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GUIDELINES FOR THE PREVENTION AND CONTROL OF INFECTION

WITH LAV/HTLV III

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GUIDELINES FOR THE PREVENTION AND CONTROL OF INFECTION
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WHO has committed itself to the preparation and distribution of guidelines for the prevention and control of infection with LAV/HTLV-III. The guidelines are broad in nature and therefore suitable for international application. They are based on the experience of many member countries and advice from the WHO AIDS and Biosafety Collaborating Centres.

The guidelines are not complete at this time as some are currently under development. These are indicated by * on the list of contents. The complete guidelines will be made available as soon as they are finalized.

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GUIDELINES FOR THE PREVENTION AND CONTROL OF INFECTION
WITH LAV/HTLV-III1. Introduction

An important component of the WHO AIDS Control Programme (ACP) is preparation and distribution of guidelines, manuals and educational materials on prevention and control of LAV/HTLV-III infections for professional personnel, for groups at risk and for the general public. The ultimate goal of the ACP guidelines is prevention of LAV/HTLV-III transmission, using strategies firmly anchored in fundamental public health concepts and utilizing the best available knowledge on the laboratory, clinical and epidemiological aspects of LAV/HTLV-III infection. These guidelines are directed, in the first instance, towards public health authorities and health professionals, who have the responsibility of adapting the general guidelines to meet the extremely diverse requirements of many different populations and settings.

The guidelines will require modification as experience is gained in their practical application and as more is learned about LAV/HTLV-III. The ACP will revise the guidelines as necessary, in consultation with an international panel of experts in the laboratory, clinical and epidemiological aspects of LAV/HTLV-III infections.

1.1 The virus

A recently discovered retrovirus, usually called lymphadenopathy-associated virus (LAV) or human t-cell lymphotropic virus type III (HTLV-III) is considered to be the etiologic agent of the acquired immunodeficiency syndrome (AIDS). Pending selection of a definitive name by the International Committee on Taxonomy of Viruses, the virus will be referred to as LAV/HTLV-III. A second retrovirus or retroviruses, provisionally identified as LAV-2 and HTLV-IV, has recently been identified, although the role of these agents in AIDS is presently unclear.

LAV/HTLV-III has a specific tropism for the OK T4 subset of T lymphocytes and has also been found in nervous tissue of some patients. The virus replicates in actively dividing T4 lymphocytes and, like other retroviruses, it can also remain in lymphoid cells in a latent, unexpressed state.

LAV/HTLV-III has been isolated from blood and semen and, at much lower titer and from a smaller proportion of infected patients, from saliva, tears, breast milk, urine, and vaginal secretions. The virus is also likely to be isolated from other body fluids, secretions and excretions.

The virus is very delicate in that it is easily inactivated. Common household disinfectants containing bleach, alcohol or ammonia when used at recommended strength inactivate the virus in about one minute. The virus is also inactivated by high and low pH and heat, sera can be decontaminated at 56° without loss of serological activity. Section 7 provides further information.

1.2 Transmission

While LAV/HTLV-III has been found in several body fluids, epidemiological evidence has thus far implicated only blood and semen in transmission. Epidemiological studies from diverse geographical settings have recognized only three modes of LAV/HTLV-III transmission: (1) sexual; (2) parenteral; and (3) perinatal.

Worldwide, the most important mode of transmission is sexual. LAV/HTLV-III can spread bi-directionally between heterosexual or homosexual partners. Transmission of LAV/HTLV-III through semen donation has also been documented. Parenteral LAV/HTLV-III transmission can occur through transfusion of whole blood, blood cells, platelets, or factors VIII or IX derived from contaminated human plasma. In addition, the accidental or intentional sharing or reuse of contaminated (unsterilized) needles, syringes, scalpels, razors, or other skin or mucous membrane-piercing instruments can transmit LAV/HTLV-III. Perinatal transmission can occur from infected mother to child before, during, or shortly after birth.

Regardless of geographical area or socioeconomic setting, LAV/HTLV-III is not transmitted through casual contacts in households, schools, or other groups living or working together. Similarly, there is no evidence of transmission by blood-sucking insects, food or water, or airborne or fecal/oral routes.

1.3 Clinical

LAV/HTLV-III infection has been associated with a wide variety of clinical responses, including: (1) an asymptomatic carrier state; (2) an acute mononucleosis-like illness; (3) a generalized lymphadenopathy syndrome; (4) a complex of signs and symptoms, generally called the AIDS-related complex (ARC), involving unexplained lymphadenopathy, chronic fever, fatigue, malaise, weight loss, night sweats and chronic diarrhea; (5) acute and sub-acute neurologic and neuropsychiatric conditions, including encephalopathy, dementia and peripheral neuropathy; and (6) AIDS, characterized by opportunistic infections and/or malignancies, including Kaposi's sarcoma.

While clinical manifestations among infants and young children generally resemble those seen in adults, failure to thrive, pneumonitis and diarrhea are frequently observed.

