



Louisiana Morbidity Report

Louisiana Office of Public Health - Epidemiology Section
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January-February 1992

Volume 3 Number 1

Salmonella Enteritidis Outbreak Traced to Foodhandler Contamination

In the fall of 1991, OPH investigated an outbreak of *Salmonella enteritidis* gastroenteritis and found that eggs are not the only source of this organism. On August 30, OPH was called by a physician regarding five college students with acute gastroenteritis. Of this initial group of students, 80% (4/5) had stool cultures that grew *Salmonella enteritidis*. All students reported having had their meals primarily at the campus cafeteria since their arrival at the college.

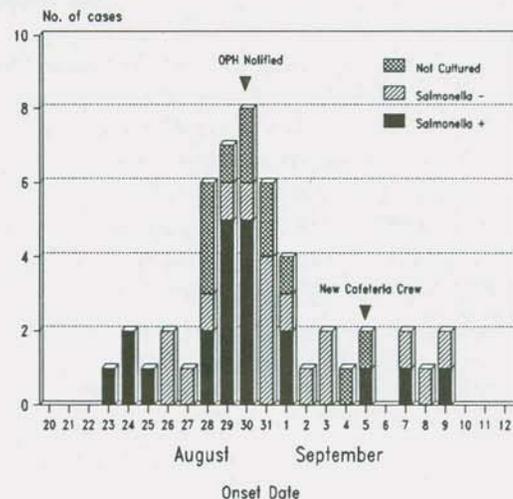
We initiated case finding in local hospitals and the college health center and conducted a case-control study that included all cases who lived on campus and had onset between 8:00 AM on August 29 and 11:00 PM on August 30. Controls were other students living on campus who were neighbors or roommates of the cases. Cases and controls were asked about food consumption for the period between lunch Tuesday, August 27 and lunch Thursday, August 29, 1991.

A total of 49 persons (42 students and seven faculty) had gastroenteritis from August 23 to September 9, 1991 (Figure 1). Of the 49 cases, 40 provided information about food consumption in the three days prior to illness. Of these, 39 (98%) reported having eaten at the campus cafeteria. Fifty-

five percent (21/38) of cases who submitted stool cultures had positive results for *Salmonella enteritidis*.

Freshmen had the highest attack rate of any class. Students who lived on-campus had an attack rate 12 times that of students who lived off-campus. All 10 cases included in the case-control study and 12 of the 16 controls recalled eating at the campus cafeteria on August 26 - 28 (Odds Ratio [OR]

Figure 1: Cases of gastroenteritis at a college, August-September 1991



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undefined, $P = 0.12$). When specific meals were analyzed, case-patients were far more likely to have eaten at the campus cafeteria Wednesday, August 28 dinner than were controls (10/10 vs. 5/16, OR undefined, $P = 0.0005$). For those individuals that ate Wednesday night dinner, eight of the ten cases and only one of five controls reported eating hamburgers (OR 16.0, $P = 0.05$; table 1).

All cafeteria staff provided stool samples for culture and a completed questionnaire. Stool samples from nine (25%) of the 35 cafeteria employees were positive for *Salmonella enteritidis* including two of the three cooks. The grill cook admitted having gastrointestinal symptoms with onset on August 19, 1991. On the day of his onset with symptoms and the following days, he was having loose stools up to ten times (Continued on page 2)

per day. He continued to work on the days that he was ill. When initially interviewed, he reported having prepared hamburgers on August 28.

On the evening of September 5, the day the first positive culture results from foodhandlers were reported, the Office of Public Health recommended that the facilities should be closed until all prepared or opened food was discarded; all kitchen area was sanitized; and that no infected employee should be allowed to work until two consecutive negative stool cultures were documented.

Comment:

Clinical symptoms of acute enterocolitis such as sudden onset of diarrhea, cramps, nausea and fever as found in this outbreak are characteristic of salmonellosis. The epidemic curve suggests that students were exposed over several days and probably exposed to several food sources. In the case-control study, consumption of hamburgers, served during dinner on August 28th was strongly associated with illness.

