Hepatitis B Virus among Participants of a Syringe Services Program in Philadelphia, PA

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CITY OF PHILADELPHIA

Hepatitis B Virus (HBV)

Hepatitis B is spread through bodily fluids:
Semen, Vaginal, Blood, Mother-Child

Often Asymptomatic. Life-long infection with no cure.

Symptoms: Fatigue, Nausea, Jaundice, Stomach Pain, Dark Urine, Grey or Clay-colored Stool.

Prevented by practicing safe sex,
vaccination, and accessing care if infected.

Hepatitis B Virus (HBV)

- Infection can be acute or chronic
- Infection longer than 6 months is chronic
- Those with chronic infection are unable to rid the virus from their body
- Chronicity is related to age at infection
  - 90% of babies and children develop chronic infection
  - These are the individuals at highest risk for liver disease, cirrhosis, liver cancer and premature death
  - There is no cure, but there are FDA approved treatments that slow the virus down and can prevent liver damage
- 5-10% of those infected as adults develop chronic infection
- Increasing among people who use drugs (PWUD)

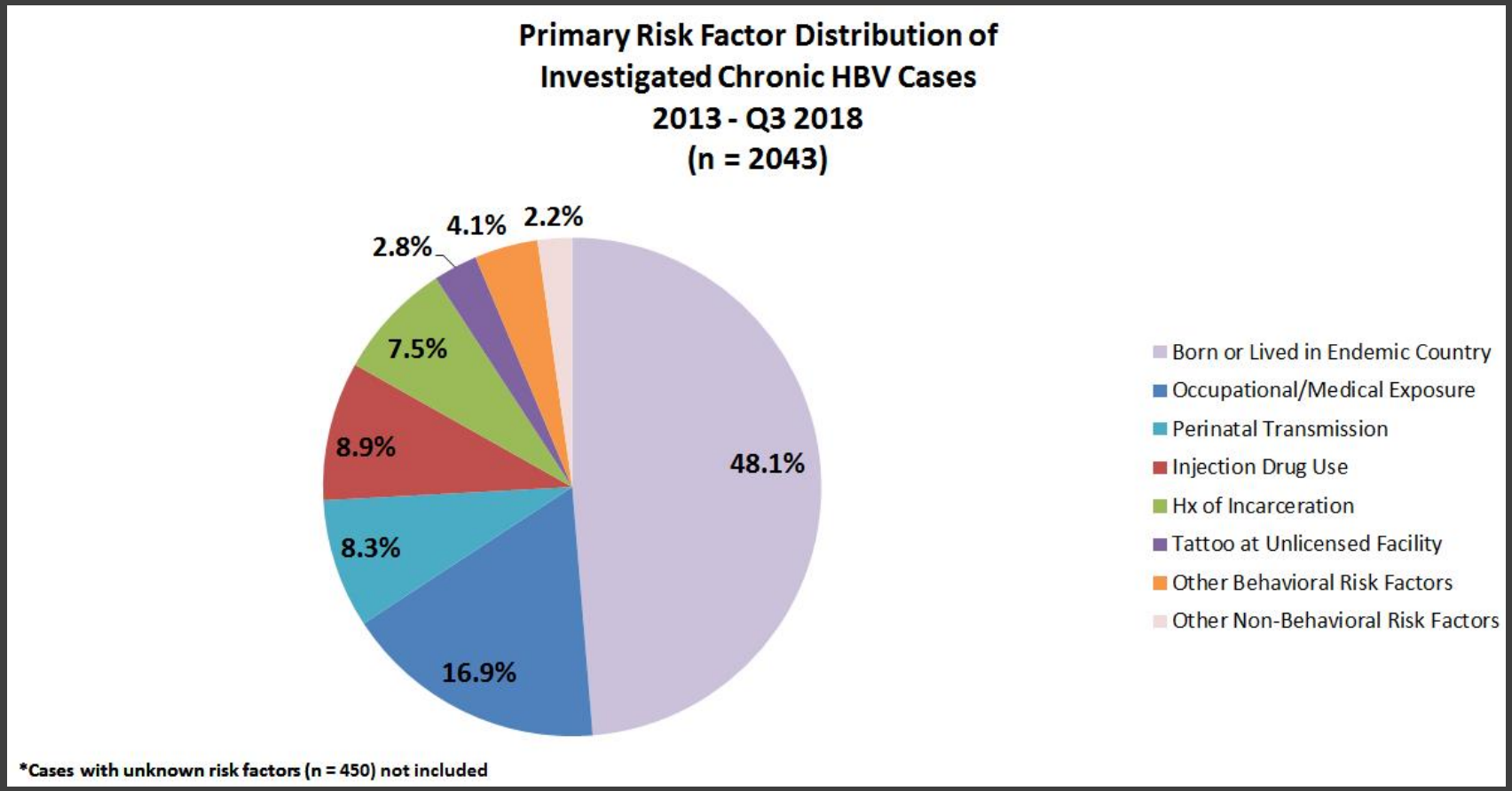
Hepatitis D Virus (HDV)

