SPECIAL REPORT

Task Force St. Bernard: Operational Issues and Medical Management of a National Guard Disaster Response Operation

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Abbreviations:
AZ-1 DMAT = Tucson, Arizona Disaster Medical Assistance Team
BAS = battalion aid station
CCP = casualty collection point
DMAT = Disaster Medical Assistance Team
EMAC = Emergency Management Assistance Compact
FEMA = Federal Emergency Management Agency
MP = military police
NAS-JRB = Naval Air Station-Joint Reserve Base
NIMS = National Incident Management System
SINCGARS = Single-Channel Ground and Airborne Radio System
TFSB = Task Force St. Bernard
USAR = Urban Search and Rescue

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Abstract

After Hurricane Katrina struck the Gulf Coast of the United States on 29 August 2005, it became obvious that the country was facing an enormous national emergency. With local resources overwhelmed, governors across the US responded by deploying thousands of National Guard soldiers and airmen. The National Guard has responded to domestic disasters due to natural hazards since its inception, but an event with the magnitude of Hurricane Katrina was unprecedented. The deployment of >900 Army National Guard soldiers to St. Bernard Parish, Louisiana in the aftermath of the Hurricane was studied to present some of the operational issues involved with providing medical support for this type of operation. In doing so, the authors attempt to address some of the larger issues of how the National Guard can be incorporated into domestic disaster response efforts. A number of unforeseen issues with regards to medical operations, medical supply, communication, preventive medicine, legal issues, and interactions with civilians were encountered and are reviewed. A better understanding of the National Guard and how it can be utilized more effectively in future disaster response operations can be developed.

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Introduction

The response to Hurricane Katrina in September 2005 involved a stateside mobilization of the National Guard of unprecedented scope.[1–4] This may have been the first opportunity for many responders to work side-by-side with United States military units in a disaster response operation. Additionally, for much of the military community, the experience of responding to a disaster of this magnitude was equally unprecedented. One part of this response involved the deployment of [US] Army National Guard units from Colorado, Georgia, and Maryland to St. Bernard Parish, Louisiana to assist local authorities with relief and recovery operations. This discussion will use the experience of this Task Force as a case study to look at the unique convergence of military and non-military agencies in a disaster response operation. It is hoped that two overarching goals can be attained by discussing some of the operational issues and concerns that came to light. First, it is hoped that military and civilians leaders can learn more about the capabilities and limitations of the National Guard during disaster response operations. The second goal is to help other military personnel by demonstrating how various operational concerns in a disaster response can affect the medical support of such an operation significantly.

National Guard Background

It is important to briefly review the structure and functions of the [US] National Guard.[5] The two components that comprise the National Guard are

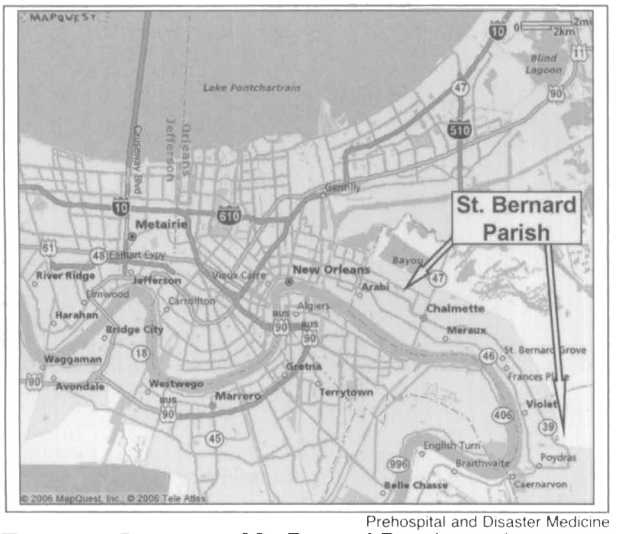

Figure 1—Location of St. Bernard Parish in relation to the greater New Orleans area (Source: MapQuest)

the Air National Guard and the Army National Guard. In terms of training and doctrine, these two components fall under the US Air Force and US Army, respectively. However, during peacetime, all National Guard assets belong to the individual states and are under the direct control of their respective governors. Much like the Air Force Reserve and the Army Reserve, the Air and Army National Guard are on reserve status. Their members usually train one weekend a month and spend 15 days per year on active duty. However, unlike the National Guard, the Air Force and Army Reserve units always are under federal control. It is for this reason, and because of some legal issues discussed below, that the National Guard usually is the agency activated by governors to respond to state emergencies.