The clinical manifestations associated with LAV/HTLV-III may vary greatly in different geographical areas. For example, the dominant clinical expression of AIDS in Central Africa is a syndrome of profound weight loss accompanied by chronic diarrhea and/or fever.

Ongoing studies suggest that during a 2-5 year followup period, approximately two-thirds of LAV/HTLV-III-infected persons will remain asymptomatic, while the remaining one-third will develop clinical illness varying in severity from mild to life-threatening (AIDS).

Two case definitions for AIDS have been published in the World Health Organization Weekly Epidemiological Record (WER). The first, the CDC/WHO definition, requires laboratory confirmation of certain opportunistic infections and/or malignancies. The second is a clinical definition, intended for use without laboratory support, developed at a WHO conference in Bangui, Central African Republic, in October 1985.

1.4 Laboratory methods for detection of LAV/HTLV-III infection

Laboratory procedures for detecting LAV/HTLV-III infection include techniques to isolate the virus, to detect viral components by immunological or molecular techniques, and to detect antibodies to viral antigens. These techniques may be useful for confirming a diagnosis of AIDS or ARC, screening blood intended for transfusion or for production of factors VIII and IX, screening of donors of organs or semen, determining the prevalence of

infection in the community, assessing the likelihood that an individual has been exposed to LAV/HTLV-III, and evaluating various methods of preventing or treating the disease.

At present, the only practical approach for routine or large-scale testing is detection of antibody to LAV/HTLV-III and the enzyme-linked immunosorbent assay (ELISA) is the antibody detection method most frequently used. ELISA test systems are highly sensitive (98%); however, not all reactive sera are indicative of LAV/HTLV-III infections because of non-specific reactions. In general, the percentage of "false positives" increases together with the sensitivity of the test systems. The acceptance of a test giving a relatively high percentage of "false positives" at this time appears prudent in order to detect all truly positive specimens among blood donors. A more specific, but also less sensitive assay system may be more appropriate for some epidemiological studies when confirmatory tests are not readily available. All repeatedly ELISA-reactive sera should be tested (confirmed) in another system. Immunoblots (Western blots) have been most frequently used for this purpose, while some laboratories are using immunofluorescence tests with LAV/HTLV-III infected and non-infected control cells. LAV/HTLV-III antibodies usually develop within weeks (rarely months) after infection and remain demonstrable possibly for life. Since a large proportion of seropositive persons, whether asymptomatic or clinically ill, have been shown, at one time or another, to be viremic, all seropositive individuals must be presumed capable of transmitting LAV/HTLV-III.

1.5 Notification and confidentiality

AIDS should be designated as a notifiable disease and immediate reporting should be established within the national surveillance system. The exchange of information on AIDS and the sero-epidemiology of LAV/HTLV-III infection is vital for global surveillance. The ACP has provided a standard reporting form (annexed) for transmission of national AIDS data to WHO on a regular basis.

Strictest confidentiality must be maintained. Given the sensationalism that often accompanies the occurrence of AIDS and adverse reactions by an uninformed public, patients and infected persons must remain anonymous. The use of a patient number rather than a name is recommended. No identifying information about an individual should be shared by the official health agencies or any physician, without the permission of the individual, (except in cases required by law). Only summary statistical information without individual identifiers should be reported to public health authorities.

1.6 Case definitions

1.6.1 WHO/CDC case definition

For surveillance purposes, a relatively precise case definition is required that includes the most characteristic manifestations of LAV/HTLV-III infections. WHO recently adopted the case definition of AIDS in adults and children developed by the Centers for Disease Control (CDC) and endorsed by the participants at the Second Meeting of the WHO Collaborating Centres on AIDS held in Geneva 16-18 December 1985. The WHO/CDC definition, to be applied in countries where appropriate diagnostic techniques are available, specifies that a case of acquired immunodeficiency syndroms (AIDS) is an illness characterized by:

- one or more of the opportunistic diseases listed below (diagnosed by methods considered reliable) that are at least moderately indicative of underlying cellular immunodeficiency; and

- absence of all known underlying causes of cellular immunodeficiency (other than LAV/HTLV-III infection) and absence of all other causes of reduced resistance reported to be associated with at least one of those opportunistic diseases.

Despite having the above, patients are excluded as AIDS cases if they have negative result(s) on testing for serum antibody to LAV/HTLV-III, do not have a positive culture for LAV/HTLV-III, and have both a normal or high number of T-helper (OKT4 or LEU3) lymphocytes and a normal or high ratio of T-helper to T-suppressors (OKT8 or LEU2) lymphocytes. In the absence of test results, patients satisfying all other criteria in this definition are included as cases.

This general case definition may be made more explicit by specifying:

- the particular diseases considered at least moderately indicative of cellular immunodeficiency, which are used as indicators of AIDS; and
- the known causes of cellular immunodeficiency, or other causes of reduced resistance reported to be associated with particular diseases, which would disqualify a patient as an AIDS case.

