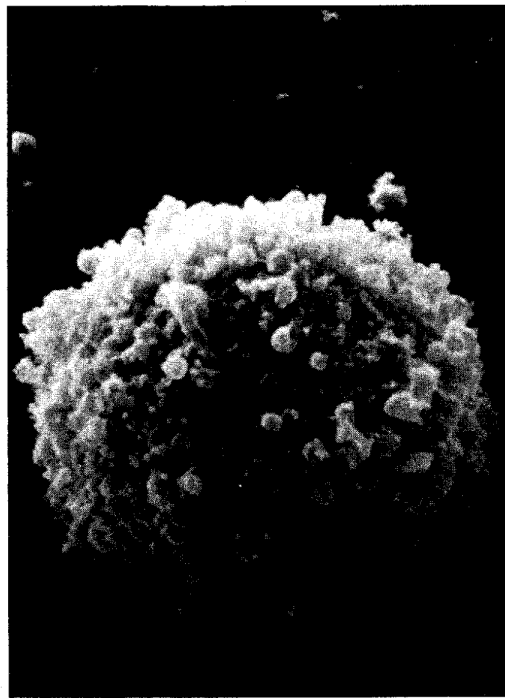




BRITISH MEDICAL ASSOCIATION

Statement on Acquired Immune Deficiency Syndrome (AIDS)



Report of the Board of Science and Education

**STATEMENT ON ACQUIRED IMMUNE
DEFICIENCY SYNDROME (AIDS)**

MAY 1986

Cover photo: Scanning electron micrograph of a T4 lymphocyte, infected with HTLV III/LAV virus (mag. $\times 10,000$)

(By courtesy of The National Institute for Biological Standards and Control)

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BMA BOARD OF SCIENCE AND EDUCATION STATEMENT ON ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS)

1.0 Introduction

During the past year or so a number of organisations and authorities have published various statements and guidelines relating to Acquired Immune Deficiency Syndrome¹⁻⁸. These statements are not necessarily consistent, as they are based on an incomplete but rapidly expanding understanding of AIDS and HTLV III infection.

In March 1985 the BMA, in response to a large number of enquiries from the profession and the public, produced a preliminary statement⁹ which we are now able to expand in certain particulars to give current advice. We were greatly helped in preparing the original and current statement by the advice of a group of experts.

In the light of further knowledge and experience with human T lymphotropic virus type III (HTLV III), infected persons and AIDS patients, the Association has now expanded its original advice which will assist medical practitioners, health authorities and others to establish detailed guidance to suit local circumstances and the needs of individual health care workers. The advice reflects the philosophy that HTLV III virus infection should be regarded along the lines that have been established for hepatitis B¹⁰.

2.0 The Virus

Considerable information is now available which details the characteristics of the new retrovirus known as HTLV III/LAV, and its effects upon the immune system.

Immuno-suppression in individuals with HTLV III infection results from viral infection of T4 lymphocytes, which, as inducer and helper cells, orchestrate much of the immune response. Ordinarily, T4 cells make up 60 — 80% of the circulating T cell population, but in AIDS they can become too rare to be detected. Many viruses kill the cells they infect usually by rupturing the cell membrane. Lacking T4 cell help, B cells are unable to produce adequate quantities of specific antibody to the AIDS virus or to many other infections. The cytotoxic T cell response is similarly hampered and suppressor T cells cannot fulfill their role either.

Production of infectious virions, from T4 cells only appears to occur when these lymphocytes have been activated. Hence intercurrent infections, e.g. with hepatitis B, or cytomegalovirus may not only compromise the immune response in general but may also provide a supply of activated T4 lymphocytes permissive for HTLV III virus infection and replication.

HTLV III has now been isolated from blood, semen, saliva, tears, breast-milk, cerebrospinal fluids and cervical secretions. A simple diagnostic test for antigen has yet to be devised, but antibody raised to HTLV III can be detected by a number of serological tests, some of which are available on a commercial basis. While the presence of antibody can only be assumed to indicate that the individual has been

infected with the virus, it seems likely that, in common with other retroviruses, once infection is contracted it is persistent, and the infected individual remains infectious. Active research is under way to develop treatments for the disease. Production of an effective vaccine appears to be some way off.

