

Hepatitis A Surveillance in Ohio

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Outline

- Burden of Hepatitis A
- Case Ascertainment
- Demographic Trends
- Risk
- Seasonal Variation
- Geographic Distribution
- Conclusion

What is Hepatitis A?

- Infection of the liver caused by the hepatitis A virus (HAV)

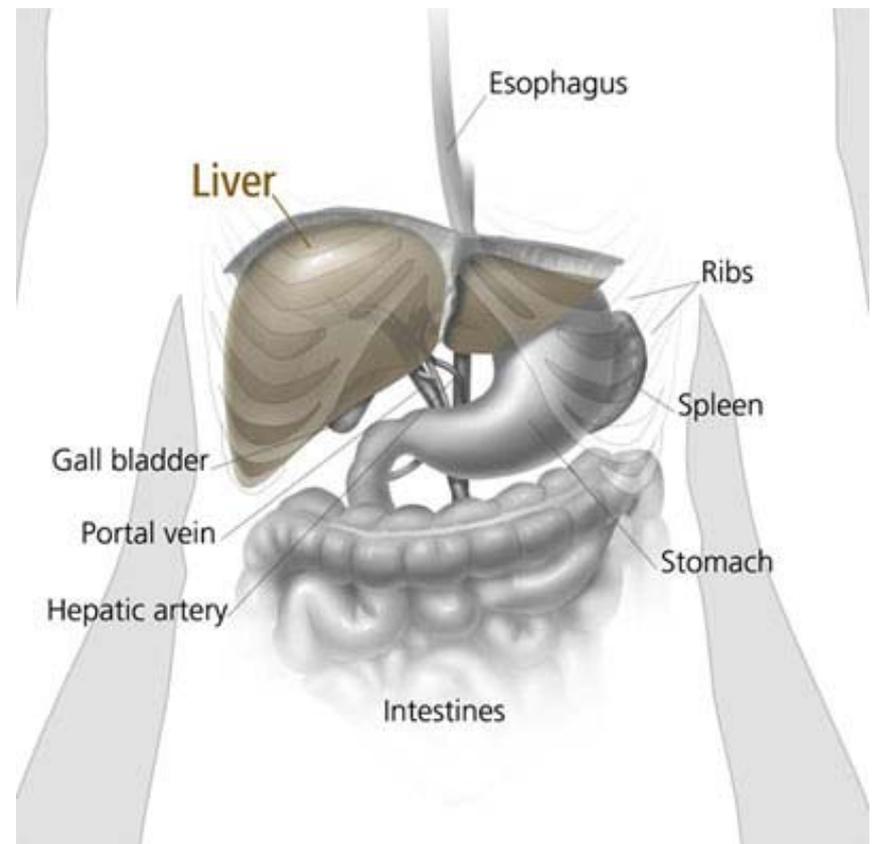


Diagram from the National Cancer Institute, Library of Cancer available at: <http://www.yourcancertoday.com/Cancers/Liver-Cancer/147>

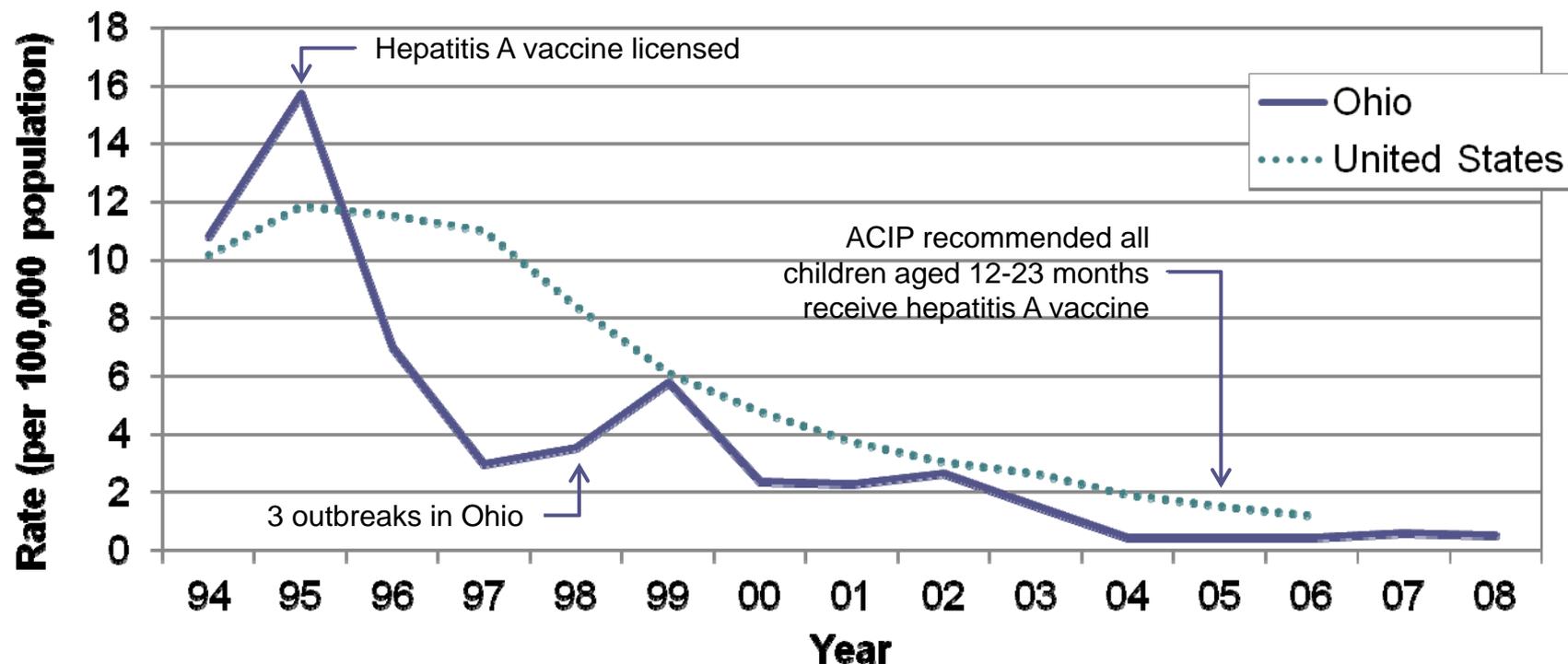
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Burden of Hepatitis A

- 1/3 of United States citizens have evidence of previous infection
- 100 deaths attributed to hepatitis A every year
- Substantial economic burden
 - 11 contacts prophylaxed per case
 - 27 work days lost by each adult case
 - \$1,817 - \$2,459 per adult case
 - \$433 - \$1,492 per pediatric case
 - Cost in Ohio 2002-2008: \$1.2 - \$1.7 million