Preparing to Mobilize

On 31 August 2005, >700 soldiers of the Colorado Army National Guard were activated and ordered to deploy to St. Bernard Parish, Louisiana in the wake of Hurricane Katrina.[6,7] A small advance party was dispatched to the Parish within eight hours of activation, while the main body of the Task Force departed for the Parish in two convoys 48 and 72 hours later.

Since the Task Force would be working in a hot, humid, flooded, and contaminated environment with essentially no infrastructure, the units planned to be self-sufficient for 10 days. Government credit cards were issued and teams were sent to various sporting goods stores and large discount stores to acquire supplies.

Medical supplies were in relatively short supply. In traditional military operations, there usually is sufficient lead time before a unit deploys so that a full cache of medical supplies appropriate to the unit's mission can be issued. During peacetime, units only have minimal supplies on hand so they are not wasted when they expire. Teams were dispatched to local pharmacies and retailers to stock up on multiple over-the-counter and prescription medications. Additionally, several local clinics and hospitals were contacted to purchase (or donate) medications and intravenous solutions.

The process of preparing a group of soldiers to deploy for a mission, be it foreign or domestic, can be involved and time consuming. The Soldier Readiness Program (SRP) is the program that the US Army uses to mobilize soldiers. This involves several medical screening forms, a dental screening examination, a screening interview with a medical professional, and periodic laboratory tests if the soldier is due for them (e.g., human immunodeficiency virus and a lipid panel every five years). Soldiers also receive appropriate vaccinations. While the US Army sets certain minimum health and fitness standards for its soldiers, there can be a wide range of physical fitness within Army personnel. Specifically, a number of chronic conditions, such as hypertension, musculoskeletal problems, and seasonal allergies, are not disqualifying conditions as long as they are well-controlled and do not interfere with a soldier's ability to perform his/her mission. These conditions, and what constitutes as "well controlled," are specified in a US Army publication (Army Regulation 40-501). The soldiers who deployed with Task Force St. Bernard (TFSB) all met the minimum health standards. The most common chronic medical conditions of deploying soldiers were hypertension and hyperlipidemia.

The Mission

St. Bernard Parish, Louisiana is a long, thin parish immediately east of New Orleans (Figure 1). It extends >10 miles along the east bank of the Mississippi River. Upon arriving in the Parish, the Colorado units were joined by smaller units from Georgia and Maryland, thus creating TFSB. The main camp was set up in the town of Chalmette with the Georgia and Maryland units at satellite locations in the Parish (Figure 2).

A large part of the TFSB was comprised of military police (MP) units. Consequently, an important part of the mission was to assist local law enforcement in establishing checkpoints to control access to the Parish so that only Parish residents would be allowed to enter. The MPs also patrolled the streets looking for looters.

The remainder of the TFSB was comprised of artillery and maintenance units. These assets were responsible for assisting with search and rescue, repairing the local infrastructure, and helping the local authorities make the streets passable by clearing away trees, boats, and other debris.

The Task Force did not have boats. Residential areas were searched on foot using hip waders, as the water receded further every day. Ultimately, the Task Force was deployed for 20 days before the units returned to their respective states.

Medical Operations

The medical section primarily was tasked with providing medical support to Task Force personnel and ensuring that appropriate preventive medicine measures were utilized. After the units from all three states were combined, there were >900 soldiers deployed. The TFSB medical section consisted of one emergency physician, two physician assistants, and a nurse practitioner. Additionally, there were 22 medical specialists (medics) who were trained similarly to civilian Basic-Level emergency medical technicians (EMT-B).