Food is an effective vehicle for transmission of salmonella, although outbreaks of *S. enteritidis* infection are most commonly associated with consumption of contaminated eggs or poultry.

Salmonella enteritidis organisms can multiply in foods to attain a very highly infective concentration if foods are left at a temperature that allows bacterial growth (generally between 50 - 100 F). The ingestion of a few organisms can cause infection in highly susceptible persons, but usually >1000 organisms are required. Prevention of disease outbreaks due to this organism rests on controlling contamination of food - and more important - prevention of conditions that allow for bacterial growth.

Table 1. Association between illness and consumption of specific food items.

	Case		Control		O.R.	Fishers Exact P-value
	Ate	DNE	Ate	DNE		
Hamburger	8	2	1	4	16.0	0.05
Dessert Bar	7	3	1	4	9.3	0.10
Hot Vegetables	7	3	2	3	3.5	0.29
Hot Dog	1	9	0	5	1.7	0.66
Potato Salad	5	5	2	3	1.5	0.57
Bread	1	8	1	4	0.5	0.60
BBQ Chicken	7	3	5	0	0.0	0.26
Beverage	10	0	4	1	*,*	0.33
Soup bar	1	9	0	5	*,*	0.71
Condiments	1	9	0	4	*,*	0.71

, Odds Ratio is undefined

1990 Annual Summary Available

The 1990 Annual Summary Report is being printed now and should be available shortly. For those of you who did not receive a copy of the 1989 issue but are interested, please contact the Epidemiology Office at 504-568-5005 and have your name added to the mailing list.

Active Surveillance for Enteric Disease in Southeast Louisiana

The Office of Public Health is working with the Centers for Disease Control on an active surveillance study of enteric diseases caused by Salmonella, Campylobacter and Vibrio organisms. Data collection will begin February 1st. The OPH Epidemiology Office will communicate weekly with hospital-based and independent laboratories in the parishes of health regions 1,3,4 and 9 (Acadia, Assumption, Evangeline, Iberia, Jefferson, Lafayette, Lafourche, Orleans, Plaquemines, St. Bernard, St. Charles, St. James, St. John, St. Landry, St. Martin, St. Mary, St. Tammany, Terrebonne and Vermilion parishes) to collect information on new cases. All laboratory isolates of these organisms should be sent to the state Central Laboratory in New Orleans for serotyping. These isolates will then be sent on to the CDC for further study.

For each case in the study, the Epidemiology Office will randomly select from one to three controls (persons who have not been ill) matched on age, sex and neighborhood of the case. A food history for cases and controls will be obtained by telephone. Differences in the foods eaten will help to identify the source of infection for the cases. Data will be collected for one year and will be compiled with that from a similar study in Texas. For more information on this enteric disease surveillance study, contact the Epidemiology Section at (504) 568-5005.

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Volume 3, Number 1

January-February 1992

The Louisiana Morbidity Report is published bimonthly by the Epidemiology Section of the Louisiana Office of Public Health to inform physicians, nurses, and public health professionals about disease trends and patterns in Louisiana. Address correspondence to Louisiana Morbidity Report, Epidemiology Section, Louisiana Department of Health and Hospitals, P.O. Box 60630, New Orleans, LA 70160.

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Visceral Leishmaniasis in Returning Soldiers Causes Blood Donation Ban

Blood donations from personnel who served in the Middle East during Operation Desert Storm have been prohibited by the Defense Department after seven soldiers were found to be infected with a new form of visceral Leishmaniasis.

As Desert Storm began, physicians were warned that returning soldiers might bring home with them a variety of tropical diseases, including Leishmaniasis (Louisiana Morbidity Report, May-June 1991). This disease is transmitted from desert rodents to humans through the bite of the sandfly, and classically causes a skin ulcer (known as a Baghdad Boil) 2-8 weeks later at the site of the bite. It cannot be transmitted person-to-person.

