

THE NORTHERN TERRITORY COMMUNICABLE DISEASES BULLETIN

THE "WET SEASON" EDITION



1369

**NT DEPARTMENT OF HEALTH
AND COMMUNITY SERVICES**

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INTRODUCTION

The "Wet Season" edition is the first *NT Communicable Diseases Bulletin*. It presents epidemiological data on two important "wet season" diseases, epidemic polyarthritis and melioidosis. A summary of research projects and control strategies relating to these infections is also included. This edition is targeting Top End diseases due to their epidemic potential over the next few months, but future publications will be relevant to all regions in the Northern Territory.

AIMS OF THE BULLETIN

The main aim of the Bulletin is to provide feedback from the Communicable Diseases branch of Disease Control (formerly the Communicable Diseases Centre) to all participants in the NT communicable diseases surveillance system. It is published in recognition of the invaluable contributions made by participants, and to enhance control efforts for the communicable diseases in the NT.

Throughout Australia, public health units have recognised the need to review surveillance networks in order to set new agendas for disease control. Our immediate concerns for communicable disease control include the improvement of the quality of collected data, rationalisation of the

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Attachment

Update on Hepatitis A in Victoria

list of notifiable diseases, incorporation of an ongoing evaluation process and improvement of the output arm of the surveillance system.

Every month, updates will appear on the notifiable diseases, with comments on epidemics or clustering of cases. A cumulative profile of infectious disease notifications by region will be included in the June and December editions. A series of feature articles will focus on the long term trends of important NT communicable diseases. Reader contributions are welcome. This publication will be an adjunct to the outbreak

alerts that the Department has distributed in the past.

The Bulletin will be available to all health professionals in the NT. The address for copies appears below. Your feedback and suggestions will help us develop a newsletter that will best address your needs.

EPIDEMIOLOGICAL UPDATES ROSS RIVER VIRUS

Epidemiology of the outbreak

The near record rainfall of the 1990/91 "wet" season resulted in an epidemic of Ross River virus disease, with 466 notifications from laboratories for the period December 1990 to October 1991. A

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more detailed analysis of the cases for which doctors provided detailed notifications directly to the Medical Entomology Branch will be presented separately. Figure 1 shows the epidemic curve for the outbreak, and Figure 2 shows the age distribution of the patients. As expected, the curve follows the seasonal variation in rainfall. Most cases occurred in the 20-39 age group; there was no significant gender-related difference in case numbers. The highest attack rates per 100 000 population occurred in Jabiru, Katherine and rural Darwin.

Fig.1
No. of patients with Ross River
infections by month of onset
Dec 1990 - Oct 1991

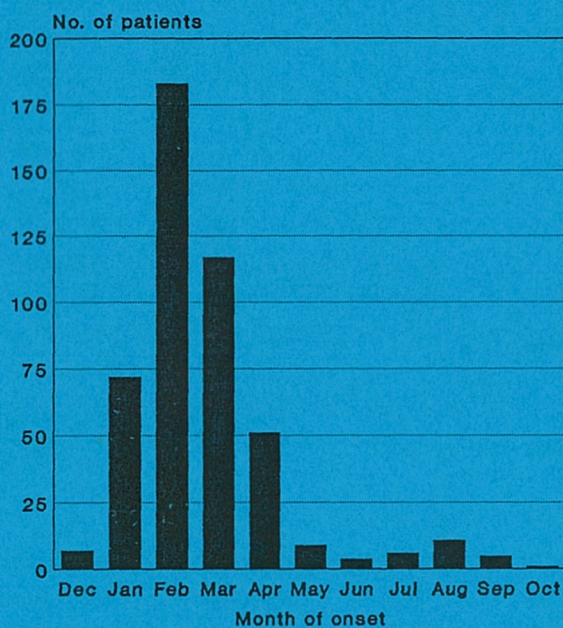
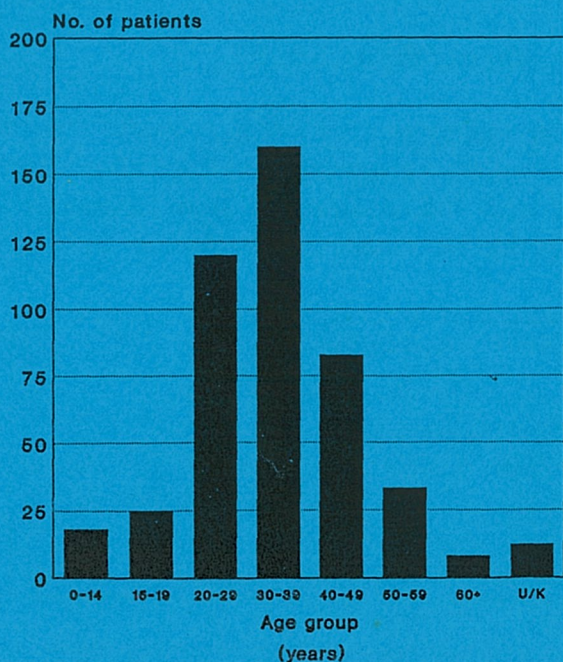


