

# IMAS 09.44

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## Guide to medical and general health care of dogs

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## Foreword

In July 1996, international standards for humanitarian mine clearance programmes were proposed by working groups at a conference in Denmark. Criteria were prescribed for all aspects of mine clearance, standards were recommended and a new universal definition of 'clearance' was agreed. In late 1996 the principles proposed in Denmark were developed by a UN-led working group into *International Standards for Humanitarian Mine Clearance Operations*. A first edition of these standards was issued by the UN Mine Action Service (UNMAS) in March 1997.

This IMAS reflects changes to operational procedures, practices and norms which have occurred over the past three years. The scope of these standards has been expanded to include the other components of mine action, in particular those of mine risk education and victim assistance.

The United Nations has a general responsibility for enabling and encouraging the effective management of mine action programmes, including the development and maintenance of standards. UNMAS is the office within the United Nations Secretariat responsible for the development and maintenance of international mine action standards (IMAS).

The work of preparing, reviewing and revising these standards is conducted by technical committees, with the support of international, governmental and non-governmental organisations. The latest version of each standard, together with information on the work of the technical committees, can be found at <http://www.mineactionstandards.org/> IMAS will be reviewed at least every three years to reflect developing mine action norms and practices, and to incorporate changes to international regulations and requirements.

## Introduction

The more obvious challenges within mine dog detection often relate to issues like training methodology, environmental factors and operational procedures. Occupational health and general dog care is often considered less important despite the obvious need to ensure good dog health and welfare. When a demining organisation decides to establish a mine dog capacity, they have already wittingly or unwittingly made an underlying commitment to invest significant funds and resources in the dogs themselves. Like machines and other technology, dogs need to be well looked after and maintained. A lack of attention here will result in a limited output, reduced cost efficiency and questions raised about credibility and reliability of dog detection as a whole.

Dogs need to be well fed and well treated in order to perform successfully. A well balanced diet facilitates increased resistance against potential diseases. It also makes the dog stronger, increases it's perseverance and it's interest during training and live clearance. Demining organisations of course want their dogs to perform optimally since reduced performance reduces the safety and cost effectiveness long term. Mine dog detection means hard physical work, and thus the working dogs face totally different challenges to pet dogs. They can be compared with human athletes, where training and diet, mental health and preventive treatment against potential diseases and injuries, are all vital for success.

IMAS 09.44 is a guide to occupational health and general dog care. It addresses all the basic health and dog care requirements applicable to mine detection dogs worldwide. It elaborates on the most common health and dog care issues with subsequent recommendations. That said, IMAS 09.44 is not, and should not be a substitute for, a Standing Operational Procedure (SOP). Mine dog detection is undertaken in many different theatres of operation under many different environmental conditions with different diseases and environmental threats. It will therefore be necessary to adapt the principles of IMAS 09.44 to the local conditions in the area of operation, and it is the responsibility of national authorities and demining organisations using dogs to incorporate these principles into their SOPs.

## **Occupational health and general dog care**

### **1 Scope**

This standard provides guidelines for general and preventive health care, medical treatment and vaccination of mine dogs. It also suggests procedures that will increase the well-being of the dogs, in the training and detection role, at the camp or kennel or during transportation. It establishes the necessary requirements for the development of adequate mechanisms for occupational health and dog care within mine dog programmes.

### **2 Terms and definitions**

A list of terms and definitions used in this standard is given in Annex A. A complete glossary of all the terms and definitions used in the IMAS series of standards is given in IMAS 04.90.

In the IMAS series of standards, the verbs 'shall' and 'should' are used to indicate the intended degree of compliance. This use is consistent with the language used in ISO standards and guidelines.

- a) 'shall' is used to indicate requirements, methods or specifications which are to be applied in order to conform to the standard; and
- b) 'should' is used to indicate the preferred requirements, methods or specifications.

The term 'national mine action authority or authorities' refers to the government department(s), organisation(s) or institution(s) in each mine-affected country charged with the regulation, management and co-ordination of mine action. In most cases the national mine action centre (MAC) or its equivalent will act as, or on behalf of, the 'national mine action authority'.

The terms 'demining organisation' and 'mine organisation' refer to any organisation (government, NGO or commercial entity) responsible for implementing demining projects or tasks. The demining organisation may be a prime contractor, subcontractor, consultant or agent.

### **3 General health care**

#### **3.1 General**

Good physical and mental health are prerequisites for all types of working dogs. The combination of strength, resistivity, fitness, joyfulness, liveliness, endurance, motivation and learning ability is key for a well working mine detection dog. All these requirements rely on systematic and comprehensive health care coupled with purposeful training. It is therefore essential that a demining organisation focuses on the need to develop adequate mechanisms for health care when establishing the programme requirements. These vital mechanisms are sometimes neglected with resulting of poor performance, frequent illness among dogs and even unnecessary death or permanent disability. The latter typically happens in tropical climates where the disease threat is significantly higher than, for instance, in Europe. Poorly established vaccination schemes may for example result in the disability or death of one or several dogs, and even allow the spread of epidemical diseases.

#### **3.2 Initial screening**

Quality health care and professional training is not sufficient to ensure the development of required skills and physical characteristics. Genealogically inherited illnesses and negative attributes may also prevent a dog from developing appropriate mine dog skills. The selection of dogs prior to training is therefore one of the most crucial elements of establishing a working mine dog detection capacity. An initial screening and evaluation of potentially suitable mine dogs should therefore be given highest priority. The screening should involve a medical examination and a test for desirable and undesirable individual qualities.

### **3.3 Principle health requirements**

Quality health care is established through a series of interlinked processes at different levels of the demining organisation. When an organisation wishes to establish the requirements for quality health care, the following principle objectives should be met:

- c) provision of sufficient and nutrient-rich food, including supplements for growth and hard physical work;
- a) provision of mechanisms and schemes for proper vaccination;
- b) provision of mechanisms for daily and periodic health check and treatment;
- c) provision of mechanisms for physical and mental exercise;
- d) provision of mechanisms for general hygiene;
- e) provision of adequate kennel or shelter facilities;
- f) provision of skilled veterinary support; and
- g) provision of adequate transportation facilities and procedures.

### **3.4 Physical condition**

Dogs need to be exercised regularly to remain in top physical and mental condition. This is particularly important in hot climates. Stereotyped exercises should be avoided, to prevent boredom. It is, however, necessary to adjust the type and periods of exercise and training to the dog's individual needs, and the type of environment in the area of operation.