As of mid-November, 1991, 22 cases of Leishmaniasis among Marines were reported to military physicians; all cases were felt to be caused by *Leishmania tropica*. Fifteen of these cases had typical skin involvement, but seven soldiers had visceral disease in the absence of skin lesions. Most of these seven soldiers had fever, gastrointestinal symptoms, enlarged livers and spleens, mild anemia, and liver enzyme elevation; however, one was asymptomatic. The diagnosis was confirmed by culture of the organism from bone marrow.

The finding of this new "viscerotropic" form of leishmaniasis caused by *Leishmania tropica* has raised questions about the prevalence of infection in other Desert Storm participants and the potential for transmission of infection via blood transfusion. Currently-available serologic tests for leishmaniasis are not very sensitive or specific, so serologic testing of asymptomatic soldiers is not useful in determining infection. There have been no reported cases of transmission of *Leishmania tropica* by blood transfusion. However, there are five cases reported in the world literature of transmission by blood transfusion of visceral leishmaniasis caused by *Leishmania donovani*. Therefore a theoretical risk exists of transmission of this infection by blood donated from an asymptotically infected soldier, and this risk has caused military officials to ban blood donation.

The blood donation ban is currently planned to last one year. It is hoped that by January 1993 more information is available about the prevalence of this infection and the risk of transmission by blood. Physicians treating military personnel (including reservists) who have symptoms suggestive of leishmaniasis should contact the infectious disease consultant for the patient's branch of the armed services. For more information, call the Epidemiology Section.

Impact of the New CDC Lead Poisoning Prevention Guidelines

The Centers for Disease Control has recently issued new guidelines which make major changes in lead poisoning prevention initiatives. The four major components of change are:

1. The blood lead level (BLL) for defining a child as "at risk" for lead poisoning has been lowered from 25ug/dL to 10ug/dL (table).
2. Screening will be by measurements of blood lead levels instead of the erythrocyte protoporphyrin (EP) levels.
3. All children should be screened.
4. Health agencies are urged to shift to primary prevention with elimination of sources of lead to prevent exposure of children.

These new guidelines will have a major impact on Louisiana's Lead Poisoning Prevention Program. The Office of Public Health will have to address such problems as: increased efforts to educate and involve health care providers and the public about the hazards of lead and the need for screening; acquiring and training personnel on new laboratory equipment needed to conduct an increased number of tests; increased numbers of children requiring intervention and follow-up; and extensive planning and resources to limit environmental lead exposures.

A multidisciplinary task force has been convened within the Office of Public Health to address these important issues. The Task Force will be expanded to include other public as well as private agencies. One of the first steps will be to document the extent of the lead poisoning in children in Louisiana. In the interim, the agency has instituted guidelines to lower the blood lead level for which medical and environmental evaluation and follow-up be done from 25ug/dL to 20ug/dL. For further information, contact the Lead Poisoning Prevention Program at 504-568-5070.

Table. Interpretation of blood lead levels for Risk Classification*

Class	BLL (ug/dL)	Intervention
I	<=9	None
IIA	10-14	Community intervention if many children with levels in this range.
IIB	15-19	Nutritional & educational interventions.
III	20-44	Environmental follow-up if level persists. Environmental evaluation & remediation; medical evaluation.
IV	45-69	Medical & environmental intervention; Chelation therapy.
V	>=70	Medical emergency; immediate medical and environmental intervention.

*Source: Preventing Lead Poisoning in Young Children: A Statement by the Centers for Disease Control, October, 1991.

AIDS Update

The Spectrum of HIV Infection

The HIV/AIDS program is currently involved in the CDC Adult Spectrum of Disease Study conducted in the outpatient clinic at Charity Hospital in New Orleans. The purpose of this study is to characterize the clinical manifestations of HIV infection in different populations at various stages of illness. Such studies may be used to further refine the AIDS case definition or follow changes in the manifestations of HIV infection as a result of medical treatments.