3.0 Clinical expression of the disease

AIDS and HTLV III infection is primarily a sexually transmitted disease that is also capable of transmission via blood. It has been estimated by the DHSS/Communicable Disease Surveillance Centre that as many as 20,000 individuals may have become infected by the virus in the UK but the great majority of these people do not show symptoms of AIDS.

Following infection, seroconversion may occur as early as 6 weeks or may take 4-6 months or longer. Seroconversion may be marked (in about 10% of people) with an acute illness from which recovery is complete. These acute illnesses are poorly described and may often not be noticed by the patient or ascribed to another infection. All antibody positive individuals should be considered capable of passing on the virus via blood, semen or intimate sexual contact.

Evidence is accumulating to indicate that the disease can present in three categories, summarised as: acute, chronic, and end stage. Both acute and chronic forms of the disease are characterised by persistent generalised lymphadenopathy, persistent fevers, night sweats or weight loss (AIDS related complex) which may subside or in some cases will lead to fully developed AIDS.

The infections and illnesses comprising AIDS can attack many parts of the body and central nervous system involvement is relatively common.

The major opportunistic infections are as follows:

1. Lung: *pneumocystis carinii* pneumonia
2. CNS: toxoplasmosis
3. Gut: Herpes simplex/cytomegalovirus/bacterial diarrhoea/candidia

Table 1 presents the current disease patterns for cases notified since 1982 up to April 1986. Kaposi's Sarcoma, cerebral lymphoma and non-Hodgkins lymphoma are malignant changes being observed and it is clear that Kaposi's Sarcoma has taken a widely disseminated form in a number of individuals. A more detailed summary of the clinical aspects of the disease has been prepared by the DHSS¹¹⁻¹², with additional specific guidance for surgeons, anaesthetists and dentists¹³.

4.0 UK Epidemiology

In 1982 a surveillance scheme was set up by the Communicable Disease Surveillance Centre at Colindale, with the object of following the course of the outbreak of the disease. Case definition adopted is that in use at the Centres for Disease Control (CDC) Atlanta USA.

Table 2 shows the category of high risk groups for the individuals that have been studied to date.

Table 1: Disease patterns for all UK cases of AIDS (Source: CDSC London, Apr 1986)

Disease	Cases	Deaths
Kaposi's sarcoma	75	32
Pneumocystis carinii pneumonia	151	78
Kaposi's sarcoma & Pneumocystis carinii pneumonia	28	12
Other opportunist infections	74	44
Cerebral lymphoma	2	2
Non-Hodgkin's lymphoma	5	2
Total	335	170

Table 2: UK Patient Characteristics shown by high risk category and sex. (Source: CDSC London Apr 1986)

Patient characteristic	Males	Females	Deaths
Homosexual/bisexual	296	—	142
Haemophilia	14	—	12
Recipient of blood	5	1	5
Intravenous drug abuser	3	1	2
Heterosexual contact	—	2	1
Visited USA/Caribbean and at possible risk	3	—	1
Directly associated with sub-Saharan Africa	2	5	7
Indirectly associated with sub-Saharan Africa	—	2	—
Other	1	—	—
Total	324	11	170

Out of a total of 335 cases only 11 are female, and this is reassuring in view of recent reports that the virus has been shown to be present in cervical secretions and that cases have occurred where the disease has been passed to female partners by heterosexual vaginal intercourse.

The distribution of cases continues to follow the established pattern; the four Thames Regional Authorities are dealing with the majority of U.K. cases (79%) of which homosexual/bisexual males form the majority of patients (89%). The average age for the development of the disease is now 38 years, and of the 335 cases recorded since 1982, 170 patients have died.

5.0 Transmission

There is no evidence that social contact with HTLV III positive individuals presents a risk of transmission of infection. Furthermore, there is no evidence that the infection is transmissible by airborne droplets resulting from coughing or sneezing, nor by sharing washing, eating and drinking utensils, other articles in general use or the sharing of toilet facilities.

The virus is heat labile and is destroyed by heating to 56 degrees centigrade for 30 minutes (blood products are treated by heating to higher temperatures for longer periods.) HTLV III is also very sensitive to chemical disinfectants and detergents and is rapidly inactivated within one minute of exposure to household bleach (10% solution), alcohol (70%) or glutaraldehyde (2%). A recent report ¹⁴ still considers that people living with AIDS patients (without sexual contact) are considered to be at low risk for the disease.

