Guidelines on AIDS

for Public Health Nurses

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Contents

Foreword

Human immunodeficiency virus (HIV) is one of the most fearful infections man has ever encountered. There is no absolute cure or vaccine available to date. Current evidence shows that the incubation period may be as short as ten days or as long as ten years. Infected persons who may or may not exhibit signs and symptoms in the early stages of disease are infectious to other persons. A lot of fear and misinformation has been generated since the disease was first described in 1981 and this is not confined only to the general population.

As only regular and accurate education can counteract irrational fears it is important that persons dealing with HIV positive individuals should keep in touch with information as it becomes available. Health care staff have a large role to play in this emotive field and must be well informed as to the real risks as opposed to the myths associated with the disease.

This booklet will help in giving factual information about HIV and how to deal with it in a calm and and balanced way.

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Preface

A decision was made by the AIDS Interest Group of the Institute of Community Health Nursing to assist nurses in a practical way by compiling this booklet. This interest group included:

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The expertise of several people outside the Institute was sought. In particular we would like to acknowledge our gratitude to —

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The Eastern Health Board Printing Section and the Community Care Programme who facilitated us in every way.

Their invaluable help and assistance are much appreciated by the AIDS Interest Group of the Institute of Community Health Nursing.

Mary A Russell
Chairperson of Group

Introduction

Acquired Immune Deficiency Syndrome (AIDS) is a new and complex disease first diagnosed in 1981. The virus was isolated in 1983. Research into this disease is continuous and new facts and information are emerging almost weekly. At present there is no cure and no vaccine, and the disease is spreading further and further into the community. Health care staff at every level will have to confront this disease sooner or later.

The first essential is to provide a caring system that is compassionate, comprehensive and cost-effective.

Nurses must appraise themselves of all the facts and endeavour to keep up to date with the latest findings on the disease and then educate others.

The aim of this booklet is to:

— increase nurses' knowledge about HIV infection and AIDS
— allay unwarranted fears about AIDS
— act as a resource tool in the dissemination of information.

CHAPTER I

What is AIDS?

Acquired Immune Deficiency Syndrome: An acquired defect in the immune system function which reduces the affected persons resistance to certain types of infections and cancers.

WHAT CAUSES AIDS?

Aids is caused by a retro virus first recognised in 1983. Originally called Human T Lymphotropic Virus III - HTLVIII or Lymphadenopathy Associated Virus - LAV which is now known as HIV Human Immune Deficiency Virus.

THE IMMUNE SYSTEM

The immune system is designed to protect the body from a large number of potentially infectious agents in the environment. The first line of defence against invasive organisms is the skin, the saliva with its anti-bacterial agents, genital secretions and mucous membranes. There is also a highly sophisticated defence system, mostly 'white blood cells' or 'leucocytes' which are distributed by organs such as bone marrow, thymus, spleen, lymph nodes and the lymphatic system.

HIV infects specific cells in the immune system namely the T lymphocytes known as T helper cells and in the central nervous system the glial cells. Lymphocytes fall into T cells and B cells. T cells are divided into (a) T helper cells, (b) T suppressor cells, (c) T killer cells. The T cells control the immune system. (a) T helper cells activate the system. (b) The T suppressor cells shut off the immune response when it is no longer needed. When the system is stimulated a third type of T cell (killer cell) is produced which eliminates potentially cancerous cells and some types of infection. In addition B cells are triggered by T helper cells to produce antibodies. Therefore the presence of a certain antibody in a person's blood means the person has at sometime come in contact with the organism known to cause production of that particular antibody. This is the basis of an antibody test.

The tests used to check for antibodies to the virus are:

(1) ELISA (enzyme linked immunosorbent assay) both indirect and competitive methods.

(2) Western blot assay. It is more specific and accurate than the ELISA.

(3) Other confirmatory assays.

Antibodies may not be found for at least 12 weeks from the time of perceived infection or contamination. The test must be repeated after a further three months to rule out a false negative result where there is any doubt and this may be extended.

A positive test does not necessarily mean that infection with full blown AIDS has occurred. It does mean the person is a carrier of the virus. Most positive persons may remain healthy for long periods of time and show no symptoms or signs of illness. Many could be unaware of their condition if antibodies had not been discovered. However, they can infect other people.

TEST FOR PRESENCE OF THE VIRUS

Research is in progress for satisfactory antigen and viral tests. Antigen tests, such as, R-T assays (reverse transcriptase) and specialised techniques such as PCR (Polymerase Chain Reaction) are being evaluated for demonstration of DNA (Deoxyribonucleic acid).

HOW IS AIDS TRANSMITTED?

(a) Intimate sexual contact heterosexual or homosexual with an infected person.

(b) Transfusion of infected blood or blood products (eg factor 8).

(c) Sharing used needles and syringes commonly called *'the works'* with an infected person.

(d) Pregnant mother to her baby (transplacental or during delivery).

HIV has been isolated from most body fluids and secretions but the heaviest concentrations have been found in blood and semen. Lesser concentrations have been found in tears, urine, saliva, breast milk, cervical secretions and CSF under ideal laboratory conditions.

The virus is fragile and does not survive well outside the body. It can easily be killed by exposure to 60°C for 10 minutes or by the use of sodium hypochlorite 1% (household bleach 1 part to 10 parts water).

The virus is not known to be spread by the respiratory route, and it is important that people understand that casual social contact, shaking hands, social kissing, hugging, crying, coughing, sneezing do not transmit the disease.

HIV infection is not passed on from cups, drinking straws, dishes, bed linen, towels, door knobs, phones, office equipment, furniture etc.

Swimming pools, toilet seats, baths are not a source of HIV infection. HIV infection cannot be contracted from eating foods prepared by a person who is antibody positive.

Couples who are not infected and who maintain a mutually faithful monogamous relationship (only one continuing sexual partner) are not at risk from HIV infection.

WHO IS AT RISK FROM HIV INFECTION?

• HEALTH CARE STAFF ARE NOT AT RISK PROVIDED THEY FOLLOW INFECTION CONTROL GUIDELINES.

