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Communicable Diseases Intelligence

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Contents:

VIRUS REPORTING SCHEME: A total of 1 465 reports were processed for this period.

Thirty seven cases of Q fever were reported, 32 from Queensland, 3 from South Australia and 2 from New South Wales. Occupational exposure data were available for 18 of the Queensland cases:-

- 8 meatworkers (2 males from Wondai aged 26 and 22 respectively, 1 male from Beenleigh aged 28, 1 male from Toowoomba aged 26, 1 male from Beaudesert aged 18, 1 male aged 20 and 1 female aged 33 from Brisbane and a 25 year old male from Armidale).
- 3 shearers (a 23 year old male from Roma, a 36 year old male and a 22 year old female from Toowoomba).
- 3 farmers (a 26 year old male from Wondai and two 43 year old males from Cairns).
- 2 hunters (a 26 year old male from Dirranbandi and a 30 year old male from Roma).
- 1 grazier, a 57 year old male from Roma.
- 1 abattoir cleaner, a 31 year old male from Beenleigh.

None of these 37 patients was involved in the Q fever vaccine field trial conducted in South Australia.

Cytomegalovirus was isolated from the urine of a 3 year old male who presented with profound bilateral nerve deafness.

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Respiratory syncytial virus was isolated from the nasal aspirate of:-

- a 3 week old male who experienced post operative distress soon after admission into Intensive Care following surgical procedure to correct a congenital heart defect.
- a 7 month old male cardiac patient who also developed post operative respiratory distress following surgery.

AIDS SURVEILLANCE - AUSTRALIA

To 20 May 1987, 481 cases of AIDS fulfilling the criteria of case definition have been reported to the National Health and Medical Research Unit in AIDS Epidemiology and Clinical Research. The distribution of those patients by State or Territory of Notification (Table 1), by age group (Table 2), by risk category (Table 3) and by clinical presentation (Table 4) are shown below:

TABLE 1: AIDS patients by State or Territory of Notification

STATE/ TERRITORY	CASES			DEATHS		
	Male	Female	Total	Male	Female	Total
NSW	316	14	330	180	10	190
VIC	79	1	80	31	-	31
QLD	32	3	35	23	2	25
WA	24	2	26	11	1	12
SA	5	-	5	2	-	2
NT	2	-	2	1	-	1
TAS	1	-	1	1	-	1
ACT	2	-	2	1	-	1
	461	20	481	250	13	263

TABLE 2: AIDS patients by age group

AGE (YEARS)	CASES			DEATHS		
	Male	Female	Total	Male	Female	Total
0-9	5	-	5	5	-	5
10-19	3	1	4	3	1	4
20-29	99	4	103	51	1	52
30-39	190	2	192	98	-	98
40-49	118	3	121	62	2	64
50-59	36	4	40	23	4	27
60 +	10	6	16	8	5	13
	461	20	481	250	13	263

TABLE 3: AIDS patients by risk category

RISK GROUPS	CASES	DEATHS
Homo-/Bi-sexual	414	218
IV drug abuser	2	-
Homo-/Bi-sexual IV drug abuser	16	8
Blood transfusion recipient	36	29
Person with haemophilia	6	4
Heterosexual transmission	5	3
None of the above	2	1
	481	263

TABLE 4: AIDS patients by clinical presentation

INITIAL DISEASE REPORTED	CASES	DEATHS
Opportunistic infection alone or with P. carinii pneumonia	356	203
Kaposi's sarcoma (KS) alone	87	39
KS + opportunistic disease	16	10
Lymphoma	22	11
	481	262

AIDS - CONSULTATION ON INTERNATIONAL TRAVEL AND HIV

(Based on WER No 12, 62, 20 March 1987)

A consultation on international travel and human immunodeficiency virus (HIV) was convened by the WHO Special Programme on AIDS on 2-3 March in Geneva.

The consultation addressed 3 related issues:

1. HIV Screening of international travellers
2. Travel of HIV-infected persons by public conveyance
3. Recommendations for international travellers on prevention of HIV infection

1. The consultation concluded that, at best and at great cost HIV screening of international travellers would retard only briefly the spread of HIV, both globally and with respect to any particular country.

The AIDS epidemic is now global; 91 countries from all regions of the world have reported AIDS cases to WHO and virtually all nations are already involved, at least to some extent, in the HIV pandemic.

Therefore, the only possible rationale for HIV screening of international travellers would be an effort to slow, rather than to prevent, the spread of HIV.

Serious logistic, epidemiological, economic, legal, political and ethical problems are inherent in any proposal for HIV screening of international travellers. For example: no screening system can prevent the introduction and spread of HIV infection; a programme for screening of international travellers would have to involve nationals returning from travel abroad as well as foreign entrants.

The diversion of resources to screening of international travellers for HIV and away from educational programmes and measures to protect the blood supply is not justified. Rather than screening, the consultation would recommend educational programmes directed to both national and international travellers.

2. The consultation concluded that use of any public conveyance (for example, train, bus, airplane, car, ship) by persons infected with HIV does not create a risk infection for others sharing the same conveyance. Therefore, there is no reason to limit use of public conveyances by HIV-infected persons.

3. Recommendations for international travellers on prevention of HIV infection:

The routes of HIV transmission have been documented to be the same throughout the world. Therefore, the behaviours that put individuals at risk of acquiring HIV are similar worldwide. Preventive measures against HIV are also the same worldwide, regardless of whether the individual is a traveller or a resident of a given country.

Educational materials should be made available for international travellers to increase awareness of how HIV is transmitted and how it can be prevented. This educational material should indicate specific preventive measures, in clear, easily understood language. This involves a difficult balance since transmission of HIV is primarily sexual and therefore involves many social and cultural sensitivities. However, it is essential to discuss these sensitive issues openly to protect the international traveller.

TRAVEL RESTRICTIONS ON HIV - INFECTED PEOPLE

(Extracted from AIDS Newsletter, Bureau of Hygiene & Tropical Diseases, London, 10 April 1987.)

This is a summary of proposed and existing travel restrictions as far as can be ascertained from reports in the media and from enquiries of embassies and consulates in London.

Ab+: antibody positive; Ab-: antibody negative.