5.1 High risk groups

The disease continues to specifically affect the following groups:

- (a) male homosexuals and bisexuals,
- (b) IV drug abusers who share needles and syringes contaminated with blood.
- (c) haemophiliacs who have received factor VIII or IX and others receiving relatively large amounts of blood or some blood products,
- (d) sexual partners of sero-positive individuals and AIDS patients,
- (e) infants born to mothers who are HTLV III positive or at risk of contracting the virus.

The epidemiological risk groups would therefore imply sexual transmission (both homosexual and heterosexual), blood to blood inoculation and materno-fetal transmission. In addition some patients with AIDS are found to have connections with Central African countries, implying that the agent is especially prevalent in that area. There has been no documented evidence to suggest that the disease is transmitted by biting insects.

5.2 School children

HTLV III virus infection has occurred in some haemophiliac children as a result of batches of factor VIII or IX used in their treatment, being infected with the virus. In the UK all blood products are now heat-treated and this should eliminate any future risk of transmission from these agents. The great majority of haemophiliac children (approximately 700 in the UK) have been tested for antibody to the virus and of these, 35% have been found to be antibody positive and may be carriers of the virus.

None of the known cases in the USA or the UK have shown evidence that infection has been transmitted by casual contact in schools and an infected child should be allowed to attend school freely and be treated in the same way as other pupils, ¹⁵.

The Department of Education and Science has advised that as infection relies upon intimate body contact or exchange of body fluids the following restrictions should be placed upon children at school:

- (a) No HTLV III positive child should give blood for class use, e.g. in biology lessons.
- (b) The fashionable practice of developing blood brother/sister relationships by cutting or pricking the skin so that two or more children can mingle blood should be actively discouraged.
- (c) Ear-piercing for boys and girls should be discouraged, as unless the ear-piercing equipment is properly sterilised there is a small risk of transfer of infection.
- (d) Tattooing — similar considerations apply as for ear-piercing.

Swimming, contact sports and music lessons (involving the use of wind instruments) present no particular risks.

However, the Board of Science believes that, because of the risk of hepatitis B or AIDS transmission, there are no circumstances in which children should give blood in class.

5.3 Female contacts of males infected with HTLV III virus

It is now clear that heterosexual females may become infected in two major ways, i.e. by sexual intercourse and by sharing infected injection equipment. The American and UK experience suggests that infection by vaginal intercourse may not occur frequently although high-risk groups such as female prostitutes may pose a threat by acting as a reservoir for the infection. Evidence from Central Africa shows that the disease is widely affecting heterosexuals and may be related to high levels of promiscuity. The recent figures from the CDSC in London do not reflect that this is the situation in the UK at present.

5.3.1 Pregnancy

There is one increasing area for concern and that is the likelihood of the transmission of the virus to a fetus in a woman who has had prior contact with the virus or contact following conception of an embryo. It has been reported that such infection may have two direct consequences: the woman has a high risk of passing the virus to the developing fetus, (with perhaps more than 50% of such babies being affected) and in so doing greatly increases her risk of developing AIDS. Accordingly, wives and female contacts of known HTLV III carriers should be counselled and advised against pregnancy. Facilities for termination of pregnancy in such women should be available.

5.4 Health Care Personnel

A Working Party was set up by the Council of the Hospital Infection Society to consider the available information concerning the risk of the spread of infection in the community and to patients and hospital staff. Evidence is accumulating of the very **low** risk of transmission of the virus to health care workers through normal work practices, in caring for patients and dealing with clinical specimens. In a study undertaken in America 512 health care workers were enrolled in a prospective evaluation of persons

exposed by parenteral or mucus membrane routes to the blood or body fluids of patients with AIDS or symptoms suggestive of AIDS. 105 of the participants were followed up for an average of eight months and have not shown seroconversion to the AIDS virus. 80% of those followed up had parenteral exposure from contaminated needle sticks or cuts from sharp instruments. There is only one confirmed report which describes a UK nurse who developed HTLV III antibody following a needle stick injury and exposure to the blood of an AIDS patient. This individual remains well.

The report of the **Hospital Infection Society Working Party** has been published¹⁰ and staff involved in the care of sero-positive individuals and AIDS patients should examine their findings in detail. Some of their main recommendations include the following:

5.4.1 Needlestick Injuries

The most likely potential method of transmission of HTLV III to health care staff is by the percutaneous inoculation of infected blood by a contaminated needle, other sharp instrument or broken glass. Important control measures are general care with blood of **whatever source**, avoidance of skin contamination (or immediate washing), and safe attention to spillages and care with sharp instruments and their correct disposal. It has been estimated in one study that 40% of needlestick injuries and other skin punctures can be avoided by more careful attention to disposal procedures.

