

Viral Hepatitis in the U.S.:

Focus on Hepatitis B Prevention and Control

July 24, 2019

Hepatitis B United Summit

Carolyn Wester, MD, MPH

Director, Division of Viral Hepatitis, NCHHSTP / Centers for Disease Control and Prevention

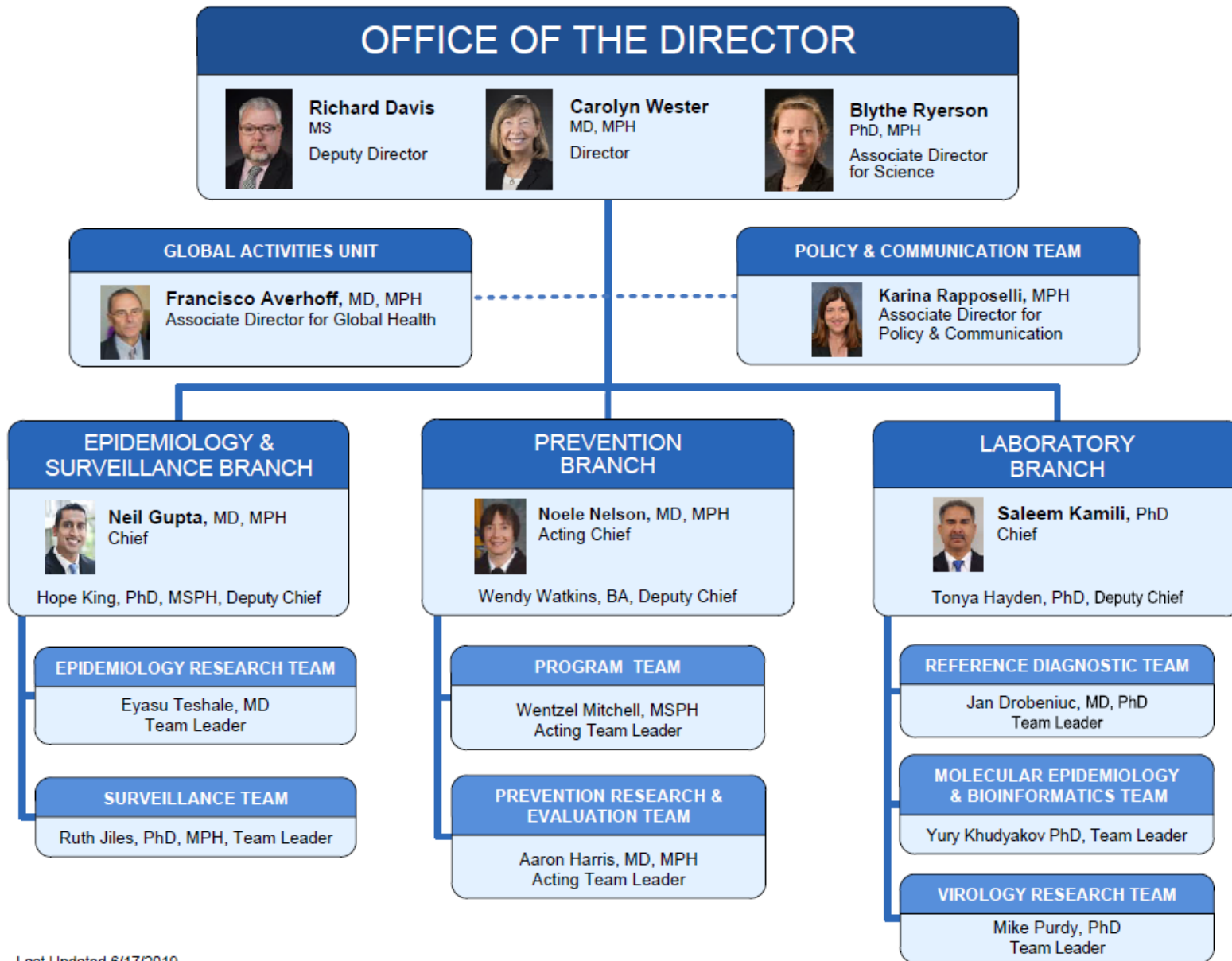


Outline

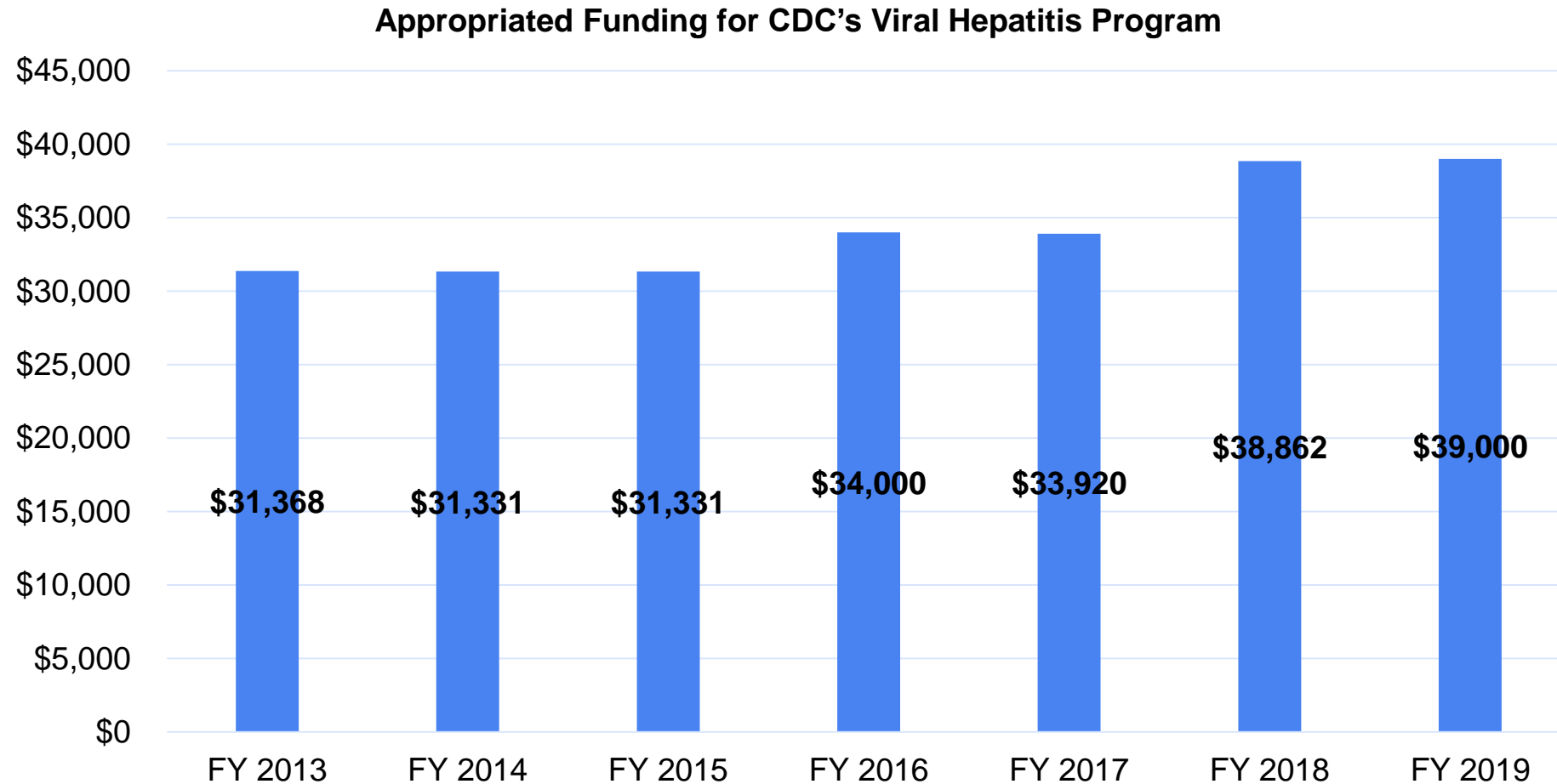
- Update on CDC's Division of Viral Hepatitis
- Burden of Viral Hepatitis
- Focus on Hepatitis B Prevention and Control
 - Vaccination
 - Testing and linkage to care and treatment
 - Education

