Patient Decontamination—A New Perspective

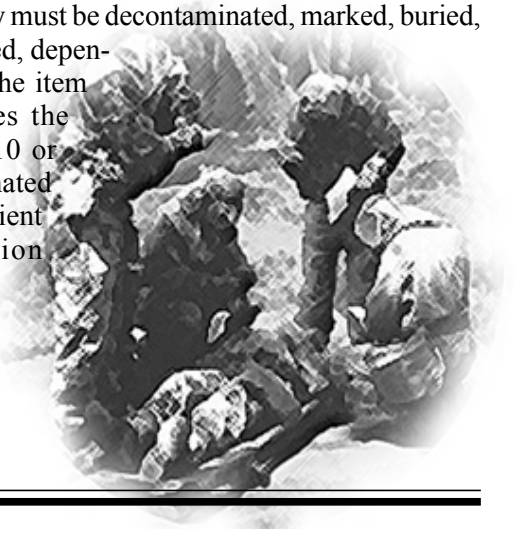
By Captain Robert Crouch

The year is 200X, and U.S. forces along with the European Coalition have begun combat operations in the country of Destonia. Fearing a complete rout at the hands of the coalition, the Destonian leadership feels it has no other choice but to engage in unconventional warfare by using its chemical stockpile. During their first attack, Destonian forces use a combined high-explosive and blister-agent artillery barrage to send coalition forces reeling. Almost immediately, casualties are identified. The only problem is these casualties are in various stages of protective posture and covered in blister agent. The order to conduct patient decontamination operations is given. Panic is felt throughout the brigade area. Although the soldiers have trained for a chemical attack, no one is sure how to deal with the casualties.

The use of weapons of mass destruction (WMD) is one of the greatest threats to the modern soldier. Commanders at all levels must be prepared for WMD use and the possibility of contaminated equipment, soldiers, terrain, casualties, and remains. The first three are deeply rooted in Chemical Corps doctrine and are practiced and trained to some degree of expertise. The last two are a joint venture operation between the Chemical Corps and other branches and, at times, are forgotten or not trained. This article addresses some possible fixes to the structure and process (but not the technique) of patient decontamination.

The current doctrinal method of patient decontamination is outlined both in FM 3-5, *NBC Decontamination*, Chapter 9, and FM 8-10-7, *Health Service Support in an NBC Environment*, Appendix C. However, this method has a few problems, such as logistical and personnel support and environmental considerations that are usually overlooked. Both references discuss a decentralized patient decontamination site set up at every medical treatment facility (MTF). At such a site, every battalion aid station in a division area (about 12 to 15) is prepared to take contaminated patients during a WMD attack.

This decentralized concept is not the answer. It overburdens the logistics channels, diverting transportation assets needed for other missions to resupply each separate MTF with extra equipment and water for decontamination operations. If an MTF receives contaminated casualties, it effectively shuts down that facility to other patients to decontaminate the casualties. The personnel augmentee requirement for patient decontamination is too high (8 augmentees per battalion aid station and 20 per combat support hospital) to conduct at every level. Any augmentees that are sent, assuming the unit can or will send them, will be untrained and unprepared and arrive later than the time they actually are needed for patient decontamination. Also, upon the completion of patient decontamination, a large amount of contaminated items (personal medical and decontamination equipment and expended supplies) are generated. They must be decontaminated, marked, buried, and/or destroyed, depending on what the item is. This creates the possibility of 10 or more contaminated areas from patient decontamination operations only, causing a great concern for U.S. forces and host nations.



The best place to set up a patient decontamination site is in conjunction with the detailed equipment and troop decontamination site (not the actual activity). Having one consolidated patient decontamination site has many benefits:

- Less transportation assets are tied up in preparing these separate patient decontamination sites with equipment and water.
- The problem of having untrained, ill-prepared augmentees arriving late could be eliminated if planned properly.
- The site could be used for troop and equipment decontamination, reducing the contaminated areas to only one.
- There is no lag time between preparing the site and decontaminating/treating casualties, if the patient decontamination site is already established at a centralized location.

This consolidated patient decontamination approach has a few problems. Where do you put this site to balance between the timely treatment of casualties, limiting the spread of contamination and protecting the site from attack? Who's in charge of this consolidated site? How do you ensure the timely care of the patients? What is the fix for patient decontamination? How can we make it a more viable and survivable concept?

The placement of the site should follow normal decontamination doctrine and principles but also take into consideration mission, enemy, troops, terrain-time available and civilians (METT-TC). It should be placed as far forward as possible to limit contamination but should be out of direct fire and, when possible, out of indirect-fire range. The site should be near avenues of approach, have some form of overhead cover, and have accessible or available water. However, there is no one spot that will completely satisfy all requirements. The chemical unit leader should pick a suitable location for the decontamination site, preferably by a ground or aerial recon, but at a minimum by map recon. This decontamination site selection should fulfill as many criteria as possible (i.e., camouflage, avenues of approach, access to water).