5.4.2 Patients at increased risk of HTLV III infection

The time at which the identification of HTLV III — risk status of patients needs to be made is either on admission to hospital or before a venepuncture or other invasive procedure. This should be the responsibility of the medical staff looking after the patient. Such patients should be offered the test and patients who decline should be treated as positive in terms of precautions taken by health care staff. Negative patients may still be regarded as needing special precautions if they belong to high risk groups. The implications for the individual patient should be considered and positive results will need to be communicated to patients by senior medical staff who will ensure that adequate information, counselling and follow-up are provided.

For the availability of specialised diagnosis and management in some areas with a low incidence of AIDS, it may be useful to concentrate the care of AIDS patients in specialised units. However, there is no risk from nursing HTLV III — risk patients in non-specialised and general wards and units except in instances where another, secondary infection, may present a risk to others.

5.4.3 Protection procedures

Protective clothing (gloves, plastic apron, gown, mask, eye protection) should be worn by staff only where there is a significant risk of contamination by blood or tissue fluids. Sharps should be disposed of in the standard hospital system by incineration. Communal shaving equipment should not be used and blood spillages should be covered by hypochlorite (10,000 ppm available chlorine) and mopped with absorbent paper. Blood and similar specimens should be collected by trained staff wearing gloves. Particular care should be taken when removing and disposing of needles and when ejecting blood into specimen bottles.

5.4.4 Surgical patients

The consultant in charge of the patient should be responsible for seeing that all members of the team know of the infection hazard and measures to be taken. Similarly a standing agreement concerning common investigations must be reached between senior clinicians and pathologists and unusual investigations should be discussed in advance.

Routine dentistry for HTLV III — risk patients should be carried out in non-specialised community dental surgeries although a number of specific precautions should be introduced to prevent spread of infection. It is essential that part-used anaesthetic cartridges are not reused on further patients, effective and regular sterilising techniques should be introduced and protective clothing and equipment should be used by dentists and assistants whenever necessary. Detailed guidance for the dental practitioner has now been published ¹⁶.

5.4.5 General policy for staff

Accidental inoculation or contamination of medical or paramedical staff must be reported to the senior member of staff with overall responsibility for the work and responsible for recording accidents and to the Control of Infection Officer. When any inoculation incident occurs, the risk of infection by HTLV III virus or hepatitis B virus should be considered and recorded. Prophylaxis against the latter, and counselling, should be given where necessary, and specimens of serum from the staff member and the source patient should be preserved. Relevant incidents should be included in the surveillance scheme set up by the Association of Medical Microbiologists and the Communicable Disease Surveillance Centres at Colindale and Glasgow.

“Baseline” specimens of serum from staff working with HTLV III positive patients and specimens may be preserved, with their agreement, for possible later testing in an ongoing epidemiological setting. These arrangements may be organised in conjunction with the occupational health staff in the hospital.

Screening of staff for HTLV III antibodies is not indicated, and in the present state of knowledge there is no suggestion that the finding of such antibodies in any type of staff is a contraindication to employment, although they would need to take precautionary measures to prevent any possibility of transmission of the virus during their work.

Health and safety committees must be adequately briefed upon the disease and its potential hazards to medical, nursing, paramedical and other staff. Occupational health staff should be adequately trained to enable them to organise AIDS counselling for NHS staff. However, health care workers should be reassured that the negative findings obtained from a number of occupational transmission studies so far undertaken, show that the chances of acquiring HTLV III infection in hospital is minimal.

5.5 Mouth to mouth resuscitation

It is clear that the virus for HTLV III is not very infectious and requires intimate contact for transmission. Although the virus has been found in saliva it may not always be present in the saliva of AIDS victims or in antibody positive individuals and there is no evidence that the virus can be transmitted by exchange of saliva.

However, there continues to be doubt in the minds of many lay people, and health care workers and doctors regarding this matter. The Royal Life-Saving Society, the St John Ambulance Association, the Department of Education and Science and a number of medical authorities have confirmed that mouth to mouth resuscitation in an emergency situation carries little or no risk for transfer of the virus. Some hospital authorities have been more guarded in respect of those health care personnel who come into regular contact with high risk patients.