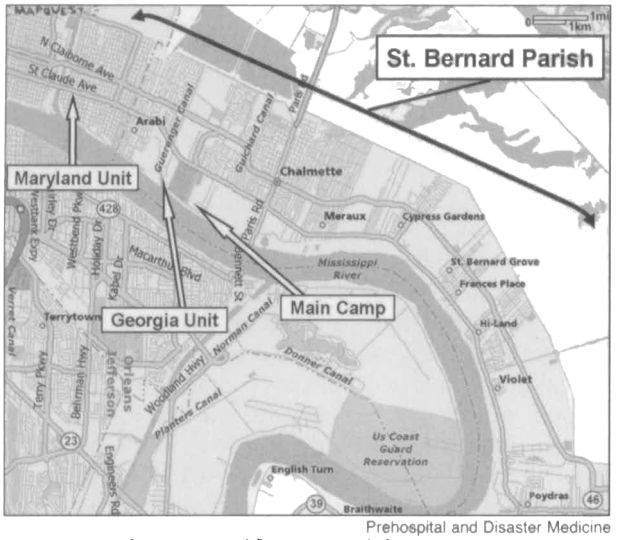

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Figure 2—Close-up of St. Bernard Parish with the location of the main camp and satellite locations of the Georgia and Maryland National Guard units highlighted (Source: MapQuest)

The medical section also had six High-Mobility, Multipurpose, Wheeled Vehicle ("Humvee") ambulances at its disposal. These military ambulances are built on a tactical, all-terrain frame and are set up to carry four stretcher-bound patients each.

A primary battalion aid station (BAS) was set up at the main camp (Figure 3) with the Colorado units, and small, secondary aid stations were set up at the Georgia and Maryland unit camps. The main BAS saw 333 initial visits, three civilians, and 64 follow-ups for a total of 394 patient encounters. The majority of cases involved upper respiratory infections (52; 46.2%), foot care issues (36; 10.8%), and rashes (46; 13.8%; Table 1).

Another major component of operations was to support the smaller teams of soldiers that were operating in different areas of the Parish. Each day, several teams of soldiers operated in at least three different areas. One or two casualty collection points (CCPs) with two military ambulances were established each morning. These CCPs allowed faster responses to emergencies and less likelihood of failed communications with the troops on the ground.

All vehicles were equipped with Single-Channel Ground and Airborne Radio System (SINCGARS) radios, the main radio Army vehicles use to communicate with each other. Unfortunately, most of their power amplifiers had been removed and sent to units in Iraq. There were two radio repeater trucks located throughout the Parish to increase the range, but the coverage still was sporadic.

Relatively good cellular telephone coverage existed in the western part of the Parish. Thus, personal cellular telephones were one of the main methods used for communication. However, coverage did not extend to the east. In light of this, it was clear that personnel could not rely on online medical control, so every effort was made to make the medics in the field as self-sufficient as possible.

The Air Force published several frequencies for a P-3 Orion, which circled overhead at all times. This airplane

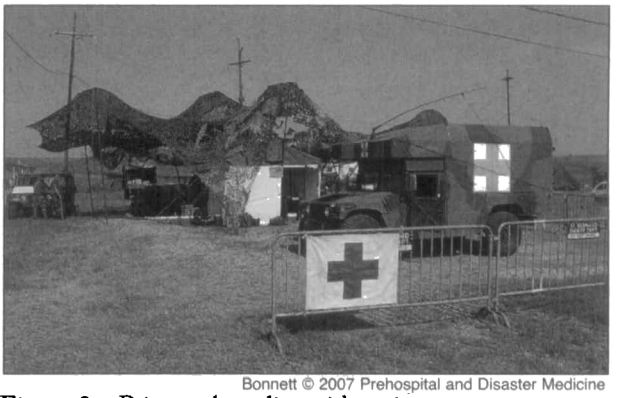

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Figure 3—Primary battalion aid station

