Tactical medicine and tactical emergency medical support (TEMS) have gained wide acceptance in medical special operations over the last 20 years. Law enforcement agencies increasingly acknowledge the benefits of far-forward emergency medical care in a broad spectrum of law enforcement missions. Although tactical medicine was originally conceived as a support function for military and police tactical teams, its value in other types of operations has become apparent over time. This type of medical support is often used in counterdrug and counterterrorism missions, surveillance cases, weapons of mass destruction crisis management, protection details, forensic investigations, national security incidents, and major public events. The basic principles of tactical medicine have wide applicability to those situations in which people must work under hostile, austere, and prolonged transport conditions. This chapter will address the application of these principles to law enforcement operations in the civil disorder environment. Whether it is described as “crowd control,” “riot control,” “civil disorder,” “civil disturbance,” or “public order,” the environment poses the same basic challenges to law enforcement and, hence, similar kinds of medical support strategies and tactics can be applied. Throughout the chapter, the term “tactical medic” denotes tactical medical providers at all levels, including field physicians. The knowledge base of the tactical medical provider (but not necessarily the tactical skills) must be mastered by the medical director as well, in order to provide effective medical oversight to TEMS operations and units.

During more traditional tactical medical support operations, such as high-risk warrant service and counterdrug operations, the tactical medic is usually responsible for only a small group of personnel—the 10- to 30-person tactical team. Civil disorder operations characteristically involve many more law enforcement officers—hundreds to thousands—and tactical medics should not be surprised to find themselves responsible for planning the medical support for all of these officers. It is important, therefore, to ensure that adequate resources are available to properly support the officers who are expecting care. The principal difficulty in this regard will not be the total number of casualties incurred, but rather access to those casualties when they are geographically dispersed in a hostile environment where crowds may restrict the safe movement of law enforcement personnel and equipment. Tactical medics should certainly be prepared to provide humanitarian care to injured civilians, including protestors, when the tactical medics are the closest accessible medical providers to the injured. These casualties should be transferred to an appropriate entry point of the existing healthcare system as soon as practical. Tactical medics should coordinate with the EMS system and ensure that there are adequate plans in place to care for the majority of civilian injuries without relying on the tactical medical team. Without such preparations, tactical medics will invariably become distracted from their primary duties and possibly separated from their unit, compromising team integrity.

BACKGROUND

Crowd control operations are not the mainstay of most tactical teams and many of their medics get relatively little experience in this arena. As reported in the Counter Narcotics and Terrorism Operational Medical Support (CONOMS) database, only 1.3% of all
incidents handled by U.S. tactical teams with medics are related to crowd control, compared to 50% that occur during high-risk warrant service and 28% during training. Despite its relatively infrequent occurrence, crowd control accounts for far more than its share of casualties. Crowd control accounts for 2.3% of all incidents that produce casualties, and 40.4% of total casualties. This is not hard to understand when one considers the large numbers of officers and subjects involved in crowd control incidents. There are sometimes thousands of people at risk for injury during a civil disorder incident, compared to only 15 to 20 people at risk during a high-risk warrant service.

To account for these huge differences in the number of people at risk, it is sometimes useful to look at casualty rates rather than at raw numbers. The casualty rates (per thousand person-missions) for various classes of personnel and types of missions are given in Table 4-1. The data demonstrate that the casualty rate for tactical team members deployed in crowd control missions approaches zero, while the casualty rate for non-tactical law enforcement personnel is 1.5 casualties for every 1,000 person-missions. This means if 100 (non-tactical) officers were deployed on each civil disturbance mission, 1.5 casualties would be expected on average for every 10 missions (100 officers × 10 missions = 1,000 person-missions) or about one casualty every seventh mission. Compare this to the injury rates for perpetrators during barricade operations: They are injured at a rate of 246 for every 1,000 person-missions. If there were an average of one perpetrator for every barricade, 246 perpetrator casualties would be encountered for every 1,000 barricade incidents that the team handles, or about one perpetrator casualty every fourth barricade.

