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Communicable Diseases Intelligence

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Editor Dr I.F. Cook

Contents:

VIRUSES, CHLAMYDIAS, COXIELLAS, RICKETTSIAS AND MYCOPLASMAS REPORTING SCHEME: A total of 1 955 reports were processed during this period.

Forty-seven cases (43 males and 4 females) of Q fever were reported during this reporting period (NSW [44], QLD [2], SA [1]) covering a period from February to May (Feb [3], Mar [18], Apr [18], May [8]). The age of the patients was generally between 15 and 76 years and two cases were young children, a 1 month old boy and a 4 year old girl. Exposure details were provided only for a 48 year old diary farmer from Toowoomba.

C. trachomatis was isolated from the eye and the respiratory tract of a 3 month old boy with a lower respiratory tract infection and gastroenteritis. Cytomegalovirus was also isolated from a nasopharyngeal aspirate.

Adenovirus type 37 was isolated from the eye of a 33 year old male who developed conjunctivitis 4 days after a sexual encounter in Manila. (This type of adenovirus can be sexually transmitted and has been associated with cervicitis).

Rotavirus and adenovirus type 14 were identified in the faeces of a 3 month old boy with gastroenteritis followed by renal failure.

IgM to rubella virus was detected in the serum of an asymptomatic pregnant woman who had been in contact with rubella.

AIDS UPDATE - CANADA

(Based on an update report from the Federal Centre for AIDS, Ottawa, Canada, 3 May 1988)

To 3 May 1988, 1 730 cases (1 697 adults and 33 paediatric) of AIDS which meet the surveillance case definition for AIDS (revised 1 September 1987) have been reported to the Federal Centre for AIDS, Ottawa. The distribution of those patients by Province of notification (Table 1), by age group (Table 2), by risk category (Table 3) and by primary diagnosis (Table 4) are shown below:

Table 1: AIDS cases by Province of notification

PROVINCE	CASES	(%)	DEATHS
British Columbia	334	(19.3)	182
Alberta	100	(5.8)	58
Saskatchewan	22	(1.3)	16
Manitoba	25	(1.4)	13
Ontario	672	(38.8)	398
Quebec	529	(30.6)	275
New Brunswick	8	(0.5)	6
Nova Scotia	30	(1.7)	12
Prince Edward Island	2	(0.1)	1
Newfoundland	7	(0.4)	4
North West Territories	1	(0.1)	0
Yukon	0	(0.0)	0
TOTAL	1730	(100.0)	965

Table 2: AIDS cases by sex and age groups

AGE (YEARS)	CASES			DEATHS		
	Male	Female	Total	Male	Female	Total
0-14	14	19	33	10	10	20
15-19	4	0	4	4	0	4
20-29	323	27	350	163	16	179
30-39	758	30	788	410	18	428
40-49	367	7	374	213	5	218
50+	157	23	180	101	15	116
Unknown	1	0	1	0	0	0
TOTAL	1624	106	1730	901	64	965

Table 3: AIDS by risk category

RISK GROUP	CASES			DEATHS		
	Male	Female	Total	Male	Female	Total
ADULTS						
Homo-/bisexual	1387	-	1387	750	-	750
IV drug user	10	1	11	6	1	7
Homo-/bisexual IV Drug User	43	-	43	26	-	26
Blood/blood products recipient	56	23	79	39	14	53
Heterosexual activity	73	56	129	45	33	78
None of the above	41	7	48	25	6	31
Total	1610	87	1697	891	54	945
PAEDIATRIC						
Perinatal transmission	12	17	29	*	*	*
Blood/blood products recipient	2	2	4	*	*	*
Total	14	19	33	10	10	20

* Death breakdown not available.

Table 4: AIDS by primary diagnosis

PRIMARY DIAGNOSIS	CASES	DEATHS
ADULTS		
Kaposi's Sarcoma (KS)	349	180
Pneumocystis carinii Pneumonia (PCP)	924	515
KS and PCP	45	30
Other opportunistic infection	311	184
Other malignancies	51	28
HIV Wasting Syndrome	10	5
HIV Encephalopathy	7	3
Total	1697	945
PAEDIATRIC		
PCP	9	7
Lymphoid interstitial pneumonitis	6	3
Cytomegalovirus	0	5
Other opportunistic infection	12	5
Total	33	20

UPDATE: ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS) - WORLDWIDE
(Based on MMWR (1988) 37:286-295)

As of 21 March 1988, 136 countries or territories throughout the world had reported a total of 84,256 cases of acquired immune deficiency syndrome (AIDS) to Global Programme on AIDS (GPA) (formerly the Special Programme on AIDS) of the World Health Organization (WHO) Table 1). Thirty-seven countries or territories had reported no AIDS cases. Reports are based on either the CDC/WHO surveillance definition[1,2], the WHO clinical definition[3], or a physician's diagnosis. From 1979 to 21 March 1988, the number of AIDS cases increased markedly in all geographical regions (Figure 1). The cumulative world total increased from 11,965 in 1984 to 25,150 in 1985 (a 110% increase) and to 48,413 in 1986 (a 92% increase). Because of reporting lags, the global total of AIDS cases reported for 1987 is not yet complete; however, as of 21 March 1988 34,913 cases had been reported for 1987 (a 72% increase). Data on the distribution of AIDS cases by region are presented below, followed by a discussion of the findings.

