



The legal implications of the administration of medical treatment to an accident victim by persons who are not qualified medical practitioners vary from country to country. Establish the legalities of administering first aid in the country in which you work.

### 6.2.1 Precautions for prevention of capture drug accidents

1. Ensure that you are thoroughly trained in the use of capture drugs.
2. Attend regular refresher courses.
3. Know basic first-aid techniques, including cardiopulmonary resuscitation (CPR).
4. Educate your local medical professionals about the drugs you use for capture. Most of these drugs will be foreign to them: give them all the information you have on the drugs, antidotes, and so on. Discuss your safety and emergency procedures with them.
5. Before a capture operation, check your communications and transport infrastructure to ensure that you can respond quickly in an emergency.
6. Use capture drugs only in the presence of a second person who is trained in their use and in the management of accidents.
7. Respect the potency of these drugs – never take chances and never underestimate a potentially dangerous situation.
8. Always concentrate on what you are doing, and work in an orderly fashion.
9. NEVER eat, drink, smoke, or rub your eyes when working with capture drugs.



**Figure 6.1:** Gloves can serve dual purposes in terms of safety: 1. Protection against contamination by dangerous drugs and 2. Preventing transmission of pathogens, this is particularly important with primates such as this immobilized mandrill (*Mandrillus sphinx*).

10. If you have cuts or abrasions on your hands, put a plaster on the affected area or wear gloves.
11. Be careful never to inhale drugs that are in powder or aerosol form.
12. NEVER work with opioid drugs in a moving vehicle; exercise extreme care in a helicopter.
13. NEVER work with opioid drugs without having the human antidote at hand in the first-aid kit or emergency kit (see details below).
14. Use a needle to equalize the air pressure inside and outside all new vials before attempting to draw up the drug.
15. Do not push air into the vials of powerful drugs – the drug may leak out. A negative pressure inside the vial is desirable from a safety point of view.
16. Use a small syringe (1 or 2 ml) with a thin needle (21 gauge/0,8 mm or thinner) for drawing up concentrated solutions of powerful drugs.
17. Take extreme care with loaded darts. Carry them in a container (e.g. cigar case, drug box). Darts that work with compressed air or gas, or with a spring, should only be armed immediately before use.
18. Consider all dart guns loaded and all darts filled until you know otherwise. Treat them accordingly.
19. Lock all capture drugs away when they are not being used.
20. Label all drugs, containers, unused darts and filled syringes that are not used immediately.
21. Keep all used syringes, darts, needles and vials in a safe place until they can be disposed of properly. Dispose of them yourself – other people may take short cuts!
22. NEVER allow a carcass from an animal that has died during chemical immobilization, or even some time after that, to be consumed. Supervise the destruction of the carcass yourself. This also applies to non-opioid capture drugs (except suxamethonium).
23. Always limit personnel present when working with dangerous drugs to those essential to the operation.
24. Always keep basic notes on capture drugs and emergency treatment, as well as emergency telephone numbers, in your drug box, first-aid kit and emergency kit.

### 6.2.2 First-aid kit

Always have a first-aid kit available when immobilizing animals. Keep it simple, keep it up to date, and keep it with you. Besides the basic drugs and dressings, your first-aid kit should include the items listed in the following box:

**Note:** Sufficient quantities of water should always be available to wash off spilt or splashed drugs.

#### FIRST-AID KIT FOR CAPTURE OPERATIONS

##### Equipment:

- Intravenous saline (0,9 %) solution – 2 litres
- IV drip sets x 2
- Sterile IV cannulas – 21G (0,8 mm)
- Disposable syringes – 2 ml and 10 ml
- Hypodermic needles – 18G (1,2 mm) and 21G (0,8 mm)
- Elastoplast and scissors
- Tourniquet and clamp
- Stethoscope
- Thermometer
- Ambu® bag with face mask
- Guedal airway for CPR

##### Drugs:

- At least one bottle of naltrexone (50 mg/ml)
- 250 mg hydrocortisone
- 40 mg diazepam
- 5 mg atropine
- 20 mg adrenaline
- 10 mg neostigmine if working with gallamine
- Doxapram hydrochloride

prevent him or her from choking should he or she vomit. For artificial respiration and heart massage, turn the patient onto his or her back.

11. Establish an airway. If the patient is unconscious, tilt the head back. The angle of the jaw may also be lifted forward to bring the tongue away from the pharynx and to allow free passage of air to the lungs. Any foreign body (including dentures), vomitus or saliva must be removed from the mouth immediately. Check and repeat periodically. If experienced personnel are available, an endotracheal tube can be inserted to prevent the tongue and vomit from obstructing the airway. You may use a Guedal airway tube if you are not willing to have mouth-to-mouth contact.
12. Administer artificial ventilation if breathing is slow or absent. Resuscitation, when indicated, must be started promptly to prevent brain damage and must be continued until normal spontaneous breathing resumes. The resuscitator may become dizzy: for this reason it is best to give artificial respiration in relays with a second person.

