
Hepatitis B

What You Need to Know

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Outline

- Hepatitis overview
 - Symptoms
- Hepatitis B virus (HBV)
 - Transmission
 - Infection/Outcomes
 - Occupational exposures
 - Prevention/Treatment
 - Vaccination programs

Hepatitis

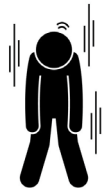
- Inflammation of the liver
- You can get hepatitis:
 - Alcohol
 - Drugs
 - Viruses
- HAV=hepatitis A virus
- **HBV=hepatitis B virus**
- HCV=hepatitis C virus
- HDV=hepatitis D virus
- HEV=hepatitis E virus



Symptoms



Fever



Aching muscles
and joints/Fatigue



Loss of appetite



Stomach pain



Nausea



Vomiting



Dark urine, pale stools,
or diarrhea



Jaundice

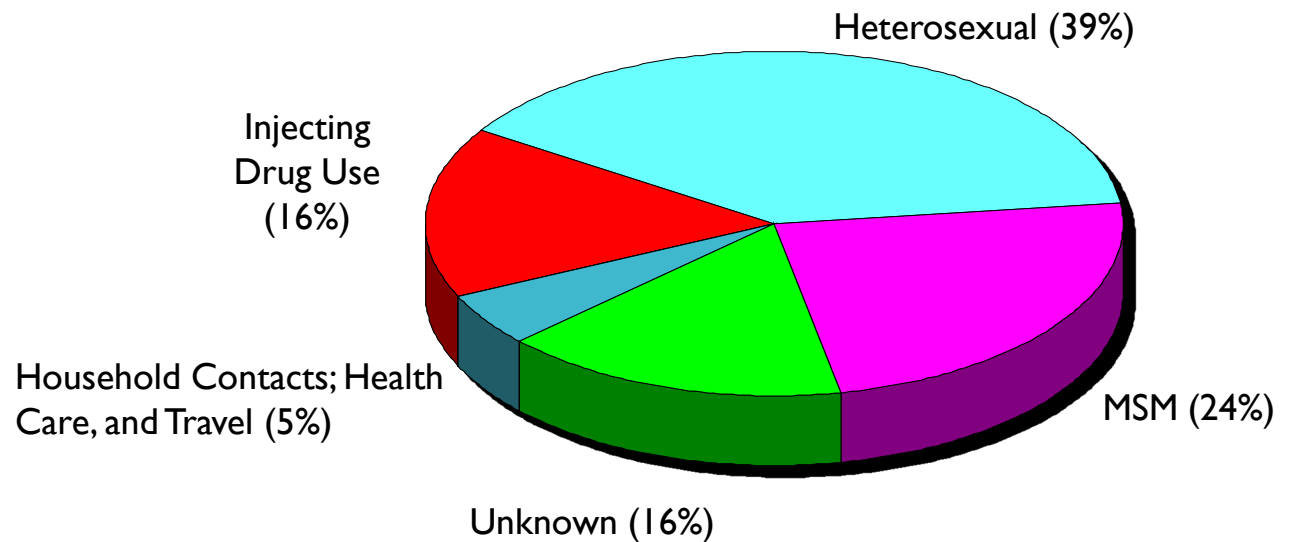
Hepatitis B Virus (HBV) Transmission

- Bloodborne
 - Toothbrushes, razors, nail clippers
 - Unsterile tattooing and body piercing equipment
 - Infectious - up to one week
- Sexual
- Perinatal
- Occupational – needle sticks, blood/body fluid exposures, not following universal precautions
- Virus found in body fluids of infected persons
 - Blood
 - Semen
 - Vaginal secretions



Hepatitis B Demographics (U.S.)

- Highest rate of disease by age
 - 24 – 49 year olds
- Highest rate of disease by risk group
 - 39% heterosexual transmission
 - 24% male to male
 - 16% IDU
 - 16% unknown
 - 5% household, occupational and travel



Rate of HBV Infection

- U.S.
 - Late 1980s to early 1990s
 - 150,000 to 320,000 new infections annually
- 1990 to 2004 – (vaccination programs)
 - Overall incidence - declined (75%)
 - Children and adolescents - declined (94%)
- 2018
 - 19,000 new infections annually



HBV Infection - Outcome

■ **Acute infection**

- Having HBV for less than 6 months
- May never have any symptoms
- May become fulminate
 - Quick onset of disease
 - 200 - 300 deaths/year in U.S.
- Recovery within 6 months, or