## **4 Kennel requirements**

### **4.1 Basic requirements**

Dogs living in a kennel environment have essential needs and requirements, which can be satisfied in a number of ways. Dogs need a healthy and hazard free environment, a certain comfort, freedom of movement and access to natural light during daylight. Other important requirements are the company of other dogs or humans and stress avoidance. The kennel should be adequately sized for current and future needs.

A dog has some basic needs that should be satisfied in a kennel environment. These are:

- a) a clean and healthy environment;
- b) a certain degree of comfort and freedom of movement and expression of natural behaviour;
- c) adequately sized shelter facilities, well tempered and with fresh and clean air which is not too dry;
- d) non-slip, easy to clean, floor that can be kept dry and that causes no harm to the dog;
- e) constant access to fresh water;
- f) access to natural daylight and lighting available at night to enable observation of the dog at any time; and
- g) access to a suitable relief and exercise areas.

## 4.2 Permanent kennel facility

The kennel is primarily a sleeping place for the dog during the night and for periodic resting during the day. Veterinary back up should always be readily available. Only authorised people, such as dog handlers, instructors or kennel attendants should be allowed to enter the kennel without prior authorisation. The requirements of a permanent kennel facility can be satisfied in many different ways. Some recommendations on how to achieve a quality kennel environment and attend to the basic needs of dogs are listed in Annex G.

Some organisations, with a very limited number of dogs, operate successfully without all the facilities listed in Annex G. Dogs can for example work from a home-like setting where they are accommodated in the homes of their trainers or handlers. It is however anticipated that a mine dog will in general function better if it is living in a kennel environment. Many organisations prefer to keep their dogs in outdoor kennels at night. This is acceptable provided that the dog is accommodated in a snug kennel with adequate shelter and a pen. The size should be at least 4,5 m (3m x 1,5m). The pen should have a self-draining ground or a base that slopes gently away from the kennel to an outside drain.

All permanent kennel staff should have basic training in general dog health and kennel care. Emergency arrangements should be prepared to cover outbreaks of fire, floods or other emergency situations. All kennel staff should be trained to deal with emergency situations according to the prevailing emergency plans in the demining organisation's SOPs.

## 4.3 Provisional kennel facilities

Provisional kennels are often established when demining organisations undertake operations in remote areas. Although desirable, it is not reasonable to expect that provisional kennels should satisfy all the requirements to a permanent kennel. Provisional kennels may be made of tents, mud/straw huts or other available material. Transport cages may also be used for shorter periods. Mud huts are often preferable in hot climates while straw huts are more applicable in colder climates. Straw huts or roofs may, however, attract insects. Regardless of the building material, the following principles should be taken into account:

- a) careful selection of a suitable location is extremely important. The area must be dry and the dog bed or cage should be raised about 10 centimetres above the ground on blocks or supports;
- b) the provisional kennel should be covered with a waterproof tarpaulin or roof sheet and it should be properly ventilated. The sides should also be protected from rain and snow;
- c) dogs should be protected against insects in areas where insects and insect bites may prevent the dog from resting properly and cause diseases and allergic reactions. This is particularly important in countries with a constant threat from tropical illnesses transmitted by insects, such as ticks. There are several insecticide sprays and creams available. While suitable when dogs are working in the field, these products should be avoided if possible for kennel use due to the risk of allergic reactions. It is then better to shield the dog against insects and flies with a mosquito net;
- d) a dog may develop stress symptoms in a provisional kennel setting due to frequent interruptions, the effects of other dogs and excitement and anticipation when dogs and people pass by. This type of stress can wear out a dog, and will probably affect its work performance. Shielding between kennels is one means of avoiding unnecessary stress. When several dogs are accommodated in the same kennel, this may also provoke stress. Even if the dogs do not affect each other, not more than 3 dogs should be accommodated in the same kennel;
- e) the dogs should always have access to drinking water of the same standard of purity as that provided for human consumption. There should also be access to clean water for bathing, laundry and maintenance of a hygienic environment at the kennel site;

- f) even under field conditions, a provisional field kennel should be established with a separate isolation facility in the event of illness. The isolation facility should be located an adequate distance from the rest of the kennel; and
- g) provisional kennels should generally correspond to all the basic needs listed in clause 5.1.

#### **5.4. Quarantine requirements**

A period of quarantine is often required for newly arrived dogs that need to be medically assessed for potential diseases and parasites. The purpose of quarantine is to prevent transmission of diseases, parasites and worms to the main kennel facilities and consequently to the other dogs. Prevention is best ensured by applying the following principles:

- a) the quarantine site should be located in adequate distance from the other dog kennels. A 300 m minimum distance is recommended although this may not always be possible;
- b) quarantine personnel should not access the normal kennels or other dogs without prior efforts to prevent transmission of disease. Prevention can be achieved by proper washing/disinfection and change of clothes, gloves and boots (dependent on the potential threat). In some instances proper washing may be sufficient, combined with a foot basin with disinfectants. Clothes and other equipment that have been used in the quarantine kennel or by personnel assigned to this kennel should be stored separately from other clothes and equipment;
- c) the meshes in the fence should be small enough to prevent birds and other animals from coming in and out of the quarantine kennel, since these animals may transmit bacteria, viruses, parasites or worms to the other kennels;
- d) the quarantine kennel should be constructed to prevent other dogs from breaking in by force;
- e) the facility should ideally have a separate water, drainage and sewage system;
- f) waste products from treatment or similar activity should be disposed of hygienically and carefully to prevent disease transmission. In cases of extreme danger of transmission the waste products may be burned; and
- g) national quarantine requirements often exist. These requirements and procedures should be investigated, respected and adhered to by a demining organisation. That said, the ultimate responsibility for the health of mine detection dogs rests with the demining organisation.

## **5 Transportation**

### **6.1 General transportation considerations**

Certain procedures should be followed to ensure good health and safety while being transported from one location to another:

- a) dogs should always be transported in portable cages or in specially designed vehicles that are equipped with guards and grilles;
- b) adequate ventilation should be ensured during transportation, especially when vehicles are stationary in hot climates. The cage should be protected from dry air, exhaust and impurities, such as dust. During transportation on open vehicles along dusty roads, this vehicle should always drive first in the convoy to avoid dust from other vehicles;
- c) during international air transportation all dogs should be transported in cages complying with the regulations provided by the International Air Transport Association (I.A.T.A.). The same principles with regards to cage size can also be applied for land and sea transportation. An extract of the relevant regulations provided by A.I.T.A is given in Annex C;

- d) dogs that are transported in a car are best confined in a cage or behind a dog-grille or dog-guard. Grilles and guards should be substantial, and well fixed to the car. The rear windows should be covered with reflecting film or insulation material to prevent overheating. On longer journeys the dogs should be watered every second hour and taken out of the cage/container and exercised for at least 10 minutes every fourth hour; and
- e) during transportation, the dog should always be accompanied by its handler or another person trusted by the dog. Dogs should not be left unattended during transportation. It may be necessary to muzzle the dogs and take them out one at a time during rest periods to prevent dogfights.

