



PHOTO CRAIG JACKSON

CRIME SCENE CRIME SCENE INTERACTION

Provide patient care while preserving evidence

By Daniel Limmer, EMT-P

YOUR AMBULANCE IS DISPATCHED TO A CALL FOR A shooting that just occurred. After discussing a plan with your partner en route and verifying that police have secured the scene, you approach the residence. A police officer meets you at the door. He tells you, "One of you can go in to make sure he's dead. Just one."

Looking through the door, you observe a teenager lying on the living room floor face up. You see a puddle of blood next to him. From this distance, he appears to have a chest wound.

You immediately realize the officer's order limiting entrance to one EMS provider is a problem. You'll likely try to resuscitate this patient. The shooting just occurred, and although the wound could prove fatal, it by no means would stop you from resuscitating—even in the absence of vital signs.

You tell the police officer that it will take your entire crew and a responding engine company crew to work on this patient. He's visibly annoyed by your request. About 45 seconds have been wasted during this encounter. You decide to enter alone and evaluate the patient. Careful

not to step in the blood on the patient's left side, you approach the patient—a young male with an obvious gunshot wound to the chest.

You note a hole in the patient's shirt between his left nipple and the sternum. You check for respirations and pulse and begin CPR with a pocket face mask.

Outside the residence, the engine company lieutenant has talked to the police sergeant, who just arrived. The sergeant tells the officer at the door to stand aside and let the remainder of the engine crew inside. The two minutes that have passed seem like an eternity.

"OK," you tell your partner. "He has a gunshot wound to the left chest, has bled quite a bit and is in arrest. Cut the shirt open and get an occlusive dressing on that wound while we start CPR and begin to work this trauma code." The engine crew starts CPR, and your partner cuts the shirt open six to eight inches away from the hole and seals the wound.

She removes the shirt and places it off to the side in an area where no blood has collected. Then she connects oxygen to the bag-valve mask and hooks up the ECG monitor.

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You and your crew work the patient primarily from the right side to avoid stepping or kneeling in the blood. This accomplishes two things: It offers bodily substance isolation (BSI) protection for you and preserves the on-scene evidence for the police.

The lieutenant radios the responding helicopter crew with an update and asks a firefighter to retrieve a backboard so the patient may be removed promptly from the scene. Once the helicopter arrives, you quickly move the patient. He's transported to a trauma center where he expires from his wounds a short time later.

Police are from Mars; EMS personnel are from Venus

A crime scene is a place where any part of a criminal act occurred or a place where

their case depends on it. As an EMS provider you need to deliver quality patient care while still considering evidence preservation. Complicating things is the fact that forensic techniques, such as DNA and blood spatter evidence, are household words. Criminal juries expect to see evidence meticulously collected and analyzed.

Additionally, you may have to testify in court about your actions and observations. Police have recently lost some credibility in jurors' minds due to high-profile cases with errors and false testimony; this may cause juries, prosecutors and defense attorneys alike to hold your testimony in high regard.

The dynamics of a crime scene often act as a pressure cooker for police as well as EMS. EMS personnel frequently find patients with significant, life-threatening injuries, such as gunshot wounds and stabbings. Police face a major crime scene and



PHOTO MARK IDE

A crime scene puts extraordinary pressure on EMS personnel to help preserve as much evidence as possible for the police, but continue to provide appropriate, speedy patient care.

evidence pertaining to a crime may be found.¹ It's also a place where EMS skills, interpersonal skills and crime-scene-preservation skills are all put to the test.

The opening scenario could easily have portrayed the police as talented, compassionate sleuths and the EMS and fire personnel as bumbling their way through the crime scene destroying all evidence they touch. Such scenes unfold both ways and often settle somewhere in between.

Providing patient care at crime scenes poses unique challenges for EMS providers. Police are under intense pressure to identify evidence and prevent contamination;

the responsibility of maintaining it. Both must live with the knowledge that criminals may go free if the evidence is contaminated or improperly gathered.

Unless you work in an environment where shootings occur daily (and likely even then), you'll probably find your heart racing as you arrive on scene. Police feel the same way (although they're less likely to tell you this; *it's a cop thing*). Remember, both the police and EMS are under considerable stress. This stress often turns scenes like the opening scenario into shouting matches—or worse. Sometimes dropping back briefly and avoiding a major conflict

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will get you further ahead in the long run.