1.6.2 Provisional WHO clinical case definition for AIDS

A clinical case definition is needed in countries where diagnostic resources are limited. A provisional clinical case definition was developed at a WHO Workshop on AIDS held in Bangui, Central African Republic, 22-24 October 1985. This definition was reviewed and slightly adapted at the Second Meeting of the WHO Collaborating Centres on AIDS as follows:

Adults

AIDS in an adult is defined by the existence of at least two of the major associated with at least one minor sign, in the absence of known causes of immunosuppression such as cancer or severe malnutrition or other recognized etiologies.

Major signs

- weight loss \geq 10% of body weight;
- chronic diarrhoea $>$ 1 month;
- prolonged fever $>$ 1 month (intermittent or constant).

Minor signs

- persistent cough for $>$ 1 month;
- generalized pruritic dermatitis;
- recurrent herpes zoster;
- oro-pharyngeal candidiasis;
- chronic progressive and disseminated herpes simplex infection;
- generalized lymphadenopathy.

The presence of generalized Kaposi's sarcoma or cryptococcal meningitis are sufficient by themselves for the diagnosis of AIDS.

Children

Paediatric AIDS is suspected in an infant or child presenting with at least two of the following major signs associated with at least two of the following minor signs in the absence of known causes of immunosuppression such as cancer or severe malnutrition or other recognized etiologies.

Major signs

- weight loss or abnormally slow growth;
- chronic diarrhoea > 1 month;
- prolonged fever > 1 month.

Minor signs

- generalized lymphadenopathy;
- oro-pharyngeal candidiasis;
- repeated common infections (otitis, pharyngitis, etc.)
- persistent cough;
- generalized dermatitis;
- confirmed maternal LAV/HTLV-III infection

These clinical case definitions are believed to be sensitive but have not yet been formally evaluated. There may be differences in clinical features among different countries. Therefore, there is an urgent need to carefully evaluate clinical diagnostic criteria in different settings. Countries initially using the clinical case definition may wish to test its specificity by coinfirming a sample number of cases by detection of specific antibody to LAV/HTLV-III.

2. Recommendations for health care workers (HCW)

Health care workers include, but are not limited to, nurses, doctors, traditional healers, dentists and other dental workers, optometrists, pediatricians, chiropractors, laboratory and blood bank technologists and technicians, phlebotomists, dialysis personnel, paramedics, emergency medical technicians, medical examiners, morticians, housekeepers, laundry workers, and others whose work involves contact with patients, their blood or other body fluids, or corpses.

Recommendations for HCWs emphasize precautions for preventing transmission of bloodborne infectious disease. These precautions should be enforced routinely, as should other standard infection-control precautions, regardless of whether health care workers or patients are known to be infected with LAV/HTLV-III. In addition to being informed of these precautions, all health care staff, including students and all hospital workers, should be educated regarding the epidemiology, clinical manifestations, transmission and prevention of LAV/HTLV-III infection.

The risk for HCWs of acquiring LAV/HTLV-III from infected patients is remote. Extensive experience among HCWs in contact with the blood of infected patients through needle-stick injuries or mucosal exposure have documented only a single case of infection; a small number of other cases possibly associated with in-hospital exposures have been reported. Finally, it is important that LAV/HTLV-III infected patients be treated with dignity and respect and according to the highest professional standards, without prejudice or stigmatization.

The detailed application of the practices described below may vary according to the prevalence of LAV/HTLV-III infection in the patient population, on the availability of infection control resources, and other factors. The most important practices to prevent LAV/HTLV-III transmission from patients to HCWs involve avoiding needlestick and other parenteral, mucous membrane or open lesion exposure to patients' blood. The most important practice to prevent LAV/HTLV-III transmission from infected HCWs to patients is exclusion of HCWs with exudative lesions from direct patient contact. Finally, prevention of patient to patient LAV/HTLV-III transmission

requires rigorous sterilization of reusable equipment such as needles, syringes and skin-piercing instruments.

2.1 Precautions for HCWs

These precautions represent prudent practices that apply to preventing transmission of all bloodborne infections and should be used routinely.

2.1.1. Sharp items (needles, scalpel blades, and other instruments) should be considered as potentially infective, should be handled with extraordinary care to prevent accidental injuries, and should be placed into puncture-resistant containers located as close as practical to the area in which they were used. To prevent needlestick injuries, disposable needles should not be recapped, purposefully bent, broken, removed from disposable syringes, or otherwise manipulated by hand. Disposable needles and syringes should be destroyed promptly or otherwise handled to prevent re-use. This may be accomplished by (1) incineration, or (2) by first autoclaving or boiling, then breaking, crushing or otherwise deforming the needle and syringe before being buried. Reusable needles and syringes must be handled by personnel who are carefully trained in methods designed to minimize the risk of accidental injuries. Details for processing reusable needles and syringes are contained in section 7.3.