■ **Chronic infection**

- Having HBV for more than 6 months
- May never show symptoms
- 350 million people worldwide
- 800,000 to 2.2 million people in U.S.
- Cirrhosis (scarring of the liver)
 - 3,000 – 4,000 deaths/year
- Liver cancer
 - 1,000 – 1,500 deaths/year



Symptomatic/Chronic HBV by Age at Infection

Age at infection	Symptomatic HBV Infection	Chronic HBV
< 1 year	< 1 %	90%
1 – 5 years	5 – 15%	25 - 50%
>5 years	20 – 50%	6 – 10%

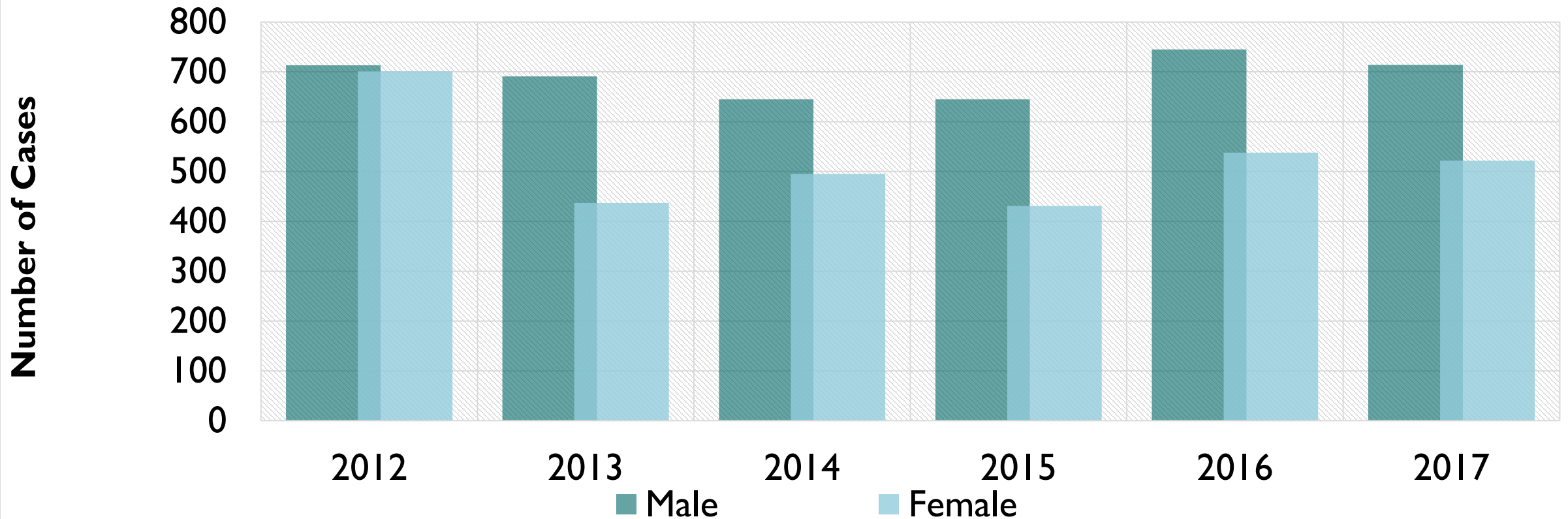
Acute/Chronic HBV Reported Cases

- MI data

Year	Acute	Chronic
2015	61	1,076
2016	47	1,268
2017	64	1,237
2018	74	1,056

Chronic HBV Cases by Gender MI 2012-2017

Chronic Hepatitis B Cases per 100,000 Population by Gender, MI, 2012-2017



Occupational Exposure – Risk of Infection

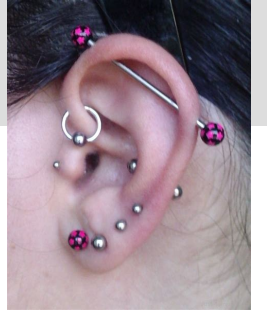
Exposure	Percutaneous	Mucocutaneous	Non-Intact Skin
HBV	1 in 30	1 in 70	<1 in 70
HIV	1 in 300	1 in 1000	<1 in 1000
HCV	1 in 500	Rare	Rare

