Title 15 - Mississippi Department of Health

Part II – Epidemiology

Subpart 11 –Office of the State Epidemiologist

CHAPTER 01 RULES AND REGULATIONS GOVERNING REPORTABLE DISEASE AND CONDITIONS

PREFACE

AUTHORITY FOR THE MISSISSIPPI STATE BOARD OF HEALTH TO MAKE AND PUBLISH RULES AND REGULATIONS

Section 41-3-17, Mississippi Code of 1972 as amended

"The State Board of Health is authorized to make and publish all reasonable rules and regulations necessary to enable it to discharge its duties and powers and carry out the purposes and objectives of its creation, and reasonable sanitary rules and regulations, to be enforced in the several counties by the county health officer under the supervision and control of the State Board of Health."

DEPARTMENT TO ESTABLISH AND MAINTAIN A CENTRAL CANCER REGISTRY

Section 41-91-5, Mississippi Code of 1972 as amended

1. "The department may establish and maintain a central cancer registry for the state.
2. The cancer registry shall be a central data bank of accurate, precise and current information that medical authorities agree serves as an invaluable tool in the early recognition, prevention, cure, and control of cancer."

Section 41-91-7, Mississippi Code of 1972 as amended

1. The board may adopt rules and regulations that the board considers necessary to implement this chapter.
2. The board in its rules and regulations shall specify the types of information to be provided to the cancer registry and the persons and entities who are required to provide such information to the cancer registry.
3. The Department may:

    a. Execute contacts that the department considers necessary;

    b. Receive the data from medical records of cases of cancer that are in the custody or under the control of clinical laboratories, hospitals, physician(s) offices and cancer treatment centers or other health care providers to record and analyze the data related to those diseases;

PENALTY FOR VIOLATING RULES AND REGULATIONS OF THE MISSISSIPPI STATE BOARD OF HEALTH

Section 41-3-59, Mississippi Code of 1972 as amended

"Any person who shall knowingly violate any of the provisions of this chapter, or any rules or regulations of the State Board of Health, or any order or regulation of the Board of Supervisors of any county herein authorized to be made, shall be guilty of a misdemeanor, and on conviction shall be punished by a fine not exceeding five hundred dollars or imprisoned in the county jail not more than six months, or both."

MISSISSIPPI DEPARTMENT OF HEALTH RULES AND REGULATIONS GOVERNING REPORTABLE DISEASES AND CONDITIONS.

100 DUTY TO REPORT

Each clinician including each physician, pathologist, nurse practitioner, medical examiner; and coroner, laboratory director and veterinarian, in epizootic diseases, shall report to the Department of Health any diagnosed case or suspected case of a reportable disease or condition, including those hereinafter listed, which he or she is attending, has examined, or of which he or she has knowledge. Reports on patients originating from institutions (including but not limited to hospitals and nursing homes) may be coordinated through a designated person, such as an infection control practitioner, provided there is prior arrangement with the Mississippi Department of Health, Division of Epidemiology. Such report shall include, unless otherwise specified, the patient's name, address, age and/or date of birth, race, sex, the disease or suspected disease or condition, the date of onset of the disease, method of diagnosis, and name of attending clinician.

All Class 4 reports should be submitted to:

Mississippi Cancer Registry
Cancer Research and Registries
University of Mississippi Medical Center
2500 North State Street
Jackson, MS 39216
601-815-5482

All reports so made are confidential. Reports shall be made as required for each class. Case Report Cards for written reports are supplied through the local health department. When a report to the local health department is made by telephone or in person, the local health officer or his or her designee shall be responsible for preparing the Case Report Card, and forwarding it to the Division of Epidemiology.

The designated diseases and conditions listed in Appendix A to the Rules and Regulations Governing Reportable Diseases and Conditions shall be reported using the following classifications. The list designating the reportable diseases and conditions shall be published annually in the Mississippi Morbidity Report and is also available upon request to the Division of Epidemiology.

100.01 **Definitions.**

1. **Class 1**: Diseases of major public health importance which shall be reported directly to the Department of Health by telephone within 24 hours of first knowledge or suspicion. Class 1 diseases and conditions are dictated by requiring an immediate public health response. Laboratory directors have an obligation to report laboratory findings for selected

diseases (Refer to Appendix C to the Rules and Regulations Governing Reportable Diseases and Conditions).

2. **Class 2**: Diseases or conditions of public health importance of which individual cases shall be reported by mail, telephone or electronically, within 1 week of diagnosis. In outbreaks or other unusual circumstances they shall be reported the same as Class 1. Class 2 diseases and conditions are those for which an immediate public health response is not needed for individual cases. Laboratory directors have an obligation to report laboratory findings for selected diseases (Refer to Appendix C to the Rules and Regulations Governing Reportable Diseases and Conditions.

3. **Class 3**: Laboratory based surveillance. Reported by laboratory only. Diseases or conditions of public health importance of which individual laboratory findings shall be reported by mail, telephone, or electronically within one week of completion of laboratory test (refer to Appendix C of the Rules and Regulations Governing Reportable Diseases and Conditions.). Types of results deemed reportable may be updated due to changes in technology by the State Epidemiologist upon advice of the Director of the Public Health Laboratory.

4. **Class 4**: Diseases of public health importance for which immediate reporting is not necessary for surveillance or control efforts. Diseases and conditions in this category shall be reported on a quarterly basis.

The State Epidemiologist; with the concurrence of the State Health Officer, when the Board is not in session, may declare a disease or condition reportable for a specific length of time, not to exceed 12 months. The Board shall be informed of any action taken under this provision at its next regular meeting. The intent and purpose of this authority is to allow rapid investigation of and response to new or emerging threats to the health of the public.

101 CASE DEFINITIONS

For reporting purposes, the criteria for diagnosis of reportable conditions shall be those specified by the Council of State and Territorial Epidemiologists and the Centers for Disease Control and Prevention, , as outlined in the surveillance case definitions contained in Appendix B to the Rules and Regulations Governing Reportable Diseases and Conditions.

102 DUTY OF LABORATORY DIRECTORS TO REPORT

It shall be the duty of the director or other person in charge of any clinical laboratory in the State of Mississippi or serving Mississippi clinicians or institutions to notify the Mississippi Department of Health of any laboratory finding as provided for in Appendix A of the Rules and Regulations Governing Reportable Diseases for all classes of diseases or conditions. The report shall in all cases include the name and location of the physician or other health care provider ordering the test in addition to the patient identifying

information specified in Section 100. Tests considered reportable shall be those listed in Appendix C to the Rules and Regulations Governing Reportable Diseases.

103 DUTIES OF LOCAL HEALTH OFFICER

The director of the local health department, as the local health officer, shall be responsible for the control of communicable diseases and other conditions within his or her jurisdiction considered prejudicial to the public health. It shall be his or her duty to collect and make reports as required to the Mississippi Department of Health, to provide consultation services to physicians regarding communicable diseases, to advise and consult with all others in matters relating to public health, and to investigate reports of known or suspected communicable diseases or of conditions which might be prejudicial to the public health. It shall be his or her duty to determine in individual cases or groups of cases whether to impose restrictions on the activities of patients or contacts of persons with a communicable disease and to fix the period of isolation for such diseases. For all the diseases listed in Section 100, Class 1 the local health officer shall, on first knowledge or suspicion, conduct an investigation into all the circumstances and prescribe such reasonable methods of control as may be calculated to minimize the danger of further dissemination of the disease process. The measures proposed in the sixteenth or later edition of the Control of Communicable Diseases Manual, published by the American Public Health Association shall be considered as supplementary. In all matters where there is disagreement as to diagnosis, isolation or in any other situation where the responsibility rests with the health officer, the opinion of the health officer shall prevail. In the discharge of his or her duties, the health officer or designee shall not be denied the right of entry to any premises nor shall he or she be denied pertinent patient health information and patient identifiers.

104 REPORTING OF PATIENTS WHO ABANDON TREATMENT

If any patient suffering from any of the diseases or conditions listed in Appendix A to the Rules and Regulations Governing Reportable Diseases and Conditions leaves the care of his/her physician or leaves any hospital, and the condition of the patient is considered harmful to the public health, it shall be the duty of the attending physician or superintendent or other person in charge of the hospital to report the circumstances to the Department of Health, whether the case has been previously reported or not.

105 SUSPECTS OR CONTACTS OF COMMUNICABLE DISEASES REQUIRED TO SUBMIT TO EXAMINATION

The local health officer is authorized to examine, treat, and/or isolate at his or her discretion or under the direction of the State Health Officer any person who, on credible information, is suspected of suffering from any communicable disease, or who is a contact with a known case of such disease or may be a carrier or have the disease in the incubation or prodromal phase. Said suspect or contact shall be notified in writing to report to a reasonable place at a reasonable time for such examination. Should the suspect or contact refuse to submit to examination satisfactory to the health officer, said suspect or contact shall be prosecuted at law to compel compliance and/or be isolated in a manner prescribed by the health officer until the danger of transmitting the disease in

question has passed. In the event that the aforementioned suspect or contact is a minor, the parent or guardian shall be apprised of the facts and requested to deliver said minor for examination. In the event of refusal, the health officer shall maintain action at law to compel compliance of the parent or guardian and/or impose isolation as necessary.

106 PERSONS IN CHARGE OF CERTAIN BUSINESSES AND INSTITUTIONS REQUIRED TO EXCLUDE CERTAIN PERSONS

When any superintendent or other person in charge of any school or other institution, whether public or private, or the person in charge of any establishment or business dealing with perishable foods or foodstuffs for public consumption knows or suspects that any person attending or employed in said school, institution, or business is afflicted with any disease transmissible under the conditions prevailing in that institution or establishment, said person in charge shall exclude the affected person from attending or working in said school, institution or business until he/she shall have been declared by the health officer, or by medical certification acceptable to the health officer, not to be a significant threat to the health of others as a result of the above mentioned disease.

107 FOOD HANDLING ESTABLISHMENTS

The production, processing, storage, handling, distribution and sale of food for human consumption shall conform to the specifications of the current "Regulations Governing Food Service Sanitation." Local authorities may impose additional, specific requirements. It shall be the duty of the local health officer to investigate any potential or actual disease occurrence in connection with food handling and to impose any measures he/she deems necessary for its control.

108 NOTIFICATION OF OTHER HEALTH CARE PROVIDERS

Any provider of health care services, including but not limited to physician, hospital, and emergency clinic who refers or transfers a patient to another provider of health care services and who has knowledge that the patient has one of the conditions listed in Section 112 or carries the infectious agent thereof or any other disease or agent transmissible under the circumstances of the care to be provided, shall advise the health care service provider to whom the patient is referred or transferred of the presence of the condition together with pertinent details as indicated by accepted standards of medical practice.

109 NOTIFICATION OF THIRD PARTY INDIVIDUALS

In certain circumstances where such notification has significant potential for interrupting the transmission of disease, the Department of Health, through its official representatives, may notify a third party of the presence of a reportable disease in another person. Such notification shall be subject to the prior approval of the State Health Officer or of the State Epidemiologist, and shall take place only under the following conditions:

109.01 Significant, medically recognized, and biologically plausible potential for the transmission of the disease involved must exist under the circumstances;

109.02 The party to be notified:

1. Must be at significant risk of acquiring the disease in question or of aggravation of the disease by additional exposure if such notification does not occur, and be potentially able to avoid such transmission by realistic means as a result of the notification; or,

2. Must stand in *loco parentis* or otherwise be responsible for the activities of other persons whose activities could realistically be expected to produce the potential for transmission of the disease to other individuals, and such notification would enable that person to take action which could realistically result in prevention of transmission; or,

3. Could, with such notification, aid in preventing further transmission of the disease by offering testimony in a judicial proceeding concerning the infected individual's violation of an order of the Mississippi Department of Health.

Such notification shall always be dependent on the presence of a disease that can be transmitted under the circumstances involved, and where there either is no other practical means of limiting transmission or where notification provides such a significant advantage over other means of attempting to reduce transmission that in the opinion of the State Health Officer or the State Epidemiologist, notification is warranted.

110 NOTIFICATION OF EMERGENCY MEDICAL SERVICE PROVIDERS - POSTEXPOSURE

When in the course of providing emergency services to an individual, an emergency medical technician, firefighter, peace officer, or other provider of emergency services comes into direct bare-skin contact with the patient's blood or other internal body fluids, and the patient is transported to a medical care facility, the emergency medical services provider shall notify the medical facility of the blood exposure. Notification shall be in writing and shall include the date and time of the exposure, a description of the nature of the exposure, and the circumstances under which it occurred. If the medical facility to whom the victim is delivered learns during that admission or episode of treatment that the patient has one of the conditions listed in Section 112 or carries the causative agent thereof, the medical facility shall then advise the emergency medical service worker who was exposed as to the condition which was present, and the need for any protective measures to be taken. The hospital shall retain in the patient's medical record a copy of the written notification by the emergency medical services provider of the exposure. The emergency service provider and/or the agency to which he or she is employed shall not disclose any patient identifying information provided under this section to any other person or agency.

111 PREVENTION OF BLOODBORNE PATHOGENS DURING EXPOSURE-PRONE PROCEDURES

The Guidelines for Prevention of Transmission of Human Immunodeficiency Virus and Hepatitis B Virus to Patients during Exposure-Prone Invasive Procedures published by the Centers for Disease Control and Prevention shall be the guidelines followed in all applicable circumstances in the State of Mississippi. (Copies of these guidelines may be obtained by contacting the Division of Epidemiology at 601-576-7725.)

112 BLOODBORNE AGENTS

The State Board of Health declares the following diseases and/or infectious agents, transmissible by blood or body fluids, to require the use of appropriate blood and body fluid precautions, including notification of other health care personnel, emergency medical personnel, and providers of post-mortem services as indicated by accepted standard of medical practice or required by law.

Bloodborne Agents

Anthrax	Rocky Mountain Spotted Fever
Hepatitis B	Syphilis
Hepatitis C	Tularemia
Human Immunodeficiency Virus (HIV) infection	Viral Hemorrhagic Fever
Malaria	Plague

113 TESTING FOR HUMAN IMMUNODEFICIENCY VIRUS INFECTION

Testing for infection with human immunodeficiency virus (HIV) shall be performed only under the following conditions:

113.01 No individual or agency shall perform screening tests or collect specimens for the performance of such tests without either the ability to perform appropriate confirmatory tests, such as fluorescent antibody, Western blot, or other tests accepted as confirmatory by the State Department of Health, or arrangements to have such confirmatory tests performed.

113.02 Individuals tested for HIV infection shall be notified of the results of the testing only upon completion of appropriate confirmatory or second level test such as fluorescent antibody, Western blot, or other tests accepted as confirmatory by the State Department of Health.

113.03 No testing shall be performed without appropriate post-test counseling of individuals tested.

114 IMPORTATION OF WILD ANIMALS

Any wild animal (including but not limited to raccoons, skunks, foxes, prairie dogs and ferrets) known to be capable of harboring and transmitting any disease which may affect humans (such as rabies), or of harboring the vector which transmits the illness (such as plague), from an area or farm enzootic for that illness, shall not be imported into the state.

115 STORAGE OF BIOLOGICALS

All local health offices, pharmacies, drug stores, apothecary shops, wholesale drug houses and other entities or institutions located within the State of Mississippi and selling or offering to sell or furnish to the public certain biologicals to be used for the purpose of preventing or curing disease shall maintain refrigeration systems in which said biologicals shall be stored at all times. The temperature of the refrigeration system shall not be above 46º F at any time. In the compartment of the refrigeration system where biologicals are stored, a standard thermometer shall be so placed in a fixed position as to indicate the average temperature of the storage compartment. Except for oral polio vaccine, varicella vaccine and other biologicals which must remain frozen until time of use, products should not be placed against ice or stored and maintained at temperatures below 35º F.

116 SPECIFIC DISEASE CONTROL MEASURES

The following measures shall be used to control or prevent the included diseases of public health importance. The measures proposed in the sixteenth or later edition of the Control of Communicable Diseases Manual, published by the American Public Health Association shall be considered as supplementary.

116.01 Anthrax

1. Class 1 case report required.

2. Human infections:

3. Any person infected with anthrax shall be isolated until all lesions are healed or the diagnosis disproved to the satisfaction of the health officer. All lesion discharges shall be subjected to concurrent disinfection in a manner acceptable to the health officer.

116.02 Brucellosis (Undulant Fever)

1. Class 2 case report required.

2. Whenever the local health officer shall have reason to suspect that any dairy herd may be infected with brucellosis he/she shall prohibit the movement, sale or giving of milk from the herd until the herd is proven free of brucellosis by veterinary certification acceptable to him/her. Milk shall be from dairy herds under a brucellosis eradication program complying with requirements set forth in the current Mississippi State

Board of Health Regulations, and the Mississippi Department of Health's "Policies and Procedures Governing the Production and Sale of Milk and Milk Products."

116.03 Benign Brain Tumors

1. Class 4 case report required.

2. The term brain-related means a listed primary tumor (whether malignant or benign) occurring in any of the following sites: (listed refers to those terms listed in ICDO)

   a. The brain, meninges, spinal cord, cauda equina, a cranial nerve or nerves, or any other part of the central nervous system.

   b. The pituitary gland, pineal gland, or craniopharyngeal duct.

3. Brain includes:

   a. Cerebrum (C71.0)

   b. Frontal Lobe (C71.1)

   c. Temporal Lobe (C71.2)

   d. Parietal Lobe (C71.3)

   e. Occipital Lobe (C71.4)

   f. Ventricle (C71.5)

   g. Cerebellum (C71.6)

   h. Brain Stem (C71.7)

   i. Overlapping lesion of the brain (C71.8)

   j. Brain NOS (C71.9)

4. Meninges include:

   a. Cerebral Meninges (C70.0)

   b. Spinal Meninges (C70.1)

   c. Meninges NOS (C70.9)

5. Spinal Cord (C72.0)

6. Cauda Equina (C72.1)

7. Cranial Nerves include:
    a. Olafactory Nerve (C72.2)
    b. Acoustic Nerve (C72.4)
    c. Cranial Nerves NOS (C72.5)
8. Other CNS (C72.8, C72.9)
9. Pituitary Gland (C75.1)
10. Craniopharyngeal duct (C75.2)
11. Pineal Gland (C75.3)

Tumors of the sites described, benign, borderline, and malignant, are reportable for cases diagnosed January1, 2004 forward. The ICD9CM codes for benign and borderline intracranial and CNS tumors are as follows:

ICD-9-CM Case finding Codes for
Benign and Borderline Intracranial and CNS Tumors

ICD-9-CM Code	Description of Neoplasm
225.0	Benign neoplasm of brain
225.1	Benign neoplasm of cranial nerves
225.2	Benign neoplasm of cerebral meninges; cerebral meningioma
225.3	Benign neoplasm of spinal cord; cauda equina
225.4	Benign neoplasm of spinal meninges; spinal memingioma
225.8	Benign neoplasm of other specified sites of the nervous system
225.9	Benign neoplasm of nervous system, part unspecified
227.3	Benign neoplasm of pituitary, craniopharyngeal duct, craniobuccal pouch, hypophysis, Rathke's pouch, sella turcica
227.4	Benign neoplasm of pineal gland, pineal body
237.0	Neoplasm of uncertain behavior of pineal gland and Craniophryngeal duct
237.1	Neoplasm of uncertain of pineal gland
237.5	Neoplasm of uncertain behavior of brain and spinal cord
237.6	Neoplasm of uncertain behavior of meninges, NOS, cerebral, spinal
237.70	Neurofibromatosis, Unspecified von Reckinghausen's Diseases

ICD-9-CM Case finding Codes for
Benign and Borderline Intracranial and CNS Tumors

ICD-9-CM Code	Description of Neoplasm
237.71	Neurofibromatosis, Type One von Reckinghausen's Disease
237.72	Neurofibromatosis, Type Two von Recklinghausen's Disease
237.9	Neoplasm of uncertain behavior of other and unspecified parts of nervous system, cranial nerves

116.04 Cancer

1. Class 4 case report required

2. All carcinomas, sarcomas, leukemias, and lymphomas are to be reported according to the following ICD-9-CM codes:

   a. 140.0 - 208.9 Malignant Neoplasms (excluding 173.0 - 173.9 Skin)

   b. 230.0 - 234.9 Carcinoma In Situ (excluding 233.1 CIS of Cervix)

3. All confirmed cancers with a behavior code of Λ2" (in-situ) or Λ 3" (malignant) in the International Classification of Diseases for Oncology, Second Edition (ICD-0-2) are reportable neoplasms. However, the following skin cancers and carcinoma in-situ of the cervix uteri, as coded in ICD-O-2, are **excluded** from reporting:

   a. 8000 - 8004 Neoplasms, malignant, NOS (not otherwise specified) of the skin (C44.0-C44.9)

   b. 8010 - 8045 Epithelial carcinomas of skin (C44.0 - C44.9)

   c. 8050 - 8082 Papillary and squamous cell carcinomas of the skin (C44.0 - C44.9)

   d. 8090 - 8110 Basal cell carcinomas of any site except genital sites

NOTE: Skin cancers in the genital sites are reportable since they are more likely to metastasize than the usual carcinomas of the skin.

