Introduction

The case study includes a short introduction and discussion of U.S. military medical engagement in past HADR missions and lessons learned from this employment. In addition, we review after-action reports and journal articles from medical personnel that deployed in support of HADR missions to capture their ideas and observations, with a focus on medical providers and medical planners. Moreover, we discuss U.S. military medical influences with NGOs and other non-military partners for a perspective on the value and any potential concerns with a robust (high acuity) U.S. military medical presence during a HADR mission and any lasting effects upon demobilization.

This booklet intends to inform military planners on their role in ensuring U.S. military medical response is appropriate to the needs of the affected population and sensitive to the lasting effects of a U.S. response. Finally, this case study provides an opportunity to discuss planning factors for U.S. military medical planners and their operational (line) counterparts, as well as, international partners and NGOs.

Military Medicine in HADR

U.S. military medicine supporting HADR missions greatly enhances the operation's impression on the host nation and its people. However, can high acuity U.S. military medicine hinder the strategic value of a HADR mission? When U.S. military medicine deploys in support of HADR, they can quickly become the most capable medical facility in the area; perhaps the entire country. While this capability highlights a U.S. strength, are there second and third order effects concerning after care, step down treatment, and post-treatment complications after U.S. forces depart?

In this case study we explore doctrine, research, and lessons learned from previous HADR missions where there was a strong U.S. military medical employment. Through this review, we seek to create best practices for military and medical planners for comprehensive needs assessments before deploying medical assets for a HADR mission. This needs assessment ensures the strategic influence of military medicine is appropriate and its effectiveness increases through ensuring continuity with host nation medical facilities and providers.

Doctrinally, U.S. military medical capabilities are an integral part of HADR missions. Joint Publication 3-29, Foreign Humanitarian Assistance states, "The JFC [Joint Force Commander] ensures US forces support and supplement HN capabilities, rather than replace or supplant them in circumstances in which there are existing HN medical capabilities."
Although JP 3-29 clearly lays out the need and utility of medical forces in HADR missions, has the U.S. utilized these assets appropriately in the eyes of the victims of the disaster and the host nation?

Reviewing lessons learned from U.S. military medical involvement in previous HADR missions, we find a common thread of U.S. military medicine's valuable contribution to the mission; however, there is an uneven hand off and sustainability challenges. In 2008, the Stockholm International Peace Research Institute (SIPRI) put forth a thought-provoking lesson learned from the 2005 Kashmir earthquake in Pakistan:

> ***"The standards of medical and health care were also higher during the relief period than they had been before the earthquake because of the intervention of the foreign military assets… Consequently, many survivors were reluctant to revert to lower health care standards in the rehabilitation process."***

As SIPRI lays out, U.S. military medicine can create a care vacuum when U.S. forces redeploy if existing medical capability and standards are greatly diminished. Further, Schreeb et al. (2008) stated, "The deployment of FFHs [Foreign Field Hospitals] following sudden-onset disasters should be better adapted to the main needs and the context and more oriented towards substituting for pre-existing hospitals, rather than on providing immediate trauma care."

A U.S. Navy Medical Planner on the ground in Khyber-Pakhtunkhwa province of Shinkiari, Pakistan after the Kashmir earthquake, shared firsthand knowledge of the value of U.S. military medical resources during a HADR mission. As the Medical Company Commander of Combined Medical Relief Team-3

(CMRT-3), the planner and his team deployed a full, U.S. Navy Field Surgical Company to the Northwest Province of Pakistan to aid earthquake relief.

The surgical company consisted of 2 surgeons, 2 nurse anesthetists, 2 operating room nurses, 6 family practice physicians, and 135 corpsman operating a tent base camp with a complete operating room, step down unit, outpatient treatment, laboratory, radiology, and pharmacy. Due to their arrival time (30 days after the earthquake), they treated very few injuries directly related to the earthquake and instead treated earthquake related illnesses like respiratory infections, diarrhea, and other communicable diseases associated with communal living (tent camps housing internally displaced persons (IDPs)).

During the early part of this mission, the medical treatment provided via family practice physicians, surgeons, nurses, and corpsman while well above the local standard, was welcomed with open arms due to the large numbers of IDPs. However, as the mission continued for several months, they experienced what could be described as mission creep. They began to see fewer earthquake related injuries and complications, and more congenital concerns, cosmetic procedure requests, and other chronic ailments, i.e., hernias, lower back pain, and headaches (Figure 1).

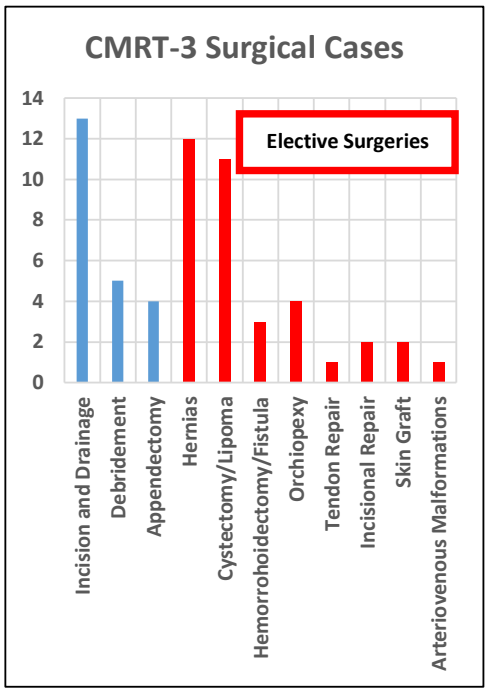

Figure 1: CMRT-3 Surgical Cases, Mosier & Orthner; Hicks (2007)

In addition, the U.S. medical company was made aware that local physicians and pharmacies were losing patients to the U.S. military facility and thus the initial strategic value began diminishing in the region. Mosier & Orthner (2007) noted a similar find, "…DOD medical teams stayed too long. Pakistani physicians and pharmacists were closing their offices/shops and leaving their local communities because their livelihoods were destroyed by the presence of no-cost U.S. medical care" (p. 8).