## **6.2 Transport cage recommendations**

- a) transport cages should be made of fibreglass, metal or rigid plastic. They should have a strong frame, without joints with protruding studs or bolts;
- b) a sturdy and well-ventilated plastic, metal or wooden cage is normally used to house the dog during transportation. Plastic or metal portable cages are generally preferable over those made of wood. Plastic and metal cages are stronger and more easily cleaned and disinfected. Metal cages should be avoided in very hot and cold climates due to the thermal conductivity of the metal, and their ability to retain heat or cold;
- c) access to the cage should be via a secure hinged or slide door, which should be covered with securely fixed bars, weld mesh or smooth expanded metal. Solid doors may be used provided that another side in the cage is open and only covered with bars or weld mesh;
- d) a portable cage should be large enough to permit the dog to shift position and turn around inside. The cage should not be larger than necessary. A small cage will prevent the dog from hurting itself from tumbling around inside the cage during transportation;
- e) a non-slip carpet or other slip-resistant material should cover the floor to prevent injury caused by sliding on the floor;
- f) the main ventilation should be supplemented if necessary by slots or holes distributed regularly at the rear end of the cage and at the upper part of the sides;
- g) the size of the ventilation holes and the distance between bars should not allow the dog to stick its nose or paws through holes or gaps; and
- h) cages that are mainly made of wire-mesh are unsuitable for international air transportation. Wooden cages may not be solid enough for large dogs.

## **6.3 Recreation after transportation**

After longer periods of transportation, a dog will often need time to recover from stress. After shipment into an area, it is recommended that dogs are allowed a recovery period of 2 days, which will permit the dog to adapt to the local climate, the terrain and the new background scent. Dogs that are frequently transported and well used to travel will generally require shorter recovery periods than dogs that are rarely moved for long distances.

# **6 Prevention against diseases and illness**

## **7.1 Vaccination requirements**

Proper vaccination provides immunity against many potentially dangerous viruses and bacteria. A list of required vaccinations against different types of disease is attached in Annex G

Further vaccinations may be required, depending on the health situation in the country or area of operation. It is therefore important that a demining organisation investigates the local bacterial and viral threat in the country/area of operation and establishes procedures for preventive vaccination and prophylaxis.

## **7.2 Skin diseases and parasites**

Skin disease is a common problem for dogs in all parts of the world. The most common causes of skin disease are parasites, bacterial sores, allergic reactions, malfunctions in the hair growth cycle or faults in the diet. Because of the variety of causes, it is most important to define and treat the specific cause of the problem rather than merely the symptom. A veterinarian should always be consulted if the treatment of a skin disease does not improve within 24 hours after the completion of the treatment.

The basic symptoms of a skin disease are inflammation and skin irritation, which causes the dog to scratch the inflamed area. A more serious consequence is that dangerous bacteria can invade the broken skin. The best treatment is to prevent the dog from scratching itself.

Parasites fall into two groups: ecto-parasites (affect the skin and coat) and endo-parasites (affects the internal organs, the muscular- or the nervous systems). Typical ecto-parasites are ticks, fleas and mites; there are three main mite types alone that typically cause skin disease problems. Most ecto-parasites can be treated with anti-insect products (in disinfectant bath), insecticide sprays or creams. Tick collars can also be used. They are effective and relatively harmless. Most endo-parasites can be treated with de-worming and de-parasite products.

De-parasite and de-worming treatments should typically be repeated once every 6 months. In tick -infected areas, the dog should be examined several times per day to make sure that all ticks are removed in time. A table of parasites that are known to affect dogs, can be found in Annex

## **7.3 Zoonoses**

Zoonosis is a generic term for a few canine diseases that can also be transmitted to human handlers. The most prevalent zoonoses are: rabies, ringworm, roundworm and fleas. These diseases can often be avoided by applying simple procedures. The dog should be given worming preparations and anti-parasitic baths on a regularly basis. Personnel working with dogs should always wash their hands after handling a dog which is thought to be suffering from parasite or skin problems.

## **7.4 Other health and illness threats**

A mine dog is typically exposed to a whole range of injuries and illnesses that are not caused by bacteriological or viral infections. The most common ones are:

- a) Poisoning in general: Poisoning is fortunately a relatively rare phenomenon. Symptoms of poisoning may vary widely. Uncontrollable twitching of the skin, agitation or nervousness, heavy panting, excessive salivation, diarrhoea and vomiting are all signs of poisoning. In addition the dog may have difficulties in breathing and the eyes will sometimes have dilated pupils and other times constricted pupils. Dogs are capable of discriminating by themselves between most poisonous and non-poisonous substances. There are unfortunately a few exceptions. A dog may for example fail to distinguish between clean and anti-parasitic water;

- b) Tick and flea dip poisoning; Organophosphates and Triatix (Amitraz) are commonly used tick and flea dips that are poisonous if ingested. Examples of organophosphates are: Chlorpyrifos, Dichlorvos, Malathian, Phosmet, Coumaphos, Ethion, Flumthron, Chlorfenvinphos, Ronnel, Stirophos and Cythioate. There are a few products that are not organophosphates but can be treated in the same way as organophosphates. Two examples are: Cabaryl and Propoxur. Clinical signs of Organophosphate poisoning are: slow heart rate (30-50 beats per minute), constricted pupils, vomiting, diarrhoea, tremors/convulsions, high temperature because of the convulsions and the dog being lethargic and weak. A clinical sign of Triatix poisoning is that the dog becomes very tired and lethargic;

Note: It is extremely important to ensure that the dog is not allowed to drink anti-parasitic water during cleaning (tick bath). It is equally important to ensure that the dog does not lick the anti-parasitic water from its coat after the bath. The dog handler should contact his/her superior immediately if a dog has been observed drinking or licking dip or if the dog shows signs of poisoning from ingesting dip. It should, however, be mentioned that if a dog has not ingested poisonous dip, the drugs that are typically used as treatment may have a detrimental effect on the dog's health and even kill it if the dog is not suffering from poisoning. It is therefore extremely important to observe the dog at all times during tick bath. If there is doubt as to whether the dog has been poisoned, it is recommended to wait for signs of poisoning to develop;