CDC's Division of Viral Hepatitis

Division of Viral Hepatitis

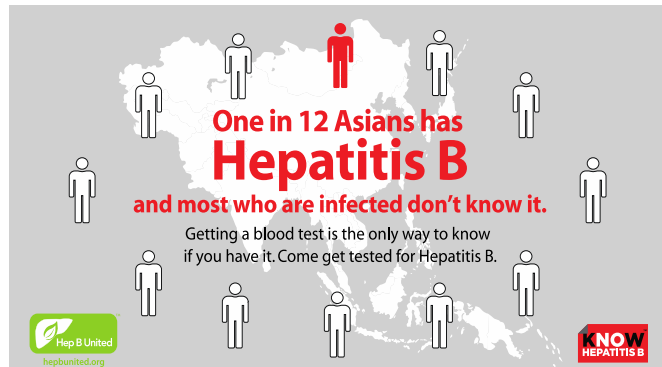


Viral Hepatitis Funding Flat



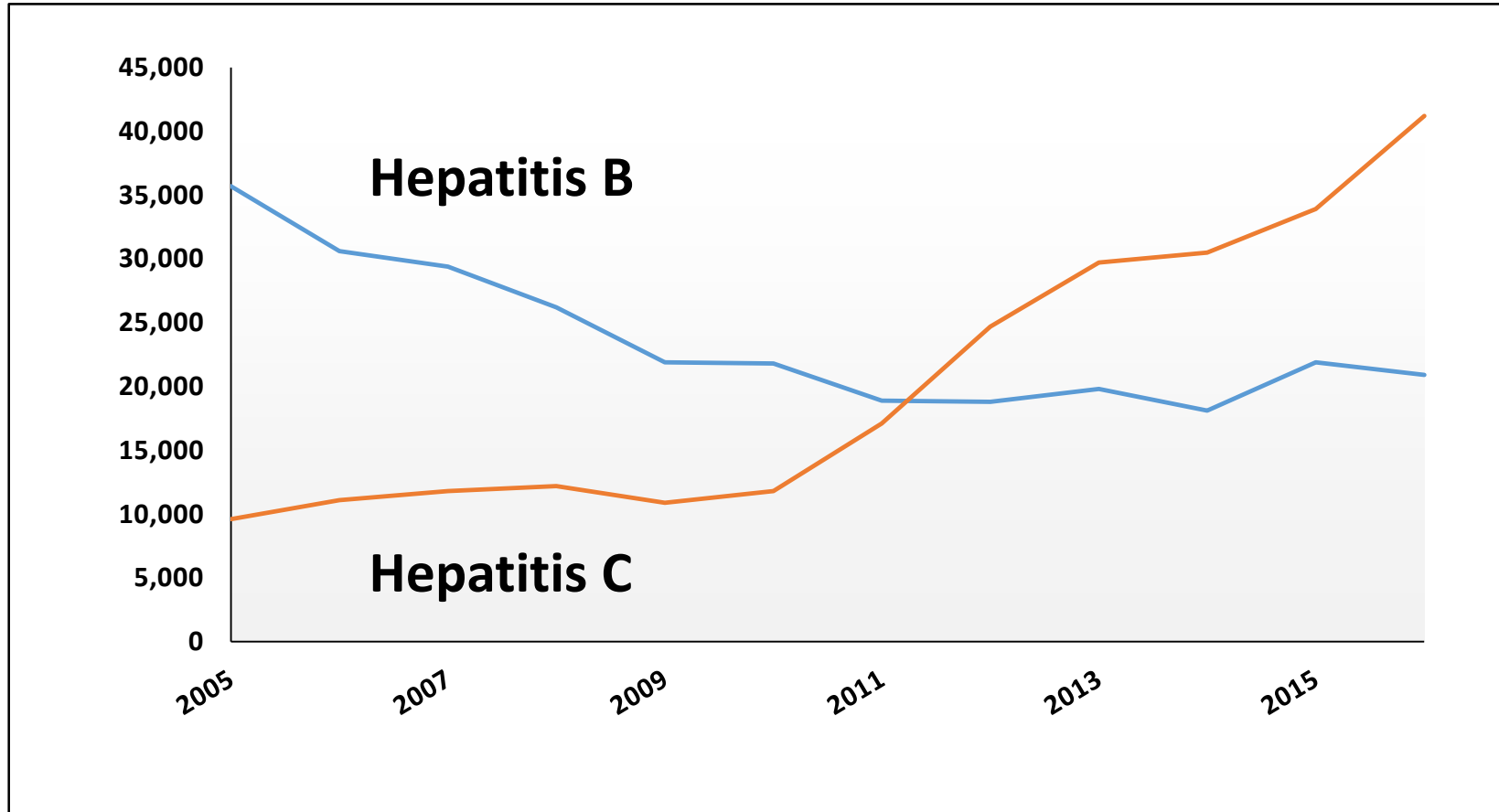
Burden of Viral Hepatitis

Millions of Americans Have Viral Hepatitis



- **Massive public health burden**
 - **862,000** infected with Hepatitis B
 - 66% unaware
 - **2.4 million** infected with Hepatitis C
 - 44% unaware
- **New infections on the rise**
- **Major cause of morbidity and mortality**
- **Substantial health inequity**
- **Disconnect between burden & resources**

Viral Hepatitis Incidence Increasing



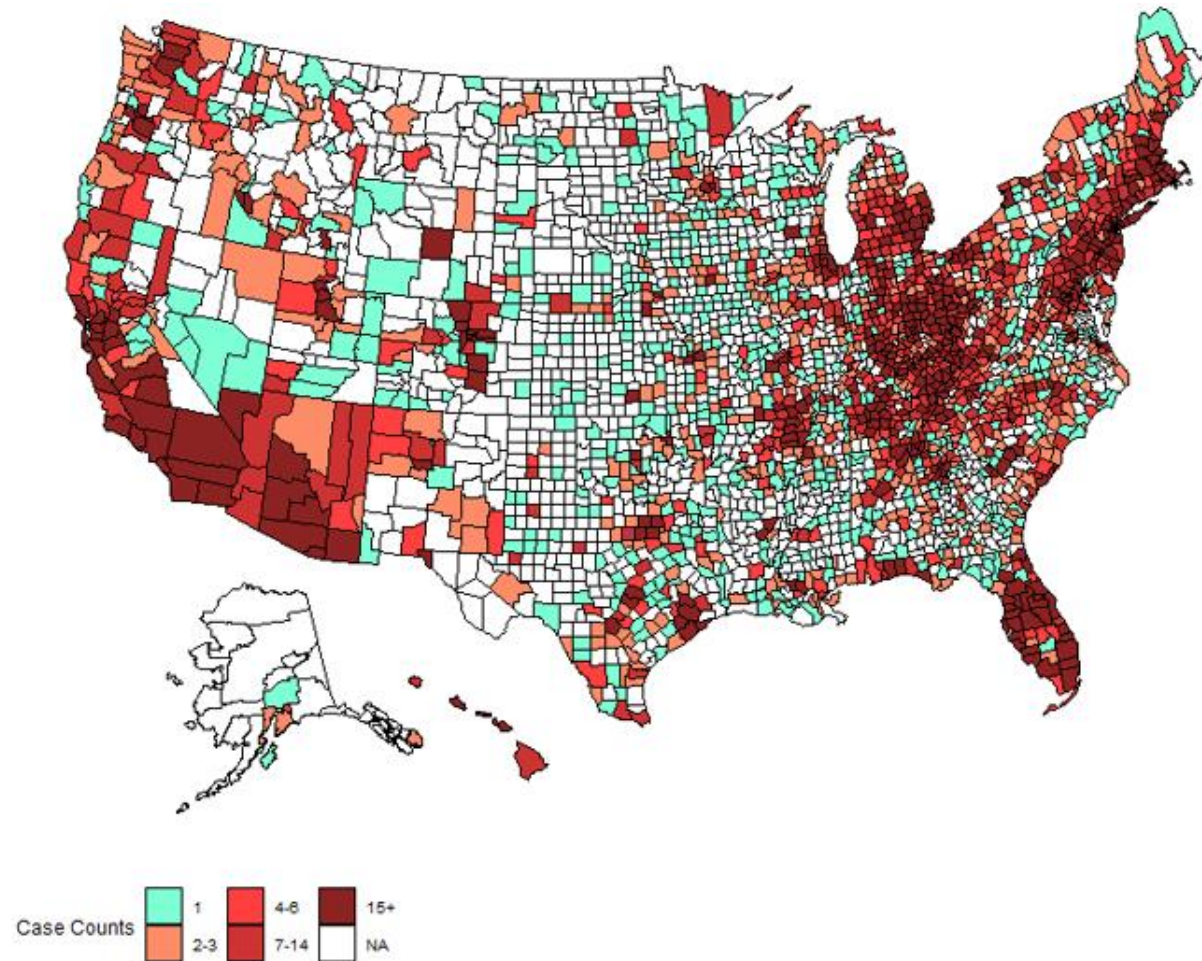
**Doubling of
number of
pregnant women
with HCV**



Source: National Notifiable Diseases Surveillance System (NNDSS)

CDC Continues to Work with States to Control Hepatitis A Outbreaks

Map of Reported Incident Hepatitis A Cases (US, 2016 – Present)

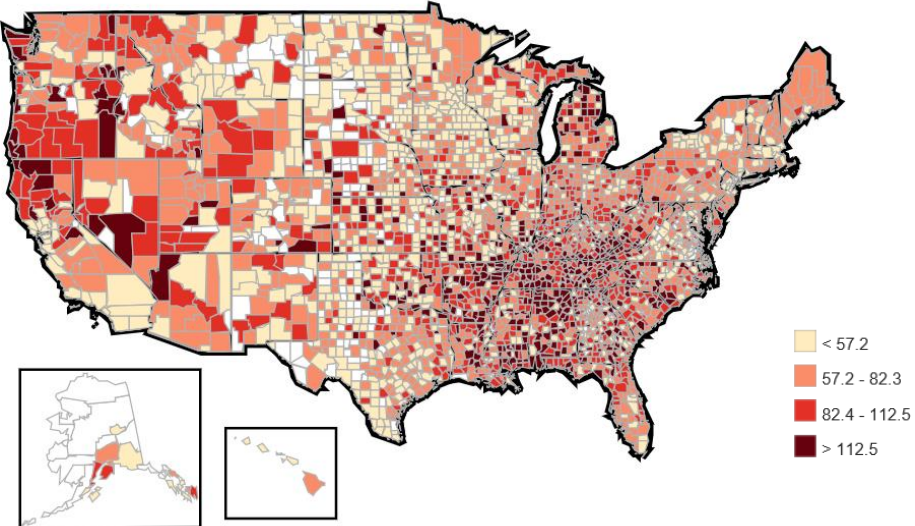


Since 2016:

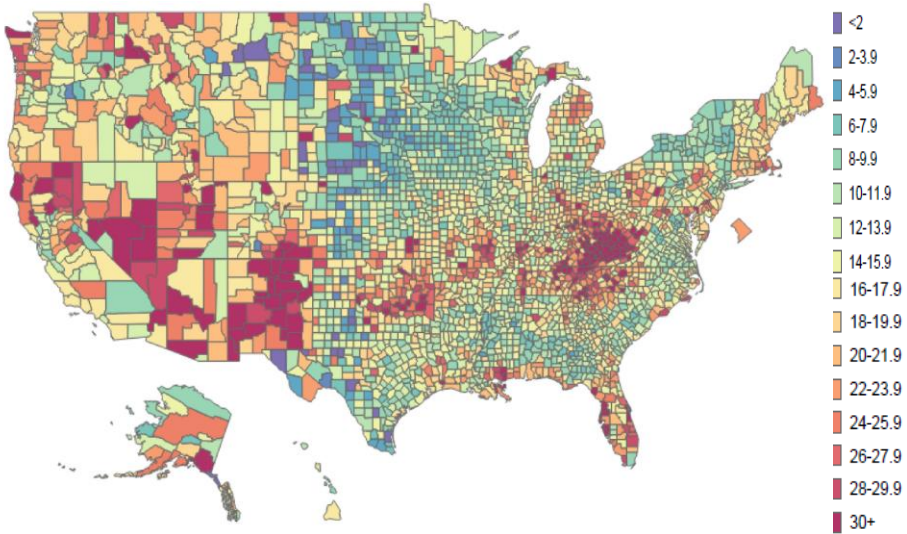
- > 22,000 cases
- > 13,000 hospitalizations
- > 220 deaths
- Primarily affecting people who use drugs and people experiencing homelessness

Source: CDC, National Notifiable Diseases Surveillance System.

