



Tactical medic with Eau Claire County, WI, SWAT team during training exercise.

# REALISTIC FIELD MEDICAL KITS

## What to Include—And Why

Tactical medical care is a hot topic.

**T**he basic principles of this care were developed for the military but are equally useful in the tactical law enforcement environment. This care begins at the point of wounding and extends to definitive care or surgical intervention. The first stage of treatment begins with care that is self administered or given by your teammate. Carrying a medical kit of some type will assist in this immediate care.

A great deal of debate and discussion has been devoted to the contents of this medical kit. These kits will be used mainly by personnel who are not medics and have only basic medical skills. This highlights the need to keep the contents basic. In fact, effective basic medical care is what is really needed initially.

So how do you decide what to include in your kit? Do you throw some supplies into your pocket and call it good?

Do you purchase the high speed, high priced all-inclusive kit? Do you take the “expert” advice of the nearest self-proclaimed tactical medical specialist?

The military has conducted a great deal of research to identify the causes of death on the battlefield. This research has helped identify the injuries that lead to death and the ones that are preventable with effective treatment. If we are going to key in on these preventable deaths, then our kit should help us accomplish this task. This should be the minimum requirement. Keep in mind that more gear is not necessarily better and can actually serve as a distraction in a time of crisis.

In reality, many more injuries are sustained in training or are of a minor nature. The need to treat these minor injuries should also be considered when assembling your kit. So if we are going to

» BY DR. KEVIN ASTON

build a kit to address both major and minor injuries, we will need to evaluate the contents of such a kit very carefully. Our kits will be much more effective if we apply some basic principles when selecting contents. Remember that this discussion is about a kit that is to be used in the first minutes after sustaining an injury, not a kit for extended care.

### BASIC PRINCIPLES OF INDIVIDUAL MEDICAL KIT SELECTION

- 1 - Operational Environment
- 2 - Effectiveness
- 3 - Skill Level
- 4 - Kit Size and Weight
- 5 - Cost
- 6 - Individual or Team Kit
- 7 - Single vs. Multi Function Item
- 8 - Availability
- 9 - Durability



Medics of the 1/110th INF training with a SLICK in Iraq.

The **operational environment** includes several considerations for your kit. For the purposes of the military and tactical law enforcement, our main consideration is the treatment of penetrating trauma. We should also consider minor injuries that could impact our ability to conduct the mission.

**Effectiveness** refers to the ability of an item to actually do the job it was intended to do. Every item you place in your kit should be effective. You need to evaluate each piece of equipment you decide to carry. For some items, this is relatively easy. For other items, this is not always so clear. Choosing which tourniquet to carry is one example. There are several on the market that are effective. There are others that have been proven to be ineffective. Do your homework.

**Skill level** refers to the team member(s) who will be utilizing the kit. We are talking basics here, so keep the kit basic. There is no sense carrying items that you or your team are not trained on or allowed to use. Often items are recommended or chosen for carry that do not follow this principle. Examples of this include certain medications such as narcotics, items for surgical airways and items for fluid resuscitation.

**Kit size and weight** limitations will influence your kit. It is not feasible to carry a huge kit for any and all situa-

tions. Likewise, carrying too little may not address the threat. A compromise on size and weight must be found. Most kits are carried in a separate pouch of some sort. It would be reasonable to expect your kit to fit into your trouser cargo pocket or pouch on your load carrying equipment.

**Cost** is a factor that most need to consider. If you want the high-speed gear, expect to pay more. There are many products out there that do the same job. A good example of this can be seen with trauma dressings. The old military trauma dressing works and is cheap. Several of the current crop have some improvements and gimmicks to go along with the higher price. You need to determine if it is really worth the extra cost to have the latest and greatest. When you start discussing items like hemostatic/blood clotting agents or specialized burn dressings, your costs will quickly increase.

**Individual or team kit?** We are talking about a kit to treat an individual, not the whole team. Keep this in mind when determining how many dressings, airways, and tourniquets you really need to carry. We tend to overdo it. Extra supplies are carried in a larger team kit.

**Single vs. multi function items.** This principle relies on your ability to improvise and adapt. An item that can be used for multiple functions is clearly

beneficial. A burn gel dressing can really only be used for just that. A dry sterile dressing can function as a burn dressing with some water poured on it. A trauma dressing that has both absorbent pad and elastic wrap has limited functions. An ace wrap and roll of gauze can accomplish the same thing and be used for other things like wrapping a sprained ankle or cutting to make smaller dressings. A CAT tourniquet can only be used for a single function, but a cravat and stick can accomplish the same thing in addition to being used as a sling for an arm injury. I think you see my point. This is not to say that single function items should not be used. For critical items like the tourniquet, you may be better served by a dedicated item.

