Background: Viral hepatitis B (HBV) infection is a significant public health issue in the United States, with approximately 2.2 million people estimated to be infected. Understanding of HBV epidemiology is important for targeted public health efforts. This study aimed to determine Delaware HBV incidence trends, distribution, and factors associated with its infection.

Methods: We performed a retrospective study on patients suspected of HBV who were reported to the Division of Public Health (DPH), Delaware Health and Social Services (DHSS) through the Delaware Electronic Reporting and Surveillance System (DERSS) between January 1, 2005 and December 31, 2015. The charts of 4,891 persons were reviewed and included in the analysis.

Results: Of 4,891 persons, 2,119 (43.9%) were identified as having either acute or chronic HBV infection. Between 2005 and 2015, acute HBV incidence declined 63.5% among males and 60.1% among females. During 2010-2015, an increase of 12.2% was seen among those 15-39 years. Sixty-six percent of infected patients were identified during 2005-2010, an increase of 12.2% during 2010-2015. A decline in HBV infection among females, in the 15-39 age group, and in the Asian population.

Conclusions: The decline in HBV incidence in Delaware is critical for targeted public health efforts. Further studies should be conducted to identify factors contributing to these decreases.

Viral Hepatitis B Infection in Delaware 2005-2015: Incidence Trend, Distribution, and Factors Associated with Its Infection

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BACKGROUND:
• HBV infection: A major global health problem, around 240 million chronic HBV patients worldwide in 2016
• Around 850,000-2.2 million HBV-infected people in the U.S.
• In Delaware: small state with population of 945,934 in 2015, 71.3% of chronic HBV were among persons born outside the U.S.
• Asian: 34.1% of Delaware’s population

METHODS:
• Descriptive statistics and cross-tabulation were used for incidence by gender, age group, and racial group were performed using Stata version 13 to identify factors associated with HBV infection.

RESULTS:
1. To determine HBV incidence trends in Delaware during the period 2005-2015:
- Among males: 63.5% decline in males while 13.4% increased in females
- Among females, in the 15-39 age group, and in the Asian population.

2. To identify HBV distribution and factors associated with HBV infection:
- A retrospective study on 4,891 persons suspected of having HBV who were reported to the Delaware DHSS through DERSS between January 1, 2005 and December 31, 2015.
- Description statistics and cross-tabulation were used for patient characteristics. Yearly incidence and trends of HBV infection by gender, age group, and racial group were determined. In addition, logistic regression models were used analyzing data to identify factors associated with HBV infection.

CONCLUSIONS:
• HBV infection is a significant public health problem in DE, it is concentrated mainly in a few big cities.
• Despite an overall decline, during 2010-2015, increases seen in females, the 15-39 age group, and Asians.
• Significant predictors for HBV infection include being male, age 19-39 years, and being Asian, Black, and Other.

Based on these findings, targeted public health efforts are needed to further decrease HBV incidence in Delaware.