- c) Rattex poisoning; Rattex is commonly used to as a rat and mice poison in the southern hemisphere, especially in Africa. Poisoning from rat poison is extremely dangerous for the dog and clinical signs of Rattex (warfarin) poisoning are: the dog is lethargic and weak, pale, fluid may surround the lungs (can be observed by using a stethoscope), bleeding from nose, anus, vulva and paintbrush bleedings or gums and balance problems;
- d) Explosive poisoning; A relatively common problem due to current training methods of mine detection dogs. Explosive poisoning typically occurs during the first stages of the training when the dog is more exposed to explosive substances. Serious explosive poisoning can occur if the dog swallows pieces of explosives. Explosive substances may also be absorbed by inhalation or skin contact. TNT poisoning can lead to several diseases, such as toxic jaundice or aplastic anaemia. Toxic jaundice is an indication of severe liver damage. In aplastic anemia (which is nearly always fatal) the blood forming organs fail to function, resulting in a progressive loss of the blood elements. Less serious diseases resulting from TNT intoxication are various effects on the nervous system. Symptoms and clinical manifestations of RDX poisoning include convulsions followed by loss of consciousness, muscular cramps, dizziness, nausea and vomiting. The most common symptom of exposure to Tetryl is dermatitis. Other symptoms are gastric disorders and fatigue. PETN has been shown to cause changes in the respiration, a fall in blood pressure and a considerable rise in the spinal fluid pressure. The balance and nervous system can also be affected. All dog handlers should be trained to identify and prevent poisoning, and to treat explosive poisoned dogs. If a dog has swallowed explosives, the treatment has to be started as soon as possible;
- e) Foot injuries; The use of protective shoes for dogs has been adopted for two different reasons, as protection of healing wounds and to prevent injury during work in areas with a high risk of sharp object injury or poisonous insects and snakes. Different materials can be used depending of the type of threat and the environment. Protective shoes aimed to protect against thorns and ants should be made of a comfortable light and breathing material, and cover 2/3 of the leg. They should be fastened above the wrist and elbow. Shoes aimed to protect a treated and bandaged wound should be made of a dense material that protects from water and dust. It should cover 1/3 of the leg and be fastened above the wrist. A dog may find it uncomfortable to wear protection if it is not used to it. All mine detection dogs should therefore be trained to wear protective shoes on weekly basis;

- f) Fatigue; This can occur during normal search but it is more common under conditions of extreme heat or cold. A dog may continue to search even if it suffers from fatigue. Its capability will, however, be greatly reduced. It may be difficult for the handler to notice if a dog is beginning to suffer from fatigue. The most practical remedy is therefore to take preventive action against fatigue. There may be cases where the dog does not display obvious symptoms of fatigue, but most will. Typical symptoms of fatigue are poor search behaviour, low motivation and lack of normal enthusiasm. To avoid fatigue, some basic rules should be followed:
- ❑ The dog should not be worked for extended periods without periodic resting. A minimum of 10 minutes rest after every 20 minutes of work is recommended, but the rest requirement will depend on the climate and the characteristics of the dog.
  - ❑ A working day should start as early as possible in hot climates. A normal working day should not be more than six to eight hours.
  - ❑ The dog should have periodic access to shade, and to ample water, especially in hot climates.
- g) Gastric dilation or torsion; This is a condition where the stomach is inflated with gas. It occurs in deep-chest breeds when the stomach twists, thus trapping gas inside. This is fairly common with German Shepherds but it may occur with any breed. The condition requires urgent surgery. An untreated dog may die within one or two hours. The cause of the problem is uncertain but one common theory is that the dog swallows air while eating. Exercise immediately after eating then causes the condition. A dog can also get gastric dilation or torsion during veterinary examination while the dog is anaesthetized. As a preventive measure, dogs should not be given water and food for at least one hour after vigorous exercise. They should also not be exercised immediately after feeding;
- h) Heat stroke; A dog may suffer from heat stroke in hot climates. The most common cause of heat stroke is that a dog is left in an unventilated cage or car. Lack of water compensation is another common cause. Heat stroke will result in variable state of collapse, panting heavily if conscious and frothing around the mouth. Heat stroke can be limited by dousing the dog's body with cold water before transportation to a veterinarian for further treatment with more cold water, stimulant drugs and cortisone. If transport cages are used as temporary field kennels, they should not be exposed to direct sunlight, but screened, with an air gap between the screen and the kennel; and
- i) High humidity; High humidity is one of the archenemies of the dog's skin both under cold and hot weather conditions. Under cold conditions the humidity will transport the heat away from the body and make it freeze. In hot conditions the heat and high humidity together typically serve as a breeding ground for bacteria, and parasites. It is therefore essential always to keep the dog as dry and clean as possible.

## 7.5 Treatment of poisoning

A recommended way of treating poisoning is to apply the following principles:

- If the dog has not already vomited, ensure that the dog vomits with the exception of caustic poisoning (acid, alkali and petroleum based products, such as strychnine, gasoline, paint thinners and cleaning fluids) where the dog should not be forced to vomit since this may cause damage to the dog. In such cases, milk is given to soothe the tissues and administration of powdered activated charcoal may be applicable since this is a simple and effective remedy in situations where a remedy specific to the poison is not available and where vomiting is not advisable. The activated charcoal, once ingested, soaks up the poisonous materials and neutralizes the stomach content.