4. 8010/2 Carcinoma in situ, NOS and intraepithelial carcinoma, NOS of the cervix uteri (C53.0 - C53.9)

5. 8070/2 Squamous cell carcinoma in situ, NOS; epidermoid carcinoma in situ, NOS; intraepidermal carcinoma, NOS; and intraepithelial squamous cell carcinoma of the cervix uteri (C53.0 - C53.9)

Basal or squamous cell carcinoma originating in the following sites shall be included:

Lip	C00.1 - C00.9
Anus	C21.0
Labia	C51.0 - C51.1
Clitoris	C51.2
Vulva	C51.9
Vagina	C52.9
Penis	C60.0 - C60.9
Scrotum	C63.2

Each record shall provide a minimum set of data items which meets the uniform standards recommended for the National Program of Cancer Registries by the North American Association of Central Cancer Registries (NAACCR). [Refer to Section 41-91-7(2) (b), Mississippi Code 1972 as amended. See Preface]

116.05 Diphtheria

1. Class 1 case report required.

   a. Every case or suspected case of diphtheria shall be isolated until 2 cultures from the throat and 2 from the nose taken not less than 24 hours apart and not less than 24 hours after antibiotic therapy fail to show diphtheria bacilli. Where culturing is impractical, isolation may be ended after 14 days of appropriate antibiotic treatment. In suspected cases, isolation may be terminated if laboratory and clinical findings fail to confirm the diagnosis.

   b. All articles in contact with a patient and all articles soiled by discharges of a patient shall be disinfected or disposed of in a manner acceptable to the health officer.

   c. At termination of isolation, the quarters shall undergo terminal disinfection.

   d. All close contacts should have cultures taken and should be kept under surveillance for 7 days. Adult contacts whose occupation involves handling food or close association with children must be excluded from these occupations until shown by bacteriological examination not to be carriers.

116.06 Foodborne Illness

1. Class 1 case report required for outbreaks. Some foodborne diseases require case reports for a single case see Appendix A to the Rules and Regulations Governing Reportable Diseases.

a. Whenever the local health officer shall know of or suspect the existence of an outbreak of illness due to food infection or food poisoning, he/she shall conduct an immediate investigation of all the circumstances.

b. The local health officer shall prohibit infected or potentially infected persons from engaging in the preparation or handling of foods or foodstuffs until said health officer is satisfied that said persons are free of pathogenic microorganisms.

c. The local health officer shall, upon investigation, prohibit practices in preparation, processing, storing or handling of food or foodstuffs which are known or may be reasonably inferred to be conducive to food poisoning.

d. The local health officer shall require compliance of all persons or firms with at least the minimum sanitary requirements of the Mississippi State Board of Health in regard to the physical plant in which or from which perishable foods or foodstuff are offered to the public.

116.07 Hepatitis

1. Class 1 case report required for hepatitis A.

a. Patients with hepatitis A should be questioned as to whether they work as a foodhandler (including voluntary work) and whether they have children in the household who attend a daycare center. This information shall be a part of the case report.

b. The local health officer shall prohibit persons infected or potentially infected with hepatitis A from engaging in the preparation or handling of foods or foodstuffs until said health officer is satisfied that said persons are free of hepatitis A virus.

2. Class 2 case report required for acute viral hepatitis other than hepatitis A.

116.08 Hansen's Disease (Leprosy)

1. Class 3 case report required.

a. Treatment in the United States Public Health Service Hospital, Carville, Louisiana, will be required only if arrangements are not made in consultation with the Mississippi Department of Health for local treatment.

b. Contacts of infectious cases are to be examined by the health officer or his/her designee at yearly intervals for 5 years after contact is broken.

116.09 Measles

1. Class 1 case report required. Effective outbreak control is dependent on immediate telephone report of individual cases.

116.10 Meningitis

1. Class 1 case report required for meningococcal and Haemophilus influenzae type b meningitis or other forms of invasive[1] disease, since chemoprophylaxis for high risk contacts is provided by the Department of Health.

116.11 Ophthalmia Neonatorum (Neonatal Gonococcal Ophthalmia)

1. All physicians and midwives attending births must install in the eyes of the newborn 1 drop of a 1 percent solution of silver nitrate within 1 hour after birth except that physicians may elect to use penicillin or other antibiotics in the manner and after the technique which may from time to time be generally accepted by the medical profession as being at least as effective as 1 percent silver nitrate.

116.12 Poisoning

1. Class 2 case report required for individual cases. For the purpose of reporting, poisoning includes, but is not limited to cases involving observable clinical symptomology or significant clinical laboratory changes as a result of over exposure to drugs, household products, pesticides, agricultural or industrial chemicals, plants, venomous animals or any other toxicant. Reports made to the Mississippi Regional Poison Control Center at the University of Mississippi Medical Center in Jackson (1-800-222-1222) will satisfy this requirement.

116.13 Rabies

1. Class 1 case report required.

2. Control in Animals

   a. The Mississippi Department of Health subscribes to the Compendium of Animal Rabies Control, parts I, II, and III, prepared annually by the National Association of State Public Health Veterinarians. The provisions of this compendium have been endorsed by the CDC, U. S. Public Health Service, Department of Health and Human Services; the American Veterinary Medical Association; the Council of State and Territorial Epidemiologists; and other public and private agencies. The current Compendium is presented as Appendix D to

[1] usually presenting as meningitis or septicemia, or less commonly as cellulitis, epiglottitis, osteomyelitis, pericarditis or septic arthritis.

the Rules and Regulations Governing Reportable Diseases. The following are state specific modifications to the Compendium.

3. Vaccine Administration

   a. All animal rabies vaccines are restricted to use by or under the supervision of a veterinarian or person specifically licensed or designated by the State Board of Health to administer rabies vaccine.

4. Vaccine Selection

   a. The current Compendium lists vaccines licensed for use in the United States. Only licensed vaccines shall be used. Vaccines selected for immunizing dogs and cats shall be licensed as providing 3-year immunity.

5. Wildlife Vaccination

   a. Vaccination of wildlife is not recommended since no vaccine is licensed for use in wild animals. Offspring of wild animals bred with domestic dogs or cats are considered wild animals.

6. Pre-Exposure Vaccination (Dogs and Cats)

   a. All dogs and cats shall be vaccinated against rabies at three months of age, revaccinated one year later and every three years thereafter, using a rabies vaccine approved as providing a 3 year immunity.

7. Post-Exposure Management

   a. Any animal bitten or scratched by a wild, carnivorous mammal or bat that is not available for testing should be regarded as having been exposed to rabies.

   b. Dogs, Cats, and Ferrets: Unvaccinated dogs, cats, and ferrets exposed to a rabid animal should be euthanized immediately. If the owner is unwilling to have this done, the animal should be placed in strict isolation for 6 months and vaccinated 1 month before being released. Animals with expired vaccinations need to be evaluated on a case-by-case basis. Dogs, cats, and ferrets that are currently vaccinated should be revaccinated immediately, kept under the owner's control, and observed for 45 days.

8. Management of Animals that Bite Humans

   a. A healthy dog, cat, or ferret that bites a person shall be confined and observed for 10 days in a manner acceptable to the local health officer or his or her designee. Rabies vaccine shall not be administered during the observation period. Such animals shall be evaluated by a

veterinarian at the first sign of illness during confinement. Any illness in the animal shall be reported immediately to the local health department. If signs suggestive of rabies develop, the animal shall be euthanized, its head removed, and the head shipped under refrigeration to the Department of Health Laboratory for examination. Any stray or unwanted dog, cat, or ferret that bites a person may be euthanized immediately, in lieu of 10 days of observation, and the head submitted as described above for rabies examination.

b. Animals other than dogs, cats, or ferrets that might have exposed a person to rabies should be reported immediately to the health department. This is not to include low risk animals such as small rodents and lagomorphs (e.g., squirrels, rats, mice, gerbils, and rabbits). Prior vaccination of an animal does not preclude the necessity for euthanasia and testing if the period of virus shedding is unknown for that species. Management of animals other than dogs, cats, and ferrets depends on the species, the circumstances of the bite, the epidemiology of rabies in the area, and the biting animal's history, current health status, and potential for exposure to rabies. The need for euthanizing and testing the animal shall be decided upon consultation with the Division of Epidemiology. Post-exposure management of persons should follow the recommendations of the ACIP.

116.14 Sexually Transmitted Diseases - General

1. Any person known or suspected of having syphilis, gonorrhea, Chlamydia, chancroid, human immunodeficiency virus (HIV) or other sexually transmissible disease (STD) or suspected of having been exposed to syphilis, gonorrhea, Chlamydia, chancroid, HIV or other STD shall submit to examination as provided in Section 103. Any person who, after due notification, fails or refuses to report for examination at the time and place designated by the health officer shall be subject to prosecution and the local health officer or the Mississippi Department of Health or its representative may make an affidavit of such fact and cause the issuance of a warrant returnable before any court of competent jurisdiction. All records and reports herein required shall be kept in secret files and disclosed only as required before the court (Section 41-23-29, Mississippi Code of 1972 as amended.).

2. It shall be the duty of the local health officer or his or her representative to conduct effective epidemiological actions including initial and follow up interviews, rapid contact and suspect referral to medical examination, satisfactory determination of the source of patient infection and all subsequent infections, and appropriate administration of prophylactic treatment to all at risk critical period contacts.

3. Case reports of genital Chlamydia, gonorrhea, chancroid and syphilis shall include date, type of treatment and dose, or if no treatment has been initiated.

4. Syphilis

   a. Class 1 case report required.

   b. General

      i. Any reactive serologic test for syphilis (STS) shall be reported to the State Department of Health by the laboratory performing the test. Report shall include test result, patient's name, age, race, sex, and address, and name of physician ordering the test.

         i. RPR or VDRL ≥ 1:8 - Class 1 case report required.

         ii. Any reactive STS in persons 10 years of age or younger - Class 1 case report required.

         iii. RPR or VDRL ≥ 1:4 - Class 2 case report required. MDH "Laboratory Log Sheet" or a form providing all the same information may be used.

   c. Premarital

      i. Every applicant for a marriage license in the State of Mississippi must have a blood test for the detection of syphilis prior to but not more than 30 days before application for a marriage license is made. Said test must be performed by a laboratory approved by the Mississippi Department of Health and must be interpreted by a duly licensed physician in order to carry out the intent of Section 93-1-5(e), Mississippi Code of 1972 as amended. This information must be supplied to the applicant in duplicate on a standard medical certificate form supplied by the Mississippi Department of Health except that certificates issued under similar laws in other states shall be acceptable.

         i. If the applicant's blood test for syphilis is reactive, the interpreting physician shall, before signing the certificate, require such additional testing, evaluation and/or treatment of the applicant as he/she may deem necessary to carry out the intent of the law in regard to the transmission of syphilis.

         ii. Medical certificates for premarital purposes may be secured by the applicant from any duly licensed physician or county health department in the State of Mississippi or in any other state or territory

where the requirements in this respect are not less than those of the State of Mississippi.

iii. Applicants in the State of Mississippi for the premarital certificates shall present themselves to the physician of their choice, or to any health department. The physician or health department shall collect from the applicant a specimen of blood suitable for use in performing a standard serologic test for syphilis and said specimen of blood shall be submitted to a laboratory approved by the Mississippi Department of Health (refer to section iv, below) for the performance of such tests.

iv. The Mississippi Department of Health no longer maintains a list of approved laboratories for premarital testing. The U.S. Department of Health and Human Services Clinical Laboratory Improvement Act (CLIA '88) regulations (and equivalent programs for military, Public Health Service, and VA laboratories) now cover all clinical laboratories in the U.S. Any laboratory currently registered under one of these programs and approved in the area of syphilis serology is deemed acceptable to perform blood test for syphilis to meet the premarital testing requirements of the State of Mississippi.

v. Serologic tests for syphilis approved by the Mississippi Department of Health for the purpose of premarital testing are: VDRL, RPR, RST and USR, providing the tests are performed in accordance with the published technique as described by the United States Public Health Service's current Manual of Tests for Syphilis or approved supplements.

vi. Laboratory data forms acceptable to the laboratory performing the test shall accompany the specimen of blood, provided that all data forms submitted under the laws of Mississippi relating to premarital requirements shall have conspicuously written or imprinted on their face the word "Premarital;" in addition, the name and address of the physician or health department submitting the specimen, and the name and address of the laboratory performing the test. A copy of the completed laboratory data form

shall be returned to the physician or health department submitting the blood specimen.

vii. Upon receipt of the laboratory data form by the physician or health department, the physician or health officer shall examine the laboratory data form and prepare an original and one copy of the premarital certificate. In the event of reactive or weakly reactive reports on the laboratory data report, it is expected that the physician or health officer will take such necessary steps as to ensure the accuracy of the medical certificate. The completed certificate shall be given to the applicant.

116.15 Tetanus

1. Class 2 case report required.

2. Grazing of livestock or use of manure on athletic fields, public parks, playgrounds, or school lots is prohibited.

116.16 Tuberculosis

1. Class 1 case report required.

2. Human Infections:

   a. The local health officer shall determine and prescribe for individual cases and contacts the isolation, quarantine restrictions and/or treatment necessary for their protection and that of other people. Should any patient fail to observe the isolation methods prescribed by the local health officer, said health officer shall quarantine the patient in writing and prescribe therein the procedures to be carried out by said patient. Should the patient break his/her quarantine restrictions, the local health officer may apply by letter outlining the circumstances to the Executive Secretary of the Mississippi State Board of Health and request approval of proceedings to commit the patient to a hospital. Upon approval by the Executive Secretary of the Mississippi State Board of Health, the local health officer may initiate proceedings as provided by law for the forcible commitment of the patient. (Sections 41-35-5, 41-33-7, Mississippi Code of 1972 as amended.)

3. Control in Animals:

   a. Bovine tuberculosis may be transmitted to man by infected cattle through close contact or the consumption of raw milk. Milk shall be from dairy herds that comply with tuberculosis requirements set forth

in the current Mississippi State Board of Health Regulations, and the Mississippi Department of Health "Policies and Procedures Governing the Production and Sale of Milk and Milk Products."

116.17 Typhoid Fever

1. Class 1 report required.

   a. In case of typhoid fever, isolation shall be maintained for not less than 4 weeks from date of onset, and urine and feces cultures for release from isolation shall not be taken earlier. Release from isolation and health department supervision shall be on the basis of not less than 3 consecutive negative cultures obtained from authenticated specimens of feces taken not less than 24 hours apart at least 48 hours after any antibiotic , and not earlier than one month after onset. If any one of this series is positive, a temporary carrier status shall be considered established.

   b. During the first 6 months of the temporary carrier status, the patient may again be tested for release by securing not less than 3 consecutive negative cultures obtained from authenticated specimens at intervals of 1 month. If the patient is positive at the 6th month or if no test is made, the case is classed as a permanent carrier. Final release from permanent carrier status must be with the advice and consent of the State Epidemiologist, and cannot be considered unless 3 consecutive monthly cultures obtained from authenticated specimens collected at least 48 hours after any antibiotic, have been negative on examination by the Department of Health Laboratory or other laboratories approved by the Department of Health.

   c. Whenever the typhoid carrier status shall be declared by the local health officer and there is no patient history of typhoid during the preceding year, the patient shall be classed as a permanent carrier.

   d. No person classed as a carrier shall engage in handling of foods or foodstuffs for public consumption, nor shall such carrier offer to perform such services for any family (other than his or her own) or for any other group or institution, either private or public. No such carrier shall engage in providing domestic services for hire or provide direct client care in a nursing home or child day care center without the advice and written consent of the health officer.

   e. When any person is declared to be a carrier of typhoid, the local health officer shall collect pertinent information about the carrier. The necessity for imposing restrictions on the patient's activities shall be explained to the patient and the patient shall signify in writing his or her willingness to observe the carrier agreement and restrictions. A copy of the carrier information shall be forwarded immediately to the

Division of Epidemiology, Mississippi Department of Health, in Jackson.

f. When any known carrier of typhoid moves from the county, a copy of the carrier's history and agreements, together with the prospective future address of the carrier, shall be forwarded to the Mississippi Department of Health by the local health officer of the county from which the carrier is moving. The original copy of the history and agreement shall remain as a part of the files of the county health department of the county from which the carrier has moved.

g. All family or other close contacts of a case of typhoid or other salmonella infection shall submit specimens of their feces as required by the health officer and submit to any reasonable examination as may aid in the search for unknown carriers and sub clinical cases.

h. All family or other close contacts of a carrier of typhoid or other salmonella infection shall be prohibited from handling foods or foodstuffs for public consumption until contact is broken and repeated negative laboratory examinations are reported. For salmonelloses, except typhoid, a series of 2 negative feces cultures taken not less than 24 hours apart at any time after contact is broken will satisfy this provision. For typhoid fever a series of 2 negative stools taken not less than 24 hours apart and not less than 14 days after contact is broken will satisfy this provision.

i. The owner or operator of a house, hotel, apartment or other institution in which a typhoid carrier resides shall provide a sanitary method of excreta disposal which will not subject other occupants of the house, apartment, hotel or other institution or the general public to typhoid or paratyphoid infection. If the owner or operator of the property on which a carrier resides fails for due cause to provide such sanitary methods of excreta disposal, the carrier shall provide such facilities as meet approval of the Mississippi Department of Health.

j. Any typhoid carrier planning to change his/her place of residence or his/her occupation shall notify the local health officer in writing of such anticipated change.

k. Whenever a case or carrier of typhoid is diagnosed it shall be the duty and responsibility of the local health officer to conduct a search for the source of the infection and for the food, water or person from whom it was acquired. Strict measures for assuring the safety of the water and milk supplies and of all foodstuffs should be instituted.

l. Mandatory report and surveillance required.

117 Penalty for Violation of Rules and Regulations Regarding Reportable Diseases

117.01 Any physician, dentist or other person who shall fail, neglect, or refuse to comply with, or shall falsify any report, or shall violate any of the Rules and Regulations of the Mississippi State Board of Health shall, upon conviction, be guilty of a misdemeanor and subject to the penalty provided by law.

117.02 Addendum for Correctional Institutions

The following regulations govern all Mississippi state correctional facilities, city and county facilities housing state prisoners, and privately operated correctional facilities in the state.

1. "Correctional Institutions" and/or "correctional facility" shall be construed to mean any of the state-operated penitentiaries, privately operated correctional facilities, community work centers, community pre-release centers, restitution centers, county or regional correctional facilities, and/or administrative offices as is applicable to each respective policy.

2. All inmates shall be medically screened for communicable diseases (including *Mycobacterium tuberculosis* [TB], syphilis, and Human Immunodeficiency Virus [HIV]) to prevent the spread of these diseases within the correctional institutions and to the public. Employees (i.e. full and part-time employees, contract staff and volunteers) shall be screened for tuberculosis infection and disease.

3. The correctional institution shall establish schedules, protocols, and responsibilities for the testing of inmates and employees to ensure compliance with al relevant Mississippi Department of Health (MDH) guidelines. The correctional institution shall appoint a liaison to ensure that all necessary screening is provided to each inmate and employee under its jurisdiction regardless of the individual's physical location.

4. The director of the correctional institution, in consultation with the correctional institution's medical director, shall issue procedures to ensure that inmates, prior to being transferred into the correctional institution from another correctional institution, a non-state facility, or out-of-state jurisdiction have been properly tested/screened for communicable disease within the previous thirty (30) days. If such testing and screening has not been accomplished, the director shall ensure that these procedures are completed prior to the transfer or upon the receipt of the inmate.

