week no. 30 ending July 30, 1983

Texas Preventable Disease NEWS

contents:

BUREAU OF EPIDEMIOLOGY 1100 West 49th Street, Austin, Texas 78756 (512-458-7207)

BOTULISM

Botulism is a neurological disease caused by toxins elaborated by the bacterium Clostridium botulinum. Most botulism is food-borne and recognition of even one case calls for vigorous public health action to: 1) find other related cases in their earliest stages when the disease can be successfully treated, and 2) prevent cases by ensuring that food contaminated with botulinal toxin is impounded. Two uncommon forms of this disease are infant botulism, which seems to result from toxin elaborated in the intestines of infants, and wound botulism in which anaerobic conditions support the production of toxin in wounds -- much in the same manner that tetanus toxin is produced.

FOOD-BORNE BOTULISM

Food-borne botulism occurs suddenly or insidiously in its victims and poses a serious threat to the patient's survival. Rapid diagnosis and treatment is imperative. The disease, actually a form of food intoxication, is a result of the growth of Clostridium botulinum bacteria in food. The spore-bearing anaerobic bacteria produce the highly toxic botulinal toxin. When consumed, this toxin acts to block peripheral neuromuscular junctions. The results of such blockage are weakness and progressive paralysis.

Being anaerobic, the bacteria grow well in canned foods which possess a low acid content, such as beans, corn, asparagus, meat, or spinach. Bacterial multiplication is inhibited in acid media, and botulism is rarely associated with food having a pH below 4.5.

Contamination occurs when spores of the organism, which exist in the soil on improperly washed vegetables or other food, are enclosed in the cans. If these spores are not destroyed by "processing" at the cannery or in the home, they may germinate and multiply inside the container. Contaminated food frequently appears normal. Although the types of food affected vary according to cultural dietary factors, those foods most often implicated in the United States as the source of outbreaks are home-preserved vegetables and preserved fruit and fish products.

Symptoms of botulism usually appear 12-36 hours following ingestion of contaminated food. Shorter incubation periods have been related to a higher case fatality rate as well as more severe episodes of the disease. Although the general manifestations associated with botulism vary according to type (A, B, or E), common early symptoms include: weakness, unsteadiness, gastrointestinal symptoms (e.g., nausea, vomiting, diarrhea, or constipation), and dryness of the throat and mouth. Neurological symptoms may be seen in conjunction with gastrointestinal symptoms or may follow at an interval of 12-72 hours. These may include blurred vision, droopy eyelids, difficulty swallowing, clumsy speech, and muscle weakness which may progress to involve

the respiratory system. Respiratory or bulbar paralysis, or both, are the chief causes of death.

Most outbreaks are small (usually one to three cases), but when a commercially distributed food is the vehicle, morbidity can be widespread. When there is only one case, the clinical similarity to other ailments can make early recognition and diagnosis difficult. For instance, gastrointestinal symptoms of botulism may simulate intestinal obstruction; neurological manifestations may simulate polyneuritis, Guillain-Barrè syndrome, encephalitis, stroke, or myasthenia gravis. The sore throat, in combination with neurologic symptoms and signs can suggest diphtheria. Because home-preserved foods often serve as the source, it is not unusual to see several members of a family affected with the illness. Botulism is more easily recognized if a group of patients, known to have eaten food of a type associated with botulism, present with characteristic symptoms.

The diagnosis can be confirmed only by demonstration of the toxin in the patient's blood or serum or in fecal samples. (The latter may be obtained by enema.) Recovery of the suspected organism from food or stool is helpful but not diagnostic.

Treatment for botulism is directed toward prevention of respiratory failure. A tracheostomy is indicated for bulbar paralysis, as is artificial ventilation for paralysis of respiratory muscles. Effective antitoxic serum is available for specific botulism serotypes A, B, and E. Intravenous and intramuscular administration of antitoxin is provided, irrespective of the duration of the illness when the diagnosis is made. When the serotype of botulism is unknown, multivalent antitoxin is administered. Presumptive treatment with polyvalent botulism antitoxin or the appropriate monovalent antitoxin may be given. Trivalent antitoxin (types A, B, and E) and monovalent type E antitoxin can be obtained from the Centers for Disease Control, Atlanta, Georgia.

Persons known to have eaten the specifically incriminated food should be purged with cathartics, given enemas, and kept under close medical observation. Gastric aspiration and colonic washouts are also used in treatment to minimize the continued absorption of toxin from the bowel.

