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AFRICAN PYGMY HEDGEHOG–ASSOCIATED *SALMONELLA* TILENE IN CANADA

Human salmonellosis attributed to *Salmonella* serotype Tilene is a rare and relatively recent phenomenon in Canada. Ten laboratoryconfirmed cases of *S.* Tilene in Canada are reported here.

The first four Canadian laboratory-confirmed cases were isolated in May 1995. Three family members from central Alberta, a 32-year-old female and her two female children (5 and 3 years of age) presented with gastrointestinal symptoms. *S.* Tilene was isolated from stool specimens from these cases and also from a frequent visitor, an asymptomatic 13-year-old male. Stool samples were collected from the family's rheas, llamas, and breeding herd of hedgehogs. *S.* Tilene was isolated from the stools of two hedgehogs. The fifth laboratory-confirmed case also occurred in central Alberta in a 4-month-old female in June 1995. Her family had two sugar gliders; both were ill and later died. Stools from the sugar gliders tested positive for *S.* Tilene.

In 1996 there were four laboratory-confirmed cases of *S.* Tilene from across Canada presenting in April, July, October, and November. One case each occurred in Saskatchewan and Manitoba, and two cases in Ontario. All of these cases were in children whose families owned hedgehogs. Finally, in Prince Edward Island, a 3-year-old female presented with a diarrheal illness in January 1997. This case had had contact with an African pygmy hedgehog over the Christmas season.

In summary, 60% (6/10) of cases were female with a median age of 4 years (range: 3 months to 32 years). All but one case occurred in children, with five cases being ≤ 3 years of age. With one exception, all cases came from or had contact with families owning African pygmy hedgehogs. The adult and older children were responsible for the care of the hedgehogs, or may have had direct animal contact. Four of the cases were associated with breeding herds. *S.* Tilene was isolated from the implicated animals or animals from the same breeders in most cases.

Exotic Pet Trace-back

Both the sugar gliders and the hedgehogs associated with the Alberta cases were purchased from a stock farm in central Alberta. The suppliers of this stock farm included three breeders from Texas and one from Oklahoma. The hedgehog associated with the Saskatchewan case was purchased from a local breeder whose stock sources were from the United States, Saskatchewan, Ontario, and British Columbia. Hedgehogs associated with one of the Ontario cases and the Prince Edward Island case were purchased from a stock farm in Manitoba. The hedgehog associated with the Manitoba case came from a local breeder who purchased hedgehogs from stock farms in Manitoba and central Alberta; both farms imported hedgehogs from Texas and Oklahoma. The hedgehog associated with the other Ontario case originated from a herd that likely was imported from Texas in 1992. The vast majority of Canadian African pygmy hedgehog stock can be traced directly or through ancestry to Texas or Oklahoma breeders.

Discussion

African pygmy hedgehogs are small insectivores that have gained popularity as caged pets. Approximately 28% of hedgehogs are asymptomatic carriers of *Salmonella*[1]. In April 1994, the Seattle King County Department of Public Health conducted an epidemiologic investigation of the first American human case of *S.* Tilene. This serotype was isolated from a family's apparently healthy pet African pygmy hedgehogs[2]. Except for one case, the first Canadian cases of infection with *S.* Tilene were also associated with African pygmy hedgehogs. The exception was probably indirectly associated with hedgehogs in that the sugar gliders owned by the family were exposed to hedgehogs and became ill; they were confirmed to be infected with *S.* Tilene and subsequently died. Sugar gliders are small marsupials that are also

kept as caged pets; nursery-raised juveniles are easily infected with *Salmonella* and often die of the disease[3].

Five of the 10 Canadian cases of *S*. Tilene were children aged ≤ 3 years. This pattern is similar to salmonellosis in general for which young children have a higher incidence[4]. The care of pets, a situation which can potentially provide exposure to infected animals and their droppings, likely facilitated direct animal-human transmission in some of these cases. However, it is unlikely that the affected infants had any direct animal contact, suggesting that infection occurred by indirect spread.

All pets have a flora of parasites and microbes, some of which have zoonotic potential. Prevention of zoonotic illness centres on good hygienic practices around pets especially when the household includes young, elderly, or immunocompromised persons. Pets should be fed, housed, and handled properly; all pets should be carefully watched for signs of illness and treated appropriately when ill.