- A recognised way of facilitating vomiting, is to use 6 mg of Apomorphine powder dissolved into 1 ml of water for injection and a few drops put under the lower eyelid. The standard powder bottle (delivers 5 mg per squeeze) can be used to squeeze under the lower eyelid. It is however, recommended that some of the Apomorphine powder is put under the eyelid at the same time, only a few drops initially. If the dog does not start vomiting after 5 minutes, give a few more drops. If no Apomorphine is available, 5 ml of 3% Hydroxide can be thrown in the back of the throat.
- The lower eyelid must subsequently be rinsed using approximately 0,9% Saline solution (NaCl).
- All poisoned dogs should, after vomiting, be dosed with activated charcoal at 4 teaspoons dissolved in 200 ml of tap water twice per day for 1-2 days. It is important to ensure that the dog actually swallows the mixture.
- If the dog is convulsing, give 0,5 mg/kg of Diazepam (or an equivalent product) intravenously (i/v). If this is not possible, give intramuscularly (i/m) in the Quadriceps muscle.
- Organophosphate poisoning is treated by giving 0,5 mg/kg (25% i/v and the rest i/m) of Atropine (or an equivalent product). This treatment can be repeated if necessary.
- Triatix is treated by giving 0,1 mg/kg of Yohimbine (or equivalent product) i/v.
- Rattex poisoning is treated by promptly giving 2,5 ml/kg Kanokione (vit k1) subcuticular (s/c) or an equivalent product once as a first injection and 1,5 mg/kg s/c twice per day for 5 days or alternatively 2 mg/kg of Kyrovite (or an equivalent product) i/v once per day for 3 days.
- Nitro-glycerine, Dynamite and TNT are all nitrate poisons and poisoning is treated by putting the dog on drip of methylene at a rate of 0,54 ml for every kg of body weight for 24 hours after vomit stimulation. Charcoal is concurrently given to the dog (4 teaspoons per day) for 1-2 days. Follow-up treatment will include a special diet that includes high calcium content and the administration of vitamin A and D.
- C4 explosive has a unique set of symptoms compared to other nitrate poisons. The dog tends to become hyperactive and will show bizarre behaviour changes. The treatment is, however, the same as for other nitrate poisons although an injection of valium should also be prescribed.
- In all cases of poisoning or suspected poisoning, the dog should immediately be rushed to an experienced veterinarian for proper treatment. Before doing so, the dog handler should try to determine what type of poison the dog has ingested.

## **7 Epidemic diseases**

### **8.1 General**

The most common epidemic diseases are viruses or bacteria affecting the digestive tract thus causing diarrhoea and vomiting. Another common disease is kennel cough or parvurus, which attacks the lungs. Epidemic diseases may spread very quickly and affect the whole stock of dogs in a few days. The best preventive protection is proper hygiene and vaccination.

If a serious epidemic disease is suspected, the infected dog(s) should immediately be put in quarantine to prevent the outbreak from spreading. If a dog is suspected to have an epidemic disease during operations, all the dogs in the area should be temporarily withdrawn from operations for further assessment. It is extremely important to determine whether there are other dogs that have been infected. Before this is established, all the dogs should be kept separately. They should also be exercised separately and in different areas.

If a serious epidemic disease is suspected in a kennel building, all the dogs should be taken out and examined outside the kennel. All kennel facilities should be disinfected before they again are taken into normal use. All areas used by any of the dogs should be classified as restricted until it has been established whether one or several dogs have been infected. The infected dog(s) should immediately be isolated in a special facility. General quarantine requirements are described in paragraph 5.4.

It is the responsibility of the demining organisation to report all cases of serious epidemic diseases to other demining organisations in the region, and to the national mine action authority.

## **8 Accidents and emergencies**

A demining organisation must be prepared to respond to accidents and medical emergency situations that involve their mine dogs. It can be extremely difficult and dangerous to deal with a dog at the site of an accident. If the handler suffers from an accident, the dog may try to protect its handler thus preventing medical staff from approaching the victim. A dog's protective instinct can be directed against members of its own team and sometimes against his/her own handler. It is, however, possible to undertake preventive training to avoid this type of behaviour. This is typically done by simulating accident scenarios in which the dog can be trained to accept interference or assistance to the handler from other people.

The principles of first aid for dogs are similar to those for humans. It is important that dog handlers, team leaders and other members of a dog team are adequately trained to undertake basic first aid on dogs. This can save a dog's life and further prevent a medical condition from getting worse. Moreover, the injury recovery period may be significantly reduced. Each dog team should be equipped with a medical first aid kit for dogs. The demining organisation should also ensure that the medical evacuation system SOPs incorporates the evacuation of their dogs.

During emergency situations it is often important to ensure an immediate treatment by a veterinary specialist. A vehicle should therefore be available for emergency transportation of dogs as well as humans. Before and during transportation the dog should be moved as gently as possible. It is often necessary to treat the dog against shock prior to and during transportation.

## **9 Feeding principles**

### **10.1 General**

Mine dogs need a comprehensive diet containing all nutrients, minerals and vitamins, to maintain full health and vigour. All dogs need certain nutritional components in the right proportions. There are many different varieties of proprietary pre-packed dog food on the market. Most of the commercially prepared dog food types are well balanced and generally of adequate quality. Dog food can be described in three different categories: dry, semi-moist and canned.

- a) Dry food; This contains about 10 % of water. All the common dry food makes have a similar nutritional analysis but they use different raw materials. Some food makes are therefore more appealing then others. Among the advantages of dry food are their comparatively low cost and the storage life. Large quantities of dry food can be stored at a kennel for several weeks and even months provided that they are properly stored. If dry food is stored for to long periods, however, it may lose some of its vitamins;
- b) Semi-moist food; This contains about 25% of water. It too stores well under conditions with no refrigeration. Semi-dry moist food has high sugar content. This makes it unsuitable for diabetic dogs;
- c) Canned food; There are two different types of canned food, complete (containing cereal components) and all-meat (containing meat only). Canned food is not a nutritionally balanced diet; and
- d) Home cooked food; This will provide a good alternative in situations when the ordinary dog food is difficult to obtain or if the dog requires special diet. A nutritionally balanced diet is easy to make by using the basic ingredients, such as meat and rice. Essential vitamins and minerals can for example be provided by the use of liver, bone meal, corn oil and salt.

The essential raw materials for the average dog are water, fat, protein, minerals and carbohydrate. An adult dog's ability to digest the different types of nourishment differs. It is therefore important to feed a dog in right proportions.

## **10.2 Nutritional disorders**

Several diseases, including hip dysplasia, are probably due in part to improper nutrition. A wrong diet may result in deficiency diseases, such as Rickets (weak and bending bones) and Osteoporosis (weak bones which break easily). Too little food may result in a lack of energy, power and concentration, loss of weight. Excess feeding of particular ingredients, such as vitamins and minerals may cause toxic effects and allergic reactions in the skin and mucus membranes. Excess feeding can also cause bone deformities, especially on young and large individuals.

## **10.3 Vitamins and minerals**

The vitamin and mineral levels in most pre-packed dog food are normally carefully balanced. Extra supplementation is only needed during particularly hard work and hot conditions. Home cooked food or fresh diets will, however, need supplementary minerals and vitamins. It is important not to over-supplement. Over-supplementation can cause bone deformities, especially on young and large individuals.