### PROCEDURE FOR ARTIFICIAL RESPIRATION

Put the patient on his or her back; establish an airway (see above); kneel next to the patient at the level of the patient's head; use either mouth to mouth (pinch nose), mouth to nose (close mouth), or a self-inflating bag (Ambu® bag) and face mask; watch the chest rise, indicating effective ventilation, remove your mouth and listen for exhalation while taking another deep breath. Give one breath every five seconds.



**Note:** Inflation of the oesophagus and stomach can cause the victim to vomit and choke. Prevent this by ventilating the patient slowly (over five seconds) and by not over distending the lungs.

13. Administer cardiac massage if the pulse cannot be felt at the carotid artery (next to the larynx), or the heartbeat cannot be heard with a stethoscope.

### PROCEDURE FOR CARDIAC MASSAGE

Lay the patient on his or her back on a hard surface with his or her head on the same level as the heart (for adequate brain perfusion) and elevate the patient's legs to assist venous return to the heart. Kneel next to the patient and place both hands on the patient's chest; keep your arms straight, with your elbows locked and with your upper hand holding the back of the lower hand. Press straight down hard on the lower half of the sternum (depress the sternum about 50 mm) using the heel of your lower hand. Use the entire weight of your upper body but remember not to push on the xiphoid process at the end of the sternum. Repeat compressions rhythmically and rapidly 30 times, followed by 2 inflations after compressions, this represents one cycle – with 2 people swap after 5 cycles. During relaxation all pressure should be removed from the hands, but they should not lose contact with the chest wall. If alone, still do 30 compressions followed by 2 inflations.



**!** 30 compressions, depress chest by at least a third followed by two inflations. Rate of compressions should be at least 100 per minute. With adequate compression there may not be a need for inflations.

**Note:** It is impossible to resuscitate a hypoxic heart but adrenaline can be useful to improve the blood flow to the heart during cardiac arrest. Adrenaline maybe contraindicated in hypoxic situations.

## SEROTONIN RECEPTOR BLOCKERS

R51163

R51703

These drugs are very safe. Extra pyramidal symptoms may occur. See butyrophenones above.

## LONG-ACTING TRANQUILLIZERS

Perphenazine enanthate

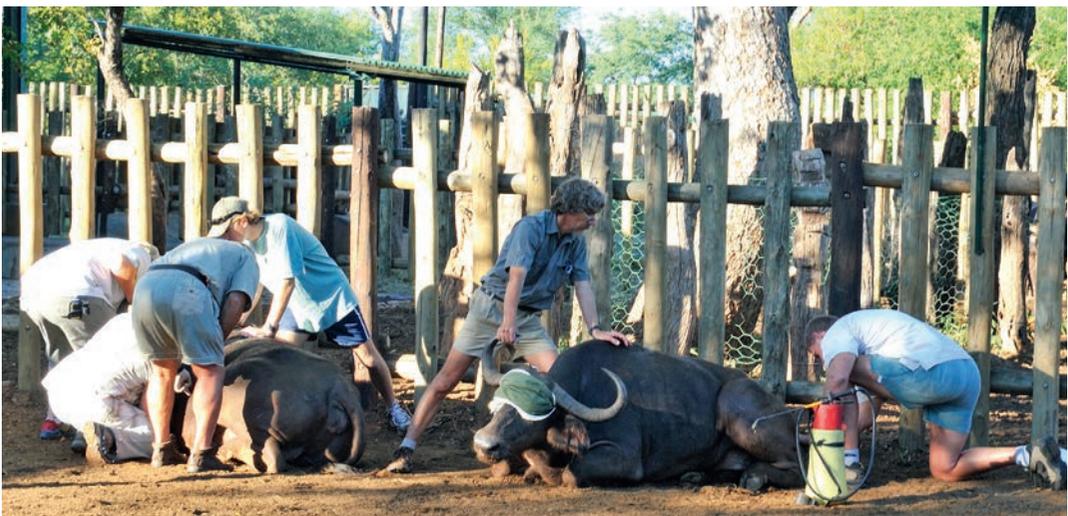
Zuclopenthixol acetate

Depending on the drug, there will be a delay in the onset of the symptoms from one hour up to two or three days. In the case of accidental injection, seek professional medical assistance. Severe reactions will be unlikely but some of the side effects may require management until the drug becomes depleted.

## 6.4 ANIMAL SAFETY

A summary list of precautions is presented below as a review. Simply stated, PROTECT the animal from:

1. excessive heat
2. cold or loss of body heat
3. dehydration
4. sun damage to the eyes – cover the eyes
5. bloat – change body position, sternal recumbency, stomach tube. If in doubt, reverse the animal as soon as possible.
6. congestion – change body position hourly
7. loud noises – this includes loud voices
8. sight of people – cover the eyes, approach from behind
9. excessive stress – work quickly and when finished, move downwind
10. sharp objects or protruding edges that, in an animal's panic, may cause a laceration.



**Figure 6.2:** Buffalo immobilized with etorphine and azaperone. Note sternal recumbency, blindfold, water for cooling and evidence of good teamwork, all key components of safety in handling an immobilized wild animal, especially a ruminant.