Country	Type of visitor	Type of restriction
Australia	Visitors suspected of having AIDS or having HIV-Ab+	Currently considering some form of restriction
Austria (Klagenfurt only)	Foreign workers	Must be certified HIV-Ab-
Belgium	Foreign students	Compulsory screening
China	Foreign students	Blood test on arrival; deportation if HIV-Ab+
Finland	Foreign workers	Screening to be introducted
India	Persons staying more than 3 months	Refused entry if HIV-Ab+ Deported if HIV-Ab+
Indonesia	Visitors suspected of having AIDS or being HIV-Ab+	Refused entry
Iraq	Visitors suspected of having AIDS or being HIV-Ab+	Blood test on arrival
Japan	Visitors suspected of having AIDS or being HIV-Ab+	Currently considering some form of restriction

Korea	Applicants for long term visas	Certificate of HIV-Ab- being considered
Kuwait	Applicants for work permits	Must be certified HIV-Ab-
New Zealand	Persons staying more than 12 months	Must be certified HIV-Ab-
Phillippines	Applicants for more than 12 months residence	Must be certified HIV-Ab-
Saudi Arabia	Applicants for work permits	Must be certified HIV-Ab-
Spain	Applicants for work permits	Must be certified HIV-Ab-
United Arab Emirates	Foreign workers	Screening; deportation if HIV-Ab+
United Kingdom	Visitors suspected of having AIDS	Refused entry
United States	People with signs of AIDS	Refused entry (proposed)
West Germany (Bavaria only)	Foreign students and visitors	Compulsory screening; possible registration of HIV-Ab+

THE DEFINITION OF AIDS
(Based on California Morbidity #3, 30 January 1987)

Acquired Immunodeficiency Syndrome (AIDS), initially recognised as a distinct clinical entity in 1981, is considered to represent the end stage of infection with the Human Immunodeficiency Virus (HIV). The Centers for Disease Control (CDC) first described this syndrome as Kaposi's sarcoma and opportunistic infections in previously health persons. In September 1982, CDC formally adopted the term AIDS and defined this syndrome as a disease, at least moderately predictive of a defect in cell-mediated immunity which occurred in a person with no known cause for diminished immune function. About a dozen diseases, primarily Pneumocystis carinii pneumonia, Kaposi's sarcoma, and other, mostly severe opportunistic infections, were specified by CDC. These diseases, if diagnosed by histological and/or culture techniques would be accepted as meeting the CDC definition for AIDS if other known causes of immunodeficiency were ruled out.

CDC recognised that this strict definition was not likely to include the full spectrum of clinical manifestations caused directly or indirectly by HIV. The CDC definition of AIDS was formulated before the aetiologic agent (HIV) was identifed and before any laboratory tests to detect HIV infection were available. Nevertheless, the CDC definition has been determined to be extremely accurate in identifying patients who have severe illnesses direcly or indirectly due to their HIV infection and has been useful in the public health monitoring (surveillance) of this syndrome in the United States.

However, with increased clinical use of HIV antibody tests, there is increasing recognition that the strict use of the CDC

definition is resulting in the under-ascertainement of many cases of severe or irreversible immune damage caused by HIV infection. Disease manifestations which are probably attributable to HIV but which do not meet the CDC definition for AIDS include: dementia; generalised lymphadenopathy; weight loss; fever; diarrhoea; lethargy; and malaise. This constellation of signs and symptoms (or some sub-group of them) have been referred to as AIDS Related Conditions (ARC), but no uniform nor accepted definition currently exists. ARC may vary from mild to very severe illness and death.

The following changes in the current CDC definition of AIDS are being considered because the current definition is too restrictive:-

1. Several severe conditions (ie, the 'wasting syndrome' and dementia) and many infections which are not currently listed in the CDC definition, occur in persons with laboratory evidence of HIV infection. These conditions are likely due, directly or indirectly, to HIV and should be formally recognised as AIDS or at a minimum be defined as severe ARC.

2. The confirmation of Kaposi's sarcoma and some opportunistic infections such as Pneumocystis carinii by histology or culture is being omitted in an increasing percentage of suspected AIDS cases because laboratory facilities may not be readily available or because these diagnostic procedures are considered unnecessarily costly or invasive. These cases should be classified as AIDS or at least, presumptive AIDS.

   Currently, the diagnosis of AIDS places increasing reliance on the use of laboratory tests to determine if a person is infected by HIV, and if infected, whether a specific and measurable immune deficiency exists. Thus, it is likely that future definitions of AIDS will require:-

   1. evidence of HIV infection;
   2. evidence of specific immune deficiency; and
   3. some clinical manifestations which can be directly or indirectly attributed to HIV infection.

Until the CDC definition is changed (probably in mid to late 1987) health care providers should continue to report AIDS using the current definition.

HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION CONTACT TRACING RECOMMENDATIONS

(Based on CDWR Vol 13-4, 31 January 1987)

Contact tracing is a strategy that has been used extensively in sexually transmitted disease control programs. Responsibility for informing sexual contacts may be placed on the individual, on the personal physician, or on the public health network. A combination of approaches, such as contact tracing by the index individual with assistance where desired from the physician or the public health network, may be the most effective means of reaching sexual contacts. It should be noted that public health units have an excellent record for safeguarding the confidentiality of patient information. In the absence of an

effective treatment for AIDS, our major prevention and control effort must be education aimed at personal risk reduction through behavioural change to reduce transmission. Depending on prevalence rates in certain high-risk communities and/or the impracticability of follow-up, risk reduction programs aimed at the community in general may be more cost effective than contact tracing aimed at individuals.

The following recommendations are based on the principle that individuals who may have no reason to suspect that they may have been exposed to HIV should have the opportunity to know that they may have been so exposed.

1. With the aim of preventing perinatal transmission of HIV, the highest priority for contact tracing must be women of child-bearing age. In many instances, these women may not be aware that they have been exposed to HIV and, therefore, may proceed to become pregnant with concomitant risk to others and themselves. Current recommendations are that infected women postpone pregnancy until more is known about the risk of overt illness during pregnancy and the risk of delivering an infected infant[1]. In the instance where the index male is unwilling to inform his female contact(s) (sexual or needle-sharing), the physician should take appropriate steps to ensure that these women are informed that they have been exposed and should offer to provide or arrange for counselling and voluntary testing.

2. Infected patients should be encouraged to refer sex partners or persons with whom they have shared needles to their health-care provider for evaluation and/or testing. If patients prefer, the physician with the patient's consent or where authorised by law, may request that trained health department professionals be made available to assist in notifying their partners and counselling them regarding evaluation and/or testing[2].

3. Intensive investigation of transfusion-related AIDS cases is essential to trace potentially asymptomatic unknowing blood donors who may otherwise donate blood or have unprotected sexual intercourse. Following identification of the infected donor(s), tracing of their contacts is required. Such contacts include sexual partners and recipients of blood/blood products who should be offered counselling and voluntary testing.