The casualty rates tell us that non-tactical officers are at greatest risk for injury during crowd control operations among all personnel types, but that the risk is about the same as it is on hostage rescues and significantly less than it is for barricades. Even though the casualty rates for crowd control operations are very modest compared to other types of tactical team operations, the total numbers of casualties generated by these events can be quite significant due to the large numbers of people involved. If your agency rarely handles civil disturbances, and the ones you do handle are small, then the impact on your tactical medical program should be relatively minor. However, if yours is one of the agencies that handles frequent, large civil disturbance missions, then the potential impact will be significant.

It is also instructive, particularly during the planning process, to examine the types of injuries that are incurred during civil disorder operations. This can help planners to identify needed equipment, supplies, and personnel. The vast majority of these injuries are musculoskeletal (45%) and soft tissue wounds (40%). Chemical exposure to riot control agents and intentional exposure to body fluids account for most of the remainder. If you are only able to carry a limited quantity of supplies with you, which is often the case during dismounted crowd control operations, these statistics suggest that bandaging, splinting, and wound treatment materials are appropriate. However, these data must be viewed with caution and applied with a good dose of judgment because they can change dramatically depending on the tactics employed. For example, as soon as riot control munitions are deployed, you can count on the number of chemical exposure casualties increasing significantly because (1) there is inherent difficulty in discriminate application of these munitions, (2) large numbers are often targeted, (3) demonstrators may return launched munitions with sling shots, lacrosse sticks, or strong arms, and (4) demonstrators may release their own smoke or chemical agents in order to blame the police.

**INTELLIGENCE**

An accurate and detailed medical threat assessment is a critical part of preparing for civil disturbance operations and should be developed in advance of the operation whenever possible. Obviously, not every
protest or First Amendment demonstration leads to civil unrest, but certainly it is one contingency in the continuum of possibilities for which law enforcement must prepare. If your agency has an intelligence division or similar unit, be sure to work closely with these personnel and let them know your interests and concerns from a tactical medicine perspective. It is ideal if the medic assigned to medical intelligence has a working relationship (and the requisite clearances or background investigations) that permits unfettered access to the same information that the analysts or intelligence officers are seeing. Sometimes, a medically naive intelligence officer simply will not have the knowledge base to identify information that has an important tactical medicine impact.

If identified organizations or groups are involved in the event, it is worth examining the techniques and tactics that these groups have used before. Some groups are known for avoiding confrontations at all costs, while others have histories of seeking confrontation with the police, other protesters, bystanders, or the public. As a starting point to identify the possible groups involved, determine whether permits have been issued, to whom, and whether there are plans for groups with differing ideologies to be present. Be aware of the detailed provisions, requirements, and restrictions of the permits. Sometimes there will be organized counterprotests; other times there may be differences of opinion among groups supporting the same cause. Determine your agency’s plans for keeping the peace among these groups. Will they be separated? How? By terrain features, barriers, fencing, and/or police officers? How will they be monitored? Will plainclothes officers be in the crowd? Is there a rescue plan should these officers need assistance?

Your intelligence unit may be able to provide you with a wealth of information in planning for medical contingencies. They can direct you to open-source histories of these groups, such as newspaper articles about prior demonstrations in which they have participated, and their own web sites. Do they frequently promote or engage in civil disobedience? Have previous protests by these groups, or for this particular cause, been associated with violence? What kinds of weapons and tactics were used?\(^3\) For example, a group that instructs its members to wear helmets and make shields out of plastic garbage cans is usually more likely to provoke a direct confrontation with the police. Has the group previously proposed spreading oil or throwing marbles in an attempt to take down police horses, or used long protest sign poles with nails in them to spook the horses? This might impact your decisions about veterinary medicine coverage and the medical resources allocated to the horse-mounted officers. If particular weapons are likely to be used, be sure that you have developed countermeasures to reduce the number and severity of injuries. For example, some groups have a propensity to use improvised incendiary devices. Has this been considered in selecting personal protective equipment? Do you have a plan for extinguishing an officer on fire? Have all the platoon members been trained in this countermeasure? Are special extinguishers or supplies needed to rescue the officer on fire and have these been appropriately distributed among police personnel? Many groups have threatened to throw blood on officers, some have used red liquids in their street theater, a handful of protest groups have actually used animal blood, and the use of human blood has been documented, although rarely.