Fig.2
Age distribution of patients with
Ross River infection
Jan - Oct 1991



The retrospective study

We are currently conducting a retrospective study of patients with RRV in 1990/91. Questionnaires have been distributed to the doctors who reported cases during the epidemic, and will be forwarded to their patients. The main aims of the study are a better understanding of the natural history of RRV in the NT, and an assessment of the information needs of both patients and doctors. The questionnaire focuses on the chronicity, severity and psychosocial aspects of epidemic polyarthritides (EPA). Preliminary results indicate that symptoms commonly persist for between 3-6 months, and that most patients are unprepared for the impact that EPA can have on their daily lives. We take this opportunity to encourage doctors to return questionnaires and updated patient lists as soon as possible so we can mail the questionnaires to patients.

Other arboviruses causing epidemic polyarthritides

It is evident that Ross River virus accounts for only some of the cases consistent with arbovirus infection. The Menzies School of Health Research (MSHR) tested sera for anti-RRV antibodies as part of the diagnostic workup on a group of patients presenting with acute polyarthritides from January 1989 to August 1990, and found that only 16% (40 cases) had a positive result (Dr Keat Song Tai, personal communication). MSHR is planning a serological study of anti-RRV negative sera from cases of EPA, in order to identify the other arboviruses endemic in the NT. Sera will be tested for the presence of antibodies to five Flaviviruses (including MVE, Kunjin, and Kokobera), two alpha viruses (Sindbis and Barmah Forrest), and to the important Bunyaviruses (Gan Gan and Trubanaman).

Health promotion

Ross River virus infections will be the focus of a health promotion campaign this "wet season". The Medical Entomology Branch, Department of Health and Community Services (DH&CS), will run its annual campaign against mosquito-borne diseases. The Health Promotions Branch, DH&CS, in collaboration with the Disease Control Centre (DCC) is also working on a multi-media campaign of arboviral disease prevention. Further details will be found in the next edition of the Bulletin.

Pathology request procedures

Doctors are reminded to specifically request anti-RRV IgM on pathology request forms. At present, unpaired sera sent via the Royal Darwin Hospital to the WA State Health Laboratory in Perth will not be tested for RRV antibodies unless a convalescent sample is also received. A request for anti-RRV IgM will prevent delays and difficulties in diagnosis. Private laboratories in the NT usually perform this test when unpaired sera are submitted.

MELIOIDOSIS

Epidemiology of the outbreak

From November 1990 to June 1991, 33 cases of melioidosis were referred to Royal Darwin Hospital. The case fatality rate was 36% (12 cases). All but four patients were infected during the last "wet". The endemic rate of melioidosis in the NT over the last 20 years was 2-3 cases/year. As most cases occurred in the Darwin urban and Palmerston area, an epidemiological investigation was carried out.

Age 50 years and over, male gender, diabetes, and/or alcohol abuse were all independent predictors of melioidosis in the epidemic period. Diabetes and alcohol abuse were the most important risk factors for disease. Diabetics were 13 times more likely to develop melioidosis than non-diabetics, and abusers of alcohol increased their risk of disease sevenfold. The diagnosis should be considered in immunosuppressed patients presenting with pyrexia of unknown origin, pneumonia, acute genitourinary symptoms and unusual skin lesions. At risk patients should be advised to wear waterproof, closed footwear during the "wet season", and gloves when gardening. Melioidosis is uncommon in people with normal immune systems.

