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Contents:

VIRUSES, CHLAMYDIAS, COXIELLAS, RICKETTSIAS AND MYCOPLASMAS REPORTING SCHEME: A total of 1 233 reports were processed for this period.

Seven cases of Q Fever were reported, 5 from New South Wales, 1 from South Australia and 1 from Western Australia. Occupational exposure data were only available for the South Australian case, a 35 year old male farmer.

None of the seven patients was involved in the Q fever vaccine field trial conducted in South Australia.

Cytomegalovirus (CMV) was isolated from:

. the tracheal aspirate and bronchial washings of a 23 year old female with varicella pneumonia.

. the saliva of three HIV-antibody positive males aged 33, 30 and 27 respectively who had completed no less than 40 weeks of AZT therapy.

Respiratory syncytial virus (RSV) was isolated from the nasopharyngeal aspirate of a 3 month old male with bronchiolitis, viral myocarditis and respiratory distress.

Herpes simplex type 1 was isolated from the facial lesions of a 35 year old female hospital worker who developed recurrent facial herpetic lesions apparently following exposure to U.V. light in the special care nursery.

The Bulletin is compiled and distributed by the Public Health Section, Communicable Diseases Branch, Department of Community Services and Health.

HEPATITIS - HONG KONG/MACAU

An increase in the number of hepatitis cases has been reported in Hong Kong and Macau since January this year:

. 536 cases have been identified in Hong Kong with

  - 157 cases of hepatitis A,
  - 15 cases of hepatitis B, and
  - the remaining cases are currently undefined.

. 15 cases of hepatitis A have been reported in Macau.

GUIDELINES FOR EFFECTIVE SCHOOL HEALTH EDUCATION TO PREVENT THE SPREAD OF AIDS

(based on MMWR Vol.37 No.5-2, 29 January 1988)

Introduction

Since the first cases of acquired immunodeficiency syndrome (AIDS) were reported in the United States in 1981, the human immunodeficiency virus (HIV) that causes AIDS and other HIV-related diseases has precipitated an epidemic unprecedented in modern history. Because the virus is transmitted almost exclusively by behaviour that individuals can modify, educational programs to influence relevant behaviour can be effective in preventing the spread of HIV [1, 6-8].

The guidelines below have been developed to help school personnel and others plan, implement, and evaluate educational efforts to prevent unnecessary morbidity and mortality associated with AIDS and other HIV-related illnesses. The guidelines incorporate the following principles for AIDS education that were developed and approved in 1987:

. Despite intensive research efforts, prevention is the only effective AIDS control strategy at present. Thus, there should be an aggressive Federal effort in AIDS education.

. The scope and content of the school portion of this AIDS education effort should be locally determined and should be consistent with parental values.

. The Federal role should focus on developing and conveying accurate health information on AIDS to the educators and others, not mandating a specific school curriculum on this subject, and trusting the American people to use this information in a manner appropriate to their community's needs.

. Any health information developed by the Federal Government that will be used for education should encourage responsible sexual behaviour-based on fidelity, commitment, and maturity, placing sexuality within the context of marriage.

. Any health information provided by the Federal Government that might be used in schools should teach that children should not engage in sex and should be used with the consent and involvement of parents.

The guidelines provide information that should be considered by persons who are responsible for planning and implementing appropriate and effective strategies to teach young people about how to avoid HIV infection. These guidelines should not be construed as rules, but rather as a source of guidance.

Although they were specifically developed to help **school personnel,** personnel from other organisations should consider these guidelines in planning and carrying out effective education about AIDS for youth who do **not** attend school and who may be at high risk of becoming infected. As they deliberate about the need for and content of AIDS education, educators, parents, and other concerned members of the community should consider the prevalence of behaviour that increases the risk of HIV infection among young people in their communities. Information about the nature of the AIDS epidemic, and the extent to which young people engage in behaviour that increases the risk of HIV infection, is reviewed below:

1. Extent of HIV infection

It was observed that although in 1985, fewer than 60% of AIDS cases in the United States were reported among persons residing outside New York City and San Francisco, it is predicted that by 1991 more than 80% of the cases will be reported from other localities[1].

It has been ESTIMATED that:

. from 1 to 1.5 million persons in the United States are infected with HIV[1],

. and, because there is no cure, infected persons are potentially capable of infecting others indefinitely

It has been PREDICTED that:

. 20%-30% of individuals currently infected will develop AIDS by the end of 1991[1]:

  - 50% of those diagnosed as having AIDS have not survived for more than about 1.5 years beyond diagnosis, and

  - only about 12% have survived for more than 3 years[2].

By the end of 1987:

. about 50,000 persons in the United States had been diagnosed as having AIDS, and
. about 28,000 had died from the disease[2].

Blacks and Hispanics, who make up about 12% and 6% of the U.S. population, respectively, disproportionately have contracted 25% and 14% of all reported AIDS cases[3].

It has been ESTIMATED that:

- during 1991,
  . 74,000 cases of AIDS will be diagnosed, and
  . 54,000 persons will die from the disease.
- By the end of 1991.
  . the total number of deaths caused by AIDS will be about 179,000[1].

- In addition, health care and supportive services for the 145,000 persons projected to be living with AIDS in that year will cost the United States an estimated $8-$10 billion in 1991 alone[1].

- The World Health Organization projects that by 1991, 50-100 million persons may be infected worldwide[4].

The magnitude and seriousness of this epidemic requires a systematic and concerted response from almost every institution in the U.S. society.

2. Vaccine

A vaccine to prevent transmission of the virus is not expected to be developed before the next decade, and its use would not affect the number of persons already infected by that time. A safe and effective anti viral agent to treat those infected is not expected to be available for general use within the next several years. The Centers for Disease Control[5], the National Academy of Sciences[6], the Surgeon General of the United States[7], and the U.S. Department of Education[8] have noted that in the absence of a vaccine or therapy, educating individuals about actions they can take to protect themselves from becoming infected is the most effective means available for controlling the epidemic. Because the virus is transmitted almost exclusively as a result of behaviour individuals can modify (eg by having sexual contact with an infected person or by sharing intravenous drug paraphernalia with an infected person), educational programs designed to influence relevant types of behaviour can be effective in controlling the epidemic.

3. Indicators of adolescent risks

a. Sexual activity

A significant number of teenagers engage in behaviour that increases their risk of becoming infected with HIV:

. The percentage of metropolitan teenage girls who had ever had sexual intercourse increased from 30% to 45% between 1971 and 1982.

. The average age at first intercourse for females remained at approximately 16.2 years between 1971 and 1979[9].

. The average proportion of never-married teenagers who have ever had intercourse increases with age from 14 through 19 years. The following data compare, the percentage of never-married girls who reported having engaged in sexual intercourse with the percentage of never-married boys living in metropolitan areas, who reported having engaged in sexual intercourse:

	Girls	Boys
14-year-olds	6%[10]	24%
15-year-olds	18%	35%
16-year-olds	29%	45%
17-year-olds	40%	56%
18-year-olds	54%	66%
19-year-olds	66%[11]	78%[9,12]

. Rates of sexual experience (e.g. percentage having had intercourse) are higher for black teenagers than for white teenagers at every age and for both sexes[11,12].

b. Homosexuality

Male homosexual intercourse is an important risk factor for HIV infection. In one survey conducted in 1973,

. 5% of 13- to 15-year-old boys, and
. 17% of 16- to 19-year-old boys

reported having had at least one homosexual experience:

- Of those who reported having had such an experience, most (56%) indicated that the first homosexual experience had occurred when they were 11 or 12 years old.