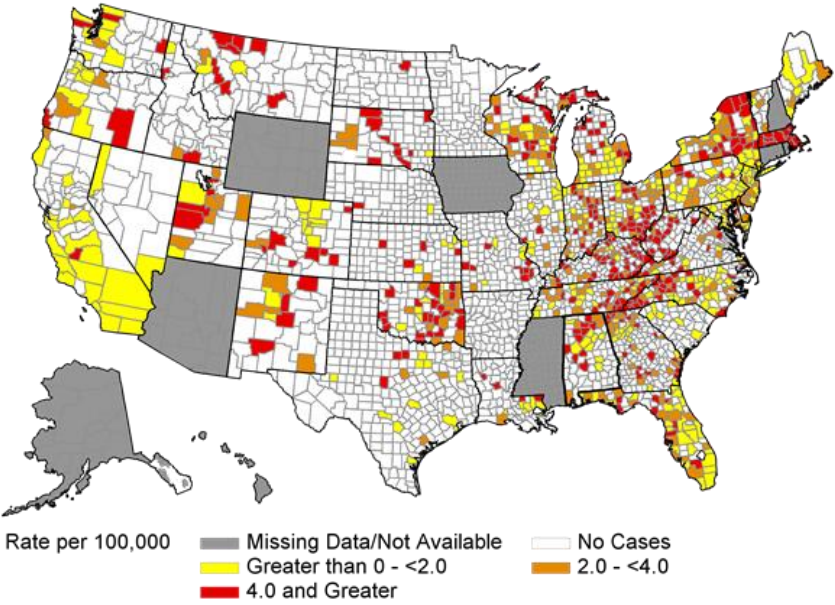
Geographic Correlation of Opioid Prescriptions, Drug Overdose Deaths, and HCV Infections



Opioid prescribing rates, by county, 2016
Rate per 100 persons



Drug overdose death rates, by county, 2016
Rate per 100,000 persons



Source: NNDSS

Rate of reported new HCV infections, by county, 2016

The Syndemic of Acute HCV and Opioid Abuse (≤ 30 year olds in KY, TN, VA, WV)

FIGURE 1. Incidence of acute hepatitis C among persons aged ≤ 30 years, by urbanicity and year — Kentucky, Tennessee, Virginia, and West Virginia, 2006–2012

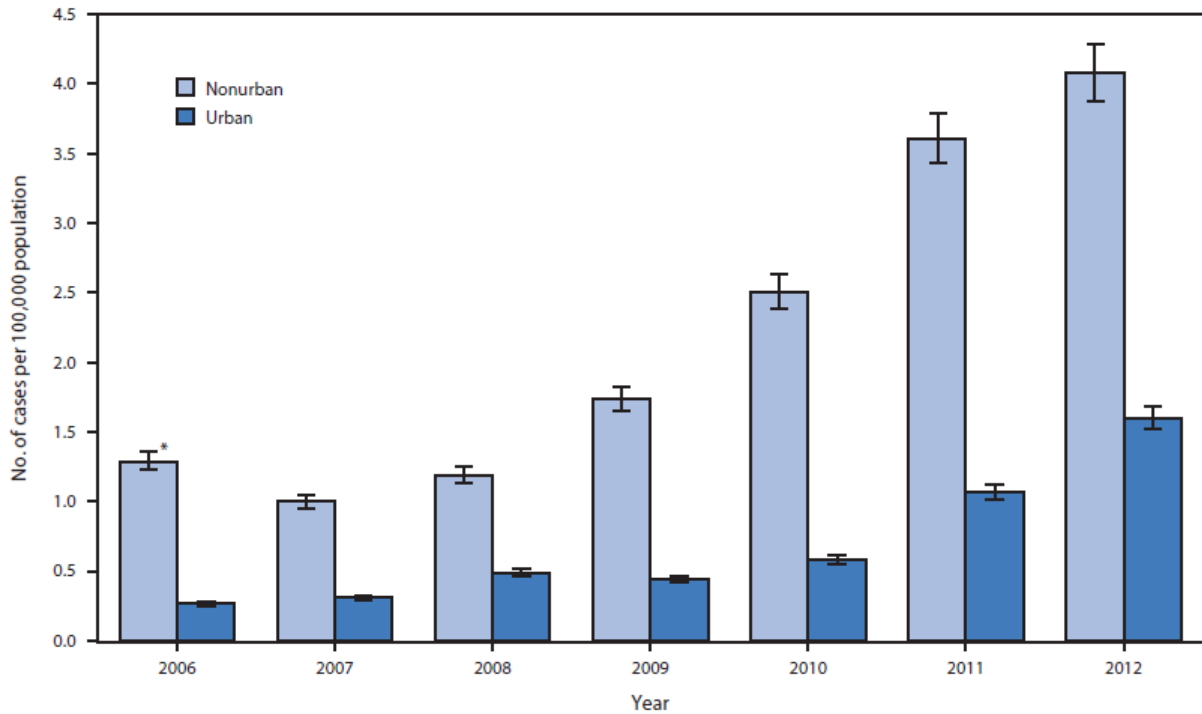
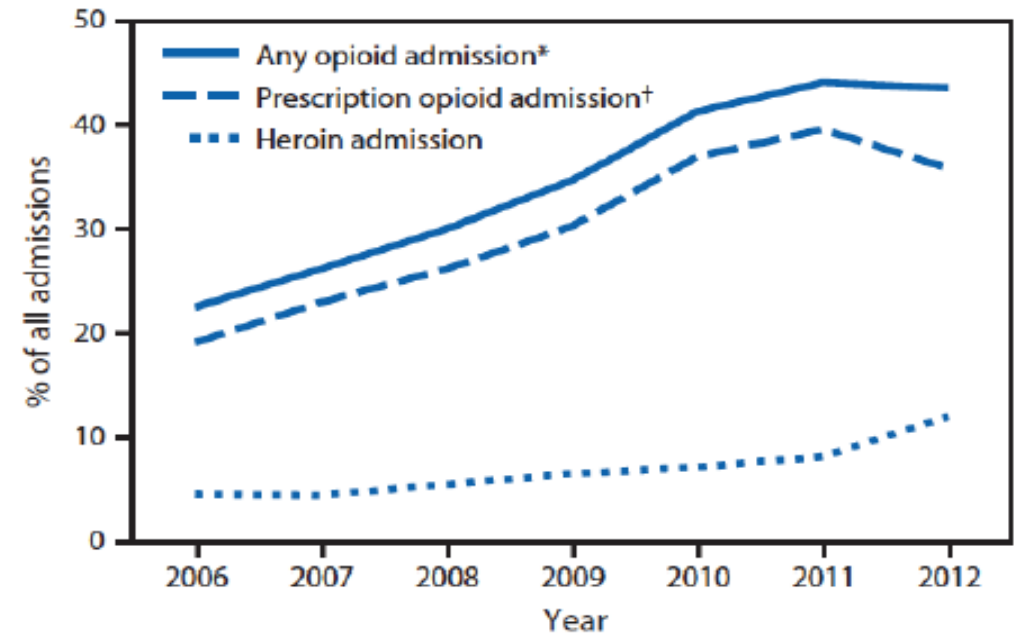
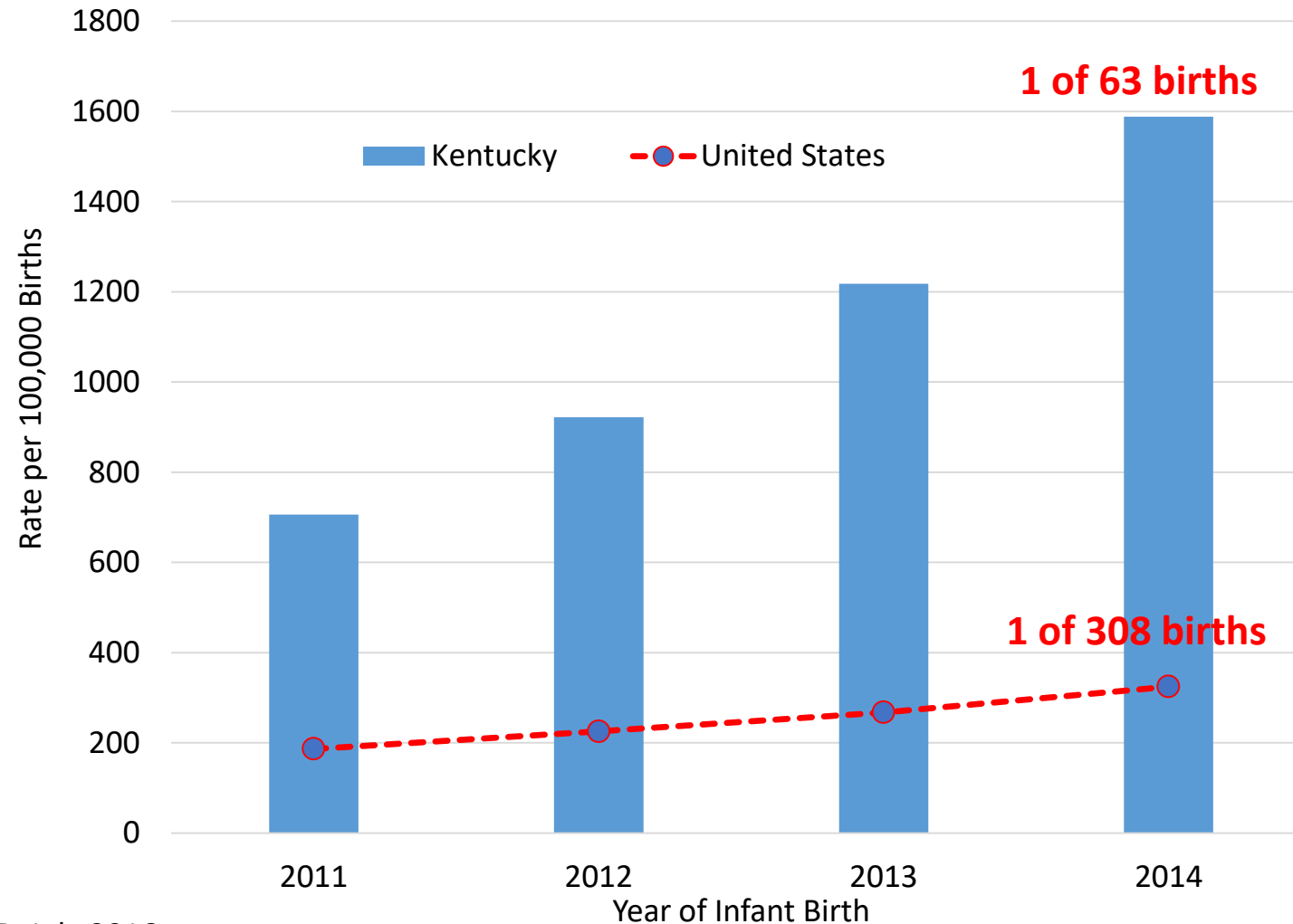


FIGURE 2. Percentage of all admissions to substance abuse treatment centers by persons aged 12–29 years (N = 217,789) attributed to the use of opioids, prescription opioids, and heroin, by year — Kentucky, Tennessee, Virginia, and West Virginia, 2006–2012



* Any opioids include heroin and prescription opioids.