Seroreactive blood donors should be counselled by their physicians regarding the significance of their test results. They may wish to be retested. Their sexual contacts should be given high priority for counselling and voluntary testing because they may be among those least likely to realise that they have been exposed.

REFERENCES

1. MMWR (1985) 34: 721-26, 731-32.
2. MMWR (1986) 35: 152-55.

ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) VACCINE DEVELOPMENT
(Based on WER No 14, 62, 3 April 1987)

The World Health Organization has recognized a responsibility to assume a lead role in global efforts to combat the pandemic of infection with the human immunodeficiency virus (HIV). Current prevention and control efforts are focused primarily on health education and communications and on HIV antibody screening of blood for transfusion. However, a safe and effective vaccine to prevent HIV infection would be a significant addition to prevention programmes. In anticipation of the need for clinical testing of candidate vaccines, the WHO Special Programme on AIDS organised an informal meeting held in Geneva from 15 to 16 December 1986 to discuss AIDS vaccine efficacy trials in human populations.

The prospects for development of a vaccine to prevent HIV infection appear to encouraging. However, substantial uncertaity remains since no vaccine against retroviruses of the lentivirus group has shown to be effective. Laboratory efforts to develop candidate vaccines are in progress in several countries.

The development of a vaccine of proven efficacy and safety, should it be feasible, is long-term objective that, at best, will take several years to accomplish. Success will be dependent upon many factors including:

(a) appropriately designed clinical trials;
(b) meticulous laboratory and clinical evaluation;
(c) inclusion of appropriately defined target groups in vaccine development programmes; and
(d) resolution of complex ethical, legal and sociopolitical issues

Design of clinical trials

The major objectives of efficacy studies for AIDS vaccine (Phase 3 trials) need to be precisely defined at the onset (e.g., prevention of infection, prevention of disease). The laboratory and clinical parameters chosen to measure efficacy should be selected on the basis of practicality and relevance to the size of the study and its duration, as well as their biological significance. Randomized, placebo-controlled studies are likely to be essential, but alternative study designs may be of value. When placebo-controlled studies are used, the need for placebos must be justified. However, the decision to conduct a study that is not placebo-controlled should also be carefully explained. Study size and duration are interrelated and can be estimated once efficacy parameters and numbers of potential subjects in individual target groups are known. Specific study sites will need to be defined and programmes established for volunteer recruitment, counselling clinical and laboratory evaluation, and follow-up. Plans regarding study design, size, duration, and site will need to account for the possibility that multiple candidate vaccine preparations may be available. The clinical evaluation of several candidate vaccines will need to be closely co-ordinated to ensure comparability of the date.

Laboratory and clinical evaluation

To facilitate interpretation of data from several testing sites on vaccine immunogenicity, adverse effects, and efficacy, a standardized set of laboratory and clinical evaluations will be needed. Evaluation of immunogenicity will include measurement of serological and cell-mediated responses to vaccine. The ability to distinguish vaccine versus natural infection-induced immune responses is important. Detection and evaluation of adverse effects will be based on information obtained from the history, physical examination, and haematological, immunological, and clinical chemistry laboratory testing.

Standardization of laboratory and clinical evaluations is essential Standardization efforts should include the use of uniform procedures and reporting parameters (e.g. laboratory units) as well as the development and distribution of standard reagents.

Definition of target groups and their inclusion in clinical trials

Issues relating to selection and preparation of vaccine recipient groups for testing include:

1. criteria for inclusion in or exclusion from a study;
2. use of high-risk or low-risk populations;
3. high-risk populations of particular interest;
4. the geographical location of studies; and
5. the background data on study population required before studies begin

Ethical, legal and sociopolitical issues

The development and testing of any candidate AIDS vaccine should follow a standard procedure which takes ethical, legal and sociopolitical considerations into account. Pre-clinical laboratory and animal testing should always precede clinical trials. Clinical trial participants should always be volunteers who are free of coercion by their government, employer, or academic superior and who have given informed consent. Studies in children should be preceded, whenever possible, by all appropriate tests in adults. All study plans should have been reviewed by an ethical committee and should contain provisions for liability coverage as appropriate to the local conditions, in the event of adverse reactions to the vaccine.

In addition to following these general guidelines, AIDS vaccine study plans should take into account issues related to the following 4 areas:

1. study design:
   (a) use of placebos;
   (b) use of inducements to participants (e.g., free medical care);

2. study location:
   (a) the health infrastructure and research regulation levels required for a country to be considered as an appropriate site for Phase 1, 2 or 3 studies;

3. subject selection and protection:
   (a) appropriate timing and special requirements and ethical considerations in connection with studies in children;
   (b) education of study participants about HIV infection, AIDS and the potential risks of participation;
   (c) education of study participants and potential participants rejected because of HIV infection about behaviour changes important for reduction of (re-)infection and transmission;
   (d) maintenance of confidentiality of study participants;
   (e) potential for discrimination against study participants who develop serum antibody to HIV as the result of vaccination;

4. ethical and legal review:
   (a) need for prior review of study protocols and monitoring by, at a minimum, the vaccine producer, the country of the producer, and the country in which the vaccine will be tested;
   (b) the need for representation of members of high-risk groups on vaccine study review boards;
   (c) liability issues.

The following general concepts were arrived at regarding evaluation of candidate AIDS vaccines:

1. Efforts to develop AIDS vaccines established a new era in vaccine development.

2. Testing of candidate AIDS vaccines is going to be complex, difficult and time-consuming. An AIDS vaccine for general use will not be available, if at all, before 1991 and is unlikely to be available before the mid 1990s.

3. Given the complexity of the problem, including ethical and social dimensions, along with the paramount global importance of developing a safe and effective AIDS vaccine, international co-operation and collaboration and open information exchange are essential in the evaluation of candidate AIDS vaccines.

4. There is an urgent need for advance planning of clinical trials of potential AIDS vaccines.

It is recommended that WHO establish, as soon as possible, a mechanism to ensure the open exchange of scientific, social, and ethical information necessary for advance planning and international collaboration in the clinical testing of candidate AIDS vaccines, with particular attention to Phase 3 trials.

HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION IN TRANSFUSION RECIPIENTS AND THEIR FAMILY MEMBERS

(Based on MMWR Vol. 36/No. 10, 20 March 1987)

A case of human immunodeficiency virus (HIV) infection among multiply-transfused leukemia patients in New York has been

reported to the Centers for Disease Control (CDC). In addition, there have been several reports that persons with transfusion-associated HIV infection have transmitted the virus to their sexual partners and newborn children. All infected transfusion recipients described in these reports had received blood or blood components before routine screening of donated blood for HIV antibody started in the spring of 1985.