The greatest numbers of those infected have come from the following groups:

(1) Homosexual/bisexual men who are sexually active.

(2) Intravenous drug abusers.

(3) Haemophiliacs and those who received transfusions in countries where blood screening services are inadequate. All blood donations are tested for HIV in Ireland and blood products are heat treated since October 1985.

(4) Sexual partners of any of the above.

(5) New born babies of mothers infected with HIV.

AIDS IS NOT A NOTIFIABLE DISEASE AT PRESENT. (This is a deliberate policy by the Department of Health in the interest of confidentiality and to encourage people at risk to come forward for counselling, testing and/or treatment). However, there is a ***voluntary*** confidential reporting scheme which is currently in operation.

WHAT IS ARC?

ARC is AIDS Related Complex. It is an acute episode of illness (lasting two weeks or more) when the patient has symptoms similar to those of a person with full-blown AIDS or clinical AIDS. These are fever, unexplained weight loss, swollen lymph nodes and fungal infection of the mouth and throat. Patients with ARC may eventually go on at some time in the future to develop clinical AIDS.

CHAPTER II

Risks to Patients

Patients with HIV infection are immune deficient and they are prone to many infections. They usually develop what are known as opportunistic infections. These are caused by organisms which live within all of us but cause no problems when the immune system is intact. This list of infections and tumours to which patients with AIDS are prone can be divided into five categories:

(1) VIRAL infections such as cytomegalovirus, herpes simplex virus and hepatitis B virus.

(2) BACTERIAL infections — salmonella, A typical mycobacterial, legionella, shigella and tuberculosis.

(3) PROTOZOAL infections — cryptosporidium causing diarrhoea (for over one month), ***pneumocystic carinii*** causing pneumonia and toxoplasmosis causing generalised lymphadenopathy and neurological complications.

(4) FUNGAL infections — aspergillus causing cerebral changes; candidiasis of mouth, throat, oesophagus, genito-urinary tract etc; cryptococcus causing pulmonary infection and central nervous system disease.

(5) TUMOURS
   (a) Kaposi's Sarcoma
   (b) Cerebral lymphoma
   (c) Non-Hodgkins lymphoma

It is important to remember that chemotherapy used during treatment can have side effects such as neutropenia. The white cell count can drop to a dangerous level leaving both sides of the patient's immune system ineffective, the T cell because of the HIV virus and the B cell because of the effect of chemotherapy. B cells deal with the common infections. The patient has no defence against infections in the environment and so needs to be protected throughout this period. Strict hand washing by attendants between patient contacts is essential. If the patient has a white cell count which is below 500 cmm a mask should be worn for the patient's protection. An understanding of the side effects and toxicity of the drugs prescribed for the patient is vital. The most common are nausea, vomiting, skin rashes, rigors and chills. It is important to be able to identify these side effects so that the patient can be supported throughout this traumatic period.

CHAPTER III

Nursing Care and Management

Those patients who develop the clinical or full-blown AIDS today have little hope of long term survival. Nurses will need the necessary skills, motivation, the moral strength and the courage to give care, comfort and peace to those who are suffering. The social isolation among AIDS patients can be relieved by friendly contact and non-judgemental acceptance. Fear among staff, family and friends can be dispelled when accurate information is provided.

Patients with HIV antibodies and AIDS remain well for long periods of time. However because of the deficient immune system they are prone to illnesses, some of which will require hospitalization, others home care.

PROBLEMS ENCOUNTERED

Respiratory Distress

The most severe problem a patient will present with in an acute stage of their illness is respiratory distress.

In the past, patients with respiratory disease were nursed in a sitting position and encouraged to cough and breathe deeply. With AIDS patients, who have **pneumocystis carinii** pneumonia, this treatment could be very dangerous. Pneumocystis lodges in the intersitial spaces — (the area between the alveoli and the capillary where gas exchange takes place). In pneumocystis the surfactant is replaced with a hard rigid cyst. If there are several cysts and if the patient is asked to cough and do deep breathing exercises collapse of the lung may result. Positive pressure ventilitation is not recommended.

Pain Control

Pain must be controlled before it becomes severe. ***It is important that medical and nursing staff have a carefully planned regime to control the patient's pain.*** Many AIDS patients have had a dramatic weight loss which also can involve muscle wasting, making intra-muscular injection an unpleasant route of administration of drugs and medication for the patient.

Nutrition

As patients with AIDS suffer huge weight loss and are frequently anorexic, they should be allowed to eat whatever they like. Small frequent feeds which are high in calories, protein and low in residue should be encouraged.

Diarrhoea

Diarrhoea can be very distressing for the patient. Up to ten litres of fluid per day may be lost. Anti-diarrhoeal agents may not always be effective. Hydration needs to be carefully monitored. Diarrhoea can be life threatening. The causative agent should be isolated and treatment initiated urgently.

Skin Care

Skin hygiene is of the utmost importance for any ill/debilitated patient. Daily shower/bath should be encouraged to prevent skin infections, which could be a threat to the already compromised immune system. Skin lotions will help to maintain the skins moisture. Regular attention to pressure areas is absolutely essential.

Mouth Infection

Oral hygiene is essential to prevent infection. A soft tooth brush should be used which will not break or tear the buccal mucosa. Patients can have severe oral thrush which makes eating and swallowing painful. Patients tend to avoid oral care. Mouth washes should be encouraged as a preventative measure. Patients should avoid spicy foods.

Generalised Infections

Meticulous care must be taken to keep intravenous sites, wounds, biopsy sites, indwelling catheters or nasogastric tubes in optimum condition. Patients are prone to pyrexia of unknown origin and any such episodes should be immediately investigated and medical intervention sought to prevent the rapid onset of septicemia.

Kaposi's Sarcoma

The lesions may be small, similar to petechiae. These are purplish in colour, resembling a bruise mark. They can be seen anywhere on the body skin, mouth etc. The involvement may include the lymphatic system, gastro-intestinal tract, spleen, lungs, heart and the Central Nervous System. This involvement may lead to pain, obstruction or perforation in the gastro-intestinal tract and other systems.

