

## A nursing care plan for exotics

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In recent years nursing care plans have become common place in veterinary nursing. In the early days human nursing models such as Roper, Logan and Tierney care plan (1980) or Orem 's self-care deficit (2001) were used, but these were soon superseded by the Orpet and Jeffrey ability model (Orpet, 2008) which is now widely used across the profession.

The aim of the nursing care plan is to clearly define the management of a case that meets the requirements of a given patient. They need to be adaptable and responsive to that individual. The ability model focusses on normal behaviours including eating, drinking, breathing and mobilising. Most reports describing use of the ability model, focus on dogs and cats (personal observation). This article focusses on the application of nursing care plans when looking after exotics in general practice and suggests a new adaptation of the ability model.

The nursing care plan requires that information be collected, then a plan of action made. Following implementation of that care plan, the response of the patient needs to be assessed and the plan modified accordingly.

By their very nature, many exotic species have specific requirements in practice. Rabbits and other small mammals are prey species and consideration needs to be given to housing, positioning in relation to other predator species, and the specifics of that accommodation. Does the animal have somewhere to hide? Is the environment quiet? Are the animals kept on a bare cage or towel, or do they require special flooring or substrate? Reptile patients will need to be kept in their Preferred Optimal Temperature Zone (POTZ) which needs to be monitored. As the metabolic rate of a reptile will depend on the environment, then response to medication will also depend on this. The authors would put forward that environmental considerations such as these need to be included in a nursing care plan for exotics.

A great deal of information can be gathered about an exotic patient through observation. Watching them from a distance may allow normal behaviour to be seen, body condition and posture to be assessed, or abnormalities in skin shedding and retention (reptiles), feather abnormalities or lumps, bumps or discharges to be seen. The presence and appearance of faecal matter in the cage should also be recorded and potentially also retained for laboratory assessment.

Small mammals and birds have a high metabolic rate. Therefore, accurate assessment of nutritional needs is of paramount importance. Working out specific energy requirements using standard formulae and the methods of feeding need to be considered. The intake also needs to be assessed. Foodstuffs such as vegetables and salad leaves can wither and it can appear as if the patient has eaten them, when in reality, they haven't. It is therefore important to determine what food has or has not been eaten, through categorising, weighing and/or counting the food that goes in and that, which is left in the cage uneaten. Alongside this weighing the patient and body scoring should be carried out on a daily basis to ensure that nutritional requirements are being met.

Pain scoring methods have advanced in recent years for cats and dogs with the development of the Glasgow Composite Measure Pain Scale (Newmetrica, n.d.). Grimace scales are used in rabbits, mice and rats (NC3RS, n.d.) to assess pain levels, and behavioural aspects can also be used, possibly even

with cameras to monitor behaviour without human presence. Pain will impact on the willingness of animals to eat (Girling, 2013), and therefore addressing analgesia needs is essential to reduce the likelihood of conditions such as gut stasis in rabbits and hystricomorphs.

The ability to drink also needs to be monitored alongside hydration. When patients are presented in a dehydrated state, this needs to be assessed (See Tables 1-3) and fluid calculations completed to assess replacement and maintenance (Table 4). In the case of small patients, it may be necessary to spread the replacements over 2 or 3 days, to avoid over perfusing the patient. In reptiles it is important to ensure that perfusion does not exceed 30ml/kg/day if fluids are given intravenously or intra-osseously. If the deficit is greater than 7% then this can be divided over 4-5 days or even a week to avoid over-perfusion.

Where mammals are not in shock then fluids can be given subcutaneously, but in the case of shock they will need to be given intravenously or intra-osseously. Birds of course cannot be given fluids into pneumonised bones and cannot be given fluids intracoelomically. Where intravenous lines are in place, a management plan will need to be put in place, minimising the risks of hospital acquired infections.

Advances in monitoring blood gasses, blood biochemistry, acid: base balance can all add to the information required to develop a nursing care plan. Collection of blood samples in reptiles and birds may require the use of heparin rather than EDTA as the latter may lyse erythrocytes. Due to the low blood pressure of reptiles, anticoagulants may be required during the collection phase and prominent lymphatic vessels may be inadvertently sampled when carrying out phlebotomy, leading to diluted samples and inaccurate results. The veterinary team as a whole should be involved in discussions around the care of an individual patient.