2.1.2. Extraordinary care should also be taken to avoid contact of open skin lesions on HCWs with material (especially blood) from LAV/HTLV-III infected patients. When the possibility of exposure to blood or other body fluids exists, the degree of care will depend upon the risk involved (e.g., gloves alone may suffice for handling items soiled with blood or equipment contaminated with blood or other body fluids, while gowns, masks, and eye-coverings may be required when performing procedures involving more extensive contact with blood or potentially infective body fluids, as in some dental or endoscopic procedures or postmortem examinations). Hands should be washed thoroughly and immediately if they become contaminated with blood.

2.1.3. Blood and other specimens from known or suspected LAV/HTLV-III infected patients should be labelled prominently with a special warning, such as "Blood Precautions". In some areas, the prevalence of LAV/HTLV-III infection in the patient population may justify handling all blood specimens as if they contained LAV/HTLV-III. If the outside of the specimen container is visibly contaminated with blood, it should be cleaned with a disinfectant (see section 7.1). All blood specimens should ideally be placed in a second container, such as an impervious bag, for transport. The bag or container should be examined carefully for leaks or cracks.

2.1.4. Blood spills should be cleaned up promptly with a disinfectant solution, such as sodium hypochlorite (see section 7.1).

2.1.5. Articles contaminated with blood should be placed in an impervious bag prominently labelled "Blood Precautions" before being sent for reprocessing or disposal. Alternatively, such contaminated items may be placed in plastic bags of a particular color designated solely for disposal of infectious wastes by the hospital. Disposable items should be incinerated or disposed of in accord with the hospital's policies for disposal of infectious wastes. Such policies include autoclaving followed by burial in a landfill. Reusable items should be reprocessed in accord with hospital policies for items contaminated with Hepatitis B virus. Instruments with lenses should be sterilized after use on patients known or suspected to be LAV/HTLV-III infected or if this is not possible, cleaned and exposed to a high level disinfectant (see section 7.2).

2.1.6. Disposable needles and syringes are preferred. Only needle-locking syringes or one-piece needle-syringe units should be used to aspirate fluids from patients, so that collected fluid can be safely discharged through the needle, if desired. If reusable syringes are employed, they must be sterilized before reuse (see section 7.3) and special care must be taken in handling to avoid injuries.

2.1.7. Precautions such as single-room isolation are not generally indicated for LAV/HTLV-III infected patients. However, to the extent possible, a private room may be indicated for patients having: (1) a particular superinfection which requires such isolation precautions; (2) a need for protective isolation; (3) difficulties in maintaining standards of hygiene, such as profuse diarrhea, fecal incontinence, uncontrolled bleeding, or altered behavior secondary to central nervous system involvement; or (4) needs for a single room based on the severity or terminal nature of the illness.

2.1.8. To minimize the need for emergency mouth-to-mouth resuscitation, mouth pieces, resuscitation bags, or other ventilation devices should be strategically located and available for immediate use.

2.1.9. Prevention of transmission from LAV/HTLV-III infected HCWs to patients:

- In general, HCWs known to be infected with LAV/HTLV-III need not be restricted from work unless they have evidence of other infection or illness for which any HCW should be restricted.
- HCWs with exudative lesions should be excluded from direct patient care until the condition has resolved.
- HCWs infected with LAV/HTLV-III may be at increased risk of acquiring or experiencing serious complications of other infectious diseases. The HCW's personal physician, in conjunction with their institution's personnel health services or medical directors, should determine on an individual basis whether the infected HCW can adequately and safely care for patients and suggest changes in work assignments, if indicated.
- Ideally, all HCWs should wear gloves for direct contact with mucous membranes or nonintact skin of all patients. The use of gloves by all HCWs is imperative during invasive procedures.

2.2 Precautions for HCWs providing home care of LAV/HTLV-III infected patients

Most persons infected with LAV/HTLV-III and not requiring hospitalization can be safely cared for at home. HCWs providing home care face the same low risk of infection as HCWs in hospitals and other health care settings, and should follow the precautions outlined above.

2.3 Precautions for providers of pre-hospital emergency care

Providers of pre-hospital emergency care include paramedics, emergency medical technicians, law enforcement personnel, firefighters, lifeguards and others whose job might require them to provide first-response medical care. The risk of transmission of LAV/HTLV-III infection should be no higher than for HCWs providing emergency care in the hospital if appropriate precautions are taken to prevent exposure to blood or other body fluids. Providers of pre-hospital emergency care should follow the precautions outlined above for other HCWs. Resuscitation and other equipment possibly contaminated with

blood or other body fluids should be used once and disposed or be thoroughly cleaned and disinfected (see section 7.1).

