Sudan National Mine Action Standards – SNMAS 08.03

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Medical Support to Demining Operations

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1. Introduction

Demining operations on explosive hazards have inherent risks that shall be mitigated in order to ensure the safety of demining workers. By ensuring that the demining workers are adequately prepared, effectively trained, provided with personnel protective equipment, supported by adequate medical response capacity and that the safe work practices are applied; the level of risk of demining accidents can be minimised.

In addition to supporting demining tasks, medical support also includes all the preparatory and preliminary requirements to ensure that demining staff are fit to work and have confidence in their organizations to look after them in an emergency.

Safety and Occupational Health (S&OH) are achieved through the development of safe work practices and operating procedures, effective supervision, and control, appropriate education and training, equipment of inherently safe design, the provision of effective and suitable Personal Protective Equipment (PPE) and clothing and correct prophylactics against disease.

Appropriate management and supervision in demining operations reduce the likelihood of accidents and harm to demining workers, but there will always be the potential for demining accidents to occur. Demining organizations and employees must therefore be properly trained and equipped to respond to demining accidents. Demining is often conducted in an environment degraded by conflict and other humanitarian challenges, perhaps made worse through natural disasters. Under these circumstances' diseases such as malaria, tuberculosis, hepatitis and cholera, previously kept in check by national medical control measures, can again become widespread.

Developing a capacity to provide an appropriate response to a demining accident requires effective planning, well trained staff and the availability of medical services able to provide effective emergency treatment. Nevertheless, the legal and moral obligations placed on managers to provide the best medical support possible, in particular at the demining worksite, planning shall acknowledge the reality of field operations. Medical facilities in state level in Sudan can be limited and evacuating casualties to the specialized hospitals in Khartoum will be needed.

2. Scope

This SNMAS cover the specifications, guidance and requirements for the provision of appropriate medical support to demining operations in the field. The national mine action standard includes terms and definitions, requirements, specifications and responsibilities. In addition, the annexes provide additional detailed information and guidance on how to apply the standard.

3. References

IMAS 10.40 Medical Support to Demining Operations

4. Terms and Definitions

A complete glossary of all mine action terms and definitions is given in IMAS 04.10, which should be referred to, IMAS 04.10 is inclusive and broader in principle, covering all mine action terms and definition that are used globally including Sudan. However, the terms related to medical support for demining operations are covered in this SNMAS.

The term 'demining accident' refers to an accident at a demining workplace involving a mine or Explosive Remnant of War (ERW), including unexploded sub-munitions hazard. A demining

workplace is any workplace where demining activities are being undertaken. Demining worksites include workplaces where survey, clearance and EOD activities are undertaken including centralized disposal sites used for the destruction of mines, and or ERW identified and removed during clearance operations.

The term “mine accident” refers to an accident away from the demining workplace involving a mine or ERW hazard.

The term 'demining accident response plan' refers to a documented plan developed for each demining workplace which details the procedures to be applied to move victims from a demining accident site to an appropriate treatment or surgical care facility.

The term “Medical Support Staff” refers to men and women employees of demining organizations designated, trained and equipped to provide first aid and further medical treatment of demining employees injured as a result of an accident.

The term “demining workers” include all employees, male and female, who work at a demining worksite.

The term “CASEVAC Destination” refers to a medical facility with the capacity to appropriately stabilize the casualty’s condition. Trauma casualties will often require transport to a facility capable of relevant emergency surgical interventions, whereas a local clinic may suffice for casualties with more minor injuries. The chosen evacuation destination should be appropriately matched to the casualty’s injuries and condition to meet the definition of an appropriate ‘CASEVAC Destination.’

The term “Clinical Competency” refers to a medic’s ability to perform a given medical intervention safely and effectively. Emphasis is placed on practical performance; therefore, demonstrable competency shall be proven irrespective of prior existing certification.

The term ‘Medical Professional’ refers to personnel that have undergone formal medical training that is endorsed by the government of Sudan recognized medical authority. Only medical professionals are appropriately knowledgeable or experienced to fulfil the role of casualty care providers which include paramedics, nurses and doctors.

The term “Casualty Evacuation or CASEVAC” refers to all actions taken to move and treat the injured person from the point of injury until handover to CASEVAC destination.