Table 1: AIDS cases reported to the World Health Organization (WHO), by continent, 1979 - 21 March 1988

Continent	Number of Cases	Number of Countries or Territories Reporting: No Cases	1 or More Cases	Total Number of Countries Reporting
Africa	10,973	8	42	50
Americas	61,602	2	42	44
Asia	231	16	21	37
Europe	10,616	1	27	28
Oceania	834	10	4	14
Total	84,256	37	136	173

Figure 1: Total AIDS cases reported to the World Health Organization, 1979 - March 21, 1988

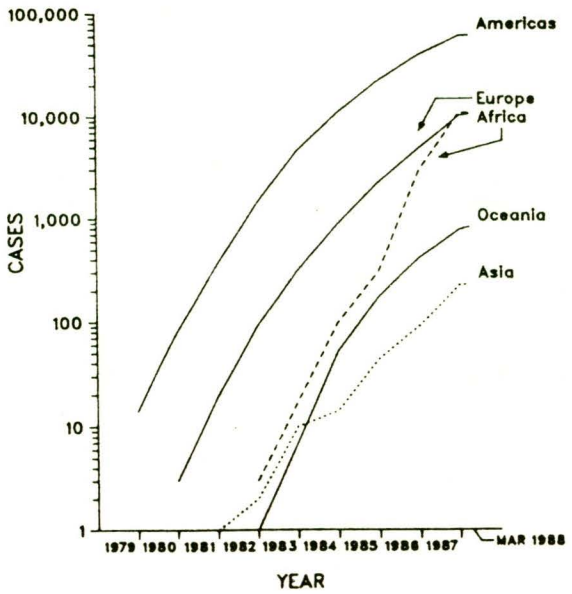

Table 2: AIDS cases, by age group and sex - 28 countries in the World Health Organization's European Region, 31 December 1987

Age Group	Male	Female	Total (%)
0-11 mths	40	48	88 (0.9)
1-4 yrs	52	48	100 (1.0)
5-9 yrs	24	7	31 (0.3)
10-14 yrs	29	3	32 (0.3)
15-19 yrs	77	14	91 (0.9)
20-29 yrs	2,325	551	2,876 (28.2)
30-39 yrs	3,440	255	3,695 (36.3)
40-49 yrs	2,031	72	2,103 (20.7)
50-59 yrs	736	53	789 (7.7)
>60 yrs	281	52	333 (3.3)
Unknown	38	2	43* (0.4)
Total	9,073	1,105	10,181 (100.0)

* Sex of three patients is unknown.

Table 3: Reported AIDS cases among adult and paediatric patients, by transmission category - Europe, 31 December 1987, and United States, 4 January 1988*

	Europe		United States	
Transmission Categories of Patients	No.	(%)	No.	(%)
Adult Patients				
Homosexual/Bisexual Male	5,865	(59)	32,138	(65)
Intravenous (IV) Drug Use	1,944	(20)	8,511	(17)
Homosexual Male and IV Drug Use	259	(3)	3,726	(8)
Haemophilia/Coagulation Disorder	349	(4)	494	(1)
Heterosexual contact	609	(6)	1,987	(4)
Transfusion	359	(4)	1,144	(2)
Other/Undetermined	545	(5)	1,515	(3)
Total	9,930	(100)	49,515	(100)
Paediatric Patients				
Haemophilia/Coagulation Disorder	38	(15)	40	(5)
Parent with/at Risk for AIDS	170	(68)	577	(77)
Transfusion	38	(15)	99	(13)
Other/Undetermined	5	(2)	34	(5)
Total	251	(100)	750	(100)

* The latest data analysis available for Europe is for 31 December 1987. The 4 January 1988 U.S. analysis is used here because it most closely approximates the time frame of the European analysis.

Americas

Forty-two countries in the Americas have reported 73% of the world total of AIDS cases. As of 21 March 1988 the United States had reported a total of 54,233 cases. The case count in Brazil was 2,325; the number had increased from 801 at the end of June 1986 to 1,695 at the end of June 1987. Canada has reported a total of 1,517 cases. The following additional countries reported over 100 cases: Haiti (912), Mexico (713), Dominican Republic (352), Trinidad and Tobago (206), Bahamas (163), Colombia (153), Argentina (120), and Venezuela (101).

Europe

Twenty-eight countries in Europe have reported 13% of the world's total AIDS cases. Between December 1986 and December 1987, the number of cases reported from Europe to the WHO Collaborating Centre on AIDS[4] in Paris, France, increased by 124%. The greatest number of cases has been reported from France (3,073), the Federal Republic of Germany (1,669), Italy (1,411), the United Kingdom (1,227), and Spain (789). The highest rates per population size are in France, Switzerland, and Denmark. Four countries with over 100 cases (Austria, France, Italy, and Spain) reported increases of more than 100% between December 1986 and December 1987. The lowest rates were reported from the Eastern European countries.

Ninety-two percent of patients reported from Europe were European; 4% were African; 1% were from the Caribbean; and 3% were from other countries[4]. The relative percentage of patients who have been reported from Europe but whose country of origin is Africa has been decreasing over the past 2 years.

The age distribution of patients in Europe (Table 2) is similar to that in the United States except that Europe has a higher percentage of patients under 19 years of age (3% compared with 2%). Europe has a lower percentage of adult patients in the homosexual and homosexual/intravenous drug user transmission categories than the United States and a higher percentage in the heterosexual, blood-related, and undetermined/other categories (Table 3). In addition, Europe has a higher percentage of paediatric patients in the haemophilia/coagulation disorder category than the United States and a lower percentage with a parent with AIDS or at increased risk for AIDS.

Intravenous (IV) drug users account for 64% of adult patients in Italy and 53% of adult patients in Spain. Both countries together reported 66% of the IV drug related cases in Europe. In the following six countries reporting more than 50 cases, 75% or more of the patients were homosexual males: the Netherlands (88%), the United Kingdom (87%), Denmark (86%), Sweden (81%), Norway (79%), and the Federal Republic of Germany (76%).