The case-mortality ratio among botulism patients is high: 60-70% for type A, 10-30% for type B, and 30-50% for type E. Improved methods for management of respiratory failure should help to lower current death rates. Patients surviving the stage of severe paralysis can recover; however, recent studies of recovery patterns suggest that subtle neurological disturbances may persist. Pathological fatigability, intermittent diplopia, and sexual dysfunction were noted as persistent late effects of botulinum intoxication.

PREVENTION OF FOOD-BORNE BOTULISM

Although the botulinum spores are resistant to heat, the highly toxic neurotoxin is readily destroyed by boiling for ten minutes. For this reason, it is advised that canned foods, especially those which are home-preserved, be heated thoroughly before serving. Home-canning education regarding the proper time, pressure, and temperatures required to destroy spores is recommended. Although commercially canned foods are manufactured under strict safety guidelines, any cans showing bulging ends, evidences of fermentation, acid or gas formation, or leaks should be turned over to the local health department or other public health authorities. Eating or tasting of sour, spoiled, or discolored food from cans or jars is dangerous.

INFANT BOTULISM AND WOUND BOTULISM

Recent evidence suggesting that C. botulinum can colonize and produce botulinal toxin in the intestinal tract of susceptible infants supports the concept that production of toxin may also occur in adults. This development may explain the recurrence of severe symptoms of botulism after several days of initial improvement in patients known to have ingested C. botulinum toxin and organisms. California studies have suggested that eating raw honey is a risk factor in the development of infant botulism. However, only one third of infant botulism cases worldwide have any history of eating honey; only one quarter of the California cases had a history of honey ingestion prior to illness. Therefore, elimination of honey from the infant diet will not eradicate infant botulism. Since honey is not essential for infant nutrition, several organizations, including the American Academy of Pediatrics, the Centers for Disease Control, and the Honey Industry Council of America have recommended that honey not be fed to infants, especially those under six months of age. Infant botulism has been proposed as one possible cause of sudden infant death syndrome (SIDS).[1]

Wound botulism is a rare complication of extensive or deep contaminated wounds. Diagnosis depends on a high index of suspicion on the part of the attending physician.

SUMMARY

According to the provisions of the Texas Communicable Disease Control Act, suspect and confirmed cases of botulism in Texas are required to be reported directly to the State Epidemiologist of the Texas Department of Health. The Department coordinates all necessary activities, such as laboratory testing of specimens and suspect foods, antitoxin procurement, and epidemiologic investigation with the national Centers for Disease Control. Samples of suspect foods are essential for identifying specific botulism serotypes as well as establishing the source of the intoxication. Laboratory tests should also be conducted on specimens of gastric contents, blood or serum, and feces of hospitalized patients.

Medical personnel attending cases of food-borne botulism are dealing with a public health emergency as well as a medical emergency. The patient needs early diagnosis and specific treatment. The same is true for all others who have been exposed or are at risk of being exposed to the contaminated food source.

PDN Editorial Note:

During the season of home canning, it is advisable that an effort be made in each locality to educate the public about precautions against botulism. An article by Jonathan Mann, M.D.,of the New Mexico Health and Environment Department recently reported the economic impact of a botulism outbreak which occurred in that state in 1978.[2] This well-written article should be read by all health directors and workers concerned with the prevention of communicable disease.

A pamphlet (Stock No. 6-3) circulated by the Texas Department of Health offers advice on home-canning and precautions to be observed when canned foods are prepared for consumption.

The State Epidemiologist for Texas may be reached at (512) 458-7328 or 458-7207; at night or on weekends, call (512) 458-7111.

This report was prepared by Charles R. Webb, Jr., M.D., M.P.H., Director, Public Health Region 6, Texas Department of Health.

REFERENCES:

1. Arnon SS, Damus K, Chin J. Infant botulism: epidemiology and relation to sudden infant death syndrome. Epidemiologic Reviews 1981; 3:45-66.

2. Mann J. Economic impact of a botulism outbreak. JAMA 1983; 249: 1299-1301.

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AIDS CASES IN TEXAS BY YEAR OF DIAGNOSIS

1981	1982	1983
5	16	26

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STATE TUBERCULOSIS MANUAL PUBLISHED

On June 1, a long-awaited, completely revised edition of the Texas Department of Health Tuberculosis Manual was published. The manual covers all aspects of tuberculosis control in Texas, including program management. It is intended for all persons involved in providing clinical services, conducting field control operations, and administering the program at state, regional, or local levels.

