

# Perinatal Hepatitis C Surveillance in Kentucky, 2014 - 2017

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## Background

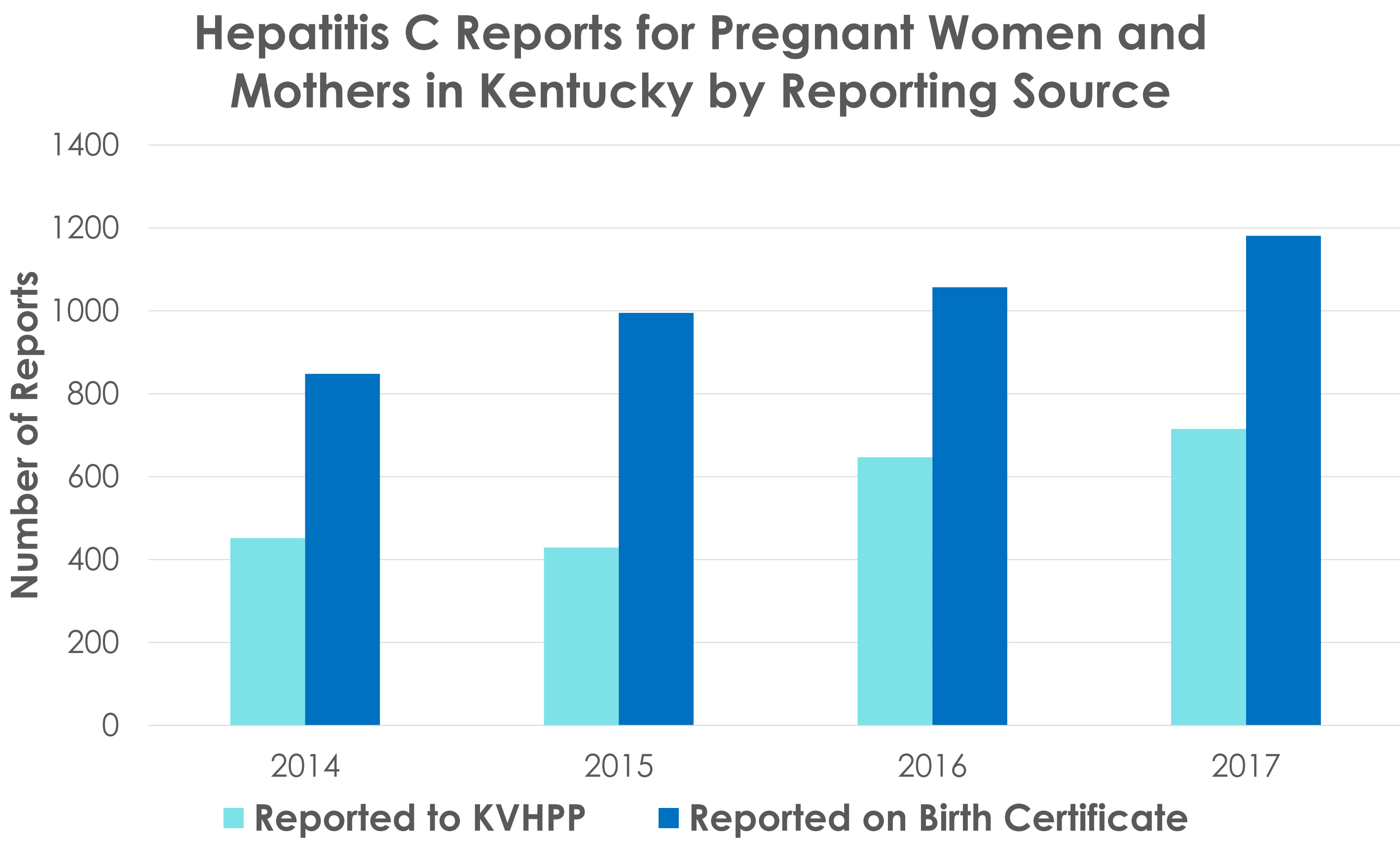
Since 2010, Kentucky has experienced an increase in acute hepatitis C infections, commonly experiencing the highest rate of new infections in the country and consistently exceeding the national rate. As a result, the Kentucky Department for Public Health (KDPH) began recommending proactive case investigations and targeted screening, focusing on persons who have the following risk factors: intravenous drug use, multiple sex partners, a history of STIs, HIV, and exposure to known hepatitis cases.