Finally, police and EMS view crime scenes differently. A person lying on the floor in a puddle of blood is a patient to you. To the police, it's a body. That's a major difference.

In EMS we have a platinum 10 minutes inside a golden hour. We must move quickly for our patient's sake. It's good medicine—and it keeps our names out of the quality improvement committee report.

Police, on the other hand, have hours to days to sift through a crime scene. Police may post an officer at a crime scene for 48 hours or more in the event forensic personnel wish to return to the scene.

should always try to work with police and preserve evidence, your No. 1 priority remains patient care. Think of your role in evidence preservation as one you do in conjunction with your patient-care role—not instead of.

Evidence

Evidence is defined as any testimony, documents or tangible objects that tend to prove or disprove the existence of an alleged fact.² Obvious examples of evidence include a knife, gun and blood. Occasionally, a perpetrator drops a set of keys, a wallet or photo identification on scene—definite clues. However, finer points, such as the condition of the scene



PHOTO CRAIG JACKSON

EMS providers have just minutes to provide lifesaving patient care, while police may have days to sift through evidence. These differing approaches predispose crime scenes to conflict between EMS and law enforcement.

Police can take their time—a luxury not afforded EMS.

These differing views mean we're set up for conflict even before we start. But it can and does work. Police can catch the bad guys; EMS providers can still save a life or two along the way. To successfully work crime scenes, providers must:

1. Understand the differing roles of police and EMS at crime scenes;
2. Realize that crime scenes are stressful—and have the desire to keep their cool, even in the face of conflict; and
3. Know the types of evidence they may encounter and how to preserve it.

Important note: Although EMS providers

or an even more subtle clue, often make the case. And evidence won't be found unless we have the mindset to identify and preserve it.

Evidence may be found anywhere. If a person is found murdered in the bedroom of a house, evidence isn't limited to one room. A perpetrator could have washed their hands in the kitchen, looked for narcotics in the bathroom, left bloody footprints throughout the house, stolen a VCR from the den or tried to hotwire a car in the garage. The scene has a much greater radius than we realize. Even the police forget this one from time to time. So don't hang out, use the bathroom or get a drink of water from a sink anywhere near the crime scene.

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Fingerprints

Your body's oils and moisture transfer your fingerprints, unique ridge patterns, to surfaces you touch. Fingerprints can be obtained from a wide variety of surfaces—not just the smooth surfaces you see dusted for prints on television. Prints can be obtained from paper, porous metals and many other surfaces. Automated fingerprint

it here as the case that made forensic evidence, especially evidence involving blood, a household word. Juries now expect to hear testimony about forensic evidence—even in cases with 12 eyewitnesses and a confession. The pressure on prosecutors and forensic technicians to obtain and present accurate, uncompromised evidence of this nature has never been greater.



PHOTO CRAIG JACKSON

When responding to crime scenes, EMS providers should avoid contaminating the evidence. Don't walk through blood or cover a deceased victim with a blanket that could leave fibers not associated with the crime.

computers can identify a suspect from millions of records in a matter of minutes.

Preserving fingerprints requires two actions: not obliterating those left behind and not leaving your own. Wearing latex or vinyl gloves usually prevents us from leaving our own prints, but they won't prevent us from destroying prints left behind. Remember, fingerprints are simply moisture. Just a light touch can destroy valuable evidence.

Thus, to preserve fingerprints, don't touch anything you don't have to. If you must touch something, minimize your contact with it or handle it from a point the perpetrator might not have touched it. (See Table 1, p. 80, and Handling Firearms at the Crime Scene, p. 81.)

Blood & body fluids

The O.J. Simpson case gained notoriety for a number of reasons. We must mention

Blood has many identifying features, including A-B-O blood type, Rh factor and DNA content. Identifying a perpetrator and obtaining a match on any of these factors, especially DNA, is powerful evidence of guilt—as long as the samples have not been contaminated or tainted. This contamination can occur when the samples are improperly collected—or when samples are mixed prior to collection. Even the inference of contamination may be enough to discredit the evidence.