**Availability** of items also influences the contents of your kit. What is available to the military is not always available to the LE community. Various factors hinder availability of certain products, ranging from items on back order to items that require medical direction and protocols. Even a simple item such as the CAT tourniquet was not obtainable by the infantry battalion I served with earlier this year in Iraq. We resorted to saving the ring from Gatorade bottles to use with cravats and a stick to function as pre-made tourniquets. No sense placing an item that you cannot obtain on the packing list.

**Durability** is an important factor depending on the environment that you will be working in. This can include the durability of a specific item or the ability to protect the items in your kit. This may be as simple as placing them in a Ziploc bag or a sealable pouch. Things like alcohol wipes and glass vial preps are a couple of examples. Even a simple item such as a cravat may not be durable. Just compare the military issue cravat with the cheap versions often substituted.

So what items do we specifically need? We need to have items that will be used to treat major life-threatening injuries. We can group these into a category called the "Major Kit." We can then group the other small items that will treat minor injuries in the "Minor Kit."

## MAJOR KIT

Military research has identified the



## SUGGESTIONS FOR MINOR KIT

ITEM	AMOUNT
Band-Aids	5 to 10, various sizes
Safety pins	2
Gauze pads	2
Gloves	1 pair
Ziploc bag	1

### MEDS

Tylenol	1 pkg.
Ibu or Nap	1 pkg.
Decongestant	1 pkg.
Anti-diarrhea	1 pkg.
Triple ABX ointment	2 pkg.
Antiseptic wipes	2



## SUGGESTIONS FOR MAJOR KIT

ITEM	AMOUNT
Trauma Dressing	1
Tourniquet	1
Roller gauze	1
Elastic wrap 3" or 4"	1
Antiseptic wipe	2
NPA 28fr - 34fr	1
Gloves	2 pair
Duct tape	3-5 yards
Ziploc bag	1
Triple ABX ointment	1 package

## POSSIBLE ADDITIONS TO MAJOR KIT

Hemostatic agent  
 Second trauma dressing or gauze  
 Asherman Chest Seal  
 Trauma Shears  
 Quality Cravat  
 14 ga 3.25" angio

three primary causes of preventable battlefield deaths: uncontrolled hemorrhage from an extremity wound, tension pneumothorax and airway obstruction. Our Major Kit should, at a minimum, include items to help us treat these three conditions.

### Control Bleeding

Hemorrhage control can be achieved by several methods. The operational environment may not allow the standard means of direct pressure, pressure dressing, elevation and pressure points to control the bleeding. If the care is being given while under fire, you will not be able to use these methods, as it will place both the patient and yourself at risk. If the wound is located on an extremity, a tourniquet may be the appropriate first step. Our kit will require both a tourniquet and bandage material to control this bleeding depending on the operational environment.

The bandage material should be substantial enough to handle a large wound. The ability to dress two wounds is important, as you may have both an entrance and an exit wound from a penetrating injury. A good way to address the need for two wounds is to carry a single trauma dressing for one wound and some form of roller gauze that can be used for the other wound. There are many different types of trauma dressings on the market. An example of these dressings includes the Emergency Trauma Dressing, Cinch Tight Bandage and the Bloodstopper.

Roller gauze also comes in various forms and sizes. This gauze can be wrapped or packed into a wound. It can also be formed into a sling, cut into smaller bandages or wrapped around a joint for support. Our kit needs equipment with this kind of versatility.

An elastic-type wrap can also be used for hemorrhage control. While it does not have an absorbent pad, it can provide compression. Some trauma dressings combine the pad and elastic wrap. A separate roll of gauze and elastic wrap will accomplish the same job cheaper and offer more options.

The tourniquet carried must be effective and easy to use. The ability to be applied with only one hand is a benefit. There are several that have proven to be both effective and easy to apply. Several have

proven to be ineffective, such as the One Handed Tourniquet (OHT) NSN 6515-01-504-0827 and the Strap and Buckle Tourniquet NSN 6515-00-383-0565. Keep in mind that just because a product has an NSN and is military issue does not ensure that it is effective. Tourniquets such as the Combat Application Tourniquet (CAT) by Phil Durango LLC, Mechanical Advantage Tourniquet (MAT) by Bio Cybernetics International, Tourni-Kwik 4 (TK-4) by H and H Associates Inc., and the Ratcheting Medical Tourniquet (RMT) by M2 Inc., are effective options.