Neurological Problems

These have been found both in patients who are HIV positive and those who have developed clinical AIDS. One study suggested that 10% of patients with

AIDS present with neurological problems. Symptoms can include personality changes, dementia, fits, memory lapses, and bizarre behaviour similar to a patient with senile dementia, except that in these cases the patient is usually young. Post mortems have shown that 75% had evidence of disease of the central nervous system.

CHAPTER IV

Positive Health and Healthy Lifestyle

A HIV positive antibody test has huge implications for the patient emotionally, socially, financially, as well as their physical and mental well-being.

Many infected persons such as drug abusers or homosexuals are painfully forced to acknowledge their lifestyles, as well as face their shortened hold of life. Media reporting of inaccurate and misleading information has resulted in hysteria and unreasonable fear in both the patients' minds and that of the general public.

Patients requesting a HIV test must be carefully counselled. They need to be helped to understand the implications of having the test. The significance of having a positive result must be explored.

A positive result does not mean that a person has AIDS or is necessarily going to develop it. Various studies which vary from country to country claim 30-60% of those with antibodies to the virus will eventually develop clinical (full-blown) AIDS in 3-8 years from initial time of infection.

Nobody can tell accurately from research available who will develop clinical AIDS.

It is suggested that adapting a healthy lifestyle and avoiding further insult to the immune system may prevent or delay the onset of full-blown AIDS. Casual sex (many partners) must be avoided thus reducing the incidence of sexually transmitted diseases which challenge the immune system each time. Drug abuse which involves sharing needles and syringes also challenges the immune system.

It is imperative that the patients understand that they are 'carriers' and may infect others. Blood or organs must not be donated. Clear instruction on how transmission of the virus takes place is very important.

Changing behaviour and lifestyle is difficult at the best of times. The patient should be encouraged to see it as a positive step in prolonging his or her life. Supportive counselling which challenges the myths and explains what is safe to the patient and if possible with the patient's permission enlisting the help of the family, can be of benefit to the patient in adjusting to their circumstances.

Family members living with individuals who have the HIV virus do not become infected except through sexual contact or sharing used IV needles and syringes.

Stress can play a major role by increasing the strain on the immune system. Patients should be encouraged to find ways to relax and to find activities or hobbies that give them enjoyment. They should be encouraged to adopt a healthy nutritious diet. A balanced programme of exercise and rest is a positive step towards healthy living. A positive attitude to health will improve their physical and mental well-being.

There are self-help and support groups which are of great value in assisting those infected and their families, — *see Appendix.*

The reaction of someone receiving a positive result is similar to a grief reaction. Feelings of anger and guilt are common. This anger may lead to behaviour which takes the form of denial. Some persist with their original lifestyle and become more promiscuous at this stage. They worry about who they have infected, their partner or their child, and how they can tell them. Patients need a lot of support and practical assistance in coming to terms with the necessity to change their lifestyles.

Depression

Depression is not unusual in these circumstances since there is no cure available or even hope of a cure at present. Patients need to express their fears and worries and time spent is well spent. Isolation by former friends or companions, fellow workers or the adverse reaction of medical or nursing personnel to their illness can be devastating. Coupled with this is their extreme difficulty in accepting their fatal illness. Helping a partner or family to understand what is happening to the patient and how they can be of assistance could be of immense help in their coming to terms with this illness. Signs and symptoms of depression need to be closely monitored and if possible the patient should not be left alone.

CHAPTER V

Risks to staff and the appropriate course of action necessary

The primary role of the nurse in the care of the patient with HIV infection is to minimise the risk of infection to patients and their carers. The Public Health Nurse in the course of her duties deals with the broad spectrum of life, from the new-born to the terminally ill. It is known that HIV infection is spread through direct contact with infected blood, semen and other body fluids. In the control of the spread of infection it is important that carers of AIDS patients are made thoroughly aware of these facts. ***Simple basic facts such as frequent hand-washing cannot be over stressed in the role of infection control.***

DISPOSAL OF NEEDLES/SYRINGES AND SHARPES

Extreme care must be taken in the disposal of all needles and syringes. Most problems occur when trying to re-cap or re-sheath the needle after use. This should never be done, the needle and syringe must be discarded as a unit into a puncture proof container for incineration. In most Community Care Areas arrangements have been made for the collection and incineration of these containers. One should remember that hepatitis B is an even bigger problem where needle stick injuries occur but immunization is available for this disease.

WHAT TO DO IF YOU ACCIDENTLY STICK YOURSELF

1. Encourage bleeding.
2. Wash the site immediately with soap and water.
3. Inform your Superintendent, Senior Nurse or Medical Officer.
4. Make a note of patient's name.
5. Fill in the appropriate accident form.
6. Blood may be taken and stored for future reference.

SKIN LESIONS

Cuts, abrasions, and chapping on the hands or arms can be a likely route for viral infections e.g. hepatitis B, HIV. If blood from an infected person comes into contact with broken skin there may be a risk of infection. All cuts or

abrasions should be covered by a waterproof dressing and gloves should be worn when dealing with body fluids or blood of any patient. Nurses with dermatitis or herpes should not be allowed to nurse patients who are HIV positive.

MOUTH/EYES SKIN CONTAMINATION

While few cases of AIDS have yet been reported from contamination of intact-skin, mucous membrane or conjunctiva, it is prudent to avoid splashing of the face with blood or body fluids. Care must be taken to avoid rubbing the eyes during or after dealing with contaminated material until the hands have been carefully washed. Splashes of blood etc into the eyes or mouth should be washed with copious amounts of water or saline. Splashes of blood on the skin should be washed off immediately with soap and water.

SPILLAGES OF BLOOD/VOMITUS

These should be cleared up as quickly as possible using hypoclorite 1% which is household bleach 10% strength, diluted one part bleach to ten parts water. If practical, the solution is left on the contaminated area for 30 minutes before being wiped up with disposable paper towels. It is advisable to wear disposable gloves and a plastic apron. The paper towel can be discarded down the toilet and if there are more than one or two towels they should be burned. Where this is not possible, dispose of as infected waste (i.e. double bagged).