Distribution of the manual and subsequent revisions are controlled by the Bureau of Communicable Disease Services for two reasons:

1. the manual contains copyrighted material used with permission within certain limits, and

2. each manual can be kept up to date only when each manual holder is known to the Bureau.

In the short time that the manual has been available, a revision has already become necessary, i.e., a new set of recommendations for treatment and prevention of tuberculosis and other mycobacterial diseases has been issued by the American Thoracic Society. The revision will be distributed to manual holders September 1, 1983.

For further information regarding the Tuberculosis Manual, contact the Chief, Bureau of Communicable Disease Services at (512) 458-7455 or STS 824-9455.

WEEK NO: 30 ENDING: JULY 30, 1983

	ASEPTIC MENINGITIS	MENINGOCOCCAL INFEC	HEPATITIS: A INFEC	HEPATITIS: B SERUM	HEPATITIS: UNSPEC	IMMUNIZABLE: MEASLES	IMMUNIZABLE: RUBELLA	RICKETTSIAL: ENDEM TYPH	RICKETTSIAL: RMSF	VENEREAL: GC	VENEREAL: P&S SYPH	MISC.: FLU & FLU-LIKE	TUBERCULOSIS
CUMULATIVE FOR THE STATE	POPULATION = 15,345,761												
CASES RPTD THIS WEEK	41	0	32	13	50	1	2	1	6	1,894	121	451	32
5-YR MEDIAN 1978-1982	21	3	39	16	28	4	1	0	2	2,018	65	576	54
CUMULATIVE 1983	457	122	1,482	637	1,220	35	84	13	63	46,069	3,684	67,971	1,037
CUM. SAME WEEK 1982	292	168	1,876	601	1,119	11	79	19	31	48,806	3,638	64,836	1,048
PUBLIC HEALTH REGION 1	CANYON, TX		PHONE: 806/655-7151			POPULATION = 385,411							
COUNTIES													
HANSFORD													1
PARMER			1										
POTTER			1		1							34	
RANDALL			1										
CASES THIS WEEK			3		1							34	1
CUMULATIVE 1983			22	10	3		2			841	21	3,759	9
OTHER COUNTIES:	NO COMMUNICABLE DISEASES: 3					OTHER DISEASES ONLY: 2				NOT REPORTING: 16			
PUBLIC HEALTH REGION 2	LUBBOCK, TX		PHONE: 806/797-4331			POPULATION = 379,488							
COUNTIES													
HALE										13	1		
HOCKLEY										1			
LAMB	1												
LUBBOCK							1			2	4	30	
CASES THIS WEEK	1						1			16	5	30	
CUMULATIVE 1983	5	1	29	6	19		2			611	36	4,453	12
OTHER COUNTIES:	NO COMMUNICABLE DISEASES: 1					OTHER DISEASES ONLY: 0				NOT REPORTING: 10			
PUBLIC HEALTH REGION 3	EL PASO, TX		PHONE: 915/779-3531			POPULATION = 553,858							
COUNTIES													
EL PASO										70	3		
PRESIDIO						1							
CASES THIS WEEK						1				70	3		
CUMULATIVE 1983	3	4	48	20	52	1	3			1,616	88	20	42
OTHER COUNTIES:	NO COMMUNICABLE DISEASES: 0					OTHER DISEASES ONLY: 0				NOT REPORTING: 4			

