

# INVESTIGATION OF HEPATITIS A CASES IN A SINGLE STREET

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Between February and April 1993 the Western Sector Public Health Unit was notified of eight cases of hepatitis A. All cases were resident in the same street in a western suburb of Sydney. The first case was notified in February and the other seven cases were notified during the first week in April. All had clinical disease and were positive for hepatitis A IgM antibody.

## INVESTIGATION AND PUBLIC HEALTH ACTION

On Friday, April 2, 1993 a member of the public telephoned the Public Health Unit and expressed concern about a possible "outbreak of hepatitis" in a street in western Sydney. Our surveillance records showed one case of hepatitis A in a resident of the street, notified in February. The case was a five-year-old female. The PHU had followed up the case at the time. All family members and close contacts had been advised to have normal (human) immunoglobulin (IG).

The same afternoon a general practitioner in the area notified the PHU of a case of hepatitis A. The case was the father of the five-year-old notified in February. He had not received normal (human) immunoglobulin (IG) at the time of his daughter's illness. The reason for the omission of IG is unclear.

The GP reported one other possible case of hepatitis A, a resident of the same street, awaiting serological confirmation. The street was a cul-de-sac in a new housing estate. Both adults and children in the street socialised extensively with each other. The area is known to be socioeconomically disadvantaged.

Our immediate response was to inform other GPs in the area. We asked them to report any further cases and to review their IG supplies. We recommended IG for all household members and any other close contacts<sup>1</sup>.

Over the following five days a further six cases were confirmed (Table 9):

- a 24-year-old woman and her 27-year-old de-facto husband who frequently socialised with the father of the index case;
- a 24-year-old female whose children played with the index case; and
- three children aged 5, 7 and 10 years from one family who regularly played with other children in the street, including the index case.

The homes of all the cases were in close proximity (Figure 4).

On Tuesday, April 6 we visited all homes in the street. We advised residents to receive IG from their GP. We left letters at homes which were unattended.

We interviewed cases to determine possible sources of infection. In December 1992 the house where the first two cases lived had reported sewage problems to the Housing Commission. A blocked drain had caused effluent to discharge into the house and soak the carpets. This occurred regularly until the Housing Commission repaired the plumbing several weeks later. No plumbing problems have occurred since.

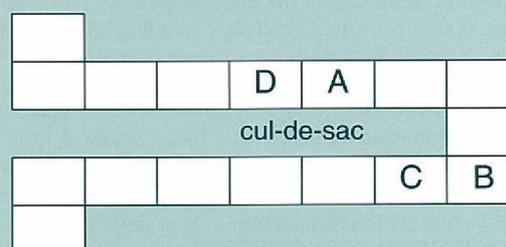
## DISCUSSION

Although foodborne and waterborne outbreaks of hepatitis A do occur in Australia, person-to-person transmission is probably the most common mode spread<sup>2</sup>. This is usually

**TABLE 9**  
NOTIFIED HEPATITIS A CASES IN ONE STREET,  
JANUARY-APRIL 1993

CASE NUMBER	AGE (YEARS)	SEX	DATE OF ONSET	HOUSE
1	5	Female	21/1/93	A
2	30	Male	13/3/93	A
3	27	Male	17/3/93	B
4	24	Female	29/3/93	B
5	24	Female	1/4/93	C
6	10	Female	4/4/93	D
7	7	Female	6/4/93	D
8	5	Female	6/4/93	D

**FIGURE 4**  
STREET PLAN OF THE NEIGHBOURHOOD WHERE THE CLUSTER  
OF CASES OF HEPATITIS A OCCURRED



through poor hygiene practices, such as inadequate hand washing. The hepatitis A virus can be transferred from hands to environment, where it can persist for several days<sup>3</sup>.

Hepatitis A has an incubation period of 15-50 days with a mean of 28 days<sup>4</sup>. The distribution of cases in this cluster is suggestive of person-to-person transmission, rather than a point source of infection. All cases had contact with either another case of hepatitis A or a child of a case. It is likely some transmission occurred through asymptotically infected children. Fewer than 5 per cent of children below three years and 10 per cent of children between four and six years of age with hepatitis A will develop symptoms<sup>5</sup>. Cases of hepatitis A in parents of asymptomatic children are often the first indication of outbreaks in child care centres.

It is uncertain how the first case acquired hepatitis A. The child attended a local primary school but there were no other cases of hepatitis reported from the school. There was no known contact with day care centres. There is a possibility she became infected through contact with sewage infected with hepatitis A when the household had sewerage problems. Hepatitis A virus can be found at low levels in primary effluent, particularly in spring and summer.

There were no further cases of hepatitis A notified from the area.

1. Infectious Diseases Manual, Infectious Diseases Section, Epidemiology and Health Services Evaluation Branch, NSW Health Department, second edition, 1993.
2. Hanna J. Hepatitis A outbreak in a rural town, Atherton Tablelands Queensland. *Communicable Disease Intelligence* 1993; 17(4):70-71.
3. Mbithi JN, Springthorpe VS, Boulet JR and Slatar SA. Survival of Hepatitis A virus on human hands and its transfer on contact with animate and inanimate surfaces. *J Clin Microbiol* 1992; 30:757-763.
4. Benenson AS (ed). *Control of Communicable Diseases in Man*; 15th edition. American Public Health Association, Washington DC 1990.
5. Hanna J. Hepatitis A in a Child Day-Care Centre. *Communicable Disease Intelligence* 1993; 17(4):73-75.
6. Personal communication, G. Grohmann, Water Board.