Multiply-Transfused Leukemia Patients

During the past year, four long-term leukemia survivors (at Memorial Sloan-Kettering Cancer Center) in New York City developed unexplained fever, weight loss, diarrhoea, or lymphadenopathy. They subsequently had positive serological tests for HIV antibody. A retrospective study of other multiply-transfused leukemia patients was conducted to determine how many had been infected with HIV. Informed consent was obtained from all living patients. Positive enzyme-linked immunosorbent assay (ELISA) tests were confirmed by Western blot assay. Patients known to have other risk factors for HIV infection were excluded from the study.

Sera were located for 182 deceased cases and obtained from 22 surviving leukemia patients treated during the years 1978-1986:-

. 16 of these 204 transfusion recipients were seropositive for HIV antibody (Figure). They had received a mean of 27 units of packed red blood cells (range 2-56) and 137 units of platelets (range 10-483).

. Of these 204 patients:

- 92 (45%) had acute myelogenous leukaemia,
- 41 (20%) had acute lymphocytic leukaemia,
- 26 (13%) had chronic myelogenous leukaemia,
- 8 (4%) had chronic lymphocytic leukaemia,
- 12 (6%) had myelodysplastic syndromes,

and the remaining

- 25 (12%) had other or unclassified leukaemias.

There was no correlation between type of leukaemia and the presence of HIV antibody.

An additional 23 newly diagnosed, untreated, and untransfused leukaemia patients were tested and all were seronegative.

Additional Case Reports From Other Areas

Case 1: An elderly man with no known risk factor for AIDS received multiple units of blood in early 1982, including one from a donor who subsequently tested positive for HIV antibody. The recipient developed Pneumocystis carinii pneumonia (PCP) in 1983 and died in 1984. His wife, who did not have any other risk factor for AIDS, had had vaginal intercourse with him until he became ill in late 1982. In late 1984, her HIV antibody test was positive and she was diagnosed as have a type of lymphoma indicative of AIDS[1].

Case 2: A pregnant woman with no other risk factors for AIDS received four units of blood in 1978, including one from a donor who later tested positive for HIV

antibody. A son, born in 1980, had failure to thrive beginning at 13 months of age and died with PCP in 1986. The woman, her son, her husband, and the child born shortly after the transfusion all tested positive for HIV antibody.

MMWR EDITORIAL NOTE

At present, prevention of HIV infection and AIDS is dependent upon:-

- deferral of blood or plasma donations by persons at increased risk for AIDS;
- testing of donated blood and plasma for HIV antibody;
- heat treatment of clotting factor concentrates;
- avoidance of unprotected sexual contact and needle sharing by persons infected with HIV; and
- prevention of perinatal transmission by infected women.

Counselling and HIV antibody testing have been recommended for persons at risk for infection including:-

- homosexual/bisexual men;
- intravenous drug abusers;
- haemophilia patients;
- prostitutes; and
- persons who have had sexual contact with members of these groups(2).

Routine counselling and antibody testing have not been recommended for blood transfusion recipients because, in general, their risk for infection is extremely low.

However, as illustrated by this report and others(3), some multiply-transfused persons may be at a higher risk for HIV infection. In addition, some persons with transfusion-associated HIV infection have transmitted the virus to their sexual partners and, perinatally, to their infant children.

Although the number of infected transfusion recipients in the United States is unknown, it can be approximated using estimates of the prevalence of infection in donors, the efficiency of transmission, and the number of units transfused per year.

In 1985 - 0.04% of donations were positive for HIV antibody by Western blot assay(4).

In 1984 (American Blood Commission, unpublished data)

IF

- 0.04% had been the seroprevalence among donors in 1984, the year prior to screening,
- all seropositive units had transmitted infection(5), and
- each seropositive unit had gone to a different recipient,

THEN

- 7 200 of the approximately 18 million components transfused in 1984 might have transmitted infection.

If 60% of these recipients have died from their underlying disease(6), then approximately 2 900 living recipients who acquired a transfusion-associated HIV infection in 1984 would remain. Most of these would be asymptomatic. The number of

infected donors was probably lower in earlier years. Mathematical projections from reported transfusion-associated AIDS cases estimate that approximately 12 000 people now living in the United States acquired a transfusion-associated HIV infection between 1978 and 1984[7].

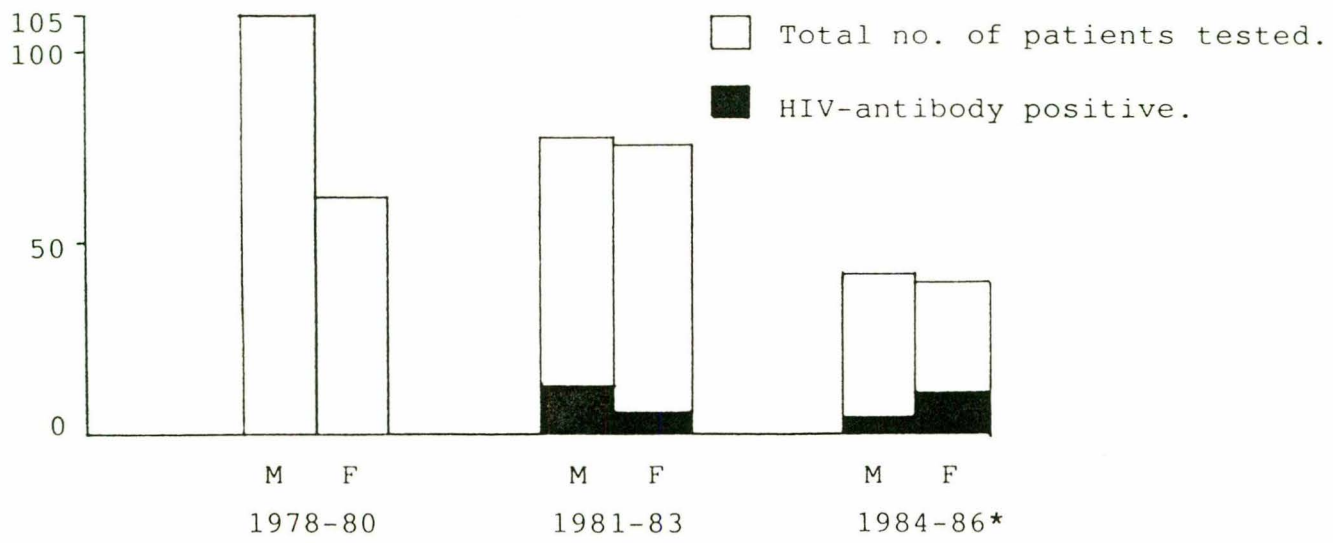
Blood banking organisations in the United States have begun "look back" programs to identify previous recipients of blood from donors who tested positive for HIV antibody after screening began. In one region, 70% of recipients identified through such a program had HIV antibody[8]. However, look-back programs cannot identify all infected transfusion recipients because many infected donors may have refrained from donating or become too ill to continue to donate after HIV serologic testing of donors began.