NB. Bleach can corrode metal and burn holes in fabrics if used for too long or if the dilution is too strong.

WASTE DISPOSAL

Urine, faeces and vomitus can be flushed down the toilet in the normal manner — no disinfectant is necessary.

Waste which is contaminated with blood, should ideally be burned. If this cannot be done, waste should be put in a plastic leakproof bag, tied, and then placed in a second similar leakproof bag. It must be ensured that it is leakproof for transport to incinerator. A biohazard warning should be attached to the bag.

NON-SOILED WASTE

This is discarded into the waste bin and disposed of in the usual way.

PROTECTIVE CLOTHING

Plastic apron and gloves should be worn

- When dealing with blood and waste products;

- When handling used instruments, linen or dressings soiled by body fluids;
- When catherization is being performed (which is normal procedure);
- When dressing wounds;
- When attending to patient's sanitary needs and disposing of excreta.

Visimasks are necessary where splashing with blood or body fluids is likely to occur.

PREGNANT NURSES

Cytomegalovirus (CMV) infection is often present in patients with HIV infection. Pregnant nurses should be guided by their obstetrician with regard to working with HIV patients. However, many adult women have already got antibodies to CMV and this can be easily checked.

HOME HELPS AND OTHER HELPERS

They need to be advised regarding infection control procedures for infectious patients. The actual diagnosis cannot be disclosed without the patient's permission.

MEALS ON WHEELS

As there is no risk to those who deliver meals on wheels they do not need any special protective measures.

SOCIAL WORKERS AND SOCIAL VISITORS

No special precautions necessary as the disease is not air borne.

PRECAUTIONS TO BE TAKEN BY MEMBERS OF THE HOUSEHOLD

PERSONAL HYGIENE

Tooth brushes or ***razors*** should not be shared. If normal hygiene rules and advice are put into practice there should be no problems.

Contact lenses — use hydrogen peroxide solution to clean lenses.

Disposable razors are advisable.

Sanitary towels — should be burned or placed in plastic leakproof bags for burning.

Disposable nappies — reduce the need for handling and are easily disposed of by burning.

LAUNDRY

Personal linen and clothing can be washed in the washing machine in the normal manner. The virus is easily killed by heat. If the linen etc is grossly soiled common sense would dictate that it should be washed separately in a hot wash at 93°C for ten minutes.

CROCKERY AND CUTLERY

Hand wash in hot soapy water or dish washer if available. Meals prepared or cooked by HIV positive persons are acceptable and are not a risk to other persons.

TOYS

Should be washed if washable in hot soapy water. Chewing of pens or pencils etc is not considered a risk.

BABIES BOTTLES, ALSO SOOTHERS

Wash thoroughly to remove milk traces and immerse in Milton (or New Born or Sterinova Irish Made).

A dark container should be used and solution changed daily. (These fluids deteriorate in light and on dilution, and also corrode metal).

GENERAL HOUSEKEEPING

Clean as you would normally. No special disinfectant is necessary. Use separate cloths or mops for kitchen and bathroom. Ensure adequate ventilation throughout.

Pets

Patients who have pets need to take precautions when caring for their pets because of the risk of contracting infections from them. Gloves should be worn when cleaning bird cages as birds may carry psittacosis, and cat litter boxes because cats can transmit toxoplasmosis. Fish tanks may contain organisms of the mycobacterium family which could infect a person with AIDS.

NURSES' REQUIREMENTS

Puncture proof containers for sharpes/needles and syringes.
Plastic disposable gloves — latex gloves for blood.
Plastic disposable aprons.
Face mask — Visimasks.

Bleach.
Paper towels.
Plastic disposable bags.

OXYGEN

Use disposable masks and tubing which can be disposed of by incineration.

Use disposable humidifiers/nebulisers and change frequently.

Non-disposable humidifiers should be autoclaved or sterilised using ethylene oxide.

SUCTION APPARATUS

Suction catheters — use single use, disposable catheters. Wear disposable gloves on both hands to suction the patient.

Tubing — preferably disposable, change daily or as required. Dispose by incineration.

SUCTION JARS

Change as required. Sterilise by autoclave. Store dry. Only add disinfectant immediately before use.

LIDS

Wash in hot water and detergents.

FILTER

Change every three months or depending on usage.

THERMOMETERS

Store dry in individual containers. Clean with 70% alcohol (alcohol swabs).

STETHOSCOPE

Clean between patients with alcohol swabs.

MATTRESSES, PILLOWS,
RING COVERS, RIPPLE MATTRESSES ETC

Enclose in nylon plastic covers. Wash with hot soapy water and disinfect if grossly soiled.

COMMODES, BEDPANS,
URINALS AND SPUTUM CONTAINERS

Empty contents down toilet in normal way - avoid splashing. Then wash in hot water using a hand mop and disinfectant. Wear disposable gloves and apron when carrying out this cleaning procedure. Sterile gloves are not needed.

DRESSING WOUNDS

Use disposable dressing packs and equipment. Try to maintain as sterile a procedure as is possible in the home situation. In order to prevent re-infection, especially in cases of gross drainage or leakage, change dressings frequently.

Where possible all soiled dressings should be burned immediately or else put in leakproof plastic bags for transport to incinerator with biohazard label.

TAKING OF SPECIMENS

Biohazard labels should be placed on containers. Make sure lids are secure and leakproof for transport. Place container in double envelope specimen bag. Specially adapted syringes are now available for the taking of specimens; the barrel of the syringe is the specimen tube.

Latex gloves must be worn ***when taking blood from every patient.***

If specimen containers are broken special care must be taken; the glass/plastic should be wrapped well in paper and discarded as infected waste.

IN THE CASE OF DEATH OCCURRING AT HOME

The normal procedure of notifying the family doctor should be followed.
NB. The body should not be handled unnecessarily. Only wash those parts of the body that are grossly soiled.

