

I. Regulated Medical Waste

1. Epidemiology

No epidemiologic evidence suggests that most of the solid- or liquid wastes from hospitals, other healthcare facilities, or clinical/research laboratories is any more infective than residential waste. Several studies have compared the microbial load and the diversity of microorganisms in residential wastes and wastes obtained from a variety of health-care settings.^{1399–1402} Although hospital wastes had a greater number of different bacterial species compared with residential waste, wastes from residences were more heavily contaminated.^{1397, 1398} Moreover, no epidemiologic evidence suggests that traditional waste-disposal practices of health-care facilities (whereby clinical and microbiological wastes were decontaminated on site before leaving the facility) have caused disease in either the health-care setting or the general community.^{1400, 1401} This statement excludes, however, sharps injuries sustained during or immediately after the delivery of patient care before the sharp is “discarded.” Therefore, identifying wastes for which handling and disposal precautions are indicated is largely a matter of judgment about the relative risk of disease transmission, because no reasonable standards on which to base these determinations have been developed. Aesthetic and emotional considerations (originating during the early years of the HIV epidemic) have, however, figured into the development of treatment and disposal policies, particularly for pathology and anatomy wastes and sharps.^{1402–1405} Public concerns have resulted in the promulgation of federal, state, and local rules and regulations regarding medical waste management and disposal.^{1406–1414}

2. Categories of Medical Waste

Precisely defining medical waste on the basis of quantity and type of etiologic agents present is virtually impossible. The most practical approach to medical waste management is to identify wastes that represent a sufficient potential risk of causing infection during handling and disposal and for which some precautions likely are prudent.² Health-care facility medical wastes targeted for handling and disposal precautions include microbiology laboratory waste (e.g., microbiologic cultures and stocks of microorganisms), pathology and anatomy waste, blood specimens from clinics and laboratories, blood products, and other body-fluid specimens.² Moreover, the risk of either injury or infection from certain sharp items (e.g., needles and scalpel blades) contaminated with blood also must be considered. Although any item that has had contact with blood, exudates, or secretions may be potentially infective, treating all such waste as infective is neither practical nor necessary. Federal, state, and local guidelines and regulations specify the categories of medical waste that are subject to regulation and outline the requirements associated with treatment and disposal. The categorization of these wastes has generated the term “regulated medical waste.” This term emphasizes the role of regulation in defining the actual material and as an alternative to “infectious waste,” given the lack of evidence of this type of waste’s infectivity. State regulations also address the degree or amount of contamination (e.g., blood-soaked gauze) that defines the discarded item as a regulated medical waste. The EPA’s *Manual for Infectious Waste Management* identifies and categorizes other specific types of waste generated in health-care facilities with research laboratories that also require handling precautions.¹⁴⁰⁶

3. Management of Regulated Medical Waste in Health-Care Facilities

Medical wastes require careful disposal and containment before collection and consolidation for treatment. OSHA has dictated initial measures for discarding regulated medical-waste items. These measures are designed to protect the workers who generate medical wastes and who manage the wastes from point of generation to disposal.⁹⁶⁷ A single, leak-resistant biohazard bag

is usually adequate for containment of regulated medical wastes, provided the bag is sturdy and the waste can be discarded without contaminating the bag's exterior. The contamination or puncturing of the bag requires placement into a second biohazard bag. All bags should be securely closed for disposal. Puncture-resistant containers located at the point of use (e.g., sharps containers) are used as containment for discarded slides or tubes with small amounts of blood, scalpel blades, needles and syringes, and unused sterile sharps.⁹⁶⁷ To prevent needlestick injuries, needles and other contaminated sharps should not be recapped, purposefully bent, or broken by hand. CDC has published general guidelines for handling sharps.^{6, 1415} Health-care facilities may need additional precautions to prevent the production of aerosols during the handling of blood-contaminated items for certain rare diseases or conditions (e.g., Lassa fever and Ebola virus infection).²⁰³

Transporting and storing regulated medical wastes within the health-care facility prior to terminal treatment is often necessary. Both federal and state regulations address the safe transport and storage of on- and off-site regulated medical wastes.^{1406–1408} Health-care facilities are instructed to dispose medical wastes regularly to avoid accumulation. Medical wastes requiring storage should be kept in labeled, leak-proof, puncture-resistant containers under conditions that minimize or prevent foul odors. The storage area should be well ventilated and be inaccessible to pests. Any facility that generates regulated medical wastes should have a regulated medical waste management plan to ensure health and environmental safety as per federal, state, and local regulations.

