

IMAS: 1997 Standards Chapter 7

Section Seven: Medical

INTRODUCTION

7.1 Medical support is one of the principle planning considerations of any demining operation, as the inherent risk to those involved in the demining task is always high. A rapid and effective medical response must be available to respond to any mine related accidents and incidents.

7.2 Where suitable national medical regulations are in existence these are to be utilized. If no suitable regulations are available then the standards outlined in this document should be adopted by all demining organisations, who should attempt not only to achieve these standards but to surpass them.

SCOPE

7.3 This document addresses the medical support required for all humanitarian survey, mine clearance and EOD operations and should be read in conjunction with other relevant standards.

PURPOSE

7.4 The purpose of this document is to establish medical support standards for rapid resuscitation and stabilization of the casualty and the prompt evacuation to a facility where emergency surgery (e.g. amputation) can be undertaken.

LEVELS OF MEDICAL SUPPORT

7.5 There are four levels of medical support;

- a) **Level One:** Casualty evacuation and a Level One medical capability. Located on the operational site, the organization must be able to conduct casualty collection and Basic Life Support and have Advanced Life Support available within 15 minutes. Off-site it should be able to tend to basic medical treatment and advise on preventative measures against disease and stress.
- b) **Level Two:** Casualty sustainment and a Level Two medical capability. Consists of additional paramedics and equipment to sustain the casualty and assist the evacuation. Used when the site is more than 2 hours from a Level Three facility.
- c) **Level Three:** A medical facility (hospital) with life saving surgical capability. Provide facilities for Level One and Two medical support and be able to conduct life and limb saving surgery. Be able to investigate, diagnose and treat patients suffering from serious or life threatening conditions. Should have dental facilities and where possible provide hygiene support, supervision and medical investigation.
- d) **Level Four:** Definitive care - A medical facility (hospital) with the capability for reconstructive surgery and rehabilitation. Full medical support facilities.

TRAINING STANDARDS

7.6 The following are the minimum standards :

- a) All personnel are to be trained to administer first aid. The training syllabus is detailed in Annex A to Section Seven.
- b) Medical Orderly. Trained to respond to a medical emergency and provide Basic Life Support and resuscitation to the casualty. The training syllabus is detailed in Annex B to Section Seven..

c) Paramedic. Trained to provide Advanced Life Support to casualties, to undertake CASEVAC planning, to supervise training, administer basic health care and assist the Medical Officer in his duties.

d) Medical Officer (Doctor with trauma training). Provides Advanced Life Support to casualties but is also responsible for aspects of training, evacuation plans, priorities and general health care.

7.7 The course syllabus and frequency of refresher training should be detailed in SOPs.

7.8 National medical staff should be registered with the national medical authorities, where they exist.

MEDICAL EQUIPMENT

7.9 Medical staff are to have the correct equipment and material to undertake their role in providing medical support to casualties and general health care. A complete equipment and material list for all levels of medical support is detailed in Annex C to Section Seven.

7.10 All clearance sites are to have a serviceable evacuation vehicle. The vehicle must be able to carry at least two stretchers and be equipped with an ambulance medical kit and communications equipment. This should include the equipment, material, drugs and consumables detailed at Annex D to Section Seven.

PRIMARY HEALTH CARE

7.11 Medical health checks should be conducted before recruitment, and include both sight and hearing checks.

7.12 Basic medical treatment and advice on preventative measures against disease should, where possible, be given to clearance personnel.

DEPLOYMENT, CASEVAC AND MEDVAC PROCEDURES

DEPLOYMENT OF MEDICAL RESOURCES

7.13 The demining site should have at least one medical orderly able to provide Basic Life Support. The medic should be no more than 5 minutes from the site location.

7.14 A paramedic or a trauma trained doctor is to be in the immediate vicinity to assist the medical orderly in providing Advanced Life Support and enable resuscitation and stabilisation before the casualty is evacuated to a Level Three facility. They should be no more than 15 minutes from the site. Should a Level Three medical facility be more than two hours distant from the site then a Level Two facility/capability will be required.

CASEVAC AND MEDEVAC

7.15 CASEVAC is the evacuation of a casualty from the injury site to the nearest medical facility. MEDEVAC is the evacuation of the casualty from the medical facility to the next higher level facility. The CASEVAC and MEDEVAC procedures must follow established evacuation plans.

