



MEDICAL GUIDANCE NOTE

Title: AMPUTATIONS AND DISMEMBERMENT
Last revised: January 2011

1. Background

1. Amputations (live victims) and dismemberment (deceased) have always generated much discussion in the USAR community and is a complex issue with social, religious and ethical aspects to be considered. Though there may be rare situations in which these two procedures are indicated as a last resort, the better course of action is to avoid these if at all possible.

2. Amputations

2.1 Pre-Procedure

2.1.1 Decision Making

1. The single most important aspect to consider regarding performing pre-hospital amputations is the decision-making process as to whether it will be performed.
2. There are numerous potential ethical, moral, cultural and religious implications as well as the clinical and psychological complications associated with pre-hospital amputation. This is compounded in situations when the procedure is performed by a medical professional in a foreign country affected by a disaster.
3. There are multiple international limb salvage score criteria. These are intended for use in the controlled environment of the operating theatre with full access to the victim and even these can be questioned retrospectively when applied. It is unrealistic to expect the USAR medical provider to make a determination as to whether a limb is salvageable or not in the collapsed structure environment.
4. Therefore, amputation should be considered a procedure of absolute last resort when:
 - a) The patient's clinical condition is life-threatening and requires immediate disentanglement and extrication to facilitate resuscitation;
 - b) Hazards present an impending threat to life of the victim or the USAR team members;
 - c) Under circumstances when the degree of patient entrapment and entanglement is such that, even after an exhaustive multi-disciplinary review



MEDICAL GUIDANCE NOTE

of alternative options, amputation provides the only viable means to extricate the patient.

5. It is therefore strongly recommended that the USAR team establish and implement a decision making process with regard to amputations. Ideally this should include a procedure and equipment checklist to be used in the field. It is also recommended that teams carry minimal equipment and supplies to perform and or complete a pre-hospital amputation.
6. Essential persons in the decision making process should include:
 - a) Treating medical professional;
 - b) Patient (if possible / practical);
 - c) Family members (if possible / practical);
 - d) USAR team medical manager;
 - e) USAR team leader / deputy team leader;
 - f) Representative from LEMA (if possible / practical).
7. It is recognized that in some circumstances it may not be possible or practical to consult with all or any of the persons described above. A recommended practice in this situation, should be to consult at least one other medical professional, even if they are a member of another USAR team.
8. Other factors to consider include:
 - a) The available receiving medical facilities and the level of care available to provide the required ongoing management and support to a post-amputation patient;
 - b) The availability of a suitably qualified medical professional to perform the procedure;
 - c) The availability of the appropriate equipment and medication to perform the procedure and post-procedure care.

2.1.2 Preparation

1. Once the decision to perform an amputation has been made, the following should be established or conducted:
 - a) A mode of transport to immediately transfer the patient post extrication;
 - b) The most appropriate available medical facility to receive the patient;
 - c) An individual to assist the primary care provider with the procedure (ideally a healthcare professional);
 - d) The appropriate equipment and medication for the procedure is available on-site;
 - e) Adequate preparation of personal protective equipment e.g., additional gloves; protective garments, goggles; etc;

MEDICAL GUIDANCE NOTE

- f) A briefing with all rescue personnel directly involved with rescue support during the procedure regarding the medical plan of action;
- g) An equipment assembly point as close to the patient and in the most “sterile” conditions possible;
- h) If possible or practical, document the decision making process;
- i) Consider environmental constraints imposed by a confined space environment e.g., limited patient access, lighting and noise.

2.1.3 Procedure

- 1. This guideline focuses on the amputation procedure. The underlying principles consistent with trauma resuscitation apply. For additional information on the provision of medical care in austere environments, refer to the Medical Guidance Note **THE PROVISION OF MEDICAL CARE IN AN AUSTERE ENVIRONMENT, SPECIFICALLY IN A CONFINED SPACE.**
- 2. This procedure should only be performed by a suitably trained physician or other medical professional (e.g., paramedic; nurse) under the direct supervision of a physician.

2.1.3.1 Anaesthesia and Analgesia

- 1. There are well documented methods of providing appropriate and adequate anaesthesia and analgesia in pre-hospital environments. USAR medical professionals are obligated to ensure adequate anaesthesia and analgesia, during and post-procedure.

2.1.3.2 Technique

- 1. The World Health Organization (WHO) has established practice guidelines on amputations in disaster situations, refer to *Best Practise Guidelines on Emergency Surgical Care in Disaster Situations, Section 12, Amputations, Page 15 – 17.*
- 2. In the confined space environment, the following points must be considered:
 - a) Consider the administration of an appropriate broad spectrum antibiotic, if available, as soon as possible;
 - b) Consider the administration of Tetanus prophylaxis, if available, as soon as possible;
 - c) Attempt to conduct the procedure with the most “sterile” technique possible. Surgical site preparation should still be considered within the restrictions of the confined space environment whenever possible or practical;
 - d) Proximal control of haemorrhage is paramount pre and post-procedure;
 - e) A guillotine amputation performed as distally as possible on the affected limb/s is the preferred method;

MEDICAL GUIDANCE NOTE

- f) It is recommended that use is made of a wire saw e.g., Gigli saw, rather than a fixed blade saw as it is more suitable in a confined space environment;
- g) Make a note on the patients limb as to the time of the amputation;
- h) Maintain vigilance of the risks posed by surgical instruments, bone fragments and body fluids during the procedure;
- i) Apply antiseptic agent to the amputated stump if available and dress the wound appropriately;
- j) If a tourniquet has been applied, leave the tourniquet in-situ until the patient is handed over to the most appropriate medical facility available.

2.1.4 Post Procedure

- a) Maintain adequate levels of anaesthesia and analgesia during the extrication process;
- b) Maintain haemorrhage control and ensure that it will remain effective during the extrication process;
- c) Ensure adequate covering of the amputation part that remains in the rubble. This is to reduce the risk of physical exposure or injury as well as the potential detrimental psychological effects;
- d) Attempt to forewarn the receiving medical facility of the patients clinical condition and arrival;
- e) Ensure completion of appropriate documentation as time permits;
- f) Due to the potential adverse psychological impacts of performing this procedure, adequate debriefing for all personnel involved is recommended;
- g) Notify all the relevant parties as to the procedure undertaken e.g., OSOCC; LEMA.

3. Dismemberment

1. As with pre-hospital amputation, the single most important aspect to consider regarding performing dismemberment is the decision-making process. In fact, dismemberment in some countries may be illegal. The decision-making process, personnel involved and procedure are similar to those for pre-hospital amputation as described above. However, the reasons for this procedure differ e.g.,:
 - a) It's the only way to gain access to a live victim;
 - b) To remove a risk to USAR personnel.
2. There are critical issues to be considered with regard to handling and recovery of the deceased that are applicable to performing dismemberment. Refer to Medical Guidance Note **RECOVERY OF DECEASED DURING USAR OPERATIONS**.