

Viral Hepatitis in Kentucky

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Adult Viral Hepatitis Prevention and Control Program

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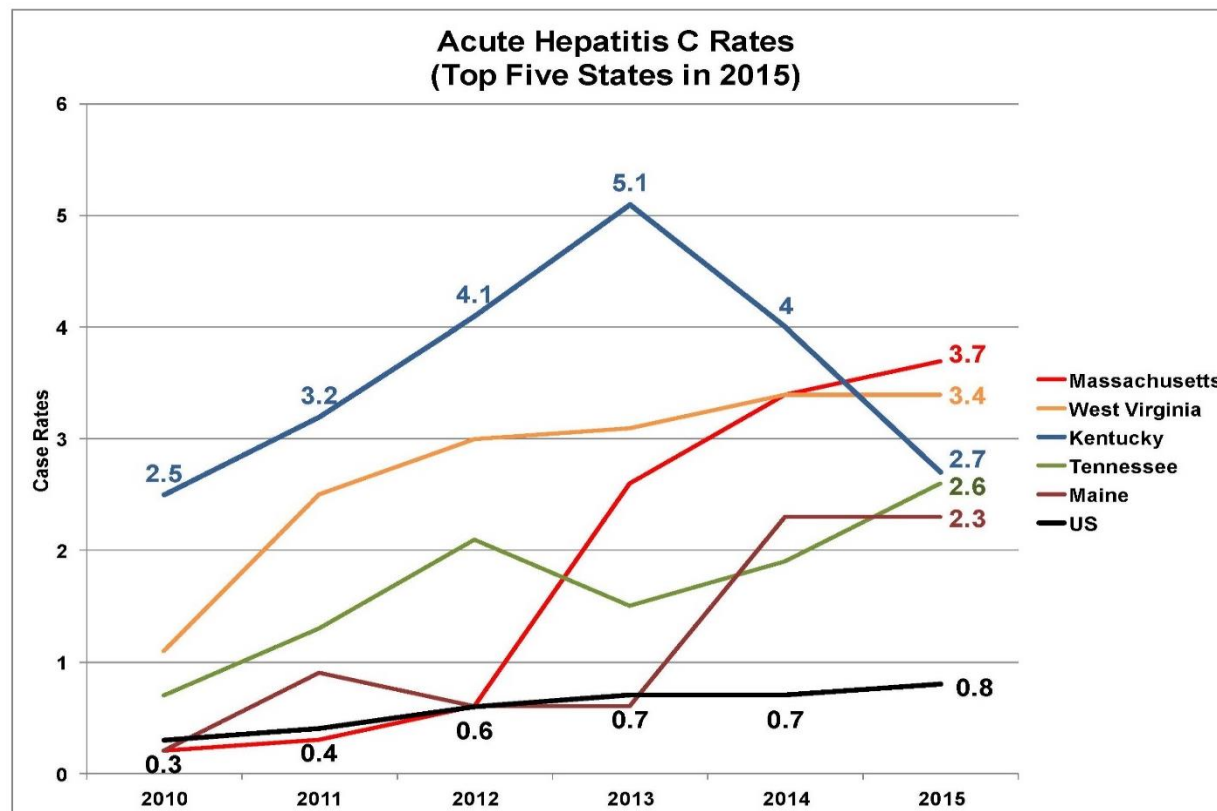


Disclosures

- Kathy J. Sanders, RN MSN, Dr. Robert Brawley and the Kentucky Department for Public Health have no relevant financial relationships with commercial interests to disclose.

State-by-state Trends

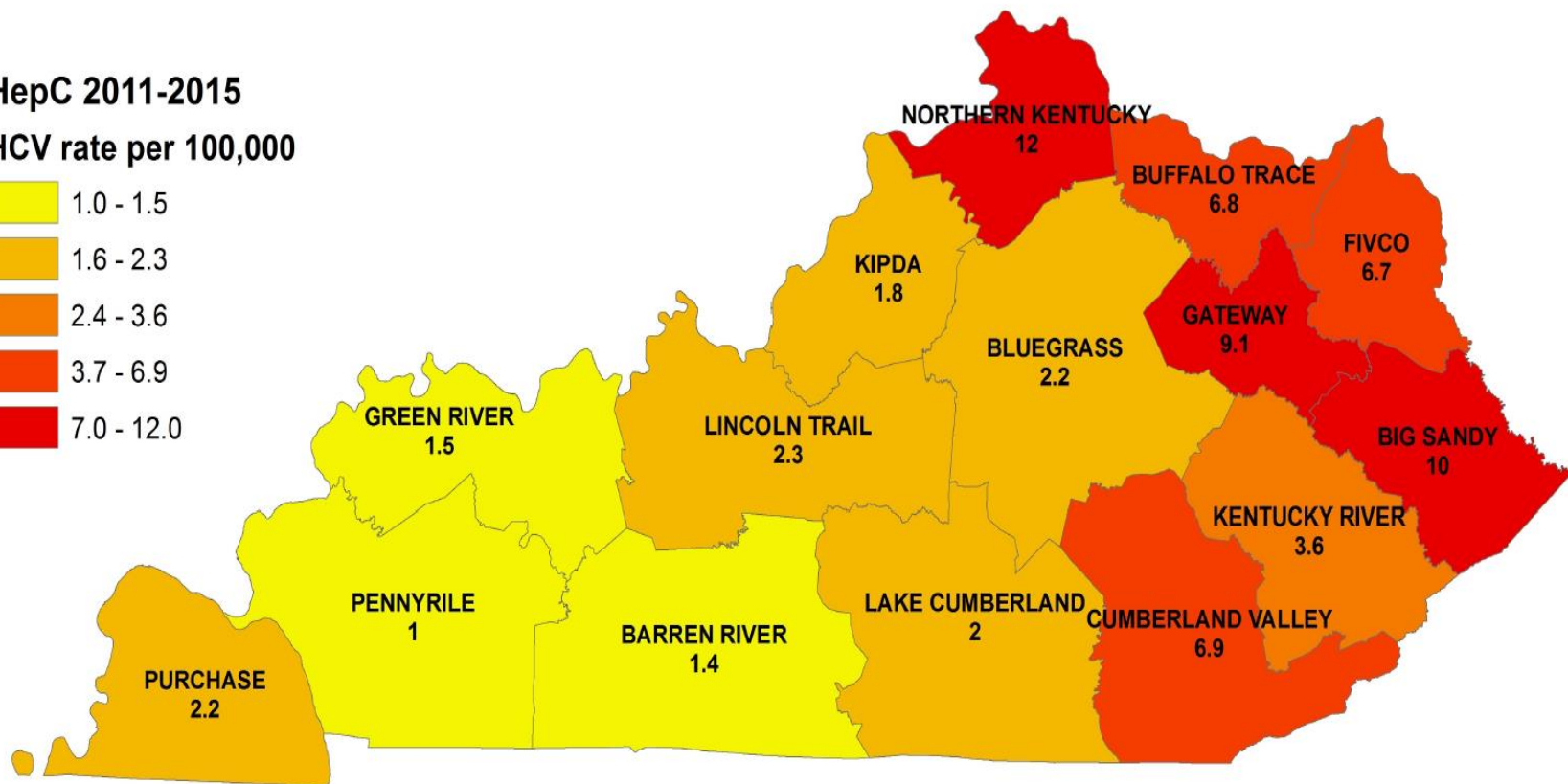
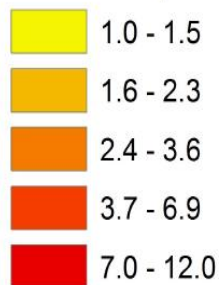
From 2010-2014, Kentucky led the nation in acute HCV rates. In 2015, rates decreased in Kentucky, making the Commonwealth third in the nation.¹