	ASEPTIC MENINGITIS	MENINGOCOCCAL INFEC	HEPATITIS: A INFEC	HEPATITIS: B SERUM	HEPATITIS: UNSPEC	IMMUNIZABLE: MEASLES	IMMUNIZABLE: RUBELLA	RICKETTSIAL: ENDEM TYPH	RICKETTSIAL: RMSF	VENEREAL: GC	VENEREAL: P&S SYPH	MISC.: FLU & FLU-LIKE	MISC.: TUBERCULOSIS
PUBLIC HEALTH REGION 4	**ABILENE, TX**		**PHONE: 915/673-5231**			**POPULATION = 678,887**							
COUNTIES													
BROWN										12			
COLEMAN										1			
CONCHO												38	
HARDEMAN												15	
JONES	2												
STEPHENS	1												
TAYLOR	3											26	
TOM GREEN	5		1							9			
WICHITA					2					38		66	
CASES THIS WEEK	11		1		2					60		145	
CUMULATIVE 1983	24		127	31	57	10	1	1		882	32	7,698	22
OTHER COUNTIES:	NO COMMUNICABLE DISEASES: 5					OTHER DISEASES ONLY: 0				NOT REPORTING: 30			
PUBLIC HEALTH REGION 5	**ARLINGTON, TX**		**PHONE: 817/460-3032**			**POPULATION = 3,481,003**							
COUNTIES													
COLLIN			1		1						1		
COOKE												14	
DALLAS	4		14	5	11			1		398	22	9	1
DENTON										1		4	1
GRAYSON								4		5			
JOHNSON										3			
KAUFMAN	1											1	
NAVARRO										1			
TARRANT			3	1	2			1		224	8	2	5
WISE										1			
CASES THIS WEEK	5		18	6	14			6		633	31	30	7
CUMULATIVE 1983	97	46	634	214	332	1	8	1	47	13,561	1,034	5,890	208
OTHER COUNTIES:	NO COMMUNICABLE DISEASES: 3					OTHER DISEASES ONLY: 1				NOT REPORTING: 5			
PUBLIC HEALTH REGION 6	**TEMPLE, TX**		**PHONE: 817/778-6744**			**POPULATION = 1,451,983**							
COUNTIES													
BELL										7			
BRAZOS										2		2	2
CORYELL										2			
GRIMES										3			
HAYS										2			

	ASEPTIC MENINGITIS	MENINGOCOCCAL INFEC	HEPATITIS: A INFEC	HEPATITIS: B SERUM	HEPATITIS: UNSPEC	IMMUNIZABLE: MEASLES	IMMUNIZABLE: RUBELLA	RICKETTSIAL: ENDEM TYPH	RICKETTSIAL: RMSF	VENEREAL: GC	VENEREAL: P&S SYPH	MISC.: FLU & FLU-LIKE	TUBERCULOSIS
PUBLIC HEALTH REGION 6	**TEMPLE, TX**		**PHONE: 817/778-6744**			**POPULATION = 1,451,983**				**(CONTINUED FROM PRIOR PAGE)**			
HILL		*			*	*	*		*		1	*	
LAMPASAS		*			*	*	*		*	2		*	
MCLENNAN		*			*	*	*		*	24	1	*	4
MILAM		*			*	*	*		*	4		*	6
ROBERTSON		*			*	*	*		*	2		*	
TRAVIS	6	*	2		2	*	*		*	11	3	*	5
WILLIAMSON	4	*			*	*	*		*	1	1	*	
CASES THIS WEEK	10	*	2		2	*	*		*	60	6	*	17	2
CUMULATIVE 1983	71	7 *	72	40	60	*	9 *	1	5 *	3,463	365	*	10,489	53

OTHER COUNTIES: NO COMMUNICABLE DISEASES: 6 OTHER DISEASES ONLY: 0 NOT REPORTING: 12

	ASEPTIC MENINGITIS	MENINGOCOCCAL INFEC	HEPATITIS: A INFEC	HEPATITIS: B SERUM	HEPATITIS: UNSPEC	IMMUNIZABLE: MEASLES	IMMUNIZABLE: RUBELLA	RICKETTSIAL: ENDEM TYPH	RICKETTSIAL: RMSF	VENEREAL: GC	VENEREAL: P&S SYPH	MISC.: FLU & FLU-LIKE	TUBERCULOSIS
PUBLIC HEALTH REGION 7	**TYLER, TX**		**PHONE: 214/595-3585**			**POPULATION = 866,604**							
COUNTIES													
		*			*	*	*		*			*	
ANDERSON		*			*	*	*		*	4		*	
BOWIE		*			*	*	*		*	16	2	*		1
CASS		*			*	*	*		*	3		*	
CHEROKEE		*			*	*	*		*	3	2	*	
GREGG		*			*	1 *	*		*	13		*		1
HARRISON		*			*	*	*		*	3		*	
HENDERSON		*			*	*	*		*			*	5	
LAMAR		*			3 *	*	*		*			*		
MARION		*			*	*	*		*	3	1	*		
PANOLA		*			*	*	*		*	1		*		
RAINS		*			*	*	*		*	1		*		
SMITH		*			*	*	*		*	25		*	16	
VAN ZANDT		*			*	*	*		*	1		*		
WOOD		*			*	*	*		*	1		*		
CASES THIS WEEK		*			3 *	1 *	*		5 *	74	5	*	21	2
CUMULATIVE 1983	8	5 *	15	13	56	*	11 *		5 *	1,651	144	*	3,825	44