- 2% reported that they currently engaged in homosexual activity[13].

c. Sexually Transmitted Diseases

Another indicator of high-risk behaviour among teenagers is the number of cases of sexually transmitted diseases they contract. Approximately 2.5 million teenagers are affected with a sexually transmitted disease each year[14].

d. Intravenous Drug Use

Some teenagers also are at risk of becoming infected with HIV through illicit intravenous drug use. Findings from a national survey conducted in 1986 of nearly 130 high schools indicated that although overall illicit drug use seems to be declining slowly among high school seniors, about 1% of seniors reported having used heroin and 13% reported having used cocaine within the previous year[15]. The number of seniors who injected each of these drugs is not known.

e. HIV Infection

ONLY 1% of all the persons diagnosed as having AIDS have been under the age of 20[2]; most persons in this group had been infected by transfusion or perinatal transmission.

HOWEVER, about 21% of all the persons diagnosed as having AIDS have been 20-29 years of age.

- Given the long incubation period between HIV infection and symptoms that lead to AIDS diagnosis (3 to 5 years or more), some fraction of those in the 20- to 29-year age group diagnosed as having AIDS were probably infected while they were still teenagers.

- Among military recruits screened in the period October 1985-December 1986, the HIV seroprevalence rate for persons 17-20 years of age (0.6/1,000) was about half the rate for recruits in all age groups (1.5/1,000)[16].

These data have lead some to conclude that teenagers and young

adults have an appreciable risk of infection and that the risk may be relatively constant and cumulative[17].

f. HIV risk reduction in adolescents

. Reducing the risk of HIV infection among teenagers is important not only for their well-being but also for the children they might produce. The birth rate for U.S. teenagers is among the highest in the developed world[18]; in 1984, this group accounted for more than 1 million pregnancies. During that year the rate of pregnancy among sexually active teenage girls 15-19 years of age was 233/1,000 girls[19].

. Although teenagers are at risk of becoming infected with and transmitting the AIDS virus as they become sexually active, studies have shown that they do not believe they are likely to become infected[20,21]. Indeed, a random sample of 860 teenagers (ages 16-19) in Massachusetts revealed that, although 70% reported they were sexually active (having sexual intercourse or other sexual contact), only 15% of this group reported changing their sexual behaviour because of concern about contracting AIDS. Only 20% of those who changed their behaviour selected effective methods such as abstinence or use of condoms[20]. Most teenagers indicated that they want more information about AIDS[20,21].

. Most adults Americans recognise the early age at which youth need to be advised about how to protect themselves from becoming infected with HIV and recognised that the schools can play an important role in providing such education:

- When asked in a November 1986 nationwide poll whether children should be taught about AIDS in school,

  . 83% of Americans agreed,
  . 10% disagreed, and
  . 7% were not sure[22].

- According to information gathered by the United States Conference of Mayors in December of 1986,

  . 40 of the nation's 73 largest school districts were providing education about AIDS, and
  . 24 more were planning such education[23].

- Of the districts that offered AIDS education,

  . 63% provided it in 7th grade,
  . 60% provided it in 9th grade, and
  . 90% provided it in 10th grade.

  . 98% percent provided medical facts about AIDS,
  . 78% mentioned abstinence as a means of avoiding infection, and
  . 70% addressed the issues of avoiding high-risk sexual activities, selecting sexual partners, and using condoms.

- Data collected by the National Association of State Boards of Education in the summer of 1987 indicated that:

a) 15 states had mandated comprehensive school health education; eight had mandated AIDS education;

b) 12 had legislation pending on AIDS education, and six had state board of education actions pending;

c) 17 had developed curricula for AIDS education, and seven more were developing such materials; and

d) 40 had developed policies on admitting students with AIDS to school[24].

g. Role of schools

The U.S. system of public and private schools has a strategic role to play in assuring that young people understand the nature of the epidemic they face and the specific actions they can take to protect themselves from becoming infected - especially during their adolescence and young adulthood:

- In 1984,
  . 98% of 14 and 15 year-olds,
  . 92% of 16 and 17 year-olds, and
  . 50% of 18 and 19 year-olds

  were in school[25].

- In that same year,
  . about 615,000 14- to 17-year-olds and
  . 1.1 million 18- to 19-year-olds

  were not enrolled in school and had not completed high school[26].

Information contained in this document was developed by CDC in co-operation with individuals appointed to represent the relevant organisations and consultants with appropriate expertise.

Planning and Implementing Effective School Health Education about AIDS

It is considered that the U.S. system of public and private schools have the capacity and responsibility to help assure that

. young people understand the nature of the AIDS epidemic, and
. the specific actions young people can take to prevent HIV infection, especially during their adolescence and young adulthood.

The specific scope and content of AIDS education in schools should be locally determined and should be consistent with parental and community values.

Because AIDS is a fatal disease and because educating young people about becoming infected through sexual contact can be controversial, school systems should obtain broad community participation to ensure that school health education policies and programs to prevent the spread of AIDS are locally determined and are consistent with community values.

The development of school district policies on AIDS education can be an important first step in developing an AIDS education program. In each community, representatives of the school board, parents, school administrators and faculty, school health services, local medical societies, the local health department, students, minority groups, religious organisations, and other relevant organisations can be involved in developing policies for school health education to prevent the spread of AIDS. The process of policy development can enable these representatives to resolve various perspectives and opinions, to establish a commitment for implementing and maintaining AIDS education programs, and to establish standards for AIDS education program activities and materials. Many communities already have school health councils that include representatives from the aforementioned groups. Such councils facilitate the development of a broad base of community expertise and input, and they enhance the coordination of various activities within the comprehensive school health program [22].

AIDS education programs should be also developed to address

- the needs and the developmental levels of students and of school-age youth who do not attend school, and
- the specific needs of minorities, persons of non-English speaking background, and persons with visual or hearing impairments or other learning disabilities.

Plans for addressing students' questions or concerns about AIDS at the early elementary grades, as well as for providing effective school health education about AIDS at each grade from late elementary/middle school through junior high/school, including educational materials to be used, should be reviewed by representatives of the school board, appropriate school administrators, teachers, and parents before being implemented.

Education about AIDS may be most appropriate and effective when carried out within a more comprehensive school health education program that establishes a foundation for understanding the relationships between personal behaviour and health [23-25].

For example, education about AIDS may be more effective when students at appropriate ages are more knowledgeable about sexually transmitted diseases, drug abuse, and community health. It may also have greater impact when they have opportunities to develop such qualities as decision-making and communication skills, resistance to persuasion, and a sense of self-efficacy and self-esteem. However, education about AIDS should be provided as rapidly as possible, even if it is taught initially as a separate subject.

State departments of education and health should work together to help local departments of education and health throughout the state collaboratively accomplish effective school and health education about AIDS. Although all schools in a state should provide effective education about AIDS, priority should be given to areas with the highest reported incidence of AIDS cases.

Preparation of Education Personnel

A team of representatives including the local school board,

parent-teachers associations, school administrators, school physicians, school nurses, teachers, educational support personnel, school counsellors, and other relevant school personnel should receive general training about:

a) the nature of the AIDS epidemic and means of controlling its spread,
b) the role of the school in providing education to prevent transmission of **HIV**,
c) methods and materials to accomplish effective programs of school health education about AIDS, and
d) school policies for students and staff who may be infected. In addition, a team of school personnel responsible for teaching about AIDS should receive more specific training about AIDS education.

All school personnel, especially those who teach about AIDS, periodically should receive continuing education about AIDS to assure that they have the most current information about means of controlling the epidemic, including up-to-date information about the most effective health education interventions available. State and local departments of education and health, as well as colleges of education, should assure that such in-service training is made available to all schools in the state as soon as possible and that continuing in-service and pre-service training is subsequently provided. The local school board should assure that release time is provided to enable school personnel to receive such in-service training.

Programs Taught by Qualified Teachers

. In the elementary grades, students generally have one regular classroom teacher. In these grades, education about AIDS should be provided by the regular classroom teacher because that person ideally should be trained and experienced in child development, age-appropriate teaching methods, child health, and elementary health education methods and materials. In addition, the elementary teacher usually is sensitive to normal variations in child development and aptitudes within a class.