was supposed to arrange for emergent air evacuation, but unfortunately, the SINCGARS radios were not capable of communicating on these frequencies. The main method used to contact the evacuation officer was by cellular telephone. All medics carried the telephone numbers for the air evacuation element at the Naval Air Station–Joint Reserve Base (NAS–JRB) New Orleans, which was just south of New Orleans. If they could not contact the Task Force Command, the medics would call the Air Force for air evacuation. Alternate landing zones also were identified and their coordinates were recorded using two separate global positioning system (GPS) hand-held units that the Medical Section members brought with them.

In case all communication with the Air Force was lost, the back-up plan was to take the patient to the local Disaster Medical Assistance Team (DMAT), which had reliable communication with civilian air evacuation assets.

Interactions with Other Agencies

Local Officials and Law Enforcement

In keeping with the vision in the National Response Plan,[8] the local government of St. Bernard Parish retained coordination and control of the overall operation. A unified command center was established at the City Hall, where representatives from the various agencies could meet with the local government and coordinate operations. The mission of the TFSB was to provide support and assist local officials. This worked smoothly because the local officials knew their Parish the best, and it avoided any animosity that could have occurred had an outside organization come in and "taken over".

Disaster Medical Assistance Team

Approximately one mile from the TFSB camp was the disaster medical assistance team (DMAT) from Tucson, Arizona (AZ-1 DMAT). Disaster medical assistance teams are one of several types of disaster response teams that are a component of the National Disaster Medical System (NDMS), which now is a component of the Department of Health and Human Services instead of the Department of Homeland Security.[10–12] These teams consist of medical professionals, paraprofessionals, and support personnel. They can deploy to a disaster area and provide basic medical care for up to 72 hours without resupply.

Complaint	Number	%
Head, Ears, Eyes, Nose, and Throat		
Dental	5	(1.5)
Earache	4	(1.2)
Headache	3	(0.9)
Ophthalmologic	8	(2.4)
Pharyngitis	3	(0.9)
Upper respiratory	40	(12.0)
Cardiopulmonary		
Chest pain	2	(0.6)
Lower respiratory	14	(4.2)
Gastrointestinal		
Abdominal pain	3	(0.9)
Vomiting/Diarrhea	1	(0.3)
Musculoskeletal		
Back pain	7	(2.1)
Fractures	1	(0.3)
Foot care/Blisters	36	(10.8)
Lacerations	16	(4.8)
Sprains/Strains	10	(3.0)
Miscellaneous		
Allergic reaction	8	(2.4)
Chemical exposure	8	(2.4)
Dermatologic (other)	46	(13.8)
Eyeglass problems	6	(1.8)
Heat Injury/Dehydration	7	(2.1)
Infectious disease (other)	3	(0.9)
Medication refill	95	(28.5)
Other/Not recorded	7	(2.1)

Table 1—Visit breakdown by complaint (Due to rounding, percentages do not add up to 100.)

The TFSB Medical Section was responsible for the medical care of military personnel, while the DMAT was responsible for the care of civilian and non-military patients. The team saw >60 patients per day and provided >4,000 immunizations to various civilians (Dr. Fred Paavola, AZ-1 DMAT, personal communication).

In addition to their mission, the local DMAT helped TFSB medical operations. Since the TFSB was deployed on such short notice, there were >100 soldiers who did not have adequate supplies of prescription medications. The majority of these prescriptions were for antihypertensive medications. The DMAT was able to fill these prescriptions. There also were several requests for antidepressants and nasal steroids. Additionally, the DMAT was able to perform electrocardiograms for two soldiers who developed chest pain during the deployment.