Health promotion

This Department plans comprehensive health promotion activities over the next few months to heighten awareness about the risk factors for melioidosis. The campaign will target people in the recognised high risk categories, but a push will also be made for safer working practices in outdoor occupations during the "wet".

THE COLD CHAIN

Cold Chain for vaccine potency
(Nan Miller, Senior Project Officer, DCC)

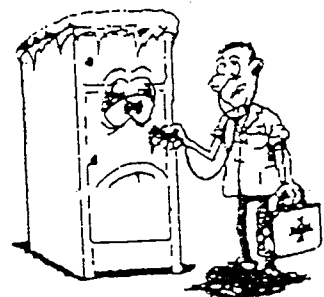
Vaccines are delicate biological products that can be destroyed by exposure to sunlight and extremes of temperature. The cold chain is the system of transporting and storing vaccines within the recommended temperature range (2°-8 °C) during transport and storage. Repeated or prolonged exposure to temperatures above 10°C can cause loss of potency in heat labile vaccines such as measles.

Other perishables (eg drugs and sometimes food & beverages) are frequently stored with vaccines in the same refrigerator. It may, therefore be difficult to maintain optimum temperatures for vaccines with frequent opening and closing. Temperatures can fluctuate from below 0°C to as high as 14°C in a day with normal usage, particularly in the door of the refrigerator.

Some simple practices can protect the vaccines stored in your refrigerator:

- monitor & adjust refrigerator temperatures with the aid of a min/max thermometer placed on the middle shelf;
- only store vaccines on the middle shelves of the refrigerator, never on the door; and
- never store beverages or food in the refrigerator with vaccines.

**Please maintain
the
Refrigerator
Temperature at
2-8°C.
Vaccine potency
depends on you.**



AVAILABILITY AND DISTRIBUTION OF IMMUNOGLOBULIN

(Nan Miller, Senior Project Officer, DCC)

Immunoglobulin is prepared from pooled human blood. The decision to use it should not be taken lightly. Normal human immunoglobulin is available from the hospital pharmacy at no charge. It can be obtained for your patient's contacts by:

1. Telephone request to the pharmacy for pickup by your staff and administration in your surgery.*
2. Prescription for patient to pickup and return to your surgery for administration.*
3. Prescription for patient to pickup for administration at a Community Health Centre.*

Please do not send patients and or contacts to Accident & Emergency for administration of immunoglobulin.

*Alice Springs hospital pharmacy should be advised by phone before sending a patient over with a prescription.

CIGUATERA IN DARWIN FOLLOWING A MEAL OF CORAL TROUT

*Angela Merianos¹, Jim Burrows², and
Mahomed Patel³.*

(1 NCEPH Epidemiology Registrar, NT Dept of Health and Community Services; 2 Physician, Royal Darwin Hospital; 3 Director, Communicable Diseases Centre, NT Dept of Health and Community Services)

Two cases of ciguatera were reported by a general practitioner to the DCC, Darwin, on 18/9/91. The intoxication followed a meal of locally purchased coral trout.

Both patients experienced nausea, vomiting, mild diarrhoea, abdominal cramps, and paraesthesia in the face and extremities. Temperature reversal, manifested as burning of the mouth and skin on contact with cold water, was a prominent and early feature in both cases. It is considered pathognomonic of ciguatera.

The first case developed facial tingling within one hour of eating the fish. Her flatmate, who

ate a smaller portion, become symptomatic with vomiting and diarrhoea within 3 hours. She complained of severe myalgia in addition to her other symptoms.

A further case of ciguatera intoxication was identified at the Royal Darwin Hospital in July, 1991. A 23 year old man was admitted semi-comatose after complaining of a headache and ataxia for one day. He had suffered a head injury 4 days beforehand and a provisional diagnosis of head injury was made. CT scan was normal. His conscious state rapidly improved over 24 hours, as did the hypotension (BP 90/50) and bradycardia (40-50 beats/minute) recorded on admission. No specific treatment was required.