2008 - 2017 HBV Reported Outbreaks

- **Historically** – there were many reports of infected healthcare workers prior to implementing Universal Precautions/bloodborne pathogens
- **24** healthcare - associated outbreaks
 - **179** - associated cases (infected)
 - More than **10,935** people notified for screening
 - **6 outbreaks** (free dental clinic - school gymnasium, outpatient oncology clinic, hospital surgery service and 2 pain clinics)
 - Hygiene lapses
 - **18 outbreaks** in long-term care facilities (including home care)
 - Improper use of blood glucose monitors
 - Sharing single finger stick devices (single use devices)
 - None were identified in MI

Transmission of HepB Through Body Piercing

Journal of Medicine Abstract (Oct 2015)



- 10 studies with 33,201 participants (11 different countries)
 - Ages 14 – 64
 - Included street youth, general community, blood donors and students
 - Excluded those who had other risk factors (IDUs, prisoners, had a recent blood transfusion, sex workers and others who were high-risk)
- Found – a larger number of students/younger population were infected with hepB after a piercing in countries with less regulated facilities and who lacked quality health care services
- Found - larger cities with better health services lead to safer body piercing procedures
 - Believe it had to do with licensing/supervision – integrating bloodborne pathogen standards
 - Having health services that included hepB vaccination programs
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5058954/>

Preventing Occupational - HBV Transmission

- Practice universal precautions and routine barrier precautions
- Ensure you/staff get hepatitis B (hepB) vaccine and have follow-up testing
 - Protects your clients
 - Protects you
 - Exposures due to
 - Blood
 - Infectious body fluids



Currently Recommended HepB Vaccines

- Monovalent (single antigen) formulations (all ages)
 - Engerix-B® or Recombivax HB®
 - 3 doses (0, 1 and 6 months apart)
- Adult combination formulations
 - Twinrix® (≥18 yrs) – Hepatitis A, Hepatitis B
 - 3 doses (0, 1, and 6 months apart)
 - Heplisav-B (≥18 yrs.)
 - 2 doses (0 and 1 month apart)



Who Else Should get Hepatitis B (HepB) Vaccine?

- **ANYONE** who wants to be **PROTECTED** from getting **HBV**
- All infants and children
- All adults:
 - At risk for infection by sexual exposure (e.g., sex partner of a HBV-infected person, multiple sex partners, MSM, people evaluated or treated for a STI)
 - At risk for infection by percutaneous or mucosal exposure to blood (e.g., household contacts of HBV-infected persons, IDUs, healthcare, or public safety workers, people with end-stage renal disease, are dialysis patients, or have diabetes)
 - Others (e.g., international travel to regions with high/intermediate HBV endemicity, persons with chronic liver disease, HCV, or HIV, and incarcerated persons)



Vaccination Programs

■ **Universal Hepatitis B for Newborns**

- Free hepB vaccine to all birthing facilities for all babies born in MI
 - Encourages immunization of all newborns with birth dose of hepB vaccine

■ **Vaccines for Children (VFC)**

- For all children 0-18 years of age
 - Medicaid – eligible or enrolled
 - Uninsured
 - American Indian or Alaskan Native
 - Underinsured (may have insurance but does not include vaccine)

■ **Perinatal HepB Prevention Program (PHBPP)**

- To prevent perinatal transmission of HBV to infants exposed at birth
- We **IDENTIFY** and **TEST** all pregnant women for hepatitis B surface antigen (HBsAg)
- **TEST and TREAT** her infant(s), household and sexual contacts
 - Free testing
 - Free hepB vaccine
 - Case management

www.michigan.gov/hepatitisB

Vaccination Programs (continued...)



■ High-Risk Hep A and B

- To protect adolescents and adults at increased risk for hep A/hepB infection regardless of insurance
- Seen in STD clinics, teen health centers and family planning clinics (even those in LHDs)
- With risk factors
 - Household, sexual contact; sexually active; STIs, MSM, IDU, liver disease, diabetes, HCV, HIV, renal disease, dialysis