Africa

Thirty-eight countries in the African Region have reported 13% of the world's total AIDS cases. Fifteen African countries reported more than 50 cases each, Zimbabwe and Zaire have each reported 300 to 500 cases, and Uganda, Tanzania, Congo, Kenya,

Burundi, Rwanda, Malawi, and Zambia have each reported more than 500 cases. Central eastern, and southern Africa have reported the largest number of cases. Although cases were first officially reported from Africa in the second half of 1982, over 70% of all cases (7,906) were reported in 1987. (As of April 1988, Zimbabwe officially retracted its report of 380 cases pending a national review of the accuracy of its reporting system).

Other Areas

Oceania has reported a total of 834 AIDS cases; Asia, a total of 231 cases; and the eastern Mediterranean countries, 100 cases. The major reporting countries (>20 cases) from these areas were Australia (758 cases), New Zealand (74), Japan (59), Qatar (32), and Turkey (21).

Discussion

Worldwide AIDS surveillance is coordinated by GPA at WHO in Geneva. Reports are received from collaborating centres, including CDC in the United States, the WHO Collaborating Centre in Paris, and WHO regional offices and ministries of health. Accuracy and completeness of AIDS reporting vary in different areas of the world. In 1985, a review of death certificates in the United States suggested that 89% of AIDS cases meeting the surveillance definition were reported[5]. In Africa, reporting has only recently started in some countries and is, therefore, incomplete. Consequently, the proportion of AIDS cases that are reported in Africa is unknown. The WHO clinical case definition, used in areas where the prevalence of HIV is high, has a specificity of over 90%[6].

Epidemiological studies indicate three broad yet distinct geographical patterns of transmission. Pattern 1 is typical of industrialised countries with large numbers of reported AIDS cases, such as North America, Western Europe, Australia, New Zealand, and parts of Latin America. In these areas, most cases occur among homosexual or bisexual males and urban IV drug users. Heterosexual transmission is responsible for only a small percentage of cases but is increasing. Transmission due to exposure to blood and blood products occurred between the late 1970s and 1985 in these countries but has now been largely controlled through the self-deferral of persons at increased risk for AIDS and by routine blood screening for human immunodeficiency virus (HIV) antibody. The ratio of male to female patients ranges from 10:1 to 15:1, and, to date, perinatal transmission is relatively uncommon. Overall population seroprevalence is estimated to be less than 1% but has been measured at up to 50% in some groups practicing high-risk behaviours, such as IV drug users and men with multiple male sex partners.

Pattern II is observed in areas of central, eastern, and southern Africa and in some Caribbean countries. In these areas, most cases occur among heterosexuals; the male to female ratio is approximately 1:1; and perinatal transmission is relatively more common than in other areas. IV drug use and homosexual transmission either do not occur or occur at a very low level. In a number of these countries, overall population seroprevalence is estimated at more than 1%, and, in a few

urban areas, up to 25% of the sexually active age group is infected. Transmission through contaminated blood and blood products has been a significant problem and continues in those countries that have not yet implemented nationwide donor screening.

Pattern III is found in areas of eastern Europe, the Middle East, Asia, and most of the Pacific. HIV appears to have been introduced into these areas in the early to mid-1980s, and only small numbers of cases have been reported. Homosexual and heterosexual transmission have only recently been documented. Generally, cases have occurred among persons who have travelled to endemic areas or who have had sexual contact with individuals from endemic areas, such as homosexual men and female prostitutes. A small number of cases due to receipt of imported blood products has been reported.

Under its charter, the World Health Assembly of WHO has authorised GPA to develop and coordinate a global strategy for AIDS prevention and control. As of March 1988, 115 member states had agreed to collaborate in supporting and developing short-term (<1 year) plans for AIDS control. Between February 1987 and March 1988, GPA provided over 250 consultant visits to assist countries in developing these plans.

WHO is conducting worldwide surveillance of AIDS, developing standardised methods for HIV serosurveys, and creating a Global Commission on AIDS to provide GPA with scientific and technical guidance. In addition, experts have met in Geneva to discuss a variety of HIV-related issues. Health promotion and HIV prevention strategies have also been developed. GPA is organising a network of specimen banks for geographically and temporally representative retroviral isolates and sera. GPA is also collaborating with a working group of leading AIDS virologists to standardise the characterisation of HIV and related human retroviruses.

Although the number of AIDS cases is expected to increase significantly over the next few years, there is growing confidence that the spread of HIV can be stopped. Stopping HIV infection, however, will require a commitment that goes beyond geographical boundaries. Education and the means to eliminate or modify risk factors and risk behaviours will be the key. The global control of AIDS will require both committed national AIDS programs and strong international coordination, cooperation, and leadership.

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TRAVEL RESTRICTIONS ON HIV INFECTED PERSONS AS AT MARCH 1988
(Based on AIDS Newsletter March 1988)

A number of countries have introduced entry restrictions for travellers, foreign workers or migrants. Below is a summary of AIDS testing requirements for various countries.