5. Screening shall include a Rapid Plasma Reagin (RPR) for syphilis, HIV serology, and TB testing, including, TB signs and symptoms assessment, two-step Mantoux tuberculin skin test or blood assay for mycobacterium tuberculosis (BAMT) and chest x-ray if indicated. No inmate shall be placed in the general population until TB assessment is completed. Any symptomatic inmate shall remain in respiratory isolation until TB test

results are known and active tuberculosis disease has been ruled out. Documentation of these screening tests shall be maintained for all inmates in a correctional institution. Significant tests shall be reported to the MDH.

6. Screening, latent therapy, active treatment and treatment follow-up of inmates and employees for tuberculosis shall follow the policies and procedures included in the latest revision of the Tuberculosis Manual of the MDH. All latent and active TB treatment of the inmates shall be directly observed by a health care provider.

7. The correctional institution's medical director, in order to contain communicable disease and/or enforce screening schedules, with the approval of the correctional institutional superintendent and/or classification director shall have the authority to:

   a. Place inmates in quarantine

   b. Suspend employees

   c. Move inmates between approved housing locations or to approved medical facilities

   d. Issue procedures for the care and treatment of inmates and employees with communicable diseases

8. Each correctional institution or correctional facility shall provide a complete, legible and accurate Tuberculin Testing Summary (MDH Form 181) summarizing the correctional facility's tuberculin testing activity and containing a roster of all inmates and employees that were first identified as having a significant Mantoux tuberculin skin test reaction* or positive BAMT with in the reporting period. This roster shall include comments and conclusions concerning the individual follow-up of each person listed. The Tuberculin Testing Summary, with appropriate notations, shall be logged in the Office of the State Tuberculosis Program on or before April 15th of each year for the twelve (12) months proceeding March 31st of that year.

   Summary of TB screening and procedures

9. All inmates shall have a two-step Mantoux tuberculin skin test or positive BAMT using five tuberculin units (5 t.u.) of purified protein derivative (PPD) unless individually excluded by a licensed physician or nurse practitioner due to medical contraindications or exceptions noted herein. All Mantoux tuberculin skin test or positive BAMT shall be administered and read by personnel trained and certified in the procedure and the results recorded in millimeters of induration. Exception to the tuberculin skin test requirements may be made if:

a. The individual is currently receiving or can provide documentation of having received a course of tuberculosis prophylaxis therapy approved by the State Tuberculosis Program for tuberculosis infection, or

b. The individual is currently receiving or can provide documentation of having received a course of multi-drug chemotherapy approved by the State Tuberculosis Program for active tuberculosis disease, or

c. The individual has a documented previous significant tuberculin skin test reaction*.

10. The tuberculin skin test status of all employees shall be documented in the individual's personnel record. The first step of a two-step Mantoux tuberculin skin test or positive BAMT shall be performed (i.e. administered and read) on all new employees (and rehires) within thirty (30) days prior to the first day of employment. All Mantoux tuberculin skin test or positive BAMT shall be administered and read by personnel trained and certified in the procedure and the results recorded in millimeters of induration. An employee shall not have contact with inmates or be allowed to work in areas of the correctional institution to which inmates have routine access prior to the reading of the first step of a two-step Mantoux tuberculin skin test or positive BAMT and completing a symptom assessment. The results of both steps of the two-step Mantoux tuberculin skin test or positive BAMT shall be documented in the individual's personnel record within fourteen (14) days of employment. Exception to the tuberculin skin test requirement may be if:

a. The individual is currently receiving or can provide documentation of having received a course of tuberculosis prophylaxis therapy approved by the State Tuberculosis Program for tuberculosis infection, or

b. The individual is currently receiving or can provide documentation of having received a course of multi-drug chemotherapy approved by the State Tuberculosis Program for active tuberculosis disease, or

c. The individual has a documented previous significant tuberculin skin test reaction*.

11. All inmates and employees with a previous significant Mantoux tuberculin skin test* or positive BAMT, found on skin testing to have a significant Mantoux tuberculin skin test or positive BAMT reaction and/or individuals with symptoms suggesting TB (e.g. cough, sputum production, chest pain, anorexia, weight loss, fever, night sweats, especially if symptoms last three weeks or longer), regardless of the size of the skin test, shall receive a chest x-ray and be evaluated by a physician or nurse practitioner within 72 hours. Individuals found to have a significant

Mantoux tuberculin skin test or positive BAMT, signs and symptoms of tuberculosis and /or a chest x-ray suggestive of active tuberculosis shall be placed in respiratory isolation according to MDH policies, reported to MDH and evaluated by physician or nurse practitioner for tuberculosis therapy.

12. Individuals found to have a significant Mantoux tuberculin skin test or positive BAMT reaction or with a history of a previous significant Mantoux tuberculin skin test or positive BAMT reaction and a chest x-ray not suggestive of active tuberculosis, shall be evaluated by a physician or nurse practitioner for latent tuberculosis therapy. Individuals with significant Mantoux tuberculin skin tests or positive BAMT and no evidence of active TB disease should be reminded periodically about the symptoms of tuberculosis and the need for prompt evaluation of any pulmonary symptoms of tuberculosis. A tuberculosis symptom assessment shall be documented as part of the annual health screening. No additional follow-up for these individuals is indicated unless symptoms suggestive of active tuberculosis develop; specifically, routine annual chest x-rays are not indicated.

13. Employees found to have a positive/significant reaction* to the skin test and no signs or symptoms of tuberculosis disease and a negative chest x-ray shall, as a condition of employment, have thirty (30) days to report to the MDH office in their county of residence to confirm appropriate follow-up testing has been completed and receive treatment, if indicated. The employees shall provide the director or designee with a written statement from the MDH verifying compliance with the directives set forth by the correctional institution's medical director and this regulation.

14. All inmates and employees who do not have a significant Mantoux tuberculin skin test or positive BAMT reaction shall be retested annually within thirty (30) days of the anniversary of their last Mantoux tuberculin skin test. Inmates and employees exposed to an active infectious case of TB between annual tuberculin skin test shall be treated as contacts and be managed appropriately.

*Criteria for a significant tuberculin skin test

- Reaction 5 mm
- High risk contact to an active tuberculosis case
- HIV-positive persons
- Fibrotic changes on chest radiograph consistent with prior TB
- Patients with organ transplants and other immunosuppressed patients (receiving the equivalent of 15 mg. of prednisone for 1 mo or more-risk of TB in patients treated with corticosteroids increases with higher doses and longer duration)

Reaction 10 mm

- any other prisoner or employee of the prison

Appendices to the Rules and Regulations

Governing Reportable Diseases and Conditions

Appendix A

List of Reportable Diseases and Conditions

Appendix A. List of officially reportable diseases and conditions

The following diseases or conditions are hereby declared to be reportable.

Class 1: Diseases of major public health importance which shall be reported directly to the Department of Health by telephone within 24 hours of first knowledge or suspicion. Class 1 diseases and conditions are dictated by requiring an immediate public health response. Laboratory directors have an obligation to report laboratory findings for selected diseases (Refer to Appendix C).

Any Suspected Outbreak (including foodborne and waterborne outbreaks)

Anthrax	Pertussis
Botulism (include foodborne, infant or wound)	Plague
Brucellosis	Poliomyelitis
Chancroid	Psittacosis
Cholera	Q fever
Creutzfeldt-Jakob Disease, including new variant	Rabies (human or animal)
Diphtheria	Ricin intoxication (castor beans)
Escherichia coli 0157:H7	Smallpox
Encephalitis (human)	Syphilis (including congenital)
Glanders	Tuberculosis
Hemolytic-uremic syndrome, post-diarrheal	Tularemia
Hepatitis A	Typhoid fever
HIV Infection, including AIDS	Typhus fever
Invasive (Disease Due to: *Neisseria meningitides or Haemophilus influenzae* type b *	Varicella Infection, Primary, in patients>15 years of age
	Viral hemorrhagic fevers (filoviruses [e.g. Ebola, Marburg] and arenaviruses [e.g., Lassa, Machupo])
Measles	
Melioidosis	Yellow fever

Any unusual disease or manifestation of illness, including but not limited to the appearance of a novel or previously controlled or eradicated infectious agent, or biological or chemical toxin.

* usually presents as meningitis or septicemia, or less commonly as cellulitis, epiglottitis, osteomyelitis, pericarditis or septic arthritis.

Class 2: Diseases or conditions of public health importance of which individual cases shall be reported by mail, telephone or electronically, within 1 week of diagnosis. In outbreaks or other unusual circumstances they shall be reported the same as Class 1. Class 2 diseases and conditions are those for which an immediate public health response is not needed for individual cases.

Any Suspected Outbreak (including foodborne and waterborne outbreaks)

Chlamydia trachomatis, genital infection	Poisonings (including elevated blood lead levels)
Dengue	Rocky Mountain Spotted Fever
Enterococcus, invasive infection, vancomycin resistant	Rubella (including congenital)
Gonorrhea	Salmonellosis
Hepatitis (acute, viral only) Note - Hepatitis A requires Class 1 Report	Shigellosis
Legionellosis	Spinal Cord Injuries
Listeriosis	Streptococcus pneumaniae, invasive infection, antibiotic resistant
Lyme Borreliosis	Streptococcus pneumoniae, invasive infection in children<5 years of age
Malaria	Tetanus
Meningitis other than Meningococcal or *H. influenzae* type b	Trichinosis
Mumps	Viral Encephalitis in horses and ratites
M. Tuberculosis Infection (positive TST) in children<15 years of age	Except for rabies, and equine encephalitis, diseases occurring in animals are not required to be reported to the Department of Health.
Noncholera vibrio disease	

Class 3: Laboratory based surveillance. To be reported by laboratory only. Diseases or conditions of public health importance of which individual laboratory findings shall be reported by mail, telephone, or electronically within one week of completion of laboratory test (refer to Appendix C).

Any Suspected Outbreak (including foodborne and waterborne outbreaks)

Blastomycosis	Hansen's Disease (Leprosy)
Campylobacteriosis	Histoplasmosis
Cryptosporidiosis	Nontuberculous Mycobacterial Disease

Class 4 Diseases of public health importance for which immediate reporting is not necessary for surveillance or control efforts. Diseases and conditions in this category shall be reported on a quarterly basis.

All carcinomas, sarcomas, leukemias, and lymphomas are to be reported according to the following ICD-9-CM codes: 140.0 - 208.9, malignant neoplasms, and 230.0 - 234.9, carcinoma in-situ. Carcinoma in-situ of the cervix, 233.1, and basal and squamous cell carcinomas of the skin, 173.0 - 173.9 are excluded from reporting. However, basal or squamous cell carcinomas originating in the lip, anus, vulva, vagina, penis or scrotum must be reported.

All brain related tumors, whether malignant or benign, shall be reported. The term “brain related” means a listed primary tumor occurring in any of the following sites: brain, meninges, spinal cord, cauda equina, cranial nerve(s), any other part of the central nervous system, pituitary gland, pineal gland, or the craniopharyngeal duct.

Each record shall provide a minimum set of data items which meets the uniform standards recommended for the National Program of Cancer Registries by the North American Association of Central Cancer Registries (NAACCR). [Refer to Section 41-91-7(2)(b), Mississippi Code 1972 as amended. See Preface]

Appendix B

Case Definitions for Surveillance

Adapted from Centers for Disease Control and Prevention
Case definitions for Infectious conditions
under public health surveillance
MMWR 1997;46(No. RR-10)

Introduction and Comments

The following selected surveillance case definitions are each reprinted in toto. The definitions were originally presented in a supplement to the CDC's *Morbidity and Mortality Weekly Report.* The original document contains two separate lists; one for those conditions under surveillance for the National Notifiable Disease Surveillance System (NNDSS) and the other for other conditions for which many states have their own surveillance needs. The definitions provide uniform criteria for state health department personnel to use when reporting to the NNDSS. The selected definitions reprinted in this appendix are alphabetized from both lists to reflect those conditions declared reportable in Mississippi. The complete list contains definitions for conditions not reportable in Mississippi and these conditions were omitted to prevent confusion on the part of disease reporters. A complete copy of *Cases Definitions for Infectious Conditions under Public Health Surveillance* may be obtained by contacting the Office of Epidemiology (601) 576-7725 and is also available from the CDC Internet site at WWW.CDC.GOV.

The surveillance case definitions were developed in collaboration with epidemiologists at CDC and the Council of State and Territorial Epidemiologists (CSTE). The original list of definitions was published in 1990. Through an ongoing process, the list has been refined, updated and new or emerging conditions added. Each addition or change is approved by vote of the CSTE membership and endorsed for use by the Association of State and Territorial Public Health Laboratory Directors (ASTPHLD). A revision date is listed for each case definition that has been revised. Newly generated case definitions that have not been published previously are designated as "adopted" on the specified date. Future additions or significant changes to the definitions will be published on the Mississippi Department of Health's website at www.healthyms.gov and shall serve as official notification until such time as the entire appendix is reissued.

Reporting parties should note that several conditions reportable or under surveillance in Mississippi are not contained in this appendix. If there are questions or concerns about these conditions the Office of Epidemiology is available to answer questions.

Two additional definitions included at the end of the appendix are not part of the CSTE/CDC list. The Surveillance Branch of the Bureau of Emergency Medical Services conducts surveillance for spinal cord and traumatic brain injuries. The definitions used by this program are presented as adopted by the National Center for Injury Control and Prevention at CDC and participating states.

Clinicians should note that these definitions are specifically for surveillance purposes and should not be used for diagnosis, or replace or substitute for sound clinical judgment.

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Definition of Terms Used in Case Classification

Clinically Compatible Case: A clinical syndrome generally compatible with the disease, for which no specific clinical criteria need to be met except for those noted in the case classification.

Confirmed Case: A case that is classified as confirmed for reporting purposes. Cases reported with this status will be printed in the *MMWR* notifiable disease tables.

Epidemiologically Linked Case: A case in which the patient has had contact with one or more persons who have/had the disease, and transmission of the agent by the usual modes of transmission is plausible. A case may be considered epidemiologically linked to a laboratory confirmed case if at lease one case in the chain of transmission is laboratory confirmed.

Laboratory-confirmed Case: A case that is confirmed by one or more of the laboratory methods listed in the case definition under "Laboratory criteria for diagnosis." Although other laboratory methods may be used in clinical diagnosis, only those listed are accepted for laboratory confirmation for reporting purposes.

Probable Case: A case that is classified as probable for reporting purposes. Except where noted in the case definition, cases reported with this status will be printed in the *MMWR* notifiable disease tables.

Supportive Laboratory Results: Specified laboratory results consistent with the diagnosis but not meeting the criteria for laboratory confirmation.

Suspected Case: A case that is classified as suspected for reporting purposes. Suspect cases will not be printed in the *MMWR* notifiable disease tables.

Acquired Immunodeficiency Syndrome (AIDS) and HIV (Revised 12/10/99)

Case definition

This revised definition of HIV infection, which applies to any HIV (e.g., HIV-1 or HIV-2), is intended for public health surveillance only. It incorporates the reporting criteria for HIV infection and AIDS into a single case definition. The revised criteria for HIV infection update the definition of HIV infection implemented in 1993; the revised HIV criteria apply to AIDS-defining conditions for adults and children, which require laboratory evidence of HIV.

I. In adults, adolescents, or children aged greater than or equal to 18 months[2], a reportable case of HIV infection must meet at least one of the following criteria:

Laboratory criteria

- Positive result on a screening test for HIV antibody (e.g., repeatedly reactive enzyme mmunoassay), followed by a positive result on a confirmatory (sensitive and more pecific) test for HIV antibody (e.g., Western blot or immunofluorescence antibodytest) or
- Positive results or report of a detectable quantity on any of the following HIV virologic nonantibody) tests:
  1. HIV nucleic acid (DNA or RNA) detection (e.g., DNA polymerase chain reaction [PCR] or plasma HIV-1 RNA)[3]
  2. HIV p24 antigen test, including neutralization assay
  3. HIV isolation (viral culture)

OR

Clinical or other criteria (if the above laboratory criteria are not met)

- Diagnosis of HIV infection, based on the laboratory criteria above, that is documented in a medical record by a physician, or
- Conditions that meet criteria included in the case definition for AIDS, or
- At least two negative HIV virologic tests from separate specimens, both of which were performed at greater than or equal to 1 month of age and one of which was performed greater than or equal to 4 months of age, and
- No other laboratory or clinical evidence of HIV infection (i.e., has not had any positive virologic tests, if performed, and has not had an AIDS-defining condition, or

[2] Children aged ≥18 months but less than 13 years are categorized as not infected with HIV if they meet the criteria in **III.**

[3] In adults, adolescents, and children infected by other than perinatal exposure, plasma viral RNA nucleic acid tests should **NOT** be used in lieu of licensed HIV screening tests (e.g., repeatedly reactive enzyme immunoassay). In addition, a negative (i.e.,undetectable) plasma HIV-1 RNA test result does not rule out the diagnosis of HIVinfection.

Presumptive: a child who does not meet the above criteria for definitive "not infected" status, but who has:

- One negative EIA HIV antibody test performed at greater than or equal to 6 months of age and NO positive HIV virologic tests, if performed, or
- One negative HIV virologic test performed at greater than or equal to 4 months of age and NO positive HIV virologic tests, if performed,
- One positive HIV virologic test with at least two subsequent negative virologic [4], at least one of which is at greater than or equal to 4 months of age; or negative HIV antibody test results, at least one of which is greater than or equal to 6months of age, and no other laboratory or clinical evidence of HIV infection (i.e., has not had any positive virologic tests, if performed, and has not had an AIDS-defining condition).

OR

Clinical or other criteria (if the above definitive or presumptive laboratory criteria are not met)

- Determined by a physician to be "not infected", and a physician has noted the results of the preceding HIV diagnostic tests in the medical record, and
- NO other laboratory or clinical evidence of HIV infection (i.e., has not had any positive virologic tests, if performed, and has not had an AIDS-defining condition)

II. In a child aged less than 18 months, a reportable case of HIV infection must meet at least one of the following criteria:

Laboratory criteria

Definitive

- Positive results on two separate specimens (excluding cord blood) using one or moreof the following HIV virologic (nonantibody) tests:

  1. HIV nucleic acid (DNA or RNA) detection

  2. HIV p24 antigen test, including neutralization assay, in a child ≥to 1 month of age

  3. HIV isolation (viral culture), or

Presumptive: a child who does not meet the criteria for definitive HIV infection but who has:

- Positive results on only one specimen (excluding cord blood) using the above HIV virologic tests and no subsequent negative HIV virologic or negative HIV antibody tests

OR

[4] HIV nucleic acid (DNA or RNA) detection tests are the virologic methods of choice to exclude infection in children aged less than 18 months. Although HIV culture can be used for this purpose, it is more complex and expensive to perform and is less well standardized than nucleic acid detection tests. The use of p24 antigen testing to exclude infection in children aged <18 months is not recommended because of its lack of sensitivity.

Clinical or other Criteria (if the above definitive or presumptive laboratory criteria are not met)

- Diagnosis of HIV infection, based on the laboratory criteria above, that is documented in a medical record by a physician, or
- Conditions that meet criteria included in the 1987 pediatric surveillance case definition for AIDS

III. A child aged less than 18 months born to an HIV infected mother will be categorized for surveillance purposes as "not infected with HIV" if the child does not meet the criteria for HIV infection but meets the following criteria:

Laboratory criteria

Definitive: At least two negative HIV antibody tests from separate specimens obtained at greater than or equal to 6 months of age

IV. A child aged less than 18 months born to an HIV-infected mother will be categorized as having perinatal exposure to HIV infection if the child does not meet the criteria for HIV infection (II) or the criteria for "not infected with HIV" (III).

Anthrax (Revised 9/96)

Clinical description

An illness with acute onset characterized by several distinct clinical forms including:

- **Cutaneous**: a skin lesion evolving over 2 to 6 days from a papule, through a vesicular stage, to a depressed black eschar
- **Inhalation**: a brief prodrome resembling a viral respiratory illness followed by development of hypoxia and dyspnea, with x-ray evidence of mediastinal widening
- **Intestinal**: severe abdominal distress followed by fever and signs of septicemia)
- **Oropharyngeal**: mucosal lesion in the oral cavity or oropharynx, cervical adenopathy and edema, and fever

Laboratory criteria for diagnosis

- Isolation of *Bacillus anthracis* from a clinical specimen, or
- Anthrax electrophoretic immunotransblot (EITB) reaction to the protective antigen and/or lethal factor bands in one or more serum samples obtained after onset of symptoms, or
- Demonstration of *B. anthracis* in a clinical specimen by immunofluorescence

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed.