Four of the cases were associated with breeding herds. A greater degree of precaution is required in the case of occupational exposure to protect animal handlers and their families. Protective clothing should be worn during feeding and cleaning, and hands must be washed before leaving the animal area. Small children should not be allowed to enter an animal breeding area.

Acknowledgements

We would like to thank all those who contributed to the care and investigation of the cases and the investigation into the source animals including K. Longmore, Environmental Health Services, K. Grimsrud, MD, Alberta Health; J. Girvan, Natural Resources Service, Alberta Fish and Wildlife; Provincial Laboratory, AB; C. Anderson and B. Brown, Saskatoon District Health Public Health Services, SK; Cadham Provincial Laboratories; Manitoba Veterinary Services; K. Mestery, Communicable Disease Control, Manitoba Health; Winnipeg Region Health Unit, MB; A. Borczyk, Reference Bacteriology Laboratory, Ontario Ministry of Health; the Eastern Ontario and Algoma Health Units, ON; and L. Sweet, MD, Prince Edward Island Health Unit, PE.

References

1. Isenbügel E, Baumgartner RA. *Diseases of the hedgehog*. In: Fowler ME, ed. *Zoo and wild animal medicine*. 3rd ed. Philadelphia, PA: WB Saunders Company, 1993:297.
2. CDC. *African pygmy hedgehog-associated salmonellosis.* MMWR 1995;44:462-64.
3. Butler R. *Monotremes and marsupials: bacterial diseases*. In: Fowler ME, ed. *Zoo and wild animal medicine*. 2nd ed. Philadelphia, PA: WB Saunders Company, 1986:575.
4. Benenson AS, ed. *Salmonellosis*. In: *Control of communicable diseases manual*. 16th ed. Washington, DC: American Public Health Association, 1995:410-15.

Source: *C Craig, DVM, Field Epidemiology Training Program, LCDC, Ottawa; S Styliadis, DVM, Ontario Ministry of Health, North York; D Woodward, BSc, National Laboratory for Enteric Pathogens, Bureau of Microbiology; D Werker, MD, Associate Director, Field Epidemiology Training Program, LCDC, Ottawa, ON.*

Editorial Comment

African pygmy hedgehogs are one of a number of exotic pets. This term includes such diverse species as sugar gliders, Vietnamese pot-bellied pigs, turtles, and tarantulas. The popularity of exotic animals as pets appears to be increasing, both in numbers of owners[1] and in numbers of species imported (J. Girvan, Natural Resources Service, Alberta Fish and Wildlife, Leduc: personal communication, 1996). The reported cases of human *S.* Tilene associated with pet hedgehogs, as well as salmonellosis associated with turtles and psittacosis associated with parrots, demonstrate that exotic pets are potential vehicles of zoonotic disease[2,3]. The *S.* Tilene cases also suggest that exotic pets are able to introduce novel serotypes, and possibly novel human pathogens, into Canada.

In general, for a given species of exotic pet, breeding animals are initially imported and sold for a high price. The price drops as local breeders saturate the market. Many breeders then move on to a 'new' exotic animal species. For example, African pygmy hedgehogs were first imported into Alberta in 1992 and sold for approximately $1,000 a pair (J. Girvan, Natural Resources Service, Alberta Fish and Wildlife, Leduc: personal communication, 1996). In Winnipeg, Manitoba, one can now buy a breeding pair for $10 to $20.

Although the exotic pet trade industry moves relatively quickly from one species to another, regulations surrounding it are species- and disease-specific. Agriculture and Agrifood Canada has some control over the importation of animals, including exotic pets, into Canada. Specific exotic species are banned from import if these animals are considered carriers of a reportable livestock disease. At this time there is no routine bacteriologic testing of exotic pet species for carriers of disease. Amphibians, rodents, and reptiles (other than turtles) are not inspected by Agriculture and Agrifood Canada. Currently, there are several groups of animals for which there are special conditions regarding their importation due to zoonotic disease potential: turtles and turtle eggs cannot be imported for commercial purposes, and turtle imports as personal pets and for research require an import permit; raccoons, foxes, and skunks require a rabies certificate and a quarantine period; psittacine birds can only be commercially imported from the United States and certain other approved countries under an import permit and quarantine (Dr. L. Bates, Animal Health, Agriculture Canada, Winnipeg: personal communication, 1997). After exotic animals have entered Canada, ownership and commercial sales are regulated at provincial, regional, or municipal levels. (J. Girvan, Natural Resources Service, Alberta Fish and Wildlife, Leduc: personal communication, 1996).