4. Treatment of Regulated Medical Waste

Regulated medical wastes are treated or decontaminated to reduce the microbial load in or on the waste and to render the by-products safe for further handling and disposal. From a microbiologic standpoint, waste need not be rendered “sterile” because the treated waste will not be deposited in a sterile site. In addition, waste need not be subjected to the same reprocessing standards as are surgical instruments. Historically, treatment methods involved steam-sterilization (i.e., autoclaving), incineration, or interment (for anatomy wastes). Alternative treatment methods developed in recent years include chemical disinfection, grinding/shredding/disinfection methods, energy-based technologies (e.g., microwave or radiowave treatments), and disinfection/encapsulation methods.¹⁴⁰⁹ State medical waste regulations specify appropriate treatment methods for each category of regulated medical waste.

Of all the categories comprising regulated medical waste, microbiologic wastes (e.g., untreated cultures, stocks, and amplified microbial populations) pose the greatest potential for infectious disease transmission, and sharps pose the greatest risk for injuries. Untreated stocks and cultures of microorganisms are subsets of the clinical laboratory or microbiologic waste stream. If the microorganism must be grown and amplified in culture to high concentration to permit work with the specimen, this item should be considered for on-site decontamination, preferably within the laboratory unit. Historically, this was accomplished effectively by either autoclaving (steam sterilization) or incineration. If steam sterilization in the health-care facility is used for waste treatment, exposure of the waste for up to 90 minutes at 250°F (121°C) in an autoclave (depending on the size of the load and type container) may be necessary to ensure an adequate decontamination cycle.^{1416–1418} After steam sterilization, the residue can be safely handled and discarded with all other nonhazardous solid waste in accordance with state solid-waste disposal regulations. On-site incineration is another treatment option for microbiologic, pathologic, and anatomic waste, provided the incinerator is engineered to burn these wastes completely and stay within EPA emissions standards.¹⁴¹⁰ Improper incineration of waste with high moisture and low energy content (e.g., pathology waste) can lead to emission problems. State medical-waste regulatory programs identify acceptable methods for inactivating amplified stocks and cultures of

microorganisms, some of which may employ technology rather than steam sterilization or incineration.

Concerns have been raised about the ability of modern health-care facilities to inactivate microbiologic wastes on-site, given that many of these institutions have decommissioned their laboratory autoclaves. Current laboratory guidelines for working with infectious microorganisms at biosafety level (BSL) 3 recommend that all laboratory waste be decontaminated before disposal by an approved method, preferably within the laboratory.¹⁰¹³ These same guidelines recommend that all materials removed from a BSL 4 laboratory (unless they are biological materials that are to remain viable) are to be decontaminated before they leave the laboratory.¹⁰¹³ Recent federal regulations for laboratories that handle certain biological agents known as “select agents” (i.e., those that have the potential to pose a severe threat to public health and safety) require these agents (and those obtained from a clinical specimen intended for diagnostic, reference, or verification purposes) to be destroyed on-site before disposal.¹⁴¹² Although recommendations for laboratory waste disposal from BSL 1 or 2 laboratories (e.g., most health-care clinical and diagnostic laboratories) allow for these materials to be decontaminated off-site before disposal, on-site decontamination by a known effective method is preferred to reduce the potential of exposure during the handling of infectious material.

A recent outbreak of TB among workers in a regional medical-waste treatment facility in the United States demonstrated the hazards associated with aerosolized microbiologic wastes.^{1419, 1420} The facility received diagnostic cultures of *Mycobacterium tuberculosis* from several different health-care facilities before these cultures were chemically disinfected; this facility treated this waste with a grinding/shredding process that generated aerosols from the material.^{1419, 1420} Several operational deficiencies facilitated the release of aerosols and exposed workers to airborne *M. tuberculosis*. Among the suggested control measures was that health-care facilities perform on-site decontamination of laboratory waste containing live cultures of microorganisms before release of the waste to a waste management company.^{1419, 1420} This measure is supported by recommendations found in the CDC/NIH guideline for laboratory workers.¹⁰¹³ This outbreak demonstrates the need to avoid the use of any medical-waste treatment method or technology that can aerosolize pathogens from live cultures and stocks (especially those of airborne microorganisms) unless aerosols can be effectively contained and workers can be equipped with proper PPE.^{1419–1421} Safe laboratory practices, including those addressing waste management, have been published.^{1013, 1422}