Hepatitis A by Year, Ohio vs. United States, 1994-2008

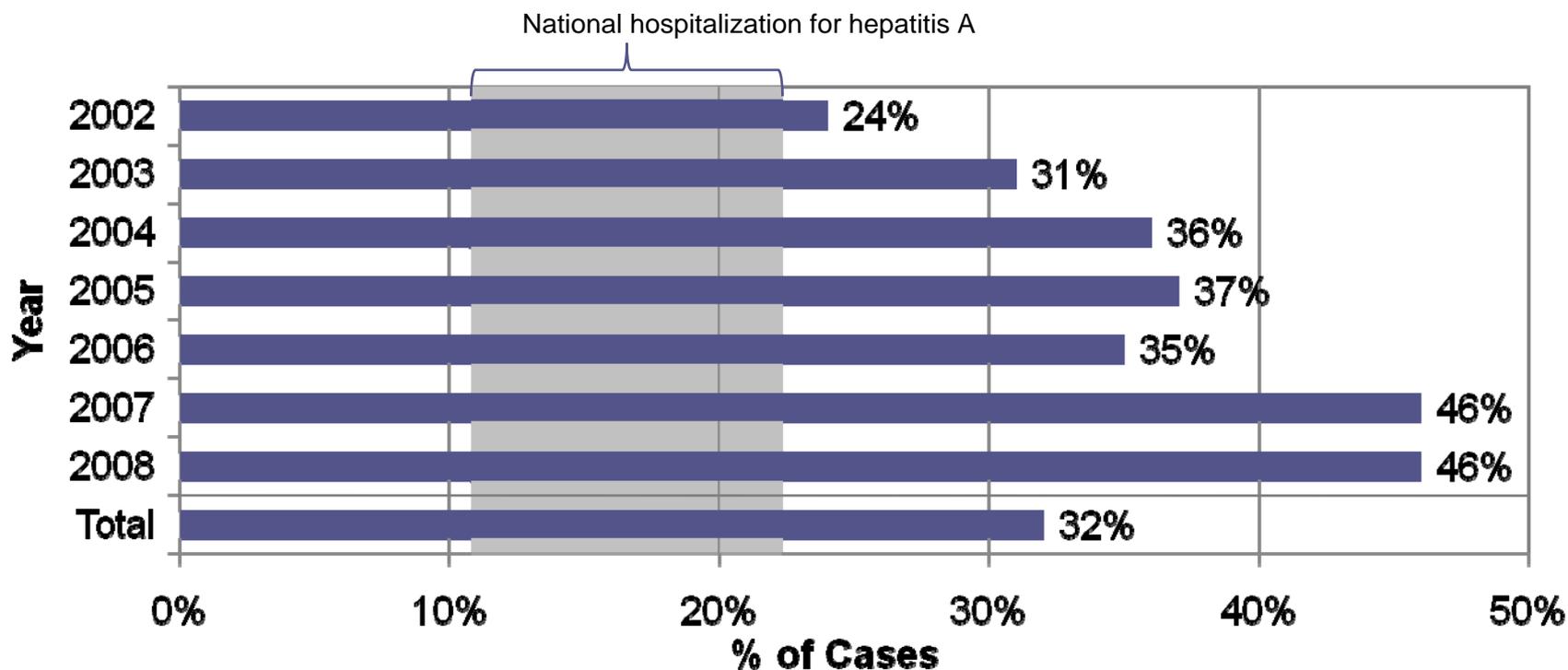


Ohio data are by year of report 1994-2003 and by year of onset 2004-2008 and come from the Ohio Department of Health Infectious Disease Surveillance.

All U.S. data are by year of report and come from the CDC's National Notifiable Disease Surveillance System.

Rates were calculated using U.S. Census population midpoint estimates for each year except 2000, which uses the actual count. Population midpoint estimates are as of December 2008.

Percent of Cases Hospitalized for Hepatitis A, Ohio, 2002-2008



12% of cases had an unknown hospitalization status 2002-2008.

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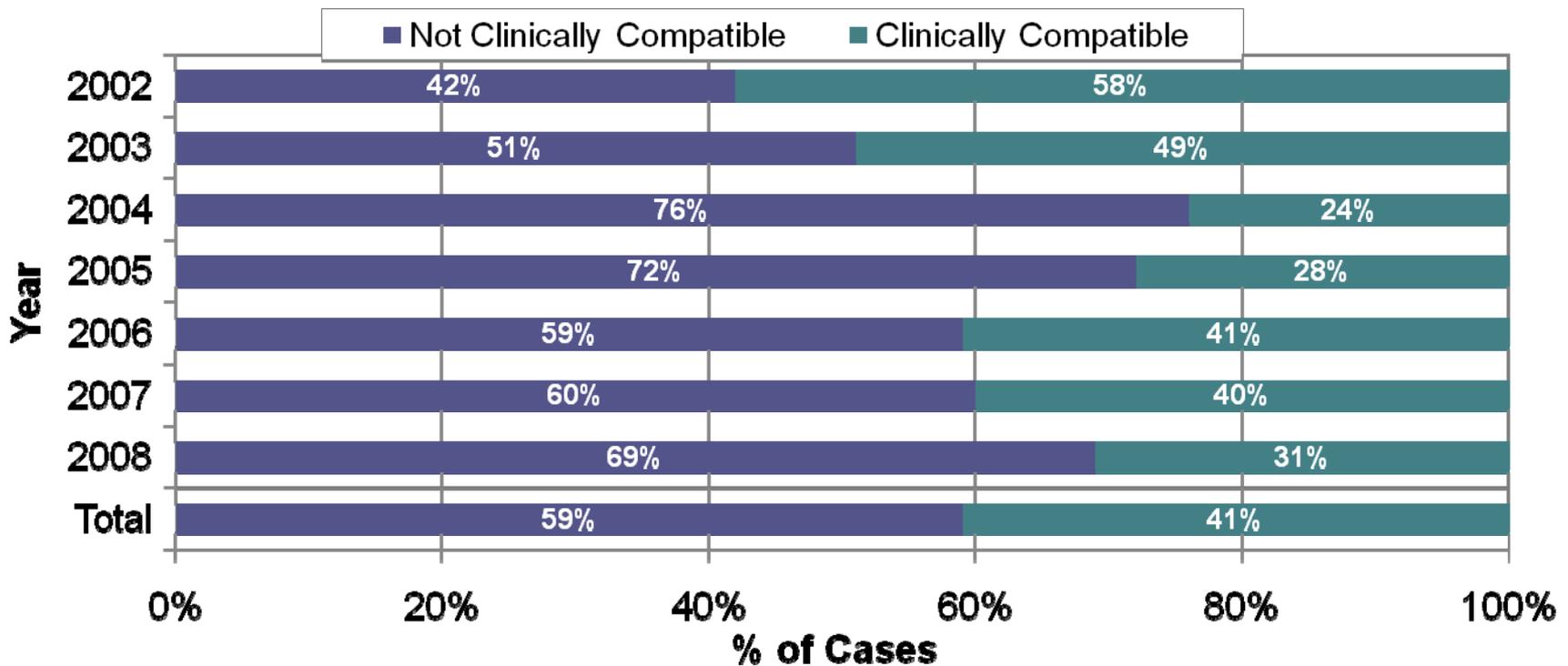
Surveillance Case Definition for Hepatitis A