The term “Medical Treatment Area” refers to a designated safe/cleared location, within or in close proximity to a clearance task that has clear and safe access and is sufficiently spacious to facilitate the safe and unhindered provision of emergency medical care. The Medical Treatment Area may be referred to by different terms in organizational SOPs, however the sentiment, whether called a ‘Medical Treatment Area or Medic Point.

5. General Requirements

5.1 Planning and Preparation

Planning and preparation include all enabling activities taken by mine action organizations in close coordination with Sudan National Mine Action Centre (NMAC) to establish and maintain appropriate medical cover at the demining workplace, and to make appropriate arrangements with local and

national specialized medical and surgical treatment facilities. There may be a need for further specialized and out of country medical and surgical treatment which should be considered.

5.1.1 Accident Response Planning

A demining accident response plan shall be developed and maintained by the demining organization for each demining workplace. The plan shall identify:

1) The training and qualification need of all employees at the demining workplace, in particular demining workers and medical support staff with responsibilities for casualty evacuation, casualty stabilization and initial treatment;

2) The equipment and materials required to implement the demining accident response plan, including:

    a) First aid kid and medical equipment;
    b) Suitable stretcher for carrying casualty;
    c) Trauma kit, supplies and medicines;
    d) Suitable, four-wheel drive casualty evacuation vehicle or ambulance;
    e) Communications to call forward assistance and/or to provide details of the nature and extent of injuries.

3) The location of a suitably equipped and staffed hospital in the state and country level. Explosive hazard accident injuries can be severe and require specialist surgery.

Preparation for a demining accident shall include:

1) The development and maintenance of work practices designed to reduce both the risk of demining accidents and the risk of its severe consequences and multiple victims;

2) Positioning of medic in a suitable safe area close to the demining worksite with required medical kit to be able to provide adequate, appropriate and immediate respond to a demining accident;

3) The development, management and maintenance of:

    a) Demining worksite documentation that includes details of the blood group, infections background and known allergies for each demining worker;

    b) A capacity to transport victims, either male or female, to an appropriate treatment facility or surgical hospital;

    c) Insurance to cover the cost of transportation and specialized treatment including prosthetics, if required to be provided out of country;

    d) Insurance to provide an appropriate disability pension to demining workers who become victims of demining accidents, in accordance with applicable national legislation in Sudan.

4) The periodic testing of emergency and evacuation procedures from the time of the accident through to the delivery of victim to an appropriate treatment facility.

The demining accident response plan shall include responsibilities for:

1) The management of the on-site emergency response procedures, which include procedures to evacuate victims from the hazardous areas and to extract victims from mechanical demining equipment;

2) Regular CASEVAC drills;

3) The on-site first aid and medical care of victims;

4) Evacuation of victims to a CASEVAC destination or suitable hospital for treatment, including:

   a) Details of planned routes and means of transportation;

   b) Details of security requirements, if required;

   c) Logistics and other facilities on evacuation route.

5) The medical care of the victim during evacuation and transportation;

5.1.2 Occupational Health Planning

The occupational health planning shall include:

1) Appropriate briefing of demining workers and all staff on the health hazards including water and victor-borne diseases, poisonous animals or insects native to the demining area. Such information can be obtained from the state ministry of health;

2) The provision, where appropriate, of prophylactics against disease;

3) Arrangements for periodic heath checks; and

4) The provision of up to date vaccination against diseases such as tetanus, yellow fever and hepatitis, as advised by state or World Health Organization.

5.2 Demining Accident Response Capability

5.2.1 General

Each demining workplace with a demining team shall include at minimum one suitably qualified medic graduated from a government of Sudan recognized medical institution, with required skills and first aid and trauma kit to:

1) Provide immediate first aid to a victim of a demining accident;

2) Reach to victim immediately after evacuated from the hazardous area;

3) Support victim evacuation to an appropriate hospital for required and specialized treatment;

4) Provide medical care for the victim throughout the evacuation route;

5) Communicate with the medical facilities, other emergency services or other coordinating organizations responsible for assisting the demining organization in providing an appropriate response to a demining accident;

6) The medic shall be suitably qualified and skilled to:

   a) Clean and dress wounds correctly;

   b) Insert cannula and open the vein of victim for fluid replacement;

   c) Stabilize fractures;

   d) Give required analgesic to prevent further complications;

   e) Give required antibiotics and anti-tetanus prophylaxis if the victim is not otherwise likely to receive them within six hours of the demining accident;

   f) Properly cover the victim to prevent possible hypothermic shock.