Staff who perform the last office should wear disposable plastic apron and gloves. Remove drips, drain tubes and catheters and discard immediately into a leakproof bag with a biohazard label on it. Secure the bag and arrange for incineration. Discard sharpes into a puncture proof container for incineration. Seal all wounds with occlusive dressings. Pack leaking orifices.

The undertaker should be asked to provide a leakproof 'cadaver' bag and a leakproof coffin.

The mortuary staff are not required to wear protective clothing as the cadaver bag acts as an effective barrier.

Relatives and close friends should be encouraged to view the body before the cadaver bag is put on. Once the cadaver bag is on ***it must not be opened.*** The bag tends to moisten and cloud over so visibility of the body is impaired.

CHAPTER VI

Child Care

The needs of the HIV positive baby are exactly the same as the needs of any newborn infant. The baby needs plenty of love, security and protection from environmental or physical hazards of life.

A mature and self-assuring approach is required when dealing with the mother of the HIV positive infant. Instruction regarding the care and nurturing of the infant must be comprehensive and understandable.

The majority of children born HIV positive are born to mothers who are —
intravenous drug abusers,
sexual partners of HIV positive men,
mothers who are HIV positive for other reasons.

The predominant route of infection with HIV in children is transplacental. Maternal antibodies cross the placenta to the infant; therefore babies born to HIV infected women may acquire passively transferred antibodies whether or not they are actually infected by the virus. The detection of antibodies to HIV in infants does not necessarily indicate infection with the virus as it does in adults and older children. These passively acquired antibodies usually disappear by 9-10 months of age but may occasionally persist up to 15 months or longer. A few children negative by antibody testing have been positive by virus or antigen testing. Loss of antibodies may not always indicate that the child is not infected. The minimum transmission rate of HIV infection from mother to infant is now thought to be 30%.

The only definitive way to establish HIV infection in children up to the age of 15 months is by demonstration of antigen or virus isolation from lymphocytes. The development of immune defects may be identified by measuring T4 lymphocyte subsets and immunoglobulins. These tests are not routinely performed in hospital laboratories. However they are available in Dublin to HIV infected children as part of a research study in paediatric HIV infection.

This study which has been in progress for about two years in Ireland, involves clinical examination and serological and immunological studies of the infants

at 3-monthly intervals up to the age of 18 months and at 6-monthly intervals up to the age of 5 years. The three major maternity hospitals in Dublin, paediatric hospitals, the Virus Reference Laboratory at University College, Dublin and the Drugs Advisory and Treatment Centre, Pearse Street, Dublin, are co-operating in the study. Paediatricians skilled in the most up- to-date management of paediatric HIV infection examine and treat the children.

Continuous follow-up of infants of HIV infected mothers is essential not only to establish infection but also in the care and medical management of the children. The most suitable advice with regard to immunisation for each particular child will be available from clinical and immunological examination on an ongoing basis. Infection requiring aggressive therapy will get treatment. Neurological changes will get early attention. The mothers of these babies and children may have many complex socioeconomic, psychological and emotional problems depending on their particular situation.

This study will establish the real needs of mothers and infants with a view to providing services and support for the children and their carers as well as providing medical care for them.

Mothers of HIV infected children are aware of the stigma attached to AIDS. They worry about maintenance of confidentiality. They may be coping with guilt about the babies' infection as well as uncertainty about their own health. Some become ill and this may leave them unable to look after the baby. A few have two or even three HIV positive babies. Some do not want contact with any statutory services.

It is important therefore that health personnel who come into contact with these mothers have accurate information about HIV infection in infants and children, are aware of the services available to them and encourage them to attend the paediatrician on a regular basis.

Mothers require intensive and individual counselling and advice on how to care for themselves and their babies. Support groups for mothers are now available.

Breast feeding is not advocated at present.

DRUG ADDICTION

The babies of drug abusing mothers can have acute withdrawal symptoms about 72 hours after birth and for up to 10 days afterwards. Infants of drug abusing mothers are carefully monitored by hospital staff in the Intensive Care Paediatric Unit before discharge.

HOME VISITING

The usual procedure carried out on first visit should be adhered to:

Gloves should be worn

- when cleansing the umbilical cord
- when obtaining blood for P.K.U.
- when changing napkin, e.g. where there is profuse diarrhoea.

STERILISATION OF FEEDING BOTTLES AND SOOTHERS

Instruct the mother in the Milton (New Born or Sterinova Irish made) method of sterilisation.

DISPOSAL OF USED NAPKINS

Instruct the mother in the care, handling and disposal of used napkins e.g. burning or carefully secured in garbage bags for collection.

STIMULATION AND PLAY

Encourage interaction with other children, family members and by the use of washable toys and mobiles.

GENERAL CARE OF THE BABY

Advise the mother of the dangers of contact with other members of the family who may have viral infections.

Inform the mother about the Community Care services in the area.

Encourage attendance at Child Welfare Clinics to monitor weight and general progress. Check if the mother has been given appointments for the hospital and encourage her to attend.

IMMUNISATIONS

It is advisable to encourage the mother to discuss the immunisation programme with the paediatrician. Mothers of HIV positive infants must be informed of the dangers of live vaccines e.g. polio. Other members of the household who are immune suppressed need to be alerted as vaccine is excreted in faeces and could put them at risk.

POLIO VACCINATION - HIV positive children should be vaccinated with Inactivated Polio Vaccine rather than live viral vaccine. If other youngsters in the house with a HIV positive child are to receive live virus vaccine then steps must be taken to protect the HIV seropositive child from the risk of excreted live virus from siblings.

Measles, Mumps and Rubella vaccine are recommended for HIV positive children ***who are otherwise healthy.***

PERTUSSIS, DIPHTHERIA AND TETANUS TOXOIDS

These can be given on schedule except where there are known contraindications.

TODDLERS

A HIV positive child needs education and stimulation like any other child and attendance at play group or school should not pose a risk to other children. The immune suppressed child is more at risk from other children who have infections such as chicken pox.

Toddlers who are habitual biters need to be assessed if they are to be allowed to enter play school or other groups because of the ***risk of blood spread*** to other children.

Tact is of the utmost importance for all professionals dealing with mother and baby.