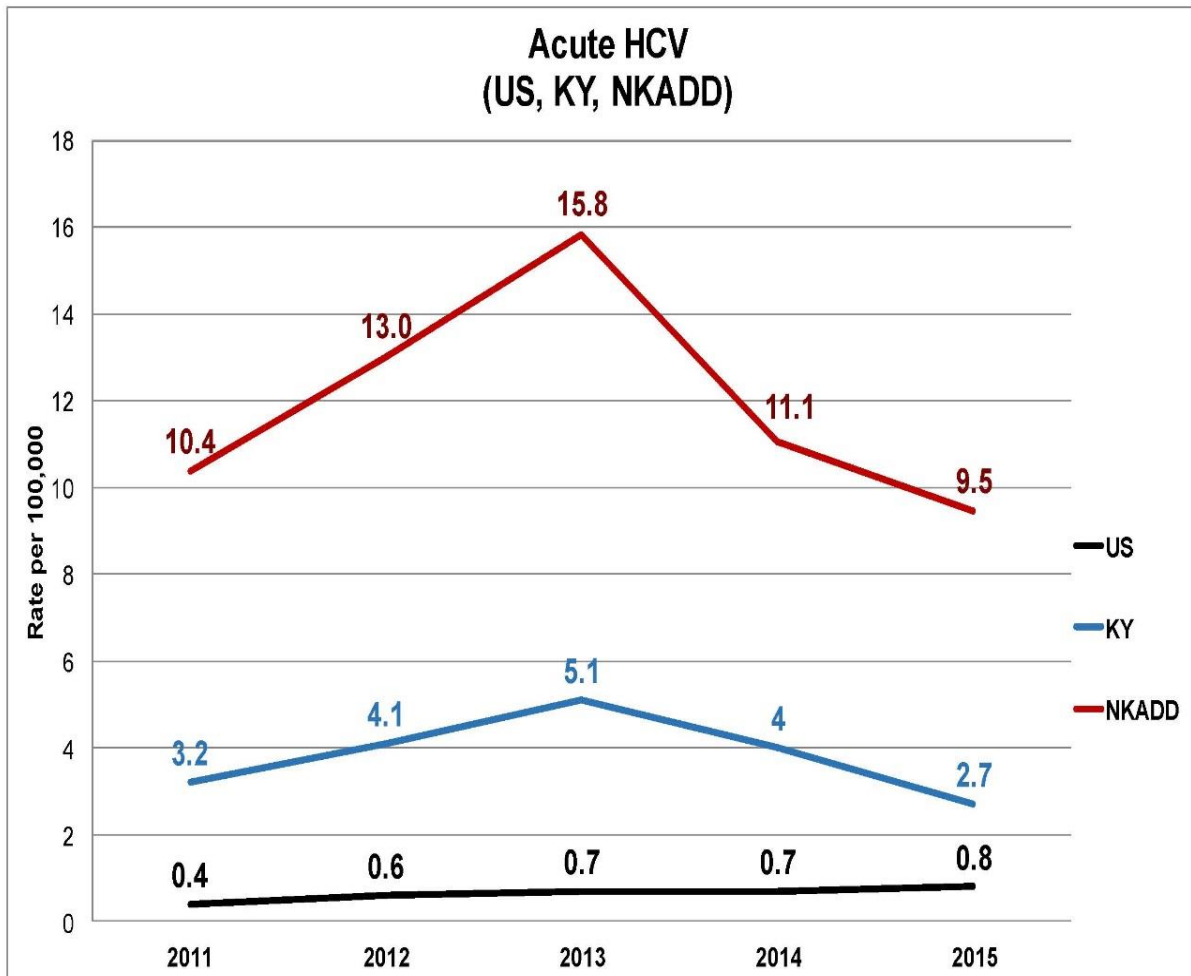
Overall Rates per 100,000 for Acute Hepatitis C in Kentucky 2011 - 2015