Rates of HCV Infection Among Women with Live Births, United States and Kentucky

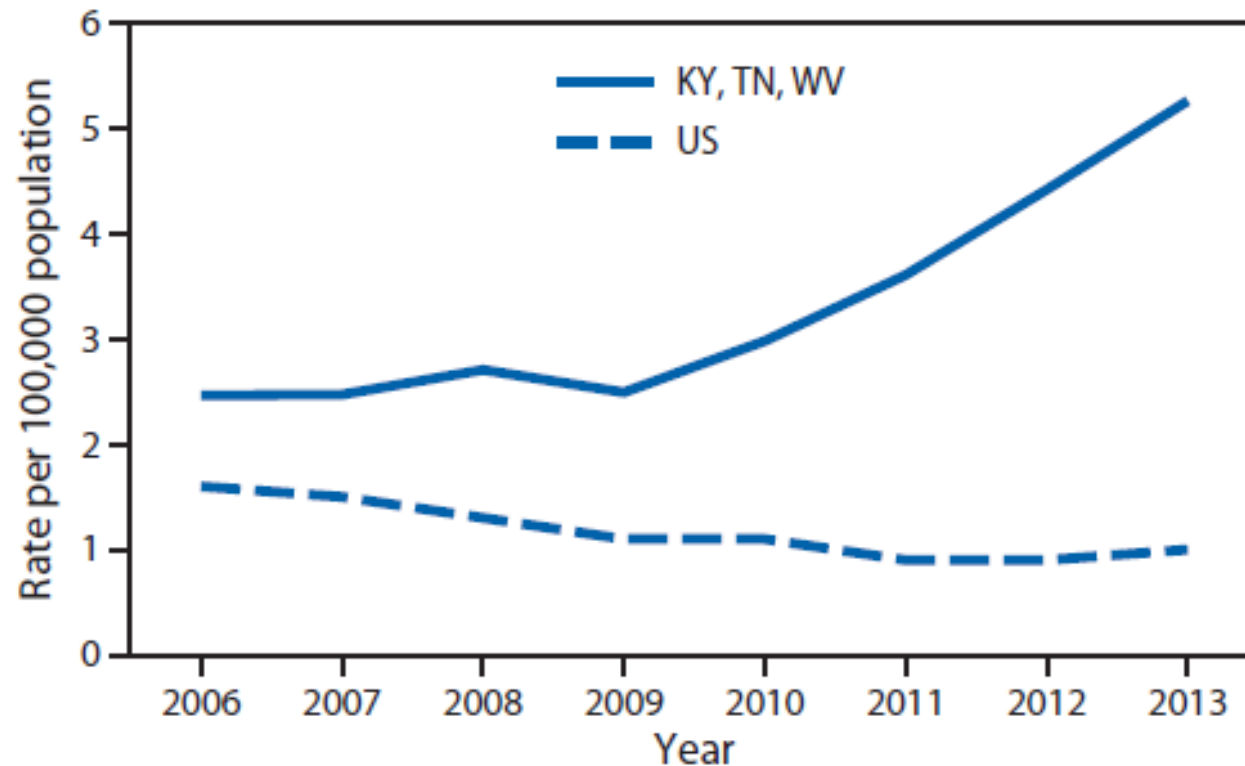


Number of babies born exposed to HCV on the rise



Hepatitis B Spikes in Areas Hit Hard by Opioid Crisis

FIGURE 1. Incidence of acute hepatitis B virus infection, by year—United States and Kentucky, Tennessee, and West Virginia, 2006–2013



Source: MMWR, January 2016

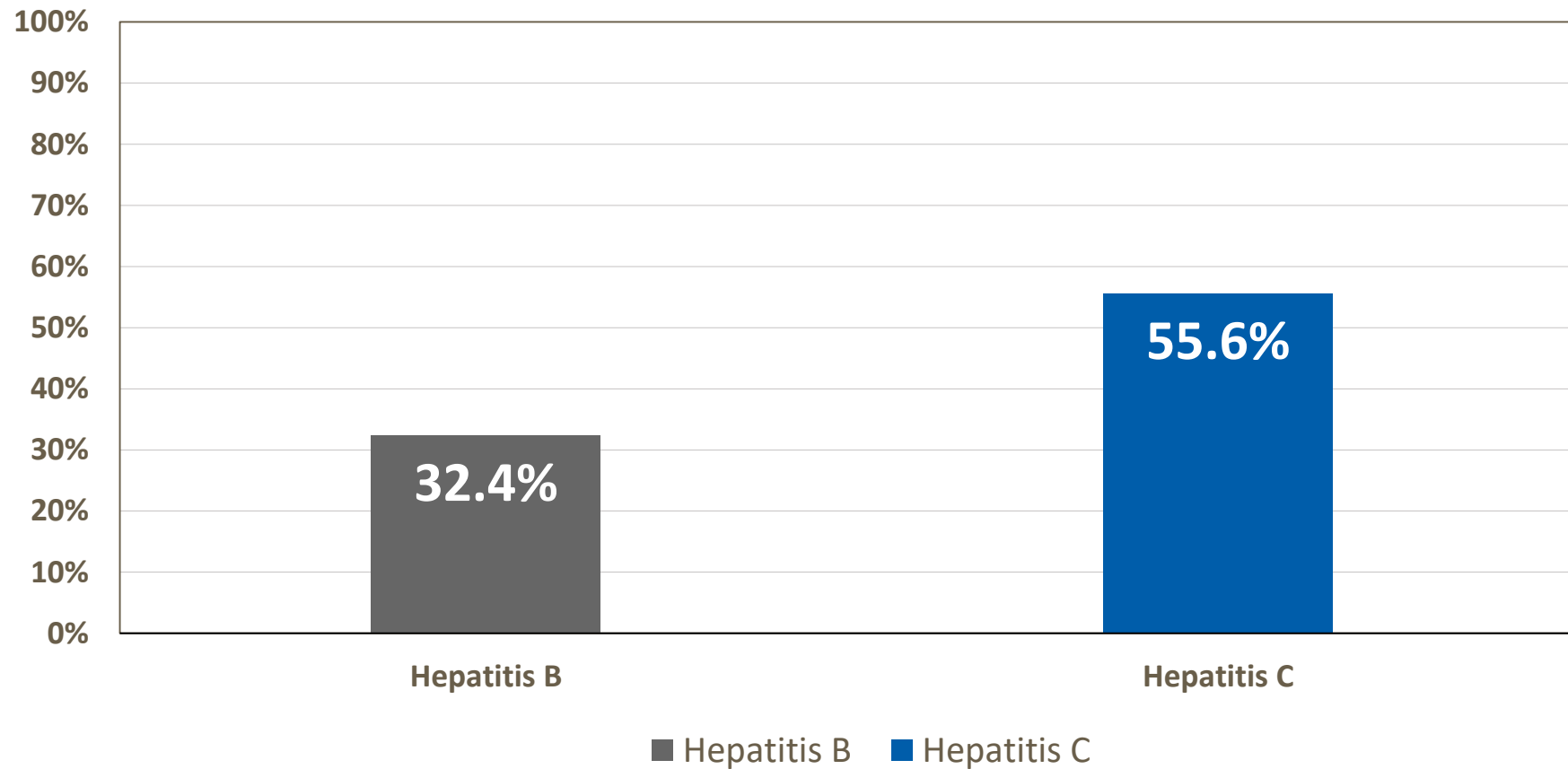
Estimated Total Cases of Acute Viral Hepatitis in the U.S. (Reported and Estimated not Reported), 2010 – 2017



Source: CDC, National Notifiable Diseases Surveillance System

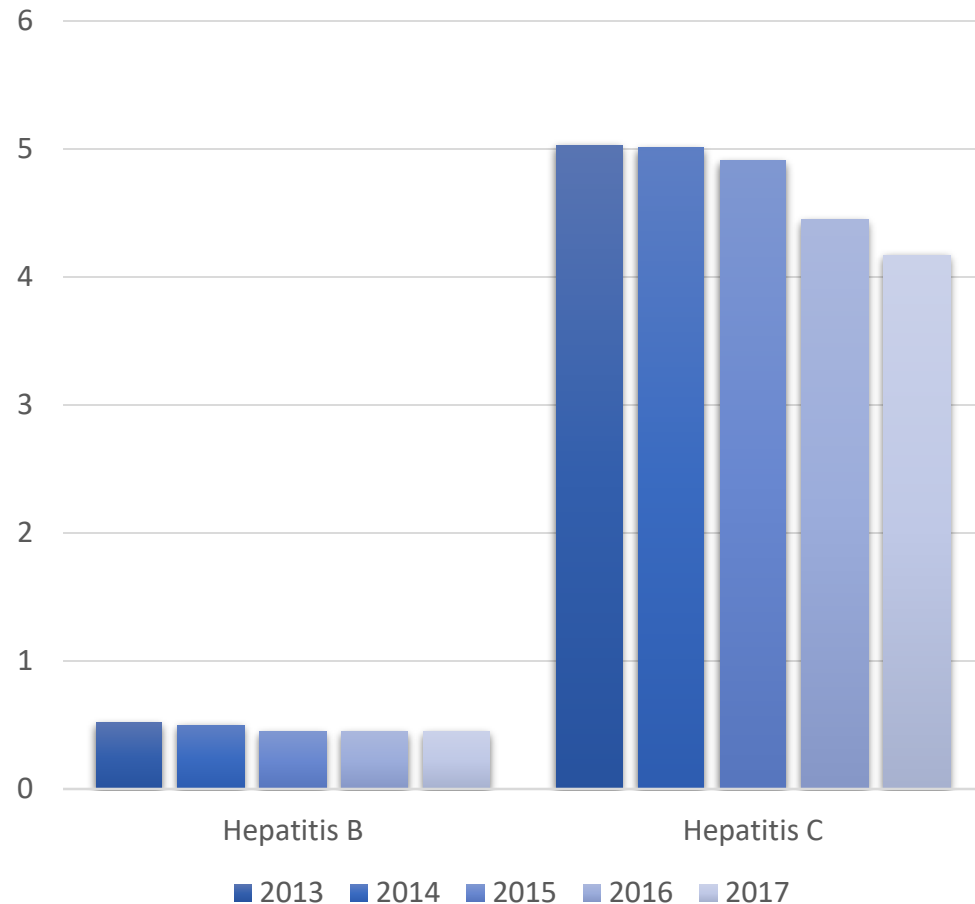
*The reported number of cases were adjusted for under-ascertainment and under-reporting to show estimated cases not reported.

Lack of Awareness of Infection Among People Living with Hepatitis B and Hepatitis C in the U.S.*



*Awareness of infection among individuals > 6 years old;
Source: NHANES 2013- 2016.