Aseptic Meningitis

Clinical description

A syndrome characterized by acute onset of meningeal symptoms, fever, and cerebrospinal fluid pleocytosis, with bacteriologically sterile cultures.

Laboratory criteria for diagnosis

- No evidence of bacterial or fungal meningitis

Case classification

Confirmed: a clinically compatible case diagnosed by a physician as aseptic meningitis, with no laboratory evidence of bacterial or fungal meningitis.

Comment

Aseptic meningitis is a syndrome of multiple etiologies, but many cases are caused by a viral agent.

Bacterial Meningitis, Other (Adopted 9/96)

Clinical description

Bacterial meningitis manifests most commonly with fever, headache, and a stiff neck, which may progress rapidly to shock and death. However, other manifestations may be observed.

Laboratory criteria for diagnosis

- Isolation of a bacterial species from the cerebrospinal fluid

Case classification

Confirmed: A clinically compatible case that is laboratory confirmed.

Comment

Cases of bacterial meningitis caused by *Haemophilus influenzae, Neisseria meningitidis*, group A *streptococcus*, and *Listeria monocytogenes* should be reported to NNDSS under the disease codes specific for these organisms. Only cases of bacterial meningitis due to other organisms should be reported as cases of "bacterial meningitis, other".

Botulism, Foodborne (Revised 9/96)

Clinical description

Ingestion of botulinal toxin results in an illness of variable severity. Common symptoms are diplopia, blurred vision, and bulbar weakness. Symmetric paralysis may progress rapidly.

Laboratory criteria for diagnosis

- Detection of botulinal toxin in serum, stool, or patient's food or
- Isolation of *Clostridium botulinum* from stool

Case classification

Probable: a clinically compatible case with an epidemiologic link (e.g., ingestion of a home-canned food within the previous 48 hours)

Confirmed: a clinically compatible case that is laboratory confirmed or that occurs among persons who ate the same food as persons with laboratory-confirmed botulism

Botulism, Infant (Revised 9/96)

Clinical description

An illness of infants, characterized by constipation, poor feeding, and "failure to thrive" that may be followed by progressive weakness, impaired respiration, and death

Laboratory criteria for diagnosis

- Detection of botulinal toxin in stool, or
- Isolation of *Clostridium botulinum* from stool

Case classification

Confirmed: a clinically compatible case that is laboratory-confirmed, occurring in a child aged <1 year

Botulism, Wound

Clinical description

An illness resulting from toxin produced by *Clostridium botulinum* that has infected a wound. Common symptoms are diploia, blurred vision, and bulbar weakness. Symmetric paralysis may progress rapidly.

Laboratory criteria for diagnosis

- Detection of botulinal toxin in serum, or
- Isolation of *C. botulinu*m from wound

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed in a patient who has no suspected food exposure to contaminated food and who has a history of a fresh, contaminated wound during the 2 weeks before onset of symptoms.

Botulism, Other

Clinical description

See Foodborne Botulism.

Laboratory criteria for diagnosis

- Detection of botulinal toxin in clinical specimen, or
- Isolation of *Clostridium botulinum* from clinical specimen

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed in a patient aged ≥1 year who has no history of ingestion of suspect food and has no wounds

Brucellosis

Clinical description

An illness characterized by acute or insidious onset of fever, night sweats, undue fatigue, anorexia, weight loss, headache, and arthralgia

Laboratory criteria for diagnosis

- Isolation of *Brucella* sp. from a clinical specimen, or
- Fourfold or greater rise in *Brucella* agglutination titer between acute- and convalescent-phase serum specimens obtained ≥2 weeks apart and studied at the same laboratory, or
- Demonstration by immunofluorescence of *Brucella* sp. in a clinical specimen

Case classification

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case or that has supportive serology (i.e., *Brucella* agglutination titer of ≥160 in one or more serum specimens obtained after onset of symptoms)

Confirmed: a clinically compatible case that is laboratory confirmed

Campylobacter Infection

Clinical description

An infection that may result in diarrheal illness of variable severity.

Laboratory criteria for diagnosis

- Isolation of *Campylobacter* from any clinical specimen

Case classification

Probable: A clinically compatible case that is epidemiologically linked to a confirmed case.

Confirmed: A case that is laboratory confirmed.

Comment

Only confirmed cases are reported to the laboratory-based surveillance system operated by the National Center for Infectious Diseases, Foodborne and Diarrheal Diseases Branch.

Chancroid (Revised 9/96)

Clinical description

A sexually transmitted disease characterized by painful genital ulceration and inflammatory inguinal adenopathy. The disease is caused by infection with *Haemophilus ducreyi.*

Laboratory criteria for diagnosis

- Isolation of *H. ducreyi* from a clinical specimen

Case classification

Probable: a clinically compatible case with both (a) no evidence of *Treponema pallidum* infection by darkfield examination of ulcer exudate or by a serologic test for syphilis performed ≥ 7 days after onset of ulcers, and (b) the clinical presentation of the ulcer(s) is not typical of disease caused by herpes simplex virus (HSV), or HSV culture is negative.

Confirmed: a clinically compatible case that is laboratory confirmed

Chlamydia trachomatis, Genital infections (Revised 9/96)

Clinical description

Infection with *Chlamydia trachomatis* may result in urethritis, epididymitis, cervicitis, acute salpingitis, or other syndromes when sexually transmitted, however the infection often

asymptomatic in women. Perinatal infections may result in inclusion conjunctivitis and pneumonia in newborns. Other syndromes caused by *C. trachomatis* include lymphogranuloma venereum and trachoma.

Laboratory criteria for diagnosis

- Isolation of *C. trachomatis* by culture or
- Demonstration of *C. trachomatis* in a clinical specimen by detection of antigen or nucleic acid

Case classification

Confirmed: a case that is laboratory confirmed

Cholera (Revised 9/96)

Clinical description

An illness characterized by diarrhea and/or vomiting; severity is variable.

Laboratory criteria for diagnosis

- Isolation of toxigenic (i.e., cholera toxin-producing) *Vibrio cholerae* O1 or O139 from stool or vomitus, or
- Serologic evidence of recent infection

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed

Comment

Illnesses caused by strains of *V. cholerae* other than toxigenic *V. cholerae* O1 or O139 should not be reported as cases of cholera. The etiologic agent of a case of cholera should be reported as either *V. cholerae* O1 or *V. cholerae* O139. Only confirmed cases should be reported to the NNDSS by state health departments.

Cryptosporidiosis (Revised 5/98)

Clinical description

An illness caused by the protozoan *Cryptosporidium parvum* and characterized by diarrhea, abdominal cramps, loss of appetite, low-grade fever, nausea, and vomiting. Infected persons may be asymptomatic. The disease can be prolonged and life-threatening in severely immunocompromised persons.

Laboratory criteria for diagnosis

Laboratory confirmed cryptosporidiosis shall be defined as the detection in symptomatic or asymptomatic persons of *Cryptosporidiosis*

- Oocysts in stool by microscopic examination, or
- In intestinal fluid or small-bowel biopsy specimens, or
- Oocysts or sporozoite antigens by immunodiagnostic methods, e.g., ELISA, or
- By PCR techniques when routinely available, or
- Demonstrations of reproductive stages in tissue preparations.

Case classification

Confirmed, symptomatic: a laboratory-confirmed case associated with one of the symptoms described above

Confirmed, asymptomatic: a laboratory confirmed-case associated with none of the above symptoms

Dengue Fever

Clinical description

An acute febrile illness characterized by frontal headache, retro-ocular pain, muscle and joint pain, and rash. The vector is the *Aedes aegypti* mosquito and transmission usually occurs in tropical and subtropical areas. Severe manifestations (i.e., dengue hemorrhagic fever and dengue shock syndrome) are rare, but may be fatal.

Laboratory criteria for diagnosis (confirmation)

- Isolation of dengue virus from serum and/or autopsy tissue samples, or
- Demonstration of a fourfold or greater rise or fall in reciprocal immunoglobulin G (IgG) or immunoglobulin M (IgM) antibody titers to one or more dengue virus antigens in paired serum samples, or
- Demonstration of dengue virus antigen in autopsy tissue or serum samples by immunohistochemistry or by viral nucleic acid detection.

Case classification

Probable: a clinically compatible case with supportive serology (a reciprocal IgG antibody titer of ≥1280 or a positive IgM antibody test on a single acute (late) or convalescent-phase serum specimen to one or more dengue virus antigens).

Confirmed: A clinically compatible case that is laboratory confirmed.

Comment

Dengue hemorrhagic fever is defined as an acute febrile illness with minor or major bleeding phenomena, thrombocytopenia (# 100,000/mm 3), and evidence of plasma leakage documented by hemoconcentration (hematocrit increased by ≥ 20%) or other objective evidence of increased capillary permeability. The definition of dengue shock syndrome follows all of the above criteria for dengue hemorrhagic fever and also includes hypotension or narrow pulse pressure (#20 mm Hg).

Diphtheria (Revised 3/95)

Clinical description

An upper respiratory tract illness characterized by sore throat, low grade fever, and an adherent membrane of the tonsil(s), pharynx, and/or nose

Laboratory criteria for diagnosis

- Isolation of *Corynebacterium diphtheriae* from a clinical specimen or
- Histopathologic diagnosis of diphtheria

Case classification

Probable: a clinically compatible case that is not laboratory confirmed and is not epidemiologically linked to a laboratory-confirmed case

Confirmed: A clinically compatible case that is laboratory confirmed or epidemiologically linked to a laboratory confirmed case

Comment

Cutaneous diphtheria should not be reported. Respiratory disease caused by nontoxigenic *C. diphtheriae* should be reported as diphtheria. All diphtheria isolates, whether associated with disease or not, should be sent to the National Center for Infectious Diseases, CDC.

Encephalitis, Arboviral (Revised 9/96)

Clinical description

Arboviral infection may result in a febrile illness of variable severity associated with neurologic symptoms ranging from headache to aseptic meningitis or encephalitis. Arboviral encephalitis cannot be distinguished clinically from other central nervous system (CNS) infections. Symptoms may include headache, confusion or other alteration in sensorium, nausea, and vomiting. Signs may include fever, meningismus, cranial nerve palsies, paresis or paralysis, sensory deficits, altered reflexes, convulsions, abnormal movements, and coma of varying degree.

Laboratory criteria for diagnosis

- Four-fold or greater change in serum antibody titer, or
- Isolation of virus from or demonstration of viral antigen or genomic sequences in tissue, blood, cerebrospinal fluid (CSF), or other body fluid, or
- Specific immunoglobulin M (IgM) antibody by enzyme immunoassay (EIA) antibody captured in CSF or serum. Serum IgM antibodies alone should be confirmed by demonstration of immunoglobulin G (IgG) antibodies by another serologic assay (e.g. neutralization or hemagglutination inhibition).

Case classification

Probable: a clinically compatible case occurring during a period when arboviral transmission is likely, and with the following supportive serology: a stable (# two-fold change) elevated antibody titer to an arbovirus (e.g., ≥ 320 by hemagglutination inhibition, ≥ 128 by complement fixation, ≥ 256 by immunofluorescence, and ≥ 160 by neutralization), or ≥ 400 by enzyme immunoassay IgM).

Confirmed: a clinically compatible case that is laboratory confirmed

Comment

The seasonality of arboviral transmission is variable and depends on the geographic location of exposure, the specific cycles of viral transmission, and local climatic conditions. Reporting should be etiology specific (see below those in bold are nationally reportable to CDC):

- **St. Louis encephalitis**
- **Western equine encephalitis**
- **Eastern equine encephalitis**
- **California encephalitis** (includes infections from the following viruses: LaCrosse, Jamestown Canyon, Snowshoe Hare, Trivittatus, Keystone, and California encephalitis viruses)
- Powassan encephalitis
- Other CNS infections transmitted by mosquitos, ticks, or midges (e.g. Venezuelan equine encephalitis, Cache Valley encephalitis)

Escherichia coli O157:H7 (Revised 12/00)

Clinical description

An infection of variable severity characterized by diarrhea (often bloody) and abdominal cramps. Illness may be complicated by hemolytic uremic syndrome (HUS) or thrombotic thrombocytopenic purpura (TTP); asymptomatic infections may also occur.

Laboratory criteria for diagnosis

- Isolation of *E. coli* O157:H7 from a specimen, or
- Isolation of Shiga toxin-producing *E. coli* O157:NM from a clinical specimen[5]

Case classification

Suspected: A case of post-diarrheal HUS or TTP (see HUS case definition)

Probable:

- Isolation of *E. coli* O157 from a clinical specimen, pending confirmation of H7 or Shiga toxin, or
- A clinically compatible case that is epidemiologically linked to a confirmed or probable case, or
- A clinically compatible case that is epidemiologically linked to a confirmed or probable case, or
- Identification of Shiga toxin in a specimen from a clinically compatible case, or
- Definitive evidence of an elevated antibody titer to a known EHEC serotype from a clinically compatible case

Confirmed: A case that meets the laboratory criteria for diagnosis.

Comment

Laboratory-confirmed isolates are reported via the Public Health Laboratory Information System (PHLIS), which is managed by the Foodborne and Diarrheal Diseases Branch, Division of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, CDC. Both probable and confirmed cases are reported to the National Notifiable Diseases Surveillance System (NNDSS), but only confirmed cases are reported to PHLIS. Confirmation is based on laboratory findings, and clinical illness is not required.

Giardiasis

Clinical description

An illness caused by the protozoan *Giardia lamblia* and characterized by diarrhea, abdominal cramps, bloating, weight loss, or malabsorption. Infected persons may be asymptomatic.

[5] Strains of E.coli 0157:H7 that have lost the flagellar "H" antigen become nonmotile and are designated "NM".

Laboratory criteria for diagnosis

- Demonstration of *G. lamblia* cysts in stool, or
- Demonstration of *G. lamblia* trophozoites in stool, duodenal fluid, or small bowel biopsy, or
- Demonstration of *G. lamblia* antigen in stool by a specific immunodiagnostic test (e.g., enzyme-linked immunosorbent assay)

Case classification

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case

Confirmed: a case that is laboratory confirmed

Gonorrhea (Revised 9/96)

Clinical description

A sexually transmitted infection commonly manifested by urethritis, cervicitis, or salpingitis. Infection may be asymptomatic.

Laboratory criteria for diagnosis

- Isolation of typical gram-negative, oxidase-positive diplococci (presumptive *Neisseria gonorrhoeae)* from a clinical specimen, or
- Demonstration of *N. gonorrhoeae* in a clinical specimen by detection of antigen or nucleic acid, or
- Observation of gram-negative intracellular diplococci in a urethral smear obtained from a male

Case classification

Probable: a) demonstration of gram-negative intracellular diplococci in an endocervical smear obtained from a woman, or b) a written morbidity report of gonorrhea submitted by a physician

Confirmed: a case that is laboratory confirmed

Haemophilus influenzae (Invasive Disease)

Clinical description

Invasive disease due to *Haemophilus influenzae* may produce any of several clinical syndromes, including meningitis, bacteremia, epiglottitis, or pneumonia.

Laboratory criteria for diagnosis

- Isolation of H. influenzae from a normally sterile site (e.g., blood or cerebrospinal fluid (CSF), or, less commonly, joint, pleural, or pericardial fluid)

Case classification

Probable: a clinically compatible case with detection of *H. influenzae* type b antigen in CSF

Confirmed: a clinically compatible case that is culture confirmed

Comment

Positive antigen test results from urine or serum are unreliable for diagnosis of *H. influenzae* disease.

Hansen Disease (Leprosy)

Clinical description

A chronic bacterial disease characterized by the involvement primarily of mainly skin as well as peripheral nerves and the mucosa of the upper airway. Clinical forms of Hansen disease represent a spectrum reflecting the cellular immune response to *Mycobacterium leprae.* Typical of the major forms of the disease are the following characteristics:

- *Tuberculoid*: one or a few well-demarcated, hypopigmented, and anesthetic skin lesions, frequently with active, spreading edges and a clearing center; peripheral nerve swelling or thickening may also occur
- *Lepromatous*: a number of erythematous papules and nodules or an infiltration of the face, hands, and feet with lesions in a bilateral and symmetrical distribution that progress to thickening of the skin
- *Borderline (dimorphous*): skin lesions characteristic of both the tuberculoid and lepromatous forms
- *Indeterminate*: early lesions, usually hypopigmented macules, without developed tuberculoid or lepromatous features

Laboratory criteria for diagnosis

- Demonstration of acid-fast bacilli in skin or dermal nerve, obtained from the full-thickness skin biopsy of a lepromatous lesion

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed.

Hemolytic Uremic Syndrome, Postdiarrheal (Revised 9/96)

Clinical description

Hemolytic uremic syndrome (HUS) is characterized by the acute onset of microangiopathic hemolytic anemia, renal injury, and low platelet count. Thrombotic thrombocytopenic purpura (TTP) is also characterized by these features but also can include central nervous system (CNS)

involvement and fever, and may have a more gradual onset. Most cases of HUS (but few cases of TTP) occur after an acute gastrointestinal illness (usually diarrheal).

Laboratory criteria for diagnosis

The following are both present at some time during the illness:

- Anemia (acute onset) with microangiopathic changes (i.e., schistocytes, burr cells, or helmet cells) on peripheral blood smear and
- Renal injury (acute onset), evidenced by either hematuria, proteinuria, or elevated creatinine level (i.e., ≥ 1.0 mg/dL in a child <13 years of age or ≥ 1.5 mg/dL in an adult, or ≥ 50% increase over baseline)

Note: A low platelet count can usually, but not always, be detected early in the illness, but it may then become normal or even high. If a platelet count obtained within 7 days after onset of the acute gastrointestinal illness is not <150,000/mm^3, other diagnoses should be considered.

Case classification

Probable:

- An acute illness diagnosed as HUS or TTP that meets the laboratory criteria in a patient who does not have a clear history of acute or bloody diarrhea in preceding 3 weeks, or
- An acute illness diagnosed as HUS or TTP, that a) has an onset within 3 weeks after onset of an acute or bloody diarrhea and b) meets the laboratory criteria except that microangiopathic changes are not confirmed

Confirmed: an acute illness diagnosed as HUS or TTP that meets the laboratory criteria and began within 3 weeks after onset of an episode of acute or bloody diarrhea

Comment

Some investigators consider HUS and TTP to be part of a continuum of disease. Therefore, criteria for diagnosing TTP on the basis of CNS involvement and fever are not provided because cases diagnosed clinically as postdiarrheal TTP also should meet the criteria for HUS. These cases are reported as postdiarrheal HUS.

Hepatitis, Viral, Acute (Revised 9/96)

Clinical Case Definition

An acute illness with a) discrete onset of symptoms and b) jaundice or elevated serum aminotransferase levels

Laboratory criteria for diagnosis :

- **Hepatitis A**: immunoglobulin M (IgM) antibody to hepatitis A virus (anti-HAV) positive

- **Hepatitis B**:

1. IgM antibody to hepatitis B core antigen (anti-HBc) positive (if done) or hepatitis B surface antigen (HBsAg) positive

2. IgM anti-HAV negative (if done)

- **Hepatitis C:** Revised 2000

1. Serum aminotransferase levels >than7 times the upper limit of normal, and

2. IgM anti-HAV negative, and

3. IgM anti-HBc negative (if done) or HBsAg negative, and

4. Antibody to hepatitis C virus (anti-HCV) positive, verified by an additional more specific assay

- **Non-A, Non-B Hepatitis**:

1. . Serum aminotransferase levels >2.5 times the upper limit of normal, and

2. . IgM anti-HAV negative, and

3. . IgM anti-HBc negative (if done) or HBsAg-negative, and

4. . Anti-HCV negative (if done)

- **Delta Hepatitis** [6]: HBsAg or IgM anti-HBc positive and antibody to hepatitis delta virus positive

Case classification

Confirmed: a case that meets the clinical case definition and is laboratory confirmed; or, for hepatitis A, a case that meets the clinical case definition and occurs in a person who has an epidemiologic link with a person who has laboratory confirmed hepatitis A, (i.e., household or sexual contact with an infected person in the 15-50 days before the onset of symptoms).