The following policy for dealing with the training of first aid or health care personnel and the application of mouth to mouth resuscitation in emergency situations has been suggested:

1. People who are **infrequently** required to give mouth to mouth resuscitation having received only basic first aid training should be reassured that in an emergency they can safely undertake life saving resuscitation techniques. For people who **regularly** encounter patients in emergency situations requiring skilled attention such as trained life-guards, ambulance staff, nursing staff and medical practitioners, etc. then the use of airways (with non-return valve) and other resuscitation equipment should be considered, so that the risk of direct contact with saliva and blood is lessened. Unless the patient's saliva is contaminated by quantities of blood then there should be no danger to the person offering resuscitation. Such equipment should therefore be provided for such health care personnel but they should be reassured that in an emergency, normal resuscitation poses no significant risk.
2. Resuscitation training involving the use of mannequins is not regarded as in any way likely to lead to the acquisition of the virus providing the recommended hygiene and cleansing procedures are followed and the manufacturers or the St John Ambulance Association can be contacted for further guidance on this matter.

6 Confidentiality of AIDS Patients

The Department of Health and Social Security has published several guidance documents regarding this matter which confirms that the following procedures should be followed:

1. It is vital to maintain the confidence of those in high risk groups to ensure that by coming forward for testing or counselling there will be **no breach** in confidentiality.
2. The introduction of regulations in relation to AIDS Public Health (Infectious Diseases) Regulations 1985 provides for medical examination, admission or detention in hospital **in exceptional cases** where the clinical condition of the patient places him in a dangerously infectious state. The exceptional implementation of the regulations would normally be on the initiative of the doctor in charge of the case with the proper officer of the local authority (usually the medical officer for environmental health).

3. Health Authorities have been reminded that anyone who goes for blood tests at a **sexually transmitted diseases clinic** must be treated under the terms of strict confidentiality. The privacy of AIDS patients and those found to be antibody positive who are treated at STD clinics are protected by the NHS (Venereal Diseases) Act 1984.
4. The Health Education measures supported by the DHSS have stressed the limited means by which HTLV III can be spread and it is hoped that this will encourage the public and employers in general not to regard the **employment** of people with AIDS or a positive antibody as posing risks.
5. The **strictest confidentiality** must be maintained for affected individuals, as set out in the detailed guidance from the DHSS ¹² as follows:

Confidentiality

"The strictest confidentiality must be maintained when an HTLV III antibody positive individual is identified. Where a person is tested for HTLV III infection or for its complications and is thought to have been sexually transmitted, health authorities have an obligation to maintain confidentiality of information under the terms of the NHS (Venereal Diseases) regulations (1974) (S11974.9). Unless the patient has given his consent, personal health data relating to him must **not** be disclosed to anyone for any purpose other than the health care of the patient, **except** where the disclosure is necessary to prevent the spread of infection. Disclosure of this information for purposes other than medical or public health reasons could lead to serious consequences for the informant. Adequate safeguards to protect individuals against unauthorised disclosures must be adopted.'

6. Individuals with a **confirmed sero-positive test** should inform doctors and dentists who are treating them that they are antibody positive prior to any blood samples being taken or surgical procedures including dental work being undertaken so that the appropriate precautions can be implemented.
7. It is anticipated that the vast majority of HTLV III antibody positive individuals will give **consent** for their own doctor to be informed of the test results. Similarly, it is very seldom found in practice that a patient will persistently refuse to tell a spouse of his/her antibody position or who refuses permission for the doctor to contact his/her partner. In the very few cases where permission for disclosure is denied by the patient then it is open to the doctor to contact the doctor of the partner at risk and with this doctors co-operation to ensure that steps are taken to safeguard the interests of both parties. Patients who attend STD clinics, including those who fear they have been exposed to the AIDS virus, do so on the basis that they will be dealt with in a confidential manner.

6.1 Counselling of patients after the HTLV III antibody test

Since October 1985 all blood donations have been tested to identify antibody to HTLV III (as done for hepatitis B and syphilis).