Many groups planning civil disobedience do not view the police as the enemy. They just want to get their message into the spotlight and the media spectacle of mass arrests is one way to do that. You will frequently find that your intelligence or special events officers are speaking with these groups about planning the arrests. Tactical medic input should be solicited to ensure that the circumstances of the arrests are negotiated with safety of officers and protesters in mind. The author has been involved in such negotiations where the protest group wanted participants to sit down in a restricted area and go limp on arrest so that there would be good media photo opportunities of them being “dragged away” by the police. Eventually they agreed to stand up and walk after being arrested as long as the press was able to photograph the actual handcuffing procedure. This negotiation saved a lot of work, expedited the arrest process, improved overall safety and security of the operation for police and protesters, and probably prevented a few back injuries.

Prior to a major demonstration or planned civil disobedience event, some well-organized protest groups will hold training seminars and informational meetings for those who plan to participate. Determine whether your agency is monitoring or attending these meetings and ensure that relevant information is shared with the tactical medical team. Emergency medical technicians, nurses, and physicians are sometimes recruited to work with these protest groups. The briefings they provide at these meetings may give some indication of the tactics the group plans to employ.
Open the lines of communication with protest medics only if deemed appropriate by your intelligence unit or supervisor. Keep the contact professional and try to explore common medical ground. This will not only provide information about the medical capabilities protesters plan to deploy, but may also provide insight into the types of injuries and illnesses for which they are preparing. Of course, you must avoid providing the protesters, even their medics, with information concerning police tools, techniques, tactics, plans, assets, time lines, or schedules, and anything else that might breach operational security and compromise the safety or success of the crowd control mission.

Finally, the medical threat assessment should include the designation of primary, secondary, and specialty receiving hospitals for law enforcement personnel. Consider arrangements for injured officers that are unlikely to put them in contact with protesters or arrestees who require hospital treatment. There is no feeling worse than to be stripped of your service weapon and duty belt and find that the patient in the emergency department bed next to you is the offender you were attempting to arrest when you were injured! Plan several different transport routes from the area of operation to the designated hospital. Be aware that crowds may block customary or the fastest routes of travel and that an angry mob may be just as likely to overturn an ambulance as a police cruiser. Civil disturbances are sometimes hard to contain and the area of operation can easily expand beyond that which was originally anticipated. When possible, designate a stronghold area, such as a police station, as a staging area for injured officers in case they cannot be safely transported right away. Generally, the most skilled medical providers should be dispatched to staff this area because it may be necessary to care for patients in this out-of-hospital setting for an extended period of time. This can also be a useful role for highly qualified medical providers who are not tactically or operationally trained, although the utilization of this area should remain a contingency response and not deplete the field of needed medics.

TACTICS

A wide variety of mounted, dismounted, and horse-mounted tactics are in use by police departments today. Most agencies use some sort of field force organization to facilitate their response to crowd control situations. Tactical medics should be embedded within the field force platoons in positions that maximize their safety, mobility, and access to law enforcement casualties. This usually means being located deep within a formation or behind a skirmish line. The tactical medics must maneuver as part of the unit and under the direction of the unit commander. Although medical operators may sometimes be tempted to break rank and expedite rescue or treatment, they must avoid independent actions that jeopardize themselves and the rest of the unit.

It may be necessary to use a diamond or wedge formation to enter a hostile crowd and effect the rescue of a downed officer or citizen. In these circumstances, the medic(s) is generally positioned within the interior of the protective formation, near the team leader. The formation moves toward the casualty and provides the medic with access to the patient and temporary protection while the casualty is readied for transport. In general, this is considered a hot-zone operation and only those interventions necessary to save life, limb, and function are carried out. Otherwise, the patient is transported within the protective formation to a warm zone where more effective examination and treatment can be undertaken.