- An incomplete DNA virus
- Only capable of replicating in the presence of HBV
- Has been noted among PWUD
- Getting the HBV vaccine protects from HDV, too!

High-Risk Groups

- Individuals born in endemic areas of the world, and their children
- Persons who live with or have sexual contact with infected persons
- Sexually active individuals
- Men who have sex with men (MSM)
- Those who received blood before 1992
- Infants born to mothers infected with hepatitis B
- Healthcare workers and providers, 1st responders
- Dialysis patients
- Individuals receiving blood products (i.e.hemophilia)
- Long-term care residents

Risk Factors of HBV in Philadelphia



Study Objectives

- Assess HBV and HDV prevalence and immunity among PWUD
  - HBV infection
  - HBV immunity
  - HDV infection
- Assess HBV and HDV among certain sub-groups with known risk factors
- Educate study participants about viral hepatitis prevention and harm reduction
- Link participants with infections to care

METHODS

Study Overview

- Design: cross-sectional serological study
- Setting: syringe services program (SSP) in Philadelphia
- Eligibility:
  - Client of the SSP
  - Adults (≥18 years old)
  - English- or Spanish-speaking
  - Self-reported history of drug use or current homelessness
- Timeframe: January – April, 2018
- Goal sample size: 400 participants

Serological Testing

- Blood specimens obtained for eligible participants
- Measurements of:
  - HBV surface antigen (HBsAg)
  - HBV surface antibody (anti-HBs)
  - Total HBV core antibody (anti-HBc)
  - HDV total antibody (anti-HDV)
- Testing performed at the Philadelphia Public Health Laboratory

Study Process

Day of:

- Recruitment
- Consent
- Blood draw
- Questionnaire
- Harm reduction

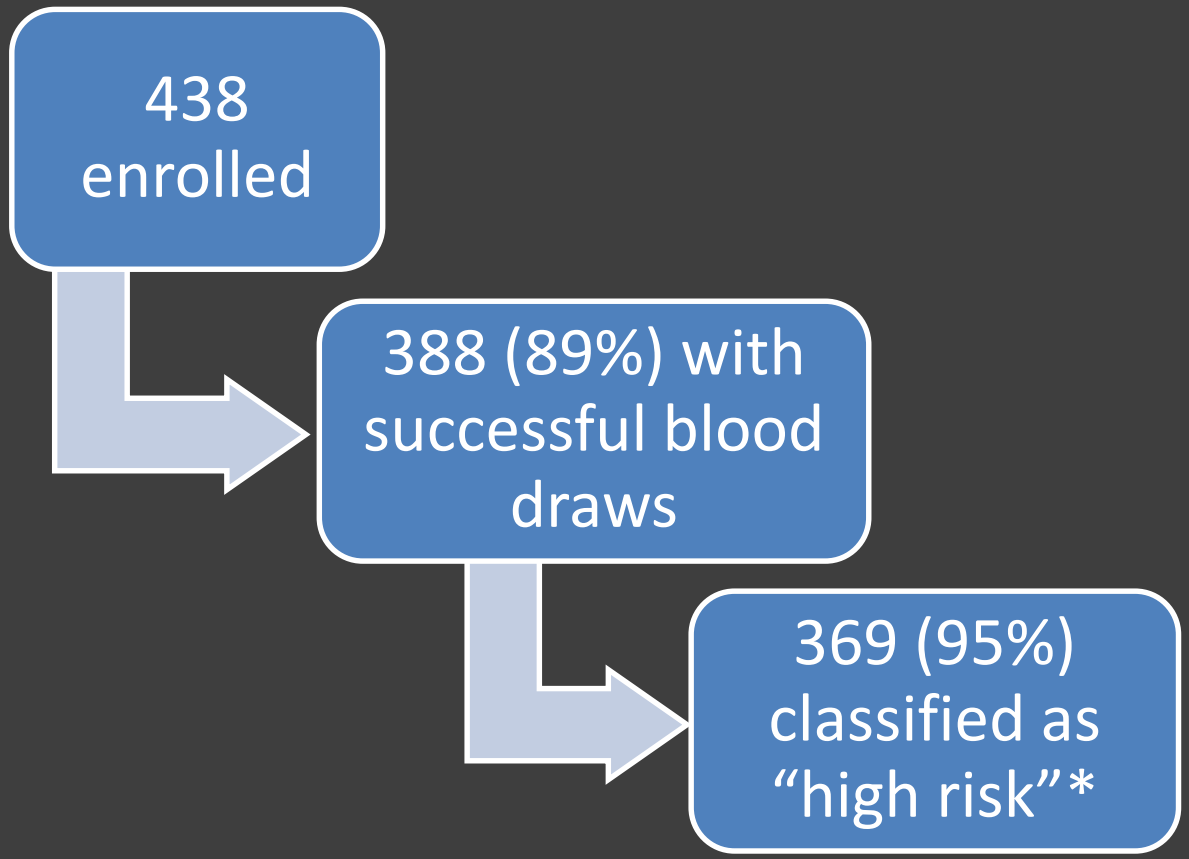
Follow-up:

- Communicate results
- Link to care*
- Provide vaccine*

*where applicable

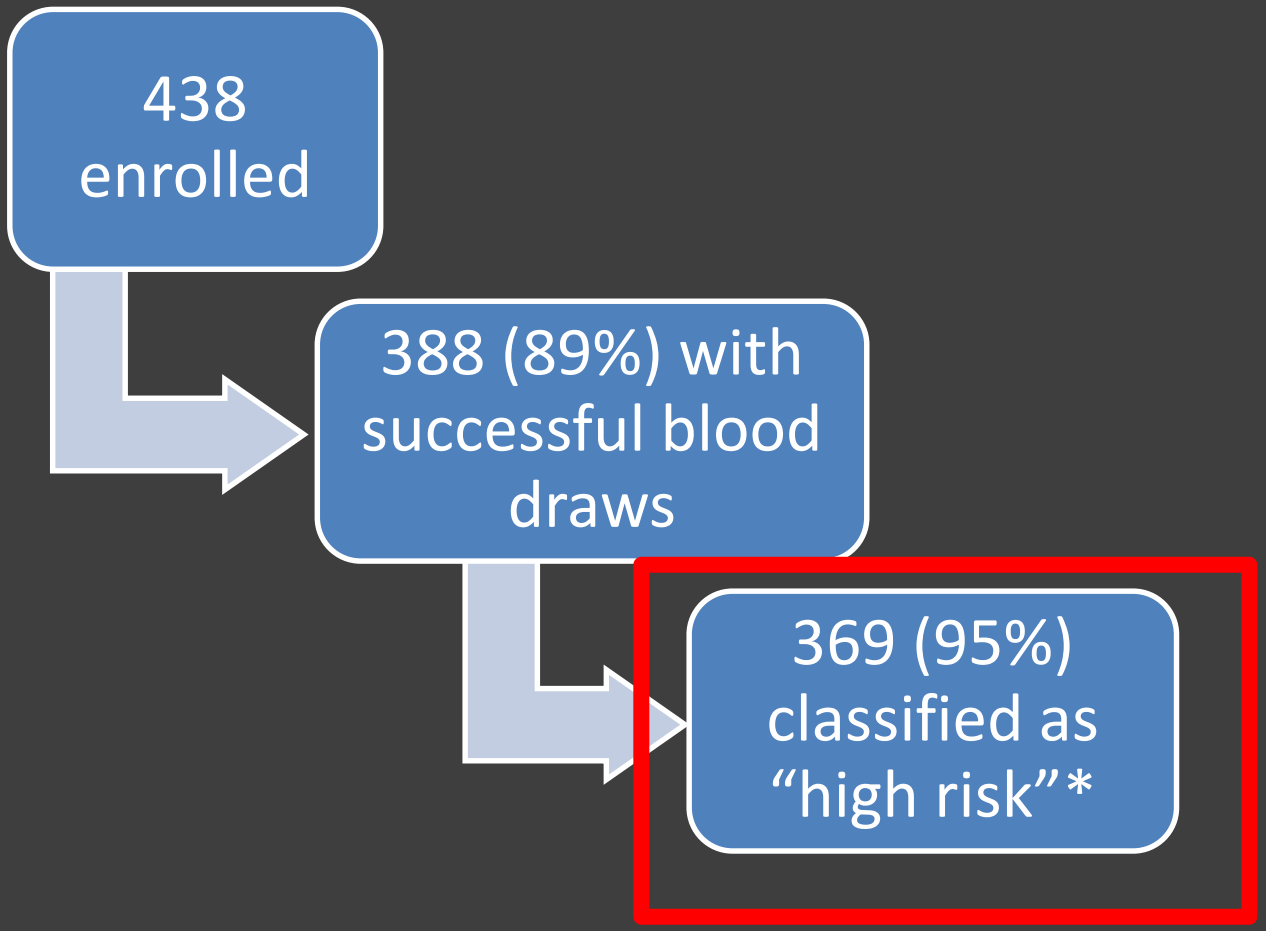
RESULTS

Participants



*High-risk was defined as having a self-reported history of drug use or currently homeless