Some might consider hemostatic agents a necessary component. But if you apply the above principles, you might think otherwise. There has also been concern about these agents and potential harm to the casualty. I think the concept of these agents is very promising. Caution should be exercised until we have clear evidence that these agents are beneficial. Local protocols and medical direction can influence the use of these agents by your team.

### Treat Tension Pneumothorax

A tension pneumothorax (buildup of air under pressure in the pleural space) can rapidly lead to death. Recognizing this condition can be challenging for any medical provider. Effective treatment involves skills that are not available to most basic level providers. A 14-gauge 3.25-inch over the needle catheter may be used to perform a pleural decompression. This is a skill that requires training and could potentially cause harm if used incorrectly. If you're properly trained and have the protocols and medical oversight to perform this procedure, then this catheter may be appropriate for your kit. A specialized dressing called the Asherman chest seal (ACS) was designed to provide an occlusive external dressing that would allow air to escape and in theory prevent a simple pneumothorax from becoming a tension pneumothorax. But you should understand that this dressing does not treat a tension pneumothorax; it may only help to prevent it. Identifying a pneumothorax or tension pneumothorax can be a difficult thing to do in the tactical environment. If you really feel compelled to cover the wound with something, then the ACS is an appropriate choice.

### Maintain Airway

Probably the best piece of equipment to

accomplish this task is a skill(s) and not really a piece of equipment. The ability to open and clear an airway is critical. Then placing the casualty in an appropriate recovery position is vital. The recovery position allows gravity to assist the drainage of secretions and helps keep the airway open. There are a couple of airway devices that are useful for our kit. The Nasopharyngeal Airway (NPA) is the best choice. The insertion of this airway is simple to learn and carries little risk. It may also be placed in a patient who is conscious. It does not overly stimulate the gag reflex. A single adult-size NPA is appropriate for our kit. Choose a 28fr (small adult) to 34fr (large adult) size for your kit.

**Gloves**

Protection from bodily fluids is important, so gloves should be worn. There are a couple of brands available in subdued colors. The Tactical Defender nitrile gloves from Bound Tree Medical are an olive drab color. The Black Talon latex gloves from North American Rescue Products are black. Carry at least two pairs in your kit.

**Tape**

There are many options available; the ability to stick to something when wet and dirty is important. There are several types of tape normally used by medical providers that are made from cloth or plastic. This type of tape was not really designed for combat or tactical environments. A small roll of duct tape will work for our purposes, is cheap, and can be used for other functions. H & H Associates sells a small roll designed for this purpose. You can also wrap the duct tape of your choice around the barrel of a pen and make a nice small roll. Several yards of tape should be enough.

**Ziploc Bag**

A sturdy bag of this type will help protect the contents of your kit. It will also keep it organized if the kit is stored in a pouch. The bag will also have many other uses such as an occlusive dressing, impromptu garbage bag, and a water container for irrigation, just to name a few.

**Antibiotic Ointment**

A small packet of triple antibiotic ointment has many uses. It can be used to lubricate the NPA prior to insertion, apply to minor wounds to help prevent infec-

tion, apply to dressings to avoid sticking to wounds, and apply to dry cracked lips, just to name a few functions.

**Antiseptic Wipes**

These can be used to clean minor wounds and to clean body fluid contaminants from your skin or equipment. Gel-type hand cleansers do not work well in the field environment. You need cloth wipes to remove the substance from your hands and not just smear it around.

**MINOR KIT**

The minor kit is not essential to treat life-threatening injuries, but will be used more often than you think. I recommend always having some form of Minor Kit with you. I also recommend that it be carried with the Major Kit. I do think that it should be in a separate Ziploc bag and the Minor Kit be carried on the bottom of the pouch with the Major Kit on top and immediately available.

Some folks may disagree about the "need" for a Minor Kit in the context of this discussion. Considering the frequency that you will use this kit, its small size and low cost, I feel that it is worth considering. Here's what should be included in a Minor Kit:

**Band-Aids:** various sizes and shapes available. Carry five to ten total

Safety pins: two large

**Gauze pad:** 2"x2" or 4"x4". Carry two total

**Gloves:** one or more pairs

**Antiseptic towelettes:** two

**Medication:** Single-use OTC packets. Ibuprofen or Naproxen (pick one), Extra Strength Tylenol, Decongestant, Anti-diarrhea, and Triple antibiotic ointment. Individual-use packages are sold at most gas stations and convenience stores. These packs usually contain one or two tablets.

