

ity of the introduction of infection is low, but if it were introduced, current levels of domestic water contact would ensure transmission.

Trinidad and Tobago. The potential intermediate host present (*B. straminea*) is resistant to infection. Suitable habitats for *B. glabrata* are limited. There is a low risk of introduction of infection, and levels of domestic water contact would be unlikely to support transmission.

Source: Donald A. P. Bundy, Caribbean Schistosomiasis Group; The Current Status of Schistosomiasis in the Caribbean Region: Endemic Areas and Areas at Risk; Pan American Health Organization, Washington, D.C., 1987.

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REVISION OF CDC/WHO CASE DEFINITION FOR ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)

INDEXED

The Definition of AIDS

The clinical and laboratory definition of AIDS has changed as documentation of the wide spectrum of clinical manifestations due to human immunodeficiency virus (HIV) has accumulated and as specific laboratory tests to detect HIV infection and immune deficiency have been developed.

The initial definition of AIDS was developed by the Centers for Disease Control (CDC) of the U.S. Public Health Service in 1982. It was subsequently accepted by WHO in 1985.¹ However, use of this definition requires extensive laboratory (culture and/or histology) capability. Since developing countries often lack adequate laboratory facilities, there was a need for a definition of AIDS that would enable clinicians to diagnose this condition with maximum precision. As a result of a workshop held in Bangui, Central African Republic, in 1985, a WHO clinical definition of AIDS in Africa was developed. AIDS cases reported to WHO are accepted if they meet either the CDC/WHO definition or the WHO clinical definition.

In late 1987, the CDC definition was revised to place greater emphasis on HIV infection status, to include additional indicator diseases, and to accept presumptive diagnosis of some of the indicator diseases. Following review by the WHO Collaborating Centers and the regional offices, WHO has accepted the new definition. The impact that this new CDC/WHO definition will have on the number of cases of AIDS reported to WHO is unclear, but it is not expected to be large. Presented below are major features of the 1987 CDC/WHO definition of AIDS.

¹ See *Wkly Epidemiol Rec*, No. 10, 1986, pp. 69-73.

Diagnosis of AIDS without Laboratory Evidence of HIV Infection

If laboratory tests for HIV were not performed or gave inconclusive results, AIDS may be diagnosed on the basis of certain definitively diagnosed indicator diseases if the patient had no other cause of immunodeficiency.² The following causes of immunodeficiency disqualify diseases as indicators of AIDS in the absence of laboratory evidence for HIV infection.

- 1 High-dose or long-term systemic corticosteroid therapy or other immunosuppressive/cytotoxic therapy three months or less before the onset of the indicator disease.
- 2 Any of the following diseases diagnosed three months or less after diagnosis of the indicator disease: Hodgkin's disease, non-Hodgkin's lymphoma (other than primary brain lymphoma), lymphocytic leukemia, multiple myeloma, any other cancer of lymphoreticular or histiocytic tissue, or angioimmunoblastic lymphadenopathy.
- 3 A genetic (congenital) immunodeficiency syndrome or an acquired immunodeficiency syndrome atypical of HIV infection, such as one involving hypogammaglobulinemia.

If these causes of immune deficiency are ruled out, the indicator diseases specified under the original definition, if reliably diagnosed, are still accepted as a diagnosis of AIDS in patients who do not necessarily have laboratory evidence of an HIV infection. These diseases are the following:

- 1 candidiasis of the esophagus, trachea, bronchi, or lungs;
- 2 extrapulmonary cryptococcosis;
- 3 cryptosporidiosis with diarrhea persisting more than one month;
- 4 cytomegalovirus disease of an organ other than liver, spleen, or lymph nodes in a patient over one month old;
- 5 herpes simplex virus infection causing a mucocutaneous ulcer that persists more than one month, or bronchitis, pneumonitis, or esophagitis for any duration affecting a patient over one month old;
- 6 Kaposi's sarcoma affecting a patient under 60 years of age;
- 7 primary lymphoma of the brain affecting a patient under 60 years of age;
- 8 lymphoid interstitial pneumonia and/or pulmonary lymphoid hyperplasia (LIP/PLH complex) affecting a child under 13 years of age;
- 9 disseminated *Mycobacterium avium* complex or *M. kansasii* disease (at a site other than or in addition to lungs, skin, or cervical or hilar lymph nodes);
- 10 *Pneumocystis carinii* pneumonia;
- 11 progressive multifocal leukoencephalopathy; and
- 12 toxoplasmosis of the brain affecting a patient over one month old.

