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The information supplied in this booklet is intended to assist veterinary practitioners in providing initial care and first aid to bats. The information provided has been sourced from and reviewed by qualified veterinarians. Bats requiring ongoing hospitalisation will require input from experienced rehabilitators to address husbandry and housing needs.

Bats no longer requiring veterinary care should be transferred to an appropriate rehabilitator as soon as possible.

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Bats Veterinary Triage & Assessment



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Triage & Assessment of BATS

Handling

- **ALWAYS wear appropriate PPE:** Nitrile or double nitrile gloves plus welding/gardening gloves and long sleeves or arm gauntlets until they are anaesthetized. Continue to wear nitrile gloves where possible.

Use a cloth/pouch when handling micro bats.

Wear a N95 face mask and safety glasses if available to prevent disease transmission.

- If the bat has been brought in by an experienced bat rehabilitator, utilise their handling abilities to assist you.
- Bats can bite and scratch using their thumb claws and feet. Their long extendable wings must be restrained as they have a thumb at the end of their carpals for gripping.
- Handle **mega bats** by wrapping a towel around them and allowing their feet to grasp your gloved finger. Keep upside down to mimic their natural behaviour. If the head needs to be exposed from the towel, grip around the back of their head/skull to prevent being bitten.
- For orphaned juvenile mega bats, provide them with a rolled-up face cloth to cling to, folding the wings around the cloth. Once they are holding on, wrap/swaddle another small towel around for support.
- **Micro bats** can be gently handled in the palm of your hand, securing the head with the thumb and forefinger, or placing the thumb under the chin of the bat.



Be aware

- **ONLY persons vaccinated against Australian Bat Lyssavirus (ABLV), with adequate titre levels AND wearing the correct PPE should handle any bat species, or be present in the room prior to them being anaesthetised.**
- If you are bitten or scratched, seek medical attention URGENTLY, and report to the appropriate health authority.
- While waiting on medical assistance, wash any wounds thoroughly ASAP with soap and water for at least five minutes and apply a virucidal antiseptic (e.g. 'Betadine') after washing. If saliva enters the eyes, nose or mouth, the area should be flushed thoroughly with water for 5 minutes (NSW DPI 2019).

Housing

- Housing for a short stay should be designed to provide comfort and support, minimise stress and maximise safety of staff.
- Animals should have enough space that they can hang and stretch their body and limbs, but not fly.
- Adult **mega bats** can be placed in a large open top wire cage placed on its side lined with towels on the bottom and a towel to cover and make it dark. They must be able to access the wire on the roof of the cage so they can hang upside down; they will get very stressed if they cannot mimic this natural behaviour.
- Infants should be swaddled in a small towel and placed on their back in the base of a wire cage; towels can be used to soften the base and create a gradient so they have their head down.
- Teats without holes can be provided as dummies, and heat should be provided.
- A mesh enclosure (see image) within a cage or Vetario® is best for **micro bats**. Adults can hang easily. Juveniles in a cotton pouch in Vetario® watching hydration and humidity.



Fluid therapy

- Warm the fluids to body temperature prior to being administered.
- SC fluids can be given in loose skin at lateral neck/shoulders. Give 5 -10% of body weight at a time, depending on level of dehydration.
- Blood samples and intravenous injections are most easily achieved using the (proptagial) cephalic vein along the cranial edge of the wing membrane or uropatagial vein near the hindlimb. Fixomull adhesive can be used to secure catheters. Elastoplast should be avoided in flying-foxes and microbats.
- 80:20 Hartmanns/5% glucose for both SC or IV initially for weak, dehydrated bats.
- IV fluid rates in flying foxes are similar to cats.



Feeding

- Nothing orally should be given until the animal has been warmed, rehydrated and is bright and alert.
- Suitable oral fluids include water/glucose or plain water.
- Mega bats should be offered water/glucose initially and then can be offered a good quality fruit juice (e.g. apple, banana, grapes, rock melon) or soft fruit.
- Micro bats can be given insects and encouraged with hand feeding if not self-feeding. Squeezing contents of meal worms can stimulate feeding.
- Orphans can be given water and Glucodin initially for the first two feeds, then a suitable milk replacer (e.g. Wombaroo flying fox milk; Biolac). Use either a 1ml syringe with catheter tip, or a bottle and appropriately sized teat for larger orphans.

Examination

- All bats should preferably be anaesthetised prior to a thorough physical examination.
- Before anaesthetising, observe the behavior and demeanor of the animal.
- Once anaesthetised, weigh and assess body condition by palpating the pectoral muscle mass. A healthy bat will have good muscle mass, with the sternum less pronounced on palpation.
- Age can be determined by measuring forearm length and looking up an appropriate age chart. This can be helpful if you are unsure if it is a juvenile.
- Assess hydration by looking for tacky or dry mucous, wrinkly skin or sunken eyes.
- Check all body systems.
- The eyes should be open and clear of discharge, inflammation or crusting – these can indicate trauma or infection.
- A fluorescein stain of eyes should be undertaken in all flying-fox exams as exposure ulcers are common due to dehydration.
- Check the nose for discharge – this can also indicate infection or trauma.
- Assess the oral cavity, including hard palate and teeth, for asymmetry or injury, common in barb wire injuries.
- Ears should be free of discharge, constantly moving and upright.
- Examine wings and limbs for wounds, fractures, asymmetry or abnormalities. Assess wing membranes for lacerations, abnormal colour/texture or other injuries. Shining a light through wing membranes can help to highlight areas of bruising.
- Orphaned pups will generally be dehydrated, hypoglycemic, hypothermic and weak.

Anaesthesia

- Handling for anaesthesia will require two people (both vaccinated and in PPE).
- Sedation with diazepam (0.5-2mg/kg IM) can be useful prior to handling and exam.
- For gaseous anaesthesia, use mask induction with 5% isoflurane.
- Inhalational anaesthesia is the method of choice for flying foxes. Injectable agents can be used but responses can be variable.
- Use a bair hugger®, heat lamp or heat mat to maintain the patient's core body temp. Normal body temperature in adult flying foxes 36-37°C. Microbats 35-39°C.
- Recovery: once off oxygen place the bat in an enclosure wrapped in a towel. Bats will usually climb to a hanging position within 1- 2 hours.
- For juveniles and compromised adults, Vetario® or Humidicribs are ideal for recovery.

Euthanasia

Bats should be euthanised immediately when:

- Death is imminent or highly likely, regardless of the treatment provided.
- It is suffering from chronic, un-relievable pain or distress.
- It is carrying an incurable disease that may pose a health risk to other wild animals.
- Its ability to consume food unaided is permanently impaired (e.g. loss of vision).

For euthanasia, the recommended method is injection of sodium pentobarbitone intravenously (under anaesthesia). The cranial edge of the wing membrane is an appropriate route.

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