He then complained of oral and extremity temperature reversal, visual blurring and visual hallucination. The ataxia resolved over 5 days. He later recalled a brief bout of diarrhoea and vomiting before onset of the neurological symptoms.

On further questioning he admitted to having spent two weeks living off the land, and his diet had consisted mainly of coral reef fish caught off the Cobourg Peninsula, NT. He had last eaten fish 12-24 hours and chicken 2 hours prior to the onset of his illness.

COMMENT

Ciguatera is a distinctive food intoxication which follows the ingestion of some species of tropical fish. Ciguatoxin is probably produced by the dinoflagellate *Gambierdiscus toxicus*, an organism at the base of the coral reef food chain. It is a heat-stable toxin which is not destroyed by cooking or freezing.

Clinical disease follows consumption of the larger carnivorous fish such as mackerel, barracuda and coral trout in which the toxin is concentrated. Coral trout (*Plectropomus* species) was implicated in 27 cases of ciguatera in Queensland between 1965 and 1984 (Gillespie et al., 1986).

Symptoms usually appear between 2 and 12 hours post-consumption, but the delay may be as long as 24 hours. Mild intoxications can occur. The number of unreported cases is unknown. Serious sequelae which can develop quickly include respiratory distress, bradycardia and hypotension, and acute depression. Hospital admission for observation is recommended in the first 24 hours of ciguatera. Marked improvement in symptoms has been reported after early administration of mannitol (Palafox et al., 1988; Pearn et al., 1989).

In the Northern Territory, ciguatera has been associated with fish caught in the Gulf of Carpentaria near Nhulunbuy (Gove), Borroloola, and Groote Eylandt. The principal ciguateric species include Spanish mackerel, barracuda, coral trout, red emperor and some varieties of cod. Ciguateric fish usually weigh over 2.5 Kg. Seven to 10 cases occur each year following consumption of fish caught in these waters.

Physicians in non-endemic areas should consider the diagnosis of ciguatera in patients presenting with acute gastroenteritis associated with neurological symptoms in patients who have recently eaten fish caught in the tropics or northern Australia.

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Gillespie NC, Lewis RJ, Pearn JH et al. (1986) Ciguatera in Australia. Occurrence, clinical features, pathophysiology and management. *MJA* 145:584-590.

Palafox NA, Jain LG, Pinano AZ et al. (1988) Successful treatment of ciguatera food poisoning with intravenous mannitol. *JAMA* 259:2740-2742.

Pearn JH, Lewis RJ, Ruff T et al. (1989) Ciguatera and mannitol: experience with a new treatment regimen. *MJA* 151:77-80.

STOP PRESS: Several reports of cryptosporidiosis have been received recently. Please notify DCC about any unusually high diarrhoeal disease activity in your area.

Editorial Comment

Since publication of this article, two further cases of ciguatera were reported to DCC by another general practitioner. They had bought frozen coral trout fillets from the same outlet as the earlier cases. Environmental Health Officers have taken appropriate action to prevent further intoxications. DCC is interested in hearing about any future cases of ciguatera.

INFORMATION ON COMMUNICABLE DISEASES

DCC has a large collection of educational material for health professionals, community members and patients on most communicable diseases and aspects of control. These are available to all health professionals and the public. The Publication & Research Branch of DH&CS also keeps a catalogue of these publications. For further information, contact Ms Chris Noonan on 228 898.

UPDATE ON HEPATITIS A IN VICTORIA (Attached)

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Editorial Comment

Eastern and Southern State figures reflect a changing pattern and incidence of hepatitis A which is not apparent in the Northern Territory. We are concerned that hepatitis A is underreported, possibly because disease occurs in an earlier age-group than in the other States, and causes non-specific symptoms. Hepatitis A statistics for the Territory will be reported in the next issue.



UPDATE ON HEPATITIS A IN VICTORIA

(Dr Tony Stewart, Health Department, Victoria)

The outbreak of hepatitis A that has affected Melbourne this year is continuing. As of 30 September, there have been 243 notifications of acute or subclinical infection to Health Department Victoria for 1991.