**TRAINING**

It makes no sense to carry this kit if you do not know how to use it effectively. The skills needed to utilize the contents are easy to learn. There are several skills that each team member should be trained in. This training should be geared toward the combat/tactical environment. Simple demonstration of a skill is not adequate or realistic training. I have found that sce-

continued on page 87

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**REALISTIC FIELD MEDICAL KITS » continued from page 59**

nario-based training works best for this. It adds a bit of realism and stress when conducting this type of training—and it is fun. Topics of training should include:

- Rapid patient assessment
- Hemorrhage control / Tourniquet application
- Opening and clearing an airway, recovery position
- Insertion of a NPA
- Rapid casualty evacuation and carries
- Treatment of a tension pneumothorax per medical control direction
- Treatment of minor injuries/illness

Rapid casualty evacuation and carries deserve special mention. For those injuries that are truly life threatening, transport to a medical facility is a top priority. Often training only deals with the stationary treatment of the casualty. We must constantly train and practice the evacuation component of treatment. This should include not only how to move the casualty, but the components involved in the transport. The entire casualty evacuation should be practiced until it becomes second nature. Trying to figure this out for the first time in a real-life situation is not acceptable.

Learning the many different types of manual carries is important. It is a learned skill, but is also useful for team building and physical training. There are several different types of tactical litters on the market. Before you spend your money on this equipment, you should apply the nine principles we discussed earlier. There are several litters out there that are described as “compact” or “lightweight.” You should determine how they achieved this. Is the material strong enough? Is the size appropriate to get the job done? Ask yourself this question: which casualty will I need to carry? These might include someone who is unconscious or has an altered mental state or is unable to ambulate for some reason. Some of these compact litters will work in training, but not in the real world. In training, our “casualty” is awake and has control of his/her body. So when you place your training victim on a litter that is shorter than full length, the “casualty” will support and balance himself.

Now think real world: your casualty is unconscious and completely flaccid. How can he be supported on that compact litter? Or your casualty cannot ambulate because of a broken lower leg. How are you going to support that unstable lower limb while carrying him on a compact litter? My point is this: if you are going to purchase a litter, make sure it will support the entire casualty. It should make tactical evacuation easier for both the team members and the casualty.

There are several full length and lightweight soft litters on the market. A couple examples include the SLICK (Soft Litter Individual Carry Kit) by ARUC Systems LLC, and the Stingray Poleless Litter by North American Rescue Products.

**CONCLUSION**

Remember that this is just *a* way of doing things and not *the* way. Having training and equipment of any type is better than none at all. Learn to take care of yourself and your team. Your lives depend on it. ☺

[Special thanks to CPT Chris Crocker PA-C for his assistance with this article.]

**LIST OF TACTICAL MEDICAL PRODUCT SUPPLIERS:**

Adventure Medical Kits  
Dept. S.W.A.T.  
P.O. Box 43309  
Oakland, CA 94624  
(800) 324-3517  
[www.adventuremedicalkits.com](http://www.adventuremedicalkits.com)

ARUC Systems LLC  
Dept. S.W.A.T.  
117 Skyline Drive  
Eau Claire, WI 54703  
(715) 864-9495  
[www.arucsystems.com](http://www.arucsystems.com)

Bio Cybernetics International  
Dept. S.W.A.T.  
1815 Wright Avenue  
La Verne, CA 91750  
(800) 220-4BCI  
[www.matourniquet.com](http://www.matourniquet.com)

Bound Tree Medical  
Dept. S.W.A.T.  
P.O. Box 8023  
Dublin, OH 43016-2023  
(800) 533-0523  
[www.boundtree.com](http://www.boundtree.com)

Chinook Medical Gear, Inc.  
Dept. S.W.A.T.  
120 Rock Point Drive, Unit C  
Durango, CO 81301  
(970) 375-1241  
[www.chinookmed.com](http://www.chinookmed.com)

H & H Associates  
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4173 GW Memorial Highway  
Ordinary, VA 23131  
(804) 642-3663  
[www.cinchtight.com](http://www.cinchtight.com)

M2 Inc.  
Dept. S.W.A.T.  
P.O. Box 386  
Winooski, VT 05404  
802-655-2364  
[www.m2intl.com](http://www.m2intl.com)

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Dept. S.W.A.T.  
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Greenville SC 29615-4619  
(864) 675-9800  
[www.narescue.com](http://www.narescue.com)

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1949 5th St. Suite 110  
Davis, CA 95616  
(800) 776-5310  
[www.promedkits.com](http://www.promedkits.com)

Tactical Response Gear  
Dept. S.W.A.T.  
3350 Hwy. 70 East  
Camden, TN 38320  
(866) 822-4327  
[www.tacticalresponsegear.com](http://www.tacticalresponsegear.com)

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Dept. S.W.A.T.  
4 Fairfield Blvd  
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[www.z-medica.com](http://www.z-medica.com)