Refer to Annex B and C for the list of medical supplies that shall be available at each demining worksite.

5.2.2 Medical Support to Non-Technical Survey (NTS) Teams

It may not be practical to provide dedicated medical staff to non-technical survey teams which may be required to operate independently and in remote locations over extended periods. In such cases, mine action organizations shall ensure that each NTS team has:

1) Employees, Male and or female as appropriate, with first aid training and resources including communications, required to respond to an accident, move victims to an intermediate medical treatment facility or directly to a hospital; and

2) A proper CASEVAC plan that is communicated to NMAC sub office and organization's operations department and approved;

3) Appropriate emergency response procedure that is well understood and available with the team, documented.

In exceptional situation, when a team has only two surveyors, both should be first aid trained and capable of carrying out appropriate emergency response procedures.

5.3 Training and Qualification

5.3.1 General

All men and women working at or visiting demining workplaces shall receive appropriate training on the precautions to reduce the risk of a demining accident, and the action to be taken in the event of a demining accident, this shall be included in organizations medical SOPs.

5.3.2 First Aid Training

First Aid training shall be provided to all field personnel, including deminers, surveyors, team command group, drivers and any management staff involved in land release and clearance operations. First aid training shall be provided by the mine action organisation on regular basis including refresher training at minimum once a year and shall be part of organizations medical SOPs. A first aid course consists of at least 20 hours of training. The syllabus is to be included in the organisations SOP, approved by NMAC.

5.3.3 Paramedic or Medic Training

All medics or paramedics employed to the demining teams, shall at minimum have been graduated from a national or international nursing institution that is recognized by the Government of Sudan's national medical and health authority. In addition to formal certification, the medics and paramedics shall demonstrate their knowledge and skills in casualty stabilization and advanced live support. For details about medic's skill and practical capability, refer to Annex A of this standard.

6. CASEVAC and Sequencing of Care

The CASEVAC process is intended to maximize casualty survivability by ensuring effective and timely casualty extraction, treatment, and evacuation whilst managing associated contextual risks.

Due to the contextual changes throughout the various points on the CASEVAC timeline it is helpful to split the CASEVAC process into three (3) distinct phases:

6.1 Hazardous Area Extraction

Hazardous Area Extraction is the first phase of the CASEVAC process and covers all activities undertaken from the point of injury until the casualty is delivered to the Medical Treatment Area. The priority in the Hazardous Area Extraction is for the trained rescue party to gain, or create, safe access to the casualty and then rapidly extract the casualty to the Medical Treatment Area.

Due to the limited safe space within clearance lanes, and the understanding that many casualties will require treatment beyond the scope of the first aid trained demining workers, non-time critical activities including dressing and bandaging and spinal immobilization, should not be performed until the Care on Site phase when the casualty is under supervision of the Medic in an appropriate Medical Treatment Area.

In certain circumstances, and where safe to do so, the medic should join the rescue party before transfer to the Medical Treatment Area to assist with casualty care during the Hazardous Area Extraction phase. The rescue party should aim to complete the Hazardous Area Extraction, within 5 minutes of initiation of the accident response.

The principles of hazardous area extraction should also be applied to accidents that occur outside of clearance tasks including vehicle collisions, where associated hazards such as fires or traffic may prohibit the safe provision of care at, or close to, the point of accident.

6.2 Care on Site

Care on Site is the second phase of the CASEVAC process and covers all activities undertaken from when the casualty is delivered to the Medical Treatment Area until they loaded and ready for transport.

The medic shall aim to complete the Care on Site phase, performing holistic casualty assessment, time critical clinical interventions, and loading into the evacuation platform, within 15 minutes of receipt of the casualty at the Medical Treatment Area.

Trauma casualties will require treatment beyond the scope of the medic; therefore, time shall not be wasted performing non-time critical clinical interventions that can be reasonably delayed and practicably performed in transit. This is especially important in time critical casualties and situations with short evacuation times.

6.3 Care in Transportation

Care in Transit is the third and final phase of the CASEVAC process and covers all activities undertaken from when the casualty loaded for transport until handover to an appropriate CASEVAC destination.