. In the secondary grades, students generally have a different teacher for each subject. In these grades, the secondary school health education teacher preferably should provide education about AIDS, because a qualified health education teacher will have training and experience in adolescent development, age-appropriate teaching methods, adolescent health, and secondary school health education methods and materials (including methods, and materials for teaching about such topics as human sexuality, communicable diseases, and drug abuse). In secondary schools that do not have a qualified health education teacher, faculty with similar training and good rapport with students should be trained specifically to provide effective AIDS education.

Purpose of Effective Education about AIDS

The principal purpose of education about AIDS is to prevent HIV infection. The content of AIDS education should be developed with the active involvement of parents and should address the broad range of behaviour exhibited by young people.

Educational programs should assure that young people acquire the knowledge and skills they will need to adopt and maintain types of behaviour that virtually eliminate their risk of becoming infected.

School systems should make programs available that will enable and encourage young people who **have not** engaged in sexual intercourse and who **have not** used illicit drugs to continue to-

. Abstain from sexual intercourse until they are ready to establish a mutually monogamous relationship within the context of marriage;

. Refrain from using or injecting illicit drugs.

For young people who **have** engaged in sexual intercourse or who **have** injected illicit drugs, school programs should enable and encourage them to -

. Stop engaging in sexual intercourse until they are ready to establish a mutually monogamous relationship within the context of marriage;

. To stop using or injecting illicit drugs.

Despite all efforts, some young people may remain unwilling to adopt behaviour that would virtually eliminate their risk of becoming infected. Therefore, school systems, in consultation with parents and health officials, should provide AIDS education programs that address preventing types of behaviour that should be practiced by persons with an increased risk of acquiring HIV infection. These include:

. Avoiding sexual intercourse with anyone who is known to be infected, who is at risk of being infected, or whose HIV infection status is not known;

. Using a latex condom with spermicide if they engage in sexual intercourse;

. Seeking treatment if addicted to illicit drugs;

. Not sharing needles or other injection equipment;

. Seeking HIV counselling and testing if HIV infection is suspected.

State and local education and health agencies should work together to assess the prevalence of these types of risk behaviour, and their determinants, over time.

Content

Although information about:

. the biology of the AIDS virus, the signs and symptoms of AIDS, and the social and economic costs of the epidemic might be of interest,
. such information is not the essential knowledge that students must acquire in order to prevent becoming infected with HIV. Similarly, a single film, lecture, or school assembly about AIDS will not be sufficient to assure that students develop the complex understanding and skills they will need to avoid becoming infected.

Schools should assure that students receive at least the essential information about AIDS, as summarised in sequence in the following pages, for each of three grade-level ranges. The exact grades at which students receive this essential information should be determined locally, in accord with community and parental values, and thus may vary from community to community. Because essential information for students at higher grades requires an understanding of information essential for students at lower grades, secondary school personnel will need to assure that students understand basic concepts before teaching more advanced information. School simultaneously should assure that students have opportunities to learn about emotional and social factors that influence types of behaviour associated with HIV transmission.

Early Elementary School

Education about AIDS for students in early elementary grades principally should be designed to allay excessive fears of the epidemic and of becoming infected.

. AIDS is a disease that is causing some adults to get very sick, but it does not commonly affect children.

. AIDS is very hard to get. You cannot get it just by being near or touching someone who has it.

. Scientists all over the world are working hard to find a way to stop people from getting AIDS and to cure those who have it.

Late Elementary/Middle School

Education about AIDS for students in late elementary/middle school grades should be designed with consideration for the following information:

. Viruses are living organisms too small to be seen by the unaided eye.

. Viruses can be transmitted from an infected person to an uninfected persons through various means.

. Some viruses cause disease among people.

. Persons who are infected with some viruses that cause disease may not have any signs or symptoms of disease.

. AIDS (an abbreviation for acquired immunodeficiency syndrome) is caused by a virus that weakens the ability of infected individuals to fight off disease.

. People who have AIDS often develop a rare type of severe pneumonia, a cancer called Kaposi's sarcoma, and certain other diseases that healthy people normally do not get.

. About 1 to 1.5 million of the total population of approximately 240 million Americans currently are infected with the AIDS virus and consequently are capable of infecting others.

. People who are infected with the AIDS virus live in every state in the United States and in most other countries of the world. Infected people live in cities as well as in suburbs, small towns, and rural areas. Although most infected people are adults, teenagers can also become infected. Females as well as males are infected. People of every race are infected, including whites, blacks, Hispanics, Native Americans, and Asian/Pacific Islanders.

. The AIDS virus can be transmitted by sexual contact with an infected person; by using needles and other injection equipment that an infected person has used; and from an infected mother to her infant before or during birth.

. A small number of doctors, nurses, and other medical personnel have been infected when they were directly exposed to infected blood.

. It sometimes takes several years after becoming infected with the AIDS virus before symptoms of the disease appear. Thus, people who are infected with the virus can infect other people - even though the people who transmit the infection do not feel or look sick.

. Most infected people who develop symptoms of AIDS only live about 2 years after their symptoms are diagnosed.

. The AIDS virus cannot be caught by touching someone who is infected, by being in the same room with an infected person, or by donating blood.

Junior High/Senior High School

Education about AIDS for students in junior high/senior high school grades should be developed and presented taking into consideration the following information:

. The virus that causes AIDS, and other health problems, is called human immunodeficiency virus, or HIV

. The risk of becoming infected with HIV can be virtually eliminated by not engaging in sexual activities and by not using illegal intravenous drugs.

. Sexual transmission of HIV is not a threat to those uninfected individuals who engage in mutually monogamous sexual relations.

. HIV may be transmitted in any of the following ways:
a) by sexual contact with an infected person (penis/vagina, penis/rectum, mouth/vagina, mouth/penis, mouth/rectum;
b) by using needles or other injection equipment that an infected person has used;
c) from an infected mother to her infant before or during birth.

. A small number of doctors, nurses, and other medical personnel have been infected when they were directly exposed to infected blood.

. The following are at increased risk of having the virus that causes AIDS and consequently of being infectious:

a) persons with clinical or laboratory evidence of infection;
b) males who have had sexual intercourse with other males;
c) persons who have injected illegal drugs;
d) persons who have had numerous sexual partners, including male or female prostitutes;
e) persons who received blood clotting products before 1985;
f) sex partners of infected persons or persons at increased risk; and
g) infants born to infected mothers.

. The risk of becoming infected is increased by having a sexual partner who is at increased risk of having contracted the AIDS virus (as identified previously), practising sexual behaviour that results in the exchange of body fluids (i.e., semen, vaginal secretions, blood), and using unsterile needles or paraphernalia to inject drugs.

. Although no transmission from deep, open-mouth (i.e., "French") kissing has been documented, such kissing theoretically could transmit HIV from an infected to an uninfected person through direct exposure of mucous membranes to infected blood or saliva.

. In the past, medical use of blood, such as transfusing blood and treating haemophiliacs with blood clotting products, has caused some people to become infected with HIV. However, since 1985 all donated blood has been tested to determine whether it is infected with HIV; moreover, all blood clotting products have been made from screened plasma and have been heated to destroy any HIV that might remain in the concentrate. Thus, the risk of becoming infected with HIV from blood transfusions and from blood clotting products is virtually eliminated. Cases of HIV infection caused by these medical uses of blood will continue to be diagnosed, however, among people who were infected by these means before 1985.

. Persons who continue to engage in sexual intercourse with persons who are at increased risk or whose infection status is unknown should use a latex condom (not natural membrane) to reduce the likelihood of becoming infected. The latex condom must be applied properly and used from start to finish for every sexual act. Although a latex condom does not provide 100% protection - because it is possible for the condom to leak, break, or slip off - it provides the best protection for people who do not maintain a mutually monogamous relationship with an uninfected partner.

Additional protection may be obtained by using spermicides that seem active against HIV and other sexually transmitted organisms in conjunction with condoms.

. Behaviour that prevents exposure to HIV also may prevent unintended pregnancies and exposure to the organisms that cause Chlamydia infection, gonorrhoea, herpes, human papillomavirus, and syphilis.