Very high standards must be maintained in all our clinics and in the home when dealing with ***every*** child.

There is also an important health education role in talking with staff in schools and nurseries i.e. dealing with spillages etc.

MATERNITY

Pregnancy

Pregnancy is immuno suppressive. The HIV positive woman must be made aware of the added risks of a pregnancy both to herself and her baby.

Ante Natal

Mothers should be encouraged to attend ante natal clinics for care early in their pregnancy.

If they are IV drug abusers a methadone programme is offered by (formerly Jervis St) Trinity Court, Pearse St to encourage them to avoid illicit drugs, which are often contaminated. The programme helps to stabilise their drug intake and organise a more structured life style.

Mothers who are drug abusers and who have HIV antibodies are particularly prone to defaulting on hospital appointments and ante natal care. With this group in particular, constant motivation and careful monitoring of their ante natal needs is required.

Early arrival at hospital when labour commences should be encouraged to ensure optimum care and management of the mother and baby through labour and delivery.

Post Natal

Where the mother's status is known the maternity hospital usually arranges a case conference involving the community and hospital staff. This enhances the co-ordination and continued care of the mother and baby in the community on discharge. The mother is fully informed of the case conference. She is informed of the decisions which were agreed on by the hospital social worker.

Smear Test

Yearly attendance for cervical smear is of vital importance to the HIV positive mother.

Family Planning

Information on family planning needs to be offered as a priority to these women.

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4. *'Clinical Management of AIDS'* by William Nelson RNBS; ward 5A/5B San Francisco General Hospital (thesis).
5. MMWR (Morbidity and Mortality Weekly Reports) CDC Atlanta; November 15 1985, vol 34/No. 45.
6. *'AIDS and HTLV III. The St. Mary's Control of Infection Pack'.* Published by Paddington and North Kensington Health Authority.
7. *'Notes from National AIDS Course'.* St Mary's Hospital, Praed St, London.
8. Health Education Bureau, *'Information Booklet on AIDS.'*
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10. Department of Health *'Criteria for Defining and Diagnosing a Case of AIDS'*, January 1988.
11. A B Millar, The Middlesex Hospital, London, British Journal Hospital Medicine (BJHM) vol 39 no 3, March 1988.
12. CA Carne, British Medical Journal, May 30 1987 vol 294.
13. Glossary —*'AIDS/HIV Experimental Treatment Directory'*, American Foundation for AIDS Research (AmFAR) vol 1 Oct 1987.

APPENDIX

INFORMATION AND SUPPORT GROUPS

AIDS PHONE-IN SERVICE
Tel 01-838677, Tuesday 2-5pm, Thursday 7-10pm.

AIDS ACTION ALLIANCE
Tel 01-531169, 13 Christchurch Place, Dublin 8.

AIDS HELPLINE DUBLIN
Tel 01-307888, Monday & Wednesday, 7-9pm, Saturday 3-6pm.

AIDS FUND
Tel 01-734437/734255, 13 Upper Ormond Quay, Dublin 7.

AIDS TASK FORCE
(Set up by the Catholic Hierarchy, under the auspices of the Catholic Social Services Conference)
Tel 01-360011/5, Red House, Dublin 3.

ANNA LIFFEY
Tel 01-786899

CAIRDE AIDS SUPPORT GROUP
Tel 01-733799/730877, Halfpenny Court, 36-37 Lower Ormond Quay, Dublin 1.
Also runs — Body Positive Groups, Self-Help Groups and Practical AID where necessary.

COOLEMINE
Tel 01-793765/782300

DRUG TREATMENT CENTRE
Tel 01-771122, Trinity Court, *(formerly Jervis St)* 30-31 Pearse St, Dublin 2.
Various support groups available.
ClinicsMon-Fri 9.30 am - 12.30 pm; 2.30 pm - 5.30 pm; Sat 10 am - 12.30 pm
Dr J O'Connor, Clinical Director.

EASTERN HEALTH BOARD — ADDICTION COUNSELLORS

Area 1
Mary T Walsh, Mary A Russell, tel 841169, 808471/2/3, 822122

Area 3
Sr Catherine Lillis, Michael Lacey, tel 757837/8.

Area 4
Michelle Hines, tel 515455/515397.

Area 5
Sheila Heffernan, tel 268101/263685/263687.

Area 7
Aine McGuirk, tel 420011.
Aine Kelly, Talbot Day Centre, Buckingham St, tel 363434.

Area 9
Monica Teehan, tel 045-76001.

GAY HEALTH ACTION

Tel 01-531165, 13 Christchurch Place, Dublin 8.

HAEMOPHILIA SOCIETY.

Tel 01-544413, 13 Christchurch Place, Dublin 8.

ST JAMES'S HOSPITAL

Tel 01-537941 ext 2161, STD Clinic, James's St, Dublin 8.
(Hospital 7 — near Rialto gate entrance.)
Clinics — Males and females 4.30 - 6.30
New patients can attend on Mondays, Tuesdays and Thursdays of each week. They should present themselves between 4 and 4.30 for registration purposes, advise 4 pm. Dr F Mulcahy, Dr D Freedman.

MATER HOSPITAL

Tel 01-301122, STD Clinic, North Circular Rd, Dublin 7.
Clinics — Male: Wednesday 5 - 7 pm, Thursday 5 - 7 pm.
Female: Tuesday 4 - 7 pm, Thursday 3 - 4 pm.
Dr Owen Carey, Dr M Coakley, Dr Chris Fitzpatrick, Dr Rosemary Hammond.

Maternity Hospitals

COOMBE HOSPITAL
Tel 01-537561, Dolphin's Barn, Dublin 8.

NATIONAL MATERNITY HOSPITAL
Tel 01-610277, Holles St, Dublin 2.

ROTUNDA HOSPITAL
Parnell Square, Dublin 1, tel 01-730700

CORK

AIDS HELPLINE
Tel 021-507237, Mon 6 - 8 pm, Thursday 6 - 8 pm, Saturday 2 - 6 pm.

