



Community & Public Health

**Report Of The Ashburton Hepatitis A Outbreak
April - October 2013**

Expanded version

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Lessons Learned

There were numerous lessons from this outbreak, many relatively minor and to do with modifications or enhancements of procedures currently in place (Appendix 1). However some were more significant that related to aspects of the management of a hepatitis A outbreak that had either not previously been encountered or were particularly pertinent. It is these lessons that are listed below:

1. Do not under-estimate the potential for asymptomatic young children to transmit infection.
2. Hepatitis A vaccine (Havrix) is an effective prophylaxis for contacts in households, preschools and the wider community in an outbreak including those in high risk occupations.
3. The use of immunoglobulin as a prophylactic was problematic because:
 - i) logistics was an issue when it had to be given beyond Christchurch and at multiple venues
 - ii) general practitioners and practice nurses were reluctant to give it because they were unfamiliar with its administration
 - iii) there was inherent resistance from the public because it is a blood-derived product
 - iv) the duration of effectiveness may be too short if a community-wide outbreak develops
 - v) the disease may be modified in some recipients already incubating hepatitis A and cases may go undetected.
4. Attention needs to be given to the CIMS structure in a prolonged outbreak to ensure clarity of roles is maintained and positions are adequately staffed.
5. Consideration must be given to managing staff in a prolonged outbreak to prevent fatigue.
6. A technical advisory group should be established early that includes expertise outside of C&PH, and a representative from Planning and Funding if the outbreak is likely to involve significant expenditure.
7. If it is possible that Pharmac may become involved, they should be involved at an early stage.
8. If ethnic groups are affected extra resources need to be allocated to engage them.
9. The embedding of the C&PH media person in the response team is essential.
10. The literature was not specific in providing guidance as to when the public health response should escalate from localised outbreak control to a population vaccination strategy. From this experience control should be attempted by vaccination early rather than later, with a targeted programme of a defined population rather than an expensive community-wide or universal programme. Escalation should be considered when, despite rigorous application of routine public health measures, the outbreak is not being controlled as evidenced by one or more of the following:
 - i) cases continue to occur at the same or increased rate despite rigorous application of the usual protocol
 - ii) the cumulative rate in the community becomes greater than ≥ 20 cases per 1000,000 population (Appendix 2)
 - iii) when epidemiological links between cases are not obvious
 - iv) when transmission occurs in more than one preschool.

A Summary Of Cases And Development Of The Outbreak

*"Hepatitis A is highly contagious with a secondary attack rate of 15% - 20% and spreads rapidly between individuals in prolonged close contact, in schools, institutions and army camps. Because the majority of children have asymptomatic or unrecognised infections, they play a key role in HAV transmission and serve as a source of infection for others."*¹

An outbreak of hepatitis A centred in Ashburton began in April and by the end of the first week in October had resulted in 35 cases: 25 lived in the Ashburton township, three developed the illness outside of Canterbury but had had exposure to cases in Ashburton and seven resided in nearby towns (Figure 1 and map). Two of the three who developed the illness outside of Canterbury were young brothers on holiday in Australia with family and the third was a middle aged man in Oamaru. The remaining seven comprised a family of three that included a young child who lived in Springston and a mother and three children who lived in Leeston who had recently moved from Ashburton. In the absence of other known risk exposures these seven cases were considered likely to have acquired the illness from contact with unidentified Ashburton cases. A total of seven cases were hospitalised.

The index case was a 26 year old male with a link to a possible case who had travelled to Africa without having a hepatitis A vaccine. The age range of the 35 cases was 14 months - 53 years with an average of 17.3 years (fig. 2). Sixty percent of cases were females. Not uncommonly an adult was the initial case notified in a family situation with young children, one or more of whom were subsequently positive (but asymptomatic) on testing. Twenty-six cases occurred in nine household clusters.

Public health action

Follow up of cases involved vaccination (Havrix) of contacts aged one year and over and immunoglobulin for infants aged less than 12 months. Transmission appeared to occur in homes and one preschool. Information about the outbreak and recommendations for the health sector were sent to primary care practitioners and pharmacies as well as to staff at the Ashburton hospital. Early child care centres and schools were asked to be vigilant and promote hand washing. The media assisted with health promotion messages. Extensive efforts were made to educate owners and managers of food premises resulting in a number of them vaccinating their staff.

Three preschools and two primary schools had cases. Vaccination clinics (Appendix 2) were conducted by C&PH with the assistance of public health nurses for the three preschools because they presented a high risk environment for transmission. In the clinics, vaccination was offered to all children who attended the preschool, household contacts of those children still in nappies, staff and those who had close contact with the centre.

Despite thorough contact tracing, ring vaccination, hand washing promotion and vaccination of food handlers, control was difficult to achieve because of spread by asymptomatic children aged less than five years. An escalation to a mass vaccination strategy was considered in August.

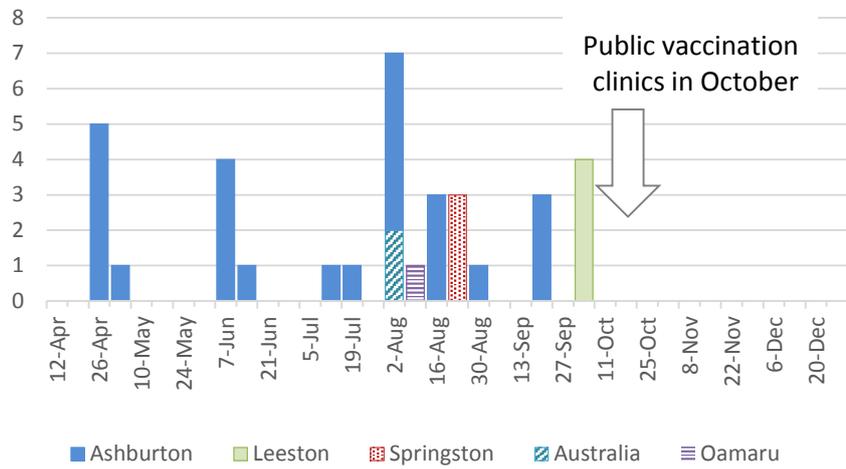
Mass vaccination strategy (Appendix 3)