This risk of HIV transmission by transfusion was low, even before screening, and has been virtually eliminated by the routine screening of donated blood and plasma. However, since HIV-infected persons are at risk for developing AIDS or related conditions themselves and may transmit infection to others, physicians should consider offering HIV antibody testing to some patients who received transfusion between 1978 and late spring of 1985. This consideration should be based on the likelihood of infection in a recipient and the likelihood of transmission from that recipient.

The risk of infection is greatest if the recipient received large numbers of transfusions and if the blood was collected during the few years before screening in an area with a high incidence of AIDS.

FIGURE

HIV SEROLOGY RESULTS IN LEUKEMIA PATIENTS, BY YEAR OF SPECIMEN COLLECTION - (MEMORIAL SLOAN-KETTERING CANCER CENTER, NY CITY)



* These patients were treated before screening of blood products began in March 1985; 22 long-term survivors, four of whom were seropositive, are included.

M = Male
F = Female

NB. The leukaemia patients in this report received many units of blood and blood components in an area with a high prevalence of HIV than most parts of the United States, so their seropositivity rate is higher than would be expected in other patients. Conversely, persons who received a small number of units in a low prevalence area would have an extremely low risk of HIV infection.

Testing is particularly important if the patient is sexually active. Since the overall prevalence of infection in transfusion recipients is expected to be low, the positive predictive value of ELISA screening tests for HIV antibody will be much lower than that seen when testing high risk populations[9-10].

Therefore, all transfusions recipients with a positive ELISA should also have their serum tested by a second method such as Western blot assay, immunofluorescence assay, before they are informed of their test result. Seropositive persons should be evaluated for signs and symptoms of AIDS or related conditions and counselled regarding the avoidance of HIV transmission to others.

REFERENCES

1. Am J Med (1986) 81: 898-900
2. MMWR (1986) 35: 152-5
3. Blood (1986) 68: 135a
4. NEJM (1985) 313: 384-5
5. Ann Intern Med (1987) 106: 61-2
6. CDC paper presented at International Conference on AIDS, 16 April 1985
7. Transfusion (in press)
8. NEJM (1986) 315: 1095-6
9. JAMA (1986) 256: 357-61
10. CDI (1987) 87/7: 4-7

UPDATE: HUMAN IMMUNODEFICIENCY VIRUS INFECTIONS IN HEALTH CARE WORKERS EXPOSED TO BLOOD OF INFECTED PATIENTS.

(Based on MMWR Vol. 36/No. 19, 22 May 1987)

Six persons who provided health care to patients with human immunodeficiency virus (HIV) infection and who denied other risk factors have previously been reported to have HIV infection:

- 4 of these cases followed needle-stick exposures to blood from patients infected with HIV[1-4].
- 2 additional cases involved persons who provided nursing care to persons with HIV infection. Although neither of these two persons sustained needle-stick injuries, both had extensive contact with blood or body fluids of the infected patient, and neither observed routinely recommended barrier precautions[5-6].

The Centers for Disease Control (CDC) has received reports of HIV infection in three additional health care workers following non-needle-stick exposures to blood from infected patients. The exposures occurred during 1986 in three different geographic areas. Although these three cases represent rare events, they re-emphasize the need for health-care workers to

adhere rigorously to existing infection control recommendations for minimising the risk of exposure to blood and body fluids of all patients[7-9].

Health Care worker 1:

A female health care worker assisting with an unsuccessful attempt at inserting an arterial catheter in a patient suffering a cardiac arrest in an emergency room applied pressure to the insertion site to stop the bleeding. During the procedure, she may have had a small amount of blood in her index finger for about 20 minutes before washing her hands. Afterwards, she may also have assisted in cleaning the room but did not recall any other exposures to the patient's blood or body fluids. She had no open wounds, but her hands were chapped. Although she often wore gloves when anticipating exposure to blood, she was not wearing gloves during this incident.

The patient with the cardiac arrest died. A post mortem examination identified Pneumocystis carinii pneumonia, and a blood sample was positive for HIV antibody by Enzyme-linked immunosorbent assay (ELISA) and Western blot methods. Twenty days after the incident, the health care worker became ill with fever, myalgia, extreme fatigue, sore throat, nausea, vomiting, diarrhoea, a 6 kg weight loss, and generalised lymphadenopathy which her physician diagnosed as a viral syndrome. That illness lasted 3 weeks. She felt much better 9 weeks after the incident, and when she was examined 6 months after the incident, all signs and symptoms had resolved.

She had donated blood 8 months before the incident and was negative for HIV by ELISA. She donated again 16 weeks after the incident and was positive for HIV by ELISA and Western blot (band p24 and gp41). Serum samples obtained 20 and 23 weeks after the incident were also positive for HIV antibody. She stated that for over 8 years her only sexual partner had been her husband, who denied risk factors for HIV and was seronegative for HIV antibody. She denied ever receiving a blood transfusion, ever using intravenous drugs, or having any needle-sticks or other significant exposures to blood or body fluids in the past 8 years. Her serologic test for syphilis was negative. Fifteen other employees who assisted in the care of the patient were seronegative at least 4 months after the exposure.

Health Care Worker 2:

A female phlebotomist (a person who incises a vein for blood letting) was filling a 10ml vacuum blood collection tube with blood from an outpatient with a suspected HIV infection when the top of the tube flew off and blood splattered around the room, on her face, and in her mouth. She was wearing gloves to protect her hands and was wearing eyeglasses so she did not think she got blood in her eyes. She had facial acne but no open wounds. She washed the blood off immediately after the exposure. The outpatient's blood sample was positive for HIV antibody by ELISA and Western blot, and a hepatitis B surface antigen test was negative. The phlebotomist's ELISA was negative the day after the incident and again 8 weeks later.