AIDS ACTION ALLIANCE
Tel 021-507237, 22 MacCurtain St, Cork.

VICTORIA HOSPITAL
Tel 021-966844, Infirmary Rd, Cork.
Clinics —Male and female:

1. Monday 5.30 - 7.30 (3.pm for new patients).
2. Wednesday 10 am - 12 pm (9 am for new patients).
3. Thursday 5.30 - 6.30 (for advice information only by phone).

Dr Cantillon, Dr E O Connell, Ms Chris Sheehan (PHN).

GALWAY

AIDS HELPLINE
Regional Hospital, tel 091-64000, Monday - Friday 10 am - 4 pm.
Dr E McHale, Ms Dorothy Melvin.

AAA AIDS HELPLINE
Tel 091-64000, Tuesday 10 - 1 pm, Thursday 7.30 - 10pm.

AIDS ACTION ALLIANCE
C/o Cairde, Tel 091-66266, Ozanam House, St Augustine St, Galway.

LIMERICK

REGIONAL HOSPITAL, LIMERICK
Tel 061-28111, Friday only 2.30 - 4.30 pm.

WATERFORD

ARDKEEN HOSPITAL
STD Clinic, tel 051-73321.
Clinics — male and female: Monday 2 - 4 pm, Thursday 9.30 - 11.30.
Dr Wilson

GLOSSARY

ACQUIRED — *A condition which is not inherited or congenital.*

ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS) — *An acquired defect in immune system function which reduces the affected person's resistance to certain types of infections and cancers.*

ANTIBODY — *Protein molecules that are produced and secreted by certain types of white cells in response to stimulation by an antigen.*

ANTIGEN — *Any substance that provokes an immune response when introduced into the body.*

ANTIVIRAL — *A substance that attacks a virus and stops or suppresses viral activity.*

ARC (AIDS Related Complex) — *Characterized by a prolonged (two weeks or more) history of fever, unexplained weight loss, swollen lymph nodes, and/or fungus infection of the mouth and throat associated with HIV infection.*

ASYMPTOMATIC INFECTION — *An infection, or phase of an infection, without symptoms.*

ABSOLUTE T4 COUNT — *The actual number of T helper cells (lymphocytes) in the blood. The number of T4 cells is significantly lower in people whose immune system has been affected by the AIDS virus.*

BACTERIUM — *A microscopic organism composed of a single cell. Many bacteria can cause disease in man.*

B CELLS — *White blood cells of the immune system derived from bone marrow and involved in the production of antibodies; they are also called B lymphocytes.*

B-LYMPHOCYTES — *White blood cells that clone themselves (produce duplicates) when informed (by the T-lymphocytes) of the presence of faruga substances in the body. Some B-lymphocytes remain to fight the virus while the others spread 'word' of the foreign presence and marshal more defensive forces to produce antibodies against it.*

CANDIDA — *A yeast organism which normally lives in the intestines, but can flourish in other parts of the body at time of immune suppression.*

CANDIDIASIS — *A yeast-like infection caused by Candida albicans which affects mucus membranes, the skin and internal organs. Oral infections are called thrush and exhibit cream white patches of exudate on inflamed and painful mucosa. Common sites are the mouth, the oesophagus, nailbeds, umbilicus and around the anus. It may occur systemically and affect the heart and the lining around the brain and spinal cord. This infection has become a common problem seen in immune depressed people.*

CARCINOGENIC — *(Cancer causing). Anything that may induce cancerous transformation of cells.*

CRYPTOCOCCOSIS — *An infectious disease being seen in AIDS patients which is acquired via the respiratory tract with primary infection in the lungs*

and which characteristically spreads to the meninges the lining of the brain and spinal cord. May also spread to the kidneys and skin. It is due to the fungus Cryptococcus neoformans. Meningitis with headache, blurred vision, confusion, depression, agitation or inappropriate speech is the most common form. It may be fatal.

CRYPTOSPORIDIOSIS — *An infection caused by a protozoan parasite found in the intestines of animals. Once transmitted to man by direct contact with the infected animal, it lodges in the intestines and causes severe diarrhoea. It may be transmitted from man to man.*

CYTOMEGALOVIRUS (CMV) — *A virus that is a member of the herpes family; CMV infections may occur without any symptoms in more than half the population. Infection may also result in mild flu-like symptoms of aching, fever, mild sore throat, weakness, enlarged lymph nodes. In AIDS patients, severe CMV infections can result in hepatitis, gastrointestinal infections, pneumonia and eye infections that can result in blindness. CMV is shed in body fluids such as urine, semen, saliva, faeces, sweat.*

DNA (Deoxyribonucleic Acid) — *A complex protein that is the chemical basis of heredity and the warehouse for genetic information.*

ELISA — *Enzyme linked immunosorbent assay; a testing method to detect antibodies to HIV.*

GRANULOCYTES — *A cell of the immune system filled with granules of toxic chemicals that enable them to digest micro organisms; basophils, neutrophils, eosinophils, and mast cells are examples of granulocytes.*

HELPER-SUPPRESSOR RATIO — *The ratio of helper T-cells to suppressor T-cells.*

HELPER T CELLS — *A subset of T cells that play a critical role in immune defences.*

HAEMOPHILIA — *An hereditary condition wherein normal blood clotting is not possible due to absence of factor 8.*

HERPES SIMPLEX VIRUS (HSV 1) — *The virus that results in cold sores or fever blisters on the mouth or around the eyes. Like all herpes viruses, the virus may lie dormant for months or years in nerve or lymph tissue and flare up again under stress, trauma, infection or immuno-suppression. There are no cures for any of the herpes viruses, but effective antiviral drugs exist.*

HERPES SIMPLEX II (HSV II) — *A virus similar to HSV I, causes painful sores on the anus or genitals, but can be transmitted to the face or mouth.*

HIV - Human Immunodeficiency Virus — *The virus that causes AIDS. Previously known as HTLV-III, LAV.*

HTLV-III (Human T Lymphotrophic Virus Type III) — *The virus that causes AIDS, previously known as LAV, now universally called HIV.*