In the epidemic curve for 1991 (Figure 1), the right hand bars in each pair represent numbers of cases in females, while the left hand bars are total male cases. The bottom (black) portions of these bars represent those males that have been identified as homosexual by call back to the notifying doctor. The upper portions include heterosexual males and males for which no information is available (and may therefore include some homosexual males). The low incidence of hepatitis A in males identified as homosexual prior to May reflects the difficulty in call back rather than the actual incidence.

Of the 243 notifications, 45 (18.0%) were female and 197 (81.5%) were male. Sex was not specified in one case. The male to female ratio of cases for the year is 4.7:1. This has become higher in the latter months (12.3:1 in July). Of the 198 cases in males, at least 89 (44.0%) are in homosexuals.

The outbreak is predominantly affecting homosexual males. The age distribution in this group shows a marked peak in the 15 to 45 year old age group (Figure 2). Analysis by place of residence shows that most reports are from the Melbourne metropolitan region.

The female cases are spread more uniformly across the State. In this group there was a small peak in May (12 cases) which tapered off in June and was back to basal levels by July. These cases may represent secondary spread from the main outbreak.

Some of the rise in notifications may reflect increased testing in the wake of the publicity given to this outbreak. There has been a genuine and continuing increase in the number of clinical cases in gay men. The public health measures so far employed are being enhanced to control of the transmission of hepatitis A in the homosexual community.