EMS personnel come into contact with blood and body fluids when they interact with the patient and their surroundings. Remember, blood from different people cannot be differentiated without laboratory analysis. Therefore, it's technically impossible to know whether the blood on the patient's shirt or the floor near the patient is from the patient or another person. *Example:* If the providers in the opening scenario

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dropped the shirt they cut off the patient in the nearby pool of blood, they could be combining blood evidence from two sources—contaminating the evidence.

Blood and fluids may be contaminated if someone walks through it and tracks it to other areas, puts clothes cut from a patient into a single pile (the blood on the shirt may be the patient's, but the blood on the pants could be from an assailant) or combines samples (throwing the bloody clothes on another bloody area). Even touching something with bloody latex or vinyl gloves can contaminate the evidence.

Preventing contamination revolves around avoiding the situations listed in the previous paragraphs. Avoid walking through blood. You'll likely cut a trauma patient's clothes off, so don't pile all the clothes in one location or in another area with blood or body fluids present. Finally, change your protective gloves between patients. Also, follow the instructions of your local police and crime laboratory for evidence-preservation guidelines.

Hair & fibers

A single hair or fiber can reveal an incredible amount of information. From hair, experts can learn the species, part of the body it came from and color. Fibers can be differentiated by material (e.g., cotton,



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Evidence may be hard to see or recognize. This bullet practically disappears into the pavement.

PHOTO ROXANNE EBERHART



Never cut through entrance or exit holes in a victim's clothing. Clothing removed from a victim may provide evidence that could help police determine the range at which a weapon was fired or the patient's position at the time of the injury.

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Be sure to tell the police about any spontaneous statements from the victim (or perpetrator) on scene.

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- ▶ If your employer does not tell the truth on a regular basis or follow through on promises.

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synthetics), color and origin (clothing, carpet, etc.).

Locard's Exchange Principle states that when two objects come in contact, a cross-transfer of evidence takes place.³ Consider a person killed in a house then placed in a vehicle's trunk and transported to a remote location. The body is found in the woods some time later. When the victim was killed and fell to the carpeted floor, pieces of that carpeting were transferred to the victim; fibers from the carpeting in the car trunk also adhered to the victim. In addition, parts of the victim (e.g., hair and clothing fibers) remain in each location. A careful analysis of the victim's clothes and the crime scene in the woods could reveal these items from the original crime scene.

EMS providers may find it difficult to envision how to preserve evidence they can't see. A general rule applies: Don't touch things if you don't have to, and if you must, touch as little as possible. The simple act of clearing off a coffee table to set up your drug box or cardiac monitor in a crowded room can ruin precious evidence.

This may also come into play when bagging evidence, such as the victim's clothes or personal effects. When evidence is bagged, the bag itself then becomes evidence and can never be discarded. (Fibers may fall to the bottom of the bag.) Follow your local guidelines for bagging evidence. In many cases it may be best to cut off clothes, put them in a place that will prevent contamination and let the police do the bagging.

Wounds

Wounds themselves and the clothing penetrated are also important evidentiary items. Never cut through the entrance opening that a bullet or knife makes in clothing. These openings may contain residue useful in determining how close to the victim the weapon was fired or the type of weapon used.

Lining up punctures in clothing with knife wounds on the body may also help investigators determine the position of the victim when they were stabbed. If the victim was turning to run, for example, the hole won't line up when the shirt is placed over the victim in a normal standing position.

Your patient care report, documenting



PHOTO DANIEL LUMMER

Fingerprints can be obtained from a wide variety of surfaces, including paper, porous metals and many other surfaces.

wounds and the patient's complaints, may later be important evidence itself.

Miscellaneous evidence & observation

EMS providers must realize that what seems unimportant to them may be extremely important evidence to the police. Consider these crime scene events: EMS providers are sent by a hospital life-line program to check on an elderly victim who didn't reset their device. They arrive to find a dark apartment, turn on the light and find a homicide victim. When did the crime occur? It probably occurred during the day. (The crew turned on the light.)