Due to the dynamic nature of the exotic pet trade on a species level coupled with an overall increase in these animals as pets, an industry-specific framework may be more appropriate to direct public-health action to reduce zoonotic illness from exotic pets than species-specific regulations.

References

1. Doolen M. *Dogs, cats and cockatoos: adding exotic pets to your patient roster*. Vet Med 1996;91:631.
2. D'Aoust JY, Daley E, Crozier M et al. *Pet turtles: a continuing international threat to public health.* Am J Epidemiol 1990;132:233-38.
3. Grimes JE. *Zoonoses acquired from pet birds.* Vet Clin North Am Small Anim Pract 1987;17:209-18.

BOTULISM IN CANADA — SUMMARY FOR 1996

Five outbreaks of foodborne botulism, involving 10 cases with no deaths, were confirmed in 1996 (Table 1). All of the outbreaks involved *Clostridium botulinum* type E and traditional fermented Inuit foods. Four of the outbreaks occurred in northern Quebec and one in the Northwest Territories.

In addition to the five confirmed foodborne outbreaks, seven other possible foodborne outbreaks were investigated, but no association with *C. botulinum* could be found.

One case of infant botulism involving an 15-week-old female occurred in March 1996. *C. botulinum* type A was isolated from the infant's stool. The infant had been visiting Arizona and symptoms of botulism began immediately upon return to Calgary. No association with food could be made in this case.

Source: *J Austin, PhD, B Blanchfield, Botulism Reference Service for Canada, Health Protection Branch, Health Canada, Ottawa, ON; J-F Proulx, MD, Coordinator of Infectious Diseases, Department of Public Health, Nunavik Regional Board of Health and Social Services, Kuujjuaq, QC; E Ashton, Department of Medical Microbiology and Infectious Diseases, Provincial Laboratory of Public Health, Edmonton, AB.*

Table 1
Foodborne botulism in Canada, 1996

Incident	Month	Location	Suspected food	Total cases	Fatal cases	Toxin type	Specimens with viable *C. botulinum*	Specimens with *C. botulinum* neurotoxin
1	April	Quaqtaq, QC	seal	3	0	E	gastric liquid, stools	serum
2	June	Bay Chimo, NT	fermented fish	1	0	E	fish	serum
3	July	Tasiujaq, QC	seal	1	0	E	seal meat, gastric liquid	serum, seal meat
4	August	Tasiujaq, QC	micerak†	1	0	E	micerak	stools
5	August	Inukjuaq, QC	beluga whale	4	0	E	stools	beluga whale meat

† Fermented fat of marine mammals (seal, whale, or walrus).

International Notes

ENTEROHEMORRHAGIC *ESCHERICHIA COLI* INFECTION

In July 1996, an outbreak of enterohemorrhagic *Escherichia coli* (EHEC) infection associated with radish sprouts in school lunches was reported in Japan, during which 6,309 cases were identified, including 678 hospitalizations and three deaths. Another large-scale outbreak of EHEC infection was reported late in 1996 in Scotland associated with contaminated meat products.

Japan: In March 1997, a cluster of 96 cases of EHEC serotype O157 infection was reported in the central region (including Tokyo, Yokohama, and Nagoya); 53 cases were hospitalized and one patient died.

On investigation, the majority of the EHEC O157:H7 serotypes which were isolated from the patients and asymptomatic carriers were found to have the same pulsed-field gel electrophoresis patterns. In two of these cases, meals served at home were suspected to be the source of infection. Laboratory tests on the remaining foods in the households confirmed that white radish sprouts were the source of the EHEC O157:H7. The origin of these sprouts was a hydroponic farm in the vicinity of Yokohama. This pathogen was not isolated from any of the samples taken from the farm, which included the factory premises, water supply, packaging material, white radish sprouts, and wastewater. Investigations ruled out the possible contamination of foods during shipment and transport. An investigation is still under way on the radish seeds used to produce the sprouts.