Persons who believe they may be infected with the AIDS virus should take precautions not to infect others and to seek counselling and antibody testing to determine whether they are infected.

- If persons **are not** infected, counselling and testing can relieve unnecessary anxiety and reinforce the need to adopt or continue practices that reduce the risk of infection.
- If persons **are** infected, they should:

  a) take precautions to protect sexual partners from becoming infected;
  b) advise previous and current sexual or drug-use partners to receive counselling and testing;
  c) take precautions against becoming pregnant;and
  d) seek medical care and counselling about other medical problems that may result from a weakened immunologic system.

More detailed information about AIDS, including information about how to obtain counselling and testing for HIV, can be obtained by telephoning the relevant centres in each Australian state as listed in the Table below:

WHERE TO GET FREE INFORMATION AND HELP

New South Wales:
Albion St. Centre
Phone: (02) 332 4000
AIDS Council of NSW
Phone: (02) 211 0499

Queensland:
AIDS Medical Unit
Phone: (07) 224 5526
(07) 224 5527
Division of Health Promotion
Phone: (07) 253 0511
Queensland AIDS Council
Phone: (07) 844 1990
(008) 17 7434 Toll Free

Victoria:
Melbourne STD Clinic
Phone: (03) 602 4900
Victorian AIDS Council
Phone: (03) 417 1759
AIDS Line
Phone: (03) 419 3166
(008) 13 3392 Toll Free
(03) 347 3000 Prerecorded message

Tasmania:
AIDS Unit
Phone: (002) 30 2872
Tasmanian AIDS Council
Phone: (002) 31 1930
AIDS Phone Link
(008) 005188 Toll Free

Northern Territory:
Communicable Diseases Centre
Phone: (089) 208 001
NT AIDS Council
Phone: (089) 411 711
Crisis Line (089) 819 227
(008) 01 9116 Toll Free

Australian Capital Territory
AIDS Reference Centre
Phone: (062) 84 2184
(062) 84 2200
AIDS Action Council of the ACT
Phone: (062) 57 2855

Western Australia:
Aids Information Line
(09) 11642 Prerecorded message
Communicable Diseases
Control branch
Phone: (09) 220 1122
WA AIDS Council
Phone: (09) 227 8619
(008) 19 9287 Toll Free

South Australia:
STD Clinic
Phone: (08) 218 3668
AIDS Council of SA
Phone: (08) 223 6322

Ethnic Line
Phone: (02) 662 6677 10am - 10pm
(008) 02 3300 Toll Free

Curriculum Time and Resources

Schools should allocate sufficient personnel time and resources to assure that policies and programs are developed and implemented with appropriate community involvement, curricula are well-planned and sequential, teachers are well-trained, and up-to-date teaching methods and materials about AIDS are available. In addition, it is crucial that sufficient classroom time be provided at **each** grade level to assure that students acquire essential knowledge appropriate for that grade level, and have time to ask questions and discuss issues raised by the information presented.

Program Assessment

The criteria recommended in the foregoing "Guidelines for Effective School Health Education To Prevent the Spread of AIDS" are summarised in the following nine assessment criteria. Local school boards and administrators can assess the extent to which their programs are consistent with these guidelines by determining the extent to which their programs meet each point shown below. Personnel in state departments of education and health can also use these criteria to monitor the extent to which schools in the state are providing effective health education about AIDS.

1. To what extent are parents, teachers, students, and appropriate community representatives involved in developing, implementing, and assessing AIDS education policies and programs?

2. To what extent is the program included as an important part of a more comprehensive school health education program?

3. To what extent is the program taught by regular classroom teachers in elementary grades and by qualified health education teachers or other similarly trained personnel in secondary grades?

4. To what extent is the program designed to help students acquire essential knowledge to prevent HIV infection at each appropriate grade?

5. To what extent does the program describe the benefits of abstinence for young people and mutually monogamous relationships within the context of marriage for adults?

6. To what extent is the program designed to help teenage students avoid specific types of behaviour that increase the risk of becoming infected with HIV?

7. To what extent is adequate training about AIDS provided for school administrators, teachers, nurses, and counsellors - especially those who teach about AIDS?

8. To what extent are sufficient program development time, classroom time, and educational materials provided for education about AIDS?

9. To what extent are the processes and outcomes of AIDS education being monitored and periodically assessed?

CDI Editorial Comment

Extensive epidemiologic investigation has defined the principal means by which HIV-1 is spread. Consequently the individual is able to greatly reduce or perhaps even eliminate the risk of acquiring HIV infection by adopting particular behaviour patterns:

- maintaining a sexually monogamous relationship,
- practicing exclusively safer sex - always using condoms preferably in conjunction with spermicides like nonoxynol-9,
- avoiding needle sharing.

These behaviours are obviously the targets of AIDS education campaigns. Communication of information is obviously an essential part of effective education, however alone would appear to be inadequate. The individual is required to have the motivation and means to effect the desired changes. Sustained change also typically requires a reinforcing social environment that supports the new pattern of behaviour. Five key obstacles to effective education can be identified:

1. Sexual practices and drug use are biologically based, socially complex behaviours. Both derived from biological impulses that are difficult to resist:

   - sexual attractiveness is a standard widely touted in today's youth-oriented culture; sexual activity may be spontaneous and unplanned and take place when judgement is clouded by alcohol consumption; condoms may be rejected as unfamiliar, embarrassing, inappropriate, or compromising of pleasure.

   - sharing of needles has traditionally been part of the subculture among drug addicts; addicts driven by withdrawal are likely to use the first available injection equipment.

Such factors would tend to undermine efforts to change the most important behaviours that allow transmission of HIV-1.

2. The propriety of educational messages to prevent AIDS is questioned following fundamental disagreement. AIDS touches upon deep-seated fears and inhibitions in western societies:

   - in the moralist view, the only socially acceptable change is to have people altogether abandon certain behaviours; since, it is wrong to have extramarital sexual relations and is wrong to use drugs, hence it is wrong to advocate or even discuss anything (such as use of condoms or sterile needles) that would appear to condone these activities.

. in the rationalist view, behaviours that will occur and are dangerous should be modified so as to make them safer; however some rationalists oppose teaching addicts to clean their injection equipment on the grounds that illicit drug use has many dangers apart from AIDS and therefore should only be discouraged.

Evidently, there are numerous shadings of view in pluralistic western societies where a number of philosophical differences underlie the reticence of many leaders about AIDS education.

3. The degree of risk to the majority of the population is currently a matter of debate:

. available data on the changing prevalence of clinical disease are consistent with a wide range of models of the antecedent spread of HIV-1 infection [28]. However, reliable and pertinent data on the incidence of HIV-1 infection are relatively sparse, although data from testing of military recruits and blood donors would suggest that the rates of infection may be leveling off in some groups [29].

. while the disease has reached saturation levels in some sexually active homosexual populations, it is not certain whether conditions will sustain an epidemic in the heterosexual population.

Although the prospect of wide spread disease is sufficiently daunting and the possibility sufficiently high to make it prudent to act as though the epidemic can be sustained, it is not possible at this time to state with confidence the likelihood of that occurrence.

4. The feeling conveyed from responsible officials to the public about AIDS is in fact ambivalent, both reassuring and alarming:

. public health authorities insist that HIV-1 is not

transmitted through the air, by mosquito bites, or through everyday interaction; at the same time, the public is told that HIV-1 is everyone's problem, that women as well as men are at risk, and that taking protective action is wise.

. the public is told that HIV-1 has been isolated from saliva and tears, and that kissing on the cheek or even the lips will not transmit AIDS.

The dual message is eminently sensible to the physician or epidemiologist educated in the transmission of viral disease, but the layperson runs an understandable risk of confusion.

5. Long-term protection of an individual from infection requires extreme changes in risk-taking behaviour. Such requirement is illustrated in the following simple model for sexual transmission of HIV-1 where the effects of reduction in the number of partners and increased use of condoms are examined. Such models may apply to the homosexual population in a city, though may equally pertain to heterosexual transmission. The model estimates the cumulative risk of becoming infected with HIV-1 over a period of time involving 1000 sexual encounters.