7.16 The casualty is to be evacuated from the accident site to the safety point. The medical orderly should not enter the minefield unless there are extenuating circumstances. Emergency procedures, including the entry into a mined area, are to be detailed in the SOPs. At the safety point, Basic Life Support treatment will be administered. A paramedic/Doctor is to be available within 15 minutes to administer Advanced Life Support treatment prior to evacuation to a Level Three facility.

7.17 If the time to get between the site and the Level Three facility is more than two hours, a Level Two facility has to be available in order to resuscitate and stabilize the casualty between the Level One and the Level Three facility.

7.18 Transfer of the casualty to a Level Four facility either in or outside the country must be recommended by a senior Medical Officer or Medical Coordinator in consultation with the medical staff of the demining organisation.

REHABILITATION SURGERY

7.19 In cases where rehabilitation surgery is necessary this can be accomplished at a later stage and is not an urgent requirement. It will be necessary for organisations to have the relevant insurance coverage for rehabilitation. This type of treatment would only be available at Level Four medical facilities.

COMMUNICATIONS AND REPORTING

7.20 All mine incidents and accidents are to be reported (see Section Five paragraph 5.32), however, it should be noted that Medical Reports may be required through separate medical channels. Details on medical reporting should be contained in the SOPs.

7.21 There is to be an adequate communication network established that will guarantee communication between the medical personnel and supporting elements. See Section Eight - Communications, for details.

**ANNEX A TO SECTION 7
SYLLABUS FOR FIRST-AID LESSONS FOR ALL DEMINERS**

1) All mine clearance personnel are to receive the following training :

A) Basic CPR

- i. One-Person CPR
- ii. Two-Person CPR

B) Arrest of Hemorrhage

- i. Direct Pressure method
- ii. Pressure Points
- iii. Tourniquet application

C) Bandaging of Wounds

D) Casualty Transportation

- i. Fireman's-Lift
- ii. Two-person method without stretcher
- iii. Use of stretcher

2) Experience has shown that this course requires at least 24 hours of instruction.

**ANNEX B TO SECTION 7
SYLLABUS FOR MEDICAL ORDERLY**

1. Medical Orderlies are to be instructed in the following subjects:

A) Anatomy and Physiology

- i. Elements of human body structure
- ii. The musculoskeletal system
- iii. The circulatory system
- iv. The respiratory system
- v. The digestive system
- vi. The nervous system
- vii. The excretory and reproductive system
- viii. The skin

B) Non-trauma Emergency/First Aid

i. Airway Management

- (1) Causes of airway obstruction
- (2) Diagnosis of airway obstruction
- (3) Techniques of removing secretions from casualty's mouth
- (4) Chin lift / jaw thrust methods
- (5) Artificial airway
- (6) Positioning SSLP (Semi-Supine Lying Position)
- (7) Artificial Respiration

- (a) Technique of artificial respiration (without ventilation bag)
- (b) Technique of artificial respiration (with ventilation bag)

ii. Arrest of Hemorrhage

- (1) Direct manual pressure and application of pressure dressing
- (2) Tourniquets and their application
- (3) Conversion of Tourniquet to pressure dressing
- (4) Pressure points and their application

iii. Infusion

- (1) Indications for intravenous infusion
- (2) Sites for infusion
- (3) Equipment needed for infusion
- (4) Preparations for infusion
- (5) Live infusion practice

iv. Bandaging of Wounds

- (1) Dressing of the head
- (2) Dressing of the face, back of the head
- (3) Dressing of the eyes
- (4) Dressing of the cheek, jaw and ear
- (5) Dressing of the scapula

- (6) Dressing of the shoulder
- (7) Dressing of the axilla
- (8) Dressing of the upper limb
- (9) Dressing of the palm and back of the hand
- (10) Dressing of the elbow and the knee
- (11) Dressing of chest and back
- (12) Dressing of the hip
- (13) Dressing of the lower limb

v. Immobilisation of Fractures

- (1) Splintless methods
- (2) Splint methods

vi. Treatment of Head Injuries

- (1) Diagnosis of head injury
- (2) Dangers of head injury
- (3) Treatment of head injury

vii. Treatment of Chest Injuries

- (1) Diagnosis of chest injury
- (2) Treatment of chest injury

viii. Treatment of Abdominal Injuries

- (1) Diagnosis of abdominal injury
- (2) Complications of abdominal injury
- (3) Treatment of abdominal injury