Figure 1. Hepatitis A notifications in Victoria, 1991, by month of onset and sex

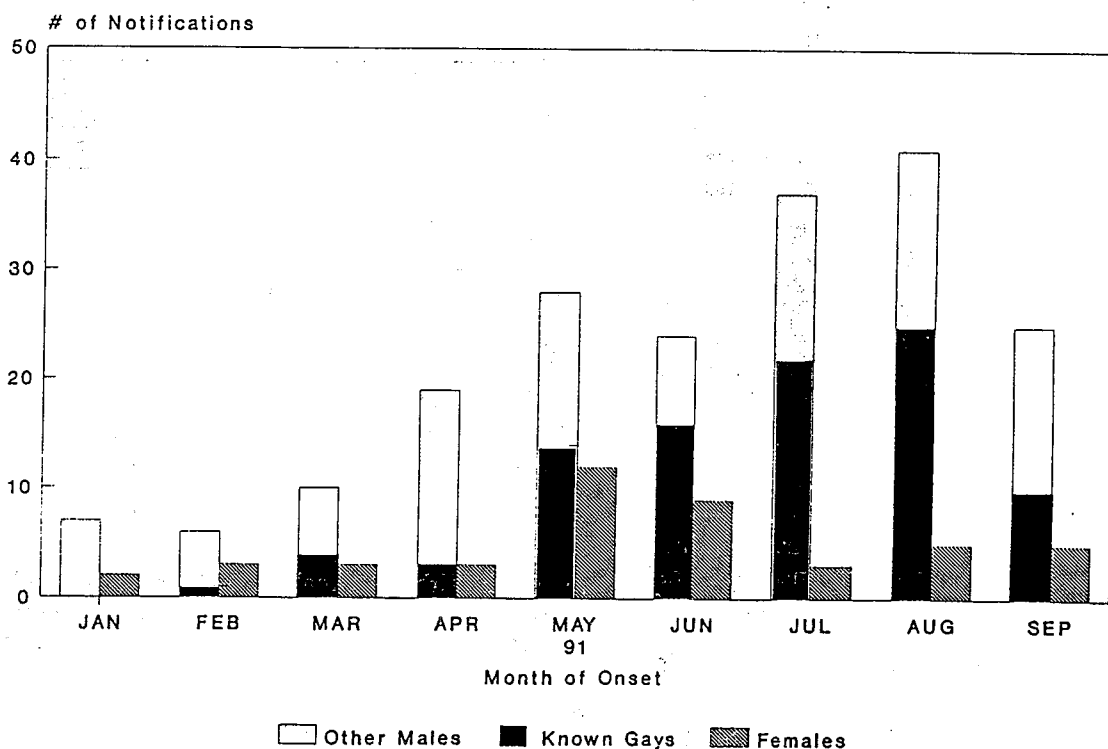
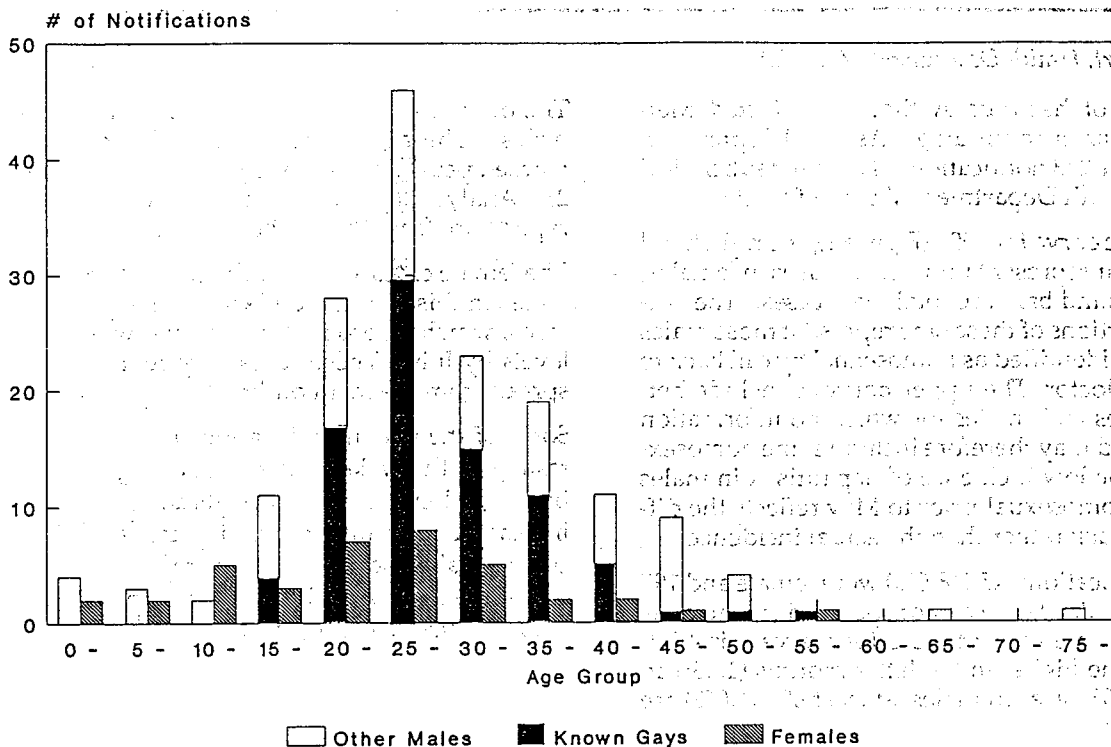


Figure 2. Hepatitis A notifications in Victoria, 1991, by age group and sex



CDI Editorial Comment

The CDI Laboratory Reporting Schemes have now received 326 reports of hepatitis A this year. Of these, 226 have been males, 94 females and 6 unknown. The overall male to female ratio is thus 2.4:1.0 and consistent with transmission of the virus occurring within the male homosexual community. Analysis of the age and sex distribution of the reported cases by State, however, reveals that only some States have a high proportion of cases in males.

Victoria

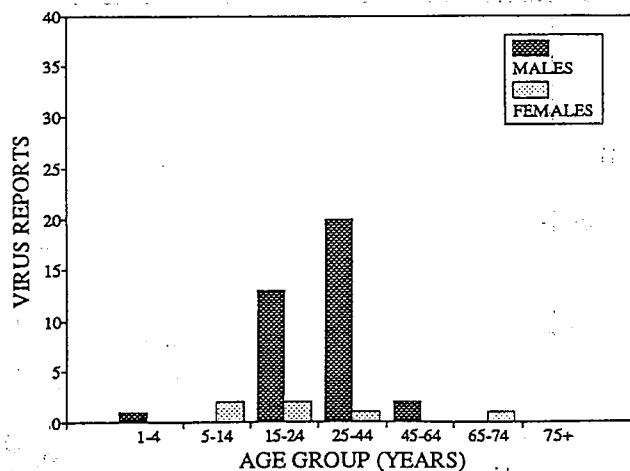
There have been 53 reports of hepatitis A for the year, with increased reports commencing in March. As for the notified cases detailed above, most of the cases have been in males in the age groups 15-44 years (Figure 3). The overall male to female ratio is 6.4:1.0.

