

# Prevention of Mother-to-Child Transmission of Hepatitis B at UNC Hospitals

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## Background

- Mother-to-child transmission (MTCT) of hepatitis B virus (HBV) is 100% preventable.
- Guidelines from the American Association for the Study of Liver Diseases (AASLD) recommend the following:
  - Timely (within 12 hours) birth-dose HBV vaccination
  - Timely hepatitis B immunoglobulin (HBIG)
  - Anti-viral prophylaxis in women with **high-risk** HBV (defined as viral load  $\geq 200,000$  IU/mL and/or HBV e antigen [HBeAg] positivity)

## Objectives

- To assess UNC Hospital's care of HBV-infected mothers and their exposed neonates in comparison to AASLD guidelines for the prevention of MTCT.

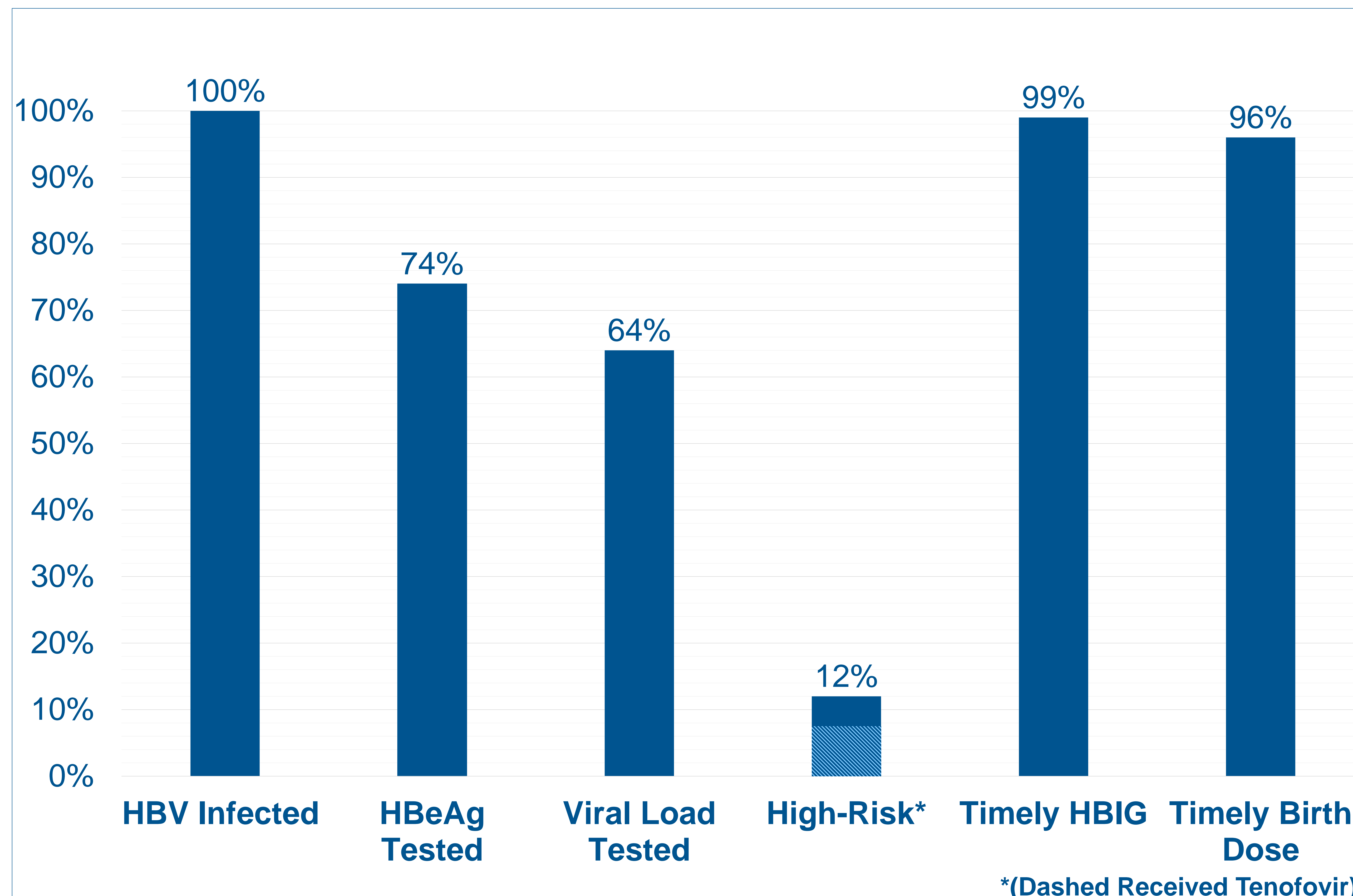
## Methods

- Retrospective chart review of all HBV-positive mothers who gave birth at UNC hospitals from April 1, 2014 through December 31, 2019.
- Data metrics included:
  - Maternal HBV and HIV status
  - Maternal HBV viral load and HBV e antigen (HBeAg) testing
  - Time to neonatal HBIG and birth dose vaccination
  - Receipt of tenofovir by **high-risk** women
- Risk status and receipt of tenofovir were assessed for women who delivered on or after January 1<sup>st</sup>, 2016 (release of AASLD guidelines).

Characteristic	No (%) or Mean $\pm$ SD
Maternal Age	33.7 $\pm$ 5.14
Mother HIV-Positive	1 (1.0)
Type of Delivery	
Spontaneous Vaginal	68 (68.7)
Caesarean Section	25 (25.3)
VBAC	3 (3.03)
Vaginal Assisted (forceps and/or vacuum)	3 (3.03)
Gestational Age	39w6d $\pm$ 15d
Number of Premature* Infants	7 (7.07)
1-minute APGAR	7.7 $\pm$ 1.7
5-minute APGAR	8.8 $\pm$ 0.9
Birth Weight (grams)	3149 $\pm$ 587

**Table 1.** Baseline Delivery Data for 99 HBsAg-positive Pregnant Women and Their Exposed Infants

Abbreviations: SD, standard deviation; VBAC, vaginal birth after C-section; APGAR, Appearance, Pulse, Grimace, Activity and Respiration; w, weeks; d, days. \* Premature defined as born at  $<37w0d$ .



**Figure 1:** Continuum of Care for the Prevention of MTCT of HBV at UNC

## Discussion

- UNC Hospitals were generally compliant with AASLD guidelines regarding:
  - Timely HBIG administration (99% of all neonates)
  - Timely neonatal vaccination (97%)
  - Anti-viral use in women with high-risk HBV (83% of those identified as **high-risk**)
- Assessment of HBV risk status is an area for improvement, as HBV viral load and HBeAg were not routinely tested in this population. Without first identifying women with **high-risk** HBV, prophylactic tenofovir cannot be provided.
- Several infants did not receive timely birth dose vaccine because of prematurity. **All** HBV-exposed infants, regardless of birth weight, should receive birth dose vaccine within 12 hours.
- Future directions for improving care for this patient population include:
  - Increasing risk status assessments of HBV-positive mothers (viral load, HBeAg)
  - Assurance of follow-up care for HBV-positive mothers (GI, ID)
  - Follow-up testing for HBV-exposed infants (HBsAg, anti-HBs at 9-12 months)

## References

Terrault NA, Bzowej NH, Chang K, et al. AASLD guidelines for treatment of chronic hepatitis B. *Hepatology* 2016;63(1):261-283.