## **10.4 Food requirements**

The amount of food required to maintain high levels of health and working stamina will vary considerably depending upon the physical demands on the dog. All dogs have different rates of turning food into energy, even within the same breed. The dog's body weight should therefore be checked on a monthly basis.

## **10.5 Liquid balance**

A dog's body consists of between 50 to 75% of water. The dog loses water through sweating, panting and via the kidneys, lungs and gut. There must be a consistent replacement of lost water. Fresh drinking water should therefore always be available. A healthy dog should drink 40-50 ml per kg of body weight per day to maintain the correct liquid balance, with water from other sources, such as food, included. A dog with a weight of 30 kg needs 1,2-1,6 litres of drinking water per day under normal conditions and more under hot conditions or hard work. These figures are guides only. There will always be individual variations. More water is needed if a dog has kidney problems or diarrhoea. The daily and average water consumption should be recorded in the logbook. All major deviations from the normal water consumption should be observed, recorded and examined.

## **11 Health control**

### **11.1 General**

A dog cannot express or describe its health condition in the same way as a human. It often attempts to continue to work even if something is wrong, to please the handler. It is therefore necessary to understand, be aware of and control all possible signs of illness. This is ensured through regular control of the dog's health, and by general observation of the dog during work and exercise. Proper physical care requires routine grooming, as well as daily examination of the dog's body for evidence of illness or injury. Dogs should always be muzzled during physical monitoring.

A medical record/logbook should be prepared and maintained for each dog. Information about vaccinations, other prophylactics, worming, illness, treatment and medicinal treatment should be included in the logbook. Some of the most important aspects to address in the logbook are listed in Annex E. Vaccination cards should also be established and maintained for each dog. The dog handler should be given a copy of the vaccination card while the project manager or the veterinary specialist should keep the original cards. International vaccination cards for dogs exist in the same way as for humans. Some countries may also have national regulations with regards to vaccination and the use of vaccination cards. If this is the case, the national regulations should be adhered to by the demining organisation.

### **11.2 Daily health check**

A dog should always be examined prior to and after the working day. It is normally sufficient that the dog handler undertakes these daily checks. It is, however, important that the dog handler informs the team leader or the relevant person on duty immediately if any symptoms or abnormalities are discovered during the daily work or health check. The results from the examination should be recorded in a logbook. Complex medical problems and failure by the dog to respond to standard treatments should always be reported to the correct specialist within the organisation since this will require further assessment. Recommended daily check items are found in Annex D.

### **11.3 Monthly health check**

A more thorough clinical examination of the dogs should be done on monthly basis, to assure that the dog is fit and healthy. The examination should be done by an experienced para-vet, a specially trained dog supervisor or a veterinarian. The examination results should always be recorded in the dog's logbook. Recommended monthly check items are found in Annex D.

## **12 Responsibilities**

### **12.1 General**

General health care mechanisms must be established at different levels of the demining organisation. It will always be necessary to draw support from a veterinary specialist. Specially trained dog medics may also have a certain responsibility for health care. The dog handlers play an important role since they normally feed, train and monitor their dogs on a daily basis. Finally the demining organisation has a responsibility for the establishment of quality health care mechanisms and the provision of high quality food, clean water, adequate kennel facilities and healthy working conditions.

### **12.2 National mine action authority**

It is the responsibility of the national mine action authority to set national standards for the use of mine detection dogs in its mine action programmes, with the aim of establishing and maintaining high standards of animal health, leading to high quality mine and UXO detection. It is further responsible for the support of dog detection operations, by the provision of veterinary records concerning nationally endemic animal diseases and health hazards.

### **12.3 Donor organisation**

It is the responsibility of the donor organisation funding the demining with mine detection dogs to encourage the maintenance by the demining organisation of a regime of dog health care. The donor organisation, or its agent, can monitor the health records, and the instance of disease. It is also the donor's responsibility to encourage the national mine action authority, where necessary, to fulfil its responsibilities in support of the creation of dog health programmes in the demining organisations working in the country.

### **12.4 Demining organisation**

The demining organisation has the responsibility to ensure that all the required mechanisms for the provision of a quality health and dog care system be established. They shall:

- a) ensure that a qualified veterinary is either employed or available on a contract basis;
- b) ensure that kennel staff, team leaders, instructors and dog handlers are given adequate training in dog health and dog care;
- c) ensure the establishment of adequate written SOPs for general kennel, training and operational health care in accordance with national and international standards and guides;
- d) ensure that appropriate permanent kennel facilities are constructed and that provisional kennel facilities in the field meet the basic requirements outlined in this guide;
- e) ensure the establishment of adequate dog transport means;
- f) ensure that the health and general dog care is regularly monitored by qualified staff; and
- g) ensuring that all aspects of its dog health regime are laid down in appropriate and up-to-date SOPs, and that these SOPs are complied with by all staff members.

In the absence of a national mine action authority, or where such an authority is in formation, the demining organisation is responsible, where appropriate, for coordinating its health care activities with other demining organisations to maintain a consistency of standards and better utilisation of resources. It is also responsible for assisting the national mine action authority to set up the basic requirements for high quality dog health regime within the country.

### **12.5 The kennel manager**

The kennel manager (kennel master) is responsible for all activities at the kennel. His/her responsibilities include:

- a) assisting the management of the demining organisation in the drafting of SOPs for all aspects of the use and health of dogs;
- b) ensuring that the adequate routines are established for proper management of the kennel;
- c) ensuring that a clean and healthy environment is maintained at the kennel, including daily washing, regular disinfections, proper disposal of faeces and daily inspection of the facilities;
- d) ensuring that all dogs are properly fed including regular provision of drinking water;
- e) inspecting the dogs at the kennel and, if abnormal behaviour is noticed, reporting this to the superior or correct official within the organisation; and
- f) maintaining a diary of kennel activities and the status of the dogs, the construction, the environment, the food storage condition and other relevant information. Reporting problems or irregularities to the correct level of the organisation.