In 1997, the Ministry of Health and Welfare in Japan launched a nationwide foodborne disease surveillance program that includes as target organisms EHEC (O157 and other serotypes), *Yersinia enterocolitica* O8, *Campylobacter jejuni/coli*, *Salmonella enteritidis*, and *Clostridium botulinum*.

United Kingdom (Scotland): Since 20 May 1997, 37 cases of EHEC infection have occurred in a nosocomial outbreak at Falkirk and District Royal Infirmary. These are all stool culture-positive cases, comprising 18 inpatients, 11 staff, and eight cases from the community. The outbreak strain has been confirmed as *E. coli* O157 phage type 8. Epidemiologic and environmental investigations are continuing in order to identify the source of the outbreak.

Reports of laboratory-confirmed *E. coli* O157 infection up to 16 May 1997 were 174, compared with 32 for the same period in 1996, showing the growing importance of this foodborne pathogen.

WHO Editorial Note

In view of a series of recent outbreaks, WHO convened a Consultation on the Prevention and Control of EHEC Infections in Geneva from 28 April to 1 May 1997, which brought together experts from 14 countries to explore the health hazards posed by recent outbreaks of *E. coli* O157:H7 and other EHEC infections. The report will be available from the Food Safety Unit, WHO, 1211 Geneva 27, Switzerland (WHO WWW site: http://www.who.ch/programmes/fsf).

First Quarter (1st) (1 January - 31 March 1997) - Premier Trimestre (1ier) (1 janvier - 31 mars 1997)