In an era when local, state, and federal health-care facilities and laboratories are developing bioterrorism response strategies and capabilities, the need to reinstate in-laboratory capacity to destroy cultures and stocks of microorganisms becomes a relevant issue.¹⁴²³ Recent federal regulations require health-care facility laboratories to maintain the capability of destroying discarded cultures and stocks on-site if these laboratories isolate from a clinical specimen any microorganism or toxin identified as a “select agent” from a clinical specimen (Table 27).^{1412, 1413} As an alternative, isolated cultures of select agents can be transferred to a facility registered to accept these agents in accordance with federal regulations.¹⁴¹² State medical waste regulations can, however, complicate or completely prevent this transfer if these cultures are determined to be medical waste, because most states regulate the inter-facility transfer of untreated medical wastes.

Table 27. Microorganisms and biologicals identified as select agents*+

<i>HHS Non-overlap select agents and toxins (42 CFR Part 73 §73.4)</i>	
Viruses	Crimean-Congo hemorrhagic fever virus; Ebola viruses; Cercopithecine herpesvirus 1 (herpes B virus); Lassa fever virus; Marburg virus; monkeypox virus; South American hemorrhagic fever viruses (Junin, Machupo, Sabia, Flexal, Guanarito); tick-borne encephalitis complex (flavi) viruses (Central European tick-borne encephalitis, Far Eastern tick-borne encephalitis [Russian spring and summer encephalitis, Kyasnaur Forest disease, Omsk hemorrhagic fever]); variola major virus (smallpox virus); and variola minor virus (alastrim)
Exclusions¶	Vaccine strain of Junin virus (Candid. #1)
Bacteria	<i>Rickettsia prowazekii</i> , <i>R. rickettsii</i> , <i>Yersinia pestis</i>
Fungi	<i>Coccidioides posadasii</i>
Toxins	Abrin; conotoxins; diacetoxyscirpenol; ricin; saxitoxin; Shiga-like ribosome inactivating proteins; tetrodotoxin
Exclusions¶	The following toxins (in purified form or in combinations of pure and impure forms) if the aggregate amount under the control of a principal investigator does not, at any time, exceed the amount specified: 100 mg of abrin; 100 mg of conotoxins; 1,000 mg of diacetoxyscirpenol; 100 mg of ricin; 100 mg of saxitoxin; 100 mg of Shiga-like ribosome inactivating proteins; or 100 mg of tetrodotoxin
Genetic elements, recombinant nucleic acids, and recombinant organisms¶	<ul style="list-style-type: none"> Select agent viral nucleic acids (synthetic or naturally-derived, contiguous or fragmented, in host chromosomes or in expression vectors) that can encode infectious and/or replication competent forms of any of the select agent viruses; Nucleic acids (synthetic or naturally-derived) that encode for the functional form(s) of any of the toxins listed in this table if the nucleic acids: a) are in a vector or host chromosome; b) can be expressed <i>in vivo</i> or <i>in vitro</i>; or c) are in a vector or host chromosome and can be expressed <i>in vivo</i> or <i>in vitro</i>; Viruses, bacteria, fungi, and toxins listed in this table that have been genetically modified.
<i>High consequence livestock pathogens and toxins/select agents (overlap agents) (42 CFR Part 73 §73.5 and USDA regulation 9 CFR Part 121)</i>	
Viruses	Eastern equine encephalitis virus; Nipah and Hendra complex viruses; Rift Valley fever virus; Venezuelan equine encephalitis virus
Exclusions¶	MP-12 vaccine strain of Rift Valley fever virus; TC-83 vaccine strain of Venezuelan equine encephalitis virus
Bacteria	<i>Bacillus anthracis</i> ; <i>Brucella abortus</i> , <i>B. melitensis</i> , <i>B. suis</i> ; <i>Burkholderia mallei</i> (formerly <i>Pseudomonas mallei</i>), <i>B. pseudomallei</i> (formerly <i>P. pseudomallei</i>); botulinum neurotoxin-producing species of <i>Clostridium</i> ; <i>Coxiella burnetii</i> ; <i>Francisella tularensis</i>
Fungi	<i>Coccidioides immitis</i>
Toxins	Botulinum neurotoxins; <i>Clostridium perfringens</i> epsilon toxin; Shigatoxin; staphylococcal enterotoxins; T-2 toxin
Exclusions¶	The following toxins (in purified form or in combinations of pure and impure forms) if the aggregate amount under the control of a principal investigator does not, at any time, exceed the amount specified: 0.5 mg of botulinum neurotoxins; 100 mg of <i>Clostridium perfringens</i> epsilon toxin; 100 mg of Shigatoxin; 5 mg of staphylococcal enterotoxins; or 1,000 mg of T-2 toxin