HepC 2011-2015

HCV rate per 100,000



Incidence of Acute Hepatitis C in Northern Kentucky

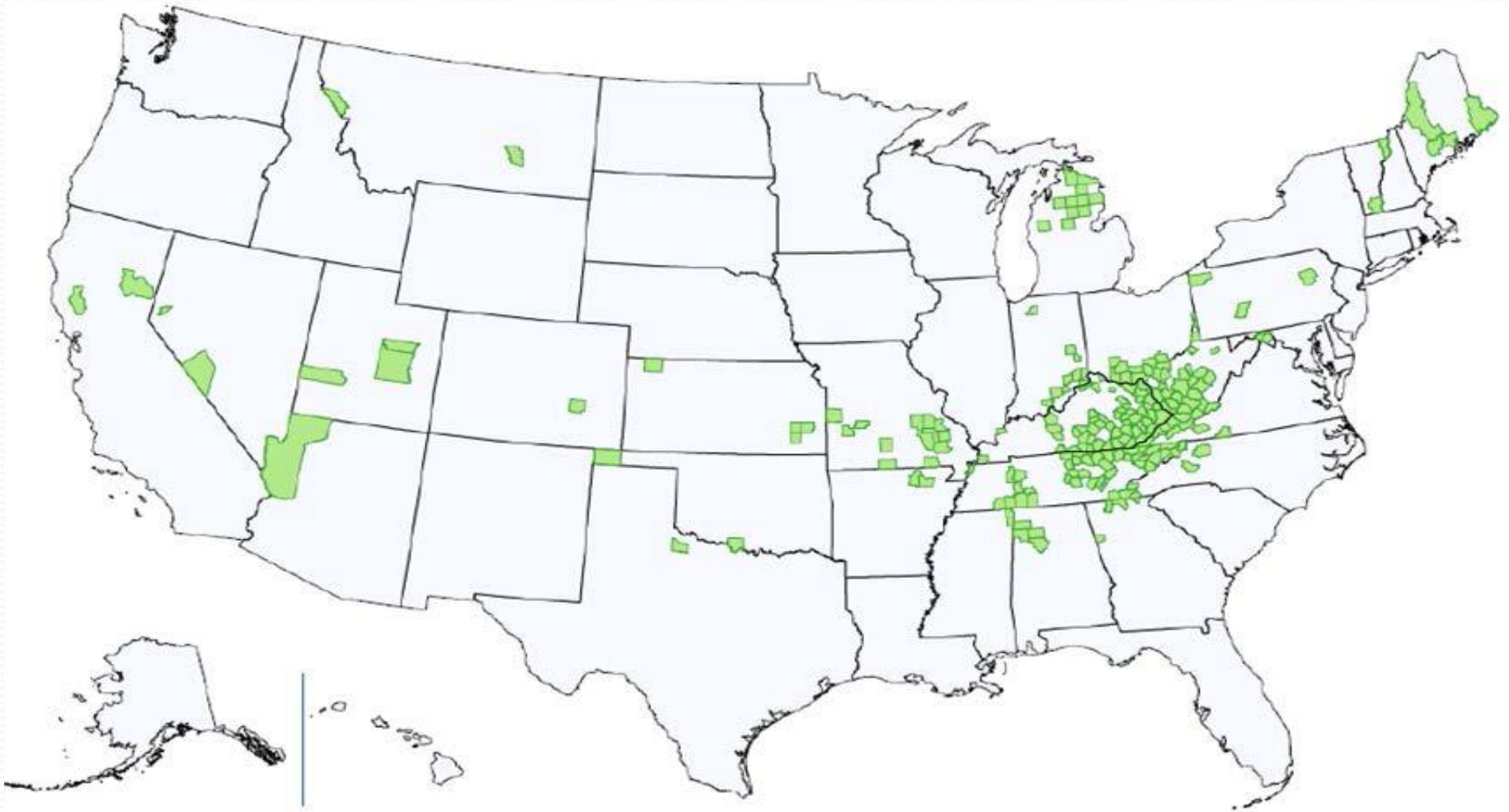


In 2015, HCV case rates in the NKADD were:

- More than **3.5 times** the Kentucky case rates
- More than **11 times** the U.S. case rates²

