so forth. We have had virtually total compliance. It has proved itself very useful in some of the recent storms and other issues we have.

I also know in my portion of the country, South Carolina has a similar system. It actually went on line just before G8. There are other issues that communities are looking at, availabilities—as I said, alternate care facilities being established, but it takes assets. The planning is there.

I don't think we are quite where we need to be with our capacity, given the potential for casualty generation in a nuclear or major biologic event.

Mr. LINDER. How much training do you do with your team?

Dr. ALSON. The DMAT that I command has a monthly meeting. We do several field exercises a year. We also function in a number of capacities—not as the DMAT, but as the local agency—so we have our ongoing training for that.

In addition, we function within our State system as what is called an SMAT, or State Medical Assistance Team, so we train with that as well.

The other component that is quartered in our community is the NMRT, or National Medical Response Team, which is one of four national medical biologic teams within the NDMS systems. I served actually as the XO of that team up until last year. That team train trains and drills on a monthly basis as well.

Mr. LINDER. Thank you.

Mr. LANGEVIN.

Mr. LANGEVIN. Thank you, Mr. Chairman.

Dr. Alson, the chairman raised an issue that I am concerned about as well, surge capacity. You said—in your testimony you mentioned your concern about lack of surge capacity in our health care system, and I certainly share your concern about this problem. I also share your analysis that a big part of the problem is the economic pressures of a just-in-time economy that views inventory as a waste.

I am concerned not just about beds, but with all kinds of medical supplies. The problem seemed so fundamental to the system.

What do you think we can do to build that capacity? You touched on a little bit of that. Can you elaborate on that a little more?

Dr. ALSON. Thank you, Mr. Langevin. There are a couple of ways I think this can be addressed, one of which is at the local level. We have to put some additional supplies in to deal with the immediate consequences of the event, particularly because, depending on the nature of the event, the ability to get those supplies in can be hampered.

I know I was successful at my own institution to get them to look at what we keep on hand for disasters and without a major expenditure. Given the current environment, they adjusted what we maintained, and we have done that as a private agency.

But I also think that communities need to be looking at how they stockpile. As I say in my written testimony, Dr. Carl Schultz out on the West Coast for years has advocated the concept of hardening communities with stockpiling supplies to address that immediate phase.

I also think that we have to look at the ability to put together additional care space, whether it is in fixed structures or tents to handle that expansion. This could be a role of the DMAT, it could be the role of a State or local resource within our State Medical Assistance Teams.

Each of the trauma systems has put together a SMAT–2 or two-level team. Besides doing decon, their major function is begin to develop additional surge capacity with the supplies. I also think a similar approach has to happen at the Federal level that we can bring in these additional materials. Whether these supplies are stockpiled in high-risk communities or whether they are regionalized, we have to have the assets to get into the hands of the response personnel.

I also believe that one of the issues we have to have is that the logistics system that handles it has to be a dedicated medical logistics system. Experience from disasters has taught us that often medical supplies, being a small portion of what is shipped, may get lost in the entire FEMA logistics system.

Dr. FREEMAN. Am I allowed to add something to that?

Mr. LINDER. Yes.

Dr. FREEMAN. I guess it depends—coming again a little bit from the outside, it depends on what you mean by surge capacity. If you are talking about a totally different scenario, you have 100,000 people or 1 million people having a surge capacity that is two- or threefold in your hospital is not going to help.

Mr. LANGEVIN. That is a valid point. On that point, do you want to expand on that a little further since you raised it?

Dr. FREEMAN. Again, it depends on—it goes back to a systems analysis, what do you need to prepare for. You know, are we preparing for 1 million people with a really bad flu? Are we preparing for 100,000 people with smallpox that we think we can keep in one particular part of the country? You know, what are we preparing for?

The analysis needs to be done first, before you decide what surge capacity is.

I mean, everybody gets tied up in these little operational details, yes, we need surge capacity, give us more money. But the point is,

I don't think anybody is looking at it from—I am sure people are—it appears that people are not looking at it with a global enough view to really come up with an overarching strategy.

Mr. LINDER. Does anybody else care to comment on

Dr. Freeman's comments?

Colonel THOMPSON. Yes, sir. I will echo that completely.

The need is really to determine the requirements, what you need if you have a communicable or biological event; what you would need if you have contaminated casualties from a radiological or nuclear event, and then where would the resources come from to meet those needs; what is the first level of resources in the particular geographic area, and then what can you surge in. That needs to be developed.

It needs to be developed with the local, State, regional perspective in mind. It needs to be—in my personal opinion, it needs to be resourced from the Federal level to figure that out, but then it needs to be gamed so you can test the plan, see where the deficiencies are, because there will be deficiencies; game it again and then prototype it in some regional area so that you can get the solution as close to fixed as possible before an event happens.

Mr. LANGEVIN. Dr. Alson, just very quickly, because I know my time is about to expire, why was your experienceKn your estimation, why is your experience with respect to the deployment in response to Katrina and the DMAT team in Massachusetts and the experience that the DMAT team in Rhode Island different? Can you speculate?

Dr. ALSON. I didn't. I am sorry, sir, I didn't hear the last part of your question.

Mr. LANGEVIN. Was it your experience as part of the deployment that the response to Katrina was different from the experience of the DMAT team from Massachusetts or the DMAT team from Rhode Island? Can you speculate as to why that was the case?

Dr. ALSON. I really cannot. You know, we were obviously working very different environments. It is my understanding that there was a lot more—or somewhat—confusion happening in the Louisiana area than there was in portions of Mississippi where I was working. But I really had no plans.

We got a mission assignment, and as soon as we got the assignment, we deployed into the area, made our contact and carried out our mission. But while we may have had some supply and support issues, like most of the time, we are adaptable and managed to make it through.

But I have no idea why they ended up in the situation they did. I guess we happened to be lucky this trip.

Mr. LANGEVIN. Thank you.

Mr. LINDER. Thank you. That ends our questioning of these four witnesses. We are grateful for your time and your expertise, and we thank you for coming.

The hearing is adjourned.

[Whereupon, at 2:03 p.m., the subcommittee was adjourned.]

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