Cumulative probability of HIV-1 infection from 1000 sexual encounters

$$= 1-[p(1-r)^{NC}(1-\{1-c\}\ r)^{C}+(1-p)]^{m}$$

this formula is based on the following assumptions and calculations:

1. Risk (r) of infection from a single unprotected exposure = 0.01 ie. r = 0.01

2. Reduction in risk per exposure through use of condoms (c) = 0.90 ie. c = 0.90
3. Prevalence (p) of HIV-1 among potential partners is constant and selection of partners is random with respect to their probability of being infected.

4. The number of exposures per partner using a condom (C) is the total number of exposures (1000) divided by the number of partners (m), the result multiplied by the frequency of condom use (0, 0.5, or 1.0) ie:

$$C= \frac{1000}{m} \times (0,\ 0.5 \text{ or } 1.0)$$

5. The number of exposures per partner without using a condom (NC) is the total number of exposures (1000) divided by the number of partners (m), the result multiplied by the frequency of condom non use (1.0, 0.5 or 0) ie:

$$NC = \frac{1000}{m} \times (1.0,\ 0.5 \text{ or } 0)$$

Numbers of Partners	Prevalence of HIV-1 among potential partners	Frequency of condom use: Never	Half of the time	Always
	0.001	0.001	0.001	0.0006
	0.01	0.01	0.01	0.006
(1)	0.05	0.05	0.05	0.03
	0.25	0.25	0.25	0.16
	0.50	0.50	0.50	0.32
	0.001	0.004	0.003	0.0009
	0.01	0.04	0.03	0.009
(5)	0.05	0.20	0.16	0.04
	0.25	0.70	0.60	0.21
	0.50	0.94	0.87	0.38
	0.001	0.006	0.004	0.001
	0.01	0.06	0.04	0.01
(10)	0.05	0.28	0.19	0.05
	0.25	0.82	0.67	0.21
	0.50	0.98	0.91	0.39
	0.001	0.009	0.005	0.001
	0.01	0.09	0.05	0.01
(50)	0.05	0.37	0.23	0.05
	0.25	0.90	0.73	0.22
	0.50	0.99	0.93	0.39

The above model incorporates the following features:

. the risk of infection from a single unprotected exposure to an infected person is assumed to be 0.01 and condoms are assumed to be 90% effective in stopping transmission.

. the actual risk of infection per exposure would be expected to depend on the prevalence of genital lesions, specific viral strain and stage of infection, and host genetic factors [30].

. the cumulative risk depends on the probability of selecting a partner who is infected, the number of different partners, and the frequency of condom use.

The above table shows the results for various combinations of a number of partners, prevalence of infection in the population of prospective sexual partners, and frequency of condom use. Several observations stand out:

1. the cumulative probabilities of infection are high because an individual can escape infection only by successfully avoiding transmission at every sexual encounter; even one failure is a failure for life.

2. it is surprising to find that the increment in risk when one goes from 1 to 5 or 10 partners is much greater than the increment is going from 5 or 10 to 50 partners. Hence, a sexually active individual who may have 50 partners in the next 10 or 20 years, has less to gain by reducing the number to 5 or 10 then by going from 5 or 10 all the way to monogamy.

3. Condom use is beneficial in reducing the cumulative risk, though if the prevalence of infection in the population of prospective partners is sufficiently high, even consistent condom use may not afford an adequate measure of protection over the long term.

4. the benefit gained from use of condoms is more substantial in moving from half-time to every-time use than in moving from no use to half-time use.

These main conclusions persist even when various assumptions in the model are modified:

. if the population of partners contains a minority who if infected are ten times as likely as others to transmit the virus, then as the number of partners increases, the cumulative probability of infection rises less steeply than in the case of uniform infectivity, yet the increase in risk from 1 partner to 5 or 10 is still much greater than the increase from 5 or 10 partners to 50.

. if condoms are assumed to be more than 90% effective, this would accentuate the advantage in moving from half-time to every-time use compared to the smaller gain going from never used to half-time use.

. if the risk transmission per exposure is very small (eg. 0.001) then the cumulative probability of infection is lowered much more by the consistent use of condoms than by reducing the number of partners.

Hence the overall implication is that if the aim of education and behaviour change is individual long-term protection from risk of infection, the changes towards safer sex must be rather extreme.

There is acceptance however that degrees of change in behaviour that fail to adequately protect the individual over a long period may nevertheless be beneficial in retarding the spread of HIV-1. The precise impact on the course of the epidemic from a partial shift toward safer behaviour in different populations at risk remains highly speculative at this time. Realistically for the most part of this epidemic, those who will develop AIDS in the next 5 years have already been infected with HIV-1. Even a spectacularly successful AIDS education program could not alter the course of the epidemic in the short term. The most that prevention of virus transmission can achieve is a reduction in cases of clinical disease in the intermediate and long terms. However, in the absence of effective therapy and vaccine, AIDS education remains the best possible tool for the control and prevention of this disease.

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ROSS RIVER VIRUS AND EPIDEMIC POLYARTHRITIS IN AUSTRALIA

The disease epidemic polyarthritis (EPA) was first recognised in the Murrumbidgee River area of New South Wales in 1928[1]. From the first, presentation of the disease was variable. However, the disease is often characterised by polyarthralgia, accompanied by headache, fever and muscle pain[2]. Infections are often asymptomatic(60%), and symptoms are rare in pre-pubertal infections[2].

Subclinical infection is common, with infection in the pre-pubertal age group being rarely symptomatic. The possibility of vector borne transmission of this disease was considered shortly after its first description. However, despite intensive efforts, neither the causative agent nor possible vector were idenitified until 1960 when it was recognised that the causative agent was probably a mosquito-transmitted arbovirus belonging to the Alphavirus group[3]. Shortly afterwards, Ross River Virus (RRv) was isolated from Aedes vigilax mosquitoes collected near Townsville, Queensland[4].

Subsequent analyses revealed that antibodies to RRv were widely distributed in Australia, Papua New Guinea, New Britain and, to a much less degree, the Solomon islands[5]. However, in 1979-80, a major epidemic of EPA occurred in the Western Pacific Region involving the island nations of Fiji, Samoa, Cook Islands, New Caledonia, and Tonga[2,6]. Over 500,000 people were infected in Fiji alone. The virus was undoubtedly introduced into the Western Pacific Region by a person from Australia who was incubating the disease.

Epidemiology of Epidemic Polyarthritis

Epidemic polyarthritis is a zoonosis. The major vertebrate reservoir of RRv in Australia appears to be the large marsupials, and probably includes both kangaroos and wallabies. The difficulties Australian researchers and clinicians experienced in attempts to isolate RRv from samples obtained from EPA cases led most to believe that man was a 'dead-end' host for the virus. However, the virus was repeatedly isolated from patients in the 1979/80 epidemic in the Western Pacific Region, and it became clear that man was the primary host in maintaining this epidemic[2].

RRv has been isolated from a large array of mosquito species[2,8], and several others have been shown to be capable of supporting transmission of the virus under laboratory conditions. The major vectors of RRv in Australia are generally accepted as being Culex annulirostris and Ae. vigilax[2,4]. In southern parts of Australia, Ae vigilax is displaced by Aedes camptorhynchus and circumstantial evidence suggests that Ae camptorhynchus may also act as a vector of RRv[2].

The intensity of RRv transmission and its seasonal occurrence is generally related to the local abundance of the vector mosquitoes. In general terms, peak vector numbers and recorded arbovirus transmission in southern Australia extends from December/January to March. In the tropics, activity occurs slightly later with the peak transmission season extending from February to June.

Local differences can also be seen in the seasonal abundance of the different vectors. For example, peak numbers of Ae vigilax, a coastal salt marsh breeding species, occur in November to January, whilst populations of Cx annulirostris, which breeds in fresh wetlands, become active from November to April, but with peak numbers in the January to March period.