<i>High consequence livestock pathogens and toxins/select agents (overlap agents) (42 CFR Part 73 §73.5 and USDA regulation 9 CFR Part 121) (continued)</i>	
Genetic elements, recombinant nucleic acids, and recombinant organisms¶	<ul style="list-style-type: none"> Select agent viral nuclei acids (synthetic or naturally derived, contiguous or fragmented, in host chromosomes or in expression vectors) that can encode infectious and/or replication competent forms of any of the select agent viruses; Nucleic acids (synthetic or naturally derived) that encode for the functional form(s) of any of the toxins listed in this table if the nucleic acids: a) are in a vector or host chromosome; b) can be expressed <i>in vivo</i> or <i>in vitro</i>; or c) are in a vector or host chromosome and can be expressed <i>in vivo</i> or <i>in vitro</i>; Viruses, bacteria, fungi, and toxins listed in this table that have been genetically modified

* Material in this table is compiled from references 1412, 1413, and 1424. Reference 1424 also contains lists of select agents that include plant pathogens and pathogens affecting livestock.

+ 42 CFR 73 §§73.4 and 73.5 do not include any select agent or toxin that is in its naturally-occurring environment, provided it has not been intentionally introduced, cultivated, collected, or otherwise extracted from its natural source. These sections also do not include non-viable select agent organisms or nonfunctional toxins. This list of select agents is current as of 3 October 2003 and is subject to change pending the final adoption of 42 CFR Part 73.

¶ These table entries are listed in reference 1412 and 1413, but were not included in reference 1424.

5. Discharging Blood, Fluids to Sanitary Sewers or Septic Tanks

The contents of all vessels that contain more than a few milliliters of blood remaining after laboratory procedures, suction fluids, or bulk blood can either be inactivated in accordance with state-approved treatment technologies or carefully poured down a utility sink drain or toilet.¹⁴¹⁴ State regulations may dictate the maximum volume allowable for discharge of blood/body fluids to the sanitary sewer. No evidence indicates that bloodborne diseases have been transmitted from contact with raw or treated sewage. Many bloodborne pathogens, particularly bloodborne viruses, are not stable in the environment for long periods of time;^{1425, 1426} therefore, the discharge of small quantities of blood and other body fluids to the sanitary sewer is considered a safe method of disposing of these waste materials.¹⁴¹⁴ The following factors increase the likelihood that bloodborne pathogens will be inactivated in the disposal process: a) dilution of the discharged materials with water; b) inactivation of pathogens resulting from exposure to cleaning chemicals, disinfectants, and other chemicals in raw sewage; and c) effectiveness of sewage treatment in inactivating any residual bloodborne pathogens that reach the treatment facility. Small amounts of blood and other body fluids should not affect the functioning of a municipal sewer system. However, large quantities of these fluids, with their high protein content, might interfere with the biological oxygen demand (BOD) of the system. Local municipal sewage treatment restrictions may dictate that an alternative method of bulk fluid disposal be selected. State regulations may dictate what quantity constitutes a small amount of blood or body fluids.

Although concerns have been raised about the discharge of blood and other body fluids to a septic tank system, no evidence suggests that septic tanks have transmitted bloodborne infections. A properly functioning septic system is adequate for inactivating bloodborne pathogens. System manufacturers' instructions specify what materials may be discharged to the septic tank without jeopardizing its proper operation.