- Positive IgM anti-HAV
- Sudden onset of acute symptoms
- Evidence of liver dysfunction by either:
 - Jaundice or
 - Elevated liver enzymes

Positive IgM Anti-HAV Tests in Persons Not Clinically Compatible

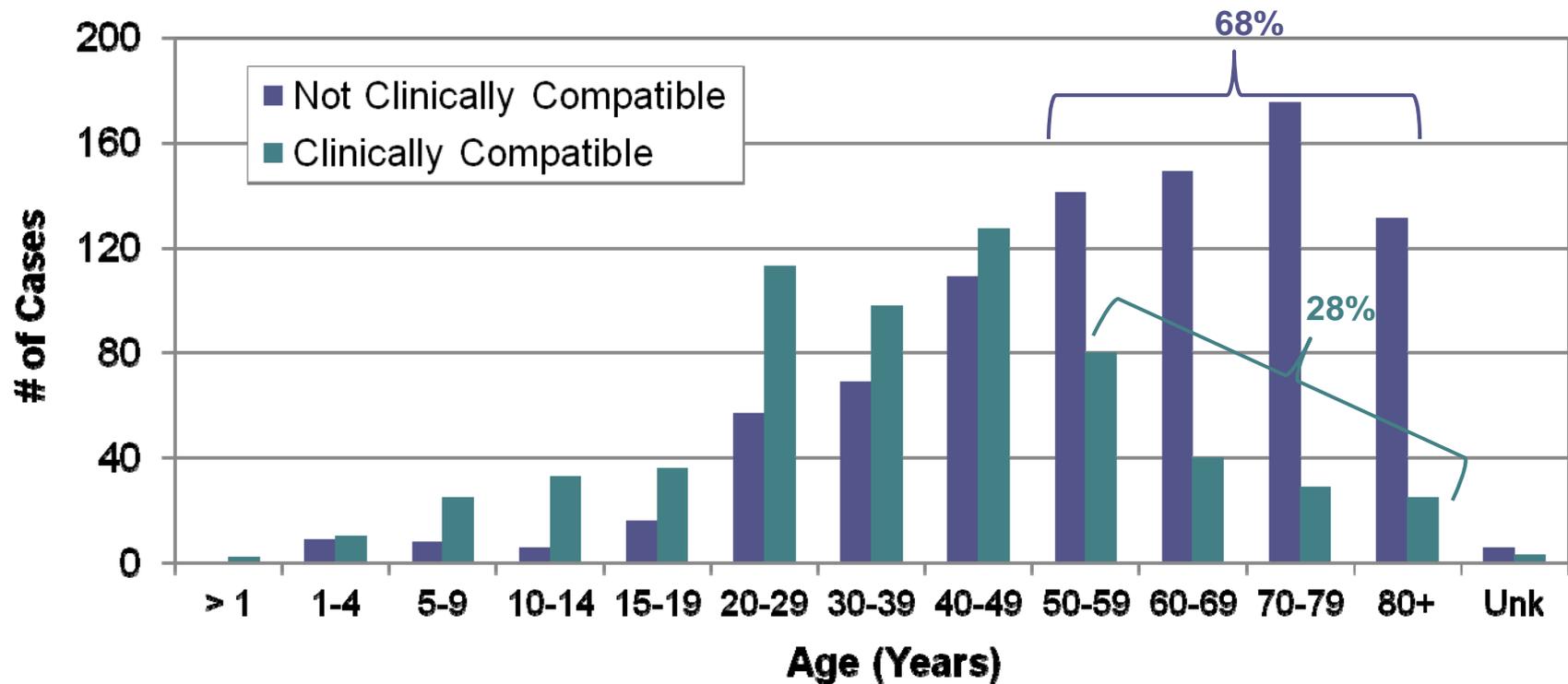
- 62% of persons testing positive for IgM Anti-HAV in 2003 were not clinically compatible
 - More likely to be older and female than those testing positive who were clinically compatible
- Positive test in a non-clinically compatible individual may indicate:
 - Asymptomatic infection of hepatitis A
 - Previous exposure to HAV with continued elevation of IgM antibody
 - False positive test

Positive IgM Anti-HAV Tests by Clinical Compatibility and Year, Ohio, 2002-2008



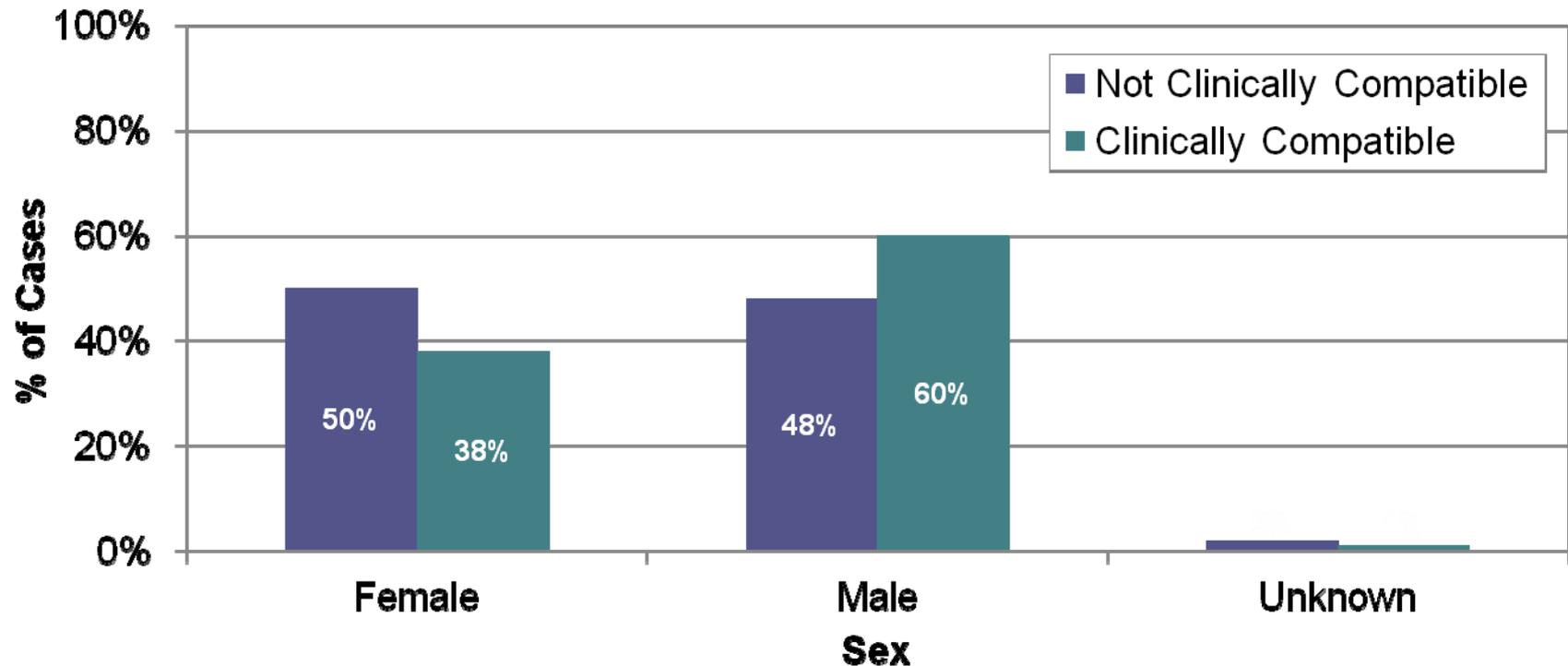
Clinical compatibility was determined by acute onset of symptoms and either jaundice or elevated liver enzymes.