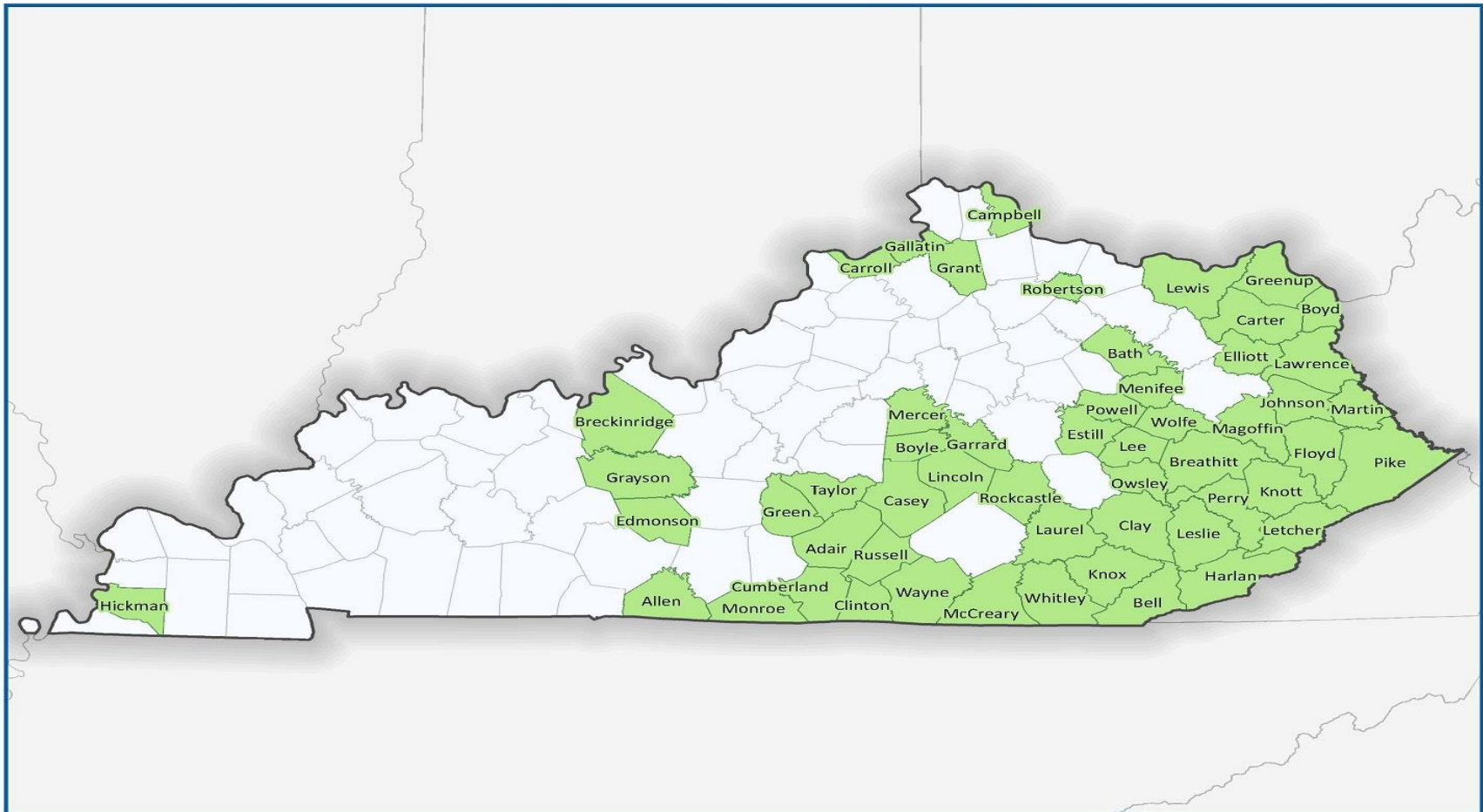
CDC- Top 220 US Counties

<http://www.kyrha.org/resources/Documents/BROOKS-KY%20HCV%20Meeting.pdf>



CDC- 55 High Risk Counties in Kentucky

County-level Vulnerability to Rapid Dissemination of HIV/HCV Infection
Among Persons Who Inject Drugs



Notes: Map and Analysis provided by the Geospatial Research, Analysis, and Services Program (GRASP), Div of Toxicology and Human Health Sciences, ATSDR (2015). **Data Sources:** American Community Survey 2012-2013; DEA ARCOS 2013; NCHS/NVSS 2012-2013; SAMHSA DATA 2000 Program Info 2014.



Kentucky Viral Hepatitis Surveillance: Successes

- In 2012, Kentucky Viral Hepatitis Prevention Program partnered with selected local health departments (LHDs), including NKIDHD, for HCV laboratory testing pilot project for individuals with identified risk factors
- Results: Identified a large number of confirmed HCV-positive tests in persons aged 20 - 29 years
- Raised concerns about the potential for mother-to-child transmission of HCV

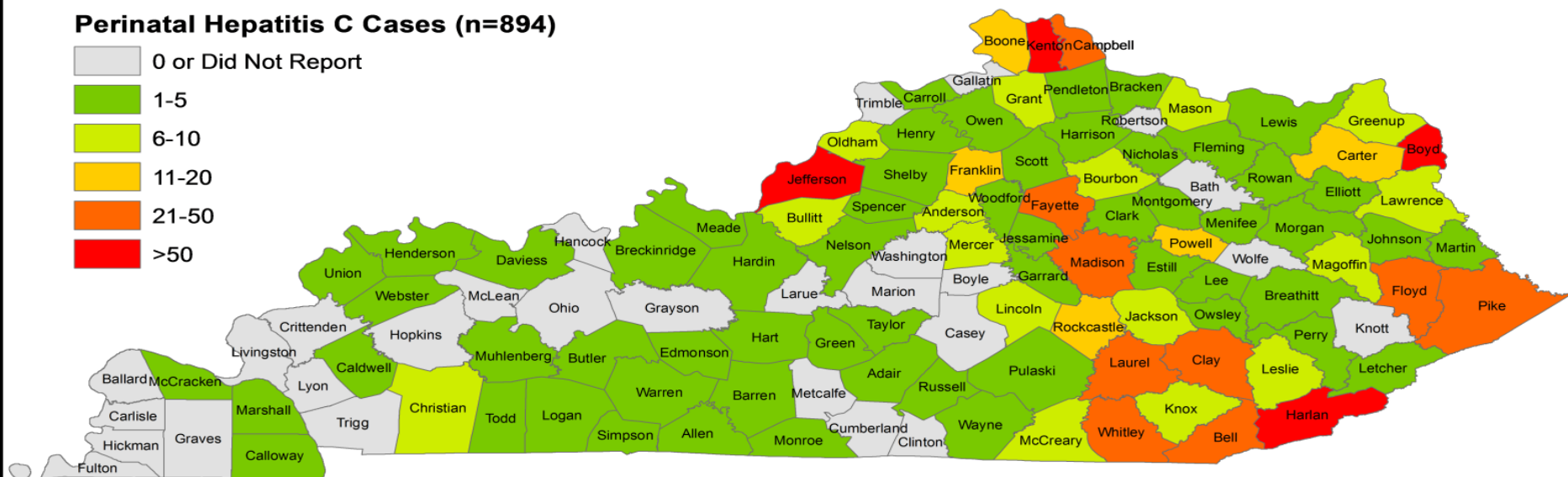
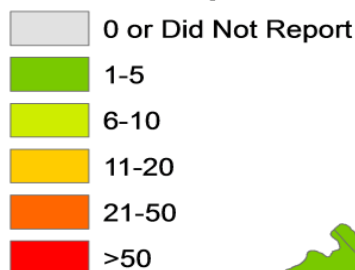