Disease Maladie	ICD-9 CIM-9	Ontario			Manitoba			Saskatchewan			Alberta			British Columbia Colombie-Britannique			Yukon			Northwest Territories Territoires du Nord-ouest		
		1st 1ier	Cum. 97	Cum. 96	1st 1ier	Cum. 97	Cum. 96	1st 1ier	Cum. 97	Cum. 96	1st 1ier	Cum. 97	Cum. 96	1st 1ier	Cum. 97	Cum. 96	1st 1ier	Cum. 97	Cum. 96	1st 1ier	Cum. 97	Cum. 96
AIDS-Sida	042-044	_	_	86	_	_	2	_	_	_	_	_	19	_	_	46	_	_	_	_	_	1
Amoebiasis - Amibiase	006	102	102	103	8	8	9	11	11	6	13	13	14	95	95	105	_	_	1	_	_	_
Botulism - Botulisme	005.1	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	1	1	_
Brucellosis - Brucellose	023	_	_	_	_	_	_	_	_	_	4	4	_	_	_	_	_	_	_	_	_	_
Campylobacteriosis - Campylobactériose	008.41*	626	626	581	34	34	41	38	38	41	108	108	146	420	420	409	_	_	2	1	1	6
Chancroid - Chancre mou	099.0	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Chickenpox - Varicelle	052	_	_	_	_	_	_	_	_	_	1844	1844	1425	_	_	_	1	1	35	84	84	113
Chlamydia, genital - Chlamydiose génitale	099.81*	1873	1873	1952	614	614	601	573	573	624	1044	1044	876	_	_	_	15	15	31	207	207	241
Cholera - Choléra	001	_	_	1	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Diphtheria - Diphtérie	032	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Giardiasis - Giardiase	007.1	327	327	356	_	_	_	49	49	91	78	78	88	233	233	305	_	_	7	2	2	8
Gonococcal Infections - Infections gonococciques[1]	098	331	331	429	114	114	129	73	73	107	101	101	50	119	119	152	_	_	9	40	40	26
Gonococcal Ophthalmia neonatorum - Ophtalmie gonococcique du nouveau-né	098.4	15	15	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Haemophilus influenzae B (all invasive) - (invasive) à H. Influenzae B[2]	320.0,038.41*	1	1	5	_	_	_	4	4	_	2	2	2	_	_	_	_	_	_	_	_	1
Hepatitis A - Hépatite A	070.0,070.1	132	132	53	22	22	101	103	103	35	67	67	44	81	81	184	_	_	_	_	_	1
Hepatitis B - Hépatite B	070.2,070.3	20	20	17	5	5	5	12	12	30	17	17	19	226	226	393	_	_	_	_	_	_
Hepatitis C - Hépatite C		1087	1087	1273	_	_	_	140	140	270	302	302	_	1344	1344	1592	6	6	11	6	6	6
Hepatitis non-A, non-B - Hépatite non-A, non-B		_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Legionellosis - Legionellose	482.41	5	5	6	_	_	_	_	_	1	2	2	_	_	_	_	_	_	_	_	_	_
Leprosy - Lèpre	030	3	3	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Listeriosis (all types) - Listériose (tous genres)	027.0,771.22	5	5	2	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Malaria - Paludisme	084	30	30	26	1	1	1	_	_	_	5	5	1	19	19	14	_	_	1	_	_	_
Measles - Rougeole	055	10	10	102	_	_	_	3	3	2	28	28	_	238	238	9	_	_	2	_	_	_
Meningitis, pneumococcal - Méningite à pneumocoques	320.1	_	_	_	_	_	_	1	1	1	3	3	2	4	4	1	_	_	_	_	_	_
Meningitis, other bacterial - Autres méningites bactériennes[3,4]		20	20	15	_	_	_	2	2	2	5	5	7	_	_	_	_	_	_	1	1	_
Meningitis/Encephalitis viral - Méningite/encéphalite virale[5]		_	_	1	2	2	_	1	1	1	8	8	11	1	1	3	_	_	_	_	_	_
Meningococcal Infections - Infections à méningocoques	036	21	21	32	2	2	2	5	5	1	8	8	7	_	_	_	_	_	_	_	_	1
Mumps - Oreillons	072	14	14	28	_	_	2	_	_	3	16	16	14	76	76	13	_	_	3	_	_	_
Paratyphoid - Paratyphoïde	002.1-002.9	1	1	1	1	1	_	_	_	_	1	1	_	_	_	_	_	_	_	_	_	_
Pertussis - Coqueluche	033	118	118	83	15	15	39	87	87	108	215	215	228	215	215	130	1	1	36	5	5	6
Plague - Peste	020	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Poliomyelitis - Poliomyélite	045	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Rabies - Rage	071	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Rubella - Rubéole	056	4	4	7	1402	1402	_	_	_	_	1	1	6	1	1	6	_	_	_	_	_	_
Congenital Rubella - Rubéole congénitale	771.0	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Salmonellosis - Salmonellose[6]	003	370	370	286	33	33	42	54	54	63	79	79	143	117	117	223	_	_	2	2	2	3
Shigellosis - Shigellose	004	72	72	41	29	29	14	35	35	27	13	13	13	_	_	_	_	_	_	_	_	_
Syphilis, Congenital - Syphilis, congénitale	090	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Syphilis, Early Latent - Syphilis, latente récente	092	1	1	3	_	_	_	_	_	1	_	_	_	_	_	_	_	_	_	_	_	_
Syphilis, Early Symptomatic - Syphilis, symptomatique récente	091	5	5	6	_	_	_	_	_	1	_	_	_	1	1	5	_	_	_	_	_	_
Other Syphilis - Autres syphilis	090,092-097	32	32	17	_	_	_	_	_	_	_	_	8	_	_	_	_	_	_	_	_	_
Tetanus - Tétanos	037	1	1	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Trichinosis - Trichinose	124	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
Tuberculosis - Tuberculose	010-018	50	50	42	_	_	_	_	_	_	_	_	_	48	48	61	_	_	_	8	8	17
Typhoid - Typhoïde	002.0	1	1	1	_	_	1	_	_	_	1	1	1	_	_	_	_	_	_	_	_	_
Verotoxigenic E. coli - E. coli vérotoxinogènes	008.01*	17	17	26	3	3	8	6	6	7	9	9	16	_	_	_	_	_	_	2	2	_
Yellow Fever - Fièvre jaune	060	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_

SYMBOLS

. *Not reportable*
.. *Not available*
_ *No cases reported*

SIGNES

. *À déclaration non obligatoire*
.. *Non disponible*
_ *Aucun cas déclarés*

SOURCE:
Division of Disease Surveillance
Laboratory Centre for Disease Control
Health Canada
Ottawa, Ontario K1A 0L2
Tel.: (613) 957-0334