With increased focus on these at-risk groups, and in the midst of Kentucky's opioid crisis, surveillance of acute cases has shown a large proportion of positive tests are in persons aged 20-29. Because of the increased risk to women of child-bearing age and to infants born in Kentucky, the Kentucky Viral Hepatitis Prevention Program (KVHPP) has taken action to illuminate and mitigate this growing threat. In 2013, KVHPP requested voluntary reporting of all HCV-positive pregnant women, all infants born to HCV-positive mothers, and all HCV-positive children aged 0-5 years. The reportable disease surveillance regulation was changed in February 2015, making perinatal HCV reporting mandatory. Concurrently, harm reduction efforts have expanded rapidly in Kentucky. As of May 31, 2017, there are 47 operational Syringe Exchange Programs in 40 counties with five additional sites approved. While there has been a drop in the number of acute hepatitis C cases reported over the past four years, early surveillance of perinatal hepatitis C does not show a decline.

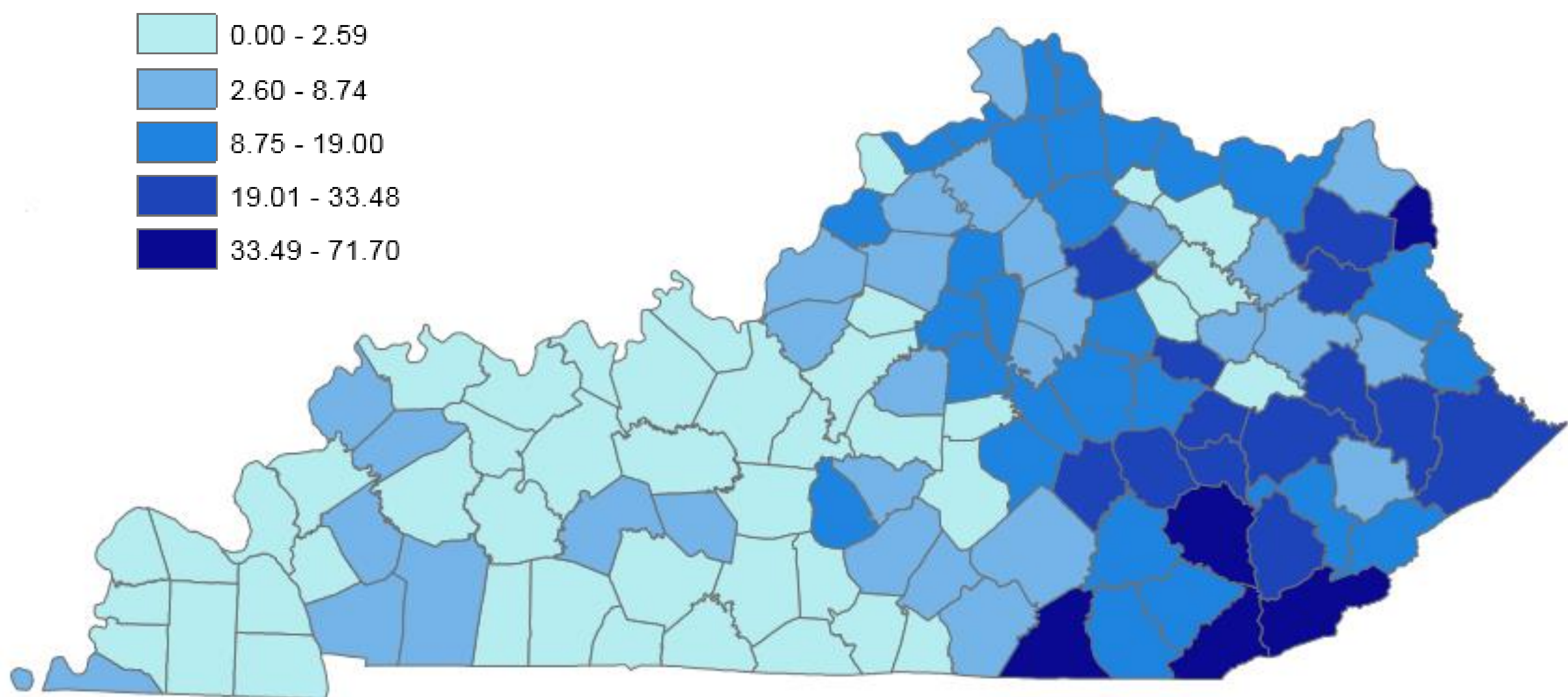
## Methods

Perinatal hepatitis C reports have been collected since December 2013 and include information for hepatitis markers, laboratory information, risk factors and vaccination history of pregnant and postpartum women and children under the age of five years. These data were entered and maintained in Epi Info and a KDPH-developed data system. Data from perinatal HCV reports submitted between 2014 and 2017 were analyzed using SPSS v22. Kentucky Office of Vital Statistics (OVS) reports were used to estimate how consistently perinatal HCV cases have been reported.