Perinatal Hepatitis C Reporting in Kentucky

- In late December 2013, DPH requested voluntary reporting from healthcare providers across Kentucky for:
 - All HCV-positive pregnant women
 - All infants born to HCV-positive women
 - All HCV-positive children aged 5 years or less
- Reporting was mandated by law in Feb 2015

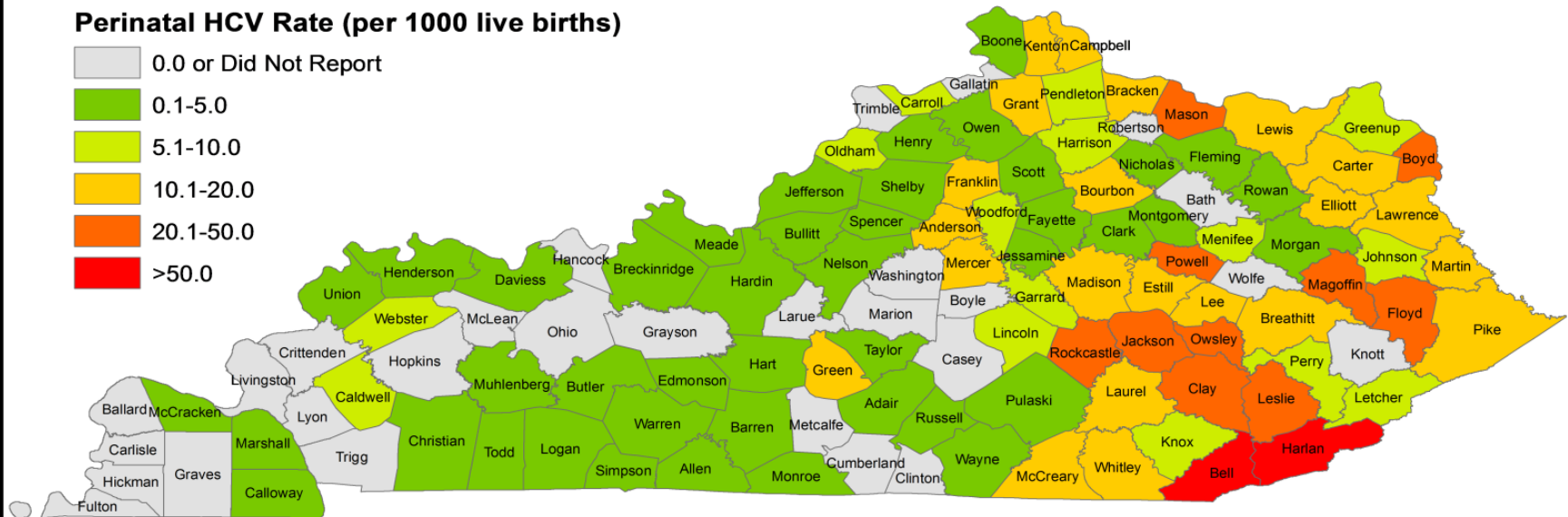
Cases of Perinatal Hepatitis C Among Mothers and Pregnant Women in Kentucky, 2013-2016

Perinatal Hepatitis C Cases (n=894)



* Two recorded cases did not identify a county of residence.

Perinatal Hepatitis C Rates (per 1000 live births) in Kentucky, 2013-2016



* To avoid double counting, rates were not calculated for counties that reported infants or children only.

Perinatal Hepatitis C Surveillance in Kentucky

Dec 2013 through Dec 2016

Mothers or Pregnant Women (n=1890)

	HCV RNA – Pos	HCV RNA - Neg	No HCV RNA	Total
HCV Ab - Pos	243	62	1195	1500
HCV Ab – Neg	1	-	4	5
No HCV Ab	74	2	309	385
Total	318	64	1508	1890

Kentucky Perinatal HCV Data - Vital Statistics Branch

	Birth Certificate Reported History of Hepatitis C of Mother			
Year	YES	NO	UNKNOWN	TOTAL
2010	260	53,134	196	53,590
2011	380	52,863	137	53,380
2012	512	52,728	138	53,378
2013	658	52,617	181	53,456
2014	848	52,840	137	53,825
2015	995	52,367	190	53,552
2016	1057	51,377	557	52,991



Kentucky Perinatal HCV Data - Vital Statistics Branch

- Data from the Vital Statistics Branch showed that 2,997 of the 166,199 births from 2014 through 2016 had a history of maternal hepatitis C virus (HCV) infection recorded on the birth certificate.
- This maternal infection was recorded for 1.8 percent of the births during this time (i.e., rate of 1,803 per 100,000 births).
- The 2,997 HCV-infected women identified on birth certificates were 1,000 more than the number of HCV-infected pregnant women reported to the DPH Hepatitis Prevention Program by clinics and medical providers.



Underreporting of Perinatal HCV Infections

- Demonstrates known underreporting that can occur with the passive surveillance for perinatal HCV infections
- During 2013 and 2014, reporting of hepatitis C infections in pregnant women and infants to DPH by clinics and medical providers was voluntary.

Perinatal Hepatitis C Surveillance in Kentucky

Dec 2013 through Dec 2016

Children's HCV Antibody and HCV RNA Results (n=695)

	HCV RNA – Pos	HCV RNA - Neg	No HCV RNA	Total
HCV Ab - Pos	26	13	75	112
HCV Ab - Neg	-	3	8	11
No HCV Ab	10	20	542	572
Total	34	36	625	695

Please note: An erratum has been published for this issue. To view the erratum, please click [here](#).