Clinical care shall not stop during transport, the medic shall deliver appropriate care in transit with an emphasis on continual monitoring and reassessment of the casualty's condition and the continued efficacy of previously performed interventions. The Care in Transit phase also provides the opportunity for the management of any remaining non-time critical conditions deferred during the Care on Site phase.

7. Priority Evaluation for Casualty Evacuation

The following priorities shall be used to describe the casualty's condition so that the need for CASEVAC destination can be decided:

7.1 Priority One

Priority one casualties are those who cannot survive without immediate treatment but who have a chance of survival:

1) Skin: pale.

2) Pulse: Absent at periphery and or >120 BPM at rest and or <50 BPM or abnormal rhythm with signs of poor perfusion.

3) Breathing rate: 10 or >29 or abnormal rhythm.

4) Blood Pressure: <80mmHg or >160mmHg.

5) Temperature: <35°c or > 39°c.

7.2 Priority Two

Priority two causalities' condition is stable for the moment and, they are not in immediate danger of death. These victims will still need hospital care and will be treated immediately after priority one:

1) Skin: pale.

2) Pulse: Weak at periphery and or >100 BPM at wrest.

3) Breathing rate: <10 or >29 or abnormal rhythm.

4) Blood Pressure: <100mmHg or >140mmHg.

5) Temperature: <36.6°c or > 37.2°c

7.3 Priority Three

Priority three casualties are those who will need medical care at some point, after more critical injuries from priority one and priority three have been treated:

1) Vital signs will be within normal range, but patient may be agitated and or in pain.

7.4 Priority Four

Priority four victims have injuries which will not be compatible with life.

8. Staff Insurance Coverage

All staff employed by mine action organizations in Sudan shall be provided with sufficient and adequate insurance coverage at no cost to the individuals. This should also cover short term workers and contractors involved in supporting demining operations. At minimum, insurance cover shall exist for all employees against death, disablement and injuries of work-related accidents. The coverage shall include:

a) Coverage for trauma orientated injuries and death.

b) The amount of compensation shall not be less than the amount stipulated in Sudan national legislation.

c) The partial permanent disablements shall be compensated according to the percentage of impairment and disability; and

d) Temporary complete and partial impairment and disability should be compensated on monthly indemnity basis.

9. Responsibilities

9.1 Sudan National Mine Action Centre (NMAC)

Sudan National Mine Action Centre (NMAC) shall:

1) Establish and maintain up to date standards for medical support to mine action operations;

2) Accredit mine action organizations' medical SOPs, Medics and Paramedics;

3) Monitor demining organizations' development and maintenance of demining accident response plans;

4) Assist in the coordination of appropriate responses to demining accidents, including supporting demining organizations in overcoming security constraints in the execution of a response plan;

5) Evaluate the effectiveness of emergency response plans and assist in implementing appropriate corrective and preventive actions;

6) Establish and maintain standards and procedures for the investigation of demining accidents; and

7) Establish and maintain gender-sensitive standards for insurance cover for medical treatment for mine action workers, and gender-equal standards for their compensation.

9.2 Mine Action Organizations

All accredited mine action organizations working in Sudan, with due consideration of possible different needs of men and women employees, shall:

1) Develop and maintain Standard Operating Procedures which aim to reduce the risk of demining incidents occurring;

2) Develop and maintain SOPs which aim to reduce the risk of harm resulting from demining accidents;

3) Develop and maintain demining accident response plans for each demining worksite;

4) Undertake regular Field Risk Assessment as per the requirements of Annex A of SNMAS 05.03;

5) Provide the training and resources needed for the implementation of the demining accident response plan;

6) Provide an appropriate health plan for the mine action workforce;

7) Ensure that demining accident response plans are practiced regularly;

8) Cooperate with other mine action organizations to ensure consistency of standards for accident prevention, emergency procedures and occupational health.

9.3 Mine Action Employees

Mine action employees, including medical support staff shall:

1) Apply SOPs which aim to reduce the risk of a demining incident, including Field Risk Assessment;

2) Apply SOPs which aim to reduce the risk of harm resulting from a demining accident;

3) Develop and maintain skills needed to respond to demining accident emergencies and regularly practice CASEVAC drills;

4) Identify and report opportunities to improve work practices to reduce the risk of a demining incident occurring and to improve the organization's demining accident response plan;

5) Provide and receive regular First Aid Training.