When she donated blood 9 months after the exposure, she was positive for HIV antibody by ELISA and Western blot (bands p24

and gp41). She has had no symptoms. She denied having any sexual contact during the previous 2 years, ever using drugs intravenously, or ever receiving a transfusion. Two months after the incident, she scratched the back of her hand with a needle used to draw blood from an intravenous drug abuser of unknown HIV antibody status. She did not bleed as a result of the scratch and has not had any needle-stick injuries in over 2 years. Her serologic tests for syphilis and hepatitis B were negative. A co-worker who was splattered with blood on the face and in the mouth during the same incident remains seronegative 1 year after the incident.

Health Care Worker 3:

A female medical technologist was manipulating an apheresis machine (a device to separate blood components) to correct a problem that developed during an outpatient procedure when blood spilled, covering most of her hands and forearms. She was not wearing gloves. She does not recall having any open wounds on her hands or any mucous membrane exposure. However, she had dermatitis on one ear, and may have touched it. She washed the blood off herself and the machine several minutes after the spill. The patient undergoing the apheresis had denied risk factors for HIV infection. However, a blood sample from the patient was positive for HIV antibody by ELISA an Western blot methods and negative for hepatitis B surface antigen the next day. The technologist's HIV-antibody tests were negative 5 days after the exposure and again 6 weeks later.

Eight weeks after the exposure, she had an influenza-like illness with fever, myalgia, diarrhoea, hives, and a pruritic red macular rash on her arms and legs. The illness resolved after a few weeks, and her physician thought the illness was probably a viral syndrome. Three months after the incident, she was positive for HIV antibody by ELISA and Western blot methods (band p24 alone). Four months after the incident, a Western blot was positive (bands p24 and gp41). She indicated that for more than 8 years her only sexual partner had been her husband, who denied risk factors for HIV infection and was seronegative for HIV antibody. She denied ever receiving a transfusion, ever using intravenous drugs, or having any needle-stick injuries in over 2 years. Her serologic tests for syphilis and hepatitis B were negative. She has an immunologic disorder which had been treated with corticossteroids in the past, but she had not taken any immunosuppressive medication for the past year. A co-worker with a similar exposure during the same procedure remains seronegative after 3 months.

MMWR Editorial Note:

Three instances of health care workers with HIV infections associated with skin or mucous membrane exposure to blood from HIV-infected patients are reported above. Careful investigation of these three cases did not identify other risk factors for HIV infection, although unrecognised or forgotten needle-stick exposures to other infected patients cannot be totally excluded. The exact route of transmission in these three cases is not known.

Health care workers 1 and 3 were not wearing gloves when direct contact with blood occurred:-

. health care worker 1 had chapped hands, and the duration of contact with blood of the patient experiencing a cardiac

arrest may have been as long as 20 minutes.
. health care worker 3 had a history of dematitis involving an ear.

Health care worker 2 was wearing gloves, but sustained contamination of oral mucous membranes when blood splattered on her face and mouth. She also had acne but did not recall having open lesions. In addition, she had sustained a scratch from a needle used to draw blood from an intravenous drug abuser of unknown HIV infection status.

Three ongoing prospective studies provide data on the magnitude of the risk of HIV infection incurred when health care workers are exposed to blood of infected patients through needle-stick wounds or contamination of an open wound or mucous membrane.

1. In a CDC cooperative surveillance project[10], a total of 1097 health care workers with parenteral or mucous membrane exposure to the blood of patients with AIDS or other manifestations of HIV infection had been enrolled as of 31 March 1987;
   - 969 (89%) had exposures to blood via needle-stick injuries and cuts with sharp objects; 298 of these had paired serum samples tested for HIV antibody, and only one (0.3%) seroconverted[2].
   - the other 128 workers have also been exposed:
     . 70 had open wounds exposed to blood, and
     . 58 had mucous membrane exposed to blood,

     Post exposure serum samples from 82 of these 128 workers have been tested for HIV antibody; none was seropositive.

2. In a study conducted up to 30 April 1987 at The National Institutes of Health[11]:
   . None of the 103 workers with percutaneous exposures, and
   . none of the 229 workers with mucous membrane exposures to blood or body fluids of patients with AIDS was seropositive.

3. At the University of California[12], none of 63 workers with open wounds or mucous membranes exposed to blood or body fluids of patients with AIDS was seropositive.

Although the precise risk of transmission during exposure of open wounds or mucous membranes to contaminated blood cannot be defined, these studies indicate that it must be very low.

The three cases reported above suggest that exposure of skin or mucous membranes to contaminated blood may rarely result in transmission of HIV. The magnitude of risk is not known since data on the frequency with which such exposures occur are not available. Skin and mucous membrane exposures are thought to occur much more commonly than needle-sticks, and the risk associated with skin or mucous membrane exposures is likely to be far lower than that associated with needle-stick injuries. Nonetheless, the increasing prevalence of HIV infection increases the potential for such exposures, especially when routinely recommended precautions are not followed.

It is unlikely that routine serological testing for HIV infection of all patients admitted to hospitals would have

prevented these exposures since:-

- two of the three exposures occurred in the outpatient clinic setting, and
- one occurred during a resuscitation effort in an emergency room shortly after the arrival of the patient.

At the time of exposure, health care worker 2 suspected that the source patient was infected with HIV, but health care workers 1 and 3 did not.

The hospital where health care worker 3 was exposed has a protocol for apheresis which normally involves HIV-antibody testing of donors; however such testing was not done in advance of the procedure. Previous CDC recommendations have emphasized the value of HIV serologic tests for patient diagnosis and management and for prevention and control of HIV transmission [13] and have stated that some hospitals in certain geographic areas may deem it appropriate to initiate serologic testing of patients[7]. Such testing may also provide an opportunity to reduce the risk of HIV infection to health care workers, but it has not been established that knowledge of a patient's serologic status increases the compliance of health care workers with recommended precautions.

These cares emphasize again THE NEED TO IMPLEMENT AND STRICTLY ENFORCE PREVIOUSLY PUBLISHED RECOMMENDATIONS FOR MINIMISING THE RISK OF EXPOSURE TO BLOOD AND BODY FLUIDS OF ALL PATIENTS IN ORDER TO PREVENT TRANSMISSION OF HIV INFECTION in the workplace and during invasive procedures[7-9]:

1. As previously recommended, routine precautions must be followed when there is a possibility of exposure to blood or other body fluids. The anticipated exposure may require gloves alone (eg, when placing an intravascular catheter or handling items soiled with blood or equipment contaminated with blood or other body fluids). Procedures involving more extensive contact with blood or potentially infective body fluids (eg some dental or endoscopic procedures or postmortem examinations) may require gloves, gowns, masks, and eye-coverings. Hand and other contaminated skin surfaces should be washed thoroughly and immediately if accidentially contaiminated with blood[7]. These precautions deserve particular emphasis in emergency care setting in which the risk of blood exposure is increased and the infectious status of the patient is usually unknown[14].