Country	Type of Visitor	Type of Restriction
Australia	Migrants with clinical AIDS	May be refused entry
Austria (Klagenfurt only)	Foreign workers	Must be certified antibody negative
Belgium	Foreign students applying for Belgian Government Scholarships	Compulsory testing in country of origin
Bulgaria	Foreign nationals staying more than one month	Compulsory testing within 15-20 days of arrival
Colombia	Visitors from USA, Haiti & Africa (under consideration)	Certified antibody negative
China	Foreign students & nationals applying for permits greater than six months, except diplomats	Must be certified antibody negative or tested on arrival
Costa Rica	Crews of all ships	Must be certified antibody negative
Cuba	Foreigners not tourists & Cubans returning from endemic areas	Tested on arrival
Czechoslovakia	Foreign students and resident workers	Compulsory testing on arrival antibody positive repatriated
Egypt	Defence, Foreign Defence workers working at military establishments	Must be certified antibody negative
Germany (Bavaria)	Foreign nationals applying for resident permits. Exemption EEC nationals, nationals of Andora, Finland, Iceland, Liechtenstein, Malta, Monarco, Norway, Austria, San-Marino, Sweden, Switzerland & Vatican City	Compulsory testing

Country	Type of Visitor	Type of Restriction
Germany West	Students receiving scholarships from Ministry of Economic Co-Operation	Compulsory testing
Finland	Foreign workers	Screening to be introduced
Indonesia	Visitors suspected of having AIDS or being antibody positive	Refused entry
India	Overseas students and foreigners staying more than a year, except diplomats	Compulsory testing on arrival
Iraq	Overseas visitors and Iraqis returning, except diplomats and children less than 12 years of age	Compulsory testing within 5 days of arrival as specified clinics/hospitals
Japan	Visitors suspected of having AIDS or being antibody positive	Refused entry
Korea	Applicants for long-term visas (under consideration)	Certified antibody negative
Kuwait	Foreign nationals applying for work permits	Must be certified antibody negative
Libya	Foreign workers and visitors	Must be certified antibody negative
Philippines	Applicants for permits granted in 1 year (uncertain) US military personnel and all foreign sailors	From 18.4.88 must be certified antibody negative
Qatar	Foreign nationals applying for work permits, except diplomats	Compulsory testing
Saudi Arabia	Applicants for work or resident permits	Must be certified antibody negative
South Africa	Foreign workers	Compulsory testing
Spain	Applicants for work permits	Must be certified antibody negative
Syria	Foreign nationals applying for work permits	Compulsory testing on arrival as specified centres

Country	Type of Visitor	Type of Restriction
United Arab Emirats	Foreign nationals applying for work or resident permits, except diplomats	Compulsory testing
United Kingdom	Visitors suspected of having AIDS and need of extensive medical treatment	Refused entry
Union of Soviet Socialist Republics	Foreign citizens from countries where AIDS has been registered by the World Health Organ-ization who intend staying for more than 3 months. Persons in risk groups: drug addicts, homosexuals, prostitutes and those receiving multiple blood transfusions	Compulsory testing on arrival
United States of America	(Written correspondence is awaited)	

RABIES REFERENCE LABORATORY, AAHL GEELONG

(Submitted by W.A. Snowdon, Australian Animal Health Laboratory, Geelong).

Since March 1986, the Australian Animal Health laboratory (AAHL) Geelong, has been responsible for rabies diagnosis in Australia. Previously, this role had been undertaken by the Commonwealth Serum Laboratories. Since early 1988, AAHL has been the reference laboratory for rabies diagnosis for New Zealand also.

Thirty-one submissions were investigated by AAHL in the 12 months from 1 May 1987 to 30 April 1988 (33 submissions had been investigated in the previous 12 months.)

The origin of submissions on a country and state basis was:

Australia	AAHL	2
	New South Wales	7
	Queensland	11
	South Australia	1
	Victoria	7
	Western Australia	2
New Zealand		1

These submissions included the following:

Source	Sample	Reason for investigation	Investigation	Result
Quarantine	6 dogs 3 cats	Post-mortem - died in quarantine.	Direct rabies antigen by immunofluorescence	Negative
	1 squirrel 2 dogs	Confiscated by quarantine and destroyed as illegal imports	and rabies virus isolation by mouse innoculation	Negative
Zoo	1 otter	Post-mortem		Negative
Veterinary laboratories	3 dogs 1 cat	Died or were destroyed with signs of CNS disturbance		Negative
Royal Children's Hospital Brisbane	10 year old boy	Post-mortem. Died with encephalitis and histological findings consistent with rabies.*	Direct rabies antigen by immunofluorescence and immunoperoxidase techniques.	Positive
			Specific antibody testing of serum samples in the terminal phase of the disease.	Positive

* For a full report of the case see CDI 88/6.

Fifty-three serum samples were tested for antibodies to rabies vaccine for:

- routine monitoring of immune status of AAHL staff (38); and
- monitoring responses to post-exposure vaccination of people who had been bitten by animals of unknown status in rabies endemic areas (15). (All these showed a satisfactory response to vaccination.)

Samples submitted to the Rabies Reference Laboratory should be addressed to:

The Chief,
Australian Animal Health Laboratory,
Ryrie Street,
Geelong, Victoria.

Prior authorisation for forwarding specimens that may be infectious must be obtained from:

- the Chief, AAHL, (052 265 222);
- the Chief Veterinary Officer, Victoria, (03 651 7137); and
- the Chief Veterinary Officer or Chief Medical Officer of the State from which the specimen is being despatched.

Packaging of specimens must conform to the requirements of international postal and air transport authorities. Suitable containers can be obtained from AAHL.

HEPATITIS A AMONG DRUG USERS

(Based on MMWR (1988) 37:)

The Centers for Disease Control (CDC) Atlanta, has received an increasing number of reports of hepatitis A outbreaks involving drug users. These outbreaks have occurred in many areas of the United States, including Alaska, Oregon, Washington State, northern and southern California, Oklahoma, upstate New York and Conneticut. A variety of drugs have been used in Oregon, northern California, and Oklahoma. Intravenous (IV) amphetamines have been most commonly implicated; in one locality in southern California, a new form of heroin, referred to as "black tar" because of its colour and consistency, has been linked with transmission; in upstate New York, IV cocaine has been the primary drug. In several areas, cases have occurred among people who only smoked marijuana. Outbreaks in upstate New York and northern California and data from the Viral Hepatitis Surveillance Program (VHSP) are summarised below to illustrate this trend.