Positive IgM Anti-HAV Tests by Clinical Compatibility and Age, Ohio, 2002-2008



Clinical compatibility was determined by acute onset of symptoms and either jaundice or elevated liver enzymes.

Positive IgM Anti-HAV Tests by Clinical Compatibility and Sex, Ohio, 2002-2008

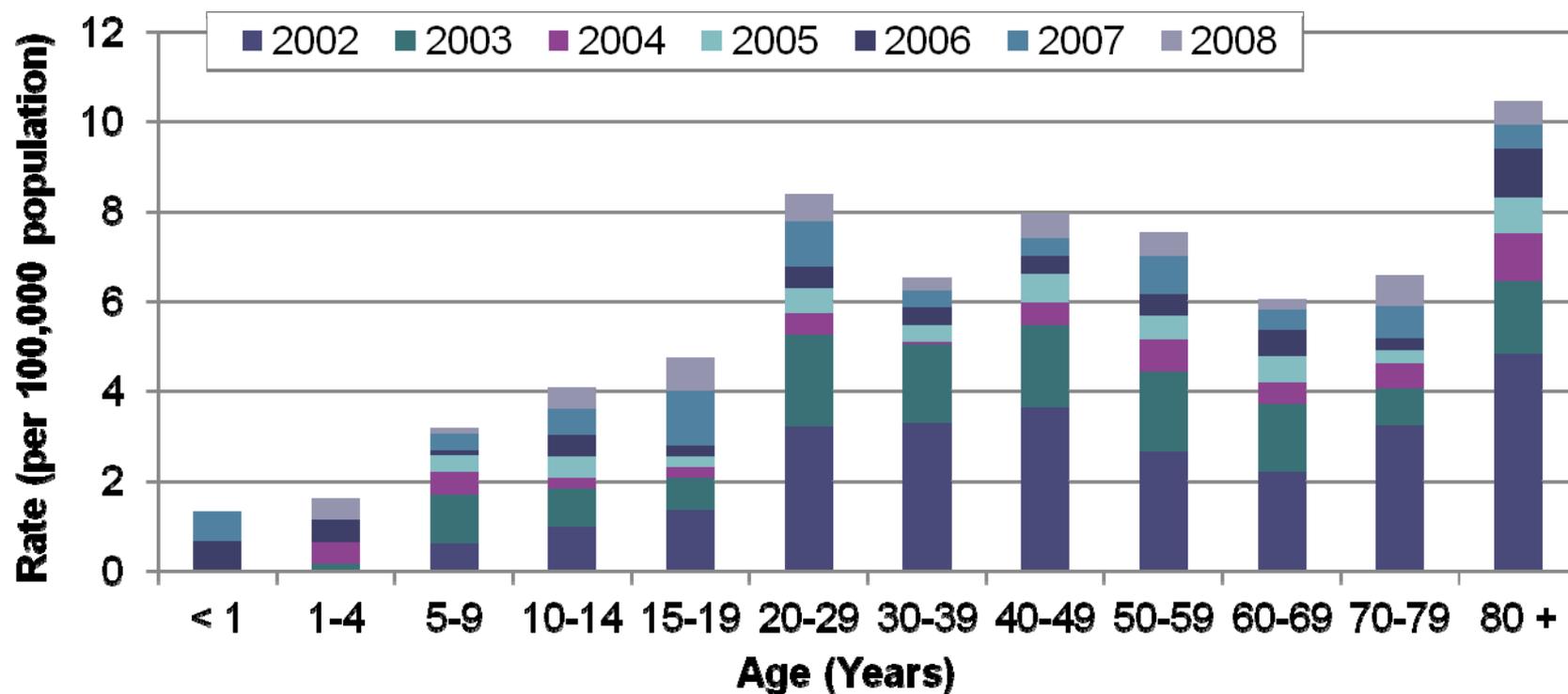


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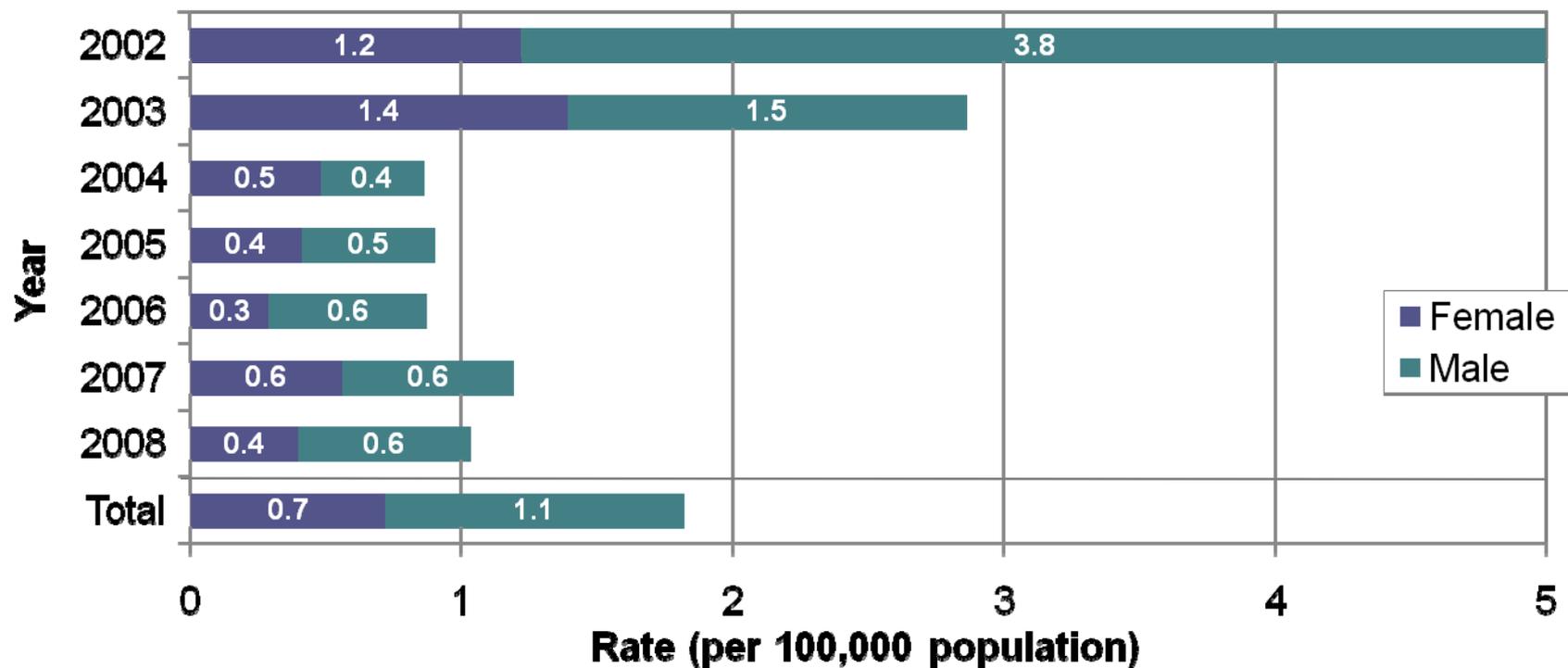
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Hepatitis A by Age and Year of Onset, Ohio, 2002-2008



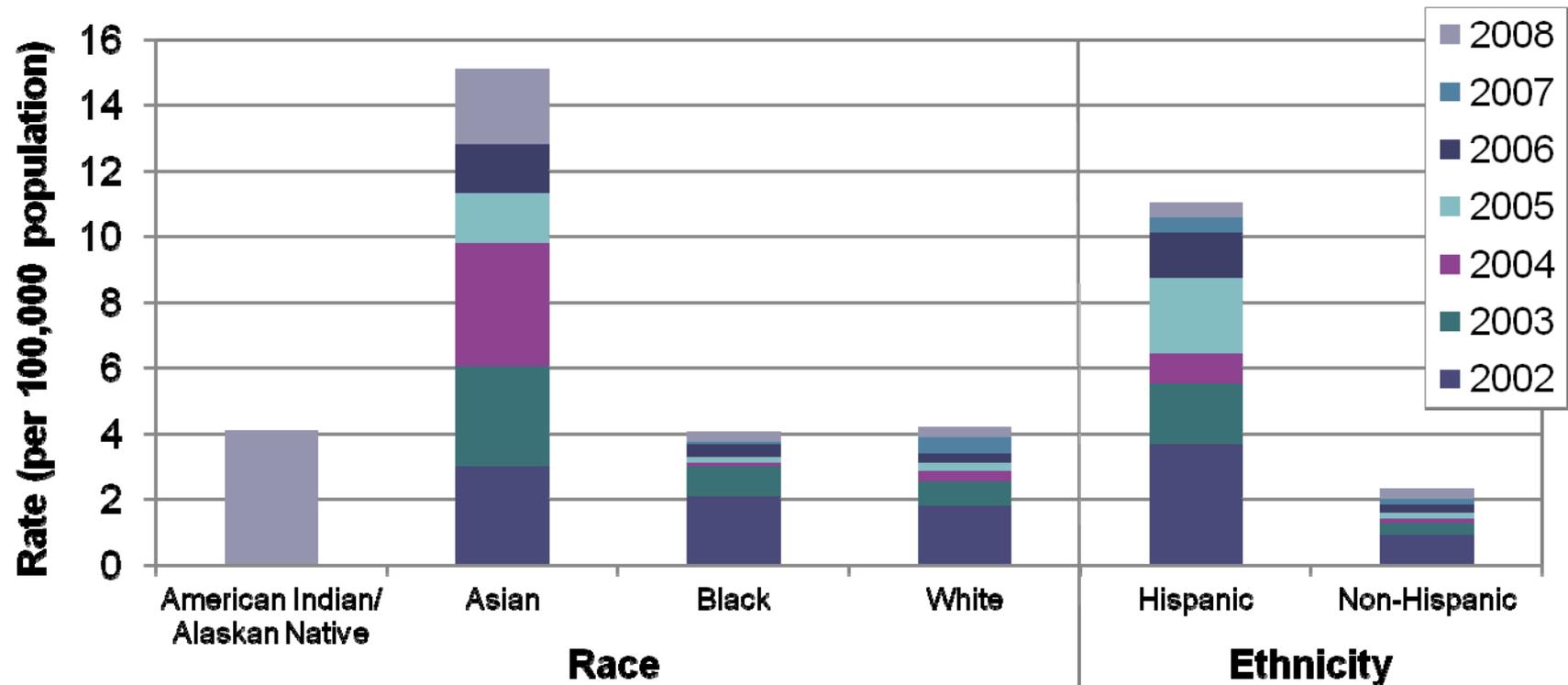
Rates were calculated using the 2000 U.S. Census.
1% of cases had an unknown age 2002-2008.

Hepatitis A by Sex and Year of Onset, Ohio, 2002-2008



Rates were calculated using the 2000 U.S. Census.
1% of cases had an unknown sex 2002-2008.

Hepatitis A by Race/Ethnicity and Year of Onset, Ohio, 2002-2008



Rates were calculated using the 2000 U.S. Census.

33% of cases had an unknown race, 1% had an other race and 62% had an unknown ethnicity 2002-2008.

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Reported Risk Factors Among Hepatitis A Cases, Ohio vs. United States

Risk	Ohio	United States
Personal contact with a known case	12%	14%
Child/employee at a day care center	2%	2%
Contact of child/employee at day care	3%	2%
Recent international travel	14%	5%
Injection drug use	1%	6%
Non-injection street drug use	1%	–
Men who have sex with men	9%	10%
No reported risks	21%	45%
Unknown/incomplete risk	43%	–

– indicates data not available for the risk.

