



# Epidemiologic Notes & Reports

Volume 35 Number 2

February 2000

## Snakes, Iguanas, & Reptile Tales

Reptile Associated Salmonellosis  
Linda Fritz Vanorio, RN, BSN

Salmonellosis is an infection caused by a bacterium of the *Salmonella* species ( spp.). There are numerous serotypes of this bacterium, with different serotypes varying from country to country. This bacterium lives in the intestinal tracts of humans and other animals including birds, and reptiles. Humans can become ill after eating or having contact with foods or animals contaminated with *Salmonella*. Contact with reptiles may place one at risk for *Salmonella* infections.

Most *Salmonella* infections in humans are mild, with vomiting, diarrhea, abdominal cramping, and fever. However, infection can spread to the bloodstream, bone marrow, or nervous system, leading to severe, and sometimes fatal illness if left untreated. Such severe infections are more likely in infants, children, the elderly, and individuals with a compromised immune system.

The growing popularity of reptiles as pets has raised legitimate concerns about their impact on public health. Reptile related salmonellosis cases are increasing and pose a substantial threat to human health. In the United States approximately 93,000 (7% of all cases) per year of *Salmonella* spp. infections are attributable to pet reptile or amphibian contact. The majority of salmonellosis reptile-related cases are infants and young children. The Centers for Disease Control and Prevention (CDC) estimates that 3% of households in the United States have a reptile. Many reptiles carry *Salmonella* bacteria and shed the organisms in their feces.

All reptiles should be presumed to be carrying *Salmonella* spp. in their intestinal tract and to be continuously or intermittently shedding it in their feces. Any reptile may be contaminated with *Salmonella*, and the organisms may be present anywhere on the skin, shell, or container. Individuals become infected by ingesting *Salmonella* spp. after handling a reptile or objects contaminated by a reptile, and then failing to wash their hands properly. Increasingly rare *Salmonella* serotypes associated with reptiles, such as java, marina, stanley, poona, and chameleon are being isolated from humans in the United States.

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In the United States, salmonellosis in pet turtles less than 4 inches long was the major source of human contamination from reptiles until commercial distribution was banned in 1975. The frequency of turtle associated *Salmonella* serotypes isolated from humans decreased 77% during 1970 – 1976.

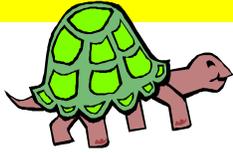
By March, 1999, only three states, California, Connecticut, and Michigan, had regulations requiring pet stores to provide information about salmonellosis to persons purchasing a turtle. Two states, Kansas and Maryland, require salmonellosis information be provided to individuals purchasing any reptile. Three states, Arizona, Minnesota, and Wyoming, prohibit reptiles in day care centers and long-term care facilities. Kentucky has no specific laws regulating the sale of reptiles or provision for pet stores to provide reptile-related educational materials to their clients.

All reptile owners and pet store personnel should be aware that reptiles can carry and transmit *Salmonella* spp. Pet stores are in a unique situation to provide educational materials to consumers about the transmission of *Salmonella* spp. because most reptile owners usually inquire about, and obtain information about their reptiles from pet store personnel.



References available upon request.

## Recommendations for Preventing Transmission of *Salmonella* from Reptiles to Humans



- Pet Store owners, veterinarians, and physicians should provide client education about the risk of acquiring salmonellosis from reptiles.
- Persons should always **wash** their hands thoroughly with soap and water after **handling** reptiles or reptile containers.
- Persons at increased risk of infection are children aged 5 years and under and the chronically ill.
- Pet reptiles should be kept out of households where children aged 5 years and under or where chronically ill persons live.
- Families expecting a new baby should remove the pet reptile from the home before the infant arrives.
- Pet reptiles should not be kept in child care centers.
- Pet reptiles should not be allowed to roam freely throughout the home or living area.
- Pet reptiles should be kept out of kitchens to prevent contamination. Kitchen sinks should not be used to bathe reptiles or to wash their dishes, cages, or aquariums. If bathtubs are used for these purposes, they should be cleaned thoroughly and disinfected with bleach.

(This information was provided by the Association of Reptilian and Amphibian Veterinarians and the Centers for Disease Control and Prevention.)



**For more information on reptile related Salmonellosis contact the following:**

Centers for Disease Control and Prevention web site at <http://www.cdc.gov/>

Association of Reptilian and Amphibian Veterinarians, Belton Animal Clinic, 511 Main St., Belton, MO 64012

## “Epi” Rapid Response Team – 1999

The “Epi” Rapid Response Team was formed in 1987 to assist with the investigation and control of disease outbreaks in Kentucky. Its membership of trained “responders” now stands at 81. New members are added to the roster through participation in a special training course given by the Division of Epidemiology and Health Planning or by conducting an epidemiologic investigation under Division supervision. Except for the 10 state staff, all the members are employed by local health departments. Providers should contact team members in their area if an outbreak or unusual occurrence is suspected. The September 1999 annual conference was held at Rough River State Park.