Upstate New York

Since 1 December 1986 hepatitis A outbreaks predominantely involving drug users have been reported in 4 counties in upstate New York.

In Monroe County, 87 cases of physician-diagnosed hepatitis A were reported to local health authorities between 1 December 1986 and 31 May 1987. An average of nine cases had been reported for the same period of the previous 2 years. Twenty-four (28%) of these patients were IV drug users without other identifiable risk factors for hepatitis A. Eight additional patients were sexual or household contacts of these 24 patients. Information about the specific drugs used was not available for all patients; however, local drug enforcement officials believe that cocaine is the primary drug used intravenously in Monroe County.

Thirty-eight cases of hepatitis A occurred in Cortland County in 1987. Twenty-two (58%) of the patients were known or suspected drug users. Eleven of these cases occurred between March 25 and April 18. About 1 month before becoming ill, these 11 patients had attended two different social gatherings at which seven of them had used IV cocaine and shared needles. No food was consumed nor were beverages shared at these gatherings, and no other risk factors for hepatitis A could be identified.

Increases in hepatitis A also occurred in Onondaga and Chemung Counties during 1987. Fifty (38%) of the 131 cases of hepatitis A in Onondaga County in 1987 were among known or suspected drug users; 70% of the 50 patients used only IV cocaine. Thirteen cases occurred between October and December in Chemung County. Four (31%) of these patients were drug users; all used IV cocaine only. Anecdotal information suggested that drug users in Chemung County had recently obtained cocaine from persons in Onondaga County.

Northern California

In June 1987, an outbreak of hepatitis A among patrons of a restaurant in a northern California county was reported to local health authorities. Investigation revealed that a restaurant cook with a history of IV drug use had been diagnosed with hepatitis A several weeks earlier. A review of all serologically confirmed cases of hepatitis A in the county between 1 January and 30 June 1987 was subsequently conducted. Thirty (42%) of the 71 cases identified were associated with the foodborne outbreak originating at the restaurant. Thirty-three of the remaining 41 patients were contacted either directly or through friends or family. Twenty-four (73%) of these 33 patients were IV drug users and did not have other risk factors for hepatitis A. Eleven (46%) of the IV drug users were male; all were white; and they ranged from 21 to 39 years of age. Twelve of the drug users admitted to IV drug use within 6 weeks before onset of hepatitis A. All twelve had injected "crank" (an amphetamine derivative). Twelve of the IV drug users admitted to either casual or intimate contact or sharing needles or drug paraphernalia with at least one other IV drug user who contracted hepatitis A during the same period.

Viral Hepatitis Surveillance Program (VHSP)

The VHSP is a nationwide reporting system in which patients serologically confirmed to have hepatitis A are interviewed to identify the probable sources of illness. Data from VHSP indicate an increasing association between drug use and hepatitis A in the United States. Between 1982 and 1986, the percentage of persons with hepatitis A who admitted to previous IV drug use rose steadily from 4% to 19%. During this period, overall hepatitis A rates were relatively constant, and the proportion of patients with hepatitis A who had other identifiable risk factors remained stable. It should be noted, however, that only one-third of patients reported to the MMWR Morbidity Surveillance System were interviewed through VHSP and that only a modest proportion of such persons are routinely asked about IV or other drug use.

MMWR Editorial Note:

In the United States, transmission of hepatitis A has traditionally been associated with crowding, poor personal hygiene, improper sanitation, and less commonly contamination of food or water. Recognised risk factors include intimate or close contact with persons with hepatitis A, foreign travel to developing countries, and contact with children in day-care centres.

The association of drug use and hepatitis A has been recognised only recently. Well-documented outbreaks of hepatitis A among drug users have been reported in Scandinavian countries [1,2]. In seroprevalence studies of antibodies against hepatitis A virus (HAV) in Denmark, drug users have had antibody rates four times those of the general population [3].

Two possible explanations for the association between hepatitis A and drug use have been proposed:

1) HAV may be transmitted by injection or ingestion of contaminated drugs (common-source spread), or

2) transmission may result from direct person-to-person contact.

The culture of faecal coliforms from marijuana confiscated during one investigation (Alaska Department of Health and Social Services, unpublished data) raises the possibility that direct contamination of drugs could be a factor in some of these outbreaks. HAV however, could not be isolated from the marijuana by tissue culture (CDC unpublished data).

Drugs could become contaminated with faecal material containing HAV at the cultivation site (e.g. through use of human faeces as fertilizer) or during transport, preparation, or distribution (e.g. through smuggling in condoms concealed in the rectum [4] or in baby diapers). However, the pattern of occurrence of the cases by dates of onset in each of the outbreaks and the diversity of drugs involved argue against a single common-source mode of transmission. Nevertheleess, sustained common-source transmission is possible if contaminated drugs were distributed among persons who then used them at different times.

Person-to-person transmission of HAV between drug users could result from sharing needles, from sexual contact, or from generally poor sanitary and personal hygiene conditions, which have often been observed among drug users. Isolated instances of bloodborne transmission resulting from transfusions from donors who had given blood during the incubation period of viral infection have been reported. Due to the relatively short viraemic phase of HAV infection, however, bloodborne transmission through needle-sharing is unlikely to have sustained large outbreaks such as those reported here, although it may have accounted for one cluster in Cortland County.