Urban Search and Rescue Team

The California Urban Search and Rescue (USAR) Task Force 5 team also was operating in the Parish. Task Force 5 (like all USAR teams) is trained in the location, extrication, and medical stabilization of victims of structural collapse.[13] Due to their higher specialized training and the fact that legal issues had been worked out for them, they were able to enter Parish houses. During their deployment, 77 team members searched 2,993 structures, treated five civilians, and evacuated three civilians.[14] Task Force St. Bernard personnel, on the other hand, were instructed to knock on doors and call out for survivors.

Active Duty Military

Task Force St. Bernard fell under the command of the 35th Infantry Division, which was in charge of the various task forces operating in the greater New Orleans parishes. However, from a medical standpoint, TFSB's main interaction was with the US Air Force.

The US Air Force set up one of its rapidly deployable Expeditionary Medical Support System (EMEDS) field hospitals at NAS–JRB New Orleans.[15,16] They proved to be an important source of re-supply, air evacuation, and a higher level of care. All military medical evacuations were to be coordinated through them.

The US Navy also provided support by docking the USS Shreveport approximately 0.5 mile from the Task Force camp. This added dental and basic x-ray and laboratory capabilities to the Medical Section's abilities. The ship also allowed TFSB soldiers to use the ship's showers.

Lessons Learned

Although many TFSB personnel had served in military operations overseas, the response to Hurricane Katrina was unique for many of them. A number of issues were identified during this deployment.

Communication

There are two equally important aspects to communication. The first involves the hardware, namely the radios and communications equipment. The interoperability of National Guard radios with the Air Force radios must be improved.

It would have been helpful to have additional commercially available two-way radios. As this was not a tactical environment, encryption of communications was not necessary. More of these radios could have helped make the operations more efficient.

One final technical issue was related to cellular telephone chargers. When the entire operation relies on cellular telephones, the inability to charge telephones is crippling. Most cellular telephone chargers are shaped in such a way that they occupy more than one slot on a traditional six-slot power strip. The available power strips always were full of charging cellular telephones. Several soldiers were able to acquire short (approximately six inches long) extension cords that could plug into a power strip and have the charger plugged into the other end. This simple piece of equipment allowed six phones to be charged instead of three to four per power strip.

Class	Specific Equipment
Personal Hygiene	Insect repellent, permethrin (to treat clothing), sunscreen, toilet paper, waterless hand sanitizer (large amounts), Solar showers, lip balm
Personal Protection	Dust masks, eye protection, hip waders/rubber boots, rubber gloves, laundry supplies (buckets and soap to wash soiled clothing), "paper scrubs" or other disposable outfit for people to wear after they have been decontaminated, foot powder
Tools	Chainsaws, shovels, basic tool sets, portable generators, portable lighting systems, plywood (to use as *flooring to keep personnel and equipment off of contaminated ground*)
Miscellaneous	Batteries, cots (no one should sleep on contaminated ground), maps of the area (computer program which can generate maps), notepads and office supplies, small offset extension cords (allow more cellular phones to be charged simultaneously on a power strip), two-way radios (commercially available from sporting good stores; allows better communication between nearby teams), waterproof containers (keep out moisture and rodents)

Table 2—Suggested equipment

The second, and possibly more important communication issue, involved the intrapersonal relationships between the different agencies. When the TFSB arrived in the Parish, it was clear that it did not have enough medical supplies or resources such as radiology, electrocardiograms, and laboratory facilities. The Medical Section immediately tried to establish cooperative relationships with the other agencies in the area in order to fill in the gaps. For the first several days, it was not clear which military medical or civilian assets were available.

Members of the medical team spent a significant amount of time driving to various locations, exchanging cellular telephone numbers, and trying to determine what medical assets were available and how to access them. The relationship with the DMAT is an example of the symbiotic relationship that can be created between agencies to support the overall mission. Task Force St. Bernard had a large amount of manpower, heavy machinery, and logistical support to offer, while the DMAT had better medical and communications capabilities. Additionally, the Task Force was able to coordinate with several fire departments to establish decontamination lanes to wash trucks and personnel as they returned from contaminated areas.