U.S. risk factor data is from 1990-2000; Ohio risk factor data is from 2002-2008.

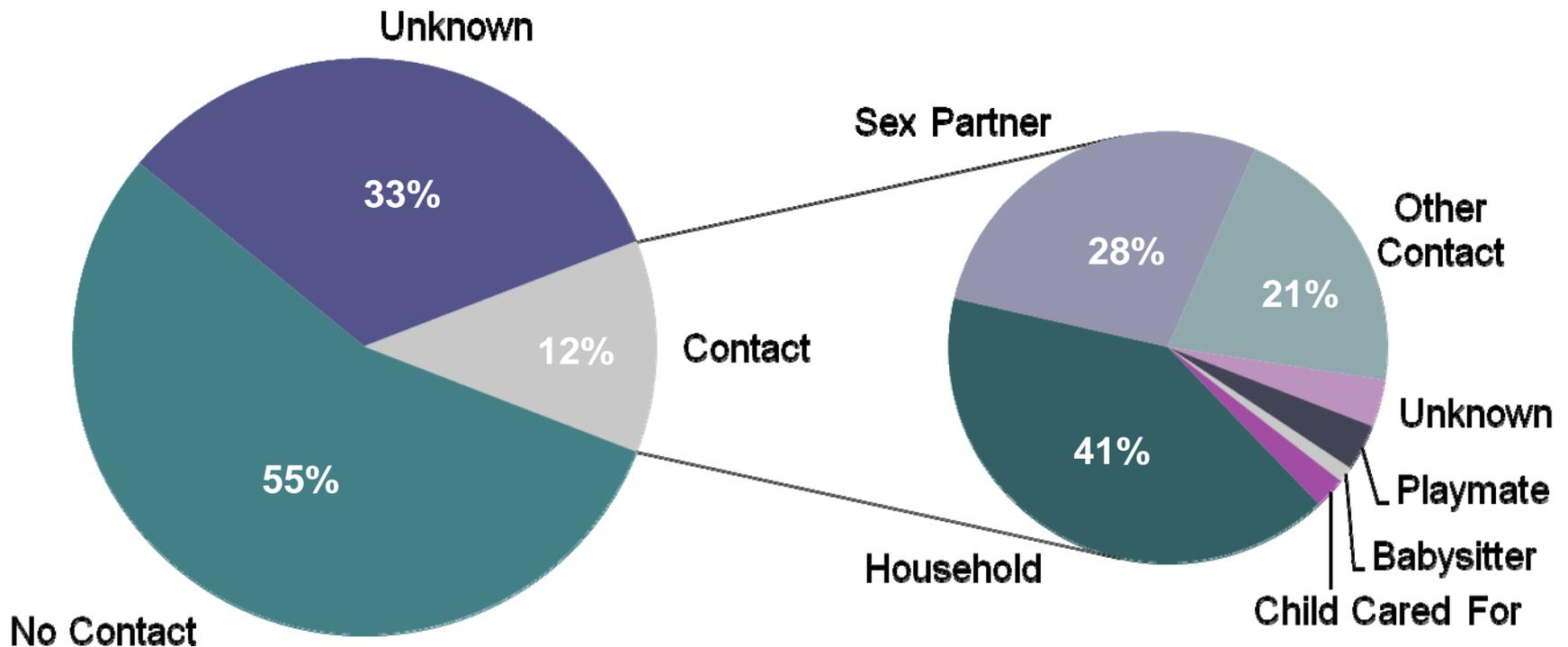
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Hepatitis A Cases with Contact to Another Case, Ohio, 2002-2008



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Risk to non-immune travelers to endemic, developing countries:

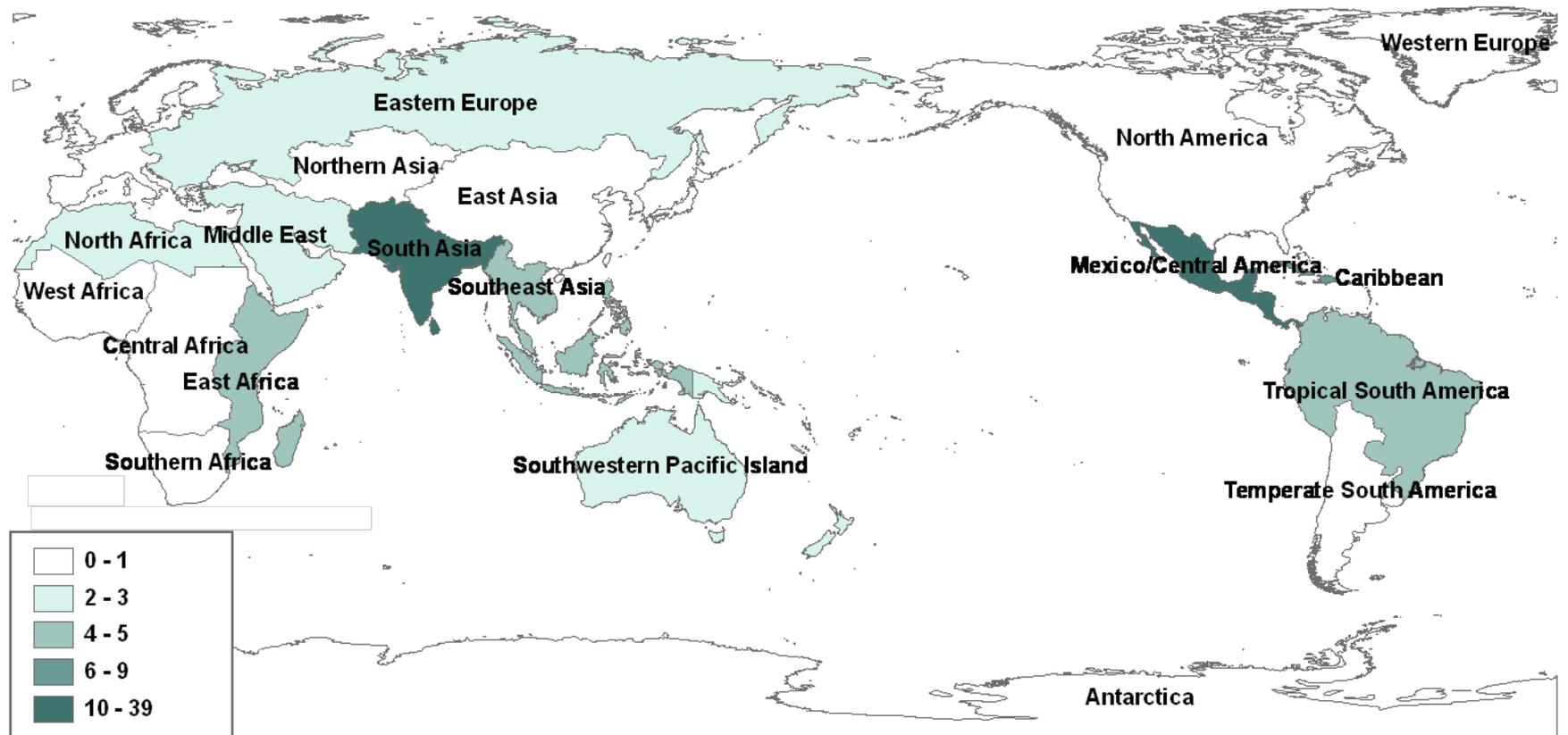
Resort areas: 1 per 1,000 per week

Remote areas: 5 per 1,000 per week

– indicates data not available for the risk.