An EMS crew arrives on scene and observes an unconscious patient lying near the door. They enter and begin care. It's later determined the patient suffered blunt trauma to the head from an assault. When asked, the providers can't recall whether the door was unlocked, ajar, pried or forced. Not only is this an important clue for your own personal safety, it's also an important scene observation. In a case such as this, observations made by the EMS crew are important parts of the case.

In another homicide, EMS providers responded to find a blaring radio. They turned the radio off so they could run the cardiac arrest and talk to medical control, but remembered to tell police officers about the loud radio. The suspect, who confessed to the murder, told police officers that he had listened to the radio while he searched for valuables after killing the elderly victim. The fact that this was communicated to the police gave the suspect's statements credibility. (Believe it or not, people confess to

PHOTO DANIEL LIMMER



Blood can spatter in characteristic patterns that indicate facts about the injuries, the actions that caused them and the physical locations and actions of the victim and perpetrator(s).

PHOTO EDDIE SPERLING



EMS providers should communicate openly with police officers. For instance, let them know the position in which you found the patient, what objects you disturbed on scene and whether you turned on a light or turned off a radio. You can always come back to the scene following transport to convey such information.

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crimes they didn't commit.) Knowing accurate details about the scene helps police and prosecutors build a solid case.

Avoid using telephones at a crime scene; redial and advanced features, such as *69, can identify past activity. Also avoid bathrooms, kitchens and any other part of a scene you don't have to be in.

In one notable case, an EMT walked to an outer area of a scene involving an obvious death to wait for the coroner. He had several cigarettes while waiting. A police officer on a perimeter canvas saw the fresh butts and thought the perpetrator had used the area as a lookout position. The butts were collected as evidence. The embarrassed EMT later reported the cigarette butts were his.

One final and important point: If you disturb something, for any reason, never replace it in what you believe was the original position. Leave it where it currently rests and inform an officer on scene.

Communication

One of the most important aspects of crime scene interaction is communication among all personnel working on scene. Police and EMS should communicate about the actions and observations of the EMS personnel on scene. Even the necessary acts of treating and transporting the patient will cause significant activity and change at the scene. *Example:* While sitting on a sofa, a man gets shot. He is found lying on the couch. EMS finds the victim in cardiac arrest and moves him to the floor to begin resuscitation. In the process, his foot drags a stack of papers onto the floor. The patient is treated and transported without the police being told where he was initially found.

Police on scene see blood on the couch, blood on the floor and papers scattered on the floor. They believe a scuffle occurred, resulting in possibly two victims (or an injured perpetrator). Communicating your initial observations to the police and telling them what you did on scene will prevent confusion and false assumptions.

Other important items to mention to the police: spontaneous statements from a perpetrator or the victim on scene, suspicious things you saw or heard, the conditions present when you arrived, the extent of the patient's injuries, where you will transport the patient and other items specific to your scene.



PHOTO DANIEL LIMMER

A person lying on the floor in a puddle of blood is a patient to you. To the police, it's a body.

Table 1: Preserving Evidence on Scene

EVIDENCE	DESCRIPTION	PRESERVATION METHODS
Fingerprints	Impressions left on surfaces with oils and other moisture from the fingertips. Unique ridge patterns help identify suspects.	Wear protective gloves to prevent leaving your fingerprints. Avoid touching anything you don't have to. Touch items in places where fingerprints may not be found.
Blood and body fluids	Any substance you would take BSI precautions for is a substance with evidentiary value. Fluids can be examined for blood type and DNA.	Do not contaminate or cross-contaminate fluids or fluid stains (don't step in them, transport fluids to other places or mix items stained with fluids).
Blood spatter	During commission of a crime involving injuries, blood is left on scene in characteristic patterns that indicate facts about the injuries, the actions that caused them and the physical locations and actions of the victim and perpetrator(s).	Do not step in, smudge or attempt to clean up any blood stains found on scene. If you leave blood (e.g., starting an IV) at a secured crime scene, leave it in place and notify police.
Footprints and tire tracks	Shoes, vehicles and even dragged bodies leave characteristic marks.	Avoid stepping in or driving over tracks.
Gunshot and knife wounds/clothing	Victims are often shot and stabbed through clothing, leaving one or more holes or tears. These holes may contain gunshot residue or, in the case of knife wounds, identify the relationship of the clothing to the wound on later examination.	Cut at least six inches away from any hole caused by a knife or gunshot.
Microscopic evidence (fibers, trace or particulate)	Fibers and hairs can be analyzed for the source (human, animal, plant) and, in the case of hair, DNA and the part of the body it came from.	You typically can't see these items, making them difficult to preserve. Avoid handling anything you don't have to. Handle evidentiary items gently.
Misc. evidence (e.g., conditions on scene)	The condition of the scene (lights, furniture, entry, location of the victim or other items, etc.) provides important clues.	Be observant. Disturb as little as possible. Relate observations to the police.