Comment

1. Persons who have chronic hepatitis or persons identified as HBsAg positive or anti-HCV positive should not be reported as having acute viral hepatitis unless they have evidence of an acute illness compatible with viral hepatitis (with the exception of perinatal hepatitis B virus infection) (See Hepatitis, Viral, Perinatal Hepatitis B Virus Infection Acquired in the United States or U.S. Territories.)

2. Up to 20% of acute hepatitis C cases will be anti-HCV negative when reported and will be classified as non-A, non-B hepatitis because some (5%-10%) have not yet seroconverted and others (5%-10%) remain negative even with prolonged follow-up.[7]

[6] Delta Hepatitis is not a nationally notifiable disease.

3. Available serologic test for anti-HCV do not distinguish between acute and chronic or past infection. Thus, other causes of acute hepatitis should be excluded for anti-HCV positive patients who have an acute illness compatible with viral hepatitis.

Hepatitis, Viral, Perinatal Hepatitis B Virus Infection Acquired in the United States or U.S. Territories (Adopted 3/95)

Clinical description

Perinatal hepatitis B in the newborn may range from asymptomatic to fulminant hepatitis.

Laboratory criteria for diagnosis

- Hepatitis B surface antigen (HBsAg) positive

Case classification

HBsAg positivity in any infant >1-24 months of age who was born in the United States or U.S. territories to an HBsAg-positive mother

Comment

Infants born to HBsAg-positive mothers should receive hepatitis B immune globulin (HBIG) and the first dose of hepatitis B vaccine within 24 hours of birth followed by the second and third doses of vaccine at 1 and 6 months of age, respectively. Postvaccination testing for antibody to HBsAg and HBsAg is recommended 3 to 6 months following completion of the vaccine series. If the initial dose of HBIG and vaccine are delayed for more than 1 month after birth, testing for HBsAg may determine if the infant is already infected.

Legionellosis (Revised 9/96)

Clinical description

Legionellosis is associated with two clinically and epidemiologically distinct illnesses: Legionnaires disease, which is characterized by fever, myalgia, cough, pneumonia, and Pontiac fever, a milder illness without pneumonia.

Laboratory criteria for diagnosis

- Isolation of *Legionella* from respiratory secretions, lung tissue, pleural fluid, or other normally sterile fluids, or
- Demonstration of a fourfold or greater rise in the reciprocal immunofluorescence antibody (IFA) titer to ≥ 128 against *Legionella pneumophila* serogroup 1 between paired acute- and convalescent-phase serum specimens, or

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[7] Kuo G, Choo Q-L, Alter HJ, et al. An assay for circulating antibodies to a major etiologic virus of human non-A, non-B hepatitis. Science 1989;244:362-4.

- Detection of *L. pneumophila* serogroup 1 in respiratory secretions, lung tissue, or pleural fluid by direct fluorescence antibody testing, or
- Demonstration of *L. pneumophila* serogroup 1 antigens in urine by radioimmunoassay or enzyme-linked immunosorbent assay

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed

Comment

The previously-used category of "probable case", which was based on a single IFA titer, lacks specificity for surveillance, and this category is no longer applicable.

Listeriosis - (Adopted 1999)

Clinical description

In adults, invasive disease caused by *Listeria monocytogenes* manifests most commonly as meningitis or bacteremia; infection during pregnancy may result in fetal loss through miscarriage or stillbirth, or neonatal meningitis or bacteremia. Other manifestations can also be observed.

Laboratory criteria for diagnosis

- Isolation of *L. monocytogenes* from a normally sterile site (e.g., blood or cerbrospinal fluid [CSF] or, less commonly, joint, pleural, or pericardial fluid)
- In the setting of miscarriage or stillbirth, isolation of *L. monocytogenes* from placental or fetal tissue

Case classification

Confirmed: A clinically compatible case that is laboratory-confirmed

Lyme Disease (Revised 9/96)

Clinical description

A systemic, tick-borne disease with protean manifestations, including dermatologic, rheumatologic, neurologic, and cardiac abnormalities. The best clinical marker for the disease is the initial skin lesion (i.e., erythema migrans [EM]) that occurs in 60%-80% of patients.

Laboratory criteria for diagnosis

- Isolation of *Borrelia burgdorferi* from clinical specimen, or
- Demonstration of diagnostic IgM or IgG antibodies to B. burgdorferi in serum or CSF. When feasible, a two test approach using a sensitive enzyme immunoassay (EIA) or immunofluorescent assay (IFA) followed by Western blot is recommended.[8]

Case classification

Confirmed: (a) a case with EM, or (b) a case with at least one late manifestation (as defined below) that is laboratory confirmed.

Comment

This surveillance case definition was developed for national reporting of Lyme disease; it is not intended to be used in clinical diagnosis.

Definition of terms used in the clinical description and case definition:

- **Erythema Migrans** For purposes of surveillance, EM is defined as a skin lesion that typically begins as a red macule or papule and expands over a period of days to weeks to form a large round lesion, often with partial central clearing. A solitary lesion must reach at least 5cm in size. Secondary lesions may also occur. Annular erythematous lesions occurring within several hours of a tick bite represent hypersensitivity reactions and do not qualify as EM. For most patients, the expanding EM lesion is accompanied by other acute symptoms, particularly fatigue, fever, headache, mild stiff neck, arthralgia, or myalgia. These symptoms are typically intermittent. The diagnosis of EM must be made by a physician. Laboratory confirmation is recommended for persons with no known exposure.
- **Late Manifestations** Late manifestations include any of the following when an alternate explanation is not found:
    1. **Musculoskeletal system**. Recurrent, brief attacks (weeks or months) of objective joint swelling in one or a few joints, sometimes followed by chronic arthritis in one or a few joints. Manifestations not considered as criteria for diagnosis include chronic progressive arthritis not preceded by brief attacks and chronic symmetrical polyarthritis. Additionally, arthralgia, myalgia, or fibromyalgia syndromes alone are not criteria for musculoskeletal involvement.

    2. **Nervous system**. Any of the following, alone or in combination: lymphocytic meningitis; cranial neuritis, particularly facial palsy (may be bilateral); radiculoneuropathy; or, rarely, encephalomyelitis. Encephalomyelitis must be confirmed by showing antibody production against *B. burgdorfer*i in the cerebrospinal fluid (CSF), demonstrated by a higher titer of antibody in CSF

[8] CDC. Recommendations for test performance and interpretation from the Second National Conference on Serologic Diagnosis of Lyme Disease. MMWR 1995;44:590-1.

than in serum. Headache, fatigue, paresthesia, or mild stiff neck alone are not criteria for neurologic involvement.

3. **Cardiovascular system**. Acute onset, high-grade (2E or 3E) atrioventricular conduction defects that resolve in days to weeks and are sometimes associated with myocarditis. Palpitations, bradycardia, bundle branch block, or myocarditis alone are not criteria for cardiovascular involvement.

- **Exposure** Exposure is defined as having been (#30 days before onset of EM) in wooded, brushy, or grassy areas (i.e., potential tick habitats) in a county in which Lyme disease is endemic. A history of tick bite is not required.
- **Disease endemic to county** A county in which Lyme disease is endemic is one where at least two confirmed cases have been previously acquired or in which established populations of a known tick vector are infected with *B. burgdorferi*.

Malaria (Revised 3/95)

Clinical description

Signs and symptoms are variable, but most patients experience fever. In addition to fever, common associated symptoms include headache, back pain, chills, sweats, myalgias, nausea, vomiting, diarrhea, and cough. Untreated *Plasmodium falciparum* infection may lead to coma, renal failure, pulmonary edema, and death. The diagnosis should be considered for any person who has these symptoms who has traveled to an area where malaria is endemic. Asymptomatic parasitemia may occur among persons who have been long-term residents of areas in which malaria is endemic.

Laboratory criteria for diagnosis

- Demonstration of malaria parasites in blood films

Case classification

Confirmed: An episode of microscopically-confirmed malaria parasitemia in any person (symptomatic or asymptomatic) diagnosed in the United States, regardless of whether the person experienced previous episodes of malaria while outside the country

Comment

A subsequent attack experienced by the same person but caused by a different *Plasmodium* species is counted as an additional case. A subsequent attack experienced by the same person and caused by the same species in the United States may indicate a relapsing infection or treatment failure caused by drug resistance. Blood smears from questionable cases should be referred to the National Malaria Repository, CDC, for confirmation of the diagnosis.

Cases are also classified according to the following World Health Organization categories:

- *Autochthonous*: *Indigenous*: malaria acquired by mosquito transmission in an area where malaria is a regular occurrence

- *Introduced*: malaria acquired by mosquito transmission from an imported case in an area where malaria is not a regular occurrence
- *Imported*: malaria acquired outside a specific area (e.g., the United States and its territories)
- *Induced*: malaria acquired through artificial means (e.g., blood transfusion, common syringes, or malariotherapy)
- *Relapsing*: renewed manifestation (of clinical symptoms and/or parasitemia) of malaria infection that is separated from previous manifestations of the same infection by an interval greater than any interval resulting from the normal periodicity of the paroxysms
- *Cryptic*: an isolated case of malaria not epidemiologically linked to additional cases

Measles (Revised 9/96)

Clinical Case Definition

An illness characterized by all of the following:

- a generalized rash lasting ≥ 3 days
- a temperature ≥ 38.3 C or 101 ºF
- cough, coryza, or conjunctivitis

Laboratory criteria for diagnosis

- Positive serologic test for measles immunoglobulin M (IgM) antibody, or
- Significant rise in measles antibody level by any standard serologic assay, or
- Isolation of measles virus from a clinical specimen

Case classification

Suspected: any febrile illness accompanied by rash

Probable: a case that meets the clinical case definition, has noncontributory or no serologic or virologic testing, and is not epidemiologically linked to a confirmed case

Confirmed: a case that is laboratory confirmed or that meets the clinical case definition and is epidemiologically linked to a confirmed case. A laboratory-confirmed case does not need to meet the clinical case definition.

Comment

Confirmed cases should be reported to the NNDSS. An *imported* case has its source outside the country or state. Rash onset occurs within 18 days of entering the jurisdiction and illness cannot be linked to local transmission. Imported cases are to be classified as:

- International. Importation from another country.
- Out-of-State. A case that is imported from another state in the United States. The possibility that a patient was exposed within his or her state of residence should be excluded; therefore, the patient either must have been out of state continuously for the

entire period of possible exposure (at least 7-18 days before onset of rash) or have had one of the following types of exposure while out of state: a) face-to-face contact with a person who had either a probable or confirmed case or b) attendance in the same institution as a person who had a case of measles (e.g., in a school, classroom, or day care center).

An *indigenous* case is defined as a case of measles that is not imported. Cases that are linked to imported cases should be classified as indigenous if the exposure to the imported case occurred in the reporting state. Any case that cannot be proved to be imported should be classified as indigenous.

Meningococcal Disease

Clinical description

Meningococcal disease presents most commonly as meningitis and/or meningococcemia that may progress rapidly to purpura fulminans, shock, and death. However, other manifestations may be observed.

Laboratory criteria for diagnosis

- Isolation of *Neisseria meningitidis* from a normally sterile site (i.e., blood or cerebrospinal fluid [CSF], or, less commonly, joint, pleural, or pericardial fluid)

Case classification

Probable: a case with a positive antigen test in CSF or clinical purpura fulminans in the absence of a positive blood culture

Confirmed: a clinically compatible case that is laboratory confirmed

Comment

Positive antigen test results from urine or serum samples are unreliable for diagnosing meningococcal disease.

Mumps (Revised 5/99)

Clinical Case Definition

An illness with acute onset of unilateral or bilateral tender, self limited swelling of the parotid or other salivary gland, lasting ≥ 2 days, and without other apparent cause

Laboratory criteria for diagnosis

- Isolation of mumps virus from clinical specimen, or
- Significant rise between acute- and convalescent-phase titers in serum mumps immunoglobulin G (IgG) antibody level by any standard serologic assay, or
- Positive serologic test for mumps immunoglobulin M (IgM) antibody

Case classification

Probable: a case that meets the clinical case definition, has noncontributory or no serologic or virologic testing, and is not epidemiologically linked to a confirmed or probable case

Confirmed: a case that is laboratory confirmed or that meets the clinical case definition and is epidemiologically linked to a confirmed or probable case. A laboratory-confirmed case does not need to meet the clinical case definition.

Comment

Two probable cases that are epidemiologically linked would be considered confirmed, even in the absence of laboratory confirmation. False-positive IgM results by immunofluorescent antibody assays have been reported.[9]

Pertussis (Revised 11/97)

Clinical Case Definition

A cough illness lasting ≥ 2 weeks with one of the following: paroxysms of coughing, inspiratory "whoop," or post-tussive vomiting, without other apparent cause (as reported by a health professional)

Laboratory criteria for diagnosis

- Isolation of *Bordetella pertussis* from clinical specimen
- Positive polymerase chain reaction (PCR) for *B. pertussis*

Case classification

Probable: a case meets the clinical case definition, is not laboratory confirmed, and is not epidemiologically linked to a laboratory-confirmed case

Confirmed: a case that is culture positive and in which an acute cough illness of any duration is present; or a case that meets the clinical case definition and is confirmed by positive PCR; or a case that meets the clinical case definition and is epidemiologically linked directly to a case confirmed by either culture or PCR.

Comment

The clinical case definition above is appropriate for endemic or sporadic cases. In outbreak settings, a case may be defined as a cough illness lasting ≥ 2 weeks (as reported by a health professional). Because some studies have documented that direct fluorescent antibody testing of nasopharyngeal secretions has low sensitivity and variable specificity, it should not be relied on

[9] Schluter WW, Reef SE, Dykewicz DA, Jennings CE. Pseudo-outbreak of mumps -- Illinois, 1995 {Abstract}. In: Program and abstracts of the 30th National Immunization Conference, Washington, DC, April 9-12, 1996.

as a criterion for laboratory confirmation.[10][11] Serologic testing for pertussis is available in some areas but is not standardized and, therefore, should not be relied on as a criterion for laboratory confirmation for national reporting purpose. Both probable and confirmed cases should be reported to the NNDSS.

Plague (Revised 9/96)

Clinical description

Plague is transmitted to humans by fleas or by direct exposure to infected tissues or respiratory droplets; the disease is characterized by fever, chills, headache, malaise, prostration, and leukocytosis that manifests in one or more of the following principal clinical forms:

- Regional lymphadenitis (bubonic plague)
- Septicemia without an evident bubo (septicemic plague)
- Plague pneumonia, resulting from hematogenous spread in bubonic or septicemic cases (secondary pneumonic plague) or inhalation of infectious droplets (primary pneumonic plague)
- Pharyngitis and cervical lymphadenitis resulting from exposure to larger infectious droplets or ingestion of infected tissues (pharyngeal plague)

Laboratory criteria for diagnosis

Presumptive

- Elevated serum antibody titer(s) to *Yersinia pestis* F1 antigen (without documented fourfold or greater change) in a patient with no history of plague vaccination or
- Detection of F1 antigen in a clinical specimen by fluorescent assay

Confirmatory

- Isolation of Y. pestis from a clinical specimen or
- Fourfold or greater change in serum antibody titer to *Y. pestis* fraction 1 F1 antigen

Case classification

Suspected: A clinically compatible case without presumptive or confirmatory laboratory results.

Probable: A clinically compatible case with presumptive laboratory results.

Confirmed: A clinically compatible case with confirmatory laboratory results.

Poliomyelitis, Paralytic

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[10] Broome CV, Fraser DW, English WJ. Pertussis -- diagnostic methods and surveillance. In: Manclark CR, Hill JC, eds. International Symposium on Pertussis. Bethesda, MD: US Department of Health, Education, and Welfare, Public Health Service, National Institutes of Health, 1979; DHEW publication no. (NIH)79-1830:19-22.

[11] Halperin SA, Bortolussi R, Wort AJ. Evaluation of culture, immunofluorescence, and serology for the diagnosis of pertussis. J Clin Microbiol 1989;27:752-7.

Clinical Case Definition

Acute onset of a flaccid paralysis of one or more limbs with decreased or absent tendon reflexes in the affected limbs, without other apparent cause, and without sensory or cognitive loss

Case classification

Probable: a case that meets the clinical case definition

Confirmed: a case that meets the clinical case definition and in which the patient has a neurologic deficit 60 days after onset of initial symptoms, has died, or has unknown follow-up status.

Comment

All suspected cases of paralytic poliomyelitis are reviewed by a panel of expert consultants before final classification occurs. Confirmed cases are then further classified on epidemiologic and laboratory criteria.[12] Only confirmed cases are included in Table I in the MMWR. Suspected cases are enumerated in a footnote to the MMWR table.

Psittacosis (Revised 9/96)

Clinical description

An illness characterized by fever, chills, headache, photophobia, cough, and myalgia.

Laboratory criteria for diagnosis

- Isolation of *Chlamydia psittaci* from respiratory secretions, or
- Fourfold or greater increase in antibody against *C. psittac*i by complement fixation or microimmuno-fluorescence (MIF) to a reciprocal titer of ≥ 32 between paired acute- and convalescent-phase serum specimens or
- Presence of immunoglobulin M antibody against *C. Psittaci* by MIF to a reciprocal titer of ≥ 16

Case classification

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case or that has supportive serology (e.g. *C. psittaci* titer of ≥ 32 in one or more serum specimens obtained after onset of symptoms)

Confirmed: a clinically compatible case that is laboratory confirmed

[12] Sutter RW, Brink EW, Cochi SL, et al. A new epidemiologic and laboratory classification system for paralytic poliomyelitis cases. Am J Public Health 1989;79:495-8.

Comment

The serologic findings by CF noted above may also occur as a result of infection with *Chlamydia pneumoniae* or *Chlamydia trachomatis*. The MIF appears to be more specific for infection with *C. psittaci*, but experience with and availability of this newer test is more limited.

Rabies, Animal

Laboratory criteria for diagnosis

- A positive direct fluorescent antibody test (preferably performed on central nervous system tissue)
- Isolation of rabies virus (in cell culture or in a laboratory animal)

Case classification

Confirmed: a case that is laboratory confirmed

Rabies, Human

Clinical description

Rabies is an acute encephalomyelitis that almost always progresses to coma or death within 10 days of the first symptom.

Laboratory criteria for diagnosis

- Detection by direct fluorescent antibody of viral antigens in a clinical specimen (preferably the brain or the nerves surrounding hair follicles in the nape of the neck), or
- Isolation (in cell culture or in a laboratory animal) of rabies virus from saliva, cerebrospinal fluid (CSF) or central nervous system tissue, or
- Identification of a rabies-neutralizing antibody titer ≥ 5 (complete neutralization) in the serum or CSF of an unvaccinated person.

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed

Comment

Laboratory confirmation by all of the above methods is strongly recommended.

Rocky Mountain Spotted Fever (Revised 9/96)

Clinical description

A tickborne febrile illness most commonly characterized by acute onset and usually accompanied by myalgia, headache, and petechial rash (on the palms and soles in two-thirds of the cases)

Laboratory criteria for diagnosis

- Fourfold or greater rise in antibody titer to *Rickettsia rickettsii* antigen by immunofluorescent antibody (IFA), complement fixation (CF), latex agglutination (LA), microagglutination (MA), or indirect hemagglutination (IHA) test in acute- and convalescent-phase specimens ideally taken ≥ 3 weeks apart, or
- Positive polymerase chain reaction assay to *R. Rickettsii*, or
- Demonstration of positive immunofluorescence of skin lesion (biopsy) or organ tissue (autopsy)
- Isolation of *Rickettsia rickettsii* from clinical specimen

Case classification

Probable: a clinically compatible case with a single IFA serologic titer of ≥ 64 or a single CF titer of ≥ 16 or other supportive serology (fourfold rise in titer or a single titer ≥ 320 by Proteus OX-19 or OX-2, or a single titer ≥ 128 by LA, IHA, or MA test)

Confirmed: a clinically compatible case that is laboratory confirmed

Rubella (Revised 9/96)

Clinical Case Definition

An illness with all of the following characteristics:

- Acute onset of generalized maculopapular rash
- Temperature >99 ºF (>37.2 ºC), if measured
- Arthralgia/arthritis, or lymphadenopathy, or conjunctivitis

Laboratory criteria for diagnosis

- Isolation of rubella virus, or
- Fourfold rise between acute and convalescent titers in serum rubella immunoglobulin G antibody level by any standard serologic assay, or
- Positive serologic test for rubella immunoglobulin M (IgM) antibody

Case classification

Suspected: any generalized rash illness of acute onset

Probable: a case that meets the clinical case definition, has no or noncontributory serologic or virologic testing, and is not epidemiologically linked to a laboratory-confirmed case

Confirmed: a case that is laboratory confirmed or that meets the clinical case definition and is epidemiologically linked to a laboratory-confirmed case.