Viral Hepatitis Death Rates*, United States 2013 - 2017



Rates* among disproportionately affected populations

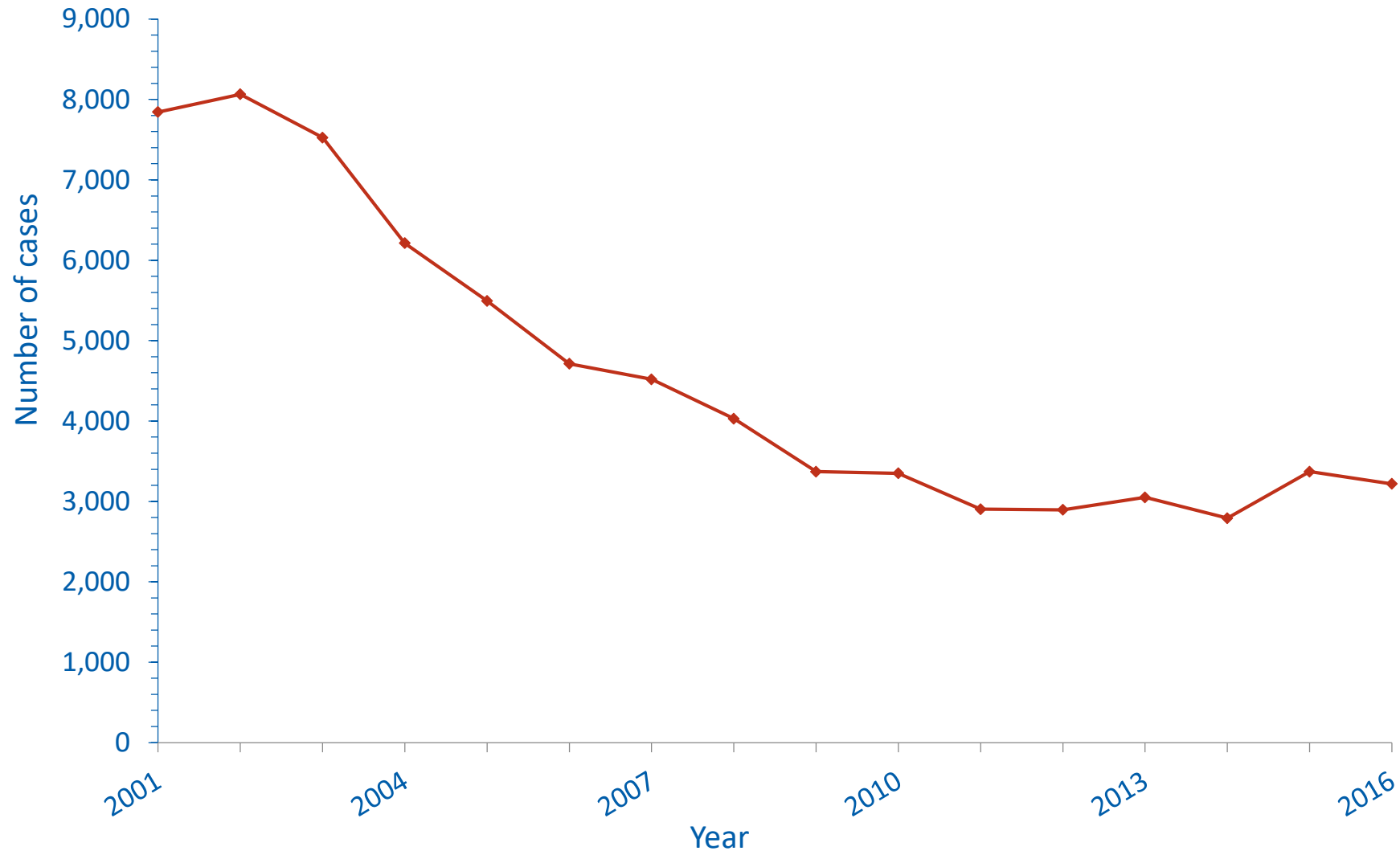
- **Hepatitis C (total = 0.5)**
 - AI/AN = 11.3
 - Blk = 7.1
 - Hisp = 5.3
- **Hepatitis B (total = 0.5)**
 - As/PI = 2.5
 - Blk = 0.8
 - AI/AN = 0.7

Source: CDC 2017 Viral Hepatitis Surveillance Report (provisional);
*Death rate per 100,000 population.

AI/AN = American Indian / Alaskan Native; Blk = Black, non-Hispanic;
Hisp = Hispanic; As/PI = Asian / Pacific Islander.

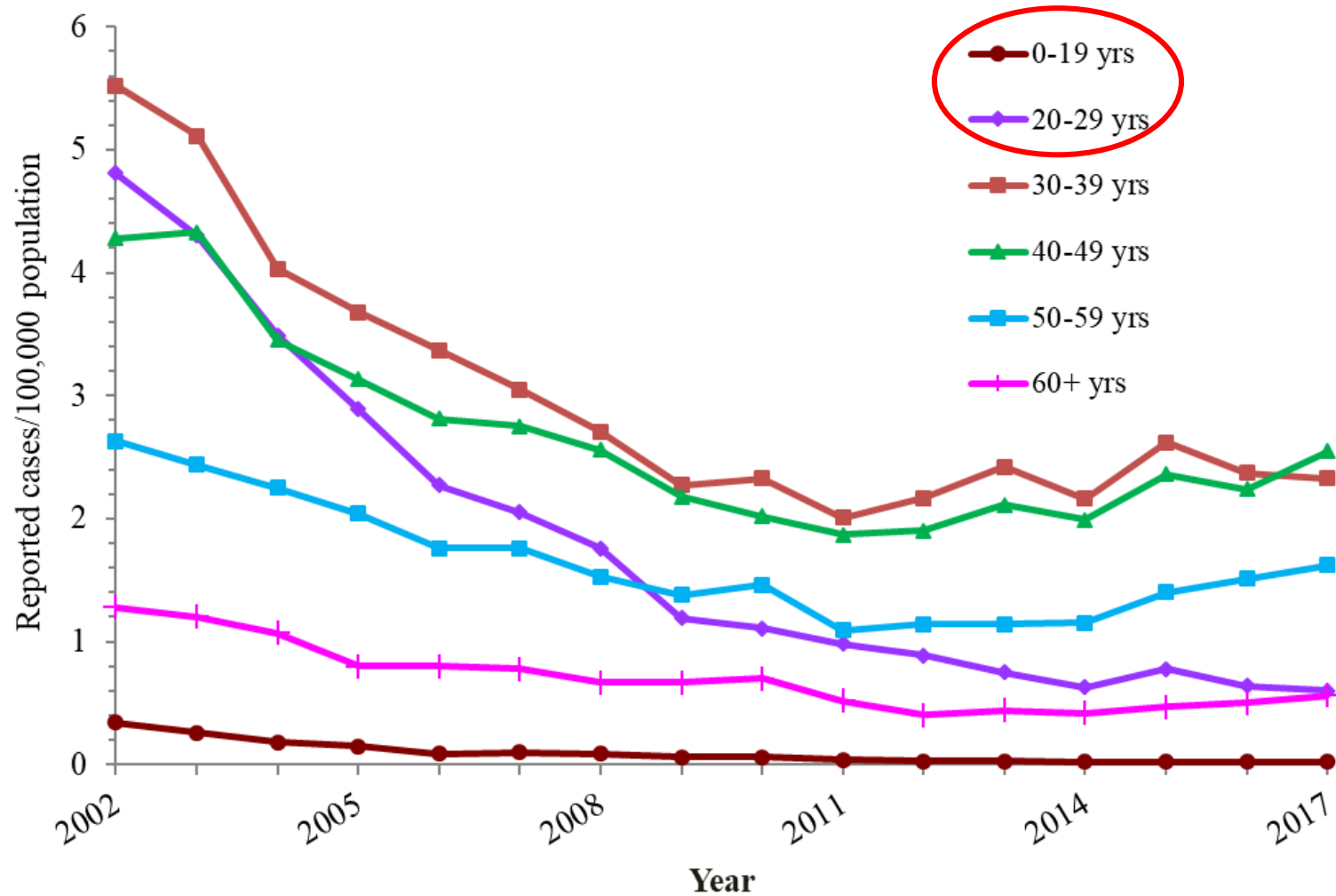
Hepatitis B: Vaccination

Acute Hepatitis B Infections Decline then Stabilize



Source: CDC, National Notifiable Diseases Surveillance System

Incidence of Acute Hepatitis B by Age Group, United States



Source: CDC, National Notifiable Diseases Surveillance System

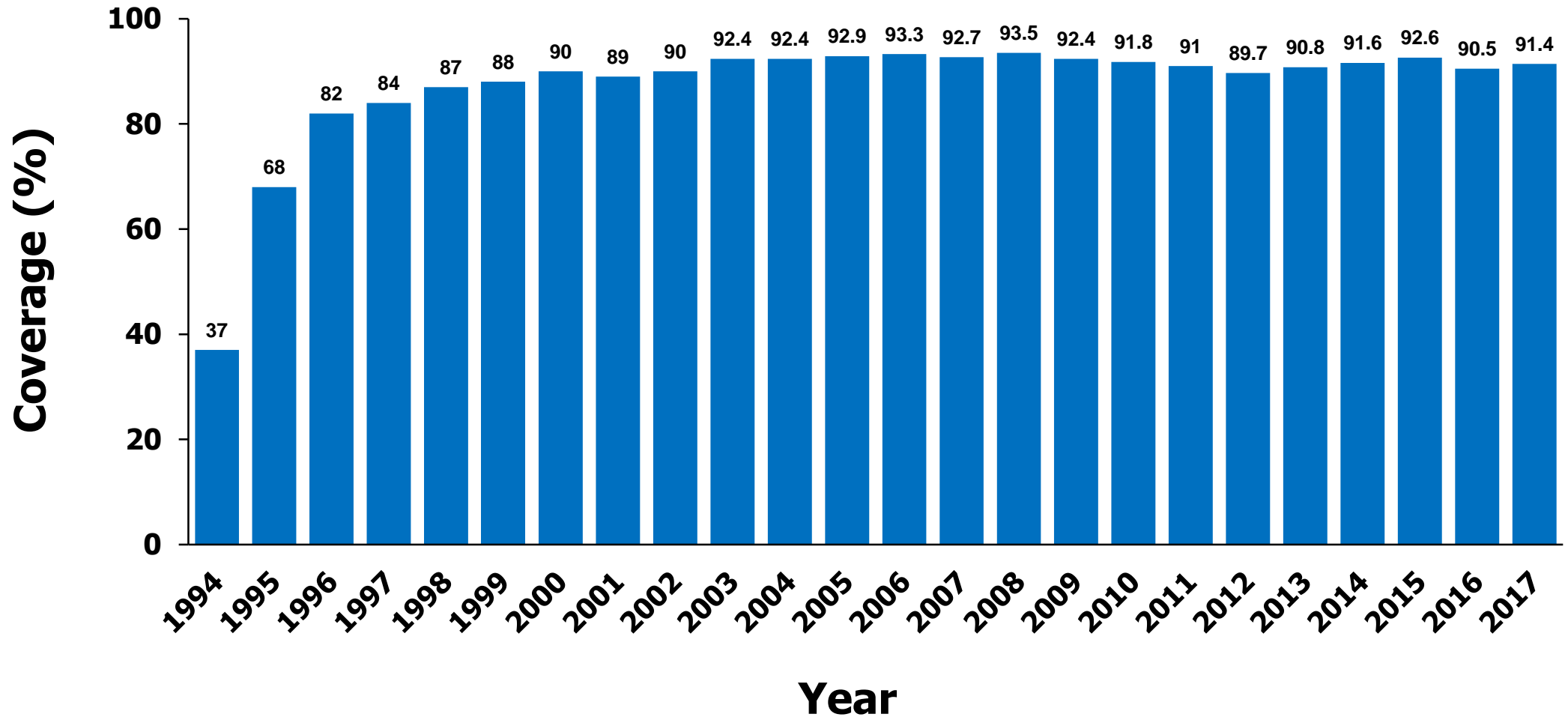
Hepatitis B Vaccine Recommendations

■ Childhood vaccination

- All infants, 1991
 - ✓ Birth dose, 2005
- All children and adolescents < 19 years of age who have not been vaccinated