All of this information needs to be collected to develop the nursing care plan. It can be seen from this, that caring for exotics in practice, has specific requirements. To find out more about the use of nursing care plans when looking after exotic patients, the authors asked vet nurses working in the UK to complete an online questionnaire. Out of the 21 respondents, only 7 clinics were using nursing care plans with exotics. The main parameters recorded were nutrition, hydration, and urination / faecal output.

After reviewing the literature on nursing care plans developed for cats and dogs and combining that with the specific requirements of exotic patients, the authors would like to put forward a nursing care plan that is specific for the care of exotic species in general practice (Figure 1). This plan brings together observation, assessment, planning and implementation of a specific list of requirements relevant to exotic species. Observation from a distance, followed by a hands on assessment, will gather information required to develop a nursing plan. After implementation of that plan, the response of the patient can be observed and assessed, to inform further development of the nursing care plan. The time between implementation and observation will depend on the specific situation and severity of the condition. The care plan also includes an element on housing or the environment in which the patient will be kept.

It is recognised that not all parameters will apply to every case, but it gives a starting point for case discussions and highlights the importance of recognising the differences in nursing care that exotic patients require. Through the development of this plan it is hoped that more practices will utilise nursing care plans for their exotic species and that this can be developed further as more practices use this resource.

Copies of the plan can be downloaded from <https://www.girlingandfraser.com/> The authors would welcome feedback on the use of this plan to allow continuous evaluation and development in the care of exotics.

*(1203 words)*

#### References

Girling, S.j. (2013) Veterinary Nursing of Exotic Pets. John Wiley & Sons, Ltd., Chichester, West Sussex.

NC3RS (n.d.) Grimace scales <https://www.nc3rs.org.uk/grimacescales>

Newmetrica (n.d.) CMPS–SF and CMPS-Feline <https://www.newmetrica.com/acute-pain-measurement/>

Orem, D (2001) Nursing concepts of practice (6th edition). St. Louis: Mosby

Orpet, H. (2008) Advances in the delivery of practical nursing care – practical examples. World Small Animal Veterinary Association World Congress Proceedings.

<https://www.vin.com/apputil/content/defaultadv1.aspx?pld=11268&catId=32738&id=3866664>

Roper, N., Logan, W. & Tierney, A (1980) The elements of nursing. Churchill Livingstone, Edinburgh

Table 1: Assessing dehydration – small mammals

<b>% bodyweight</b>	<b>Clinical signs of dehydration</b>
3-5%	increased thirst, slight lethargy, tacky mucous membranes.
7-10%	increased thirst leading to anorexia, dullness, tenting of the skin and slow return to normal, dry mucous membranes, 'dull corneas'.
10-15%	dull-comatose, skin remains tented after pinching, desiccating mucous membranes.

Table 2: Assessing dehydration – reptiles

<b>% bodyweight</b>	<b>Clinical signs of dehydration</b>
3%	increased thirst, slight lethargy, decreased urates
7%	increased thirst, anorexia, dullness, tenting of the skin and slow return to normal, dull corneas, collapsed spectacles in snakes
10%	dull-comatose, skin remains tented after pinching, desiccating mucous membranes, sunken eyeballs, no urate / urine output

Table 3: Assessing dehydration – birds

<b>% bodyweight</b>	<b>Clinical signs of dehydration</b>
3-5%	increased thirst, slight lethargy, tacky mucous membranes, increased heart rate
7-10%	increased thirst, anorexia, dullness, tenting of the skin and slow return to normal, dull corneas
12-18%	dull-comatose, skin remains tented after pinching, desiccating mucous membranes, sunken eyes

Table 4: Maintenance fluid requirements

Animal group	Maintenance fluid rate
<b>Avian species</b>	50ml/kg/day
<b>Small Mammals</b>	80-100ml/kg/day
<b>Reptiles</b>	25ml/kg/day

Figure 1: Girling & Fraser Nursing Care Plan for Exotics