Regardless of the specific tactics used by your department, the following basic principles should be followed:

- A hostile crowd is really a hot zone, where extraction may be the best treatment.
- You will be focused on the patient—be sure the team is providing your protection as a matter of routine.
- When extracting a non-ambulatory casualty, take a litter and adequate people to carry the casualty. Body carries and drags can be exhausting and awkward, and will degrade unit mobility and effectiveness.
- Practice “officer down” immediate-action drills before they are needed.

SPECIFIC THREATS AND COUNTERMEASURES

Among the specific threats unique to the crowd control environment is the tendency for a seemingly innocuous gathering to escalate rapidly into a violent mob with little warning. For a variety of reasons, officers and their commanders tend not to deploy full riot control personal protective equipment (PPE) un-
til it is actually needed. This may be the result of an abundance of caution about provoking the demonstrators with a “hardened” appearance, an overly reactive media, or simply deference to the discomfort of PPE on a hot day.

Face shields may be up, helmets may be slung on duty belts, gloves stuffed in a pocket, and shin guards and gas masks kept in a nearby vehicle. Suddenly a bottle or two can be thrown and tensions begin to rise. Officers are keeping an eye out for the next attack and commanders are tightening up the formations and anticipating orders to take action. Everyone seems to forget about the face shields that are still up and the hands that remain bare. Somehow, it does not seem like the right time to run back to the cruiser to get a gas mask or to begin donning shin guards. As a result, officers can suffer very preventable injuries. It is the tactical medic’s responsibility to remind the commander about PPE at times like these. A simple command over the radio can direct alternate officers to don and check all PPE, much in the same way that half of the unit puts their gas masks on while the other half maintains the line. Within a few minutes, every officer can be fully geared up, many injuries will be prevented, and the effectiveness of the unit will be conserved. The tactical medic should recommend that these actions be practiced in training so that the PPE can be rapidly donned.

Caltrops, also known as star nails, have been used throughout history as anti-personnel devices against dismounted soldiers. More recently, they have been used mostly against vehicles to puncture tires and obstruct the flow of traffic, although they can be thrown at officers, as well as injure police canines and horses. Caltrops look like children’s jacks and are designed to be thrown and always land with at least one point up.5 Directions for their homemade manufacture and use,6 as well as commercial sources7 are easily located on the internet. The employment of durable leather gloves, helmets with face shields, and boots with a sturdy shank are the most common countermeasures, along with discriminating deployment of horse-mounted units and canine teams. Since these devices are often homemade, transported, and stockpiled in the area of the planned protest, the value of good intelligence leading to detection and seizure of the devices before their use should not be underestimated as an injury control strategy.

Trip wires and snag lines have been situated by protesters across routes of travel, consisting of fishing line, cord, or wire positioned at neck or ankle level. Unlike the booby trap defenses of marijuana patches, there have been no reports of fishhooks attached, but nonetheless this tactic can cause a multitude of injuries including sprains, lacerations, and blunt trauma from falls and the crush of a moving formation. The tactic represents a threat to canines and horses, as well as officers on foot. Basic countermeasures against this tactic include deliberate and controlled unit movements, good covert and overt observation of crowd activities, and appropriate PPE, such as helmets, gloves, body armor, and kneepads or shin guards.

Noxious liquids can be delivered by a variety of means including wrist rocket-type sling shots, balloons, squirt guns, and spray bottles. The liquid agents used have ranged from household ammonia and bleach to urine. Work with your hazardous materials personnel to deploy field identification capability whenever possible. Specific identification of the substance will not only enhance decontamination and treatment efforts when they become necessary, but will help alleviate officer anxiety about being exposed to an unknown material. It is important to educate officers about the real dangers of, as well as the myths associated with, anticipated exposures. For example, the average officer will feel very threatened by someone spraying him with urine from a supersoaker. However, urine is normally sterile and has an extremely low probability of disease transmission following cutaneous exposure. The officer who understands this is less likely to overreact and use inappropriate or unnecessary force. A decontamination station for police should be pre-established and officers should be encouraged to stage a spare uniform at a convenient, protected location.