Participants



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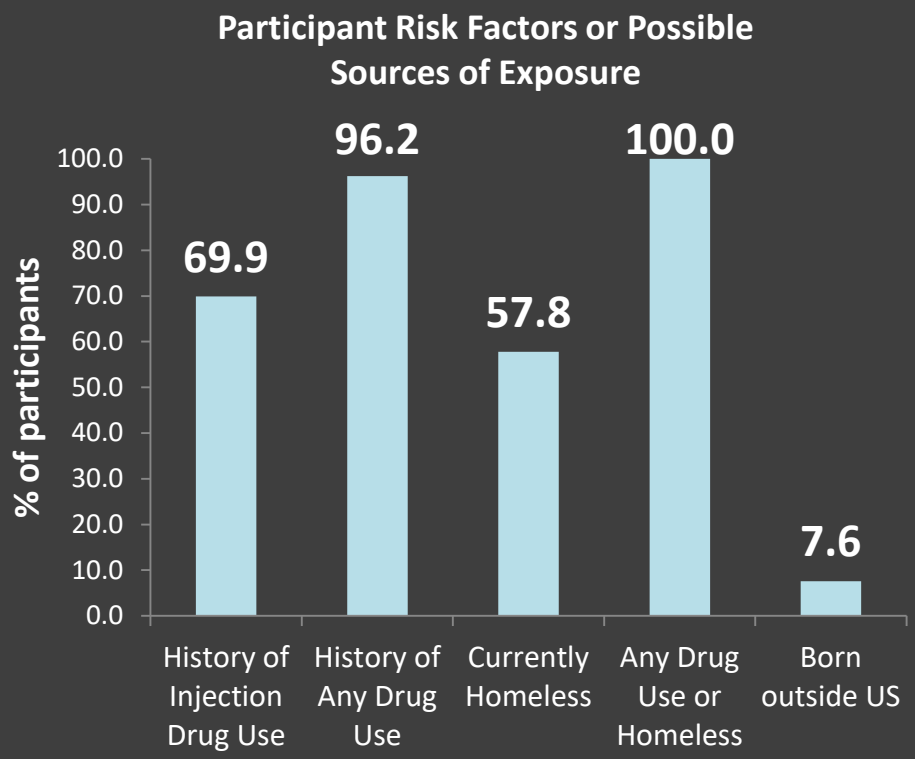
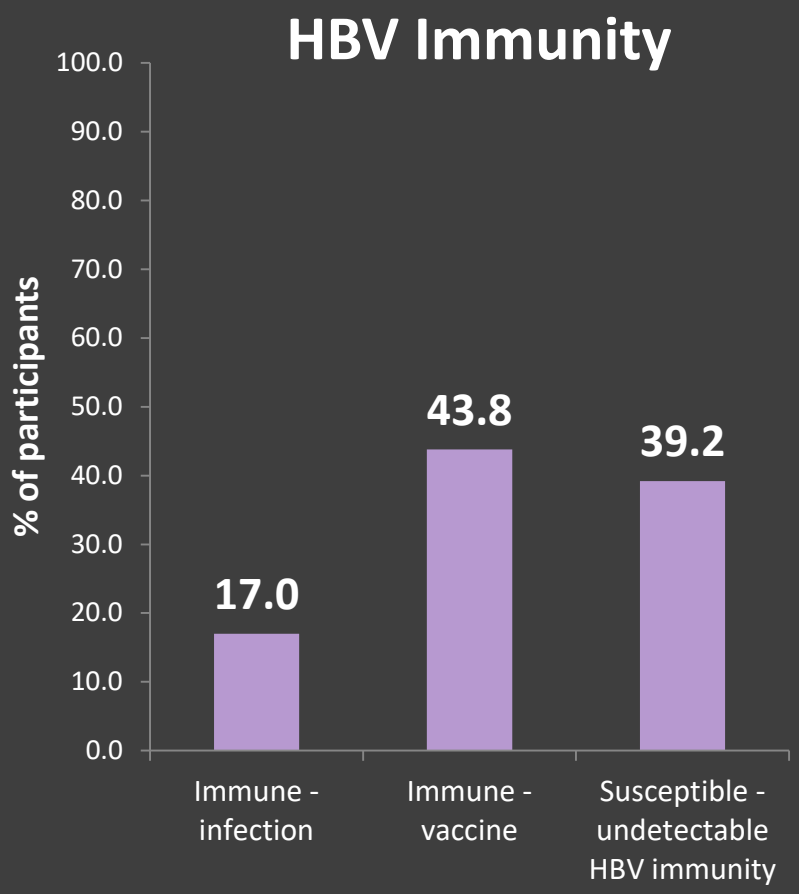
Participant Characteristics