Although U.S. military medicine improved the lives of the over 14,000 patients they treated, less than two percent were directly attributed to the earthquake. One could argue from a macro-level view, the value of the U.S. military team's contribution was tempered by the length of their presence. "Offering the community a higher standard of care than they are accustomed to receiving resulted in negative consequences for the local community" (Mosier & Orthner, 2007, p. 8).

The experiences of the medical company during the Kashmir earthquake echo The Center for Naval Analyses' findings in 2008, "The most common problems that come with drive-by medicine include undercutting local private medical practices, providing drug regimens that cannot be sustained by the local clinics (which then has the effect of discrediting the capability of the local health care in the eyes of the local population), and providing care that may need followup attention…"[Pacific Partnership 2006 & 2007].

Medical Diplomacy

As U.S. military medicine evolved in supporting HADR missions, the term "medical diplomacy" was created. Medical diplomacy is a broad term meaning the "goodwill" that comes from using U.S. military medicine on HADR missions to provide lifesaving treatment, first aid, and preventive medicine. However, medical diplomacy is an imprecise concept because it isn't taught in any medical or military planning courses, but rather it is an on the job training skill attainment and as such, is unevenly applied throughout the enterprise.

In 2008, Amundson, Lane & Ferrara noted, "…the Department of Defense should develop and vigorously support a specific and robust HA/DR planning and implementation program using experienced and knowledgeable personnel to further the goal of "medical diplomacy.""

U.S. military medicine is a valuable asset for HADR missions when employed 'in tune' with the needs of the local populace, and delivered at the appropriate acuity level with the host nation's capabilities. Below is a short, planning checklist to guide decision-makers when determining the use and employment of military medicine in an HADR mission. While this list is not all inclusive, it provides a fundamental roadmap for military medical planning. Using U.S. military medical forces, skills, and equipment in HADR is highly successful and largely in demand from countries requesting support from the United States.

Best Practices for U.S. Military Medicine in HADR

CFE-DM developed a short checklist for medical planners when deciding when/how to incorporate military medicine in a HADR mission:

Military medicine supports Medical Diplomacy when it…

- Provides first aid to affected populace
- Provides trauma/lifesaving treatment immediately following an event
- Improves public health (water, food safety, sanitation, vector control, etc.)
- Promotes western medicine in underserved areas
- Provides newborn and in some instances pre-natal care in areas where it is non-existent

Military medicine hinders Medical Diplomacy when it…

- Greatly exceeds local capability
- Lacks handoff to step down care of same or similar quality/acuity
- Creates additional unmet needs (infections, rehabilitation, after care, etc.)
- Reduces confidence in local health care providers/facilities
- Threatens local businesses (pharmacy, radiology, ancillary services)
- Overstays their operational effectiveness time

Needs Assessment

A comprehensive needs assessment is critical in ensuring U.S. military medicine is used effectively when deployed in support of a HADR. Consulting with the United States Agency for International Development (USAID), local NGOs, and other country staff is extremely valuable in determining local medical capabilities and needs of the host nation. More importantly, through collaboration, local experts can assist military planners in identifying potential gaps created when U.S. military assets redeploy after treating victims of the event.

In addition, although U.S. military medicine seeks to improve the lives of those affected by the disaster, it can often be challenging for outsiders to determine what needs were created by the event, and what needs existed before the event. To prevent this, medical planners should be part of the initial assessment teams to determine the appropriate U.S. military medical response by matching need with capability.

Another important aspect of the needs assessment is knowledge of each military service's medical capabilities. Knowing how each service's medical capabilities perform and the evaluation of the needs of patients throughout the system (entry into U.S. system, triage, treatment, after care, and follow-up) is vital to orchestrating a local mechanism for treated patients. Once military planners understand their own medical systems, they can create comprehensive plans that fit and support host nation capabilities.

Define the Standard of Care

Although many developing countries have a medical system, they lack standardized medical practices that are often not at the same standard of care as Western medicine. U.S. military planners should seek assistance from local NGOs and/or USAID representatives familiar with the host nation and explore gaps between U.S. military medicine and the host nation's medical support. Local NGOs and/or USAID can help define the standard of care so responding U.S. military medical units can tailor their capabilities with a lighter, lower acuity footprint and contribute to the local medical community instead of replacing or degrading it. Lessons learned have shown cooperation between military and NGOs is most effective at the operational level (Moroney et al., 2013). It is these local relationships that are most effective when defining the standard of care.

Civil-Military collaboration creates an effective U.S. military medical response supporting the overall strategic mission by ensuring patients receiving treatment from the U.S. forces are matched with local resources and health care providers.

Consider Lower Cost Alternatives

While U.S. military medicine provides a highly capable, expeditionary advantage, the financial cost of U.S. military involvement should be weighed against other effective lower costs alternatives through NGOs or USAID. For example, U.S. military involvement in Operation Tomadachi costs $90 million, $12.9 million in Burma (flooding), $7 million in Indonesia (earthquake), and $104 million in Pakistan (flooding), (Rand Corporation, 2013).

Conclusion

Building local relationships in the early hours after a disaster help prevent over-saturation of U.S. military medicine during a HADR event. U.S. military medicine is a tremendous and highly desired capability after a disaster, but careful and thoughtful planning is needed to ensure military medical involvement doesn't impede the greater strategic value of U.S. engagement with the host nation.

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