Comments

Serum rubella IgM test results that are false positives have been reported in persons with other viral infections (e.g., acute infection with Epstein-Barr [infectious mononucleosis], recent cytomegalovirus infection, parvovirus infection), or in the presence of rheumatoid factor. Patients who have laboratory evidence of recent measles infection are excluded.

Rubella, Congenital Syndrome (Revised 5/99)

Clinical description

Presence of any defect(s) or laboratory data consistent with congenital rubella infection. Infants with congenital rubella syndrome usually present with more than one sign or symptom consistent with congenital rubella infection. However, infants may present with a single defect. Deafness is most common single defect.

Laboratory criteria for diagnosis

- Isolation of rubella virus, or
- Demonstration of rubella-specific immunoglobulin M (IgM) antibody, or
- An infant's rubella antibody level that persists at a higher level and for a longer period of time than expected from passive transfer of maternal antibody (i.e., rubella titer that does not drop at the expected rate of a twofold dilution per month)
- PCR positive rubella virus

Clinical Case Definition

An illness usually manifesting in infancy resulting from rubella infection in utero and characterized by signs or symptoms from the following categories:

- Cataracts/congenital glaucoma, congenital heart disease, (most commonly patent ductus arteriosus, peripheral pulmonary artery stenosis), loss of hearing, pigmentary retinopathy.
- Purpura, hepatosplenomegaly, jaundice, microcephaly, mental retardation, meningoencephalitis, radiolucent bone disease.

Case classification

Suspected: a case with some compatible clinical findings but not meeting the criteria for a probable case.

Probable: a case that is not laboratory confirmed and that has any two complications listed in paragraph a) of the clinical case definition or one complication from paragraph a) and one from paragraph b), and lacks evidence of any other etiology.

Confirmed: a clinically consistent case that is laboratory confirmed.

Infection Only: a case that demostrates laboratory evidence of infection, but without any clinical symptoms or signs

Comment

In probable cases, either or both of the eye-related findings (cataracts and congenital glaucoma) count as a single complication. In cases classified as infection only, if any compatible signs or symptoms (e.g., hearing loss) are identified later, the case is reclassified as confirmed.

Salmonellosis

Clinical description

An illness of variable severity commonly manifested by diarrhea, abdominal pain, nausea, and sometimes vomiting. Asymptomatic infections may occur and the organism may cause extraintestinal infections.

Laboratory criteria for diagnosis

- Isolation of *Salmonella* from a clinical specimen

Case classification

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case

Confirmed: a case that is laboratory confirmed

Comment

Laboratory confirmed isolates are reported to CDC via the Public Health Laboratory Information System (PHLIS), which is managed by the Foodborne and Diarrheal Disease Branch, Division of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, CDC. Both probable and confirmed cases are reported to the National Notifiable Disease Surveillance System, but only confirmed cases are reported to PHLIS. Both asymptomatic infections and infections at sites other than the gastrointestinal tract, if laboratory confirmed, are considered confirmed cases that should be reported to PHLIS.

Shigellosis

Clinical description

An illness of variable severity characterized by diarrhea, fever, nausea, cramps, and tenesmus. Asymptomatic infections occur.

Laboratory criteria for diagnosis

- Isolation of *Shigella* from a clinical specimen

Case classification

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case

Confirmed: a case that is laboratory confirmed

Comment

Laboratory confirmed isolates are reported to CDC via the Public Health Laboratory Information System (PHLIS), which is managed by the Foodborne and Diarrheal Disease Branch, Division of Bacterial and Mycotic Diseases, National Center for Infectious Diseases, CDC. Both probable and confirmed cases are reported to the National Notifiable Disease Surveillance System, but only confirmed cases are reported to PHLIS. Confirmation is based on laboratory findings, and clinical illness is not required.

Streptococcus pnemoniae, Drug Resistant Invasive Disease (Revised 9/96)

Clinical description

Streptococcus pneumoniae causes many clinical syndromes, depending on the site of infection (e.g., acute otitis media, pneumonia, bacteremia, or meningitis).

Laboratory Criteria for Diagnosis

- Isolation of *S. pneumoniae* from a normally sterile site (e.g., blood, cerebrospinal fluid, or, less commonly, joint, pleural, or pericardial fluid) and
- Nonsusceptible isolate i.e., intermediate- or high-level resistance of the *S. pneumoniae* isolate to at least one antimicrobial agent currently approved for use in treating pneumococcal infection

Case classification

Probable: a clinically compatible case caused by laboratory-confirmed culture of *S. pneumoniae* identified as "nonsusceptible" (i.e., an oxacillin zone size of less than 20 mm) when oxacillin screening is the only method of antimicrobial susceptibility testing performed

Confirmed: a clinically compatible case that is laboratory confirmed

Comment

Resistance defined by National Committee for Clinical Laboratory Standards (NCCLS)-approved methods and NCCLS-approved interpretive minimum inhibitory concentration (MIC) standards (Φg/mL) for *S. pneumoniae*. NCCLS recommends that all invasive *S. pneumoniae* isolates found to be "possibly resistant" to beta-lactams (i.e., an oxacillin zone size of less than 20 mm) by oxacillin screening should undergo further susceptibility testing by using a quantitative MIC method acceptable for penicillin, extended-spectrum cephalosporins, and other drugs as clinically indicated

Streptococcus pneumoniae, Invasive, (Children < 5 years) (Revised 12/00)

Clinical description

Streptococcus pneumoniae causes many clinical syndromes, depending on the site of infection (e.g., acute otitis media, pneumonia, bacteremia, or meningitis). Starting in 2000, a conjugate pneumococcal vaccine is recommended for prevention of pneumococcal disease in the pediatric population.

Laboratory criteria for diagnosis

- Isolation of *S. pneumoniae* from a normally sterile site (e.g., blood, cerebrospinal fluid, or, less commonly, joint, pleural, or pericardial fluid)

Case classification

Confirmed: a clinically compatible case in a child less than 5 years of age caused by laboratory-confirmed culture of *S. pneumoniae* from a normally sterile site

Syphilis (All Definitions Revised 9/96)

Syphilis is a complex sexually transmitted disease that has a highly variable clinical course. Classification by a clinician with expertise in syphilis may take precedence over the following case definitions developed for surveillance purposes.

Syphilis, primary

Clinical description

A stage of infection with *Treponema pallidum* characterized by one or more chancres (ulcers); chancres may vary considerably in clinical appearance.

Laboratory criteria for diagnosis

- Demonstration of *T. pallidum* in clinical specimens by darkfield microscopy, fluorescent antibody (DFA-TP), or equivalent methods

Case classification

Probable: a clinically compatible case with one or more ulcers (chancres) consistent with primary syphilis and a reactive serologic test (non-treponemal: Venereal Disease Research Laboratory [VDRL] or Rapid Plasma Reagin [RPR]); treponemal: fluorescent treponemal antibody-absorbed [FTA-ABS] or microhem-agglutination assay for antibody to *T. pallidum* [MHA-TP])

Confirmed: a clinically compatible case that is laboratory confirmed

Syphilis, secondary

Clinical description

A stage of infection caused by T. pallidum and characterized by localized or diffuse mucocutaneous lesions, often with generalized lymphadenopathy. The primary chancre may still be present.

Laboratory criteria for diagnosis

- Demonstration of T. pallidum in clinical specimens by darkfield microscopy, DFA-TP, or equivalent methods

Case classification

Probable: a clinically compatible case with a nontreponemal (VDRL or RPR) titer ≥ 4.

Confirmed: a clinically compatible case that is laboratory confirmed

Syphilis, latent

Clinical description

A stage of infection caused by *T. pallidum* in which organisms persist in the body of the infected person without causing symptoms or signs. Latent syphilis is subdivided into early, late, and unknown categories based upon the duration of infection.

Case classification

Probable: no clinical signs or symptoms of syphilis and the presence of one of the following:

- No past diagnosis of syphilis, a reactive nontreponemal test (i.e., VDRL or RPR), and a reactive treponemal test (i.e., FTA-ABS or MHA-TP)
- A past history of syphilis therapy and a current nontreponemal test titer demonstrating fourfold or greater increase from the last nontreponemal test titer

Syphilis, early latent

Clinical description

A subcategory of latent syphilis. When initial infection has occurred within the previous 12 months, latent syphilis is classified as early latent.

Case classification

Probable: latent syphilis (see Syphilis, latent) in a person who has evidence of having acquired the infection within the previous 12 months based on one or more of the following criteria:

- Documented seroconversion or fourfold or greater increase in titer of a nontreponemal test in the past 12 months
- A history of symptoms consistent with primary or secondary syphilis in the past 12 months
- A history of sexual exposure to a partner who had confirmed or probable primary or secondary syphilis, or probable early latent syphilis, (documented independently as duration <1 year)
- Reactive nontreponemal and treponemal tests from a person whose only possible exposure occurred within the preceding 12 months

Syphilis, late latent

Clinical description

A subcategory of latent syphilis. When initial infection has occurred >1 year previously, latent syphilis is classified as late latent.

Case classification

Probable: latent syphilis (see Syphilis, latent) of a patient who shows no evidence of having acquired the disease within the past 12 months (see Syphilis, early latent) and whose age and titer do not meet the criteria specified for latent syphilis of unknown duration.

Syphilis, latent, of unknown duration

Clinical description

A subcategory of latent syphilis. When the date of initial infection cannot be established as occurring within the previous year, and the patient's age and titer meet criteria described below, latent syphilis is classified as latent syphilis of unknown duration.

Case classification

Probable: latent syphilis (see Syphilis, latent) that does not meet the criteria for early latent syphilis, and the patient is 13-35 years of age with a nontreponemal titer ≥ 32.

Neurosyphilis

Clinical description

Evidence of central nervous system infection with *T. pallidum*

Laboratory criteria for diagnosis

- A reactive serologic test for syphilis and reactive VDRL in cerebrospinal fluid (CSF)

Case classification

Probable: syphilis of any stage, a negative VDRL in CSF, and both of the following:

- Elevated CSF protein or leukocyte count in the absence of other known causes of these abnormalities
- Clinical symptoms or signs consistent with neurosyphilis without other known causes for these clinical abnormalities

Confirmed: syphilis, of any stage, that meets the laboratory criteria for neurosyphilis

Syphilis, late with clinical manifestations other than neurosyphilis (late benign syphilis and cardiovascular syphilis).

Clinical description

Clinical manifestations of late syphilis other than neurosyphilis may include inflammatory lesions of the cardiovascular system, skin, and bone. Rarely, other structures (e.g. the upper and lower respiratory tracts, mouth, eye, abdominal organs, reproductive organs, lymph nodes, and skeletal muscle) may be involved. Late syphilis usually becomes clinically manifest only after a period of 15 to 30 years of untreated infection.

Laboratory criteria for diagnosis

Demonstration of *T. pallidum* in late lesions by fluorescent antibody or special stains (although organisms are rarely visualized in late lesions).

Case classification

Probable: characteristic abnormalities or lesions of the cardiovascular system, skin, bone or other structures with a reactive treponemal test, in the absence of other known causes of these abnormalities, and without CSF abnormalities and clinical symptoms or signs consistent with neurosyphilis.

Confirmed: A clinically compatible case that is laboratory confirmed.

Comment:

Analysis of CSF for evidence of neurosyphilis is necessary in the evaluation of late syphilis with clinical manifestations.

Syphilitic Stillbirth

Clinical description

A fetal death that occurs after a 20 week gestation or in which the fetus weighs >500 g, and the mother had untreated or inadequately treated[13] syphilis at delivery.

Comment

For reporting purposes, syphilitic stillbirths should be reported as cases of congenital syphilis.

[13] Inadequate treatment consists of any nonpenicillin therapy or penicillin administered <30 days before delivery.

Syphilis, Congenital (Revised 9/96)

Clinical description

A condition caused by infection *in utero* with *Treponema pallidum*. A wide spectrum of severity exists, and only severe cases are clinically apparent at birth. An infant (<2 years) may have signs such as hepatosplenomegaly, rash, condyloma lata, snuffles, jaundice (non-viral hepatitis), pseudoparalysis, anemia, or edema (nephrotic syndrome and/or malnutrition). An older child may have stigmata (e.g., interstitial keratitis, nerve deafness, anterior bowing of shins, frontal bossing, mulberry molars, Hutchinson teeth, saddle nose, rhagades, or Clutton joints).

Laboratory criteria for diagnosis

- Demonstration of *T. pallidum* by darkfield microscopy, fluorescent antibody, or other specific stains in specimens from lesions, placenta, umbilical cord, or autopsy material

Case classification

Probable: a condition affecting an infant whose mother had untreated or inadequately treated syphilis at delivery, regardless of signs in the infant; or an infant or child who has a reactive treponemal test for syphilis and any one of the following:

- Any evidence of congenital syphilis on physical examination
- Any evidence of congenital syphilis on radiographs of long bone
- A reactive cerebrospinal fluid (CSF) venereal disease research laboratory (VDRL)
- An elevated CSF cell count or protein (without other cause)
- A reactive fluorescent treponemal antibody absorbed--19S-IgM antibody test or IgM enzyme linked immunosorbent assay

Confirmed: a case that is laboratory confirmed

Comment

Congenital and acquired syphilis may be difficult to distinguish when a child is seropositive after infancy. Signs of congenital syphilis may not be obvious, and stigmata may not yet have developed. Abnormal values for CSF VDRL, cell count, and protein, as well as IgM antibodies, may be found in either congenital or acquired syphilis. Findings on radiographs of long bones may help because radiographic changes in the metaphysis and epiphysis are considered classic signs of congenitally acquired syphilis. The decision may ultimately be based on maternal history and clinical judgment. In a young child, the possibility of sexual abuse should be considered as a cause of acquired rather than congenital syphilis, depending on the clinical picture. For reporting purposes, congenital syphilis includes cases of congenitally acquired syphilis among infants and children as well as syphilitic stillbirths.

Tetanus (Revised 9/96)

Clinical Case Definition

Acute onset of hypertonia and/or painful muscular contractions (usually of the muscles of the jaw and neck) and generalized muscle spasms without other apparent medical cause

Case classification

Confirmed: a clinically compatible case, as reported by a health-care professional

Trichinosis (Revised 9/96)

Clinical description

A disease caused by ingestion of *Trichinella* larvae. The disease has variable clinical manifestations. Common signs and symptoms among symptomatic persons include eosinophilia, fever, myalgia, and periorbital edema.

Laboratory criteria for diagnosis

- Demonstration of *Trichinella* larvae in tissue obtained by muscle biopsy, or
- Positive serologic test for *Trichinella*.

Case classification

Confirmed: a clinically compatible case that is laboratory confirmed

Comment

In an outbreak setting, at least one case must be laboratory confirmed. Associated cases should be reported as confirmed if the patient shared an epidemiologically implicated meal or ate an epidemiologically implicated meat product and has either a positive serology for trichinosis or a clinically compatible case.

Tuberculosis (Revised 9/96)

Clinical description

A chronic bacterial infection due to *Mycobacterium tuberculosis*, characterized pathologically by the formation of granulomas. The most common site of infection is the lung, but other organs may be involved.

Clinical Case Definition

A case that meets the following criteria:

- A positive tuberculin skin test
- Other signs and symptoms compatible with tuberculosis, (e.g., an abnormal, unstable [i.e., worsening or improving] chest radiograph, or clinical evidence of current disease)
- Treatment with two or more antituberculosis medications
- Completed diagnostic evaluation

Laboratory criteria for diagnosis

- Isolation of *M. tuberculosis* from a clinical specimen[14] or
- Demonstration of *M. tuberculosis* from a clinical specimen by nucleic acid amplification test[15] or
- Demonstration of acid-fast bacilli in clinical specimen when a culture has not been or cannot be obtained

Case classification

Confirmed: a case that meets the clinical case definition or is laboratory confirmed.

Comment

A case should not be counted twice within any consecutive 12 month period. However, cases in which the patients had previously had verified disease should be reported again if the patients were discharged from treatment. Cases also should be reported again if patients were lost to supervision >12 months and disease can be verified again. Mycobacterial diseases other than those caused by *M. tuberculosis* complex should not be counted in tuberculosis morbidity statistics unless there is concurrent tuberculosis.

Tularemia (Adopted 1999)

Clinical description

An illness characterized by several distinct forms, including the following:

- Ulceroglandular: cutaneous ulcer with regional lymphadenopathy
  Glandular: regional lymphadenopathy with no ulcer
- Oculoglandular: conjunctivitis with preauricular lymphadenopathy
- Oropharyngeal: stomatitis or pharyngitis or tonsillitis and cervical lymphadenopathy
- Intestinal: intestinal pain, vomiting, and diarrhea
- Pneumonic: primary pleuropulmonary disease
- Typhoidal: febrile illness without early localizing signs and symptoms

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[14] Use of rapid identification techniques for M. tuberculosis (e.g., DNA probes and mycolic acids high-pressure liquid chromatography performed on a culture from a clinical specimen) are acceptable under this criterion.
[15] Nucleic acid amplification (NAA) tests must be accompanied by culture for mycobacteria species. However, for surveillance purposes, CDC will accept results obtained from NAA tests approved by the Food and Drug Administration (FDA) and used according to the approved product labeling on the package insert. Current FDA approved NAA tests are only approved for smear-positive respiratory specimens.

Clinical diagnosis is supported by evidence or history of a tick or deerfly bite, exposure to tissue of a mammalian host of *Francisella tularensis*, or exposure to potentially contaminated water.

Laboratory criteria for diagnosis

Presumptive

- Elevated serum antibody titer(s) to *F. tularensis* antigen (without documented fourfold or greater change) in a patient with no history of tularemia vaccination or
- Detection of *F. tularensis* in a clinical specimen by fluorescent assay

Confirmatory

- Isolation of *F. tularensis* in a clinical specimen or
- Fourfold or greater change in serum antibody titer to *F. tularensis* antigen

Case classification

Probable: a clinically compatible case with laboratory results indicative of presumptive infection

Confirmed: a clinically compatible case with confirmatory laboratory results

Typhoid Fever

Clinical description

An illness caused by *Salmonella typhi* that is often characterized by insidious onset of sustained fever, headache, malaise, anorexia, relative bradycardia, constipation or diarrhea, and nonproductive cough. However, many mild and atypical infections occur. Carriage of *S. typhi* may be prolonged.

Laboratory criteria for diagnosis

Isolation of *S. typhi* from blood, stool, or other clinical specimen

Case classification

Probable: a clinically compatible case that is epidemiologically linked to a confirmed case in an outbreak

Confirmed: a clinically compatible case that is laboratory confirmed

Comment

Isolation of the organism is required for confirmation. Serologic evidence alone is not sufficient for diagnosis. Asymptomatic carriage should not be reported as typhoid fever.

Isolates of *S. typhi* are reported to the Foodborne and Diarrheal Diseases Branch, National Center for Infectious Diseases, CDC, through the Public Health Laboratory Information System. (See *Salmonella.*)

Yellow Fever

Clinical description

A mosquito-borne, viral illness characterized by acute onset and constitutional symptoms followed by a brief remission and a recurrence of fever, hepatitis, albuminuria, and symptoms and, in some cases, renal failure, shock, and generalized hemorrhages

Laboratory criteria for diagnosis

- Fourfold or greater rise in yellow fever antibody titer in a patient who has no history of recent yellow fever vaccination, and cross-reactions to other flaviviruses have been excluded or

- Demonstration of yellow fever virus, antigen, or genome in tissue, blood, or other body fluid

Case classification

Probable: a clinically compatible case with supportive serology (stable elevated antibody titer to yellow fever virus, [e.g., ≥ 32 by complement fixation, ≥ 256 by immunofluorescence assay, ≥ 320 by hemagglutination inhibition, ≥ 160 by neutralization, or a positive serologic result by immunoglobulin M-capture enzyme immunoassay]. Cross-reactive serologic reactions to other flaviviruses must be excluded, and the patient must not have a history of yellow fever vaccination.)