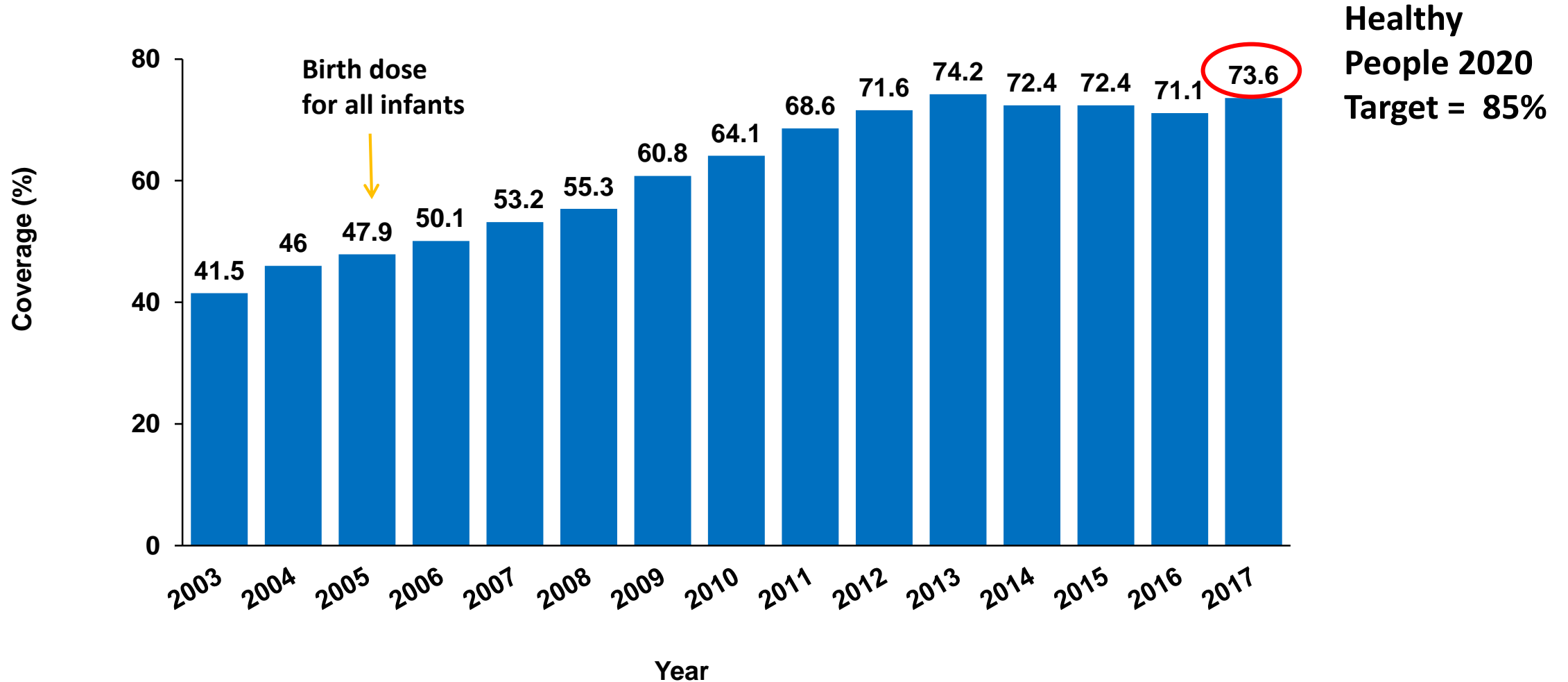
Estimated Hepatitis B Vaccination Coverage 19-35 Months of Age, U.S., 1994-2017

**Healthy People
2020 Target = 90%**



Source: National Immunization Survey, CDC

Hepatitis B Birth Dose (0 to 3 Days of Age) Vaccine Coverage, U.S., 2003-2017



Source: National Immunization Survey, CDC

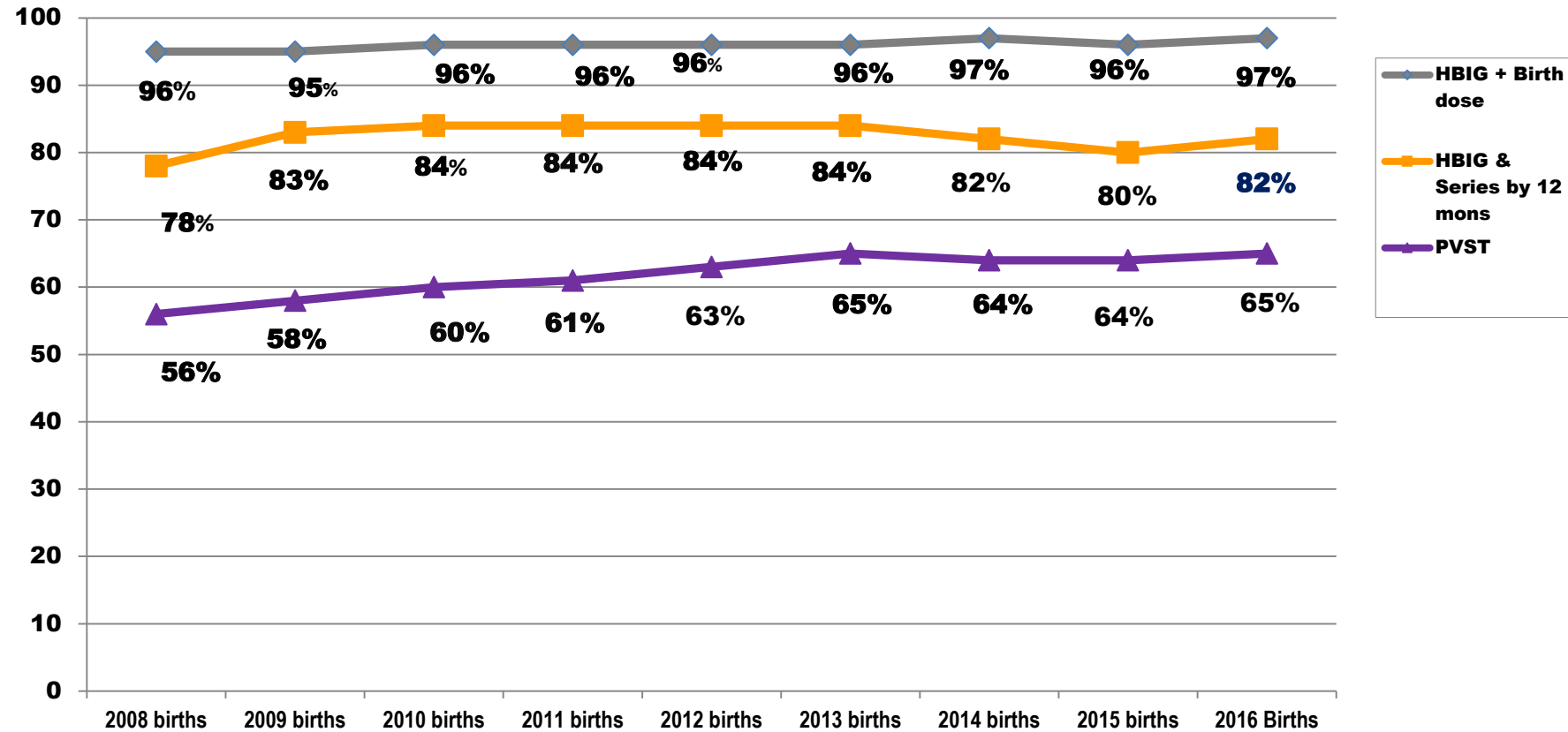
Hepatitis B Vaccine Recommendations

- **Screening of all pregnant women**
 - All infants born to HBsAg+ women
 - ✓ Accelerated birth dose + HBIG
 - HBIG alone is ~71% effective
 - Hepatitis B vaccine alone is ~75% effective
 - HBIG and hepatitis B vaccine combined is ~94% effective

U.S. Perinatal Hepatitis B Prevention Program (PHBPP)

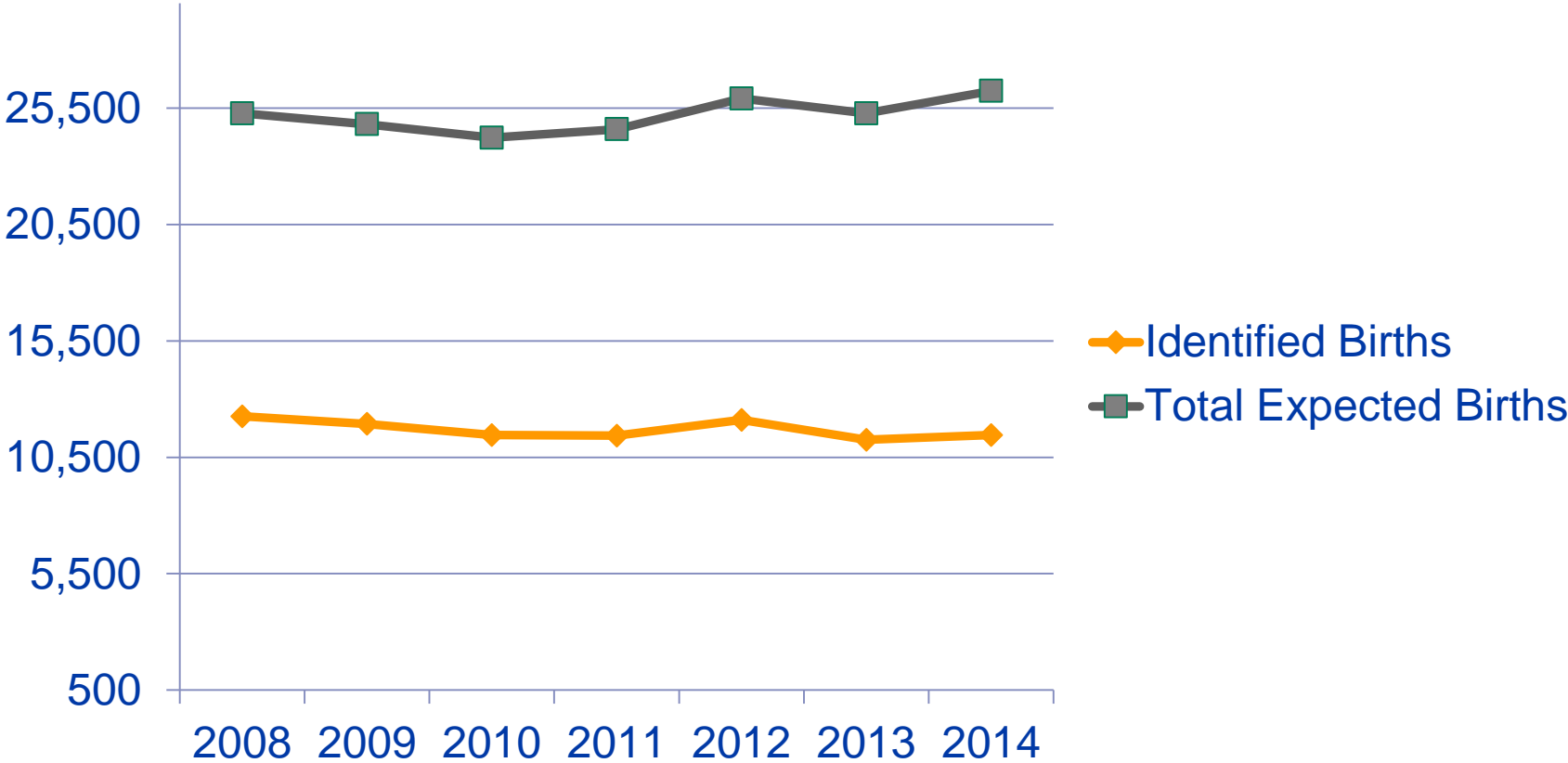
- In 1990, CDC funded the PHBPP
 - Funded in CDC immunization cooperative agreements (Section 317 funding)
- Programs in 64 jurisdictions
 - 50 states, 6 cities, 5 territories, 3 island nations
- PHBPPs aim to:
 - Identify all hepatitis B-infected pregnant women
 - Ensure timely receipt of infant post-exposure prophylaxis
 - Ensure infant post-vaccination serologic testing
 - Ensure revaccination of infants with non-response to hepatitis B vaccine