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Reported International Exposures to Hepatitis A, Ohio, 2002-2008



World regions were based off of CDC's *Health Information for International Travel 2008*, Geographic Distribution of Potential Health Hazards to Travelers chapter.

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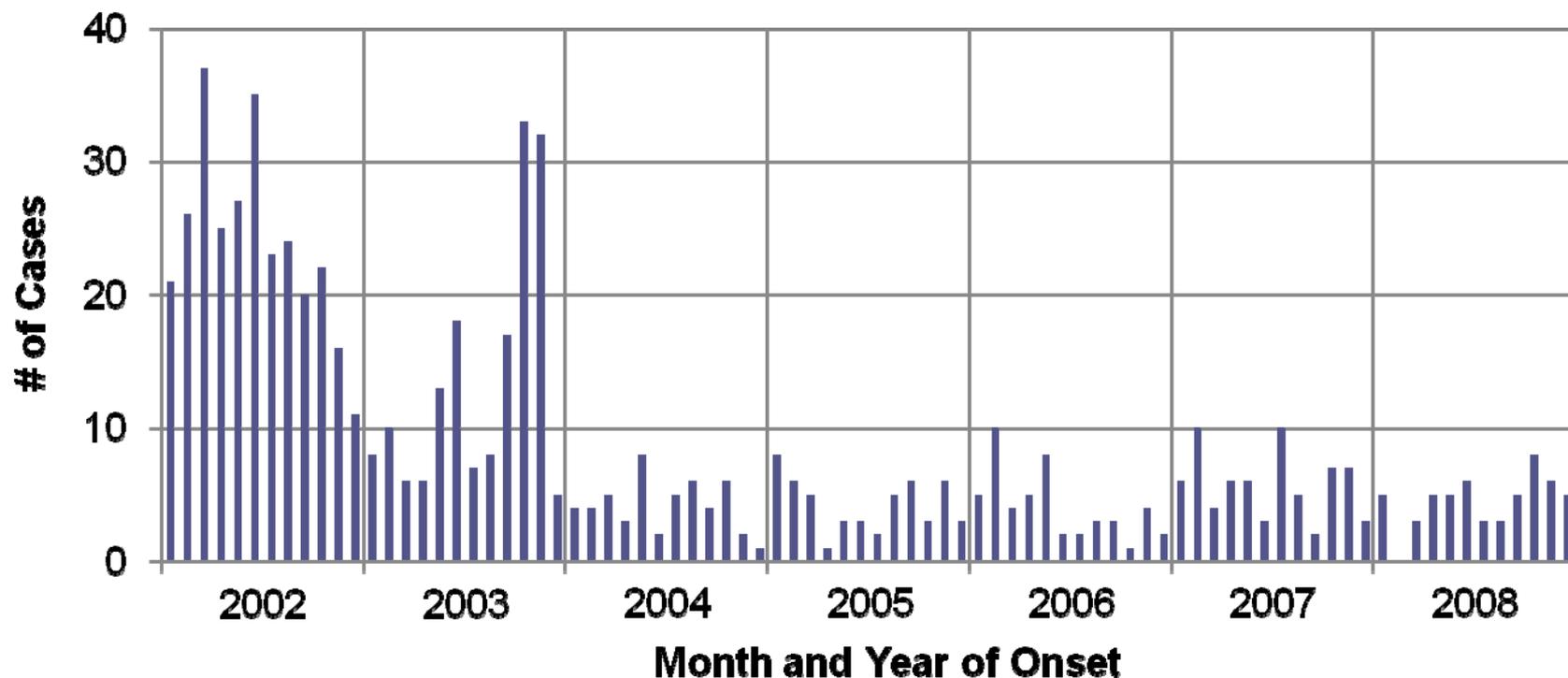
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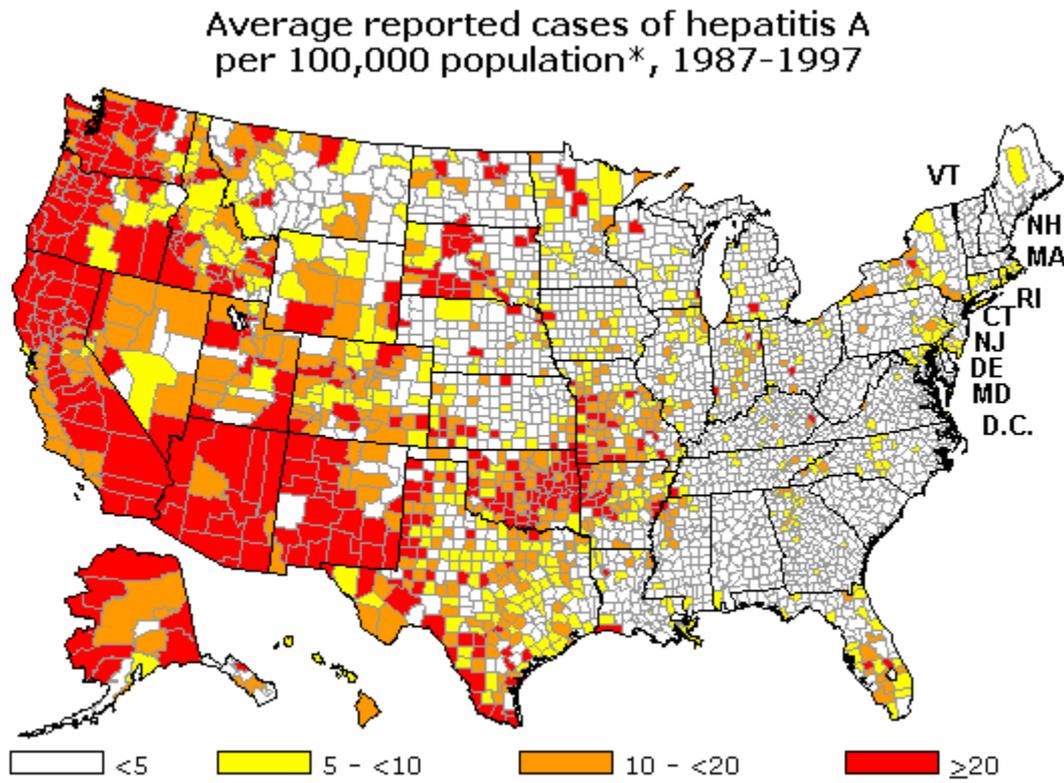
Hepatitis A by Month and Year of Onset, Ohio, 2002-2008