IMMUNE DEFICIENCY — *A breakdown or inability of certain parts of the immune system, making a person more susceptible to certain diseases to which the person would not ordinarily be subject.*

IMMUNE RESPONSE — *The activity of the immune system against foreign substances.*

IMMUNE SYSTEM — *The body cells that recognise foreign agents or substances, neutralise them, and recall the experience later when confronted with the same challenge.*

IMMUNITY — *Protection from an infection or disease by the immune system. Contrary to popular usage of the word, immunity may be partial or complete.*

IMMUNOSUPPRESSION — *A process that prevents or retards the combative ability of the immune system defences. Immunosuppression may be due to the action of a drug, poor nutrition, an organism, or in the case of AIDS, the HIV virus.*

INCUBATION PERIOD — *The time interval between the initial exposure to a virus or other pathogen and the appearance of the first symptom or sign of infection.*

INTERFERON — *A naturally existing antiviral substance secreted by an infected human cell to strengthen the defence of uninfected neighbouring cells.*

KAPOSI'S SARCOMA (KS) — *A tumour of the walls of blood vessels. Usually appears as pink to purple, painless spots on the skin but may also occur internally in addition to or independent of the skin lesions. If death occurs, the cause is a major organ involvement. Originally seen in elderly men or in equatorial Africa as a slow growing, benign lesion.*

LAS (Lymphadenopathy Syndrome) — *A chronic enlargement of lymph nodes (glands), often associated with HIV infection.*

LAV (Lymphadenopathy Associated Virus) — *See HTLV-III and HIV.*

LEUCOCYTES — *All the white blood cells.*

LYMPH — *A transparent, slightly yellow fluid containing primarily lymphocytes. Lymph is composed of tissue fluids collected from all parts of the body and returned to the blood via the lymphatic vessels.*

LYMPH NODES — *Small bean-sized organs of the immune system, distributed widely throughout the body. An outpost for B lymphocytes.*

LYMPHADENOPATHY — *Swollen, firm and possibly tender lymph glands. The cause may range from a temporary infection, such as flu or mononucleosis to lymphoma which is cancer of the lymph nodes.*

LYMPHOCYTES — *Small white cells, normally present in the blood and in lymphoid tissue, that bear the major responsibility for carrying out the functions of the immune system.*

LYMPHOKINES — *Powerful substances, produced and released into the*

bloodstream by T lymphocytes and capable of stimulating other cells in the immune system.

LYMPHOMA — *A cancer of the lymph nodes.*

MACROPHAGE — *A scavenger cell found in the tissues, able to destroy invading bacteria or other foreign material.*

MICROBES — *Minute living organisms, including bacteria, protozoa and fungi.*

MICRO-ORGANISM — *A microscopic plant or animal.*

MONOCYTE — *A large white blood cell which acts as a scavenger, capable of destroying invading bacteria or other foreign material.*

MUCOCUTANEOUS — *Anything that concerns or pertains to mucous membranes and the skin, e.g. mouth, vagina, lips, anal area.*

NATURAL KILLER CELLS — *Large granular lymphocytes that attack and destroy other cells such as tumour cells and those infected with viruses or other microbes.*

NEUTROPHIL — *A special white blood cell, called a granulocyte, that can digest micro-organisms.*

OPPORTUNISTIC DISEASES — *Those diseases that are caused by agents that are frequently in our bodies or environment but which cause disease only when there is an alteration from normal healthy conditions, such as when the immune system becomes depressed.*

OPPORTUNISTIC INFECTIONS — *Illnesses which would not be serious to anyone whose immune system is functioning normally.*

PATHOGEN — *Any disease-producing micro-organisms.*

PERSISTENT GENERALISED LYMPHADENOPATHY — *Chronic, diffuse, non-cancerous lymph node enlargement. It typically has been found in those with immune system disturbances who develop frequent and persistent bacterial,viral and fungal infections. See LAS.*

PHAGOCYTE — *A cell that is able to ingest and destroy the invading virus, such as macrophages.*

PCP (Pneumocystis Carinii Pneumonia) — *A parasitic infection of the lungs; the most common opportunistic infections in AIDS patients. An opportunistic lung infection seen in immuno-suppressed people. It is caused by a protozoa that is normally destroyed by healthy immune systems.*

RETROVIRUS — *A virus containing the enzyme reverse transcriptase, the AIDS virus is a Retrovirus.*

SEROLOGIC TEST — *Any of a number of tests that are performed on the clear portion of blood (serum). Often refers to a test which measures antibodies to a virus.*

SUBCUTANEOUS — *Beneath or introduced beneath the skin (eg*

subcutaneous injections).

SUPPRESSOR T CELLS — *Subset of T cells that return the immune system to its normal surveillance activities.*

T CELLS — *White blood cells that are processed in the thymus. They produce lymphokines and are responsible, in part, for carrying out the immune system's reponse to antigens. They are also called T lymphocytes. See Suppressor T Cells and Helper T cells.*

THRUSH — *A fungal infection of the mouth caused by candida; common in people with ARC or AIDS.*

THYMUS — *A central lymphoid organ important in the development of immune capability.*

TOXOPLASMOSIS — *A disease due to infection with the protozoa toxoplasma gondii, frequently causing focal encephalopathy (inflammation of the brain). Seen frequently in people with AIDS.*

VARICELLA - ZOSTER VIRUS (VZ) — *The varicella zoster that causes chicken pox in children and may reappear in adulthood as herpes zoster (shingles) consists of very painful blisters on the skin and follows nerve pathways.*

VIRAL CULTURE — *A laboratory study of a specimen of fluid or tissue taken to determine the presence of viral material. The specimen is placed in a special medium containing live cells, incubated for a period of time and then tested for evidence of a virus.*

VIROLOGY — *The study of viruses and viral diseases.*

VIRUS — *An intracellular parasite that invades a cell and may disrupt or subvert its normal functions, causing the cell to behave in a manner determined by the genetic information contained in the virus.*

WESTERN BLOT — *A test for antibodies to the HIV virus; more specific and accurate than the ELISA test.*