2.4 Management of parenteral and mucous membrane exposure

If a HCW has a parenteral (e.g., needlestick or cut) or mucous membrane (e.g., splash to eye or mouth) exposure to blood or other body fluids, the source patient should be assessed clinically and epidemiologically to determine the likelihood of LAV/HTLV-III infection. In some situations serologic testing of the source patient may be considered. If the source patient has evidence of LAV/HTLV-III infection, the HCW should be evaluated clinically and serologically for evidence of LAV/HTLV-III infection as soon as possible after the exposure. If the HCW is seronegative, he/she should be retested and evaluated clinically 6 weeks later and on a periodic basis thereafter (e.g., 3, 6 and 12 months following exposure) to determine if transmission has occurred. During this follow-up period, especially the first 6-12 weeks when most infected persons are expected to seroconvert, the HCW should receive counseling about the risk of infection. The procedure outlined above is addition to any other management protocols, such as for Hepatitis B.

If a patient has a parenteral or mucous membrane exposure to blood or other body fluids of an infected HCW, an analogous procedure to that outlined above should be followed for both the source HCW and the potentially exposed patient.

2.5 Laboratory staff

Rather than institute special precautions for known LAV/HTLV-III contaminated specimens, routine precautions against transmission of blood borne infection in the laboratory should be followed. Normal virus isolation procedures and use of ELISA and other diagnostic procedures may be performed under the conditions described. For work involving production and purification of LAV/HTLV-III, containment laboratory facilities and procedures apply (P-3; Biosafety level 3; containment level 3 - see WHO Laboratory Safety Manual).

2.5.1 Mechanical pipetting devices should be used for the manipulation of all liquids in the laboratory. Mouth pipetting should not be allowed.

2.5.2 Needles and syringes should be handled as stipulated in 2.1.1

2.5.3 Laboratory coats, gowns, or uniforms should be worn while working with potentially infectious materials and should be discarded appropriately before leaving the laboratory.

2.5.4 Gloves should be worn to avoid skin contact with blood, specimens containing blood, blood-soiled items, body fluids, excretions, and secretions as well as surfaces, materials and objects exposed to them.

2.5.5 All procedures and manipulations of potentially infectious material should be performed carefully to minimize the creation of droplets and aerosols.

2.5.6 Biological safety cabinets (Class I or II) and other primary containment devices (e.g. centrifuge safety cups) are advised whenever procedures are conducted that have a high potential for creating aerosols or infectious droplets. These include centrifuging, blending, sonicating, vigorous mixing, and harvesting infected tissues from animals or embryonated

eggs. Fluorescent activated cell sorters generate droplets that could potentially result in infectious aerosols. Translucent plastic shielding between the droplet-collecting area and the equipment operator should be used to reduce the presently uncertain magnitude of this risk. Primary containment devices are also used in handling materials that might contain concentrated infectious agents or organisms in greater quantities than expected in clinical specimens.

2.5.7 Laboratory work surfaces should be decontaminated with a disinfectant, such as sodium hypochlorite solution (see 7.1), following any spill of potentially infectious material and at the completion of work activities.

2.5.8 All potentially contaminated materials used in laboratory tests should be decontaminated, preferably by autoclaving, before disposal or reprocessing.

2.5.9 All personnel should wash their hands following completion of laboratory activities, and removal of protective clothing, and before leaving the laboratory.

2.5.10 Eating, smoking, drinking or applying cosmetics in the laboratory is not permitted.

2.6 Staff handling experimental animals

2.6.1 Laboratory coats, gowns, or uniforms should be worn by personnel entering rooms housing inoculated animals. Certain nonhuman primates, such as chimpanzees, are prone to throw excreta and to spit at attendants; personnel attending inoculated animals should wear molded surgical masks and goggles or other equipment sufficient to prevent potentially infective droplets from reaching the mucosal surfaces of their mouths, noses and eyes. In addition, when handled, other animals may disturb excreta in their bedding. Therefore, the above precautions should be taken when handling them.

2.6.2 Personnel should wear gloves for all activities involving direct contact with experimental animals and their bedding and cages. Such manipulations should be performed carefully to minimize the creation of aerosols and droplets.

2.6.3 Necropsy of experimental animals should be conducted by personnel wearing gowns and gloves. If procedures generating aerosols are performed, masks, goggles and gloves should be worn.

2.6.4 Extraordinary care must be taken to avoid accidental sticks or cuts with sharp instruments contaminated with body fluids or tissues of experimental animals inoculated with material from AIDS patients.

2.6.5 Animal cages should be decontaminated, preferably by autoclaving, before they are cleaned and washed.

2.6.6 Only needle-locking syringes or one-piece needle-syringe units should be used to inject potentially infectious fluids into experimental animals.