2. Previous recommendations have emphasized management of parenteral and mucous membrane exposures of health care workers:-
   - if a health care worker has a parenteral (eg needlestick or cut) or mucous membrane (eg splash to the eye or mouth) exposure to blood or other body fluids, the source patient should be assessed clinically and epidemiologically to determine the likelihood of HIV infection.
   - if the assessment suggests that infection may exist, the patient should be informed of the incident and requested to consent to serologic testing for evidence of HIV infection.

- if the source patient has AIDS or other evidence of HIV infection, declines testing, or has a positive test, the health care worker should be evaluated clinically and serologically for evidence of HIV infection as soon as possible after the exposure, and, if seronegative, retested after 6 weeks and on a periodic basis thereafter (eg 3, 6, and 12 months following exposure) to determine if transmission has occurred. During this follow-up period, especially the first 6-12 weeks, when most infected persons are expected to seroconvert, exposed health care workers should receive counselling about the risk of infection and follow US Public Health Service (PHS) recommendations for preventing transmission of AIDS[15-16].
- if the source patient is seronegative and has no other evidence of HIV infection, no further follow-up of the health care worker is necessary.
- if the source patient cannot be identified, decisions regarding appropriate follow-up should be individualised based on the type of exposure and the likelihood that the source patient was infected[7].

In addition, health care workers who are involved in incidents that result in cutaneous exposures involving large amounts of blood or prolonged contact with blood-especially when the exposed skin is chapped, abradded, or afflicted with dermatitis-should follow these same recommendations. Moreover, serologic testing should be available to all health care workers who are concerned that they may have been infected with HIV.

REFERENCES

1. Lancet (1984) 2:136-7.
2. NEJM (1986) 314:1115
3. NEJM (1986) 315:582
4. Lancet (1986) 2:814
5. PHLS Commun. Dis. Rep (1985) 42:4
6. MMWR (1986) 35:76-9
7. MMWR (1985) 34:681-5, 691-5
8. MMWR (1986) 35: 221-3
9. MMWR (1986) 35:237-42
10. NEJM (1986) 314:1127-32
11. Ann Intern Med (1986) 104:644-7
12. J Infect Dis (1987) 156:1-8
13. CDC - PHS (1987)
14. JAMA (1987) 257:2609-11
15. MMWR (1983) 32:101-3
16. MMWR (1985) 34:1-5

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

REPORTING PERIOD - 18-5-87 TO 31-5-87 BULLETIN NUMBER 87/11

VIRAL IDENTIFICATIONS FROM CONTRIBUTING LABORATORIES

VIRUS OR VIRAL ANTIGEN	ICPMR (NSW)/ WVH (ACT)	RAHC (NSW)	PHH/ POW (NSW)	FAIR-FIELD (VIC)	RCH (VIC)	IMVS (SA)	STATE LAB (QLD)	STATE LAB (WA)	Total
0100 ADENOVIRUS NOT TYPED			5	1	2	1	14	2	25
0101 ADENOVIRUS TYPE 1				2	1	1			4
0102 ADENOVIRUS TYPE 2			1	1					2
0103 ADENOVIRUS TYPE 3			1		4				5
0105 ADENOVIRUS TYPE 5					1				1
0107 ADENOVIRUS TYPE 7					3				3
0199 ADENOVIRUS TYPING PENDING					4				4
0203 INFLUENZA B VIRUS				1	1				2
0204 INFLUENZA C VIRUS							1		1
0301 PARAINFLUENZA VIRUS TYPE 1					3	2			5
0302 PARAINFLUENZA VIRUS TYPE 2					1		4	1	6
0303 PARAINFLUENZA VIRUS TYPE 3					6	2	6		14
0399 PARAINFLUENZA VIRUS TYPING PENDING					2				2
0400 RESPIRATORY SYNCYTIAL VIRUS (RS)		7	8	3	4	15	7	9	53
0500 RHINOVIRUS (ALL TYPES)			1	5	9	3		3	21
0600 MYCOPLASMA PNEUMONIAE					1		14	1	16
0700 ORNITHOSIS-PSITTACOSIS				1					1
0809 COXSACKIEVIRUS A9					1				1
0902 COXSACKIEVIRUS B2		1							1
0903 COXSACKIEVIRUS B3			1		3	1			5
1003 ECHOVIRUS TYPE 3		2							2
1005 ECHOVIRUS TYPE 5		1		1	1				3
1009 ECHOVIRUS TYPE 9		1							1
1011 ECHOVIRUS TYPE 11				2	2				4
1022 ECHOVIRUS TYPE 22				1					1
1100 POLIOVIRUS NOT TYPED					6				6
1101 POLIOVIRUS TYPE 1				1		1			2
1103 POLIOVIRUS TYPE 3					1				1
1200 MUMPS VIRUS				1					1
1300 HERPES VIRUS GROUP-NOT TYPED				10		5		1	16
1301 HERPES SIMPLEX VIRUS NOT-TYPED		2		2			1	2	7
1302 EPSTEIN-BARR VIRUS (EB VIRUS)			2	8			24	3	37
1303 VARICELLA-ZOSTER VIRUS		1				2	3	1	7
1306 HERPES SIMPLEX TYPE 1	1		12	29		29	20	18	109
1307 HERPES SIMPLEX TYPE 2	5		28	68		12	46	40	199
1399 HERPES VIRUS TYPING PENDING					3				3
1401 COXIELLA BURNETI			2			3	32		37
1502 PICORNA VIRUS-NOT TYPED			9				13	1	23
1521 MEASLES VIRUS				1			1	4	6
1522 RUBELLA VIRUS						4	17	2	23
1532 HEPATITIS B ANTIGEN			5	37	1	20	29	9	101
1535 HEPATITIS A ANTIBODY				3		6	1	3	13
1541 CHLAMYDIA A - C TRACHOMATIS			4	8	1	48	13	46	120
1543 CHLAMYDIA A - LGV TYPE	14		1						15
1556 CMV - CYTOMEGALOVIRUS			7	47	4	6	18	6	88
1564 ROTAVIRUS			7	1	6	25	4		43
1571 ENTEROVIRUS TYPE 71 (BRCR)					1				1
1599 ENTEROVIRUS TYPING PENDING		2	9		6				17
9992 ROSS RIVER VIRUS			7	2			390	4	403
9995 DENGUE							1		1
9997 KUNJIN VIRUS							2		2
9998 ARBO. GROUP B. ...							1		1
Total	20	17	110	236	78	186	662	156	1,465

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Viral Identifications by Clinical Information Table 1.
Code 00,99 -No ill or data; 01,02,11,12 -Respiratory; E3 -Encephalitis; M3 -Meningitis; 04 -Paralysis; 05,13 -CNS other unspec.; 07,49 -GI; 17,47 -Hepatic; 19 -CVS; 89 -Urinary; 06 -Skin/mucous.