SOURCE:
Division de la surveillance des maladies transmissibles
Laboratoire de lutte contre la maladie
Santé Canada
Ottawa (Ontario) K1A 0L2
Tél.: (613) 957-0334

HEALTH CANADA - SANTÉ CANADA

Notifiable Diseases Summary - Sommaire des maladies à déclaration obligatoire

New Cases Reported for First Quarter (1st) (1 January - 31 March 1997) - Nouveaux cas déclarés pour le premier trimestre (1ier) (1 janvier - 31 mars 1997)

Disease / Maladie	ICD-9 / CIM-9	Canada†			Newfoundland / Terre-Neuve			Prince Edward Island / Île-du-Prince-Édouard			Nova Scotia / Nouvelle-Écosse			New Brunswick / Nouveau-Brunswick			Quebec / Québec		
		1st 1ier	Cum. 97	Cum. 96	1st 1ier	Cum. 97	Cum. 96	1st 1ier	Cum. 97	Cum. 96	1st 1ier	Cum. 97	Cum. 96	1st 1ier	Cum. 97	Cum. 96	1st 1ier	Cum. 97	Cum. 96
AIDS-Sida	042-044	–	–	237	–	–	–	–	–	–	–	–	4	–	–	–	–	–	79
Amoebiasis - Amibiase	006	287	287	297	3	3	1	–	–	–	7	7	5	–	–	–	48	48	53
Botulism - Botulisme	005.1	1	1	–	–	–	–	–	–	–	–	–	–	–	–				
Brucellosis - Brucellose	023	4	4	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Campylobacteriosis - Campylobactériose	008.41	1709	1709	1769	7	7	11	9	9	4	37	37	39	28	28	20	401	401	469
Chancroid - Chancre mou	099.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Chickenpox - Varicelle	052	2489	2489	1884	418	418	302	–	–	–	142	142	8	–	–	1	–	–	–
Chlamydia, genital - Chlamydiose génitale	099.81*	6309	6309	6277	71	71	85	33	33	24	277	277	281	200	200	151	1402	1402	1411
Cholera - Choléra	001	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Diphtheria - Diphtérie	032	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Giardiasis - Giardiase	007.1	946	946	1089	8	8	10	1	1	4	19	19	17	49	49	27	180	180	176
Gonococcal Infections - Infections gonococciques[1]	098	932	932	1015	–	–	–	–	–	–	23	23	8	8	8	4	123	123	101
Gonococcal Ophthalmia neonatorum - Ophtalmie gonococcique du nouveau-né	098.4	15	15	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Haemophilus influenzae B (all invasive) - (invasive) à H. Influenzae B[2]	320.0,038.41*	11	11	14	–	–	1	–	–	–	–	–	–	–	–	–	4	4	5
Hepatitis A - Hépatite A	070.0,070.1	545	545	563	2	2	–	–	–	–	4	4	1	–	–	–	134	134	144
Hepatitis B - Hépatite B	070.2,070.3	531	531	731	1	1	1	–	–	1	14	14	12	1	1	2	235	235	251
Hepatitis C - Hépatite C		3145	3145	3189	9	9	3	–	–	–	81	81	–	32	32	34	138	138	–
Hepatitis non-A, non-B - Hépatite non-A, non-B		–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Legionellosis - Legionellose	482.41	9	9	8	–	–	–	–	–	–	1	1	1	–	–	–	1	1	–
Leprosy - Lèpre	030	3	3	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
Listeriosis (all types) - Listériose (tous genres)	027.0,771.22*	6	6	2	–	–	–	1	1	–	–	–	–	–	–	–	–	–	–
Malaria - Paludisme	084	83	83	67	–	–	–	–	–	–	–	–	–	–	–	1	28	28	23
Measles - Rougeole	055	287	287	119	7	7	–	–	–	–	–	–	–	–	–	–	1	1	4
Meningitis, pneumococcal - Méningite à pneumocoques	320.1	11	11	4	1	1	–	2	2	–	–	–	–	–	–	–	–	–	–
Meningitis, other bacterial - Autres méningites bactériennes[3,4]		33	33	28	2	2	4	–	–	–	1	1	–	2	2	–	–	–	–
Meningitis/Encephalitis viral - Méningite/encéphalite virale[5]		14	14	21	–	–	–	–	–	–	–	–	–	–	–	5	2	2	–
Meningococcal Infections - Infections à méningocoques	036	53	53	62	2	2	1	–	–	–	–	–	1	1	1	1	14	14	16
Mumps - Oreillons	072	111	111	82	–	–	–	–	–	–	–	–	2	–	–	–	5	5	17
Paratyphoid - Paratyphoïde	002.1-002.9	3	3	2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Pertussis - Coqueluche	033	930	930	1130	16	16	26	27	27	11	50	50	94	23	23	27	158	158	342
Plague - Peste	020	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Poliomyelitis - Poliomyélite	045	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Rabies - Rage	071	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Rubella - Rubéole	056	1409	1409	28	–	–	–	–	–	–	–	–	–	–	–	–	1	1	9
Congenital Rubella - Rubéole congénitale	771.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Salmonellosis - Salmonellose[6]	003	932	932	1151	8	8	6	8	8	1	26	26	19	32	32	27	203	203	336
Shigellosis - Shigellose	004	213	213	165	1	1	1	7	7	–	1	1	–	4	4	2	51	51	67
Syphilis, Congenital - Syphilis congénitale	090	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Syphilis, Early Latent - Syphilis, latente récente	092	2	2	5	–	–	–	–	–	–	–	–	–	–	–	–	1	1	1
Syphilis, Early Symptomatic - Syphilis, symptomatique récente	091	7	7	14	–	–	–	–	–	–	1	1	2	–	–	–	–	–	–
Other Syphilis - Autres syphilis	090,092-097	45	45	39	–	–	–	–	–	–	–	–	1	3	3	3	10	10	10
Tetanus - Tétanos	037	1	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Trichinosis - Trichinose	124	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Tuberculosis - Tuberculose	010-018	161	161	175	2	2	6	–	–	–	1	1	–	–	–	–	52	52	49
Typhoid - Typhoïde	002.0	6	6	5	–	–	–	–	–	–	–	–	–	–	–	–	4	4	2
Verotoxigenic E. coli - E. coli vérotoxinogènes	008.01*	65	65	99	–	–	1	–	–	–	2	2	10	–	–	–	26	26	31
Yellow Fever - Fièvre jaune	060	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