Centers for Disease Control and Prevention

MMWR

Weekly / Vol. 65 / No. 28

Morbidity and Mortality Weekly Report

July 22, 2016

World Hepatitis Day — July 28, 2016

World Hepatitis Day, recognized on July 28, was established by the World Health Organization (WHO) to raise awareness and promote understanding of viral hepatitis, the seventh leading cause of death worldwide (1). Together, hepatitis B and hepatitis C are responsible for most of the 1.4 million annual deaths attributed to viral hepatitis (1). In April 2016, the 69th World Health Assembly adopted a Global Viral Hepatitis Strategy that aims to eliminate hepatitis B and hepatitis C as public health threats by 2030 (1). The strategy includes prevention and treatment targets that, when met, will save millions of lives.

This issue of MMWR features a report revealing the growing risk for perinatal transmission of hepatitis C virus (HCV) in the United States, a risk most pronounced in areas where HCV incidence is increasing among young adults and women of childbearing age. Vaccination-based strategies are highly effective in preventing perinatal hepatitis B virus transmission (2). The report highlights that, in the absence of a vaccine for HCV, there is an immediate need to improve risk screening, scale up HCV testing among persons at risk, including children born to HCV-infected mothers, as recommended by CDC and the United States Preventive Services Task Force, and improve case reporting, particularly among women who are pregnant or planning pregnancy. Additional information and resources are available at <http://www.cdc.gov/hepatitis>.

References

1. World Health Organization. Draft global health sector strategies: viral hepatitis, 2016–2021. Geneva, Switzerland: World Health Organization; 2016. http://apps.who.int/gb/ebwha/pdf_files/WHA69/A69_32-en.pdf?ua=1
2. Meehan EE, Mendenhall US, Brown AE, et al. A comprehensive immunization

Increased Hepatitis C Virus (HCV) Detection in Women of Childbearing Age and Potential Risk for Vertical Transmission — United States and Kentucky, 2011–2014

Alaya Koneru, MPH¹; Noele Nelson, MD¹; Susan Hariri, PhD¹; Lauren Canary, MPH¹; Kathy J. Sanders, MSN²; Justine E. Maxwell, MPH²; Xiaohua Huang, MS³; John A.D. Leake, MD³; John W. Ward, MD¹; Claudia Vellozzi, MD¹

Hepatitis C virus (HCV) infection is a leading cause of liver-related morbidity and mortality (1). Transmission of HCV is primarily via parenteral blood exposure, and HCV can be transmitted vertically from mother to child. Vertical transmission occurs in 5.8% (95% confidence interval = 4.2%–7.8%) of infants born to women who are infected only with HCV and in up to twice as many infants born to women who are also infected with human immunodeficiency virus (HIV) (2) or who have high HCV viral loads (3,4); there is currently no recommended intervention to prevent transmission of infection from mother to child (3). Increased reported incidence of HCV infection among persons aged ≤30 years (5,6) with similar

INSIDE

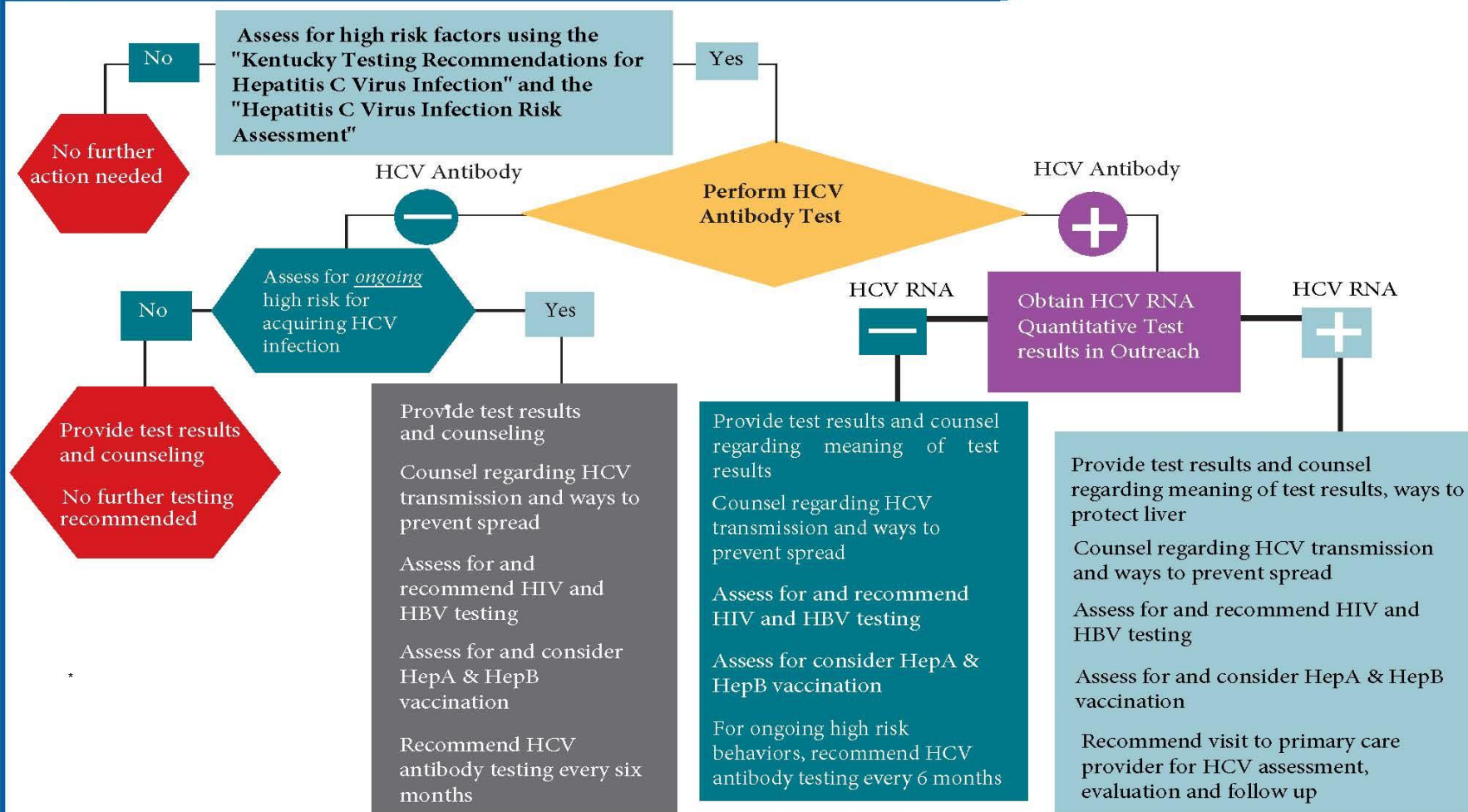
- 711 Projected Zika Virus Importation and Subsequent Ongoing Transmission after Travel to the 2016 Olympic and Paralympic Games — Country-Specific Assessment, July 2016
- 716 Suspected Female-to-Male Sexual Transmission of Zika Virus — New York City, 2016
- 718 Notes from the Field: *Rickettsia parkeri* Rickettsiosis — Georgia, 2012–2014
- 720 Announcement