## Results



**Rate of hepatitis C infection among pregnant and postpartum women per 1,000 live births, by county – Kentucky 2014-2016**



Mothers or Pregnant Women		
Age Group	n=2,243	%
14-20	99	4.4
21-24	465	20.7
25-29	780	34.8
30-34	430	19.2
35-39	154	6.9
40+	31	1.4
Unknown	284	12.7
Children		
Age Group	n=946	%
<12 months	825	87.2
≥12 months	121	12.8

Mothers or Pregnant Women				
	RNA +	RNA -	No RNA	Total
Ab +	295	77	1502	1874
Ab -	1	0	4	5
No Ab	114	3	247	364
Total	410	80	1753	2243
Age <18 months				
Ab +	9	16	58	83
Ab -	0	3	3	6
No Ab	14	28	722	764
Total	22	47	783	852
Age ≥ 18 months				
Ab +	11	4	24	39
Ab -	0	1	8	9
No Ab	6	5	34	45
Total	17	10	66	93

Risk Factors of Mothers/Pregnant Women	Yes	No/Unknown	% with Risk Factor
Intravenous Drug Use	805	1438	35.9
Multiple Sex Partners	195	2048	8.7
Tattoos	49	893	5.2
STIs	72	2171	3.2
HIV	3	2240	0.1
Exposure to Known Hepatitis Positive Contact	61	2182	2.7
Foreign born	3	2240	0.1
Incarceration	31	1271	2.4
Intranasal Drug Use	30	1272	2.3

## Discussion

KVHPP reporting results indicate the rate of hepatitis C infection among pregnant women and new mothers was 10.6 per 1,000 live births between 2014 and 2017. Birth certificate data, however, yield a rate of 19.3. Burden of disease was concentrated in southeastern Kentucky, with the worst affected county reporting a rate of 71.7.

There was a lack of HCV RNA confirmation tests conducted/reported on pregnant and postpartum women who had a positive HCV antibody test result; only 19.9% had a follow-up confirmation test reported.

Intravenous drug use was the most common risk factor (36%) for HCV among women reported. Additionally, multiple sex partners (8.7%), tattoos (5.2%), STIs (3.2%), incarceration (2.4%) and intranasal drug use (2.3%) were identified as lesser risks.

The number of reports submitted to KVHPP after passage of the reporting requirement increased but there is still a discrepancy with data from OVS identifying significant underreporting.

## Conclusion

Perinatal hepatitis C reporting in Kentucky has evolved with increased burden of disease, increased awareness of the epidemic and, ultimately, changes in legislation. Voluntary reporting that began at the end of 2013 demonstrated the high number of infections and need for mandatory reporting. Data from the birth certificate has historically reflected under reporting. While reporting has increased, additional assistance needs to be provided to be sure all positive cases are reported. Further, because under-reporting is a flaw of passive surveillance, active perinatal HCV infection surveillance may need to be implemented with birthing hospitals or by means of electronic laboratory reporting.

This information helped contribute to further legislation changes; In April 2018 a bill passed that will require universal screening of all pregnant women for hepatitis C. This mandate is anticipated to take effect July 2018. Inevitably this will lead to a dramatic increase in the number of cases identified and reported. Continued tailored education and awareness campaigns about HCV transmission, targeting at-risk women of childbearing age, need to be disseminated, with emphasis on regions with high infection rates.

## Limitations

While reporting became mandatory in February 2015, no formal assessment of provider compliance has been conducted, making it difficult to determine the completeness of the data and, consequently, the generalizability of the results.

## Acknowledgements

KDPH would like to thank local health department staff and healthcare providers across the state for their compliance with the reporting regulation and submitting reports in a timely manner. The KVHPP would like to thank the OVS for providing birth certificate data.