New South Wales

A total of 94 reports of hepatitis A have been received from New South Wales laboratories this year. The number of reports began to increase in March, and there was a small peak in reports in July. The large majority of the cases have been in males in the age groups 15-44 years (Figure 4) and the overall male to female ratio is 5.1:1.0.

These data are consistent with transmission within the homosexual community and with this year's significant outbreak of hepatitis A in the male homosexual community in the Eastern, Central and Southern Sydney Areas. By the end of August, 474 cases of hepatitis A had been notified to the New South Wales Depart-

Figure 3. Hepatitis A reports, Victoria, 1991, by age group and sex

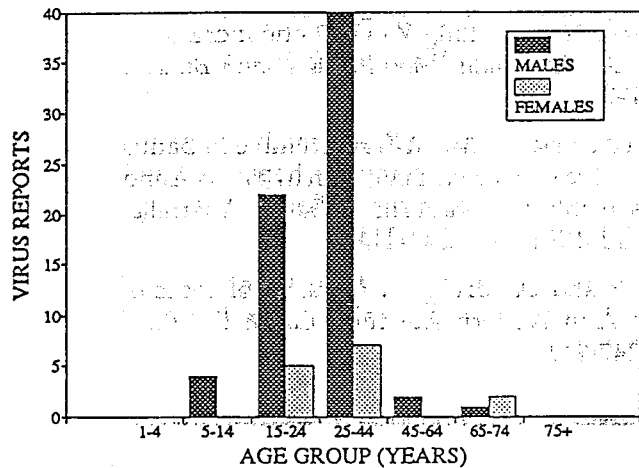


ment of Health¹. An analysis of the cases notified to the end of July showed a male to female ratio of almost 3:1, and 63% of cases in the Eastern Sydney area in homosexual or bisexual males².

South Australia

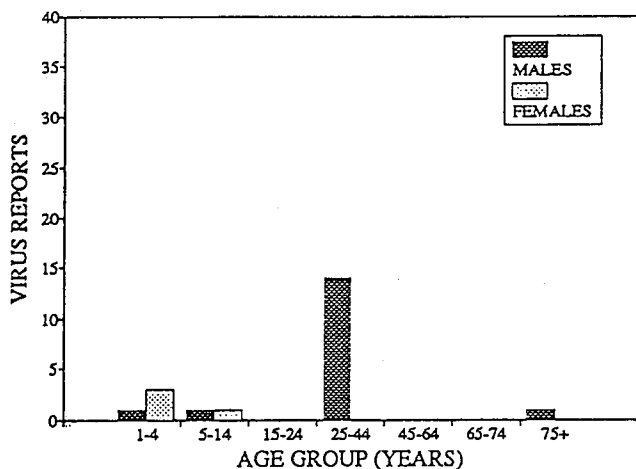
Twenty-four laboratory reports of hepatitis A have been received from South Australia this year. Although the number of reports is small, the distribution of cases by age group and sex (Figure 5) shows a high proportion of cases in adult males, and is consistent

Figure 4. Hepatitis A reports, New South Wales, 1991, by age group and sex



with the sex distribution of cases notified in the State this year³. The overall male to female ratio is 2.8:1.0.