ix. Treatment of Spinal and Pelvic Injuries

- (1) Diagnosis of spinal injuries
- (2) Management of spinal injuries
- (3) Lifting and transportation of spine-injured casualty
- (4) Diagnosis of pelvic injuries
- (5) Management of pelvic fractures

x. Treatment of Burns and Blast Injuries

- (1) Diagnosis of burns and blast injuries
- (2) Treatment of burns and blast injuries
- (3) Treatment of phosphorus burns

xi. Resuscitation Equipment

- (1) Acquaintance of air-viva
- (2) Acquaintance of ambu-suction
- (3) Acquaintance of oxygen administration

C) Medical Evacuation

- i. Different means of evacuation
- ii. Requests for evacuation
- iii. Structure of medical support

D) Drug and Dispensing

E) Mass Casualty Management

- i. Single Casualty - primary and secondary survey
- ii. Multiple casualties management

F) Theory and Practical Test

- i. It is expected that the course for an untrained person would take from 4 to 8 weeks depending on the basic medical knowledge of the trainee. To determine the length of the course, a pretest to assess the trainees' medical knowledge may be conducted.

ANNEX C TO SECTION 7 MEDICAL ORDERLY POUCH - CONTENTS

<i>Serial</i>	<i>Items</i>	<i>Quantity</i>
1.	Airway, disposable	1 (adult)
2.	Pocket mask (artificial respirator)	1 ea
3.	Cervical collar	1 ea
<i>Dressings For Medical Orderly Pouch</i>		
4.	Personal field dressing	4 ea
5.	Abdominal/Chest dressing	2 ea
6.	Burn dressing	2 ea
7.	Triangular bandages	3 ea
8.	Elastic aid bandages	2 ea
9.	Adhesive tape 2.5 cm wide	1 roll
10.	Gauze pads 15 x 15 cm	5 ea
11.	Gauze rolls 15 x 15 cm	5 rolls
<i>Intravenous Fluids/Equipment For Medical Orderly Pouch</i>		
12.	Ringer Solution (1 litre)	2 ea
13.	Intravenous sets	2 ea
14.	IV Cannula 18 g	3 ea
15.	Alcohol swabs	25 ea
<i>Non-disposable Equipment For Medical Orderly Pouch</i>		
16.	Thermometers (with disposable sheaths)	1
17.	Scissors (Super shear paramedic scissors)	1
18.	Tourniquet - Arterial (1 metre)	2
19.	Kramer Splint (for upper limbs)	1 ea
20.	Kramer Splint (for lower limbs)	1 ea
21.	Stretcher (foldable)	1
<i>Disposable Items For Medical Orderly Pouch</i>		
22.	Casualty tags	5 ea
23.	Antiseptic cream	1 tube
24.	Antiseptic solution	100 cc
<i>Drugs For Medical Orderly Pouch</i>		
25.	Morphine auto-injectors	5 ea

PARAMEDIC KIT

<i>Serial</i>	<i>Items</i>	<i>Quantity</i>
1.	Airway, disposable (adult)	2
2.	Laryngoscope set	1

3.	Endotracheal tubes (adult size)	3
4.	Coniotomy set	1
5.	Cervical collar	1
<i>Dressings For Paramedic Kit</i>		
6.	Personal field dressing	4 ea.
7.	Abdominal/Chest dressing	2 ea
8.	Burn dressing	2 ea
9.	Triangular bandages	3 ea
10.	Elastic aid bandages	2 ea
11.	Adhesive tape 2.5 cm wide	1 roll
12.	Gauze pads 15 X 15 cm	5 ea
13.	Gauze rolls 15 X 15 cm	5 rolls
<i>Intravenous Fluids/Equipment For Paramedic Kit</i>		
14.	Hartmann solution (1 litre)	2
15.	Intravenous sets	2
16.	IV Cannula 18g ea	3
17.	Alcohol swabs	25
<i>Non-disposable Equipment For Paramedic Kit</i>		
18.	Scissors (Super shear paramedic scissors)	1
19.	Tourniquet - Arterial (1 metre)	2
20.	Kramer Splints for upper limbs	1
21.	Kramer Splints for lower limbs	1
22.	Stethoscope	1
23.	Blood Pressure manometer (aneroid)	1
24.	Surgical kit for venous cutdown	1
25.	Intercostal drain set, including 20 g chest tube	1
<i>Disposable Items For Paramedic Kit</i>		
26.	Casualty Tags	5 ea
27.	Antiseptic Solution 100 cc	1
28.	Antiseptic Cream tube	1
<i>Drugs For Paramedic Kit</i>		
29.	Morphine auto-injector	5 ea
MEDICAL EQUIPMENT - LEVEL 1 EMERGENCY KIT		