MMWR – July 2016

- Results in MMWR indicated that from 2011-2014, HCV detection among women of child bearing age in Kentucky increased 213% from 275 to 862 per 100,000.
- 1 in 63 births in Kentucky
- About 80% have current disease when HCV RNA is reported, i.e., HCV RNA result is reported as “positive”
- Multiple risk factors are associated with pregnant women and mothers with HCV
- Vertical transmission of HCV is occurring in Kentucky
- Not limited to urban centers

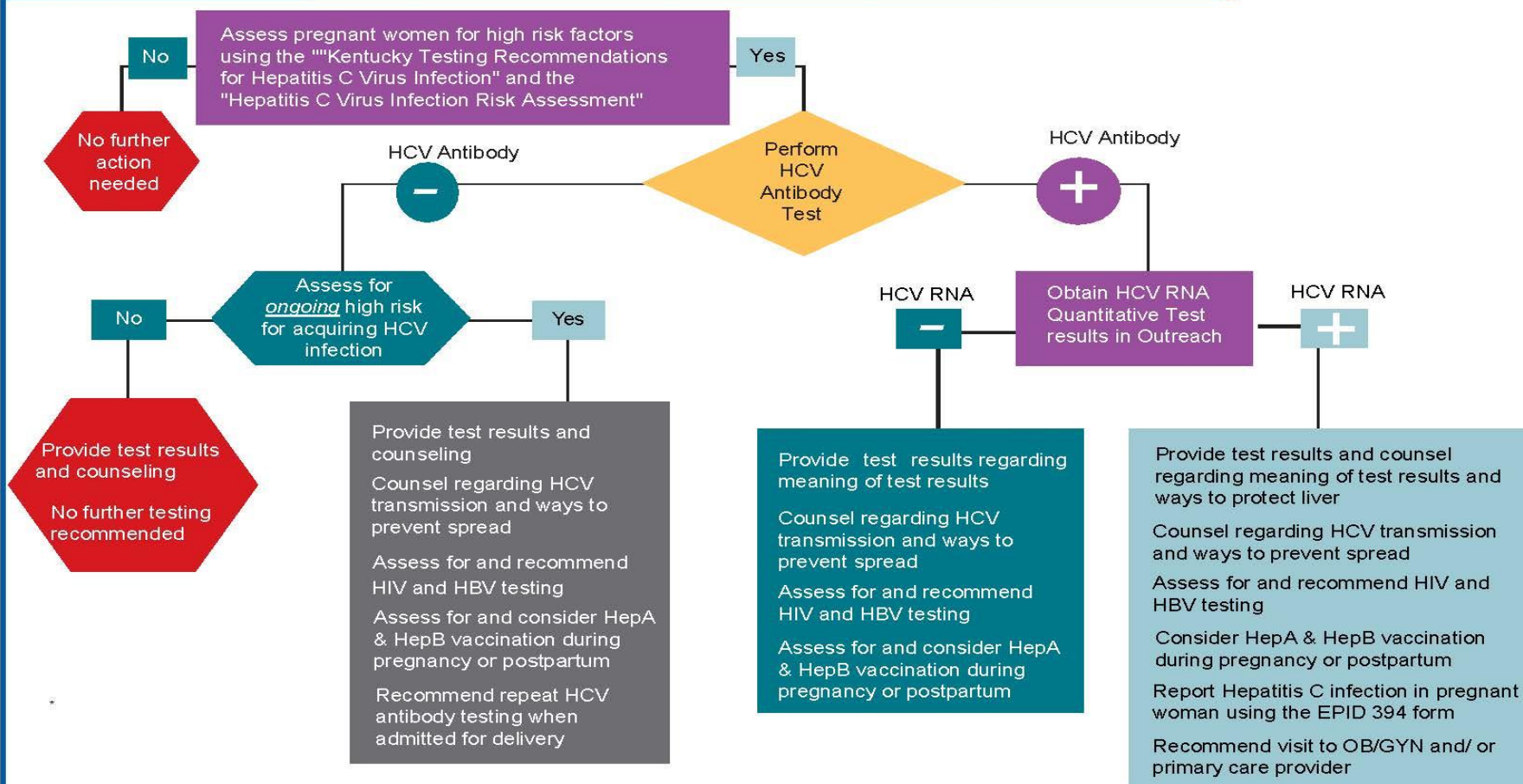
2 Screening and Referral Guidance for Hepatitis C Virus (HCV) Infection among High Risk Individuals





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4 Screening and Referral Guidance for Hepatitis C Virus (HCV) Infection among High Risk Pregnant Women





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5 Screening and Referral Guidance for Infants Born to Mothers with Hepatitis C Virus (HCV) Infection