Equipment

Since this was a short, unique mission, a few challenges were encountered with regards to equipment. One problem was that each military unit has a defined list of what equipment it can and cannot own. For instance, an artillery unit cannot own an electrocardiogram machine or examination lights (both would have been useful in this mission). To circumvent the problem, a state's National Guard could identify and even palletize a cache of disaster response equipment and keep it in a central location, ready to be picked up by whichever unit is deployed.

Initially, the TFSB planned on being self-sufficient for 10 days. After approximately five days, the Task Force was able to be resupplied partially through shipments from Colorado, and partially through *ad hoc* mechanisms. For example, the Medical Section contacted the State Surgeon of the Louisiana National Guard and was able to procure additional medical supplies.

Task Force St. Bernard members felt that a few additional pieces of equipment would be useful for future disaster response missions (Table 2). The list is not meant to be all-inclusive, but rather should serve as a starting point when planning equipment and supply requirements. Disaster medical assistance teams with more experience with disaster response, may be helpful in creating a better equipment/supply list for the National Guard.

Preventive Medicine

With the complete breakdown of the local infrastructure, there was no running water, and personal hygiene was a challenge. Multiple bottles of waterless hand sanitizer were taped to portable latrines and distributed to each soldier. After several days, some makeshift showers were built with solar showers were used.

The advance party was able to contact the Emergency Operations Center prior to the main body of the TFSB arriving, and arranged to have portable latrines installed the day the convoys began arriving. This was important, as having >900 soldiers with no latrines could have created a hazardous public health situation.

Another problem was that St. Bernard Parish is home to several oil refineries and thousands of flooded houses. The entire area was contaminated with unknown industrial and household chemicals, and most of the area was covered with heavy mud. As a result, hundreds of pairs of hip waders were issued to the troops working in these contam-

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inated areas. Unfortunately, since rubber hip waders do not allow one's feet to air out, blisters were a serious problem.

Legal Issues

Military medical personnel should be aware of two main legal entities that occurred following Hurricane Katrina. The first is an interstate agreement known as the Emergency Management Assistance Compact (EMAC) (Public Law 104-321), which the US Congress ratified in 1996 to facilitate the rapid mobilization and response of emergency medical resources and National Guard assets from other states to an affected area.[17,18]

The EMAC provides four main privileges and protections to responders.[19] First, a responder's license or certification should be given reciprocity by the state to which they will be responding. However, this applies only for individuals who are part of the official response element. Freelancers are not protected.

Additionally, official responders get significant protection against malpractice claims that may arise from their practice in the affected area. Responders also should receive death and disability benefits (although this applies more to civilian responders than to military personnel). Finally, states that respond through EMAC should be reimbursed for any expenses they incur during the response.

The second important law with regards to domestic military response is the Posse Comitatus Act of 1876 (18 US Code, Section 1385).[20] The Act has been updated and, in its current form, states:

> *"Whoever, except in cases and under circumstances expressly authorized by the Constitution or Act of Congress, willfully uses any part of the Army or Air Force as a posse comitatus or otherwise to execute the laws shall be fined under this title or imprisoned not more than two years, or both."*

The exact meaning of the Act has been debated, but it is taken by many to mean that active duty military troops cannot perform police duties. Also, it generally has been held that National Guard forces under state authority (Title 32) can be used for policing duties.

Some scholars have argued that the Act actually came into being after the Civil War to protect active duty forces from being forced to provide policing duties at the request of local officials in the Southern states.[21,22] Whatever the case may be, there have been calls for new legislation that would establish a clear role that active duty and National Guard military forces could play in domestic incidents in light of the modern homeland security situation.

Prior to mobilization, there was much discussion in the Medical Section about the legal aspects of providing medical care in another state. Specifically, there was confusion about whether civilians could be treated. As the Medical Section was not aware of EMAC at the time, the plan was to avoid providing medical care to civilians unless it was an emergency. Instead, they would be directed to the DMAT.

