The Epidemiology of Acute Hepatitis B Infections — Alaska, 1980–2015

Background
While the incidence of hepatitis B has decreased considerably in the United States since hepatitis B vaccines were first licensed in the 1980s, nearly 20,000 acute cases were estimated to have occurred nationally in 2014. Moreover, >2 million persons in the United States have chronic hepatitis B virus infection, and at least 15% of these persons will likely die prematurely from cirrhosis or liver cancer. This Bulletin examines the recent epidemiology of hepatitis B in Alaska.

Methods
Acute hepatitis B reports received by the Alaska Section of Epidemiology (SOE) during 1980–2015 were reviewed. A case was defined as an acute onset of illness compatible with hepatitis B (fever, headache, nausea/vomiting, diarrhea, and abdominal pain) with either a) jaundice, or b) serum alanine aminotransferase levels >100 IU/L, and HBsAg-positive and IgM-anti-HBc-positive laboratory test results. Case reports from 2011–2015 were reviewed to identify risk factors for infection. Rates were calculated using Alaska Department of Labor & Workforce Development population estimates.

Results
During 1980–2015, SOE received 972 acute hepatitis B case reports; the median number of cases reported annually was 13 (range: 1–125; Figure). Most (550 or 57%) of the cases were in males; the average age was 38 years (range: <1–94 years). Race data were available for 789 (82%) persons; of those, 406 (51%) were white, 286 (36%) were Alaska Native people, 49 (6%) were black, 41 (5%) were Asian/Pacific Islanders, and 7 (1%) were another race. The average annual incidence and the age distribution changed considerably over this time period (Tables 1 and 2). Since 2011, no cases of acute hepatitis B infection occurred among persons aged <30 years.

Of the 11 cases for which risk factors were reported during 2011–2015, 6 (55%) had a history of injection drug use (IDU), 3 (27%) had a history of incarceration, 2 (18%) had a history of multiple sex partners and unprotected sex, 2 (18%) had HIV co-infection, and 2 (18%) were homeless.

Discussion
During 1980–2015, Alaska’s annual rate of acute hepatitis B cases declined substantially from 22.7 to 0.4 cases per 100,000 persons in 1986 and 2015, respectively. By comparison, the national rate in 2014 was 0.9 cases per 100,000 persons. The important role of hepatitis B vaccines in the declining incidence of hepatitis B nationally has been well described.

In Alaska, the 1991 recommendation to universally vaccinate newborns and children against hepatitis B was followed by a substantial decline in incidence statewide. The Alaska Native Tribal Health Consortium began offering HBV vaccine to Alaska Native infants starting in 1984; the Alaska Division of Public Health began offering state-supplied HBV vaccine for all newborns and infants starting in 1993.

Table 1. Annual Case Rate by Time Period — Alaska, 1980–2015

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate (per 100,000)</td>
<td>12.1 cases</td>
<td>2.7 cases</td>
<td>0.9 cases</td>
</tr>
</tbody>
</table>

Table 2. Ages of Persons Reported with Acute Hepatitis B by Time Period — Alaska, 1980–2015

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0–19</td>
<td>14%</td>
<td>5%</td>
</tr>
<tr>
<td>20–39</td>
<td>66%</td>
<td>59%</td>
</tr>
<tr>
<td>40–59</td>
<td>15%</td>
<td>31%</td>
</tr>
<tr>
<td>60+</td>
<td>3%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Recommendations
1. Health care providers should ensure that children receive 3 doses of hepatitis B vaccine beginning at birth.
2. Screen pregnant females for HBsAg during each pregnancy and report HBsAg-positive pregnant women to the Alaska Perinatal Hepatitis B Prevention Program to ensure that newborns receive hepatitis B immune globulin and vaccine prophylaxis at birth, subsequent doses of vaccine, and post-vaccination serologic testing.
3. Test unvaccinated persons at risk for hepatitis B infection for immunity, vaccinate susceptible persons. Persons at risk include those born in countries with high or moderate rates of hepatitis B, persons having at least one parent who was born in a high-incidence country, and household contacts and sexual partners of people with hepatitis B. Persons at risk for or infected with HBV should be tested for HIV.
4. Follow the CDC guidelines for post-exposure prophylaxis for persons exposed to blood or body fluids.
5. Report suspected and confirmed cases of acute hepatitis B to SOE (7 AAC 27.005 and .007) by phone 907-269-8000 or fax 907-561-4239 using the appropriate report form.

References
3. CDC. Recommendations of the ACIP Part 2: Immunization of Adults. MMWR 2006;55(RR16):1-25. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5516a1.htm
8. CDC. Viral Hepatitis – Recommendations for Specific Populations and Settings. Available at: http://www.cdc.gov/hepatitis/populations/api.htm

Figure. Incidence Rate of Acute Hepatitis B by Year — Alaska, 1980–2015

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