



LONDON'S  
AIR AMBULANCE  
roadside intensive care



## Pre-hospital Care Standard Operating Procedure

### Penetrating Trauma

<b>REVIEW:</b>	May 2010	
<b>APPROVAL/ ADOPTED:</b>	PHC Policy Board	
<b>DISTRIBUTION:</b>	PHC Doctors PHC Paramedics	
<b>RELATED DOCUMENTS:</b>	SOP Thoracotomy SOP Haemorrhage control, vascular access & fluids	
<b>THIS DOCUMENT REFERS TO:</b>	<input checked="" type="checkbox"/> PHC Clinical Practice PHC Non-clinical Practice PHC Operational Procedure	Ref: CP-5

#### Aims:

- Describe broad philosophy of clinical care for penetrating disease (GSW, stabbings, glass injury, impaling, etc).
- Describe triage pattern for penetrating chest trauma.

#### Background:

Unlike blunt trauma where a significant proportion of hypotensive patients do not require haemostasis with an urgent surgical procedure or intervention, penetrating disease may require urgent surgery to control bleeding. For this reason time to theatre is important and *scene times should be kept short as possible if no interventions are thought necessary.*

For several reasons the degree of bleeding and potential for internal damage is often underestimated. In penetrating disease, the characteristic physiological response to blood loss of increasing tachycardia can be less marked and is usually manifest by bradycardia or relative bradycardia. This has the potential to give the attending team a false sense of security and with this in mind, any change in the cardiovascular state of the patient should warrant immediate re-assessment. Similarly the entry hole may bear little or no relationship to the tip of the knife at maximum insertion - "worst case scenario" should therefore be presumed. Even simple wounds to the legs, especially the upper thigh, can prove fatal as uncontrolled bleeding occurs into the large volume of the thigh.

## POLICY:

### 1. Triage

- Always inspect the patient from head to toe both front and back before coming to a triage decision as the decision to move to a cardiothoracic centre should not solely be based on the clinical state of the patient, but also the potential for damage as described by wound position. Do not presume the wounds at the front are the only ones; all patients must be examined from 'top to toe' for other stab wounds. Look especially for wounds in the axillae, groin, back and buttocks.
- **For chest wounds:** Chest wounds between the nipple lines or in the 'cardiac danger zone', in the epigastrium or between the shoulder blades should be triaged to a cardiothoracic centre irrespective of clinical state. Wounds outside of these areas should go to the local hospital if the patient shows no signs of shock, however if the patient is abnormal in any way, you should triage the patient to a cardiothoracic centre.
- **All other wounds:** Should be triaged to the nearest emergency department.

### 2. Clinical Care:

- Tamponade obvious bleeding points – use a tourniquet if necessary. A Combat Application Tourniquet is available in the Thomas pack for this purpose. If a registrar elects to put on a tourniquet then it is his responsibility to ensure this information is handed to the receiving team. The time it was applied must also be clearly documented.
- If the patient displays signs of shock, exclude hypoxia as a cause and drain pneumothoraces if present. If signs of shock persist "time to theatre" is important. If the patient is compliant then nil else should be done. Maximise FiO<sub>2</sub> with reservoir mask and proceed to hospital. If the patient is being airlifted draw up 100 mg Ketamine, ensure good venous access and tight packaging and that the IV line is easily accessible in the back of aircraft. The purpose of the Ketamine is emergency sedation should the patient become agitated / uncontrollable on the aircraft. If the patient is already combative or restless, a general anaesthetic should be considered prior to loading. If only analgesia is required, morphine should be the drug of choice. The only caveat to this is analgesia for insertion of a chest drain in the awake patient. In these situations, Ketamine (sedative dose) is a quick and effective agent and should be considered first.
- In general, fluids should only be infused if verbal contact is lost with the patient (if awake) or the systolic pressure falls below 80 systolic (if ventilated). It is important to exclude the presence of a tension pneumothorax. If RSI is to be undertaken in the presence of severe volume depletion, then first ensure good venous access and consider volume loading before drug administration. In cases of moderate volume depletion, give ½ the dose of induction agent. In extreme cases, only the paralysing agents may be required. Remember that IPPV itself may precipitate cardiac arrest in cases of profound volume depletion.
- If the patient loses cardiac output en route (exclude presence of tension pneumothorax), thoracotomy should be performed as soon as possible. In flight it may be possible to initiate part of the thoracotomy procedure- a right thoracostomy and skin incision. As soon as the aircraft has landed, the procedure should be completed.