Both EMAC and the Posse Comitatus Act were put to the test during the responses to Hurricane Katrina. How well they worked is an active area of debate and should be examined by both military and civilian disaster planners before future events.

Credentialing Issues

The literature uses the term "convergent volunteerism" to describe what happens when people who are not members of the official response services arrive on-scene and offer their assistance.[23,24] Oftentimes, these individuals possess needed skills and could provide an important contribution. Unfortunately, some of them may be acting outside of the incident command structure and may not have the training to operate in a dangerous environment. Then, they can become victims themselves, as evidenced by a nurse who responded to the 1998 bombing of the Alfred P. Murrah Federal Building in Oklahoma City, and tragically, was killed by falling debris.[25]

During the deployment, a woman presented to the BAS with an identification tag that had her name (but no photo) and the words "Louisiana Disaster Response" printed on it. She claimed to be a physician with a masters degree in public health who recently had come off active duty in the US Army. She also claimed that she had been assigned by FEMA to assist in the public health survey of St. Bernard Parish.

Over the next few days, she worked with teams from the US Public Health Service and the US Navy, which were performing environmental assessments of the Parish. She even managed to shake hands with President George W. Bush when he visited the local Emergency Operations Center.

After this woman maneuvered her way into multiple meetings with high-ranking officials, Colonel Daryl J. Callahan, the Division Surgeon of the 35th Infantry Division, did a background check on her credentials and spoke with her previous commander in the US Army. As it turned out, she had only spent a little over a year on active duty before leaving the service, and she had a criminal record. She also had a number of "colorful" issues in her past. Her previous commander asked to have her arrested.

It was embarrassing that it had been assumed that she had valid credentials. In light of this experience, the importance of credentialing cannot be overstated. One wants to avoid an influx of people who are interested only in "disaster tourism"[26] or worse, who do not even possess the skills they claim to have.

A related issue that the TFSB had to cope with was credentialing of the civilian residents of St. Bernard Parish who wanted to come back to their homes and search for salvageable possessions. The potential existed for people who were not residents to come in and loot the homes in the Parish. A black and white pass was created on a computer to be given to residents, but it did not take long for people to make multiple photocopies. A second version was made on a color printer that was somewhat more successful, but it became clear that this is an issue that must be addressed for future events.

Training

During traditional military operations, the armed forces essentially operate as a closed system. However, Hurricane Katrina demonstrated that any disaster of this magnitude will require the coordinated responses of all aspects of government and the private sector. In future disasters, the National Guard and active duty military units will work side-by-side with other agencies and private groups. In this

Class	Specific Medications
Analgesic/Antipyretic	Acetaminophen, aspirin, ibuprofen, migraine medications (i.e. sumatriptan succinate), muscle relaxants (i.e. cyclobenzaprine), oral narcotics (e.g., hydrocodone), IV narcotics (e.g. fentanyl), topical anesthetic (e.g., benzocaine spray)
Antimicrobial	Several classes of oral antibiotics to account for allergies (e.g. amoxicillin, azythromycin, cephalexin, doxycycline, ciprofloxacin), IV antibiotics (e.g. levofloxacin, ceftriaxone), oral antifungal (e.g., fluconazole)
Cardiovascular	Antihypertensives (e.g., beta blocker and ACE inhibitor to refill prescriptions), nitroglycerine
Dermatologic	Topical antibiotic ointment, topical hydrocortisone ointment, topical antifungal ointment (e.g., clotrimazole), topical antipuritic (e.g., calamine, diphenhydramine lotion), hemorrhoid ointment (e.g., dibucaine, witch hazel)
Emergency/ACLS	Amiodarone, atropine, epinephrine (autoinjectors, 1:1000, & 1:10,000), IV diphenhydramine, IV normal saline, IV methylprednisolone
Gastrointestinal	Antacids (e.g., calcium carbonate tablets, ranitidine), IV/PO/PR antiemetics (e.g., prochlorperazine, promethazine, metoclopramide, ondansetron), antidiarrheals (e.g., loperamide), bismuth salicylate, docusate
Ear/Nose/Throat	PO diphenhydramine, antitussives (e.g., dextromethorphan, benzonatate), eye irrigation solution, non-sedating antihistamines (e.g., cetirizine, loratidine), nasal decongestants (e.g., pseudoephedrine), nasal steroids (e.g., beclomethasone, triamcinolone), Natural Tears, ophthalmic antibiotics (e.g., gentamycin, levofloxacin), ophthalmic anesthetic (e.g., tetracaine), otic antibiotic (e.g., hydrocortisone/neomycin/polymixin), otic analgesic (e.g., phenazone/benzocaine)
Pulmonary	Albuterol (metered dose inhaler or nebulized), ipatropium bromide, PO prednisone.
Wound Care	Blister care products, liquid skin adhesive, local anesthetic (e.g., lidocaine), povidone-iodine solution