6. Medical Waste and CJD

Concerns also have been raised about the need for special handling and treatment procedures for wastes generated during the care of patients with CJD or other transmissible spongiform encephalopathies (TSEs). Prions, the agents that cause TSEs, have significant resistance to inactivation by a variety of physical, chemical, or gaseous methods.¹⁴²⁷ No epidemiologic evidence, however, links acquisition of CJD with medical-waste disposal practices. Although handling neurologic tissue for pathologic examination and autopsy materials with care, using barrier precautions, and following specific procedures for the autopsy are prudent measures,¹¹⁹⁷ employing extraordinary measures once the materials are discarded is unnecessary. Regulated medical wastes generated during the care of the CJD patient can be managed using the same strategies as wastes generated during the care of other patients. After decontamination, these wastes may then be disposed in a sanitary landfill or discharged to the sanitary sewer, as appropriate.

Part II. Recommendations for Environmental Infection Control in Health-Care Facilities

A. Rationale for Recommendations

As in previous CDC guidelines, each recommendation is categorized on the basis of existing scientific data, theoretic rationale, applicability, and possible economic benefit. The recommendations are evidence-based wherever possible. However, certain recommendations are derived from empiric infection-control or engineering principles, theoretic rationale, or from experience gained from events that cannot be readily studied (e.g., floods).

The HICPAC system for categorizing recommendations has been modified to include a category for engineering standards and actions required by state or federal regulations. Guidelines and standards published by the American Institute of Architects (AIA), American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE), and the Association for the Advancement in Medical Instrumentation (AAMI) form the basis of certain recommendations. These standards reflect a consensus of expert opinions and extensive consultation with agencies of the U.S. Department of Health and Human Services. Compliance with these standards is usually voluntary. However, state and federal governments often adopt these standards as regulations. For example, the standards from AIA regarding construction and design of new or renovated health-care facilities, have been adopted by reference by >40 states. Certain recommendations have two category ratings (e.g., Categories IA and IC or Categories IB and IC), indicating the recommendation is evidence-based as well as a standard or regulation.

B. Rating Categories

Recommendations are rated according to the following categories:

- **Category IA.** Strongly recommended for implementation and strongly supported by well-designed experimental, clinical, or epidemiologic studies.
- **Category IB.** Strongly recommended for implementation and supported by certain experimental, clinical, or epidemiologic studies and a strong theoretical rationale.
- **Category IC.** Required by state or federal regulation, or representing an established association standard. (Note: Abbreviations for governing agencies and regulatory citations are listed, where appropriate. Recommendations from regulations adopted at state levels are also noted. Recommendations from AIA guidelines cite the appropriate sections of the standard).
- **Category II.** Suggested for implementation and supported by suggestive clinical or epidemiologic studies, or a theoretical rationale.
- **Unresolved Issue.** No recommendation is offered. No consensus or insufficient evidence exists regarding efficacy.

I. Recommendations—Regulated Medical Waste

I. Categories of Regulated Medical Waste

A. Designate the following as major categories of medical waste that require special handling and disposal precautions: 1) microbiology laboratory wastes [e.g., cultures and stocks of microorganisms]; 2) bulk blood, blood products, blood, and bloody body fluid

specimens; 3) pathology and anatomy waste; and 4) sharps [e.g., needles and scalpels].²

Category II

B. Consult federal, state, and local regulations to determine if other waste items are considered regulated medical wastes.^{967, 1407, 1408} **Category IC** (States; Authorities having jurisdiction [AHJ]; OSHA: 29 CFR 1910.1030 §g.2.1; U.S. Department of Transportation [DOT]: 49 CFR 171-180; U.S. Postal Service: CO23.8)

II. Disposal Plan for Regulated Medical Wastes

A. Develop a plan for the collection, handling, predisposal treatment, and terminal disposal of regulated medical wastes.^{967, 1409} **Category IC** (States; AHJ; OSHA: 29 CFR 1910.1030 §g.2.i;)

B. Designate a person or persons to be responsible for establishing, monitoring, reviewing, and administering the plan. **Category II**

III. Handling, Transporting, and Storing Regulated Medical Wastes

A. Inform personnel involved in the handling and disposal of potentially infective waste of the possible health and safety hazards; ensure that they are trained in appropriate handling and disposal methods.⁹⁶⁷ **Category IC** (OSHA: 29 CFR 1910.1030 § g.2.i)

B. Manage the handling and disposal of regulated medical wastes generated in isolation areas by using the same methods as for regulated medical wastes from other patient-care areas.²