² See Annexes 1 and 2 on pp. 199–200 for definitions of laboratory evidence for, against, and inconclusive of HIV infection, and for definitive diagnostic methods for diseases indicative of AIDS, respectively.

Diagnosis of AIDS with Laboratory Evidence of HIV Infection

The revised case definition places increased emphasis on HIV infection status as a consideration in the diagnosis of AIDS. For those patients with laboratory evidence of HIV infection, the following additional 12 indicator diseases, if definitively diagnosed (see Annex 2), will be accepted as meeting the new expanded definition of AIDS.

- 1 Any combination of at least two of the following types of bacterial infections within a two-year period in a child under 13 years of age: septicemia, pneumonia, meningitis, bone or joint infection, or abscess of an internal organ or body cavity (excluding otitis media or superficial skin or mucosal abscesses) caused by *Haemophilus*, *Streptococcus* (including pneumococcus), or other pyogenic bacteria.
- 2 Disseminated coccidioidomycosis (at a site other than or in addition to lungs or cervical or hilar lymph nodes).
- 3 HIV encephalopathy (also called "HIV dementia," "AIDS dementia," or "subacute encephalitis due to HIV").
- 4 Disseminated histoplasmosis (at a site other than or in addition to lungs or cervical or hilar lymph nodes).
- 5 Isosporiasis with diarrhea persisting more than one month.
- 6 Kaposi's sarcoma at any age.
- 7 Primary lymphoma of the brain at any age.
- 8 Other non-Hodgkin's lymphoma of B-cell or unknown immunological phenotype and the following histological types: a) small noncleaved lymphoma (either Burkitt or non-Burkitt type), or b) immunoblastic sarcoma (equivalent to immunoblastic lymphoma, large-cell lymphoma, diffuse histiocytic lymphoma, diffuse undifferentiated lymphoma, or high-grade lymphoma, although not necessarily all in combination). Note that lymphomas are not included here if they are of T-cell immunological phenotype, or their histological type is not described or is described as "lymphocytic," "lymphoblastic," "small cleaved," or "plasmacytoid lymphocytic."
- 9 Any mycobacterial disease caused by mycobacteria other than *M. tuberculosis* and disseminated to a site other than or in addition to lungs, skin, or cervical or hilar lymph nodes.
- 10 Disease caused by *M. tuberculosis* involving at least one site outside the lungs, regardless of whether there is concurrent pulmonary involvement.
- 11 Recurrent *Salmonella* (nontyphoid) septicemia.
- 12 HIV wasting syndrome (emaciation, "slim disease").

Presumptive Diagnosis of Some Indicator Diseases

For those patients with laboratory evidence of HIV infection, the new definition permits some specified indicator diseases to be diagnosed presumptively (by a method other than those in Annex 2). However, given the seriousness of diseases indicative of AIDS, it is

generally important to diagnose them definitively, especially when therapy that would be used may have serious side effects or when definitive diagnosis is needed for eligibility for antiretroviral therapy. Nonetheless, in some situations, a patient's condition will not permit the performance of definitive tests; in other situations, accepted clinical practice may be to diagnose presumptively based on the presence of characteristic clinical and laboratory abnormalities. Suggested guidelines for presumptive diagnosis are given in Annex 3, p. 201.

