



Emergency Medical Services Agency Lessons Learned

To all Prehospital Providers

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The following information is related to EMS Agency review of Prehospital care. The lessons learned from these reviews are applicable to all paramedic providers. Please review this important information and incorporate it into your practice.

1. Controlling bleeding in a dialysis shunt

A hemodialysis shunt, graft or fistula (see figure below) provides vascular access for hemodialysis, the treatment for acute or chronic renal failure.

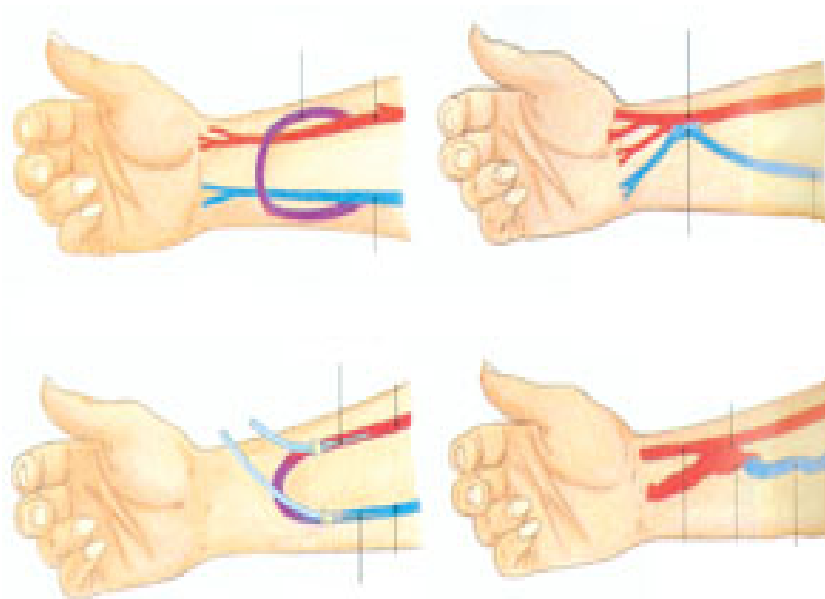


Figure 1: Patients requiring long-term dialysis need a more permanent solution, usually from an arteriovenous (A-V) shunt, or a connection between an artery and vein. This allows for large flow rates and can be done surgically using one of two methods: a fistula or a graft

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When a patient requires hemodialysis, a vascular site such as an AV fistula or graft provides access for the removal and return of blood during hemodialysis.

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A normal sized vein would not support multiple needle insertions or the volume of flow required by the use of a dialysis machine. Therefore a surgical procedure to connect the vein to an artery is required. The typical site used for this procedure is the forearm. Other sites will be used as the shunts may clot off or become non-functional.

Complications

The two most common complications of surgical dialysis grafts are clotting and infection. Proper hemodialysis depends on fistulas and grafts that work well. If a graft clots the patient will require another surgical procedure to either revise or replace the graft.

The preferred site for an AV fistula is the forearm. However problems can occur with the grafts and alternate sites must be found. These include proximal arms and thighs. When the thighs are used this is an indication that the patient has had multiple problems with shunts and grafts in the past and very few options for other sites remain.

To preserve and protect AV access for dialysis:

- Keep the access clean at all times to prevent infection
- Avoid injections, Intravenous needles or fluids or taking blood samples in the access site arm.
- **Do not take blood pressure measurements, or put pressure on the access arm.**

Should the patient develop bleeding at the site of the AV fistula or graft, do the following:

- Apply direct pressure to the site. Most bleeding sites on AV fistulae or grafts are from needle insertions and are usually small holes. Since the graft makes a communication between the artery and the vein the bleeding will be under pressure. Direct fingertip pressure with a single 4X4 over the hole will control the bleeding and not compromise the patency of the graft.
- **Do not** use a BP cuff on the affected extremity to control the bleeding as this will most likely clot off the graft.
- **Do not** use a bulky dressing between fingertip and graft because this will spread the pressure across the entire graft and not place it specifically on the bleeding point.

2. Trauma Triage

Trauma triage systems are designed to identify patients who will most likely have severe injuries related to their traumatic event. All trauma systems will

accommodate a certain amount of over-triage (patients taken to trauma centers that are later found to not have needed trauma services), so that those patients who have more subtle findings will not be inadvertently taken to the ED of a community hospital rather than to a trauma center.

Transfer of patients out of a community hospital ED to a specialty care center (trauma, stroke, cardiac, burns etc) is difficult to accomplish in a timely fashion. We have only one chance to get it right the first time.

Some patients may appear to be less injured than the mechanism of their injury may indicate. If the mechanism of injury is significant and other physiologic or anatomic criteria are less evident, the Base Hospital must be called to triage the patient "out of the trauma system".

When calling the base hospital for this purpose please make sure that all pertinent information regarding the mechanism of injury, as well as all pertinent assessment findings must be communicated to the person answering the phone.