

Examining the impact of universal hepatitis C screening in perinatally exposed infants

Traci Scott M.S., Nicholas Herring B.A., Michelle Rose MBA
Norton Healthcare

Background

In recent years there has been a dramatic increase in the incidence of HCV infections with the highest rate among reproductive aged adults ((Koneru et al., 2016)). Correspondingly there has been an increase of incidence of HCV among pregnant women. (Patrick, Bauer, Warren, Jones, & Wester, 2017; S. F. Schillie et al., 2018) During pregnancy, HCV can be passed to the fetus in a process called vertical transmission. The recent rise of HCV infections among pregnant women coupled with the potential for vertical transmission to their children represents a significant public health concern for children in the US. In response to these statistics, Kentucky became the first state to mandate universal screening for HCV for all pregnant women in April 2018 (Bill SB250). This study aims to add to the literature by analyzing the impact of mandated universal screening on hepatitis C screening among children perinatally exposed to HCV.

Objectives

The primary objective of this study is to evaluate the application and impact of SB250. Specifically, examining

- rates of completion of recommended HCV serologic testing by 24 months of age
- documentation of perinatal exposure to HCV in the infant's chart.

Characterize the HCV cascade of care for infants perinatally exposed to HCV

Methods

- A retrospective cohort of HCV-positive women who sought obstetric care at Norton Healthcare between January 1, 2017, and December 31, 2019, and subsequently delivered live infants at NHC was identified.
- Only women with current HCV infection, those were women with both positive anti-HCV Ab and HCV RNA results were included in this study. Women with HCV-Ab negative results and women with positive HCV-Ab but negative HCV RNA results were considered HCV non-viremic and therefore not included in this study.
- SB250 went into effect on July 1, 2018. Mother-infant dyads were grouped into either pre- or post-implementation groups based on the infant's date of birth
- Data were extracted from mother infant dyad charts using a standardized template and then analyzed using Microsoft excel

Results

Infant group	n	Adequately tested	Not adequately tested
Pre- implementation	102	15 (14.7%)	87 (85.29)
Post-implementation	178	52 (29.3)	125 (70.62)

Table 1: testing rates of infants born pre and post implementation of SB250

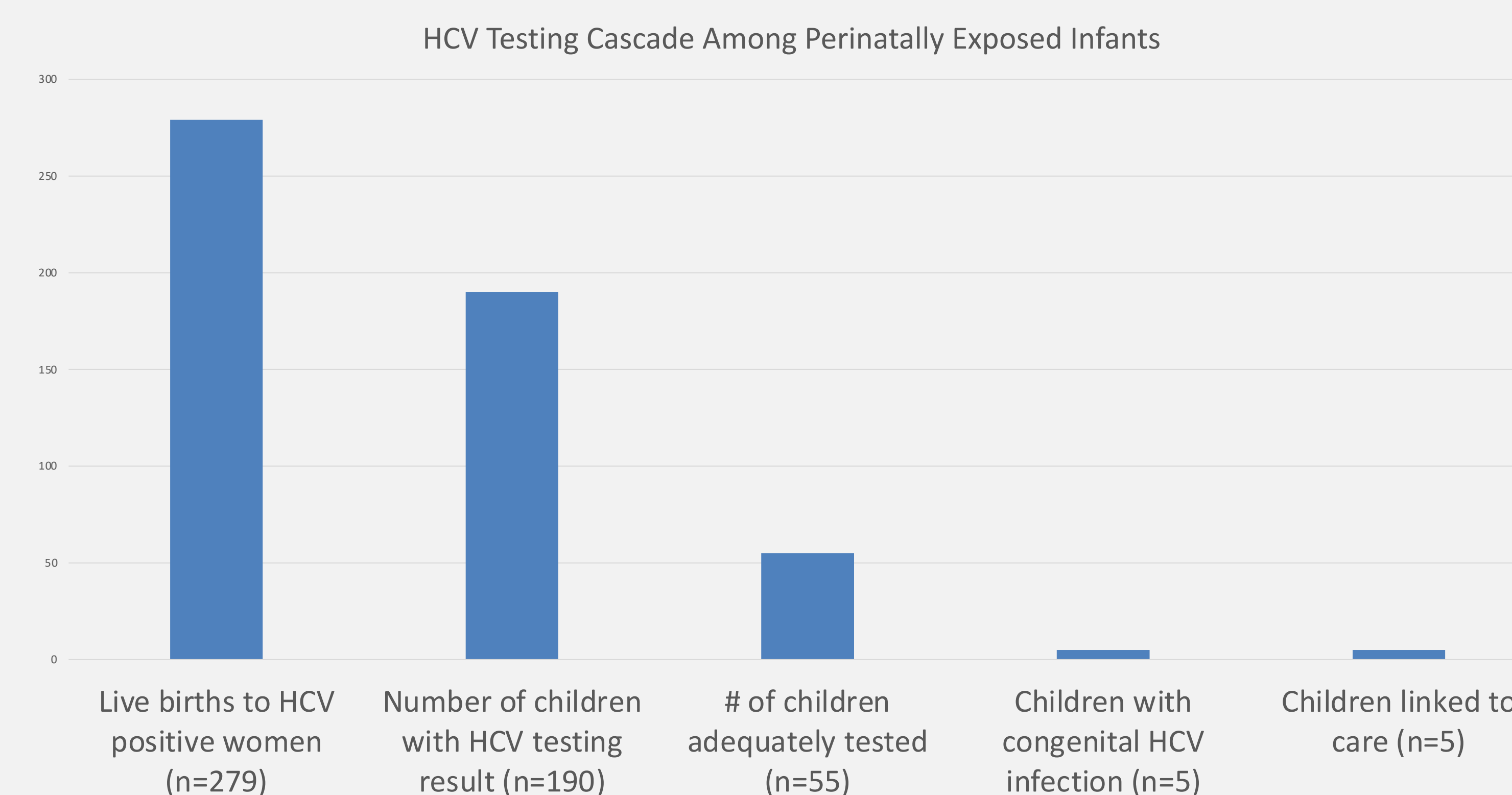


Chart 1: HCV cascade of care for infants born to HCV seropositive women

Discussion

The implementation of universal screening resulted in an increase in HCV testing among perinatally exposed infants. There was statistically significant increase in the number of infants who completed adequate testing when comparing infants in the pre-and post-implementation groups (14.85% pre-implementation vs 29.2% post-implementation)($p = 0.012$). Additionally, there was an increase in the number of infants who received any testing (5.7% increase) although this was not statistically significant ($p = 0.11$).

Many infants in this study, nearly 75%, did not receive an anti-HCV antibody test during the first 24 months of their life ($n=205, 73.48\%$). There is also a substantial amount of these children who are not receiving any HCV testing at all. Nearly 18% of the infants in this study were not tested for HCV ($n=50, 17.86\%$). Our data suggest that in many cases children are receiving an HCV RNA test with no confirmatory anti-HCV antibody test. This could be due to providers' misconceptions about the testing guidelines or loss of follow-up from care. By missing a critical step in the HCV cascade of care we are leaving many children without the proper testing to rule out hepatitis.

Conclusion and Future Directions

- SB250, which mandated universal hepatitis C screening during pregnancy led to statistically significant increase in HCV testing among perinatally exposed infants.
- There are still many gaps within the cascade of care. Most children are not receiving adequate HCV testing.
- More research is needed to identify interventions to increase the percentage of children receiving adequate testing

References

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