Investigations of the various outbreaks to date have not revealed clear modes of transmission. It is possible that each outbreak has multiple modes of transmission. Clinicians evaluating persons with a hisotry of drug user for viral hepatitis should obtain serologic tests for both hepatitis A and B. Public health officials should ask persons with hepatitis A about drug use and include such information on the VHSP questionnaires. Control measures include the use of good sanitation and personal hygiene and the administration of immunoglobulin to contacts of patients within 2 weeks of exposure. Factors operating in communities of drug users, such as poor hygienic conditions and transience as well as the relatively poor responsiveness of such groups to education and preventative efforts, make outbreaks among these groups difficult to control.

Consequently, drug users may be candidates for the vaccines against HAV that are currently being developed [5,6].

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AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

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

Period 17-5-88 to 31-5-88.

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
307		0	1	0	0	0	0	0	0	1
0100	ADENOVIRUS NOT TYPED	5	2	1	4	2	2	1	13	30
0101	ADENOVIRUS TYPE 1	0	1	1	0	2	0	0	0	4
0102	ADENOVIRUS TYPE 2	1	2	1	0	0	0	0	0	4
0103	ADENOVIRUS TYPE 3	1	2	0	0	0	1	0	0	4
0104	ADENOVIRUS TYPE 4	1	0	0	0	0	0	0	0	1
0106	ADENOVIRUS TYPE 6	0	0	0	0	1	0	0	0	1
0107	ADENOVIRUS TYPE 7	0	1	0	0	0	0	0	0	1
0108	ADENOVIRUS TYPE 8	0	2	0	0	0	0	0	0	2
0111	ADENOVIRUS TYPE 11	0	0	0	0	1	0	0	0	1
0114	ADENOVIRUS TYPE 14	0	1	0	0	0	0	0	0	1
0135		1	0	0	0	0	0	0	0	1
0137	ADENOVIRUS TYPE 37	2	0	0	0	0	0	0	0	2
0199	ADENOVIRUS TYPING PENDING	0	0	0	1	1	0	0	0	2
0201	INFLUENZA A VIRUS	0	2	1	0	1	0	0	0	4
0202	INFLUENZA A VIRUS SUBTYPE H3N2	1	0	0	0	0	0	0	0	1
0203	INFLUENZA B VIRUS	0	0	0	0	1	0	0	0	1
0301	PARAINFLUENZA VIRUS TYPE 1	2	10	1	31	0	0	0	0	44
0302	PARAINFLUENZA VIRUS TYPE 2	0	0	1	14	2	0	0	0	17
0303	PARAINFLUENZA VIRUS TYPE 3	0	1	4	3	3	0	0	2	13
0399	PARAINFLUENZA VIRUS TYPING PEN	0	0	0	1	0	0	0	4	5
0400	RESPIRATORY SYNCYTIAL VIRUS (R	3	5	11	13	58	1	19	28	138
0500	RHINOVIRUS (ALL TYPES)	13	6	0	8	1	0	1	1	30
0600	MYCOPLASMA PNEUMONIAE	0	1	4	4	45	2	2	0	58
0700	ORNITHOSIS-PSITTACOSIS	0	0	0	0	3	3	0	0	6
0808	COXSACKIEVIRUS A8	1	0	0	0	0	0	0	0	1
0809	COXSACKIEVIRUS A9	2	0	0	1	0	0	0	0	3
0816	COXSACKIEVIRUS A16	1	0	0	0	0	0	0	0	1
0904	COXSACKIEVIRUS B4	0	0	1	0	0	0	0	0	1
0905	COXSACKIEVIRUS B5	1	0	0	1	1	0	1	0	4
1001	ECHOVIRUS TYPE 1	0	0	0	0	1	0	0	0	1
1005	ECHOVIRUS TYPE 5	0	1	0	0	2	0	0	0	3
1006	ECHOVIRUS TYPE 6	2	0	0	0	0	0	0	0	2
1011	ECHOVIRUS TYPE 11	0	1	0	0	0	0	0	0	1
1014	ECHOVIRUS TYPE 14	0	1	0	0	0	0	0	0	1
1018	ECHOVIRUS TYPE 18	0	0	0	0	1	0	0	0	1
1022	ECHOVIRUS TYPE 22	0	1	0	0	1	0	0	0	2
1023	ECHOVIRUS TYPE 23	0	1	0	0	0	0	0	0	1
1100	POLIOVIRUS NOT TYPED	0	0	0	2	0	3	0	0	5
1101	POLIOVIRUS TYPE 1	0	0	0	0	1	0	0	0	1
1102	POLIOVIRUS TYPE 2	0	0	1	0	1	0	0	0	2
1200	MUMPS VIRUS	0	0	0	0	2	0	0	0	2
1300	HERPES VIRUS GROUP - NOT TYPED	2	2	0	0	46	1	0	1	52
1301	HERPES SIMPLEX VIRUS - NOT TYP	1	4	0	0	0	0	2	0	7
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	2	8	0	0	22	3	0	9	44
1303	VARICELLA-ZOSTER VIRUS	3	4	0	0	11	2	0	1	21
1306	HERPES SIMPLEX TYPE 1	45	38	20	0	61	12	0	32	208
1307	HERPES SIMPLEX TYPE 2	63	51	20	0	205	33	0	83	455
1399	HERPES VIRUS TYPING PENDING	0	0	0	3	1	0	0	0	4
1401	COXIELLA BURNETI	0	0	1	0	44	0	0	2	47
1502	PICORNIA VIRUS - NOT TYPED = E	0	0	0	0	10	7	0	23	40
1522	RUBELLA VIRUS	0	1	0	0	9	1	0	1	12
1532	HEPATITIS B ANTIGEN	17	15	25	0	48	14	1	17	137
1535	HEPATITIS A ANTIBODY	0	9	8	0	4	0	0	0	21
1541	CHLAMYDIA A - C. TRACHOMATIS	22	66	20	0	66	6	0	12	192
1556	CMV - CYTOMEGALOVIRUS	26	9	3	3	40	8	0	24	113
1564	ROTAVIRUS	1	13	26	9	11	1	0	0	61
1599	ENTEROVIRUS TYPING PENDING	0	0	0	3	0	7	0	0	10
9902	POXVIRUS GROUP NOT TYPED	1	0	0	0	0	0	0	0	1
9992	ROSS RIVER VIRUS	4	0	0	0	38	9	0	70	121
9995	DENGUE	0	1	0	0	0	0	0	1	2
9998	ARBO. GROUP B. (UNSPECIFIED)	0	1	0	0	0	0	0	2	3
TOTAL		224	264	150	101	747	116	27	326	1955