The problem of timely treatment of contaminated casualties actually rests in the first echelon of medical care. Most casualties that are not immediately treated for exposure to WMD agents, either by self or buddy-aid, will not survive long enough to be transported to any MTF for treatment. Most chemical casualties have about 15 to 20 minutes before the agent takes effect. The average time to conduct patient decontamination on a litter casualty is 20 minutes, which does not include the travel time from

Soldiers deconning the hood, the first step of casualty decon.

exposure to the patient decontamination site. So why waste time with the patient decontamination? Patient decontamination conducted at MTFs is designed to remove patients from a contaminated environment allowing lifesaving care to be conducted in a clean, contamination-free zone. This process is necessary to protect the medical personnel and the patient from secondary exposure.

Ultimately, the chemical unit leaders must have overall responsibility for the decontamination site. They have the expertise to pick an adequate site and are already responsible for the troop and equipment decontamination sites. Placing the chemical unit leader in charge allows the medical personnel to concentrate on treating casualties.

The current preferred method for patient decontamination used during most field training exercises and combined training centers is more of a "patch-hole" concept. After a nuclear, biological, or chemical (NBC) event, the forward medical company dispatches a patient decontamination team (PDT) to the equipment and troop decontamination sites. Sometimes, the PDT is not even aware or notified of the mission until the event has already occurred. Usually, the team arrives a few minutes before or after the contaminated equipment and soldiers arrive at the decontamination site, which causes confusion as the PDT is usually poorly prepared and trained in setup and actual patient decontamination operations. The logistics usually is not coordinated for or in place, so the PDT is away getting adequate water and equipment instead of treating patients. The augmentees either don't arrive or arrive so late that they are more of a hindrance to the operation than a help. These problems cause more patients to die than normally would have. So how can the concept of patient decontamination be fixed?

The first approach to the patient decontamination problem is to attach a medical PDT directly to the chemical unit when there is an increase in the WMD threat level based on the military decision-making process. This team would ensure the proper setup of the patient decontamination site, to include the coordination for logistics and augmentation support. During an actual patient decontamination operation, the medical PDT would be augmented with a doctor or physician's assistant to conduct triage and emergency medical treatment for the contaminated patients. This approach allows for a well-prepared patient decontamination site (to include logistic considerations such as water), an established command and control structure for the site, and the possibility of trained augmentees from the chemical unit or any other unit at the site.

The disadvantages of this approach are the holding of medical assets in reserve (awaiting an attack that may never occur) and the possible misuse of these medical personnel at the decon site. Having the medical PDT set up a "mini" aid station to treat the soldiers in the immediate area can help eliminate these disadvantages.

An alternate version of the first approach is to attach a chemical element to the forward medical company and build a separate area for patient decontamination near the brigade support area. This approach still allows for an established command and control structure, a prepared decontamination site, and trained personnel. However, it has the same disadvantages of personnel misuse (except now on the chemical side) and some of the same concerns for logistics and augmentee support. The possibility of the MTF becoming contaminated because of its proximity to the decontamination site is another problem.

A third possible approach is perhaps the most radical one. Selected chemical personnel could be additionally school trained (and psychologically prepared) for patient decontamination, possibly adding an additional skill identifier. These specialized chemical personnel could then prepare the decontamination site for the medical personnel (eliminating the need to hold medical personnel at the decontamination site) collocated with the troop and equipment decontamination areas. During an NBC event, these specially trained chemical personnel would work as either patient decontamination personnel or, if augmentation support was available, subject matter experts in patient decontamination for the augmentees. This approach frees the medical personnel to concentrate on the triage, treatment, and evacuation of patients and allows the chemical personnel to focus on command and control of the site and the actual decontamination procedures. The major disadvantage to this approach is the additional workload on the chemical unit, but increasing the number of augmentees or changing the force structure in the decontamination unit could fix that.

The first two concepts could be implemented using current force strengths and unit authorizations. They would require some prior coordination and planning at the brigade, division, or higher levels and development in the military decision-making process. They could be written into operation orders, standing operating procedures, and doctrine. These concepts might be enough to fix some of the patient decontamination problems. The third concept requires a Chemical Corps force-structure change and doctrine change. However, this method would possibly fix all the problems associated with patient decontamination.

Regardless of which method is used, the patient decontamination site must be consolidated to ensure proper support and to limit the number of contaminated areas that U.S. forces leave on the battlefield. The site must be properly resourced and set up before an NBC event actually occurs. During or after an event is too late. The overall command and control for the decontamination site must fall with the senior chemical person on the ground, thus allowing the medical personnel to concentrate on treating casualties.