Epidemic Polyarthritis in Australia

RRv is enzootic throughout mainland Australia and EPA is generally recorded as isolated cases throughout the year with occasional large outbreaks associated with summer rainfall and flooding. Recently, RRv has been found in Tasmania.

Because EPA has such variable presentation, clinical diagnosis must be confirmed by serological testing. The clinical picture has been discussed elsewhere [2], and a draft clinical handbook on EPA has been prepared [9].

The following analysis is based on data extracted from the CDI virus reporting scheme. The national incidence cannot be inferred from these data. Regular monitoring, however, provides trends of virus activity.

Table 1 presents a summary of all reports presented to CDI for the period from 1979 to 1986 (the data for 1987 are not yet completed). The majority of reports are from the Queensland laboratory. The major features of the data are that there is a fairly constant rate of RRv infection in most years, but that those years with unusual climatic conditions result in increased activity. For example, the major outbreaks of EPA in 1984 were reflected by an increase of more than two fold in reports for that year.

In New South Wales the majority of arbovirus identifications are carried out in laboratories which are not part of the sampling frame of CDI. As a result, the most recent severe outbreak of EPA in New South Wales in 1983/84 which resulted in 1196 laboratory confirmed cases [10], was reflected by an increase of only 73 reports (compared with 1983) from the 3 collaborating laboratories in that state (Table 1). Similiarly a detailed analysis of EPA in New South Wales in the 1985/86 summer [11], revealed 237 cases, yet only 53 reports were received from the three laboratories for this two year period (Table 1).

In addition, the WHO Arbovirus Reference Laboratory for the Australasian Region has been relocated from the Queensland Institute for Medical Research to the Queensland State Reference Laboratory. The results of tests performed on sera referred to the Reference Centre by other States are incorportated into the CDI virus reports from that laboratory, thereby inflating the Queensland figures. Despite these caveats, the reporting scheme can provide an index of the trends in EPA prevalence.

Overall, the incidence of EPA as indicated by the reports received is highly seasonal peaking in late summer and early autumn (January to April). Whilst this provides a broad pattern of RRv activity, it must be remembered that local factors such as vector abundance can greatly affect local incidence of the virus. EPA is rarely reported in patients less than 15 years of age or older than 60 years.

Of the 5819 reports received in the period 1979-1986, 4755 reports listed symptoms the most common being muscle and joint symptoms followed by skin and mucous membrane symptoms and fever/malaise. These symptoms are generally found later in the illness as the initial infection presents symptoms commonly seen in viral infections ie fever/malaise.

TABLE 1. **Annual virus reports (Ross River virus) received by CDI 1979-1986***

Year	REPORTING LABORATORY								
	ICPMR (NSW), WVH (ACT)	RAHC (NSW)	PHH POW (NSW)	FAIR-FIELD (VIC)	RCH (VIC)	IMVS (SA)	STATE LAB (QLD)	STATE LAB (WA)	TOTAL
1979	1		1	7		48	435	31	523
1980				2		39	475	19	535
1981			1	3	1	6	399	68	478
1982	2		2	78	1	19	472	101	675
1983	30	1	5	5		11	426	38	516
1984	25	2	82	131	3	92	1094	194	1623
1985	1		10	29		3	447	74	564
1986	2	2	35	199		1	598	68	905
Total	61	5	136	454	5	219	4346	593	5819

* data for 1987 are incomplete.

CDI Editorial Comment

Epidemic polyarthritis exhibits variable clinical patterns from patient to patient. Arthritis is often a feature, and unlike the more chronic arthritic diseases, this arthritis resolves with time.

The Department of Community Services and Health has recently prepared, in collaboration with recognised experts, a patient information sheet on the disease. It is hoped that improved patient education will help allay unnecessary fear about epidemic polyarthritis and its sequelae. A copy of the sheet is included in this Bulletin.

Additional copies of the sheet are available, free of charge by contacting:

The Publications Clerk
Public Health Section
Communicable Diseases Branch
Department of Community Services and Health
GPO Box 9848
CANBERRA ACT 2601

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ERRATUM

In the CDI issue of 1 February 1988 (CDI 88/2) one isolate of coxsackievirus B2 (virus code 0902) reported by Fairfield has been inadvertently listed in the virus table as coxsackievirus B7 (virus 0907). Since no such virus exists, we apologise for this typographical error.

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

TOTAL VIRAL ISOLATIONS BASED ON DATE OF COLLECTION
PERIOD - FORTNIGHTLY
VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES

Period 8/2/88 - 21/2/88.

1. CODE 019 - FAIRFIELD(VIC)
2. CODE 065 - STATE LAB(WA)
3. CODE 110 - IMVS(SA)
4. CODE 111 - RCH(VIC)
5. CODE 112 - ICPMR(NSW) WVH(ACT)
6. CODE 113 - PHH POW(NSW)
7. CODE 114 - RAHC(NSW)
8. CODE 115 - STATE LAB(QLD)

		019	065	110	111	112	113	114	115	TOTAL
0100	ADENOVIRUS NOT TYPED	0	5	0	3	3	4	3	6	24
0101	ADENOVIRUS TYPE 1	0	2	3	2	0	0	0	0	7
0102	ADENOVIRUS TYPE 2	0	0	1	5	1	0	0	0	7
0103	ADENOVIRUS TYPE 3	2	0	1	0	4	0	0	0	7
0104	ADENOVIRUS TYPE 4	0	1	0	0	0	0	0	0	1
0105	ADENOVIRUS TYPE 5	0	0	0	2	0	0	0	0	2
0106	ADENOVIRUS TYPE 6	0	1	1	0	0	0	0	0	2
0107	ADENOVIRUS TYPE 7	0	0	0	1	0	0	0	0	1
0108	ADENOVIRUS TYPE 8	0	5	0	0	0	0	0	0	5
0137	ADENOVIRUS TYPE 37	0	1	0	0	0	0	0	0	1
0199	ADENOVIRUS TYPING PENDING	0	0	0	4	0	0	0	0	4
0201	INFLUENZA A VIRUS	0	0	0	0	0	1	0	0	1
0203	INFLUENZA B VIRUS	0	0	2	0	0	0	0	0	2
0301	PARAINFLUENZA VIRUS TYPE 1	1	0	0	3	0	0	0	0	4
0302	PARAINFLUENZA VIRUS TYPE 2	0	0	0	2	0	0	0	0	2
0303	PARAINFLUENZA VIRUS TYPE 3	2	0	1	4	0	0	1	0	8
0400	RESPIRATORY SYNCYTIAL VIRUS (R	5	0	1	1	0	0	0	1	8
0500	RHINOVIRUS (ALL TYPES)	3	0	2	9	2	0	0	3	19
0600	MYCOPLASMA PNEUMONIAE	1	1	8	6	15	3	2	0	36
0700	ORNITHOSIS-PSITTACOSIS	0	0	0	0	1	1	0	0	2
0809	COXSACKIEVIRUS A9	4	1	0	10	0	0	0	0	15
0816	COXSACKIEVIRUS A16	2	0	0	0	0	0	0	0	2
0901	COXSACKIEVIRUS B1	0	1	0	0	0	0	0	0	1
0902	COXSACKIEVIRUS B2	0	1	1	1	1	0	0	0	4
0905	COXSACKIEVIRUS B5	0	0	1	15	0	0	0	0	16
1005	ECHOVIRUS TYPE 5	0	1	0	0	0	0	0	0	1
1018	ECHOVIRUS TYPE 18	1	0	0	0	0	0	0	0	1
1100	POLIOVIRUS NOT TYPED	0	0	0	2	0	1	0	0	3
1102	POLIOVIRUS TYPE 2	0	0	1	0	0	0	0	0	1
1200	MUMPS VIRUS	0	0	0	0	0	2	0	0	2
1300	HERPES VIRUS GROUP - NOT TYPED	0	7	1	0	15	1	0	2	26
1301	HERPES SIMPLEX VIRUS - NOT TYP	2	5	0	0	0	0	3	0	10
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	1	13	1	1	1	2	0	0	19
1303	VARICELLA-ZOSTER VIRUS	0	7	2	0	6	1	0	1	17
1306	HERPES SIMPLEX TYPE 1	42	31	21	0	60	1	0	52	207
1307	HERPES SIMPLEX TYPE 2	53	46	13	0	156	1	0	64	333
1399	HERPES VIRUS TYPING PENDING	0	2	0	4	0	0	0	0	6
1401	COXIELLA BURNETI	0	1	1	0	4	1	0	0	7
1502	PICORNIA VIRUS - NOT TYPED = E	0	1	0	0	0	8	0	9	18
1515	CONTAGIOUS PUSTULAR DERMATITIS	0	1	0	0	0	0	0	0	1
1521	MEASLES VIRUS	1	0	0	1	0	0	0	0	2
1522	RUBELLA VIRUS	11	0	0	0	0	0	0	0	11
1532	HEPATITIS B ANTIGEN	36	22	11	0	4	10	0	21	104
1535	HEPATITIS A ANTIBODY	1	10	4	0	0	0	0	2	17
1541	CHLAMYDIA A - C. TRACHOMATIS	17	27	49	2	50	2	0	25	172
1555	PAPOVAVIRUS GROUP (PAPILLOMA -	0	1	0	0	0	0	0	0	1
1556	CMV - CYTOMEGALOVIRUS	33	9	5	0	1	3	0	4	55
1564	ROTAVIRUS	0	0	8	2	1	0	0	0	11
1599	ENTEROVIRUS TYPING PENDING	0	0	0	9	0	4	1	0	14
9992	ROSS RIVER VIRUS	0	13	0	0	0	0	0	0	13
TOTAL		218	216	139	89	325	46	10	190	1233