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS BY CLINICAL INFORMATION TABLE 1.

Period 17-5-88 to 31-5-88.

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	9	10	11	TOTAL
0100	ADENOVIRUS NOT TYPED	0	12	0	0	0	0	10	0	0	0	0	22
0101	ADENOVIRUS TYPE 1	1	0	0	0	0	0	2	0	0	0	0	3
0102	ADENOVIRUS TYPE 2	0	3	0	0	0	0	1	0	0	0	0	4
0103	ADENOVIRUS TYPE 3	1	0	0	0	0	0	1	0	0	0	0	2
0106	ADENOVIRUS TYPE 6	0	1	0	0	0	0	0	0	0	0	0	1
0107	ADENOVIRUS TYPE 7	0	0	0	0	0	0	1	0	0	0	0	1
0114	ADENOVIRUS TYPE 14	0	0	0	0	0	0	1	0	0	0	0	1
0199	ADENOVIRUS TYPING PENDING	0	1	1	0	0	0	0	0	0	0	0	2
0201	INFLUENZA A VIRUS	1	1	0	0	0	1	0	0	0	0	1	4
[redacted]	PARAINFLUENZA VIRUS TYPE 1	0	41	0	0	0	1	0	0	0	0	0	42
[redacted]	PARAINFLUENZA VIRUS TYPE 2	0	17	0	0	0	0	0	0	0	0	0	17
0303	PARAINFLUENZA VIRUS TYPE 3	1	11	1	0	0	0	0	0	0	0	0	13
0399	PARAINFLUENZA VIRUS TYPING PEN	0	5	0	0	0	0	0	0	0	0	0	5
0400	RESPIRATORY SYNCYTIAL VIRUS (R	10	125	0	0	0	0	1	0	0	0	0	136
0500	RHINOVIRUS (ALL TYPES)	0	25	0	1	0	0	0	0	0	0	0	26
0600	MYCOPLASMA PNEUMONIAE	9	40	0	0	0	1	0	0	1	0	0	51
0700	ORNITHOSIS-PSITTACOSIS	0	1	0	0	0	0	0	0	0	0	0	1
0808	COXSACKIEVIRUS A8	0	0	0	1	0	0	0	0	0	0	0	1
0809	COXSACKIEVIRUS A9	0	1	0	2	0	0	0	0	0	0	0	3
0816	COXSACKIEVIRUS A16	0	0	0	0	0	0	0	0	0	0	1	1
0904	COXSACKIEVIRUS B4	0	0	0	0	0	0	0	0	0	0	1	1
0905	COXSACKIEVIRUS B5	0	1	1	1	0	0	0	0	0	0	0	3
1001	ECHOVIRUS TYPE 1	0	0	0	0	0	0	1	0	0	0	0	1
1005	ECHOVIRUS TYPE 5	1	0	0	0	0	0	2	0	0	0	0	3
1006	ECHOVIRUS TYPE 6	0	0	1	1	0	0	0	0	0	0	0	2
1011	ECHOVIRUS TYPE 11	0	0	0	0	0	0	1	0	0	0	0	1
1014	ECHOVIRUS TYPE 14	0	0	0	0	0	0	1	0	0	0	0	1
1022	ECHOVIRUS TYPE 22	0	1	0	0	0	0	0	0	0	0	0	1
1023	ECHOVIRUS TYPE 23	1	0	0	0	0	0	0	0	0	0	0	1
1100	POLIOVIRUS NOT TYPED	0	1	0	0	0	0	3	0	0	0	0	4
1101	POLIOVIRUS TYPE 1	0	0	0	0	0	0	1	0	0	0	0	1
1102	POLIOVIRUS TYPE 2	1	1	0	0	0	0	0	0	0	0	0	2
1300	HERPES VIRUS GROUP - NOT TYPED	10	2	0	0	0	0	0	0	0	0	21	33
1301	HERPES SIMPLEX VIRUS - NOT TYP	1	1	0	0	1	0	0	0	0	0	1	4
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	14	4	0	0	0	2	0	3	0	0	0	23
[redacted]	VARICELLA-ZOSTER VIRUS	4	2	0	0	1	1	0	0	0	0	8	16
[redacted]	HERPES SIMPLEX TYPE 1	17	11	1	0	0	1	0	0	0	0	80	110
1307	HERPES SIMPLEX TYPE 2	10	0	0	0	0	0	0	0	0	0	76	86
1399	HERPES VIRUS TYPING PENDING	0	0	0	1	0	0	0	0	0	0	2	3
1401	COXIELLA BURNETI	17	2	0	0	0	0	2	0	0	0	1	22
1502	PICORNIA VIRUS - NOT TYPED = E	1	11	2	4	0	6	14	0	0	0	0	38
1522	RUBELLA VIRUS	2	0	0	0	0	0	0	0	1	0	4	7
1532	HEPATITIS B ANTIGEN	71	0	0	0	0	0	0	54	0	0	0	125
1535	HEPATITIS A ANTIBODY	1	0	0	0	0	0	0	16	0	0	0	17
1541	CHLAMYDIA A - C. TRACHOMATIS	33	1	0	0	0	0	0	0	0	0	0	34
1556	CMV - CYTOMEGALOVIRUS	22	18	0	0	0	2	2	6	1	6	2	59
1564	ROTAVIRUS	1	1	0	0	0	0	59	0	0	0	0	61
1599	ENTEROVIRUS TYPING PENDING	0	0	0	0	0	0	6	0	0	0	1	7
9902	POXVIRUS GROUP NOT TYPED	0	0	0	0	0	0	0	0	0	0	1	1
9992	ROSS RIVER VIRUS	30	1	0	0	0	1	0	0	1	0	9	42
9998	AREO. GROUP B. (UNSPECIFIED)	1	0	0	0	0	0	0	0	0	0	0	1
TOTAL		261	342	7	11	2	16	109	79	4	6	209	1046