Improvised incendiary devices enjoyed increasing popularity as a tactic prior to 2001. They sometimes consist of traditional “Molotov cocktails” or tiki torches disguised as protest sign poles. Occasionally, thickeners or enhancers have been added to the flammable liquid in an attempt to cause more serious injury and some unsuccessful attempts to ignite flammable metals, which burn at a very high temperature, have been reported. While the wearing of flame-resistant riot suits is a reasonable countermeasure, the initially undetected trapping of burning liquid under the suit has been reported. Usually the liquid gets to the back or chest after entering around the collar of the suit. Exterior flames are quickly extinguished by fellow officers, but the flames under the suit are not visible and go undetected until the burning officer feels pain. During these few seconds, serious burns can occur. All officers
should be trained and practiced in an immediate action drill for an officer on fire. The first person to recognize such a situation should call out, “Officer burning!” to activate immediate action. The term “fire” is avoided to prevent it from being misinterpreted as a command to discharge a weapons system. The affected officer should be brought down if not already down, and the flames smothered using the “stop, drop, and roll” method. Some units have successfully deployed an aerosol product marketed as Cold Fire® fire suppressant. It is available in 12-oz aerosol cans and can be issued to multiple officers in a platoon. The suppressant rapidly removes heat from any surface it contacts, terminating combustion, and encapsulates flammable liquids effectively isolating the fuel source and preventing re-ignition. In tests conducted at the U.S. Park Police Special Forces Branch, this product sprayed down the collar of a Nomex® coverall effectively, rapidly, and reliably extinguished burning gasoline. Such fire suppressant adjuncts should always be employed in conjunction with the “stop, drop, and roll” techniques, not in lieu of them.

As noted earlier, blood simulants are frequently used as props during street theater or for marking buildings during protest “direct action” tactics (e.g., placing bloody handprints on the entry way of a targeted corporation’s headquarters). Occasionally, red liquids are thrown on police officers in an attempt to intimidate, distract, or provoke them with the implied threat of a blood-borne pathogen exposure. The substance is rarely blood, and if it is, it is most often animal blood derived from domestic food processing or preparation. Nonetheless, the tactical medic should be prepared to take split samples of any red liquid to which officers are exposed, conduct field screening to determine whether the substance is indeed blood, and preserve the sample for laboratory analysis, including virology and species-specific determination. The latter sample should be handled in accordance with departmental procedures for evidence management and documentation, since the courts may be receptive to more serious charges if intent to do harm can be demonstrated through the deliberate use of human blood or infectious human blood.

A blood-sampling protocol and kit should be developed and used whenever officers or other personel risk exposure to a blood-like substance or when such a substance is used in the possible commission of a criminal act. This field protocol should provide documented presumptive testing to determine whether the substance is blood. Several forensic tests are available for field screening, including a very inexpensive and easy-to-use leucomalachite green test. Leucomalachite green, also known as MacPhail’s reagent, is a colorimetric test and demonstrates the presence of peroxidase-like activity. This activity can be from hemoglobin or from certain other materials that will cause a false-positive test. It is a presumptive test for hemoglobin, but does not distinguish the source as human or animal. (Although bedside clinical tests for occult fecal blood have been used for this purpose in the past, they are not tested and approved for this purpose and may come under criticism if used for evidentiary purposes. Therefore, the inexpensive, commercially available forensic tests for presumptive testing of environmental blood are recommended.) More sophisticated field tests are available to determine whether the blood is of primate origin. If field screening is positive, the remainder of the split sample should be preserved and transported to a forensic laboratory capable of doing a virology screen and definitive species-specific determination.

CONCLUSION

The general principles of tactical emergency medicine apply to the civil disorder environment. This environment can be characterized as resource poor, prolonged transport, austere, and sometimes hostile. Although the casualty rates for crowd control operations are within the range that might be expected when compared to other high-risk operations, the actual number of casualties can be enormous due to the large number of participants at risk for injury. Injury control, medical intelligence analysis, and preplanning play a significant role in reducing injury occurrence, limiting severity, and preserving operational capability. Some medical threats are unique to civil disorder operations and specific countermeasures should be implemented to mitigate these.
REFERENCES