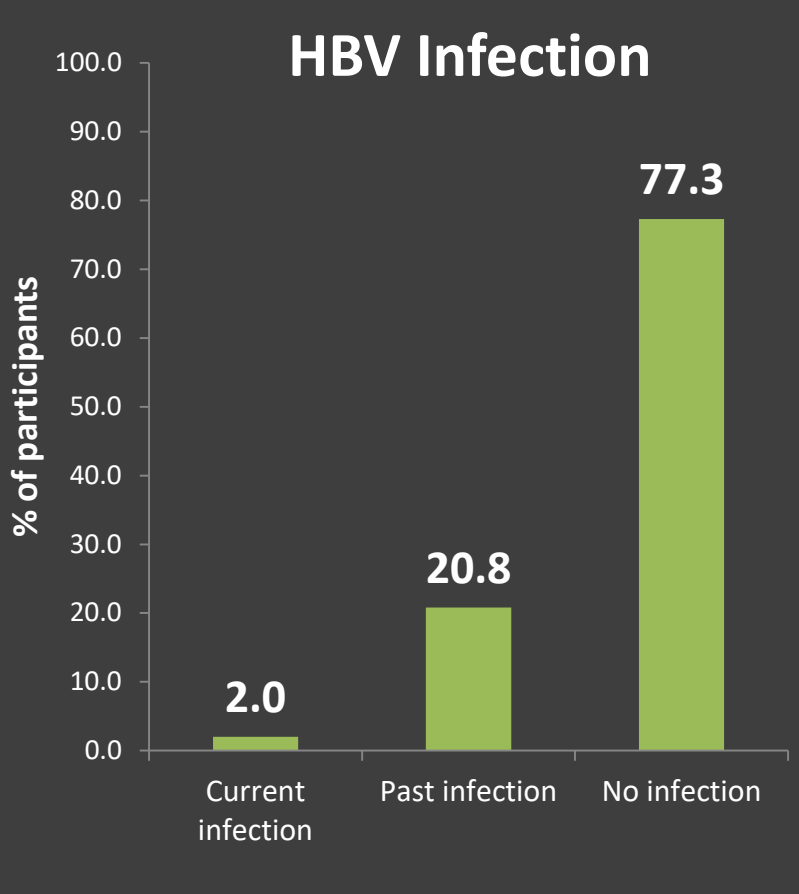
Participant Demographics

	N=369	%
Birth Year		
<1970	62	16.9%
1970-1979	68	18.5%
1980-1989	166	45.1%
1990+	72	19.6%
Gender		
Female	188	32.4%
Male	242	66.5%
Race		
Black	67	18.2%
Hispanic	74	20.1%
White	204	55.3%
Other	24	6.5%



HBV Immunity & Infection





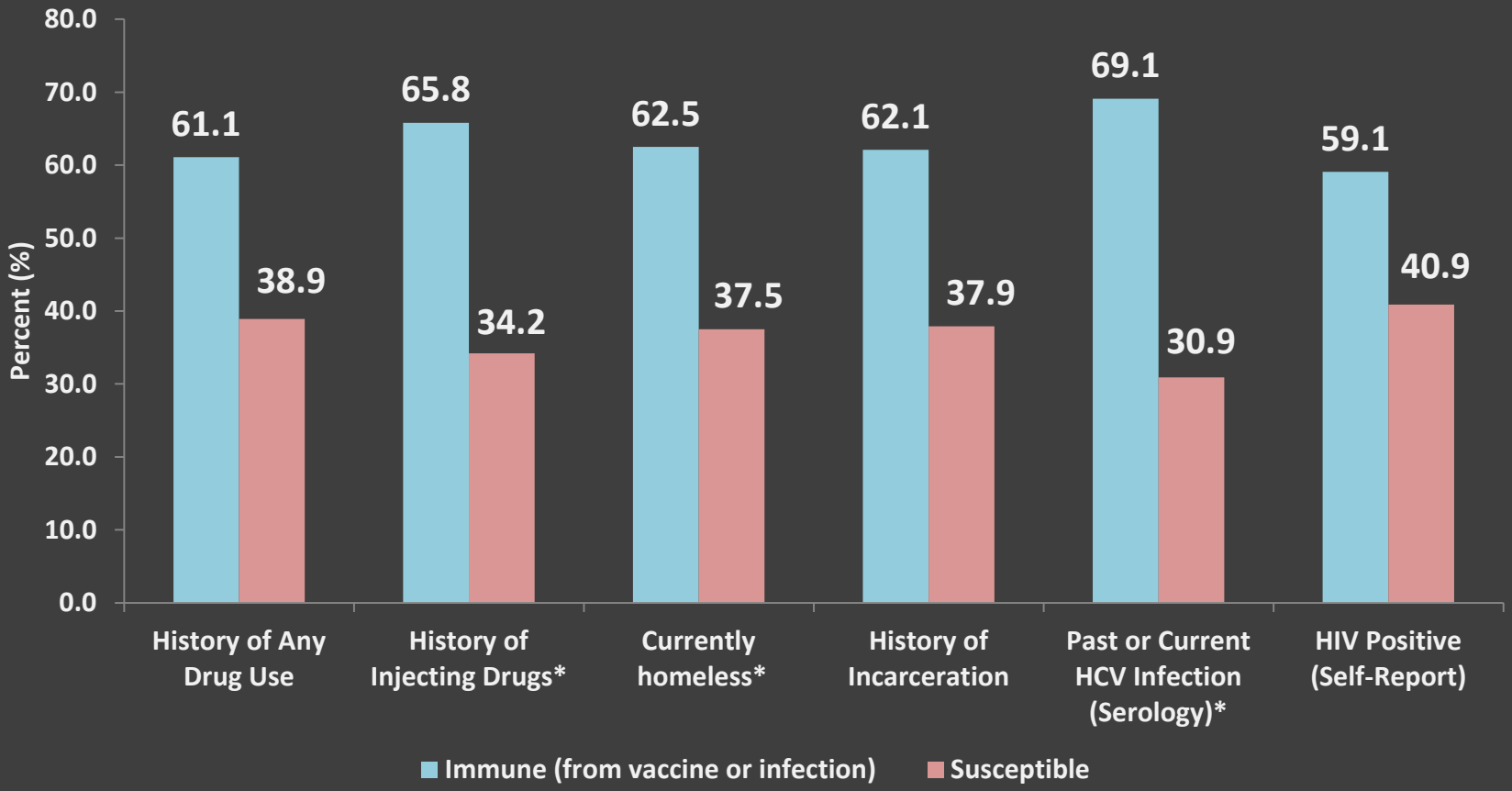
- In addition, 4 individuals had evidence of HDV exposure, two of whom had current HBV infections.