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS BY CLINICAL INFORMATION TABLE 1.

Period 8/2/88 - 21/2/88.

1. CODE 00, 99 ..... - NO ILL OR DATA
2. CODE 01, 02, 11, 12 - RESPIRATORY
3. CODE E3 ..... - ENCEPHALITIS
4. CODE M3 ..... - MENINGITIS
5. CODE 04 ..... - PARALYSIS
6. CODE 05, 13 ..... - CNS OTHER UNSPEC
7. CODE 07, 49 - GASTRO INTESTINAL
8. CODE 17, 47 - HEPATIC
9. CODE 19 ... - CVS
10. CODE 89 ... - URINARY TRA CT
11. CODE 06 ... - SKIN MUCOUS

		1	2	3	4	5	6	7	8	10	11	TOTAL
0100	ADENOVIRUS NOT TYPED	0	5	0	0	1	0	15	0	0	0	21
0101	ADENOVIRUS TYPE 1	0	3	0	1	0	1	2	0	0	0	7
0102	ADENOVIRUS TYPE 2	0	5	1	0	0	0	0	0	0	0	6
0103	ADENOVIRUS TYPE 3	0	2	0	0	0	0	1	0	0	0	3
0104	ADENOVIRUS TYPE 4	0	0	0	0	0	0	1	0	0	0	1
0105	ADENOVIRUS TYPE 5	0	2	0	0	0	0	0	0	0	0	[redacted]
0106	ADENOVIRUS TYPE 6	0	2	0	0	0	0	0	0	0	0	2
0107	ADENOVIRUS TYPE 7	0	1	0	0	0	0	0	0	0	0	1
0199	ADENOVIRUS TYPING PENDING	0	2	0	0	0	0	0	0	0	0	2
0201	INFLUENZA A VIRUS	0	1	0	0	0	0	0	0	0	0	1
0203	INFLUENZA B VIRUS	0	1	0	0	0	0	0	0	0	0	1
0301	PARAINFLUENZA VIRUS TYPE 1	0	4	0	0	0	0	0	0	0	0	4
0302	PARAINFLUENZA VIRUS TYPE 2	0	1	0	0	0	0	0	0	0	0	1
0303	PARAINFLUENZA VIRUS TYPE 3	0	7	0	0	0	0	0	0	0	0	7
0400	RESPIRATORY SYNCYTIAL VIRUS (R	0	7	0	0	0	0	0	0	0	0	7
0500	RHINOVIRUS (ALL TYPES)	1	13	0	1	0	0	0	0	0	0	15
0600	MYCOPLASMA PNEUMONIAE	4	28	0	0	0	0	0	0	0	2	34
0700	ORNITHOSIS-PSITTACOSIS	0	1	0	0	0	0	0	0	0	0	1
0809	COXSACKIEVIRUS A9	0	1	0	8	0	2	1	0	0	1	13
0816	COXSACKIEVIRUS A16	0	0	0	0	0	0	0	0	0	2	2
0901	COXSACKIEVIRUS B1	0	0	0	0	0	0	1	0	0	0	1
0902	COXSACKIEVIRUS B2	0	2	0	0	0	0	0	0	0	0	2
0905	COXSACKIEVIRUS B5	0	7	0	2	0	0	0	0	0	1	10
1005	ECHOVIRUS TYPE 5	0	0	0	0	0	0	1	0	0	0	1
1018	ECHOVIRUS TYPE 18	0	0	0	1	0	0	0	0	0	0	1
1100	POLIOVIRUS NOT TYPED	0	1	0	0	0	0	1	0	0	0	2
1102	POLIOVIRUS TYPE 2	0	1	0	0	0	0	0	0	0	0	1
1300	HERPES VIRUS GROUP - NOT TYPED	1	1	1	0	0	0	0	0	0	14	17
1301	HERPES SIMPLEX VIRUS - NOT TYP	0	1	0	0	0	0	0	0	0	6	7
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	6	0	0	0	0	1	0	1	0	1	9
1303	VARICELLA-ZOSTER VIRUS	1	0	0	0	0	1	0	0	0	13	[redacted]
1306	HERPES SIMPLEX TYPE 1	13	9	0	0	0	1	0	0	1	113	[redacted]
1307	HERPES SIMPLEX TYPE 2	24	1	0	0	0	0	0	0	2	78	105
1399	HERPES VIRUS TYPING PENDING	0	1	0	0	0	0	0	0	0	4	5
1401	COXIELLA BURNETI	2	0	0	0	0	0	0	0	0	0	2
1502	PICORNIA VIRUS - NOT TYPED = E	1	3	0	1	0	0	11	0	0	1	17
1515	CONTAGIOUS PUSTULAR DERMATITIS	0	0	0	0	0	0	0	0	0	1	1
1521	MEASLES VIRUS	0	1	0	0	0	0	0	0	0	1	2
1522	RUBELLA VIRUS	1	0	0	0	0	0	0	0	0	8	9
1532	HEPATITIS B ANTIGEN	20	0	0	0	0	0	0	70	1	6	97
1535	HEPATITIS A ANTIBODY	2	0	0	0	0	0	2	13	0	0	17
1541	CHLAMYDIA A - C. TRACHOMATIS	17	0	0	0	0	0	1	0	0	0	18
1555	PAPOVAVIRUS GROUP (PAPILLOMA -	0	0	0	0	0	0	0	0	1	0	1
1556	CMV - CYTOMEGALOVIRUS	4	10	0	0	0	2	0	1	1	0	18
1564	ROTAVIRUS	0	0	0	0	0	0	11	0	0	0	11
1599	ENTEROVIRUS TYPING PENDING	0	2	0	7	0	0	3	0	0	0	12
9992	ROSS RIVER VIRUS	2	0	0	0	0	0	0	0	0	2	4
TOTAL		99	126	2	21	1	8	51	85	6	254	653

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS BY CLINICAL INFORMATION TABLE 2.

Period 8/2/88 - 21/2/88.

