Information Sheet on *Salmonella* Bacteria and Reptiles

Introduction

This document summarises the key information on *Salmonella* bacteria. The guidelines are for informational use only. They are not exhaustive. Other methods may occasionally be applicable.

Overview

Veterinary surgeons who treat reptiles should educate their clients who own reptiles about *Salmonella* spp. and provide information on the recommended precautions for reducing the risk of transmission of *Salmonella* spp. from reptiles to humans. The ARAV-sponsored handout is available below or on the www.arav.org website and can be copied as necessary.

All veterinary surgeons, staff, and clients who handle reptiles should follow recommended precautions for reducing the risk of transmitting *Salmonella* spp. from reptiles to humans. These precautions are also included in the ARAV client education handout.

All reptiles should be presumed to be carrying *Salmonella* spp. in their intestinal tract and to be continuously or intermittently shedding it in their faeces. Bacterial culture of faecal specimens from reptiles to determine *Salmonella* infection status is discouraged. If veterinary surgeons are called upon to assist health officials in determining the cause of salmonellosis in a person, bacterial culture of combined faecal and cloacal specimens from reptiles with which that person has had direct or indirect contact are recommended.

It is not recommended to treat healthy reptiles with antimicrobial agents with the intention of eliminating *Salmonella* spp. from the intestinal tract. Clients who request treatment of healthy reptiles for *Salmonella* spp. should be discouraged from such treatment and cautioned about the possibility of causing the emergence of antimicrobial-resistant Salmonella strains that might pose a greater health risk to humans.

Transmission and Zoonotic Implications

Most, if not all, reptiles carry *Salmonella* bacteria in their intestinal tract and intermittently or continuously shed these bacteria in their faeces. *Salmonella* bacteria usually do not cause any illness in reptiles but can cause serious illness in people.

Salmonella bacteria are easily spread from reptiles to humans. Humans may become infected when they place their hands on objects, including food items, that have been in contact with the stool of reptiles, in their mouths. For example, infants have become infected after drinking from bottles of infant formula that became contaminated during preparation. Individuals who prepared the formula had not washed their hands after

touching a reptile or because reptiles were allowed to walk on kitchen counters. For *Salmonella* bacteria to spread from reptiles to humans, the bacteria must be ingested. Therefore, simply touching or holding a reptile will not result in spread of bacteria unless something contaminated with reptile faeces or the reptile itself is placed in the mouth.

Most *Salmonella* infections in humans result in a mild, self-limiting illness characterised by diarrhoea, fever, and abdominal cramps. However, the infection can spread to the bloodstream, bone marrow, or nervous system, leading to severe, and sometimes fatal, illness. Such severe infections are more likely to occur in infants and in individuals whose immune system is compromised (for instance, bone marrow transplant recipients, persons with diabetes mellitus, persons infected with the human immunodeficiency virus, and chemotherapy patients).

Prevention of *Salmonella* Infection

Unfortunately, *Salmonella* bacteria cannot be eliminated from the intestinal tract of reptiles. Administration of antibiotics to eliminate these bacteria has been unsuccessful and may result in emergence of *Salmonella* bacteria that are resistant to antibiotics.

Attempts to raise or identify reptiles that do not carry *Salmonella* bacteria have also been unsuccessful; therefore, bacterial culture of stool samples in an attempt to identify reptiles that are not carrying *Salmonella* bacteria is not recommended.

Fortunately, the spread of *Salmonella* bacteria from reptiles to humans can be easily prevented by using the following routine precautions:

- Always wash your hands with hot, soapy water after handling reptiles, reptile cages and equipment, and the stool of reptiles.
- Do not allow reptiles to have access to the kitchen, dining room, or any other area in which food is prepared. Also, do not allow reptiles to have access to bathroom sinks and tubs or to any area where infants are bathed. Consider keeping your reptiles caged or limiting the parts of the house where reptiles are allowed to roam free. Always wash your hands after coming into contact with any area where reptiles are allowed to roam free.
- Do not eat, drink, or smoke while handling reptiles, reptile cages, or reptile equipment. Do not kiss reptiles or share food or drink with them.
- Do not use the kitchen sink, kitchen counters, bathroom sinks, or bathtubs to bathe reptiles or to wash reptile cages, dishes, or aquariums. Reptile owners may wish to purchase a plastic basin or tub in which to bathe or swim their reptiles. Waste water and faecal material should be disposed of in the toiler instead of the bathtub or household sink.
- The Centres for Disease Control and Prevention recommends that children less than five years of age avoid contact with reptiles and that households with children less than one year of age do not own reptiles. The Association of Reptilian and Amphibian Veterinarians encourages reptile owners with young children to discuss steps for minimise risks associated with owning reptiles with their reptiles' veterinary surgeon. Children should be supervised when they are handling reptiles

to ensure they do not place their hands or objects that a reptile has contacted in their mouth. Reptiles should not be kept in childcare centres.

- Immunocompromised persons should avoid contact with reptiles.
- Follow instructions from your reptile's veterinary surgeon concerning proper diet and environment for your reptile. Healthy reptiles living in proper environment are less likely to shed *Salmonella* bacteria.

Information in this handout is not meant to discourage reptile ownership. With a few exceptions (for example, infants or immunocompromised individuals), most people have a low risk of acquiring salmonellosis from reptiles, but this risk can be reduced even further by following simple precautions. Reptiles can be safely kept as pets, but reptile owners should be aware of the methods for reducing their risk of acquiring *Salmonella* bacteria from their reptiles.