National Trends in PHBPP Indicators, 2008-2016

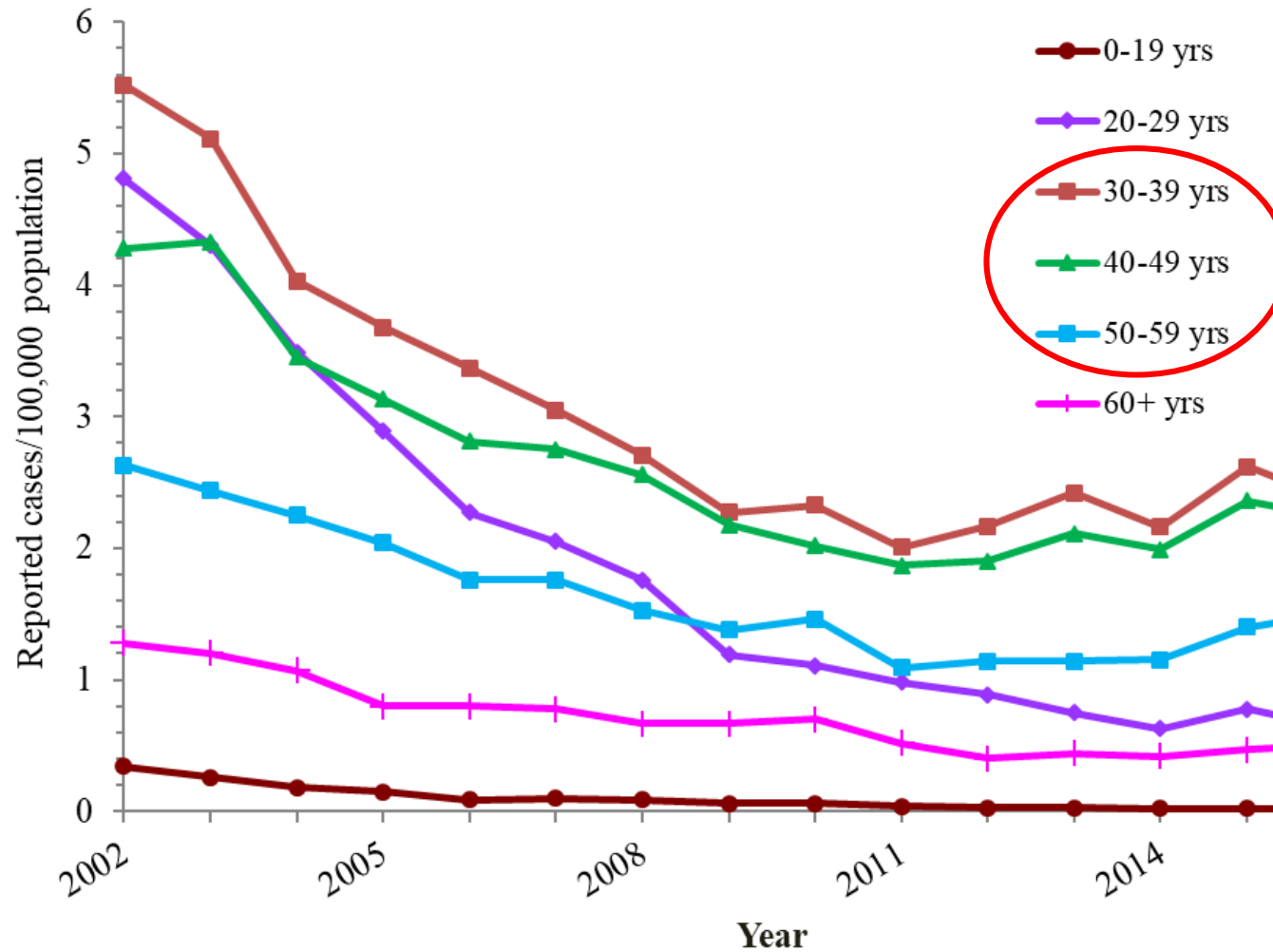


(Provisional)

Identified Births to HBsAg-positive Women Compared to Total Expected Births to HBsAg-positive Women, 2008-2014



Incidence of Acute Hepatitis B by Age Group, United States

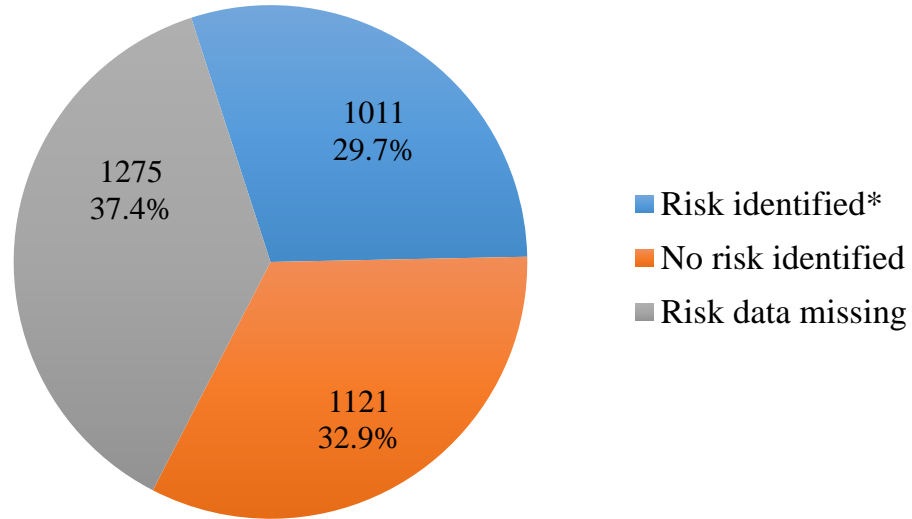


Source: CDC, National Notifiable Diseases Surveillance System

Hepatitis B Vaccine Recommendations

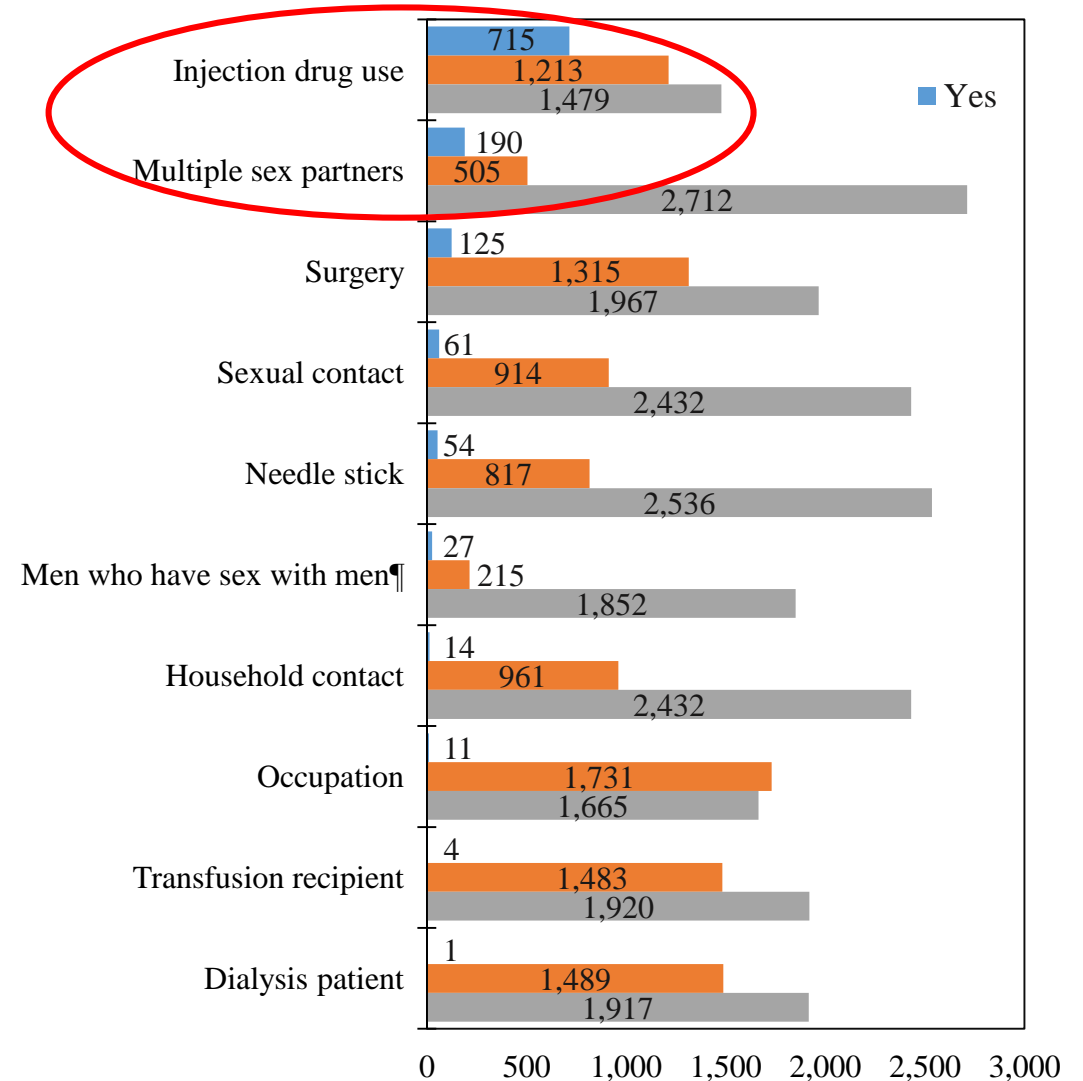
- **Groups at increased risk of HBV infection, including:**
 - People at risk for infection by sexual exposure
 - People who share needles, syringes, or other drug preparation equipment
 - People with chronic liver disease
 - People with HIV infection
 - People who are in jail or prison
 - International travelers to countries where hepatitis B is common

Reported Risk Exposure / Behavior Associated with Acute Hepatitis B, United States 2017