All patients who are identified as HIV-positive are eligible for the study. Of the 1,000 patients enrolled so far, 24% have more than 500 CD4 cells, 31% have between 200 and 499 CD4 cells, and 34% have under 200 CD4 cells per mm³; twelve percent have unknown T-cell results. As expected, AIDS-defining infections and conditions were found more frequently by those with lower CD4 cell counts (Figure 1).

Most patients also had infectious diseases not included in the AIDS case definition (Figure 2). The most common of these infections were thrush, oral hairy leukoplakia (OHL), and tinea. Pulmonary tuberculosis occurred in 4% of the persons. Generally, infections occurred more frequently with decreasing immune function. However, sexually transmitted diseases (syphilis, herpes, and other genital infections) declined slightly with progression of HIV disease. In addition, other infections (not shown on the graph) such as tinea, bronchitis, and otitis occurred equally in all CD4 cell groups.

Figure 3 shows other clinical manifestations which may occur in HIV-infected persons. Except for lymphadenopathy, most of these conditions increase with the progression of immunosuppression. Twenty percent of all cases also had allergic sinusitis, 17% had fatigue/weakness, and 15% had depression.

Future articles will present other data from this study, particularly the differences in the clinical manifestations by sex, race, and risk group.

Figure 1: Percentage of HIV-infected persons with AIDS - defining opportunistic infections, by CD4 counts

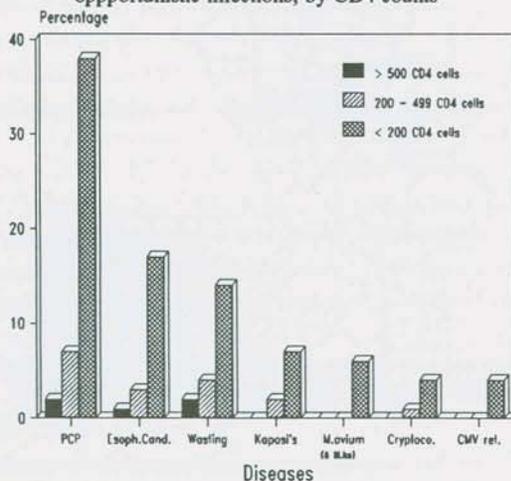


Figure 2: Percentage of HIV-infected persons with other infections by CD4-cell count

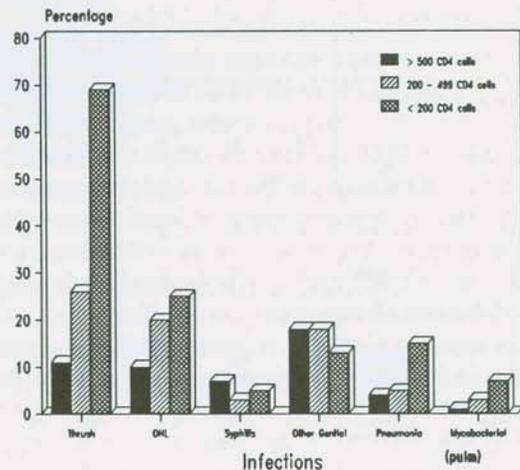
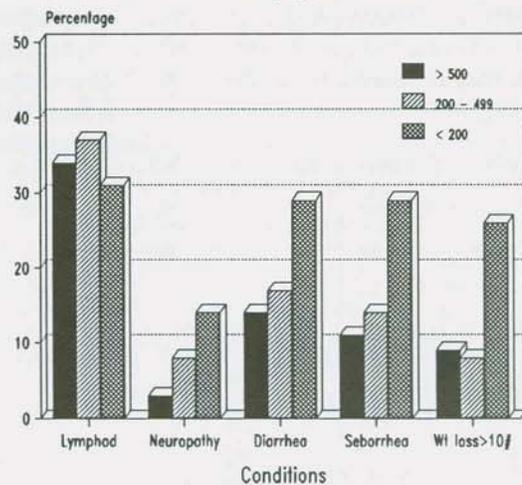
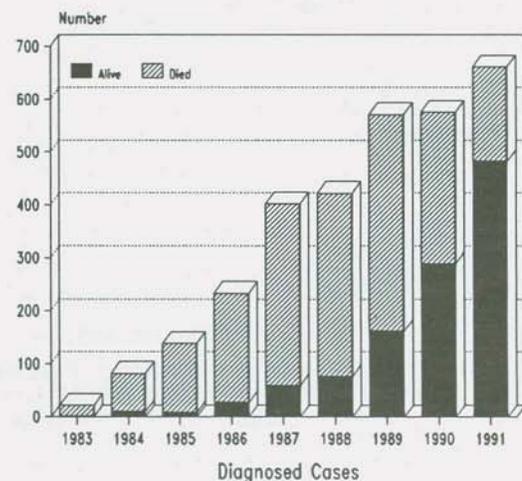