Whether or not donors or patients are members of a high risk group, the news that they are HTLV III antibody positive may be difficult for them to accept and careful counselling will be required. Patients who are found to have a positive test will be asked to consult a medical practitioner (their general practitioner or a GUM Clinician)

who with their consent, will be informed of the test results and will arrange any follow up required. If general practitioners wish to provide the test for their patients themselves then they will need to contact the director of their local PHLS laboratory about arrangements for collecting and testing blood samples. In such circumstances it would be necessary for the GP to provide advice and counselling before and after the test. Where the patient has a confirmed positive result a full clinical examination will be required and if necessary referral for investigation and treatment.

7 Summary

AIDS is a serious disease and not all the information presented to the public has been entirely accurate, so many people are confused about who is at risk and how the disease is spread and how dangerous it is. AIDS can affect anyone and the number of cases will continue to increase in the UK as is happening in America, and although research and development work in this field is progressing at a fast pace it would be unreasonable to hope for a vaccine or a cure for the disease to be offered within the next five years or so.

HTLV III, which causes AIDS, is being spread by people who do not know they are carriers. It is therefore essential and urgent that people in high-risk groups, some of whom are quite unaware of the risks, must be advised that if they undertake certain sexual practices they will be risking their lives. They must also be warned that they could already be carrying HTLV III and must therefore protect the lives of others by ensuring that no opportunity arises for the virus to be passed on. Accordingly, a number of voluntary bodies are now undertaking intensive public health campaigns in this field, notably the Terrence Higgins Trust.

With effect from Sunday the 16th March 1986 the Government launched a comprehensive public health campaign organised by the DHSS and there will be wide coverage in the national press and the media to present the basic facts regarding this disease and to encourage those at risk to take all precautions to prevent further spread of the virus, ie. essentially by the use of safe sexual practices and reducing the number of casual sexual relationships, refraining from anal intercourse and the sharing of I.V. drug injection equipment.

This booklet suggests steps which must be taken within health services to protect employees and patients in their care and to help cater for the needs of AIDS sufferers. Many advances are taking place in the knowledge of the disease and the agent responsible for it and these guidelines are therefore interim. The Board of Science and Education will keep under continuous review any new information published in the scientific and medical press and will also work on evidence or comments from doctors, health care workers, researchers in the field or other interested parties, which will allow them to reassess the measures that have been recommended.

REFERENCES

1. Advisory Committee on Dangerous Pathogens Report. Acquired Immune Deficiency Syndrome (AIDS) — interim guidelines. DHSS 1984.
2. First report of the RCN AIDS working party. Nursing guidelines on the management of patients in hospital and the community suffering from AIDS. RCN 1985.
3. Health Education Council leaflet. AIDS: What everybody needs to know. HEC 1986.
4. The Terrence Higgins Trust leaflets: AIDS: Medical briefing, AIDS: The facts, AIDS: HTLV III antibody; to test or not to test. Terrence Higgins Trust 1985.
5. Leaflet of the Haemophilia Society Haemofact: Advice on safer sex (special issue). Haemophilia Society 1985.
6. National Union of Public Employees booklet. AIDS epidemic — time for action. NUPE 1985.
7. COHSE Health and Safety Bulletin. AIDS — guidelines for health staffs dealing with patients suffering from Acquired Immune Deficiency Syndrome (AIDS) or with AIDS virus. COHSE 1985.
8. National Blood Transfusion Service leaflet. AIDS: Important new advice for blood donors. DHSS central office of information for the NBTS. 1985.
9. British Medical Association, Board of Science and Education statement on AIDS. BMA 1985.
10. Hospital Infection Society. Acquired Immune Deficiency Syndrome: recommendations of a working party of the Hospital Infection Society. *Journal of Hospital Infection*. (1985) 6, (supplement c), 67-80.
11. Department of Health and Social Security booklet 1. AIDS: General information for doctors. DHSS 1985.
12. Department of Health and Social Security booklet 2. AIDS: Information for doctors concerning the introduction of the HTLV III antibody test. DHSS 1985.
13. Department of Health and Social Security booklet 3. AIDS: Guidance for surgeons, anaesthetists, dentists and their teams dealing with patients infected with HTLV III. DHSS 1986.
14. Luzi G, Ensoli B, et al. Transmission of HTLV III infection by heterosexual contact. *Lancet* 1985, II:1018.
15. Department of Education and Science. Guidance on school children and AIDS. DES 1986.
16. Dinsdale, RCW Viral Hepatitis, AIDS and Dental Treatment. Published by the British Dental Journal, 1985.