Confirmed: a clinically compatible case that is laboratory confirmed

Case Definitions

The following case definitions and data elements are recommended for use by all surveillance systems gathering information on traumatic brain and spinal cord injuries. This standardization will allow us to collect data that can be compared across time and between jurisdictions. As a result, we will be better able to target efforts to prevent these injuries and their consequences.

For the purposes of public health surveillance, jurisdictions may elect to ascertain cases of traumatic brain injury either from clinical records or from existing uniform data systems. Case definitions are presented for both types of ascertainment.

Traumatic Brain Injury

Clinical case definition

For surveillance systems using data from clinical records, a case of traumatic brain injury (craniocerebral trauma) is defined either

- As an occurrence of injury to the head that is documented in a medical record, with one or more of the following conditions attributed to head injury[16]:

1. Observed or self-reported decreased level of consciousness[17]
2. Amnesia[18]
3. Skull Fracture
4. Objective neurological or neuropsychological abnormality[19]
5. Diagnosed intracranial lesion[20]

- As an occurrence of death resulting from trauma, with head injury listed on the death certificate, autopsy report, or medical examiner(s report in the sequence of conditions that resulted in death.

The clinical definition of traumatic brain injury *excludes* the following:

- Lacerations or contusions of the face, eye, ear, or scalp, without the other criteria listed above
- Fractures of facial bones, without other criteria listed above
- Birth trauma
- Primary anoxic, inflammatory, infectious, toxic, or metabolic encephalopathies that are not complications of head trauma
- Cancer
- Brain infarction (ischemic stroke) and intracranial hemorrhage (hemorrhagic stroke) without associated trauma

Uniform data systems case definition

For surveillance systems receiving case reports from coded death certificates or hospital discharge data, the following International Classification of Diseases, Ninth Revision (ICD-9) or

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[16] Injuries to the head may arise from blunt or penetrating trauma or from acceleration-deceleration forces.

[17] Decreased level of consciousness refers to partial or complete loss of consciousness. This includes states described as obtundation, stupor, or coma.

[18] Amnesia may include loss of memory for events immediately preceding the injury (retrograde amnesia), for the injury event itself, and for events subsequent to the injury (posttraumatic amnesia).

[19] Neurological abnormalities are determined from neurological examination. Examples include abnormalities of speech (aphasia or dysphasia); or seizures acutely following head trauma. Neuropsychological abnormalities are determined from mental status and neuropsychological examinations. Examples include disorders of mental status (such as disorientation, agitation, or confusion) and other changes in cognition, behavior, or personality.

[20] Examples of diagnosed intracranial lesions include traumatic intracranial hematomas or hemorrhage (epidural, subural, subarachnoid, or intracerebral), cerebral contusions or laceratins, or penetrating cerebral injuries (e.g., gunshot wounds). The diagnosis of such intracranial lesions is usually confirmed with a computed tompgraphy (CT) or magnetic resonance imaging (MRI) brain scan or by other neurodiagnostic procedures.

International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnostic codes are included in the definition of traumatic brain injury:

Diagnostic Codes for Traumatic Brain Injuries	
800.B0801.9	Fracture of the vault or base of the skull
803.B0804.9	Other and unqualified and multiple fractures of the skull
850.B0854.1	Intracranial injury, including concussion, contusion, laceration, and hemorrhage

Additional cases of traumatic brain injury may be ascertained from death certificates coded as follows:

Diagnostic Codes for Traumatic Brain Injuries	
873.0B873.9	Other open wound of head[21]

Spinal Cord Injury

Clinical case definition

For surveillance systems using data from clinical records, a case of spinal cord injury is defined as the occurrence of an acute traumatic lesion of neural elements in the spinal canal (spinal cord and cauda equina), resulting in temporary or permanent sensory deficit, motor deficit, or bowel or bladder dysfunction.

The clinical definition of spinal cord injury *excludes* the following:

- Intervertebral disc disease (ICD-9-CM 722)
- Vertebral injuries in the absence of spinal cord injury
- Nerve root avulsions and injuries to nerve roots and peripheral nerves outside the spinal canal
- Birth trauma
- Cancer, spinal cord vascular disease, and other nontraumatic spinal cord diseases

Uniform data systems case definition

For surveillance systems receiving case reports from coded death certificates or hospital discharge data, the following ICD-9 or ICD-9-CM[22] diagnostic codes should be used to define acute spinal cord injury:

[21] This code range should not be applied to intracranial injuries. However, reviews of data from death certificates indicate that a substantial number of cases of intracranial injury, especially gunshot wounds, are mistakenly given these codes. Suspected cases of head trauma that have been so coded may be confirmed by reviewing medical records or death certificates.

Diagnostic Codes for Spinal Cord Injuries	
806.0B806.9	Fracture of vertebral column with spinal cord lesion
952.0B952.9	Spinal cord lesion without evidence of spinal bone injury

Additional cases of spinal cord injury may be ascertained from hospital discharge data and death certificates codes as follows:

Diagnostic Codes for Traumatic Brain Injuries	
805.0B805.9	Fracture of vertebral column without mention of spinal cord lesion
907.2	Late effect of spinal cord injury
953.0B953.9	Injury to nerve roots and spinal plexus

However, since these categories are less specific than those listed above, individual medical or other records should be reviewed to confirm potential cases.

[22] Note: ICD-9 codes are used for coding death certificates. ICD-9-CM codes are used for morbidity data. The codes are comparable except that ICD-9-CM codes include a fifth digit not found in ICD-9 codes.

Appendix C

List of Reportable Laboratory Results

Laboratory Results That Must be Reported to the Mississippi Department of Health

Laboratories shall report these findings to the Mississippi Department of Health at least **WEEKLY**. Diseases in bold type shall be reported immediately by telephone. Isolates of organisms marked with a dagger (†) should be sent to the Mississippi Department of Health Public Health Laboratory. All referring laboratories should call the Public Health Laboratory prior to shipping any isolate (601-576-7582).

Positive Bacterial Cultures or Direct Examinations

Result	Reportable Disease
any bacterial agent in CSF	bacterial meningitis
Bacillus anthracis†	**anthrax**
Bordetella pertussis	**pertussis**
Borrelia burgdorferi†	Lyme disease
Brucella species	**brucellosis**
Burkholderia mallei	Glanders
Burkholderia pseudomallei	Melioidosis
Campylobacter species	campylobacteriosis
Chlamydia psittaci	Psittacosis
Chlamydia trachomatis	Chlamydia trachomatis genital infection
Clostridium botulinum†**	**botulism**
Clostridium tetani	tetanus
Corynebacterium diphtheriae†	**diphtheria**
Coxiella burnetii	Q fever
Enterococcus species*	enterococcus infection, invasive vancomycin resistant
Escherichia coli O157:H7†	**E coli O157:H7 infection**
Francisella tularensis	**tularemia**
Haemophilus ducreyi	**chancroid**
Haemophilus influenza type b †*(not from throat, sputum)	**H. influenzae infection, invasive**
Legionella species	legionellosis
Listeria monosytogenes	listeriosis
Mycobacterium species disease	nontuberculous mycobacterial
Mycobacterium tuberculosis	**tuberculosis**
Neisseria gonorrhea	gonorrhea
Neisseria meningitidis †*(not from throat, sputum)	**meningococcal infection, invasive**
Rickettsia prowazekii	Typhus fever
Rickettsia rickettsii	Rocky Mountain spotted fever
Salmonella species, not S. typhi	salmonellosis

Salmonella typhi †	**typhoid fever**
Shigella species	shigellosis
Streptococcus pneumoniae*	pneumococcal infection, invasive in children < 5 or antibiotic resistant
Vibrio cholerae 01†	**cholera**
Vibrio species†	Vibrio infection
Yersinia pestis†	**plague**

* Specimen obtained from a normally sterile site (usually blood or cerebrospinal fluid, or, less commonly, joint, pleural, or pericardial fluid). **Do not report throat or sputum isolates**.
† Isolates of organism should be sent to the Mississippi Department of Health Public Health Laboratory. All referring laboratories should call the Public Health Laboratory at (601)-576-7582 prior to shipping any isolate.
**Contact the Mississippi Department of Health, Division of Epidemiology at 601-576-7725 or the Public Health Laboratory (601)576-7582 for appropriate tests when considering a diagnosis of botulism.

Laboratory Results That Must be Reported to the Mississippi Department of Health

Laboratories shall report these findings to the Mississippi Department of Health at least **WEEKLY**. Diseases in bold type shall be reported immediately by telephone. Confirmatory tests for some of these may be obtained by special arrangement through the Division of Epidemiology at 601-576-7725

Positive Serologic Tests

Arboviral agents including but not limited to:
California encephalitis
Eastern equine encephalitis
La Cross encephalitis
St. Louis encephalitis
Western equine encephalitis
West Nile encephalitis
brucellosis
cholera
Chlamydia trachomatis genital infection
dengue
hepatitis A (anti-HAV IgM)
hepatitis B (anti-HBc IgM)
HIV infection (refer to Section XIV)
legionellosis[1]
Lyme disease
malaria
measles
mumps
plague
poliomyelitis
psittacosis
Rocky Mountain spotted fever
rubella
syphilis (refer to Section XVII)
smallpox
trichinosis
yellow fever

[1] Serologic confirmation of an acute case of legionellosis can not be based on a single titer. There must be a four-fold rise in titer to >1:128 between acute and convalescent specimens.

Laboratory Results That Must be Reported to the Mississippi Department of Health

Laboratories shall report these findings to the Mississippi Department of Health at least **WEEKLY**. **Diseases in bold type shall be reported immediately by telephone.** The dagger † indicates the positive specimens may be submitted to the Mississippi Public Health Laboratory for confirmation.

Positive Parasitic Cultures or Direct Examinations

Result	Reportable Disease Condition
any parasite in CSF†	parasitic meningitis
Cryptosporidium parvum	cryptosporidiosis
Plasmodium species†	malaria

Positive Fungal Cultures or Direct Examinations

Result	Reportable Disease Condition
any fungus in CSF	fungal meningitis
Blastomyces dermatitidis	blastomycosis
Histoplasma capsulatum	histoplasmosis

Positive Viral Cultures or Direct Examinations

Result	Reportable Disease Condition
any virus in CSF	viral meningitis
Arboviral agents including but not limited to:	
California encephalitis virus	**California encephalitis**
Eastern equine encephalomyelitis virus	**Eastern equine encephalitis**
La Cross encephalitis virus	**La Cross encephalitis**
St. Louis encephalitis virus	**St. Louis encephalitis**
Western equine encephalomyelitis virus	**Western equine encephalitis**
West Nile virus	**West Nile encephalitis**
dengue virus, serotype 1, 2, 3, or 4	dengue
polio virus, type 1, 2, or 3	**poliomyelitis**
variola virus	**smallpox**

Filoviruses	Viral hemorrhagic fevers
Arenaviruses	Viral hemorrhagic fevers
yellow fever virus	**yellow fever**

Positive Blood Chemistries

blood lead levels (venous) of > 15 (g/dl in children less than 16 years of age
blood lead levels (venous) of > 25 (g/dl in those than 16 years of age or older

Positive Toxin Identification

Ricin toxin from *Ricinus communis* (castor beans)

Surgical Pathology Results

Creutzfeldt-Jakob Disease,
including new variant
Malignant Neoplasms
Hansen's disease
human rabies
trichinosis
tuberculosis

Appendix D

Control of Rabies in Animals

Reprinted from Centers for Disease Control and Prevention
Compendium of Animal Rabies Prevention and Control, 2005
Published March 18, 2005

http://www.cdc.gov/ncidod/dvrd/rabies/Professional/ publications/compendium/comp

National Association of State Public Health Veterinarians, Inc. (NASPHV)

The material in this report originated in the National Center for Infectious Diseases, Anne Schuchat, MD, Acting Director, and the Division of Viral and Rickettsial Diseases, James W. LeDuc, PhD, Director.

Rabies is a fatal viral zoonosis and a serious public health problem.[1] The recommendations in this compendium serve as the basis for animal rabies prevention and control programs throughout the United States and facilitate standardization of procedures among jurisdictions, thereby contributing to an effective national rabies-control program. This document is reviewed annually and revised as necessary. Principles of rabies prevention and control are detailed in Part I; Part II contains recommendations for parenteral vaccination procedures; all animal rabies vaccines licensed by the United States Department of Agriculture (USDA) and marketed in the United States are listed in Part III.

Part I: Rabies Prevention and Control

Principles of Rabies Prevention and Control.

1. **Rabies Exposure**. Rabies is transmitted only when the virus is introduced into bite wounds, open cuts in skin, or onto mucous membranes from saliva or other potentially infectious material such as neural tissue. Questions about possible exposures should be directed to state or local health authorities.

2. **Human Rabies Prevention**. Rabies in humans can be prevented either by eliminating exposures to rabid animals or by providing exposed persons with prompt local treatment of wounds combined with the administration of human rabies immune globulin and vaccine. The rationale for recommending preexposure and post exposure rabies prophylaxis and details of their administration can be found in the current recommendations of the Advisory Committee on Immunization Practices (ACIP).[2] These recommendations, along with information concerning the current local and regional epidemiology of animal rabies and the availability of human rabies biologics, are available from state health departments.

3. **Domestic Animals.** Local governments should initiate and maintain effective programs to ensure vaccination of all dogs, cats, and ferrets and to remove strays and unwanted animals. Such procedures in the United States have reduced laboratory-confirmed cases of rabies in dogs from 6,949 in 1947 to 117 in 2003. Krebs JW, Mandel EJ, Swerdlow DL, Rupprecht CE. Rabies surveillance in the United States during 2003. J Am Vet Med Assoc 2004; 225:1837--49.[3] Because more rabies cases are reported annually involving cats (321 in 2003) than dogs, vaccination of cats should be required. Animal shelters and animal control authorities

should establish policies to ensure that adopted animals are vaccinated against rabies. The recommended vaccination procedures and the licensed animal vaccines are specified in Parts II and III of the compendium.

4. **Rabies in Vaccinated Animals**. Rabies is rare in vaccinated animals.[4] If such an event is suspected, it should be reported to state public health officials, the vaccine manufacturer, and USDA, Animal and Plant Health Inspection Service, Center for Veterinary Biologics (Internet: telephone: 800-752-6255; or e-mail: CVB@usda.gov). The laboratory diagnosis should be confirmed and the virus characterized by a rabies reference laboratory. A thorough epidemiologic investigation should be conducted.

5. **Rabies in Wildlife.** The control of rabies among wildlife reservoirs is difficult.[5] Vaccination of free-ranging wildlife or selective population reduction might be useful in some situations, but the success of such procedures depends on the circumstances surrounding each rabies outbreak (see Part I. C. Control Methods in Wildlife). Because of the risk of rabies in wild animals (especially raccoons, skunks, coyotes, foxes, and bats), AVMA, NASPHV, and CSTE strongly recommend the enactment and enforcement of state laws prohibiting their importation, distribution, and relocation.

6. **Rabies Surveillance**. Laboratory-based rabies surveillance is an essential component of rabies control and prevention programs. Accurate and timely information is necessary to guide human post exposure prophylaxis decisions, determine the management of potentially exposed animals, aid in emerging pathogen discovery, describe the epidemiology of the disease, and assess the need for and effectiveness of oral vaccination programs for wildlife.

7. **Rabies Diagnosis**. Rabies testing should be performed by a qualified laboratory that has been designated by the local or state health department[6] in accordance with the established national standardized protocol for rabies testing (http://www.cdc.gov/ncidod/dvrd/rabies/Professional/publications/DFA_diagnosis/DFA_protocol-b.htm). Euthanasia[7] should be accomplished in such a way as to maintain the integrity of the brain so that the laboratory can recognize the anatomical parts. Except in the case of very small animals, such as bats, only the head or brain (including brain stem) should be submitted to the laboratory. Any animal or animal specimen being submitted for testing should be kept under refrigeration (not frozen or chemically fixed) during storage and shipping.

8. **Rabies Serology**. Some "rabies-free" jurisdictions may require evidence of vaccination and rabies antibodies for importation purposes. Rabies antibody titers are indicative of an animal's response to vaccine or infection. Titers do not directly correlate with protection because other

immunologic factors also play a role in preventing rabies, and our abilities to measure and interpret those other factors are not well developed. Therefore, evidence of circulating rabies virus antibodies should not be used as a substitute for current vaccination in managing rabies exposures or determining the need for booster vaccinations in animals.[8]

Prevention and Control Methods in Domestic and Confined Animals.

1. **Preexposure Vaccination and Management**. Parenteral animal rabies vaccines should be administered only by or under the direct supervision of a veterinarian. Rabies vaccinations may also be administered under the supervision of a veterinarian to animals held in animal control shelters prior to release. Any veterinarian signing a rabies certificate must ensure that the person administering vaccine is identified on the certificate and is appropriately trained in vaccine storage, handling, and administration and in the management of adverse events. This practice ensures that a qualified and responsible person can be held accountable to ensure that the animal has been properly vaccinated.

   Within 28 days after primary vaccination, a peak rabies antibody titer is reached and the animal can be considered immunized. An animal is currently vaccinated and is considered immunized if the primary vaccination was administered at least 28 days previously and vaccinations have been administered in accordance with this compendium.

   Regardless of the age of the animal at initial vaccination, a booster vaccination should be administered 1 year later (see Parts II and III for vaccines and procedures). No laboratory or epidemiologic data exist to support the annual or biennial administration of 3-year vaccines following the initial series. Because a rapid anamnestic response is expected, an animal is considered currently vaccinated immediately after a booster vaccination.

   a. **Dogs, Cats, and Ferrets.** All dogs, cats, and ferrets should be vaccinated against rabies and revaccinated in accordance with Part III of this compendium. If a previously vaccinated animal is overdue for a booster, it should be revaccinated. Immediately following the booster, the animal is considered currently vaccinated and should be placed on an annual or triennial schedule depending on the type of vaccine used.

   b. **Livestock**. Consideration should be given to vaccinating livestock that are particularly valuable or that might have frequent contact with humans (e.g., in petting zoos, fairs, and other public exhibitions).[9 10] Horses traveling interstate should be currently vaccinated against rabies.

c. **Confined Animals.**

i. **Wild**. No parenteral rabies vaccines are licensed for use in wild animals or hybrids (the offspring of wild animals crossbred to domestic animals). Wild animals or hybrids should not be kept as pets.[11 12 13 14]

ii. **Maintained in Exhibits and in Zoological Parks.** Captive mammals that are not completely excluded from all contact with rabies vectors can become infected. Moreover, wild animals might be incubating rabies when initially captured; therefore, wild-caught animals susceptible to rabies should be quarantined for a minimum of 6 months before being exhibited. Employees who work with animals at such facilities should receive preexposure rabies vaccination. The use of pre- or post exposure rabies vaccinations for employees who work with animals at such facilities might reduce the need for euthanasia of captive animals. Carnivores and bats should be housed in a manner that precludes direct contact with the public.

2. **Stray Animals**. Stray dogs, cats, and ferrets should be removed from the community. Local health departments and animal control officials can enforce the removal of strays more effectively if owned animals have identification and are confined or kept on leash. Strays should be impounded for at least 3 business days to determine if human exposure has occurred and to give owners sufficient time to reclaim animals.

3. **Importation and Interstate Movement of Animals**.

a. International. CDC regulates the importation of dogs and cats into the United States. Importers of dogs must comply with rabies vaccination requirements (42 CFR, Part 71.51[c] [http://www.cdc.gov/ncidod/dq/animal.htm]) and complete CDC form 75.37 (http://www.cdc.gov/ncidod/dq/pdf/cdc7537-05-24-04.pdf). The appropriate health official of the state of destination should be notified within 72 hours of the arrival into his or her jurisdiction of any imported dog required to be placed in confinement under the CDC regulation. Failure to comply with these requirements should be promptly reported to the Division of Global Migration and Quarantine, CDC (telephone: 404-498-1670). Federal regulations alone are insufficient to prevent the introduction of rabid animals into the country.[15 16] All imported dogs and cats are subject to state and local laws governing rabies and should be currently vaccinated against rabies in accordance with this compendium. Failure to comply with state or local requirements should be referred to the appropriate state or local official.

b. Interstate. Before interstate (including commonwealths and territories) movement, dogs, cats, ferrets, and horses should be currently vaccinated against rabies in accordance with the compendium's recommendations (see Part I. B.1. Preexposure Vaccination and Management). Animals in transit should be accompanied by a currently valid NASPHV Form 51, Rabies Vaccination Certificate (http://www.nasphv.org/83416/106001.html). When an interstate health certificate or certificate of veterinary inspection is required, it should contain the same rabies vaccination information as Form 51.

c. Areas with Dog-to-Dog Rabies Transmission. The movement of dogs from areas with dog-to-dog rabies transmission for the purpose of adoption or sale should be eliminated. Rabid dogs have been introduced into the United States from areas with dog-to-dog rabies transmission [15, 16]. This practice poses the risk of introducing canine-transmitted rabies to areas where it does not currently exist.

