

BASICS

Salmonellosis in warm-blooded vertebrates is most commonly caused by *Salmonella enterica*. Many infected animals, particularly reptiles, carry the bacteria without showing any clinical signs.

In wildlife, the most well known syndrome occurs in **SONGBIRDS** during the winter months (songbird fever) when the bacteria are shed through sharing of birdfeeders.

In birds, **CLINICAL SIGNS** include ruffled feathers, diarrhea and lethargy. Affected songbirds have plaques in the mouth and crop and may have general signs of illness.

Bird feeder associated outbreaks may cause **HIGH MORTALITY** across large geographic areas. Infected animals intermittently shed the organism in the **FECES**.

The **TRANSMISSION** of infection is fecal-oral, although infection through the upper respiratory tract and the mucous membranes of the eye has also been reported.

People and domestic animals have become infected through **CONTACT** with infected songbirds. Carrier animals are chronically infected and may **SHED** salmonella intermittently into the environment.

DIAGNOSIS of salmonellosis depends on clinical signs and isolation of the bacteria from feces, blood, or tissues of affected animals.

Early **TREATMENT** is essential for septicemic salmonellosis, but there is controversy regarding the use of drugs for intestinal salmonella. Oral administration of antimicrobials may alter the protective natural gut flora.

Removal of **BIRD FEEDERS** and seed waste during outbreaks may help reduce songbird transmission.

Common sense hygiene can **PROTECT** from human infection: handwashing, avoiding eating, drinking or personal care while handling animals or contaminated equipment.



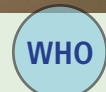
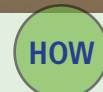
**ZOOONOTIC
RISK**



**DIRECT
CONTACT OR
INGESTION**



**BIRDS,
MAMMALS,
& REPTILES**



DETAILS

These non-clinical infections in the gut of many species of animals can enter the **HUMAN FOOD CHAIN**, and produce gastroenteritis in people. Infants and the elderly are particularly susceptible to more severe forms of the disease.

CLINICAL SIGNS Once ingested, bacteria invade the intestinal lining and cause gut damage and diarrhea. As infection progresses **SEPTICEMIA** (bacterial spread through the blood) can develop. Bacteria can travel to the **BRAIN** and brain membranes (meningitis or inflammation of the meninges), joints and distal aspects of the limbs (polyarthritis and osteomyelitis), and tips of the ears and tails.

The organism also frequently localizes in the gallbladder and lymph nodes, and survivors intermittently shed the organism in the **FECES**.

Young calves, piglets, lambs, and foals may develop both the **INTESTINAL AND SEPTICEMIC** form. Adult cattle, sheep, and horses commonly develop acute diarrhea, and chronic diarrhea may develop in growing pigs and occasionally in cattle. Pregnant animals may abort.

The clinically normal carrier animal is a **SERIOUS PROBLEM** in all host species. Salmonella is seen infrequently in dogs and cats and is characterized by acute diarrhea with or without septicemia.

TRANSMISSION Salmonellosis has been identified globally and is most prevalent in regions with **INTENSIVE ANIMAL HUSBANDRY**. Although this bacteria lives in the intestines, feces of infected animals can contaminate feed and water, milk, meat, plant and animal products, pastures and rangeland.

The organisms may **SURVIVE FOR MONTHS** in wet, warm areas such as barns, and can survive around one week in composted manure. Rodents and wild birds may be sources of infection for domestic animals.

CARRIER ANIMALS can develop clinical disease whenever immunocompromised.

DIAGNOSIS Serologic tests are available and are increasingly used as a diagnostic tool in salmonellae surveillance and control programs.

TREATMENT There is evidence that there is increased risk of drug resistance when using oral administration.

Although clinical signs resolve, **ELIMINATING** the bacteria is difficult, either because the organisms become established in the biliary system and are intermittently shed into the intestine, or because the animals are **RE-INFECTED** from the environment at a time when their normal gut flora is compromised by antibiotics.

PRECAUTIONS AND PREVENTION Carrier animals, contaminated feedstuffs, and environment are major sources of Salmonella.

RANDOM MIXING of animals should be avoided. Feed and water supplies must be protected from fecal contamination. **CONTAMINATED** buildings and equipment should be disinfected and contaminated material should be disposed of carefully.