Handling Firearms at the Crime Scene

At times, you may arrive on a crime scene to find an unconscious victim with a firearm present. Other times, you may be assessing a gunshot victim and realize the victim is armed. I'm frequently asked what to do in such situations. *Some guidelines:*

Don't touch the firearm if you don't have to. *One option:* Quickly move the patient away from the firearm. If you're assessing an armed patient who is conscious or may regain consciousness, don't hesitate to retreat from the scene and notify police.

If these suggestions fail and you must move a firearm, do so with two considerations: safety and evidence preservation. Safety comes first. Never point the muzzle at anyone—including yourself. Never stick a pen or pencil into the barrel to move the firearm. Never touch the area around the trigger. Firing a gun when the hammer is cocked may take less than a pound of pressure.

With evidence preservation in mind, handle the gun by the top of the grip, near the frame with the muzzle pointed in a safe direction. Move the gun to a safe location—away from the patient and others—and place it in a resting position with the muzzle pointed in a safe direction.

Again, handle firearms only when absolutely necessary.

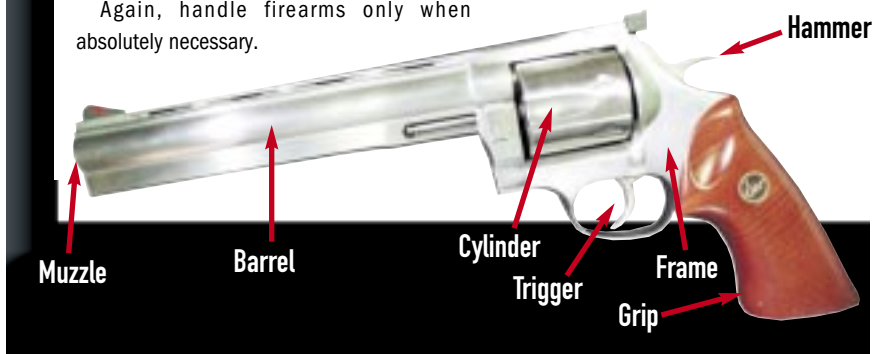


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Putting it all together

As on any call, your actions at a crime scene should be directed toward proper patient care *while preserving evidence*; evidence-preservation never takes precedence over patient care. And remember, where violence once happened, it can happen again. Safety should remain your first and foremost concern throughout the call.

One final point to consider: This article presented quite a bit of information about interaction and evidence preservation at a known crime scene. But what if you treat a patient and their injury seems unusual or gives you a bad feeling in your gut?

Suppose you transport a patient found with minor bleeding from a scalp laceration and presenting with altered mental status from an unknown cause, and the patient dies? There are many cases such as this where an autopsy reveals a subdural hematoma from a head injury caused the death—and it wasn't accidental.

If you're contacted by detectives two days later who tell you your patient was murdered, their first question to you will be, "What do you remember?" Their second question will be, "Where is the

patient care report you completed after this call?"

If you get a gut feeling that a call you've responded to involves a crime but it hasn't yet been uncovered, report your suspicions to the police. They'll be happy you did. A false alarm once in a while is better than a single piece of evidence missed, contaminated or not reported at a crime scene. **■**

Dan Limmer is an EMT-paramedic and faculty member at the George Washington University Emergency Health Service Program in Washington, D.C. He's a retired police officer with experience in patrol, investigations, sex crimes and narcotic units. He has co-authored several EMS textbooks, including Emergency Care; First Responder, A Skills Approach; and Advanced Medical Life Support. Contact him via e-mail at limmer@gwu.edu.

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