## **12.6 Veterinary**

The veterinary has the professional responsibility for all aspects of dog health care. This includes:

- a) assisting the demining organisation in establishing a quality health care policy, and assisting the demining organisation management writing the SOPs necessary to such a policy;
- b) establishing vaccination schemes for the dogs in accordance with general requirements and the local threats in the area of operation;
- c) assessing the dogs on a regular basis and treating or (prescribing treatment for) dogs that are ill;
- d) assisting the demining organisation in the training of kennel staff, team leaders, instructors and dog handlers on health issues, on matters such as regular health control, illness and disease recognition, preventive treatment/action and basic treatment of sick dogs, emergency treatment, potential threats (poisoning etc) and feeding principles;
- e) managing the consumption of medicines and drugs and ensure a re-supply of medicines/drugs/medical equipment when required; and
- f) ensuring that staff with a medical responsibility are sufficiently supplied with medicines and medical equipment.

## **12.7 Team Leader**

The team leader is responsible for the monitoring and supervision of the dogs and the handlers within his/her team. This includes:

- a) understanding and complying with all details of the demining organisation's SOPs relating to dog health care;
- b) ensuring that all principles relating to health and dog care are followed in accordance with the demining organisation's SOPs;
- c) monitoring the daily and monthly inspection of the mine dogs and maintaining the logbook in co-operation with the dog handlers; and
- d) supervising the handlers and the dogs during work, training and feeding and correcting inappropriate behaviour and procedures related to health- and dog care.

## 12.8. Dog Handler

The dog handler is perhaps the most important element in the process of assessing the mine dog since he/she spends most time with the dog. The dog handler is responsible for:

- a) understanding and complying with all relevant sections of the demining authority's SOPs related to dog health care;
- b) possessing the necessary skills to enable a medical assessment of the dog and the recognition of symptoms of basic illness and discomfort;
- c) assessing the dog's health and condition every day prior to and after work and monitoring the dog's physical and mental health during work;
- d) maintaining the daily logbook in co-operation with the team leader;
- e) ensuring that the dog is adequately fed and provided with water;
- f) ensuring that the dog is well treated and cared for;
- g) ensuring that the dog is sufficiently exercised; and
- h) ensuring that the dog is appropriately rested during work and provided with shade and drinking water during rest time if this should be required.

## **Annex A**

(Informative)

### **Terms and definitions**

#### **A.1.1**

**i/m**  
intramuscularly

#### **A.1.2**

**i/v**  
intravenously

#### **A.1.3**

**s/c**  
subcuticular. Under the epidermis. In this context an injection just under the epidermis but not deep enough to penetrate the dermis

#### **A.1.4**

**SOP**  
Standing Operating Procedures

#### **A.1.5**

**quarantine**  
Enforced isolation or restriction of free movement imposed to prevent the spread of contagious disease

#### **A.1.6**

**I.A.T.A**  
International Air Transport Association

#### **A.1.7**

**epidemic disease**  
Disease, which spreads rapidly and extensively by infection and affecting many individuals in an area or a population at the same time. In contrast to an endemic disease, which is prevalent in or peculiar to a particular locality, region, or people

#### **A.1.8**

**nutritional**  
The process of nourishing or being nourished, especially the process by which a living organism assimilates food and uses it for growth and for replacement of tissues.

**Annex B**  
(Informative)  
**Vital abstracts from the I.A.T.A Standard**  
**(Air transportation)**

Below are some principle formulas for the calculation of cage measurements in accordance with the requirements provided by I.A.T.A

- a) Inside length of the cage: The dogs length from its nose to the root of tail + half of dog's height from ground to the elbow joint.  **$A = D + \frac{1}{2} E$**
- b) Inside with of the cage: The dog's shoulder with multiplied by two.  **$B = 2 \times F$**
- c) Inside height of the case: The dog's height in standing position.  **$C = G$**
- d) Cage marking labels:
  - "Dog's name"
  - "This way up"
  - "live animal"

A = Length of the cage

B = Width of the cage

C = Height of the cage

D = Dog's length from its nose to the root of tail

E = Dog's height from ground to elbow joint

F = Dog's shoulder width

G = Height of the dog in standing position

## Annex C (Informative) Daily and monthly health check points

Table of recommended daily and monthly health check points

Daily health check	Monthly health check
The dog's general condition and willingness to play and respond to positive stimuli	The dog's general condition and willingness to play and respond to positive stimuli
Examine the skin and coat and let the hand run over the body to feel for wounds, ticks, thorns and areas of matted hair, or lumps and bumps	Check the appetite by asking the dog handler
Examination of breast, legs and paws. Look particularly for hot spots swollen joints, dry pads, long or damaged claws and fungus diseases between toes	Check the skin and coat for wounds, ticks, thorns and areas of matted hair, or lumps and bumps
Examine the tail, anal region and anal sacs. Look for swelling and irritation	Examine the nose, mucous membranes, throat, tongue and teeth
Examine the vagina/penis and testes	Examine the eyes and ears
Examine the nose, eyes and ears	Check visually the lung functions and the hydration status
Examine the mouth and throat. Control mucous membranes, throat, tongue and teeth. Look for swelling, changes in colour, inflamed gums, bad breath and foreign bodies/objects and loose or broken teeth and accumulated tartar	Inspect lymph nodes for swelling or sore points
Check the temperature if there is any doubt about the dog's health	Check the heart and pulse function
	Check the body temperature

## Annex D (Informative) Logbook check points

Daily logging	Monthly logging
General physical/mental health	Appetite
Willingness to work and play	Thirst
Skin condition	Skin condition
Occurrence of ectoparasites	Occurrence of ectoparasites
Condition of the legs	Condition of the legs
Condition of paws and claws	Tail condition
Tail condition	Condition of the anal region
Vagina/penis and testes condition	Vagina/penis and testes condition
Nose condition	Nose condition
Eye condition	Eye condition
Ears condition	Ears condition
Mouth condition	Mouth condition
Throat condition	Throat condition
Teeth condition	Teeth condition
Temperature	Temperature
Vaccinations	Vaccinations
Other prophylactics	Other prophylactics
Worming	Worming
Treatment	Treatment
Use of medicines	Use of medicines
	Pulse condition
	Respiration and lung function
	Urine test
	Blood test