Figure 3: Percentage of HIV-infected persons with other HIV-related conditions, by CD4-cell counts



AIDS Case Trends



COMMUNICABLE DISEASE SURVEILLANCE, November-December 1991
PROVISIONAL DATA

Table 1. Selected diseases by region

DISEASE	HEALTH DEPARTMENT REGION										Nov-Dec 1991	Nov-Dec 1990	Cum 1991	Cum 1990	%Change
	1	2	3	4	5	6	7	8	9						
Vaccine-preventable															
Measles	Cases	0	0	0	0	0	0	0	0	0	0	0	0	10	-
Mumps	Cases	2	1	0	2	1	1	0	0	1	8	12	37	115	-68
Rubella	Cases	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Pertussis	Cases	0	0	0	0	0	0	0	0	0	0	1	12	32	-63
Sexually-transmitted															
AIDS	Cases	39	18	3	13	4	4	16	6	5	108	75	710	657	+ 8
	Rate*	5.3	2.4	1.0	2.3	1.5	1.3	2.9	2.0	1.1	2.6	1.8	16.8	15.7	
Gonorrhea	Cases	873	222	57	153	80	72	274	133	149	2033	2187	15266	13633	+12
	Rate**	11.9	2.9	1.9	2.7	3.1	2.3	5.4	4.9	3.3	4.8	5.0	36.2	31.1	
Syphilis (P&S)	Cases	112	88	60	44	4	19	36	27	24	414	413	3028	2703	+12
	Rate**	1.5	1.2	2.0	0.8	0.2	0.6	0.7	0.9	0.5	1.0	1.0	7.2	6.2	
Enteric															
Campylobacter	Cases	1	1	0	1	0	0	0	0	1	4	19	80	132	-39
Hepatitis A	Cases	9	1	1	0	0	0	5	0	3	19	36	125	208	-50
	Rate*	1.2	0.1	0.3	0	0	0	0.9	0	0.6	0.4	0.8	2.9	4.7	
Salmonella	Cases	23	13	7	26	6	6	23	5	11	121	197	709	735	-3.5
	Rate*	3.0	1.7	2.3	4.6	2.3	1.9	4.0	1.6	2.4	2.8	4.5	1.62	16.8	
Shigella	Cases	3	2	1	12	2	0	1	0	4	26	35	186	282	-34
	Rate*	0.4	0.3	0.3	2.1	0.8	0	0.2	0	0.9	0.6	0.8	4.2	6.4	
Vibrio Cholera	Cases	0	0	0	0	0	0	0	0	0	0	0	0	2	-
Vibrio, other	Cases	1	0	1	0	1	0	0	0	0	3	5	41	31	+32
Other															
Hepatitis B	Cases	17	15	1	11	1	1	11	1	8	66	51	323	319	+1.3
	Rate*	2.2	1.9	0.3	1.9	0.4	0.3	1.9	0.3	1.7	1.5	1.2	7.4	7.3	
Meningitis/Bacteremia	Cases	2	0	0	0	0	0	0	0	0	2	8	22	66	-67
H. Influenza	Cases	2	0	0	0	0	0	0	0	0	2	8	22	66	-67
N. Mening.	Cases	1	0	0	0	0	0	0	0	0	1	6	31	37	-16
Tuberculosis	Cases	16	8	1	4	2	3	11	12	2	59	127	340	355	-4.2
	Rate*	2.1	1.0	0.3	0.7	0.8	0.9	1.9	3.8	0.4	1.3	2.9	7.8	8.1	