2.7 Dental care personnel*

2.8 Persons performing necropsies or providing morticians' services*

2.9 Eye examiners*

3. Considerations relevant to non health care workers

3.1 Personal service workers

Personal service workers are defined as individuals whose occupations involve close personal contact with clients (e.g. hairdressers, barbers, manicurists, pedicurists, massage therapists). Personal service workers whose services (tattooing, ear piercing, acupuncture, etc.) require needles or other instruments that penetrate the skin should follow precautions indicated for health care workers. Particular care must be taken to ensure that all skin-piercing instruments are properly disinfected (section 7.1). Although there is no evidence of transmission of LAV/HTLV-III from clients to these personal service workers, or from these personal service workers to their clients, a risk of transmission could exist in situations where there is both (1) trauma to one of the individuals that would provide a portal of entry for the virus, and (2) access of blood or serous fluid from one infected person to the open tissue of the other, as could occur if either sustained a cut, or if a blood-contaminated instrument was not sterilized or disinfected between clients. However, as hepatitis B virus (HBV) transmission has rarely been documented in acupuncture, ear piercing, or tattooing establishments and never in other personal-service settings, the risk for LAV/HTLV-III transmission in most personal service settings is likely to be extremely low.

All personal service workers should be educated about transmission of bloodborne infections, including LAV/HTLV-III and HBV. Such education should emphasize principles of good hygiene, sterilization, antiseptics, and disinfection. Instruments that are intended to penetrate the skin (e.g. tattooing and acupuncture needles, ear piercing devices) should be used once and disposed of or be thoroughly cleaned and sterilized after each use (section 7.1 and 7.2). Instruments not intended to penetrate the skin but which may become contaminated with blood (e.g. razors) should be used for only one client and be disposed of or thoroughly cleaned and disinfected before re-use (section 7.1). Any personal service worker with exudative lesions or weeping dermatitis, regardless of LAV/HTLV-III infection status, should refrain from direct contact with clients until the condition resolves. Personal service workers known to be infected with LAV/HTLV-III need not be restricted from work unless they have evidence of other infections or illnesses for which any personal service worker should also be restricted.

3.2 Food service workers

Food service workers are defined as individuals whose occupations involve the preparation or serving of food or beverages (e.g. cooks, caterers, servers, waiters, bartenders, airline attendants). All epidemiological and laboratory evidence indicates that blood-borne and sexually transmitted infections are not transmitted during the preparation or serving of food or beverages, and no instances of HBV or LAV/HTLV-III transmission have been documented in this setting.

All food service workers should follow recommended standards and practices of good personal hygiene and food sanitation. All food service workers should exercise care to avoid injury to hands when preparing food. Should such an injury occur, both aesthetic and sanitary considerations would dictate that food contaminated with blood be discarded. Food service workers known to be infected with LAV/HTLV-III need not be restricted from work unless they have evidence of other infection or illness for which any food service worker should also be restricted.

3.3 Workers sharing same work environment

No known risk of transmission to coworkers, clients or consumers exists from LAV/HTLV-III infected workers in other settings (e.g. offices, schools, factories, construction sites). Workers known to be infected with LAV/HTLV-III should not be restricted from work solely based on this finding. Moreover, they should not be restricted from using telephones, office equipment, toilets, showers, eating facilities and water fountains. In general, equipment contaminated with blood or other body fluids of any worker should be cleaned with soap and water or a detergent, and ideally, a disinfectant solution or a fresh solution of sodium hypochlorite (household bleach) should be used to wipe the area after cleaning.

4. Parenteral transmission

4.1 Blood and blood products - see WER Vol. 61, No 18, 2 May 1986.

4.2 Other*

5. Guidance for health professionals*

6. Guidance for high risk groups and the general population*

7. Disinfection and sterilization

Recent studies have shown that disinfectants commonly used in laboratories and health care facilities will kill LAV/HTLV-III at concentrations much lower than those commonly used in general practice. Routine sterilization and disinfection procedures used in health care facilities and in laboratories do not need to be altered because of a concern for LAV/HTLV-III. Disinfectants that are mycobactericidal are preferred as these are effective against the most resistant groups of microorganisms.

7.1 Commonly available effective disinfectants are :

7.1.1. Chlorine-Sodium hypochlorite

A solution of 5 g/litre (5000 ppm) as available chlorine is recommended for general use.

Dilution of chlorine solutions

<u>Required strength</u>	<u>Household bleach</u>	<u>Eau de Javel</u>	<u>Choros</u>	
	USA & Canada	France	U.K.	
			10%	15%
5g/L (0.5%)	1 part to 10 parts water	1 part to 30 parts water	1 part to 20 parts water	1 part to 30 parts water

When using hypochlorite solutions, it is to be remembered that they gradually lose strength, necessitating daily preparation of fresh solutions. Care is required in preparation of the use solution from stock solutions as the amount of available chlorine in stock solutions varies with the country of manufacture - i.e. household bleach, USA - 5.25% available chlorine; Eau de Javel, France - 15% available chlorine; "Chloros", UK - 10-15% available chlorine.

A 10 to 30 minute contact time is required depending upon level of contamination of material to be disinfected.