**Annex E**  
(Informative)  
**Parasites that are known to affect dogs**

Parasite name	Characteristics	Ecto	Endo
<b>Demodex</b>	Carried by most dogs, these mites usually cause no trouble, but may be nuisance at times of stress or in animals whose natural defences are not fully developed	X	
<b>Sarcoptes</b>	These are commonly known as "scabies", a disease where the sarcoptes burrow through the skin, producing tunnels in which they lay eggs	X	
<b>Otodectes</b>	These normally appear in the dog's ears where they can cause inflammation. It is the only type of mite visible to the human eye and then only rarely as tiny white moving dots	X	
<b>Ring worm</b>	This is an infectious fungus which grows on the skin and within the coat	X	
<b>Lice</b>	There are two different types of louse. There are biting lice which eat skin flakes, and sucking lice which penetrate the skin to feed on tissue fluids. These cause more irritation to the dog	X	
<b>Fleas</b>	When a flea bites, it injects a form of saliva which stops the blood from clotting whilst it feeds. The saliva contains chemicals which often cause an allergic reaction	X	
<b>Ticks</b>	Ticks are increasingly common in nature. The tick hangs on to the dogs hair and sticks its mouth parts through the skin to suck blood. It can transmit several serious diseases but this takes time, and therefore it is important to remove the tick as soon as possible.	X	
<b>Tapeworms</b>	These are transmitted by fleas in which its larvae develop. The definitive host becomes infected by ingestion of an intermediate host containing the infected larvae stage. Normally the clinical symptom are vague or absent, but may contribute to inanition, diarrhoea, anorexia and nervousness		X
<b>Roundworms</b>	The two most important types of roundworms are <i>Toxocara canis</i> and <i>Toxascaris leonina</i> which both live in the small intestine. They feed on digesting food in the gut and are particularly harmful to young dogs. Other roundworms infest the large intestine, blood vessels and respiratory system. These worms can infect humans		X
<b>Hookworm</b>	This is a bloodsucker and can cause anaemia, diarrhoea and poor condition.		X
<b>Whipworm</b>	This is a larger type of hookworm. Severe infection may cause loss of weight, cause anaemia, diarrhoea and poor condition.		X
<b>Heartworm</b>	There are different types of the parasite. The European heartworm is transmitted via slugs eaten by the dog. Its larvae infect lungs, blood. The American and Asian parasite is transmitted by mosquitoes and fleas and infects the pulmonary artery and the right ventricle. The infection is often fatal. In view on the fact that treatment is tedious and not always effective, and because of the longevity in host animals presents a constant threat of infection in other dogs, rejection of dogs with the diagnosis of heartworm should be considered. This applies especially to organisations who do not have access to proper quarantine facilities.		X

## Annex F (Informative) Required vaccinations

Illness type	Description	Comments and preventive means
<b>Canine viral hepatitis (CVH)</b>	This is a highly contagious disease and caused by a virus. Initially, signs are vague and without treatment a dog will die with no warning	Vaccination or two times during an early stage of a dog's life.
<b>Canine leptospirosis (CL)</b>	There are two types of leptospirosis in dogs. One is a bacterium that attacks the liver and the second affect the kidneys. HeThis can cause acute liver damage, which often results indeath.	Vaccination or two times during an early stage of a dog's life.
<b>Canine parvovirus (CP)</b>	Is a viral disease that affects the intestines and bowel The disease can be fatal. Death is common despite treatment.	Vaccination or two times during an early stage of a dog's life.
<b>Canine distemper (CD)</b>	The virus attacks the immune and nervous system and the cell lining the lungs and guts	Vaccination or two times during an early stage of a dog's life.
<b>Adinovirus</b>	The virus can cause symptoms similar to those of the true distemper virus	Vaccination or two times during an early stage of a dog's life.
<b>Parainfluenza</b>	The virus can cause symptoms similar to those of the true distemper virus	Vaccination or two times during an early stage of a dog's life.
<b>Rabies</b>	Rabies is a potentially fatal virus transmitted in saliva of infected animals.	Regular vaccination. Avoid direct contact with free roaming, wild or feral animals.
<b>Trypanosoma</b>	Also known as sleeping disease. Spread by the tsetse fly. The disease is fatal for dogs. Dogs that survive may be permanently disabled	Shield against flies if possible. Prophylaxis two times per year in areas where the disease is known to exist

## Annex G (Informative) Kennel requirements

Below are some recommendations that will facilitate a quality kennel environment and attend to the basic needs of a dog.

<b>Construction</b>	The kennel should be a purpose built facility, constructed of brick/breeze blocks or wood covered by tiles or other appropriate surface material. The design should be such that it prevents the dog against injuries and accidents. Thus there should be no sharp, poisonous or other hazardous assets within reach of the dog. The floor should have an impervious surface
<b>Temperature and ventilation</b>	The kennel should be well ventilated and, if necessary, isolated to prevent against uncomfortable chill, heat, dry air and humidity. The shelter should in general facilitate a comfortable inside temperature independent on the outside weather conditions. It is preferable to maintain an inside temperature of 10-30 degrees Celsius. The use of air conditioning may be necessary under extremely hot and humid conditions. This should, however, be avoided if possible since it may be detrimental in the process of adapting the dog to field conditions.
<b>Kennel size</b>	The requirement to kennel size is dependent on several factors, such as; the size of the dog, the number of dogs in each individual kennel and how long time the dog spends inside the kennel. Mine detection dogs are normally active outside the kennel during daytime. Thus it may not be necessary to establish too large individual kennels since the dog will mainly eat and rest during the hours inside the kennel. Each kennel should, however, be large enough for a bed to be placed at the back and for the dog to stand, turn, lie and change position without any discomfort. A too large kennel may cause a feeling of insecurity.
<b>Lightning</b>	The arrangement should be equipped with a lamp to enable observation and assessment of the dogs at any time.
<b>Running facility</b>	A separate running facility in conjunction with each kennel is desirable
<b>Visibility</b>	All dogs should have adequate visibility of the environment outside the immediate kennel area
<b>Inside material</b>	All materials used inside the kennel should be easy to change, wash and dry. This to minimise the spread of parasites and diseases
<b>Relief area</b>	Dogs should have close proximity to relief area for daily opportunity to exercise either during work or play time. The relief area should be fully enclosed to a minimum height of two meters with the top angled in.
<b>Hygiene</b>	There should be constant access to cold and warm water for cleaning. A hygienic method should be established for faeces disposal. If there are health and safety legal requirements in country, these should be followed.
<b>Food and water</b>	The dog should have constant access to cold drinking water.
<b>Food preparation</b>	There should be close proximity to clean and hygienic food preparation areas. A separate store for dog food should be established to facilitate a proper storage without affection of damp or vermin. A freezer and refrigerator shall be available if fresh foods are used.
<b>Cleaning facility</b>	A special space should be established for bathing, grooming and treatment
<b>Isolation facility</b>	An Isolation/quarantine facility should be established to provide kennelling for infectious dogs, whilst protecting the rest of the population/ stock
<b>Sleeping place</b>	The dog bedding should be warm and raised off the ground