Category II

C. Use proper sharps disposal strategies.⁹⁶⁷ **Category IC** (OSHA: 29 CFR 1910.1030 § d.4.iii.A)

1. Use a sharps container capable of maintaining its impermeability after waste treatment to avoid subsequent physical injuries during final disposal.⁹⁶⁷ **Category IC** (OSHA: 29 CFR 1910.1030 § d.4.iii.A)

2. Place disposable syringes with needles, including sterile sharps that are being discarded, scalpel blades, and other sharp items into puncture-resistant containers located as close as practical to the point of use.⁹⁶⁷ **Category IC** (OSHA: 29 CFR 1910.1030 § d.4.iii.A)

3. Do not bend, recap, or break used syringe needles before discarding them into a container.^{6, 967, 1415} **Category IC** (OSHA: 29 CFR 1910.1030 § d.2.vii and § d.2.vii.A)

D. Store regulated medical wastes awaiting treatment in a properly ventilated area that is inaccessible to vertebrate pests; use waste containers that prevent the development of noxious odors. **Category IC** (States; AHJ)

E. If treatment options are not available at the site where the medical waste is generated, transport regulated medical wastes in closed, impervious containers to the on-site treatment location or to another facility for treatment as appropriate. **Category IC** (States; AHJ)

IV. Treatment and Disposal of Regulated Medical Wastes

A. Treat regulated medical wastes by using a method (e.g., steam sterilization, incineration, interment, or an alternative treatment technology) approved by the appropriate authority having jurisdiction (AHJ) (e.g., states, Indian Health Service [IHS], Veterans Affairs [VA]) before disposal in a sanitary landfill. **Category IC** (States, AHJ)

B. Follow precautions for treating microbiological wastes (e.g., amplified cultures and stocks of microorganisms).¹⁰¹³ **Category IC** (DHHS: BMBL)

1. Biosafety level 4 laboratories must inactivate microbiological wastes in the laboratory by using an approved inactivation method (e.g., autoclaving) before transport to and disposal in a sanitary landfill.¹⁰¹³ **Category IC** (DHHS: BMBL)

2. Biosafety level 3 laboratories must inactivate microbiological wastes in the laboratory by using an approved inactivation method (e.g., autoclaving) or

incinerate them at the facility before transport to and disposal in a sanitary landfill.¹⁰¹³ **Category IC**
(DHHS: BMBL)

C. Biosafety levels 1 and 2 laboratories should develop strategies to inactivate amplified microbial cultures and stocks onsite by using an approved inactivation method (e.g., autoclaving) instead of packaging and shipping untreated wastes to an offsite facility for treatment and disposal.^{1013, 1419–1421} **Category II**

D. Laboratories that isolate select agents from clinical specimens must comply with federal regulations for the receipt, transfer, management, and appropriate disposal of these agents.¹⁴¹² **Category IC** (DHHS: 42 CFR 73 § 73.6)

E. Sanitary sewers may be used for the safe disposal of blood, suctioned fluids, ground tissues, excretions, and secretions, provided that local sewage discharge requirements are met and that the state has declared this to be an acceptable method of disposal.¹⁴¹⁴ **Category II**

V. Special Precautions for Wastes Generated During Care of Patients with Rare Diseases

A. When discarding items contaminated with blood and body fluids from VHF patients, contain these regulated medical wastes with minimal agitation during handling.^{6, 203} **Category II**

B. Manage properly contained wastes from areas providing care to VHF patients in accordance with recommendations for other isolation areas (Regulated Medical Waste: III B).^{2, 6, 203} **Category II**

C. Decontaminate bulk blood and body fluids from VHF patients using approved inactivation methods (e.g., autoclaving or chemical treatment) before disposal.^{6, 203} **Category IC, II**
(States; AHJ)

D. When discarding regulated medical waste generated during the routine (i.e., non-surgical) care of CJD patients, contain these wastes and decontaminate them using approved inactivation methods (e.g., autoclaving or incineration) appropriate for the medical waste category (e.g., blood, sharps, pathological waste).^{2, 6, 948, 1199} **Category IC, II** (States; AHJ)

E. Incinerate medical wastes (e.g., central nervous system tissues or contaminated disposable materials) from brain autopsy or biopsy procedures of diagnosed or suspected CJD patients.^{1197, 1201} **Category IB**