VIRUS OR VIRAL ANTIGEN	No-ill or data	Respir-atory	Enceph-alitis	Mening-itis	Para-lysis	CNS other unspec	GI	Hepa-tic	CVS	Urin-ary	Skin/ mucs memb
0100 ADENOVIRUS NOT TYPED.....		1									
0101 ADENOVIRUS TYPE 1.....		4					1				
0102 ADENOVIRUS TYPE 2.....		1					1				
0103 ADENOVIRUS TYPE 3.....		3									
0105 ADENOVIRUS TYPE 5.....		1									
0107 ADENOVIRUS TYPE 7.....		2					1				
0203 INFLUENZA B VIRUS.....		2									
0204 INFLUENZA C VIRUS.....											1
0301 PARAINFLUENZA VIRUS TYPE 1....		5									
0302 PARAINFLUENZA VIRUS TYPE 2....		5									
0303 PARAINFLUENZA VIRUS TYPE 3....		13									
0400 RESPIRATORY SYNCYTIAL VIRUS (RS).....		52									
0500 RHINOVIRUS (ALL TYPES).....		7									
0600 MYCOPLASMA PNEUMONIAE.....	2	13			1						
0902 COXSACKIEVIRUS B2.....		1									
0903 COXSACKIEVIRUS B3.....		3				1					
1003 ECHOVIRUS TYPE 3.....		1	1								
1005 ECHOVIRUS TYPE 5.....					1		1				1
1009 ECHOVIRUS TYPE 9.....					1						
1011 ECHOVIRUS TYPE 11.....	1	1			2		1				
1022 ECHOVIRUS TYPE 22.....						1					
1101 POLIOVIRUS TYPE 1.....		2									
1103 POLIOVIRUS TYPE 3.....		1									
1200 MUMPS VIRUS.....	1										
1301 HERPES SIMPLEX VIRUS NOT-TYPED											4
1302 EPSTEIN-BARR VIRUS (EB VIRUS).	4	12						1			1
1303 VARICELLA-ZOSTER VIRUS.....											7
1306 HERPES SIMPLEX TYPE 1.....		7	1						1	2	58
1307 HERPES SIMPLEX TYPE 2.....		2									58
1401 COXIELLA BURNETI.....	7	7						1			
1521 MEASLES VIRUS.....	1	2	1								4
1522 RUBELLA VIRUS.....	1	1	1								16
1532 HEPATITIS B ANTIGEN.....	18							77			
1535 HEPATITIS A ANTIBODY.....								11			
1541 CHLAMYDIA A - C.TRACHOMATIS...	1						2				2
1543 CHLAMYDIA A - LGV TYPE.....	1										
1556 CMV - CYTOMEGALOVIRUS.....	9	14				1		4		4	1
1564 ROTAVIRUS.....	1						41				
1571 ENTEROVIRUS TYPE 71 (BRCR)....		1									
9992 ROSS RIVER VIRUS.....	64	22	3								75
9995 DENGUE.....	1										
9997 KUNJIN VIRUS.....	1										
Total.....	113	186	7	5		3	48	94	1	6	228

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Viral Identifications by Clinical Information Table 2.
Code 10 -Eye; 59 -Genital; 39 -Endo/sal gland;
38 -RES; 29 -Muscle/joint; 69 -Congenital; P8 -PUO;
G8 -Fever/malaise; 09 -Other; A1 -SIDS ...

VIRUS OR VIRAL ANTIGEN	Eye	Genital	Endo/sal gland	RES	Muscle/joint	Congenital	PUO	Fever/malaise	Other	SIDS
0100 ADENOVIRUS NOT TYPED.....								1		
0101 ADENOVIRUS TYPE 1.....							1			
0102 ADENOVIRUS TYPE 2.....								1		
0103 ADENOVIRUS TYPE 3.....	1							2		
0203 INFLUENZA B VIRUS.....								1		
0204 INFLUENZA C VIRUS.....					1					
0302 PARAINFLUENZA VIRUS TYPE 2....									1	
0303 PARAINFLUENZA VIRUS TYPE 3....									1	
0400 RESPIRATORY SYNCYTIAL VIRUS (RS).....					1			1	1	
0600 MYCOPLASMA PNEUMONIAE.....								8		
0700 ORNITHOSIS-PSITTACOSIS.....							1			
0809 COXSACKIEVIRUS A9.....								1		
0903 COXSACKIEVIRUS B3.....								1	1	
1005 ECHOVIRUS TYPE 5.....								1		
1103 POLIOVIRUS TYPE 3.....								1		
1301 HERPES SIMPLEX VIRUS NOT-TYPED	1	1					2			
1302 EPSTEIN-BARR VIRUS (EB VIRUS).			10		3		1	17	3	
1306 HERPES SIMPLEX TYPE 1.....	5	35						1	1	
1307 HERPES SIMPLEX TYPE 2.....		138							1	
1401 COXIELLA BURNETI.....					6			26	2	
1521 MEASLES VIRUS.....			1							
1522 RUBELLA VIRUS.....			3		7	3		1		
1532 HEPATITIS B ANTIGEN.....								1	5	
1535 HEPATITIS A ANTIBODY.....								1	1	
1541 CHLAMYDIA A - C.TRACHOMATIS...	4	107				1			3	
1543 CHLAMYDIA A - LGV TYPE.....		14								
1556 CMV - CYTOMEGALOVIRUS.....			1		1	9	3	8	40	
1564 ROTAVIRUS.....										1
9992 ROSS RIVER VIRUS.....			4		264			124	9	
9997 KUNJIN VIRUS.....								1		
9998 ARBO. GROUP B.					1			1		
Total.....	11	295	19		284	13	8	199	69	1