Presumptive diagnosis is permitted for the following indicator diseases:

- 1 candidiasis of the esophagus;
- 2 cytomegalovirus retinitis with loss of vision;
- 3 Kaposi's sarcoma;
- 4 lymphoid interstitial pneumonia and/or pulmonary lymphoid hyperplasia (LIP/PLH complex) affecting a child under 13 years of age;
- 5 mycobacterial disease (acid-fast bacilli with species not identified by culture) disseminated to at least one site other than or in addition to lungs, skin, or cervical or hilar lymph nodes;
- 6 *Pneumocystis carinii* pneumonia; and
- 7 toxoplasmosis of the brain affecting a patient over one month of age.

Diagnosis of AIDS with Laboratory Evidence Against HIV Infection

For surveillance purposes, a diagnosis of AIDS is generally not accepted if laboratory test results are negative for HIV infection (see Annex 1). However, AIDS can be diagnosed in some patients with laboratory evidence against HIV infection 1) if all the other causes of immunodeficiency listed above (page 196, top) are excluded, *and* 2) the patient has had either *Pneumocystis carinii* pneumonia diagnosed by a definitive method, *or* any of the other diseases indicative of AIDS (page 196, bottom) diagnosed by a definitive method *and* T-helper/inducer (CD4) lymphocyte count less than 400/mm³.

Source: World Health Organization; Acquired immunodeficiency syndrome (AIDS), 1987 revision of CDC/WHO case definition for AIDS; *Wkly Epidemiol Rec* 63:1/2, 1988, pp. 1-7.

ANNEX 1. Laboratory evidence for or against HIV infection.

I. For infection

When a patient has disease consistent with AIDS:

A. a serum specimen from a patient ≥ 15 months of age, or from a child < 15 months of age whose mother is not thought to have had HIV infection during the child's perinatal period, that is repeatedly reactive for HIV antibody by a screening test (e.g., enzyme-linked immunosorbent assay—ELISA), as long as subsequent HIV-antibody tests (e.g., Western blot, immunofluorescence assay), if done, are positive; *or*

B. a serum specimen from a child < 15 months of age, whose mother is thought to have had HIV infection during the child's perinatal period, that is repeatedly reactive for HIV antibody by screening test (e.g., ELISA), plus increased serum immunoglobulin levels and at least one of the following abnormal immunological test results: reduced absolute lymphocyte count, depressed CD4 (T-helper) lymphocyte count, or decreased CD4/CD8 (helper/suppressor) ratio, as long as subsequent antibody tests (e.g., Western blot, immunofluorescence assay), if done, are positive; *or*

C. a positive test for HIV serum antigen; *or*

D. a positive HIV culture confirmed by both reverse transcriptase detection and a specific HIV-antigen test or *in situ* hybridization using a nucleic acid probe; *or*

E. a positive result on any other highly specific test for HIV (e.g., nucleic acid probe of peripheral blood lymphocytes).

II. Against infection

A nonreactive screening test for serum antibody to HIV (e.g., ELISA) without a reactive or positive result on any other test for HIV infection (e.g., antibody, antigen, culture), if done.

III. Inconclusive (neither for nor against infection)

A. a repeatedly reactive screening test for serum antibody to HIV (e.g., ELISA) followed by a negative or inconclusive supplemental test (e.g., Western blot, immunofluorescence assay) without a positive HIV culture or serum antigen test, if done; *or*

B. a serum specimen from a child < 15 months of age, whose mother is thought to have had HIV infection during the child's perinatal period, that is repeatedly reactive for HIV antibody by a screening test, even if positive by a supplemental test, without additional evidence for immunodeficiency as described above (in I.B.) and without a positive HIV culture or serum antigen test, if done.

ANNEX 2. Definitive diagnostic methods for diseases indicative of AIDS.