4. **Adjunct Procedures**. Methods or procedures which enhance rabies control include the following:

   a. **Identification**. Dogs, cats, and ferrets should be identified (e.g., metal or plastic tags or microchips) to allow for verification of rabies vaccination status.

   b. **Licensure**. Registration or licensure of all dogs, cats, and ferrets may be used to aid in rabies control. A fee is frequently charged for such licensure, and revenues collected are used to maintain rabies- or animal-control programs. Evidence of current vaccination is an essential prerequisite to licensure.

   c. **Canvassing**. House-to-house canvassing by animal control officials facilitates enforcement of vaccination and licensure requirements.

   d. **Citations**. Citations are legal summonses issued to owners for violations, including the failure to vaccinate or license their animals. The authority for officers to issue citations should be an integral part of each animal-control program.

5. **Animal Control**. All communities should incorporate stray animal control, leash laws, and training of personnel in their programs.

6. **Post exposure Management.** Any animal potentially exposed to rabies virus (see Part I. A.1. Rabies Exposure) by a wild, carnivorous mammal or a bat that is not available for testing should be regarded as having been exposed to rabies.

   a. **Dogs, Cats, and Ferrets**. Unvaccinated dogs, cats, and ferrets exposed to a rabid animal should be euthanized immediately. If the

owner is unwilling to have this done, the animal should be placed in strict isolation for 6 months. Rabies vaccine should be administered upon entry into isolation or 1 month prior to release to comply with preexposure vaccination recommendations (see Part I.B.1.a.). Protocols for the post exposure vaccination of previously unvaccinated domestic animals have not been validated, and evidence exists that the use of vaccine alone will not prevent the disease.[17] Animals with expired vaccinations need to be evaluated on a case-by-case basis. Dogs, cats, and ferrets that are currently vaccinated should be revaccinated immediately, kept under the owner's control, and observed for 45 days. Any illness in an isolated or confined animal should be reported immediately to the local health department.

b. **Livestock**. All species of livestock are susceptible to rabies; cattle and horses are among the most frequently infected. Livestock exposed to a rabid animal and currently vaccinated with a vaccine approved by USDA for that species should be revaccinated immediately and observed for 45 days. Unvaccinated livestock should be slaughtered immediately. If the owner is unwilling to have this done, the animal should be kept under close observation for 6 months. Any illness in an animal under observation should be reported immediately to the local health department.

   i. The following are recommendations for owners of livestock exposed to rabid animals:

      i. If the animal is slaughtered within 7 days of being bitten, its tissues may be eaten without risk of infection, provided that liberal portions of the exposed area are discarded. Federal guidelines for meat inspectors require that any animal known to have been exposed to rabies within 8 months be rejected for slaughter.

      ii. Neither tissues nor milk from a rabid animal should be used for human or animal consumption. [18]Pasteurization temperatures will inactivate rabies virus; therefore, drinking pasteurized milk or eating cooked meat does not constitute a rabies exposure.

      iii. Having more than one rabid animal in a herd or having herbivore-to-herbivore transmission is uncommon; therefore, restricting the rest of the herd if a single animal has been exposed to or infected by rabies might not be necessary.

7. **Other Animals**. Other mammals bitten by a rabid animal should be euthanized immediately. Animals maintained in USDA-licensed research facilities or accredited zoological parks should be evaluated on a case-by-case basis.

8. **Management of Animals That Bite Humans**.

   a. **Dogs, Cats, and Ferrets**. Rabies virus may be excreted in the saliva of infected dogs, cats, and ferrets during illness and/or for only a few days prior to illness or death.[19 20 21] A healthy dog, cat, or ferret that bites a person should be confined and observed daily for 10 days[22]; administration of rabies vaccine to the animal is not recommended during the observation period to avoid confusing signs of rabies with possible side effects of vaccine administration. Such animals should be evaluated by a veterinarian at the first sign of illness during confinement. Any illness in the animal should be reported immediately to the local health department. If signs suggestive of rabies develop, the animal should be euthanized and the head shipped for testing as described in Part I.A.7. Any stray or unwanted dog, cat, or ferret that bites a person may be euthanized immediately and the head submitted for rabies examination.

   b. **Other Biting Animals**. Other biting animals which might have exposed a person to rabies should be reported immediately to the local health department. Management of animals other than dogs, cats, and ferrets depends on the species, the circumstances of the bite, the epidemiology of rabies in the area, the biting animal's history, current health status, and potential for exposure to rabies. Prior vaccination of these animals may not preclude the necessity for euthanasia and testing.

Prevention and Control Methods Related to Wildlife.

The public should be warned not to handle or feed wild mammals. Wild mammals and hybrids that bite or otherwise expose persons, pets, or livestock should be considered for euthanasia and rabies examination. A person bitten by any wild mammal should immediately report the incident to a physician who can evaluate the need for antirabies treatment (see current rabies prophylaxis recommendations of the ACIP [2]). State-regulated wildlife rehabilitators may play a role in a comprehensive rabies control program. Minimum standards for persons who rehabilitate wild mammals should include rabies vaccination, appropriate training, and continuing education. Translocation of infected wildlife has contributed to the spread of rabies.[23 24]; Therefore, the translocation of known terrestrial rabies reservoir species should be prohibited.

1. **Terrestrial Mammals**. The use of licensed oral vaccines for the mass vaccination of free-ranging wildlife should be considered in selected situations, with the approval of the state agency responsible for animal rabies control [(5).] The distribution of oral rabies vaccine should be based on scientific assessments of the target species and followed by timely and appropriate analysis of surveillance data; such results should be provided to all stakeholders. In addition, parenteral vaccination (trap-vaccinate-release) of wildlife rabies reservoirs may be integrated into coordinated oral rabies vaccination programs to enhance their effectiveness. Continuous and persistent programs for trapping or poisoning wildlife are not effective in reducing wildlife rabies reservoirs on a statewide basis. However, limited population control in high-contact areas (e.g., picnic grounds, camps, suburban areas) may be indicated for the removal of selected high-risk species of wildlife [(5)]. State agriculture, public health, and wildlife agencies should be consulted for planning, coordination, and evaluation of vaccination or population-reduction programs.

2. **Bats**. Indigenous rabid bats have been reported from every state except Hawaii and have caused rabies in at least 40 humans in the United States.[25 26 27 28 29] Bats should be excluded from houses, public buildings, and adjacent structures to prevent direct association with humans.[30 31] Such structures should then be made bat-proof by sealing entrances used by bats. Controlling rabies in bats through programs designed to reduce bat populations is neither feasible nor desirable.

Part II: Recommendations for Parenteral Rabies Vaccination Procedures

1. **Vaccine Administration.** All animal rabies vaccines should be restricted to use by, or under the direct supervision of a veterinarian[32] except as recommended in Part I.B.1. All vaccines must be administered in accordance with the specifications of the product label or package insert.

2. **Vaccine Selection**. Part III lists all vaccines licensed by USDA and marketed in the United States at the time of publication. New vaccine approvals or changes in label specifications made subsequent to publication should be considered as part of this list. Any of the listed vaccines can be used for revaccination, even if the product is not the same brand previously administered. Vaccines used in state and local rabies control programs should have 3-year duration of immunity. This constitutes the most effective method of increasing the proportion of immunized dogs and cats in any population.[33] No laboratory or epidemiologic data exist to support the annual or biennial administration of 3-year vaccines following the initial series.

3. **Adverse Events.** Currently, no epidemiologic association exists between a particular licensed vaccine product and adverse events, including vaccine failure.[34 35] Adverse events should be reported to the vaccine manufacturer

and to USDA, Animal and Plant Health Inspection Service, Center for Veterinary Biologics (Internet: http://www.aphis.usda.gov/vs/cvb/ic/adverseeventreport.htm; telephone: 800-752-6255; or e-mail: CVB@usda.gov).

4. **Wildlife and Hybrid Animal Vaccination.** The safety and efficacy of parenteral rabies vaccination of wildlife and hybrids have not been established, and no rabies vaccines are licensed for these animals. Parenteral vaccination (trap-vaccinate-release) of wildlife rabies reservoirs may be integrated into coordinated oral rabies vaccination programs as described in Part I. C.1. to enhance their effectiveness. Zoos or research institutions may establish vaccination programs, which attempt to protect valuable animals, but these should not replace appropriate public health activities that protect humans.

5. **Accidental Human Exposure to Vaccine**. Human exposure to parenteral animal rabies vaccines listed in Part III does not constitute a risk for rabies infection. However, human exposure to vaccinia-vectored oral rabies vaccines should be reported to state health officials.[36]

6. **Rabies Certificate**. All agencies and veterinarians should use NASPHV Form 51, Rabies Vaccination Certificate, which can be obtained from vaccine manufacturers or from NASPHV (http://www.nasphv.org). It is also available from CDC (http://www.cdc.gov/ncidod/dvrd/rabies/professional/professi.htm). The form must be completed in full and signed by the administering or supervising veterinarian. Computer-generated forms containing the same information are also acceptable.

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[1] Rabies. In: Chin J, ed. Control of communicable diseases manual. 17th ed. Washington, DC: American Public Health Association; 2000:411--9.
[2] CDC. Human rabies prevention---United States, 1999. Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1999;48:(No. RR-1).
[3] Krebs JW, Mandel EJ, Swerdlow DL, Rupprecht CE. Rabies surveillance in the United States during 2003. J Am Vet Med Assoc 2004;225:1837--49.
[4] McQuiston J, Yager PA, Smith JS, Rupprecht CE. Epidemiologic characteristics of rabies virus variants in dogs and cats in the United States, 1999. J Am Vet Med Assoc 2001;218:1939--42.
[5] Hanlon CA, Childs JE, Nettles VF, et al. Recommendations of the Working Group on Rabies. Article III: Rabies in wildlife. J Am Vet Med Assoc 1999;215:1612--8.
[6] Hanlon CA, Smith JS, Anderson GR, et al. Recommendations of the Working Group on Rabies. Article II: Laboratory diagnosis of rabies. J Am Vet Med Assoc 1999;215:1444--6.
[7] American Veterinary Medical Association. 2000 Report of the AVMA Panel on Euthanasia. J Am Vet Med Assoc 2001;218:669--96.
[8] Tizard I, Ni Y. Use of serologic testing to assess immune status of companion animals. J Am Vet Med Assoc 1998;213:54--60.
[9] National Association of State Public Health Veterinarians. Compendium of measures to prevent disease and injury associated with animals in public settings. Available at http://www.nasphv.org/83416/84501.html.

[10] Bender J, Schulman S. Reports of zoonotic disease outbreaks associated with animal exhibits and availability of recommendations for preventing zoonotic disease transmission from animals to people in such settings. J Am Vet Med Assoc 2004;224:1105--9.
[11] Wild animals as pets. In: Directory and resource manual. Schaumburg, IL: American Veterinary Medical Association; 2002:126.
[12] Position on canine hybrids. In: Directory and resource manual. Schaumburg, IL: American Veterinary Medical Association; 2002:88--9.
[13] Siino BS. Crossing the line. American Society for the Prevention of Cruelty to Animals, Animal Watch 2000;Winter:22--9.
[14] Jay MT, Reilly KF, DeBess EE, Haynes EH, Bader DR, Barrett LR. Rabies in a vaccinated wolf-dog hybrid. J Am Vet Med Assoc 1994;205:1729--32.
[15] CDC. An imported case of rabies in an immunized dog. MMWR 1987;36:94--6,101.
[16] CDC. Imported dog and cat rabies---New Hampshire, California. MMWR 1988;37:559--60
[17] Hanlon CA, Niezgoda MN, Rupprecht CE. Postexposure prophylaxis for prevention of rabies in dogs. Am J Vet Res 2002;63:1096--100.
[18] CDC. Mass treatment of humans who drank unpasteurized milk from rabid cows---Massachusetts, 1996--1998. MMWR 1999;48:228--9.
[19] Vaughn JB, Gerhardt P, Paterson J. Excretion of street rabies virus in saliva of cats. J Am Med Assoc 1963;184:705.
[20] Vaughn JB, Gerhardt P, Newell KW. Excretion of street rabies virus in saliva of dogs. J Am Med Assoc 1965;193:363--8.
[21] Niezgoda M, Briggs DJ, Shaddock J, Rupprecht CE. Viral excretion in domestic ferrets (Mustela putorius furo) inoculated with a raccoon rabies isolate. Am J Vet Res 1998;59:1629--32.
[22] Tepsumethanon V, Lumlertdacha B, Mitmoonpitak C, Sitprija V, Meslin FX, Wilde H. Survival of naturally infected rabid dogs and cats. Clin Infect Dis 2004;39:278--80.
[23] Jenkins SR, Perry BD, Winkler WG. Ecology and epidemiology of raccoon rabies. Rev Infect Dis 1988;10:Suppl 4:S620--5.
[24] CDC. Translocation of coyote rabies---Florida, 1994. MMWR 1995;44:580--7.
[25] Messenger SL, Smith JS, Rupprecht CE. Emerging epidemiology of bat-associated cryptic cases of rabies in humans in the United States. Clin Infect Dis 2002;35:738--47.
[26] CDC. Human rabies---California, 2002. MMWR 2002;51:686--8.
[27] CDC. Human rabies---Tennessee, 2002. MMWR 2002;51:828--9.
[28] CDC. Human rabies---Iowa, 2002. MMWR 2003;52:47--8.
[29] CDC. Human death associated with bat rabies---California, 2003. MMWR 2003;53:33--5
[30] Frantz SC, Trimarchi CV. Bats in human dwellings: health concerns and management. In: Decker DF, ed. Proceedings of the first eastern wildlife damage control conference. Ithaca, NY: Cornell University Press; 1983:299--308.
[31] Greenhall AM. House bat management. US Fish and Wildlife Service, Resource Publication 143; 1982.
[32] Model rabies control ordinance. In: Directory and resource manual. Schaumburg, IL: American Veterinary Medical Association; 2002:114--6.
[33] Bunn TO. Canine and feline vaccines, past and present. In Baer GM, ed. The natural history of rabies. 2nd ed. Boca Raton, FL: CRC Press; 1991:415--25.
[34] Gobar GM, Kass PH. World wide web-based survey of vaccination practices, postvaccinal reactions, and vaccine site-associated sarcomas in cats. J Am Vet Med Assoc 2002;220:1477--82.
[35] Macy DW, Hendrick MJ. The potential role of inflammation in the development of postvaccinal sarcomas in cats. Vet Clin North Am Small Anim Pract 1996;26:103--9.
[36] Rupprecht CE, Blass L, Smith K et al. Human infection due to recombinant vaccinia-rabies glycoprotein virus. N Engl J Med 2001;345:582--6.

PART III: Rabies vaccines licensed and marketed in the United States, 2005

Product name	Produced by	Marketed by	For use in	Dosage (mL)	Age at primary vaccination*	Booster recommended	Route of inoculation
A) MONOVALENT (Inactivated)							
DEFENSOR 1	Pfizer, Inc. License No. 189	Pfizer, Inc.	Dogs	1	3 mos†	Annually	IM§ or SC¶
			Cats	1	3 mos	Annually	SC
DEFENSOR 3	Pfizer, Inc. License No. 189	Pfizer, Inc.	Dogs	1	3 mos	1 year later and triennially	IM or SC
			Cats	1	3 mos	1 year later and triennially	SC
			Sheep	2	3 mos	Annually	IM
			Cattle	2	3 mos	Annually	IM
RABDOMUN	Pfizer, Inc. License No. 189	Schering-Plough	Dogs	1	3 mos	1 year later and triennially	IM or SC
			Cats	1	3 mos	1 year later and triennially	SC
			Sheep	2	3 mos	Annually	IM
			Cattle	2	3 mos	Annually	IM
RABDOMUN 1	Pfizer, Inc. License No. 189	Schering-Plough	Dogs	1	3 mos	Annually	IM or SC
			Cats	1	3 mos	Annually	SC
RABVAC 1	Fort Dodge Animal Health License No. 112	Fort Dodge Animal Health	Dogs	1	3 mos	Annually	IM or SC
			Cats	1	3 mos	Annually	SC
RABVAC 3	Fort Dodge Animal Health License No. 112	Fort Dodge Animal Health	Dogs	1	3 mos	1 year later and triennially	IM or SC
			Cats	1	3 mos	1 year later and triennially	IM or SC
			Horses	2	3 mos	Annually	IM
RABVAC 3 TF	Fort Dodge Animal Health License No. 112	Fort Dodge Animal Health	Dogs	1	3 mos	1 year later and triennially	IM or SC
			Cats	1	3 mos	1 year later and triennially	IM or SC
			Horses	2	3 mos	Annually	IM
PRORAB-1	Intervet, Inc. License No. 286	Intervet, Inc.	Dogs	1	3 mos	Annually	IM or SC
			Cats	1	3 mos	Annually	IM or SC
			Sheep	2	3 mos	Annually	IM
PRORAB-3F	Intervet, Inc. License No. 286	Intervet, Inc.	Cats	1	3 mos	1 year later and triennially	IM or SC
IMRAB 3	Merial, Inc. License No. 298	Merial, Inc.	Dogs	1	3 mos	1 year later and triennially	IM or SC
			Cats	1	3 mos	1 year later and triennially	IM or SC
			Sheep	2	3 mos	1 year later and triennially	IM or SC
			Cattle	2	3 mos	Annually	IM or SC
			Horses	2	3 mos	Annually	IM or SC
			Ferrets	1	3 mos	Annually	SC
IMRAB 3 TF	Merial, Inc. License No. 298	Merial, Inc.	Dogs	1	3 mos	1 year later and triennially	IM or SC
			Cats	1	3 mos	1 year later and triennially	IM or SC
			Ferrets	1	3 mos	Annually	SC
IMRAB Large Animal	Merial, Inc. License No. 298	Merial, Inc.	Cattle	2	3 mos	Annually	IM or SC
			Horses	2	3 mos	Annually	IM or SC
			Sheep	2	3 mos	1 year later and triennially	IM or SC
IMRAB 1	Merial, Inc. License No. 298	Merial, Inc.	Dogs	1	3 mos	Annually	SC
			Cats	1	3 mos	Annually	SC
B) MONOVALENT (Rabies glycoprotein, live canary pox vector)							
PUREVAX Feline Rabies	Merial, Inc. License No. 298	Merial, Inc.	Cats	1	8 wks	Annually	SC
C) COMBINATION (Inactivated rabies)							
Equine POTOMAVAC + IMRAB	Merial, Inc. License No. 298	Merial, Inc.	Horses	1	3 mos	Annually	IM
MYSTIQUE II POTOMAVAC +	Intervet, Inc. License No. 286	Intervet, Inc.	Horses	1	3 mos	Annually	IM
D) COMBINATION (Rabies glycoprotein, live canary pox vector)							
PUREVAX Feline 3/Rabies	Merial, Inc. License No. 298	Merial, Inc.	Cats	1	8 wks	Annually	SC
PUREVAX Feline 4/Rabies	Merial, Inc. License No. 298	Merial, Inc.	Cats	1	8 wks	Annually	SC
E) ORAL (Rabies glycoprotein, live vaccinia vector) - RESTRICTED TO USE IN STATE AND FEDERAL RABIES-CONTROL PROGRAMS							
RABORAL V-RG	Merial, Inc. License No. 298	Merial, Inc.	Raccoons Coyotes	N/A	N/A	As determined by local authorities	Oral

* Minimum age (or older) and revaccinated 1 year later.
† 1 month = 28 days.
§ Intramuscularly.
¶ Subcutaneously.

CERTIFICATION OF REGULATION

This is to certify that the above **Rules and Regulations Governing Reportable Diseases and Conditions** was adopted by the Mississippi State Board of Health on August 8, 2007 to become effective September 8, 2007.

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