HBV Immunity

	N=369	Immune (from vaccine or infection), %	Susceptible, %
Birth Year*			
<1970	56	55.4%	44.6%
1970-1979	64	54.7%	45.3%
1980-1989	155	69.0%	31.0%
1990+	72	52.8%	47.2%
Gender			
Female	109	59.6%	40.4%
Male	230	61.7%	38.3%
Race			
Black	60	61.7%	38.3%
Hispanic	71	53.5%	46.5%
White	194	54.6%	45.5%
Other	22	63.9%	36.1%
Birthplace			
USA	307	61.6%	38.4%
Other	27	59.3%	40.7%

*Statistically significant difference

HBV Immunity



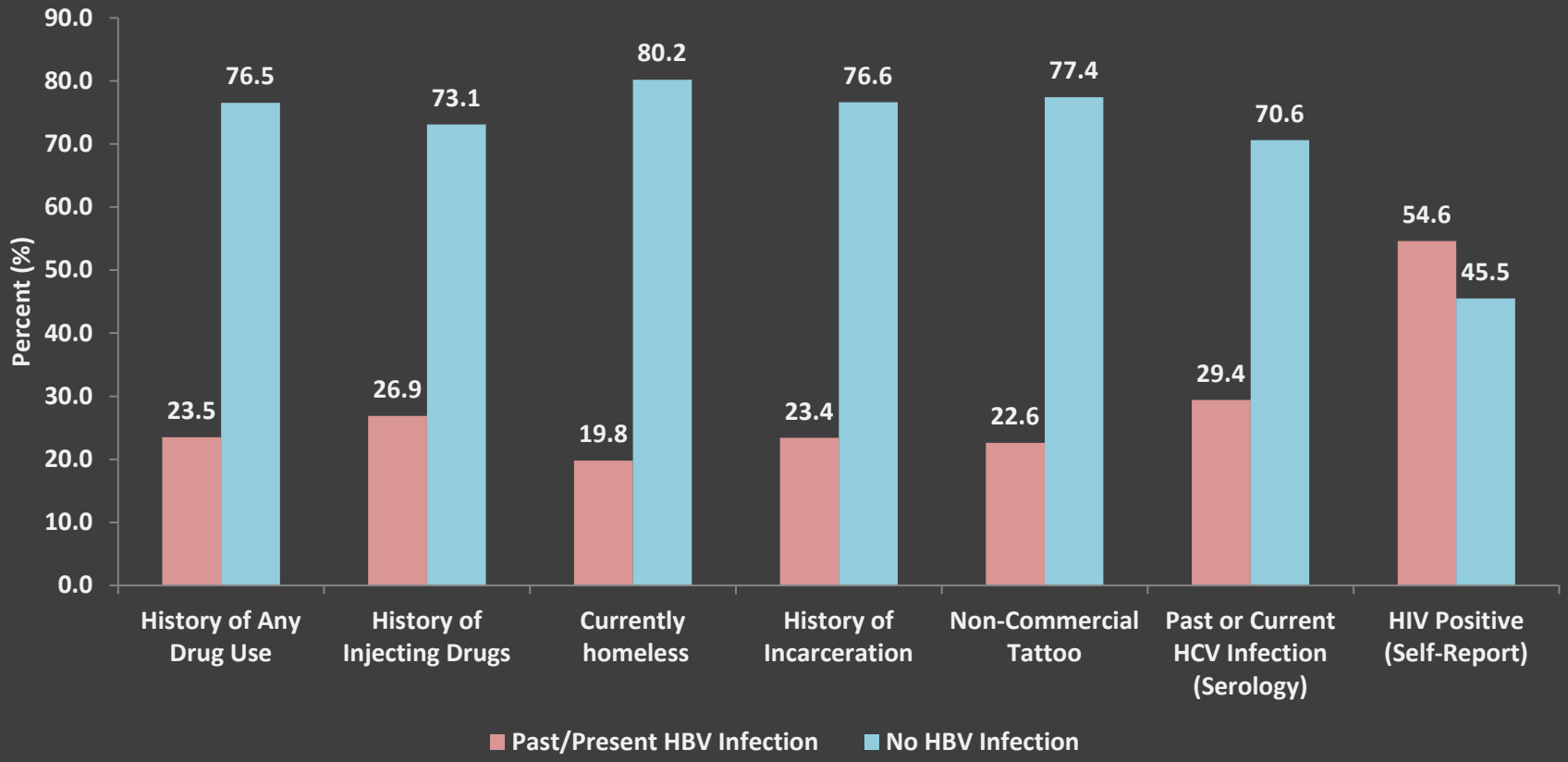
*Statistically significant difference when comparing to participants without risk factor