Diseases	Definitive diagnostic methods
Cryptosporidiosis Cytomegalovirus Isosporiasis Kaposi's sarcoma Lymphoma Lymphoid pneumonia or hyperplasia <i>Pneumocystis carinii</i> pneumonia Progressive multifocal leukoencephalopathy Toxoplasmosis	Microscopy (histology or cytology)
Candidiasis	Gross inspection by endoscopy or autopsy or by microscopy (histology or cytology) of a specimen obtained directly from the tissues affected (including scrapings from the mucosal surface), not from a culture
Coccidioidomycosis Cryptococcosis Herpes simplex virus Histoplasmosis	Microscopy (histology or cytology), culture, or detection of antigen in a specimen obtained directly from the tissues affected or a fluid from those tissues
Tuberculosis Other mycobacteriosis Salmonellosis Other bacterial infection	Culture
HIV encephalopathy ^a (dementia)	Clinical findings of disabling cognitive and/or motor dysfunction interfering with occupation or activities of daily living, or loss of behavioral developmental milestones affecting a child, progressing over weeks to months, in the absence of a concurrent illness or condition other than HIV infection that could explain the findings. Methods to rule out such concurrent illnesses and conditions must include cerebrospinal fluid examination and either brain imaging (computed tomography or magnetic resonance) or autopsy.
HIV wasting syndrome ^a	Findings of profound involuntary weight loss greater than 10% of baseline body weight, plus either chronic diarrhea (at least two loose stools per day for ≥ 30 days) or chronic weakness and documented fever (for ≥ 30 days, intermittent or constant) in the absence of a concurrent illness or condition other than HIV infection that could explain the findings (e.g., cancer, tuberculosis, cryptosporidiosis, or other specific enteritis)

^a For HIV encephalopathy and HIV wasting syndrome, the methods of diagnosis described here are not truly definitive, but are sufficiently rigorous for surveillance purposes.

ANNEX 3. Suggested guidelines for presumptive diagnosis of diseases indicative of AIDS.

Diseases	Presumptive diagnostic criteria
Candidiasis of esophagus	Recent onset of retrosternal pain on swallowing <i>and</i> oral candidiasis diagnosed by the gross appearance of white patches or plaques on an erythematous base or by the microscopic appearance of fungal mycelial filaments in an uncultured specimen scraped from the oral mucosa
Cytomegalovirus retinitis	A characteristic appearance on serial ophthalmoscopic examinations (e.g., discrete patches of retinal whitening with distinct borders, spreading in a centrifugal manner, following blood vessels, progressing over several months, frequently associated with retinal vasculitis, hemorrhage, and necrosis). Resolution of active disease leaves retinal scarring and atrophy with retinal pigment epithelial mottling.
Mycobacteriosis	Microscopy of a specimen from stool or normally sterile body fluids or tissue from a site other than lungs, skin, or cervical or hilar lymph nodes showing acid-fast bacilli of a species not identified in culture
Kaposi's sarcoma	A characteristic gross appearance of an erythematous or violaceous plaque-like lesion on skin or mucous membrane ^a
Lymphoid interstitial pneumonia	Bilateral reticulonodular interstitial pulmonary infiltrates present on chest X-ray for ≥ 2 months with no pathogen identified and no response to antibiotic treatment
<i>Pneumocystis carinii</i> pneumonia	A history of dyspnea on exertion or nonproductive cough of recent onset (within the past three months); <i>and</i> chest X-ray evidence of diffuse bilateral interstitial infiltrates or gallium scan evidence of diffuse bilateral pulmonary disease; <i>and</i> arterial blood gas analysis showing an arterial pO_2 of < 70 mm Hg or a low respiratory diffusing capacity ($< 80\%$ of predicted values) or an increase in the alveolar-arterial oxygen tension gradient; <i>and</i> no evidence of a bacterial pneumonia
Toxoplasmosis of the brain	Recent onset of a focal neurological abnormality consistent with intracranial disease or a reduced level of consciousness; <i>and</i> brain imaging evidence of a lesion having a mass effect (on computed tomography or nuclear magnetic resonance) or the radiographic appearance of which is enhanced by injection of contrast medium; <i>and</i> serum antibody to toxoplasmosis or successful response to therapy for toxoplasmosis

^a Presumptive diagnosis of Kaposi's sarcoma should not be made by clinicians who have seen few cases of it.