* Cases per 100,000 population

** Cases per 10,000 population

Table 2. Diseases of low frequency, 1991

Disease	Total to date
Blastomycosis	4
Brucellosis	0
Histoplasmosis	4
Lead Toxicity	19
Legionellosis	10
Leprosy	1
Leptospirosis	1
Lyme Disease	5
Malaria	16
Rocky Mountain Spotted Fever	0
Tetanus	0
Typhoid	5

Table 3. Animal rabies - November - December, 1991

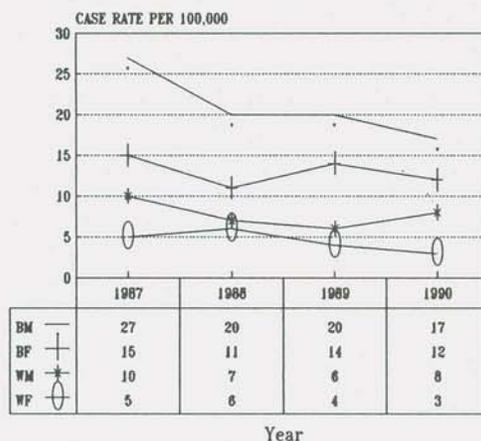
Parish	Species	No. Cases
Bossier	Skunk	2



Annual Summary Hepatitis B 1990

In 1990, there were 361 cases of hepatitis B reported to the Epidemiology Section, a 16% decrease from 1989. The case rate for 1990 was 5 per 100,000. Rates for males were slightly higher than for females (11 vs 10 per 100,000). Race-sex specific case rates for black males (17 per 100,000) were over twice as high as white males (8 per 100,000), while rates for black females (12 per 100,000) were four times higher than white females (3 per 100,000; Figure 1). Age-specific rates were highest among persons 20-44 years of age, which has been consistent with the overall national trend. Parishes with the highest case rates per 100,000 include: Iberia (19), Iberville (19), Tangipahoa (19), Orleans (17), St. Landry (16), Madison (16), E. Baton Rouge (15), Lasalle (15), and West Feliciana (15) [Figure 2].

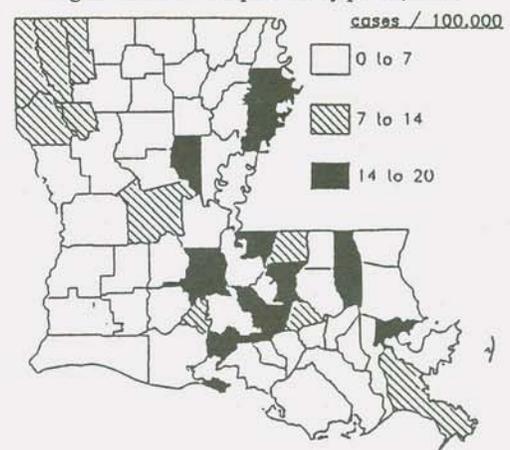
Figure 1: Rates of hepatitis B by race and sex, 1987-1990



Comment:

The most frequently reported known risk factors for hepatitis B continue to be IV street drugs and percutaneous needlestick exposures, which suggests little modification of high risk behavior in this group. Vaccination programs and vaccine usage have been focused primarily on risk groups such as health care workers, staff and residents of institutions for the developmentally disabled, as well as hemodialysis units. The major obstacle to reducing the incidence of HBV infection in the U.S. is identifying persons before they become infected and vaccinating them promptly. Adults in general and groups such as IV drug users in particular are difficult to access for delivery of vaccine. Once persons begin the lifestyle associated with high risk groups, they may be infected before the vaccine can be given. Broader hepatitis programs such as routine vaccination of infants, children and adults may be the only means by which vaccination can have an impact on the incidence of hepatitis B, but this impact would be delayed. The Office of Public Health has instituted a program to prevent perinatal hepatitis B transmission and has recently expanded the program to provide vaccine to household members of carriers and to all infants of Southeast Asian women. Consideration is currently being given to the national recommendations of universal infant vaccination against hepatitis B.

Figure 2: Rates of hepatitis B by parish, 1990



LOUISIANA FACTS

In 1927 Louisiana and the surrounding region experienced a massive flood that directly affected the lives of 1.5 million persons. In the subsequent response, the United States Public Health Service observed that wherever parish health units were operating, emergency work proceeded promptly and efficiently. The outstanding permanent result of the flood was the establishment within one year of 74 full-time parish and county health units in the seven states where devastation was greatest.

Do you have an interesting fact about Louisiana that you would like to see published in the Louisiana Morbidity Report? Send facts and source to: Louisiana facts, DHH-OPH-Epidemiology Section, P.O. Box 60630, New Orleans, LA 70160.

LIST OF REPORTABLE DISEASES/CONDITIONS

REPORTABLE DISEASES		OTHER REPORTABLE CONDITIONS
Acquired Immune Deficiency Syndrome (AIDS)	Gonorrhea**	Cancer
Amebiasis	Granuloma Inguinale**	Complications of abortion
Anthrax	Hepatitis, (Specify type)	Congenital hypothyroidism
Aseptic meningitis	Herpes (genitalis/neonatal)**	Lead poisoning
Blastomycosis	Legionellosis	Phenylketonuria
Botulism*	Leprosy	Reye Syndrome
Brucellosis	Leptospirosis	Severe Traumatic Head Injuries*
Campylobacteriosis	Lyme Disease	Severe undernutrition
Chancroid**	Lymphogranuloma venereum**	severe anemia, failure to thrive
Cholera*	Malaria	Sickle cell disease (newborns)
Chlamydial infection**	Measles (rubeola)*	Spinal cord injury*
Diphtheria*	Meningitis, Haemophilus	Sudden infant death syndrome (SIDS)
Encephalitis (Specify primary or post-infectious)	Meningococcal Infection (including meningitis)*	
Erythema infectiosum (Fifth Disease)	Mumps	
Foodborne illness*	Mycobacteriosis, atypical***	
Genital warts**	Ophthalmia neonatorum*	
	Pertussis (whooping cough)	
	Plague*	
	Poliomyelitis	
	Psittacosis	
	Rabies (animal & man)	
	Rocky Mountain Spotted Fever	
	Rubella (German measles)*	
	Rubella (Congenital syndrome)	
	Salmonellosis	
	Shigellosis	
	Syphilis**	
	Tetanus	
	Trichinosis	
	Tuberculosis***	
	Tularemia	
	Typhoid fever	
	Typhus fever, murine (fleaborne endemic)	
	Vibrio infections (excluding cholera)	
	Yellow fever	

Report cases on green EPI-2430 card unless indicated otherwise below.

*Report suspected cases immediately by telephone. In addition, report all cases of rare or exotic communicable diseases and all outbreaks.

**Report on STD-43 form. Report syphilis cases with active lesions by telephone.

***Report on CDC 72.5 (f 5.2431) card

*Report on DDP-3 form; preliminary phone report from ER encouraged (568-2509).

The toll free number for reporting communicable diseases is
1-800-256-2748

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