Figure 5. Hepatitis A reports, South Australia, 1991, by age group and sex



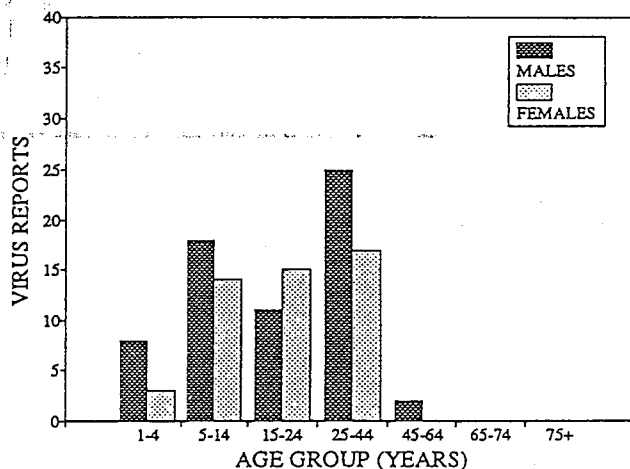
Western Australia

With 117 reports, Western Australia has the largest number of hepatitis A reports made through the CDI Laboratory Reporting Schemes this year. The pattern of cases reported from this State is different from those in Victoria, New South Wales and South Australia. Small peaks were recorded in February and May, consistent with the usual seasonality of the disease in Western Australia, and with the greater rate of contraction of the disease in summer months when people are

commonly engaged in outdoor activities and fly numbers are greater.

The age and sex distribution of the cases (Figure 6) does not show a large proportion of cases in adult males. Thirty-seven per cent were in children less than 15 years old, the overall male to female ratio is 1.3:1.0, and in the 15-44 year age group, it is 1.1:1.0.

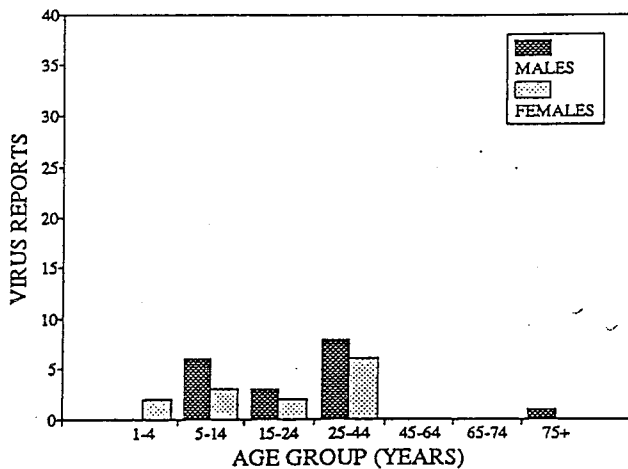
Figure 6. Hepatitis A reports, Western Australia, 1991, by age group and sex



Queensland

Although only 33 reports of hepatitis A have been received from Queensland laboratories, it appears that the sex and age distribution of the cases is similar to that in Western Australia (Figure 7). Thirty-three per cent

Figure 7. Hepatitis A reports, Queensland, 1991, by age group and sex



of the cases have been in children under the age of 15 years, and the overall male to female ratio is 1.3:1.0. As for Western Australia, these data do not suggest any association between cases of the disease and the State's homosexual community.

Tasmania, the ACT and the Northern Territory

A total of only 5 reports have been received from laboratories in these areas of Australia, so it is not possible to determine sex and age distributions.

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2. Stokes M-L and Manning W. Dramatic increase in hepatitis A. *New South Wales Public Health Bulletin* 1991;2:77-78.
3. Cameron AS and Weinstein P. Alternative hepatitis for alternative sex: recent changes in hepatitis A and hepatitis B infection patterns in South Australia. *Comm Dis Intell* 1991;15:244-245.
4. Condon R and Dandridge S. A cluster of cases of hepatitis A in Western Australia. *Comm Dis Intell* 1991;15:247-249.



Dear Colleague

As a result of suggestions received from Health Centres I am pleased to provide your area with this binder. This binder has been sent to you for the purpose of storing the NT Communicable Disease Bulletin and therein provide the opportunity for all in your area to access copies of the Bulletin.

The latest copy of the NT Communicable Disease Bulletin (the first for 1995) includes an index to previous topics for the past three years. Should you require any back copies please contact us on 22 8044.

regards

Vicki Krause
Director, Disease Control

22 March 1995



1980-1981

1982-1983

1984-1985

1986-1987

1988-1989

1990-1991

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