AUSTRALIA - COMMUNICABLE DISEASES INTELLIGENCE

VIRAL IDENTIFICATIONS BY CLINICAL INFORMATION TABLE 2.

Period 17-5-88 to 31-5-88.

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
307		0	1	0	0	0	0	0	0	0	0	1
0100	ADENOVIRUS NOT TYPED	4	0	0	0	0	0	0	3	1	0	8
0101	ADENOVIRUS TYPE 1	0	0	0	0	0	0	1	0	0	0	1
0103	ADENOVIRUS TYPE 3	1	0	0	0	0	0	1	0	0	0	2
0104	ADENOVIRUS TYPE 4	1	0	0	0	0	0	0	0	0	0	1
0108	ADENOVIRUS TYPE 8	2	0	0	0	0	0	0	0	0	0	2
0111	ADENOVIRUS TYPE 11	0	0	0	0	0	0	1	0	0	0	1
0135		1	0	0	0	0	0	0	0	0	0	1
0137	ADENOVIRUS TYPE 37	2	0	0	0	0	0	0	0	0	0	2
0202	INFLUENZA A VIRUS SUBTYPE H3N2	0	0	0	0	0	0	0	1	0	0	1
0203	INFLUENZA B VIRUS	0	0	0	0	0	0	1	0	0	0	1
0301	PARAINFLUENZA VIRUS TYPE 1	1	0	0	0	0	0	0	1	0	0	2
0400	RESPIRATORY SYNCYTIAL VIRUS (R	0	0	0	0	0	0	1	0	1	0	2
0500	RHINOVIRUS (ALL TYPES)	0	0	0	0	0	0	0	2	1	1	4
0600	MYCOPLASMA PNEUMONIAE	0	0	0	0	0	1	1	3	2	0	7
0700	ORNITHOSIS-PSITTACOSIS	0	0	0	0	0	0	1	0	4	0	5
0905	COXSACKIEVIRUS B5	0	0	0	0	0	0	0	1	0	0	1
1018	ECHOVIRUS TYPE 18	0	0	0	0	0	0	0	1	0	0	1
1022	ECHOVIRUS TYPE 22	0	0	0	0	0	0	0	0	1	0	1
1100	POLIOVIRUS NOT TYPED	0	0	0	0	0	1	0	0	0	0	1
1200	MUMPS VIRUS	0	0	1	0	0	0	0	1	0	0	2
1300	HERPES VIRUS GROUP - NOT TYPED	0	17	0	0	0	0	0	0	2	0	19
1301	HERPES SIMPLEX VIRUS - NOT TYP	0	1	0	0	0	0	0	1	1	0	3
1302	EPSTEIN-BARR VIRUS (EB VIRUS)	0	0	7	0	1	0	0	9	4	0	21
1303	VARICELLA-ZOSTER VIRUS	0	2	0	0	0	0	0	0	3	0	5
1306	HERPES SIMPLEX TYPE 1	2	91	2	0	0	0	1	0	2	0	98
1307	HERPES SIMPLEX TYPE 2	0	367	0	0	1	0	0	0	1	0	369
1399	HERPES VIRUS TYPING PENDING	0	0	1	0	0	0	0	0	0	0	1
1401	COXIELLA BURNETI	0	0	0	0	0	0	9	7	9	0	25
1502	PICORNIA VIRUS - NOT TYPED = E	0	0	0	0	0	0	0	0	1	1	2
1522	RUBELLA VIRUS	0	0	2	0	0	0	1	1	1	0	5
1532	HEPATITIS B ANTIGEN	0	0	0	0	0	0	0	0	12	0	12
1535	HEPATITIS A ANTIBODY	0	0	0	0	0	0	0	0	4	0	4
1541	CHLAMYDIA A - C. TRACHOMATIS	1	151	0	0	0	0	0	0	6	0	158
1556	CMV - CYTOMEGALOVIRUS	1	2	2	4	1	9	5	12	17	1	54
1599	ENTEROVIRUS TYPING PENDING	0	0	0	0	0	0	0	1	0	2	3
9992	ROSS RIVER VIRUS	0	0	1	0	61	0	0	10	7	0	79
9995	DENGUE	0	0	0	0	1	0	0	0	1	0	2
9998	ARBO. GROUP B. (UNSPECIFIED)	0	0	0	0	2	0	0	0	0	0	2
TOTAL		16	632	16	4	67	11	23	54	81	5	909