7.1.2. Formaldehyde as Formalin: 50 g/litre (5%). 10-30 minute contact time.

7.1.3. Ethanol: 700 g/litre (70%). 10-30 minute contact time.

7.1.4. Glutaraldehyde: 20 g/litre (2%). 10-30 minute contact time.

7.2 Sterilization

7.2.1 Ideally, all reusable patient care equipment and instruments entering the blood stream or tissue should be sterilized by steam under pressure (autoclaving). Autoclaves should be operated at 121°C (250°F) for a minimum exposure time of 20 minutes. Such equipment may also be decontaminated by boiling for 20 minutes.

7.2.2 Non-disposable heat labile equipment and instruments must be subjected to a high level of disinfection. The technique requires scrupulous cleaning of the materials prior to disinfection with a suitable germicide such as 2% glutaraldehyde for 10-30 minutes contact time. Following this, the equipment should be thoroughly rinsed with sterile water. Other disinfectants may be used but care should be taken to use those that are compatible with the materials of the medical devices. The use of recognised gaseous sterilization techniques may also be used if equipment is available.

7.3 Processing needles and syringes (reusable)

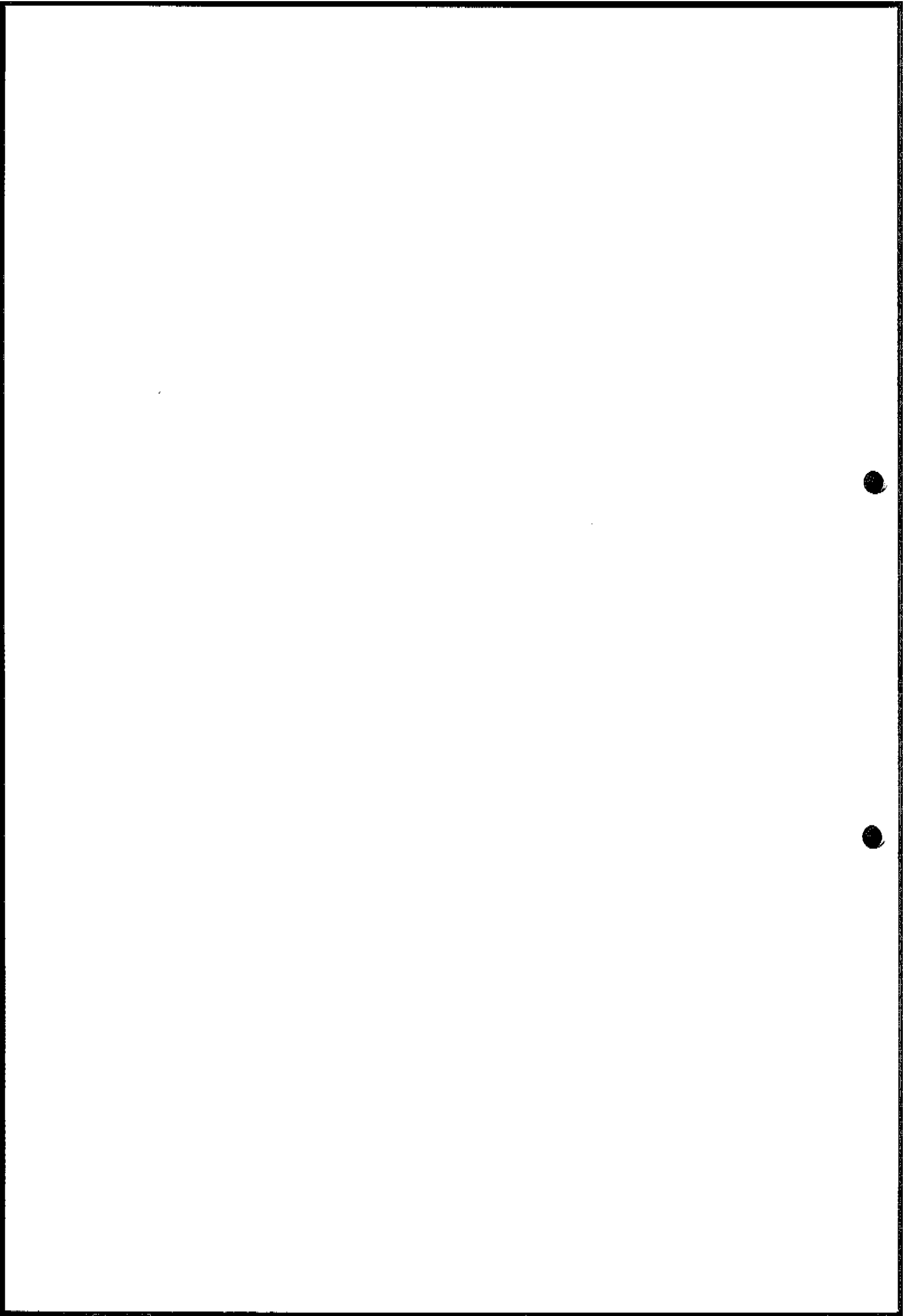
Disposable, single-use syringes and needles are generally preferred for all patient care and laboratory procedures. Needle locking syringes or one piece needle syringe units (disposable or reusable) should be used to aspirate fluids so that the collected fluid can be safely discharged through the needle if desired. However, in some situations reusable syringes and needles suitable for re-use and sterilization may be preferred for economic and practical reasons. In this setting it is imperative that needles and syringes are decontaminated before reprocessing and reuse.