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### “EPI” RAPID RESPONSE TEAM CONFERENCE

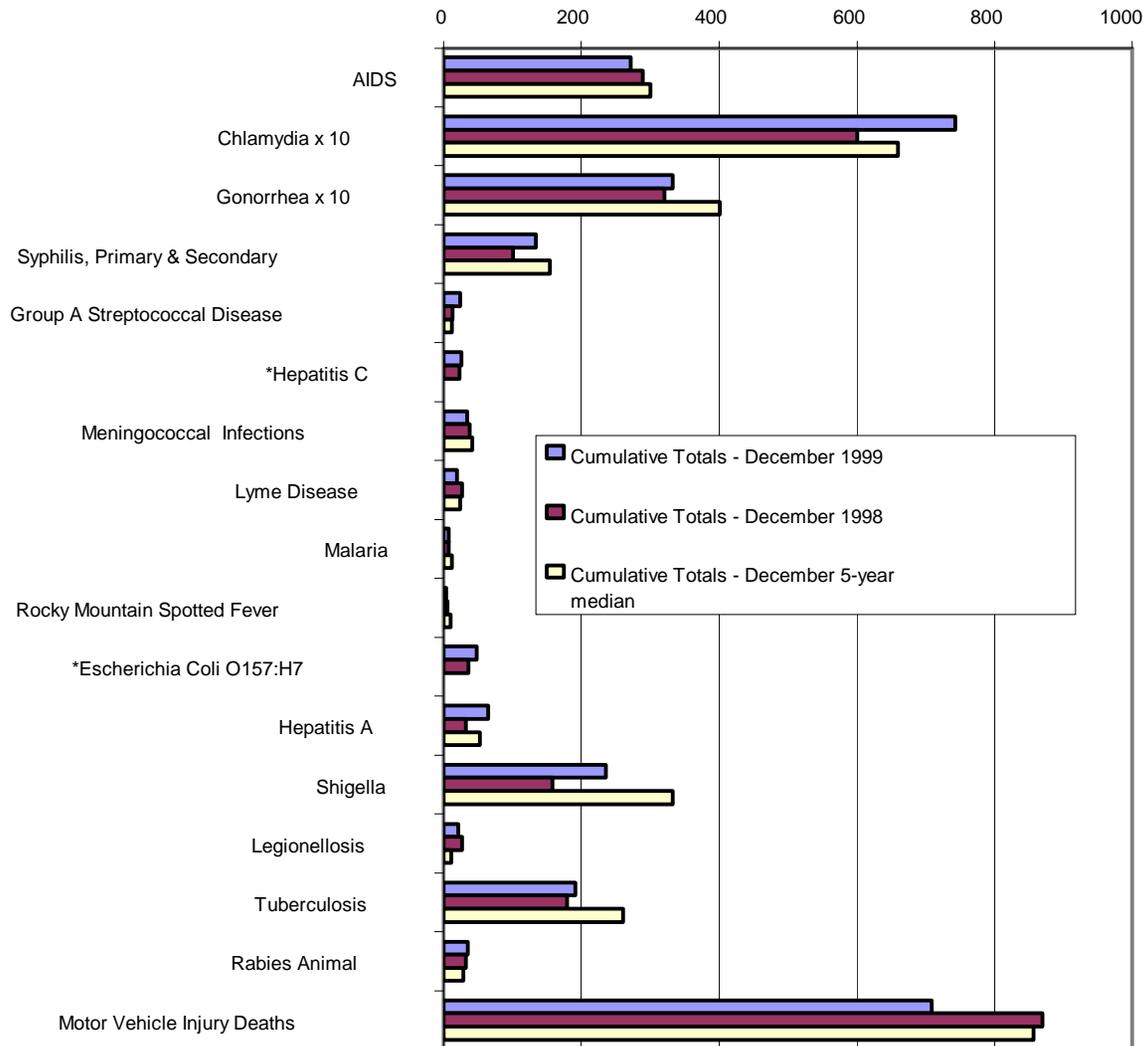
May 3, 2000

Lake Cumberland State Park

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**CASES OF SELECTED REPORTABLE DISEASES IN KENTUCKY, YEAR TO DATE (YTD)  
THROUGH DECEMBER 1999**



INFLUENZA	
SENTINEL REPORTS	OCTOBER 1999 THRU JANUARY 19, 2000
FLU -LIKE SYMPTOMS	1729
CONFIRMED ISOLATES	
TYPE A	19
TYPE B	2
TOTAL CONFIRMED	21

Vaccine Preventable Diseases December		
Diseases	1999 YTD	1998 Annual Totals
Diphtheria	0	0
<i>Haemophilus influenzae b</i>	8	7
Hepatitis B	45	44
Measles	2	0
Mumps	0	1
Pertussis	33	93
Polio	0	0
Rubella	0	0
Tetanus	0	0

\* Historical data are not available.  
Disease numbers reflect only those cases which meet the CDC surveillance definition.  
Contributed by: Patricia Beeler, Surveillance and Health Data Branch.

**KENTUCKY EPIDEMIOLOGIC NOTES & REPORTS**

Printed With State Funds

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COMMONWEALTH OF KENTUCKY  
CABINET FOR HEALTH SERVICES  
DEPARTMENT FOR PUBLIC HEALTH  
275 EAST MAIN STREET, MAILSTOP HS 2C-B  
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## **DESK REFERENCE**

**The following reference tools are still available from the Division of Epidemiology and Health Planning:**

- **Reportable Disease Desk Reference**
- **Medical Management Biological & Chemical Casualties Handbook**

These reference tools were previously distributed by Division of Epidemiology & Health Planning.

For more information or to request a reference tool, please call (502) 564-3418, fax (502) 564-0542, or email: [sue.billings@mail.state.ky.us](mailto:sue.billings@mail.state.ky.us)