Table 3—Suggested formulary (ACLS = advanced cardiac life support; IV= intravenous, PO= by mouth; PR= rectally administered)

light, it is critical that National Guard leaders and personnel understand the larger context of disaster response in the US and where they may fit into response operations.

National Guard units should be trained in how to work within the National Incident Management System (NIMS).[27] A full discussion of the NIMS is beyond the scope of this paper, but one of its strengths is that it allows multiple agencies to effectively coordinate their actions towards a common goal.

Planning

The previously stated lessons all are important but useless unless implemented. Therefore, if a state's National Guard is serious about being prepared to respond to domestic disasters, it is critical that they incorporate these lessons into their planning. Conducting a disaster response operation is different from conducting a combat operation. Preparing the National Guard to operate in this environment will require some unique solutions and forward thinking. One possibility could be to create a "Disaster Response Committee" with representation from the highest levels of the Command. This Committee could assess the capabilities of the various state units, coordinate training with non-military agencies, develop agreements with local vendors to be able to provide supplies at a moment's notice, and arrange to have propositioned equipment.

Medical Issues

The actual provision of medical care in a disaster environment is similar to the practice of medicine in austere environments that the military trains for. From an asset management standpoint, it was helpful to strip all of the medics and medical assets away from the individual units and put them under centralized medical control. This centralization allowed the Medical Section to work closely with the Task Force Commander, and thus, allocate medical coverage more efficiently.

Although it is important to be able to provide advanced cardiac life support (ACLS) and trauma stabilization, much of the medical care provided was for routine complaints. Upper respiratory infections, foot care issues, and rashes comprised the majority of the cases. Notably, and hopefully due to aggressive preventive medicine efforts, only one case with vomiting and diarrhea was seen at the BAS.

Based on the experience of the Medical Section, Table 3 provides a suggested formulary that other units can consider utilizing. This list was created by surveying the medical providers during the mission as to what medications actually were used and which medications they felt would be useful to have during future operations. This list is not meant to be all-inclusive, but should serve as a starting point for planning.

One final issue that arose dealt with contact lenses and prescription eyeglasses. Several soldiers only had brought contact lenses with them. During the operations, several of these soldiers had contaminated mud splashed into their

eyes and had to have their contacts removed and thrown away. These soldiers, and several whose glasses had broken, had to be taken to a one-hour eyeglass store in Baton Rogue, Louisiana for examinations and new glasses. This highlights the problems of using contact lenses in a disaster environment. During future missions, each soldier should have at least two pairs of eyeglasses (which is the standard for soldiers deploying to a combat environment).

Conclusions

The sheer scale of Hurricane Katrina emphasized the potential for catastrophes that require the activation of the National Guard to strike the US. In light of this, it is important for civilian and military leaders to understand the capabilities and limitations of the National Guard in disaster response operations. The Army and Air National Guard have long prided themselves on their ability to adapt to challenging situations and missions. If the National Guard can learn from this experience and incorporate specific disaster training and planning into its operations, then it can serve as a valuable response asset for future disasters.

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