<i>Serial</i>	<i>Items</i>	<i>Quantity</i>
1	Airway Guedel	2
2	Manual Ventilation Bag & Mask (Ambu)	1
3	Resuscitator (Oxygen, Suction and Ventilator Functions)	1
4	Defibrillator and ECG Portable	1
5	Laryngoscope Set	1
6	Coniotomy Set	1
7	Stethoscope	1
8	Blood Pressure Set (Aneroid - Automatic)	1
9	Surgical Set (Venous Cutdown)	1
10	Intercostal Drain Set	1
11	Scissors (Super Shear - Paramedic)	1
12	Tourniquet - Arterial (1 Metre)	2
13	Tourniquet - Venous	1
14	Needle Holder - Straight	1
15	Scissors Sterile (for Sutures)	1
16	Surgical Blade Holder	1
17	Torch Light	1
<i>Emergency Drugs - Level 1 Emergency Kit</i>		
18	Adrenaline Injection	10
19	Atropine Sulphate Injection	10
20	Dopamine Injection	5
21	Calcium Gluconate Solution (10 %)	5
22	Lignocaine Injection (150 G Vial)	5
23	Sodium Bicarbonate (50 cc 8.4 % Bottle)	2

24	Morphine for Injection (10mg Vial)	10
25	Fursemide Injection (20 mg Vial)	5
26	Aminophylline Injection (250 mg Vial)	2
27	Hydrocortisone Injection (100 mg Vial)	10
28	Promethazine Injection (50 mg Vial)	10
29	Doctor Bag - to Store Consumables / Drugs	1

MEDICAL CONSUMABLES - LEVEL 1 EMERGENCY KIT

<i>Serial</i>	<i>Items</i>	<i>Quantity</i>
1	Ringer Solution (1 Litre)	2
2	Colloid Solution (500 cc)	2
3	Intravenous Sets	3
4	Intravenous Cannula (Gage 18)	3
5	Syringes (10 cc)	10
6	Syringes (5 cc)	10
7	Glucose 5 % Solution (1 Litre)	1
8	Water for Injection	20
9	Alcohol Swabs	100
10	Suction Tubes (Oropharyngeal)	5
11	Endotracheal Tubes	3
12	Chest Tubes	2
13	Pneumatic Valve (for Pneumothorax)	2
14	Urinary Catheter	2
15	Urinary bag	2
16	Personal Field Dressing	4
17	Gauze Pads 15 x 15 cm	5
18	Gauze Rolls 15 x 15 cm	5
19	Triangular Bandages	2
20	Casualty Tags	5
21	Sutures Silk (2 “O”)	5

ANNEX D TO SECTION 7

Ambulance - Medical Equipment

<i>Serial</i>	<i>Items</i>	<i>Quantity</i>
1	Airway, disposable (adult)	2
2	Manual ventilation bag & masks set	1
3	Foot operated suction pump set	1
4	Oxygen cylinder 3, 5 kg & valve with disposable mask	1
5	Hartmann solution (1 litre bag)	5
6	Personal field dressing	15
7	Abdominal/Chest dressing	5
8	Burn dressing	5
9	Triangular bandages	5
10	Elastic aid bandages	5
11	Adhesive tape rolls	2
12	Splints (Kramer Splints 1 m)	2
13	Splints (Thomas Splints) or similar	1
14	Back Boards (long)	2
15	Cervical Collars	3
16	Stretchers Army style	4
17	Blankets	5
18	Strobe Light	1
19	Signal smoke grenade (colour)	4
20	Water Purifying Tablets Sufficient for 60 litres (packets)	2
21	Intravenous sets	5

22	IV cannula (sizes 18 G)	10
23	Arterial tourniquet	1
22	Scissors (super shear paramedic scissors)	1
24	Casualty tags	5
25	Water Container (20 litres capacity)	3