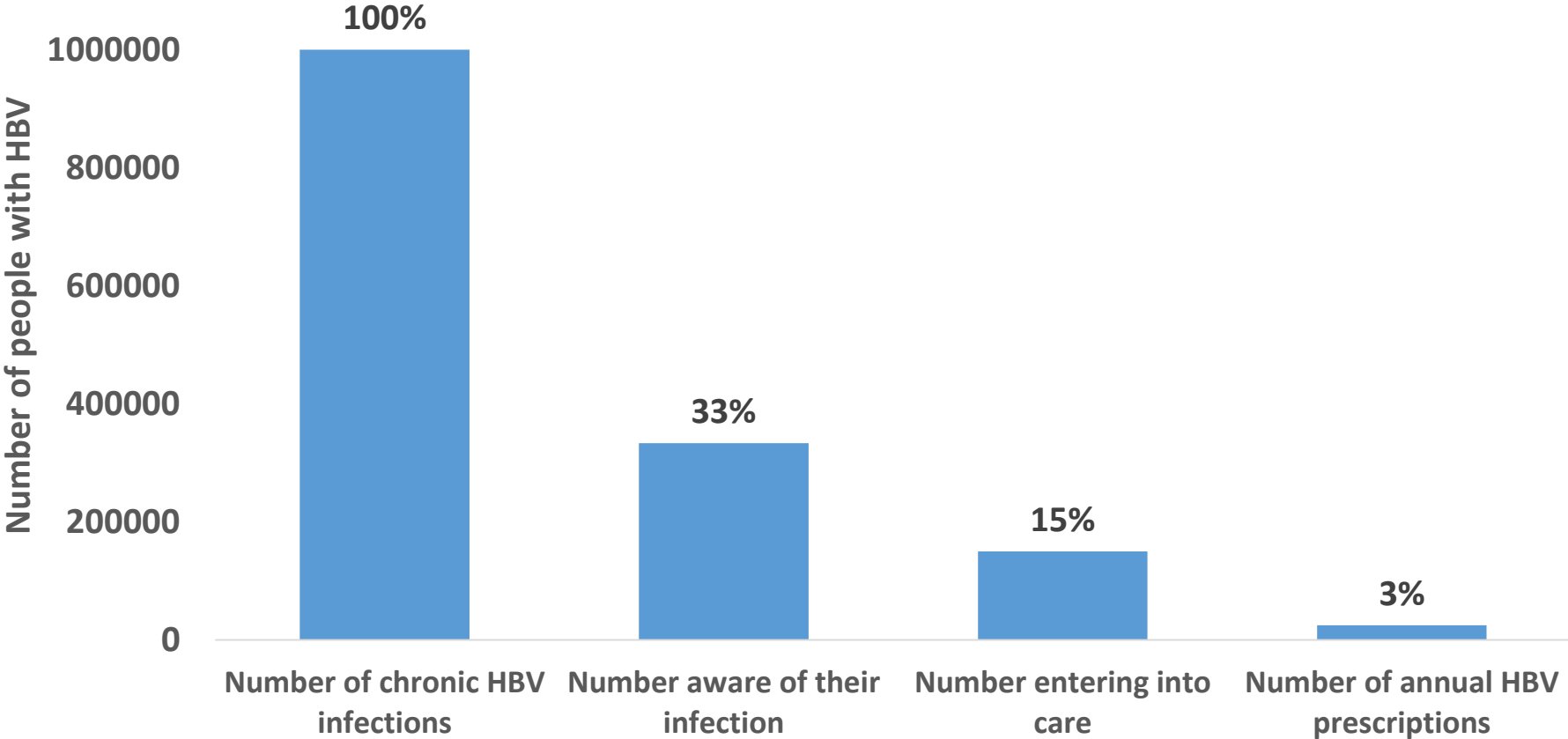
Of people reporting risk factors:

- **37.1% IDU**
- **27.3% multiple sex partners**
- 6.3% sexual contact



Hepatitis B: Testing & Linkage to Care

U.S. HBV Continuum of Care, 2011



Cohen, PLoS 2011

Supplemental Perinatal Prevention Projects

2013-2015: *Supplemental* project (CDC-RFA-PS13-1307)

- \$1.2M total for 3 years (\$200K / year / site)
- 2 sites (MI, NYC)

■ Program Elements

- Proportion of HBsAg+ pregnant women who received evaluation for and access to HBV treatment during pregnancy
- Infant outcomes
- Facility-based reporting of hepatitis B “birth dose” vaccine coverage

2016–2019: Perinatal Hepatitis B Prevention Program Auxiliary Projects (PS16-1602)

- \$2,000,000 (\$80,000 / year / site)
- 5 sites (GA, PA, MI, NY, WI)

■ Program Elements

- Increase identification of Hepatitis B-infected pregnant women
- Improve proportion infants receiving post-vaccination serologic testing
- Ascertain factors associated with perinatal hepatitis B transmission and vaccine response

Community Based HBV Testing & Linkage to Care Programs

2012–2014: 9 Sites Project

- 9 locations: NYC, Sacramento, San Francisco, Chicago, Jacksonville, San Diego, OR, MN, OH
- Sites partnered with healthcare centers and community-based organizations

■ Program Elements

- Focus on HBsAg testing among foreign-born persons
- Referral to care if HBsAg+

2014–2017: 3 Cities Project

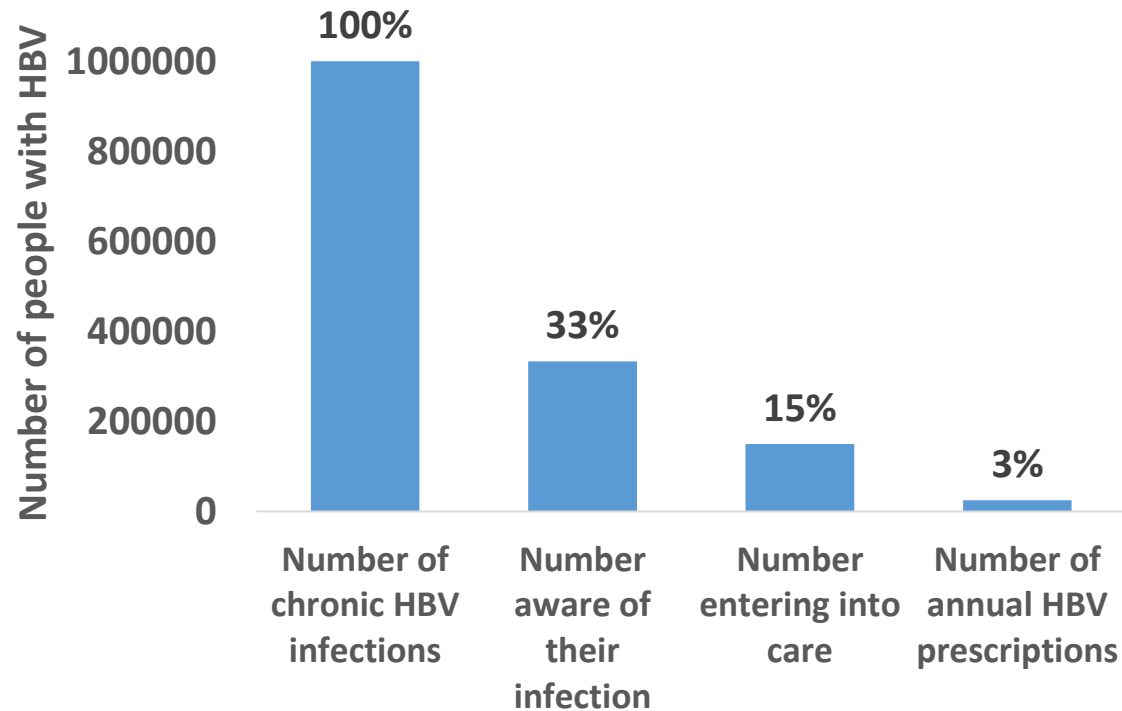
- NYC, Chicago, Sacramento

■ Program Elements

- Improve capacity of healthcare providers to serve populations of persons born in countries with high HBV prevalence
 - Increase testing of non-US-born persons for HBV
 - Increase vaccination of susceptible persons
 - Increase linkage to ongoing, high quality HBV-directed care for persons identified with HBV

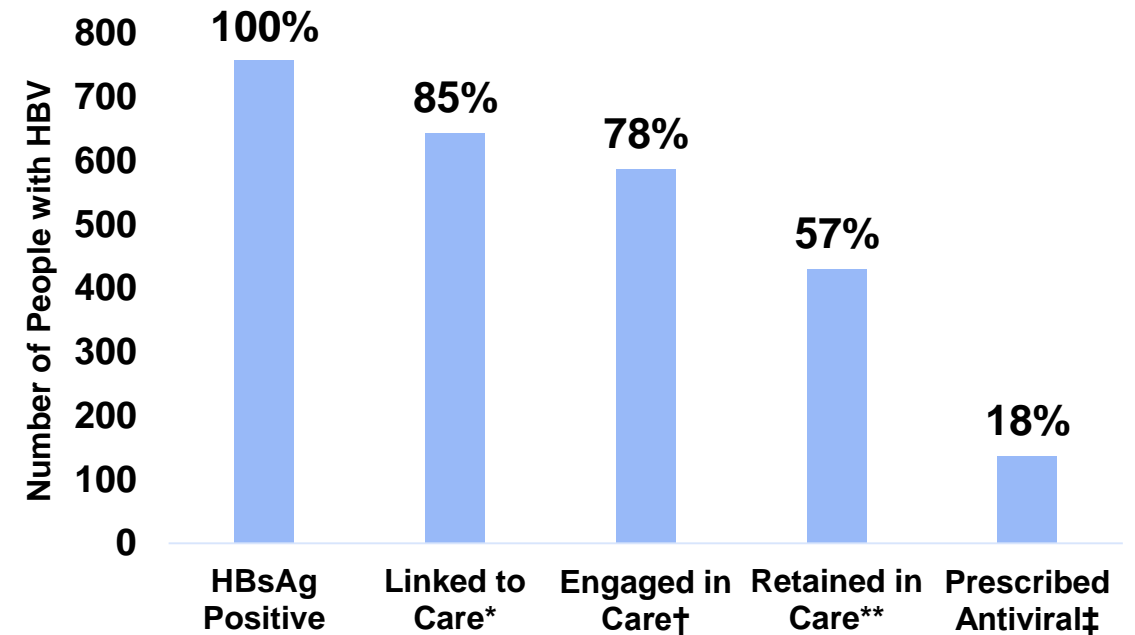
Demonstration Project Deliverables

U.S. Hepatitis B Continuum of Care, 2011



Cohen, PLoS 2011

3 Cities Hepatitis B Continuum of Care, 2014-2017



Harris, MMWR 2018

Partnership to Combat Transmission of HBV (OMH, HHS, CDC)

- **2019-2022: *Hepatitis B Demonstration Grant* (MP-CPI-19-001)**
 - \$3.0M for up to 3 years
 - 7 awards
- **Program Elements:**
 - Encourage collaboration:
 - Academic partners, community-based minority-serving organizations, local service organizations
 - Develop model comprehensive hepatitis B programs that:
 - End transmission of HBV (perinatal, children, and adults), and
 - Reduce morbidity and mortality attributable to ongoing HBV infection

Hepatitis B: Education

Know Hepatitis B Campaign



Multilingual campaign developed by CDC & Hep B United

- Launched in 2013 with new phases ~ each year
- **Goal:** Increase testing for chronic Hepatitis B
- **Audience:** Asian Americans
- **Languages:** Chinese, Korean, Vietnamese
- **Channels:** TV, radio, print, digital ads
- **Patient Education Materials:** videos, posters, infographics, flyers, fact sheets, cards, etc
- **Implementation:** Two prong approach

www.cdc.gov/KnowHepatitisB

NATIONAL CAMPAIGN RESULTS

- To date...



~\$3.7 Million
in Media Value

New “Liver” Video in Chinese, Vietnamese & Korean



New “Doctor” Video for Vietnamese Audiences



Viral Hepatitis Prevention Key Issues

- Test and link to care (HBV) & cure (HCV)
- Reduce spread associated with drug use
- Prevent perinatal transmission
- Implement HBV and HAV vaccination
- Rapidly detect and respond to outbreaks
- Improve surveillance



Thank You!

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