A review of the international literature was undertaken to establish whether or not a change in the public health response would be beneficial, particularly in relation to vaccination, due to the ongoing outbreak and its increasing complexity. The conclusion was that the incidence of disease exceeded the level at which population-level intervention in the form of mass vaccination was indicated. Eligible population numbers and costs were estimated and a number of options proposed. The option chosen was to vaccinate children aged between 1- 4 years in the Ashburton District with Havrix.

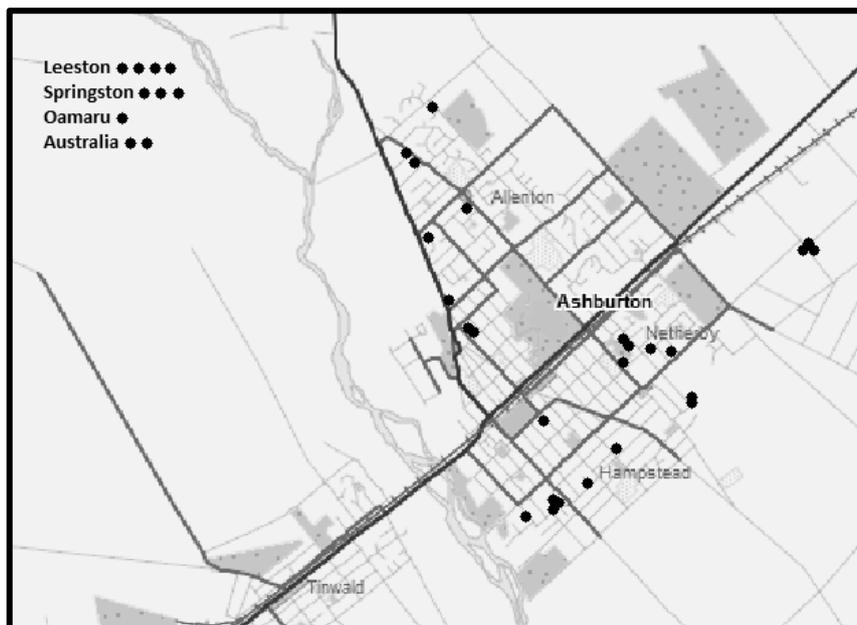
The proposal was submitted to Pharmac and CDHB Planning and Funding. In October the vaccination campaign was conducted at community venues throughout the Ashburton District and reached approximately 70% of the target group. The vaccine was funded and available from general practice also.

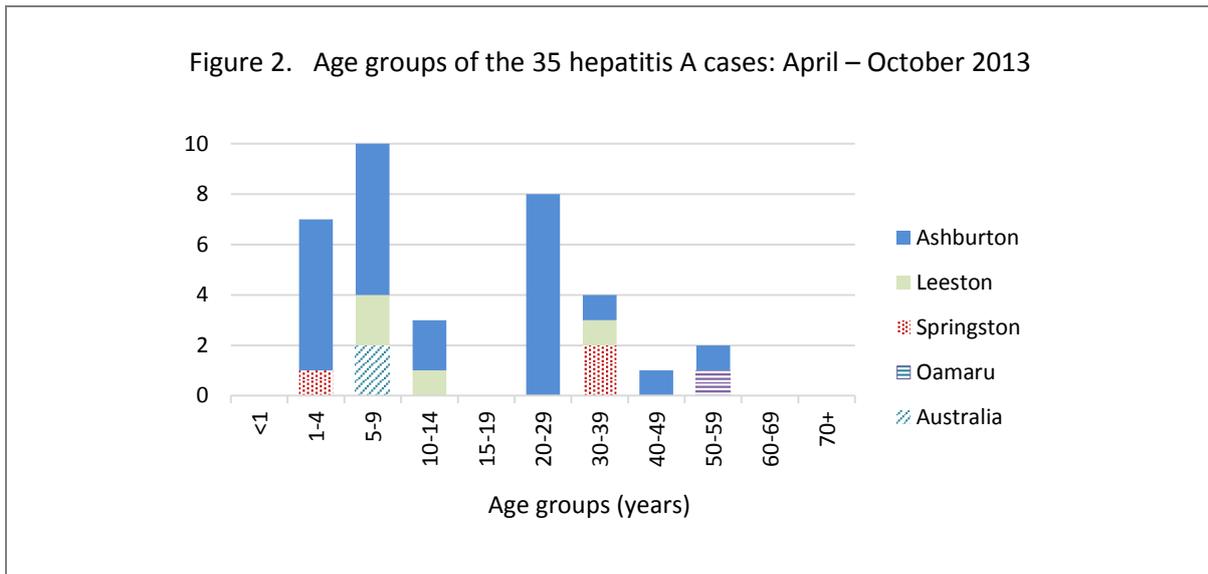
The last cases notified were in Ashburton on 20 September and in Leeston on 4 October.

Figure 1. Notification dates of the 35 hepatitis A cases by week: April - October 2013



Map. Domicile of the 35 hepatitis A cases





References

1. Principles and Practice of Infectious Disease, Eds. Mandell G, Bennett J, Dolin R. 7th ed. p. 1581

Appendices

- 1  131217_MinutesFromOutbreakDebriefN

- 2  Setting up a community vaccination

- 3  HepAVaccinationStrategyOptionsFinal1

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April 2014