LASSA FEVER — SIERRA LEONE

During the first 4 months of 1997 a total of 353 cases of Lassa fever with 43 deaths (12.2%) were reported. The number of cases increased from 45 with seven deaths (15.6%) in January to 75 cases and nine deaths (12.0%) in February, and 147 cases with 20 deaths (13.6%) in March but decreased to 86 cases with seven deaths (8.1%) in April. The resumption of civil unrest in Kenema in late April and the brief closure of the Kenema hospital may have adversely affected reporting. During 1996, a total of 470 cases with 110 deaths (23.4%) were reported. While the majority of cases sought medical care in Kenema, four cases were identified in Freetown. Initially, cases seeking medical care in Freetown were transported to Kenema but an isolation ward is now being established in Freetown using health staff trained at the Lassa fever isolation ward in Kenema to ensure prompt management of suspect cases.

The Ministry of Health and Sanitation, together with WHO and MERLIN, is planning activities to prevent the spread of the disease and improve management of suspect cases. The Ministry is also studying a plan for rodent control. Treatment with ribavirin was resumed in mid-April with the arrival of new supplies of the drug after the stock was depleted in February. Ribavirin will be distributed to other areas where health personnel are familiar with administration of this drug for the treatment of Lassa fever. The Ministry of Health and Sanitation is also establishing a national Lassa fever control program with a program manager based in Kenema.

Source: *WHO Weekly Epidemiological Record, Vol 72, Nos 22 and 25, 1997.*

Notifiable Diseases Summary

We have excluded this table from the electronic issue of Canada Communicable Disease Report for those readers who do not need this information. For those readers interested in this table, call the FAX*link* (1-613-941-3900 from a fax machine) and select the index to get the access number.

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