OTHER COUNTIES: NO COMMUNICABLE DISEASES: 2 OTHER DISEASES ONLY: 1 NOT REPORTING: 6

	ASEPTIC MENINGITIS	MENINGOCOCCAL INFEC	HEPATITIS: A INFEC	HEPATITIS: B SERUM	HEPATITIS: UNSPEC	IMMUNIZABLE: MEASLES	IMMUNIZABLE: RUBELLA	RICKETTSIAL: ENDEM TYPH	RICKETTSIAL: RMSF	VENEREAL: GC	VENEREAL: P&S SYPH	MISC.: FLU & FLU-LIKE	TUBERCULOSIS
PUBLIC HEALTH REGION 8	**HARLINGEN, TX**		**PHONE: 512/423-0130**			**POPULATION = 1,413,993**							
COUNTIES													
		*			*	*	*		*			*	
ARANSAS		*			*	*	*		*	1		*	
CALHOUN		*			*	*	*		*			*	5	
CAMERON		*			*	*	*		*	5		*	72	1
HIDALGO		*			7 *	*	*		*	1	3	*	2	
JACKSON		*			*	*	*		*	1		*		
NUECES		*		3	2 *	*	*		*	26	3	*	49	
SAN PATRICIO		*			*	*	*		*	1	1	*		
VICTORIA	2	*	1		*	*	*		*			*	5	1

	ASEPTIC MENINGITIS	MENINGOCOCCAL INFEC	HEPATITIS: A INFEC	HEPATITIS: B SERUM	HEPATITIS: UNSPEC	IMMUNIZABLE: MEASLES	IMMUNIZABLE: RUBELLA	RICKETTSIAL: ENDEM TYPH	RICKETTSIAL: RMSF	VENEREAL: GC	VENEREAL: P&S SYPH	MISC.: FLU & FLU-LIKE	TUBERCULOSIS
PUBLIC HEALTH REGION 8	HARLINGEN, TX		PHONE: 512/423-0130				POPULATION = 1,413,993			(CONTINUED FROM PRIOR PAGE)			
WEBB		*			11 *		*	1	*	1	*	16	
WILLACY		*			*		*		*	1	*		
CASES THIS WEEK	2	*	1	3	20 *		*	1	*	37	7 *	149	2
CUMULATIVE 1983	36	7 *	135	60	273 *	1	19 *	10	1 *	1,380	124 *	16,114	117
OTHER COUNTIES:	NO COMMUNICABLE DISEASES: 4					OTHER DISEASES ONLY: 2				NOT REPORTING: 10			
PUBLIC HEALTH REGION 9	UVALDE, TX		PHONE: 512/278-7173				POPULATION = 1,443,279						
COUNTIES		*			*		*		*		*		
BEXAR	1	*	1		*		*		*	93	2 *		3
COMAL		*			*		*		*		*	4	1
DIMMIT		*			1 *		*		*		*		
GUADALUPE	1	*			*		*		*		*		
KARNES		*			*		*		*		*	4	
KERR		*			1 *		*		*		*		
VAL VERDE		*			*		*		*	2	*		
CASES THIS WEEK	2	*	1		2 *		*		*	95	2 *	8	4
CUMULATIVE 1983	111	5 *	157	30	31 *		2 *		2 *	2,304	184 *	4,496	92
OTHER COUNTIES:	NO COMMUNICABLE DISEASES: 1					OTHER DISEASES ONLY: 2				NOT REPORTING: 11			
PUBLIC HEALTH REGION 10	NACOGDOCHES, TX		PHONE: 713/560-3058				POPULATION = 683,950						
COUNTIES		*			*		*		*		*		
ANGELINA		*			*		*		*	10	1 *		
HARDIN		*			*		*		*	2	*		
HOUSTON	1	*			*		*		*	1	*		
JASPER		*			*		*		*	5	*		
JEFFERSON	4	*	2	1	1 *		*		*	34	7 *		
NACOGDOCHES		*			*		*		*	8	4 *		
NEWTON		*			*		*		*	1	*		
ORANGE		*			*		*		*		*		1
POLK		*			*		*		*	1	*		
SAN AUGUSTINE		*			*		*		*	1	*		
TRINITY		*			*		*		*	2	*		
CASES THIS WEEK	5	*	2	1	1 *		*		*	65	12 *		1
CUMULATIVE 1983	11	12 *	38	24	20 *		10 *		*	1,801	117 *	1,790	40
OTHER COUNTIES:	NO COMMUNICABLE DISEASES: 0					OTHER DISEASES ONLY: 1				NOT REPORTING: 3			