■ MI – Adult Vaccine Replacement (MI-AVP) Program

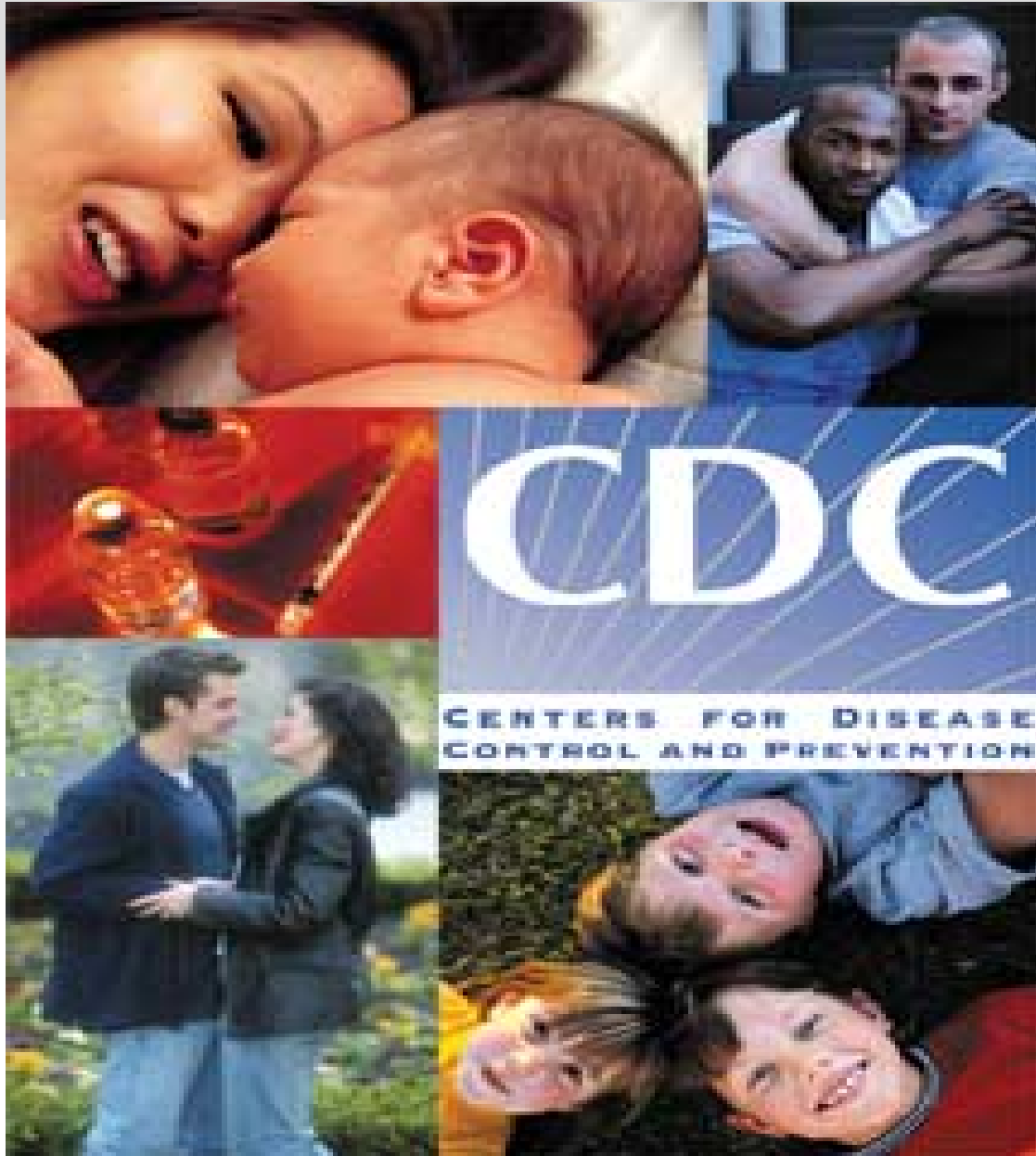
- Uninsured and underinsured adults 19 and older
- With risk factors for hepB
- Seen in LHDs, Federally Qualified Health Centers (FQHCs), Migrant Health Centers (MHCs), Tribal Health Centers (THCs)

Get Tested - Understanding HepB Labs

- **HBsAg** = hepatitis B surface antigen – marker for **infection**
 - **Positive = infected**
- **Anti-HBs** = hepatitis B surface antibody – marker to show **protection/immunity**
 - **Positive = protected**
- **HBcAb IgM** = hepatitis B core antibody IgM – marker to show if **recent exposure** (less than 6 months)
 - **Positive = recently infected**
- **HBcAb IgG/IgM** = hepatitis B core antibody total – marker to show if **ever been exposed**
 - **Positive = came in contact with the virus sometime in their lifetime**

HBV Treatment

- **Discuss treatment with a specialist!**
- Treatment for HBV reduces replication of the virus (slows it down), but rarely resolves it
- Most people will have HBV for the rest of their lives
 - So get hepB vaccine and a blood test to make sure you are protected from getting HBV



*Hepatitis
can happen
to anyone...*

Questions??