12. CODE 10 - EYE
13. CODE 59 - GENITAL
14. CODE 39 - ENDOCRINE/SALIVARY GL.
15. CODE 38 - RETICULO-ENDOTHELIAL
16. CODE 29 - MUSCLE/JOINT
17. CODE 69 - CONGENTIAL
18. CODE P8 - PUO
19. CODE G8 - FEVER/MALAISE
20. CODE 09 - OTHER
21. CODE A1 - SIDS

		12	13	14	15	16	17	18	19	20	21	TOTAL
0100	ADENOVIRUS NOT TYPED	2	0	0	0	0	0	0	0	1	0	3
0102	ADENOVIRUS TYPE 2	1	0	0	0	0	0	0	0	0	0	1
0103	ADENOVIRUS TYPE 3	4	0	0	0	0	0	0	0	0	0	4
0108	ADENOVIRUS TYPE 8	5	0	0	0	0	0	0	0	0	0	5
0137	ADENOVIRUS TYPE 37	1	0	0	0	0	0	0	0	0	0	1
0199	ADENOVIRUS TYPING PENDING	1	0	0	0	0	0	0	0	0	1	2
0203	INFLUENZA B VIRUS	0	0	0	0	0	0	0	0	1	0	1
0302	PARAINFLUENZA VIRUS TYPE 2	0	0	0	0	0	0	1	0	0	0	1
0303	PARAINFLUENZA VIRUS TYPE 3	0	0	0	0	0	0	0	1	0	0	1
0400	RESPIRATORY SYNCYTIAL VIRUS (R	0	0	0	0	0	0	0	1	0	0	1
0500	RHINOVIRUS (ALL TYPES)	0	0	1	0	0	0	0	2	1	0	4
0600	MYCOPLASMA PNEUMONIAE	0	0	0	0	0	0	0	1	1	0	2
0700	ORNITHOSIS-PSITTACOSIS	0	0	0	0	0	0	0	0	1	0	1
0809	COXSACKIEVIRUS A9	0	0	0	0	0	0	0	0	2	0	2
0902	COXSACKIEVIRUS B2	0	0	0	0	0	0	1	0	1	0	2
0905	COXSACKIEVIRUS B5	0	0	0	0	0	0	0	1	2	3	6
1100	POLIOVIRUS NOT TYPED	0	0	0	0	0	0	0	0	0	1	1
1200	MUMPS VIRUS	0	0	0	0	0	0	0	1	1	0	2
1300	HERPES VIRUS GROUP - NOT TYPED	0	8	0	0	0	0	0	0	1	0	9
1301	HERPES SIMPLEX VIRUS - NOT TYP	0	3	0	0	0	0	0	0	0	0	3
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	0	0	3	3	0	0	2	2	0	0	10
1303	VARICELLA-ZOSTER VIRUS	0	0	1	0	0	0	0	0	1	0	2
1306	HERPES SIMPLEX TYPE 1	3	60	0	0	0	0	0	0	7	0	70
1307	HERPES SIMPLEX TYPE 2	0	227	0	0	0	0	0	0	1	0	228
1399	HERPES VIRUS TYPING PENDING	0	1	0	0	0	0	0	0	0	0	1
1401	COXIELLA BURNETI	0	0	0	0	0	0	2	2	1	0	5
1502	PICORNIA VIRUS - NOT TYPED = E	0	0	0	0	0	0	0	0	0	1	1
1522	RUBELLA VIRUS	0	0	0	1	0	0	0	0	1	0	2
1532	HEPATITIS B ANTIGEN	0	0	0	0	0	0	0	0	7	0	7
1541	CHLAMYDIA A - C. TRACHOMATIS	2	152	0	0	0	0	0	0	0	0	154
1556	CMV - CYTOMEGALOVIRUS	1	2	0	1	0	3	2	7	21	0	37
1599	ENTEROVIRUS TYPING PENDING	0	0	0	0	0	0	0	2	0	0	2
9992	ROSS RIVER VIRUS	0	0	0	1	8	0	0	0	0	0	9
TOTAL		20	453	5	6	8	3	8	20	51	6	580

COMMONWEALTH OF AUSTRALIA

GPO Box 9848
Canberra ACT 2601
Telephone: (062) 89 1555
Telex: 61209 Fax: (062) 81 6946

DEPARTMENT OF
COMMUNITY SERVICES
AND HEALTH

PATIENT INFORMATION SHEET

EPIDEMIC POLYARTHRITIS

Epidemic polyarthritis is caused by a virus which is transmitted by certain species of mosquitoes. It is also known as Ross River virus disease.

SYMPTOMS

Flu-like symptoms are common, and include fever, chills, sweating, headache, aches and pains in muscles and joints, and a dislike of bright light. Some parts of the body may be painful to touch and you might notice swelling in some joints. You could also experience joint stiffness, particularly early in the morning.

Sometimes a rash occurs, usually on the trunk or limbs, although it can occur elsewhere. It will usually resolve in 7 to 10 days. You might also notice a few small purple blotches which look like bruises or small lumps just under the skin, although they should cause no discomfort.

On some days you might feel tired, weak, unable to concentrate, and generally out of sorts or 'down'. School or work performance can be affected. It may be important to inform teachers or employers of these effects.

After a few weeks all of these symptoms will disappear. However, epidemic polyarthritis is an unusual illness in that some of the symptoms may return for periods of time, even after the virus is gone. These include the aches, pains, stiffness, and swellings referred to earlier.

These symptoms are an indication that the recovery process for epidemic polyarthritis can take longer in some people than for most other viral infections. The symptoms can occur on and off over some time, and full recovery can take several months. The severity of the symptoms will usually decrease each time they occur, and you will eventually recover fully, with no after-effects.

BLOOD TESTS

At least one blood test, and often a second taken a week later are necessary to confirm that you have epidemic polyarthritis. Other tests are often needed to exclude illnesses with similar symptoms, especially rubella if the patient, any family member or close acquaintance might be pregnant.

TREATMENT

Antibiotics are not effective against the virus. However, the symptoms can be treated effectively. Your doctor will advise what to take for aches, pains or joint swelling, and it may be necessary to try a few different preparations to discover the one which works best for you. If the treatment upsets you in any way, stop it until you speak to your doctor, even though your symptoms might temporarily return. Otherwise, avoid changing the dose without consulting your doctor. It is a good idea to keep a record of the names of the medications you take. This will help your doctor at your next visit if any follow-up treatment is needed.

SPREAD OF EPIDEMIC POLYARTHRITIS

The virus which causes epidemic polyarthritis is transmitted by some (but not all) species of mosquitoes. When a mosquito feeds on an infected animal or human, it takes up virus. The virus multiplies in the mosquito and is transmitted to a second animal or person during a later feed. In this way, the virus is transferred from one animal (or human) to another, using the mosquito as a carrier or 'vector'.

The virus is not transmitted from one person to another in the absence of a mosquito vector. You cannot transmit the infection directly to your family or acquaintances through normal domestic or casual social contact.

The avoidance of mosquito bites is of great importance in the prevention of epidemic polyarthritis. This can be accomplished in several ways, including -

1. Elimination of breeding sites. Mosquitoes can only breed in water. There are often many sites around the home where water stands for the week or more necessary for eggs to develop into adult mosquitoes. Drainage of these sites or the application of insecticides will reduce mosquito numbers.

2. Self protection. Wear light-coloured clothes which cover as much of the body as possible, particularly in the late afternoon and dusk when mosquitoes are most active. Ensure that insect screens in the home are in good repair. Use a knock-down insecticide before retiring at night. When outdoors, use an effective insect repellent. Your doctor or pharmacist will be able to advise on suitable products.

SUMMARY

CAUSE - a virus transmitted by mosquitoes.

SYMPTOMS - muscle and joint pain, rash, fever, headache, joint swelling, tiredness, inability to concentrate, and aversion to bright light.

TESTS - one or two blood tests.

TREATMENT - symptomatic, to reduce fever, pain and swelling.

RECOVERY - will be complete, but can take some months as the symptoms can recur periodically, even after the virus has been eliminated.

PREVENTION - avoid mosquito bites. Use protective clothing and insect repellents.

Canberra January 1988