	ASEPTIC MENINGITIS	MENINGOCOCCAL INFEC	HEPATITIS: A INFEC	HEPATITIS: B SERUM	HEPATITIS: B UNSPEC	IMMUNIZABLE: MEASLES	IMMUNIZABLE: RUBELLA	RICKETTSIAL: ENDEM TYPH	RICKETTSIAL: RMSF	VENEREAL: GC	VENEREAL: P&S SYPH	MISC.: FLU & FLU-LIKE	TUBERCULOSIS
PUBLIC HEALTH REGION 11 ROSENBERG, TX PHONE: 713/342-8685 POPULATION = 3,642,976													
COUNTIES													
BRAZORIA											1		1
CHAMBERS										8			
COLORADO											1		
FORT BEND										2	2		1
GALVESTON	3									42			
HARRIS			1		2					688	44		10
LIBERTY										5			
MATAGORDA				1								8	
MONTGOMERY	2			1						10			
WALKER										7			1
WALLER										3	1		
CASES THIS WEEK	5		1	2	2					765	49	8	13
CUMULATIVE 1983	83	33	154	163	236	32	2	2		16,057	1,366	2,189	383
OTHER COUNTIES: NO COMMUNICABLE DISEASES: 1 OTHER DISEASES ONLY: 0 NOT REPORTING: 1													
PUBLIC HEALTH REGION 12 MIDLAND, TX PHONE: POPULATION = 364,329													
COUNTIES													
DAWSON					1								
ECTOR					1							7	
MIDLAND			3	1								2	
CASES THIS WEEK			3	1	2							9	
CUMULATIVE 1983	3		44	13	63	5				525	81	2,215	0
OTHER COUNTIES: NO COMMUNICABLE DISEASES: 1 OTHER DISEASES ONLY: 0 NOT REPORTING: 13													
OTHER REPORTING SOURCES													
ARMED FORCES					1					19	1		
V.A. HOSPITALS													
CASES THIS WEEK					1					19	1		
CUMULATIVE 1983	5	2	7	13	18	1				1,377	92	5,033	

OTHER REPORTABLE DISEASES	REPORTED THIS WEEK 1982	1983	CUMULATIVE 1982	1983
ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS)		6		26
AMEBIASIS	8	6	277	208
ANTHRAX	0	0	0	0
BOTULISM	0	0	0	0
BRUCELLOSIS	0	4	10	44
CHICKENPOX	28	50	9547	13545
CHOLERA	0	0	0	0
DIPHTHERIA	0	0	0	0
ENCEPHALITIS, ST. LOUIS	0	0	0	0
ENCEPHALITIS, WESTERN EQUINE	0	0	0	0
ENCEPHALITIS, VENEZUELAN EQUINE	0	0	0	0
ENCEPHALITIS, ALL OTHER	4	2	67	49
LEPROSY (HANSENS DISEASE)	2	0	17	13
LEPTOSPIROSIS	0	0	5	0
MALARIA	0	0	0	0
MALARIA ACQUIRED OUTSIDE USA	6	0	31	31
MUMPS	3	1	141	144
PERTUSSIS	2	4	34	29
PLAGUE	0	0	1	0
POLIOMYELITIS, PARALYTIC	0	0	0	0
PSITTACOSIS	1	0	4	2
Q FEVER	0	0	0	0
RABIES IN MAN	0	0	0	0
RELAPSING FEVER	0	0	1	0
RHEUMATIC FEVER	0	0	7	11
RUBELLA CONGENITAL SYNDROME	0	0	0	0
SALMONELLOSIS	128	52	1000	963
SHIGELLOSIS	97	51	1048	709
STREP THROAT & SCARLET FEVER	405	562	31539	24705
REYE SYNDROME		3		13
TETANUS	0	3	5	3
TRICHINOSIS	0	0	0	1
TULAREMIA	1	0	1	3
TYPHOID FEVER	0	1	15	20
TYPHUS, EPIDEMIC	0	0	0	0
YELLOW FEVER	0	0	0	0
RABIES IN ANIMALS	7	13	453	504