HBV Infection

	N=369	Past/Present HBV Infection, %	No HBV Infection, %
Birth Year*			
<1970	59	54.2%	45.8%
1970-1979	68	35.3%	64.7%
1980-1989	163	12.3%	87.7%
1990+	72	6.9%	93.1%
Gender			
Female	116	21.6%	78.5%
Male	239	23.9%	76.2%
Race/ethnicity			
Black	65	33.9%	66.2%
Hispanic	73	16.4%	83.6%
White	202	20.3%	79.7%
Other	23	30.4%	69.6%
Birthplace			
USA	322	22.7%	77.3%
Other	27	18.5%	81.5%

*Statistically significant difference

HBV Infection



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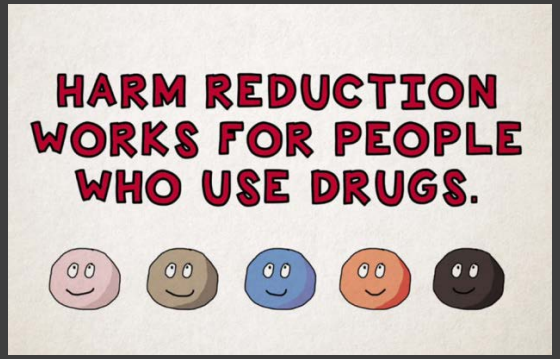
CONCLUSIONS

Overall Findings

- Over 20% of participants had evidence of past or present HBV infection, most of whom cleared their infections
  - Most cleared the infection
- Nearly 40% of participants lacked detectable HBV immunity
  - Despite childhood HBV vaccination recommendations, susceptibility was present in 31% of those born during 1980-1989 and 47% of those born during 1990-1999
  - All individuals met criteria for risk-based vaccine recommendations
- HDV was identified

Recommendations

- Increase vaccination coverage among PWUD and those experiencing homelessness
  - Make it easy for PWUD to get vaccinated
  - Offer vaccine in non-traditional locations (e.g., SSPs, jails/prisons)
- Promote other methods of harm reduction
- Monitor for increases in HBV and HDV among PWUD



Source: UNAIDS

Acknowledgements

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