Hepatitis A Outbreaks

Hepatitis A virus spreads by the fecal-oral route. Universal childhood vaccination was implemented about two decades ago in most states, followed by marked reductions in disease rates across the United States. Over 10,000 hepatitis A cases occurred in the country in 2001, falling to around a fifth of that level by 2015. Outbreaks of hepatitis A virus infection in the past were of limited duration and were mainly associated with commercial food establishments, child care settings, and contaminated imported produce. Recently generalized and ongoing hepatitis A outbreaks in communities have resulted in large numbers of cases and control measures have been difficult to implement.

Extent of the Outbreaks

Currently hepatitis A outbreaks in the United States are widely distributed in the community. The first prominent increase in hepatitis A occurred in parts of California. In late 2016 increased reports of hepatitis A cases occurred San Diego County, followed by Santa Cruz, Los Angeles, and Monterey counties. Those at particular risk of infection were persons experiencing homelessness or persons using drugs in settings of limited sanitation. In the months that followed, similar person-to-person outbreaks affecting mainly these risk groups occurred in Arizona and Utah. Increased case reporting also occurred in Michigan.

US hepatitis A case counts prior to the outbreak [www.cdc.gov](http://www.cdc.gov)
More extensive hepatitis A outbreaks then began in other states in central and eastern states. Those affected were persons using drugs with reduced sanitation, sometimes also associated with homelessness. There have been unusually high hospitalization rates (50-60% or higher) and mortality rates among cases. This may be due to prior infections with hepatitis C virus and to co-occurring chronic health issues; persons experiencing homelessness or unstable housings are likely to have reduced access to routine health care.

Hepatitis A activity has slowed in the western states. In April 2018, California declared that state’s outbreak over with a total of 704 reported cases (21 deaths) while Utah reported 281 outbreak-associated cases. Over the past year and a half about a quarter of states elsewhere in the country have been affected with increases in hepatitis A cases (see map).

States with large on-going hepatitis A outbreaks find that the median age of cases in most states is in the 30-50 year range. Among cases there is typically a predominance of males. Co-infection with hepatitis C virus is elevated among cases. The use of injection or non-injection drugs and having insecure housing continue to be the identified risks for acquiring hepatitis A infection. Through 2018, particularly large numbers of hepatitis A cases were being reported in a half dozen states.

- Michigan: 910 cases (28 deaths)
- Indiana: 959 cases (2 deaths)
- Ohio: 1595 cases (5 deaths)
- Tennessee: 797 cases (3 deaths)
- Kentucky: 3919 cases (25 deaths)
- West Virginia: 2304 cases (12 deaths)

Note that two of the states most affected by outbreaks, Kentucky and West Virginia, each had more cases of hepatitis A reported in about one year than the entire country did during 2015. The annual rate in West Virginia, with a population of 1.8 million, is over 100 per 100,000 population. This compares to fewer than 60 cases annually and a rate under 1/100,000 in Washington over the past decade. Although less affected, central states with increased hepatitis A rates include Missouri with 247 cases (1 death) and Arkansas with 270 cases. Massachusetts has had 287 cases (4 deaths). No increase in hepatitis A cases has been detected yet in Washington since 2017.
Public Health Interventions

States and jurisdictions have taken a number of actions to control their outbreaks of hepatitis A. Approaches to disease control in affected communities included improved sanitation, cleaning of public areas, vaccination, and education. In San Diego, portable toilets with handwashing stations were installed in areas with many people living on the streets and individual hygiene kits offered to persons at risk. Streets and sidewalks with human waste contamination received spray cleaning with dilute bleach solutions; attention was given to preventing infections in workers involved in the cleaning operations.

The populations at risk for hepatitis A transmission due to reduced access to basic sanitation may also have limited options for health care including vaccination. During its outbreak response, San Diego County supported administration of over 200,000 hepatitis A vaccine doses. Distribution methods including foot teams in highly affected areas, mobile vaccination vans, and designated points of vaccine distribution. Vaccine was also provided to persons in county jails.

On February 15, 2019, CDC’s MMWR published a new vaccine recommendation. The Advisory Committee on Immunization Practice (ACIP) recommends routine hepatitis A vaccination for all persons aged one year and older experiencing homelessness. Although hepatitis A vaccine is a two-dose series, even one dose provides 95% protection.

Public health agencies had other associated activities during community hepatitis A outbreaks. There have been multiple alerts in the national news about potential customer exposures due to food handlers working in commercial establishments while ill with hepatitis A. Some states have done outreach to the restaurant industry to reduce the risk of hepatitis A transmission from ill workers. When properly followed, the Washington State no-bare-hands rule for food handlers working with ready-to-eat items reduces the risk of transmission in food establishments.

The extended and extensive hepatitis A outbreaks in the United States have placed considerable demands on public health agencies in the affected regions. Many of Washington’s counties have populations at risk of such outbreaks. Jurisdictions doing preparatory response planning might review the San Diego after-action report (see Resources). Combination hepatitis A and hepatitis B vaccine should be considered for persons at risk for both infections.

Other Hepatitis A Updates

The 2019 national case definition for reporting hepatitis A has a few additions from the previous classification criteria:

- A bilirubin level $\geq 3$ mg/dL is now equivalent to clinically reported jaundice
- ALT level should now be at least 200 IU/L to be considered elevated
- Nucleic acid amplification tests such as PCR are accepted as a confirming result

It is not certain whether the change in case definition will affect numbers of cases reported. Bilirubin level may include cases where clinical information could not be obtained. Setting a minimum ALT level may eliminate cases with only slightly elevated liver function tests that would have been counted in the past. PCR is presently of limited availability so will not immediately increase case reports.
Local health jurisdictions may be advising international travelers regarding hepatitis A prevention. Recommended medications and dosing for travel to risk areas have been updated.

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<th>Age group</th>
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| Age < 6 months and those who cannot received hepatitis A vaccine | Immune globulin based on travel duration:
  - 0.1 mg/kg up to one month of travel
  - 0.2 mg/kg up to two months of travel
  - 0.3 mg/kg every two months for longer travel
Note that MMR cannot be administered simultaneously with immune globulin and should be administered preferentially to immune globulin |
| Age 6-11 months | One dose of vaccine which should be followed by two additional doses at age 12 months and older |
| Age ≥ 12 months | Hepatitis A vaccine, preferably two doses before travel |
| Age > 40 years, chronic medical condition, immunocompromised | Hepatitis A vaccine, preferably two doses before travel and consider also administering immune globulin |

Hepatitis A virus infection can be a severe or even fatal disease. Cases and outbreaks can be prevented through vaccination combined with improved access to shelter and sanitation. Public health action can prevent or mitigate hepatitis A outbreaks in marginalized populations including by promoting vaccination of populations at risk.

**Resources**

- California’s final hepatitis A outbreak update: https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/Immunization/Hepatitis-A-Outbreak.aspx
- ACIP recommendation for hepatitis A vaccine for persons experiencing homelessness: https://www.cdc.gov/mmwr/volumes/68/issue/16/mm6816a6.htm?s_cid=mm6816a6_e
- CDC updated travel prophylaxis recommendations for hepatitis A: https://www.cdc.gov/mmwr/volumes/67/issue/5/mm6743a5.htm and https://stacks.cdc.gov/view/cdc/59777
- CDC outbreak-specific considerations for hepatitis A vaccine: https://www.cdc.gov/hepatitis/outbreaks/InterimOutbreakGuidance-HAV-VaccineAdmin.htm
- CDC disease data: https://wwwn.cdc.gov/nndss/infectious-tables.html