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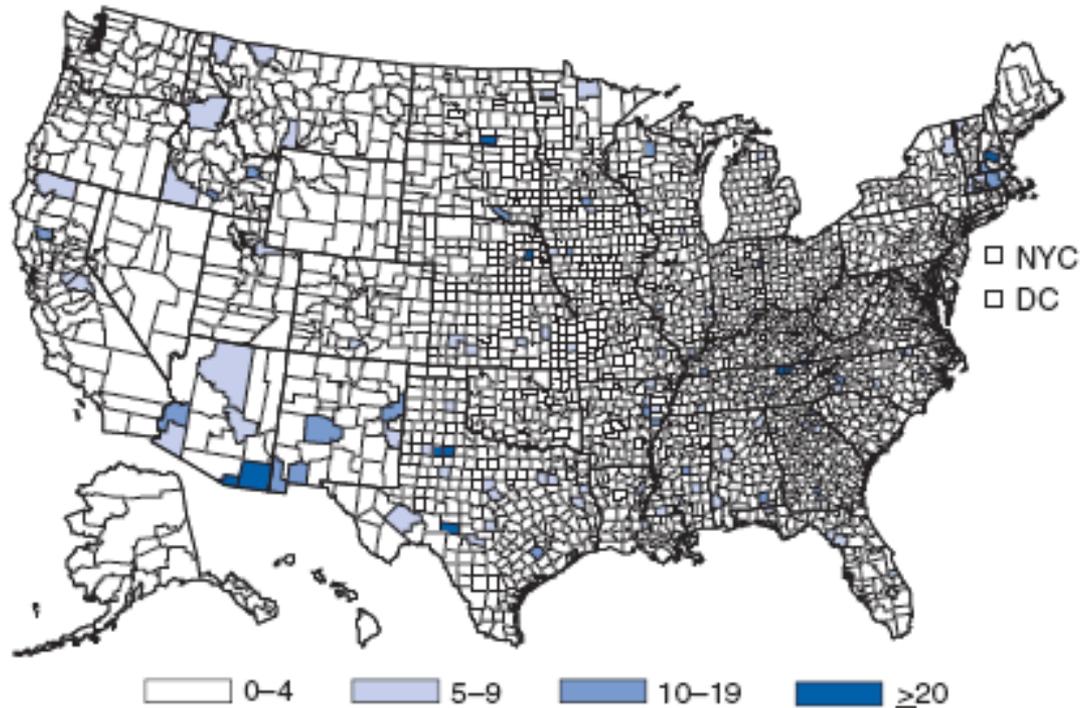
Hepatitis A by County, United States, 1987-1997



*Approximately the national average during 1987-1997.
Source: National Notifiable Diseases Surveillance System.

Hepatitis A by County, United States, 2005

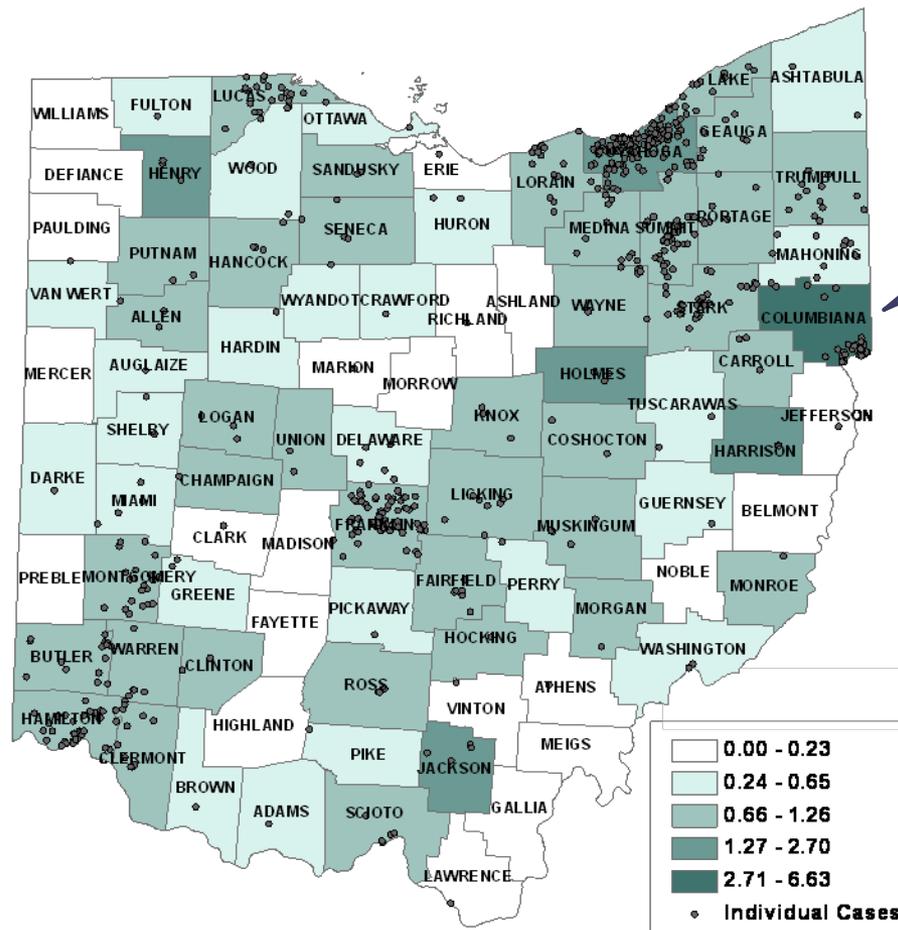
Incidence* of acute hepatitis A by county, United States, 2005



Source: National Notifiable Disease Surveillance System, 2005

* Per 100,000 population.

Hepatitis A by County, Ohio, 2002-2008



2003 rate:
45 cases
per 100,000

Rates are per 100,000 per year and were calculated using the 2000 U.S. Census.

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- Hepatitis A was the most commonly reported hepatitis until 2004
- Vaccination and sanitation improvements have reduced incidence to an all-time low
- Continued vaccination could lead towards eradication of hepatitis A in the United States

Questions?

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