Reusable syringes and needles may be processed for reuse by the following method: (Note: gloves must be worn and extreme care exercised to prevent needlesticks and/or cuts.)

- Leave needle attached to syringe.
- Fill syringe with disinfectant solution.
- Immerse syringe and attached needle in disinfectant solution (horizontal in flat tray).
- Leave immersed in disinfectant solution for 20 minutes.
- Aspirate disinfectant solution from syringe and needle.
- Rinse syringe and needle in sterile or boiled water (fill and aspirate).
- Examine needles and syringes for needle barbs, syringe seal integrity (rubber ring), needle hub fit to syringe, readable syringe markings, etc.

- Disinfect or sterilize syringe and needle by autoclaving (steam sterilizer) or boiling prior to reuse.

7.4 Care of eye examination instruments and contact lenses*



WORLD HEALTH ORGANIZATION REPORTING FORM ON ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)					Provisional 2 April 1986	
Reporting Officer:			Name (code) of country:			
Unit/department:			Reporting period			
Date of report:			Month ¹ :	Quarter ¹ :	Year:	
1A. Number of cases meeting CDC/WHO case definition ²						
1B. Number of cases meeting clinical case definition ² but not CDC/WHO case definition						
Of clinical cases, how many were serotested?						
Of clinical cases serotested, how many were positive by initial test (ELISA, other)?						
Of clinical cases positive by initial test, how many were confirmed positive (immunoblot, other)?						
1C. Total number of AIDS cases reported during this period					*	
2. Age at onset and sex				3. Disease category (at time of original diagnosis) for cases fulfilling CDC/WHO case definition		
Age (years)	Sex			Total cases	Disease category	No. of cases
	Male	Female	Unknown			
<1					Opportunistic infection	
1-4					Kaposi's sarcoma	
5-14					Malignancies other than Kaposi's sarcoma	
15-19					Opportunistic infection plus Kaposi's sarcoma	
20-39					Opportunistic infection plus malignancies other than Kaposi's sarcoma	
40-59					Other	
60+						
Unknown						
Total				**	Total	***

4. Of total number of cases reported during this period, how many were diagnosed:

pre-1983	1983	1984	1985		1986		1987		Total cases
			Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	Jan-Jun	Jul-Dec	
									**

¹ Reporting can be monthly (code 01 for January, 02 for February, etc.) or quarterly (code 1 for January-March, 2 for April-June, 3 for July-September and 4 for October-December)

² See case definitions published in Weekly Epidemiological Record, No. 10, 1986, pp. 69-73

* Total number of cases should equal the sum of number of cases reported in 1A and 1B

** Total number of cases should equal number of cases in 1C

*** Total number of cases should equal number of cases in 1A

5. Risk factor¹

5A. Adult cases (15 years old or older)

Risk factor	Male	Female	Unknown	Total
Homosexual male				
Bisexual male				
Intravenous drug user				
Haemophiliac				
Heterosexual contact ²				
Blood transfusion ³				
Other ⁴				
No risk factor ⁵				
Unknown ⁶				
Total number of adult cases				*

5B. Paediatric cases (< 15 years old)

Risk factor	Male	Female	Unknown	Total
Parent with LAV/HTLV-III antibody/ARC/AIDS				
Parent in high risk group ⁷				
Blood transfusion ³				
Haemophiliac				
Other ⁸				
No risk factor ⁵				
Unknown ⁶				
Total number of paediatric cases				**

6. Of total number of cases reported, how many were:

Residents of the country at onset of symptoms	
Residents but likely infected outside the country (imported)	
Temporarily in the country for diagnosis or treatment of AIDS	
Of unknown residence	
Total	**

¹ Categories are mutually exclusive and listed in hierarchical order, i.e. cases in drug abusing homosexual men would be classified in the group 'Homosexual male'

² Category also includes cases with multiple heterosexual partners or heterosexual contact with partner who has multiple partners, e.g. female prostitutes

³ Includes transfusion with blood components. Transfusion within 5 years prior to onset of symptoms

⁴ Includes persons injected with non-sterile needles/syringes or exposed to other skin/mucous membrane piercing instruments

⁵ Following case investigation, the patient cannot be assigned to one of the above-listed categories

⁶ Investigation of case not done or incomplete

⁷ High risk group defined according to local epidemiological situation

⁸ Includes children with other identifiable risk factors (sexual contact, intravenous drug abuse, other injections with non-sterile needles/syringes, scarification, etc.)

* Total number of adult and paediatric cases should equal number of cases in 1C

** Total number of cases should equal number of cases in 1C