The Epidemiology of Hepatitis A — Alaska, 1973–2016

Background
Hepatitis A was once a common, cyclically-occurring disease associated with large outbreaks in Alaska. The highest rates of infection occurred among Alaska Native (AN) children aged <14 years living in rural areas. Since 1995, effective hepatitis A vaccines have been available nationally. The Section of Epidemiology began offering hepatitis A vaccine for all children in 1996; hepatitis A vaccination became an Alaska requirement for daycare and K-12 school attendance in 2001. This Bulletin provides an update on the epidemiology of hepatitis A in Alaska and prevention recommendations.

Methods
Hepatitis A reports received by the Section of Epidemiology (SOE) during 1973–2016 were reviewed. A confirmed case was defined as an acute illness with discrete onset of clinically compatible symptoms (e.g., fever, headache, malaise, anorexia, nausea/vomiting, diarrhea, and abdominal pain), with IgM antibody to hepatitis A virus (HAV) and either a) jaundice, or b) elevated serum alanine aminotransferase or aspartate aminotransferase. Annual rates were calculated using Alaska Census data. Vaccine coverage estimates were obtained from the National Immunization Survey (NIS).

Results
During 1973–2016, SOE received 6,488 hepatitis A case reports (range: 1–1,469; Figure). Most (3,430, 53%) cases were in males; the average age of HAV-infected persons was 17 years (range: <1–86 years). Of the 5,945 persons for whom race was known, 4,229 (71%) were AN people, 1,619 (27%) were white, and 97 (2%) were another race.

The incidence of hepatitis A decreased after HAV vaccine was recommended as a routine childhood vaccine and after it was required for school entry (Tables 1 and 2). During 2002–2016, 56 cases of HAV infection were reported to SOE; the average number of cases per year was 3.7 (range: 1–12), and the average age was 42.5 years (range: 0.9–82). Of the 56 cases, 54 (96%) were known to be unvaccinated persons and 23 (41%) were associated with large outbreaks in Alaska. The highest rates of HAV are among Alaska Native (AN) people, who have traditionally lived in close-knit family groups and maintain traditions that include sharing meals.

Discussion
The key role of HAV vaccines in decreasing the incidence of HAV has been well described. In Alaska, the 1995–1996 recommendation to vaccinate all children through 18 years of age was followed by a precipitous decline in HAV incidence statewide. High childhood vaccine coverage through routine childhood vaccination coupled with mandatory immunization policies for daycare and school entry has nearly eliminated domestic transmission of HAV infection in Alaska. Since 2002, reported cases of HAV have primarily occurred among unvaccinated adults with a recent international travel history.

Table 1. Hepatitis A Incidence by Time Period — Alaska, 1973–2016

<table>
<thead>
<tr>
<th>Age (Years)</th>
<th>1973–1995 (N=5,994)</th>
<th>1996–2016 (N=203)</th>
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<tbody>
<tr>
<td></td>
<td># (%); Rate*</td>
<td># (%); Rate*</td>
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<tr>
<td>0–14</td>
<td>3,350 (56%); 106.4</td>
<td>25 (12%); 0.8</td>
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<tr>
<td>15–24</td>
<td>1,123 (19%); 53.0</td>
<td>20 (10%); 0.1</td>
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<tr>
<td>25–44</td>
<td>1,266 (21%); 26.5</td>
<td>98 (48%); 2.6</td>
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<tr>
<td>45+</td>
<td>255 (4%); 13.3</td>
<td>60 (30%); 1.3</td>
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</tbody>
</table>

# Rate per 100,000 population

Table 2. Hepatitis A Cases and Incidence Rates by Age Group and Time Period — Alaska, 1973–2016

References
1. CDC. Hepatitis A vaccine recommended as a routine childhood vaccine Alaska in 1996
5. CDC. Updated recommendations from the ACIP for use of hepatitis A vaccine in close contacts of newly arriving international adoptees. MMWR 2009;58(35);1-6. Available at: https://www.cdc.gov/mmwr/pdf/mm/mm5836a3.htm
6. CDC. Recommendations from the ACIP for use of hepatitis A vaccine for unvaccinated household members and close personal contacts of adopted children newly arriving from countries with high or intermediate HAV endemicity.

Figure. Cases of Hepatitis A by Year — Alaska, 1973–2016

Hepatitis A vaccine recommended for routine childhood vaccination Alaska in 1996
Hepatitis A vaccine required for Alaska daycare and K-12 school entry in 2001

(Contributed by Stephanie Massay, MPH, Infectious Disease Program, Section of Epidemiology)