Infant born to mother with a positive HCV Antibody test or positive HCV RNA Test

1. Report to KY DPH using the EPID 394 form and recommend visit to pediatrician or family practice for follow up test at 2 month or 4 month well child visit
2. Provide HBV vaccination
3. No HCV test recommended at time of BIRTH
4. Provide HCV counseling to caregiver on HCV transmission and ways to prevent spread
5. Infant may be breastfed as long as mother's nipples are not cracked or bleeding

HCV RNA
Quantitative Negative

No further
action needed

1. Recommend physician assessment and evaluation for HCV RNA Quantitative test at 2 month or 4 month well-child visit, or the HCV antibody test at 18 months of age
2. Counsel caregiver on transmission and ways to prevent spread
3. Provide test results and counseling
4. Update and resend the EPID 394 form to report a HCV Antibody positive test

HCV RNA
Quantitative Positive

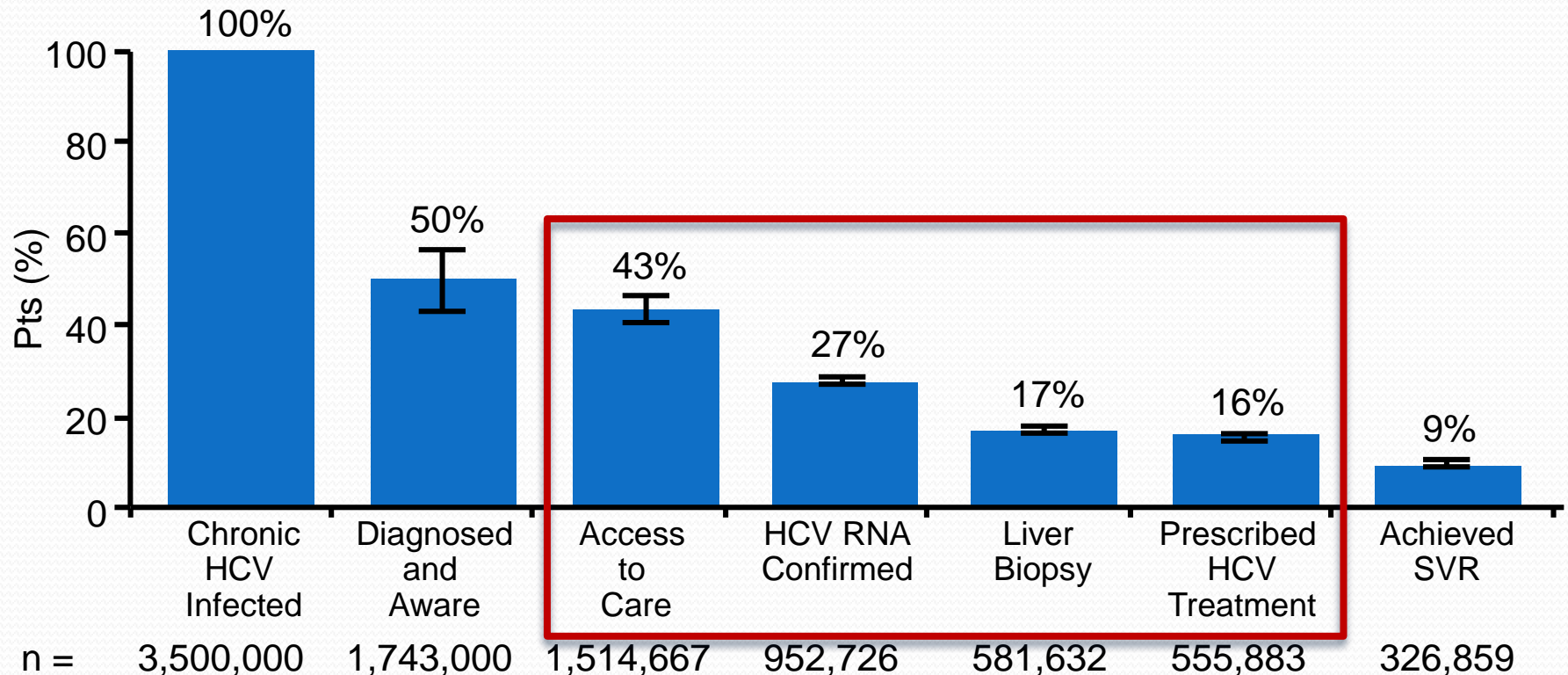
Ongoing evaluation and follow up by pediatrician or family practice as high risk infant
Update and resend the EPID 394 form to report a HCV RNA Quantitative positive test



Linkage to Care

Identify Linkage to Care in Kentucky to ensure referrals for further evaluation for those with HCV RNA positive test results.

HCV in the US: Gaps in Current Practice



Yehia BR, et al. PLoS One. 2014;9:e101554.



Integrated Approach

KY DPH seeking an integrated approach:

- Linkage to care
- Assistance getting healthcare coverage
- Assessment of history of drug use and referral for treatment when appropriate
- HIV testing
- HepA and HepB vaccination
- Education on prevention of transmission
- Prevention of liver damage



Updates

Kentucky 5th Annual Viral Hepatitis Conference

- 1) Partner with Kentucky Rural Health Association and KY DPH Immunization Program
- 2) Target Audience- GI/ ID Specialists, Primary Care Providers, Nurses, Pharmacists, Surveillance and local health department staff



Kentucky 5th Annual Viral Hepatitis Conference

- Purpose to discuss national and state viral Hepatitis elimination strategies and provide attendees the most up-to-date information on Hepatitis B and Hepatitis C epidemiology, diagnosis, management, treatment and prevention.
- Assist health service providers to offer the most effective care to persons infected with HBV and HCV.
- Promote collaborations and the sharing of knowledge, elimination strategies, ideas, and experience, to continue to make advances in the prevention and management of HBV and HCV infections in Kentucky and throughout the Appalachian Region.



Coming July 2018 Kentucky Hepatitis Academic Mentorship Program (KHAMP)

- Targeting primary care providers in identified locations interested in providing HCV treatment services
- One full day of training, followed by monthly educational webinars



Updates

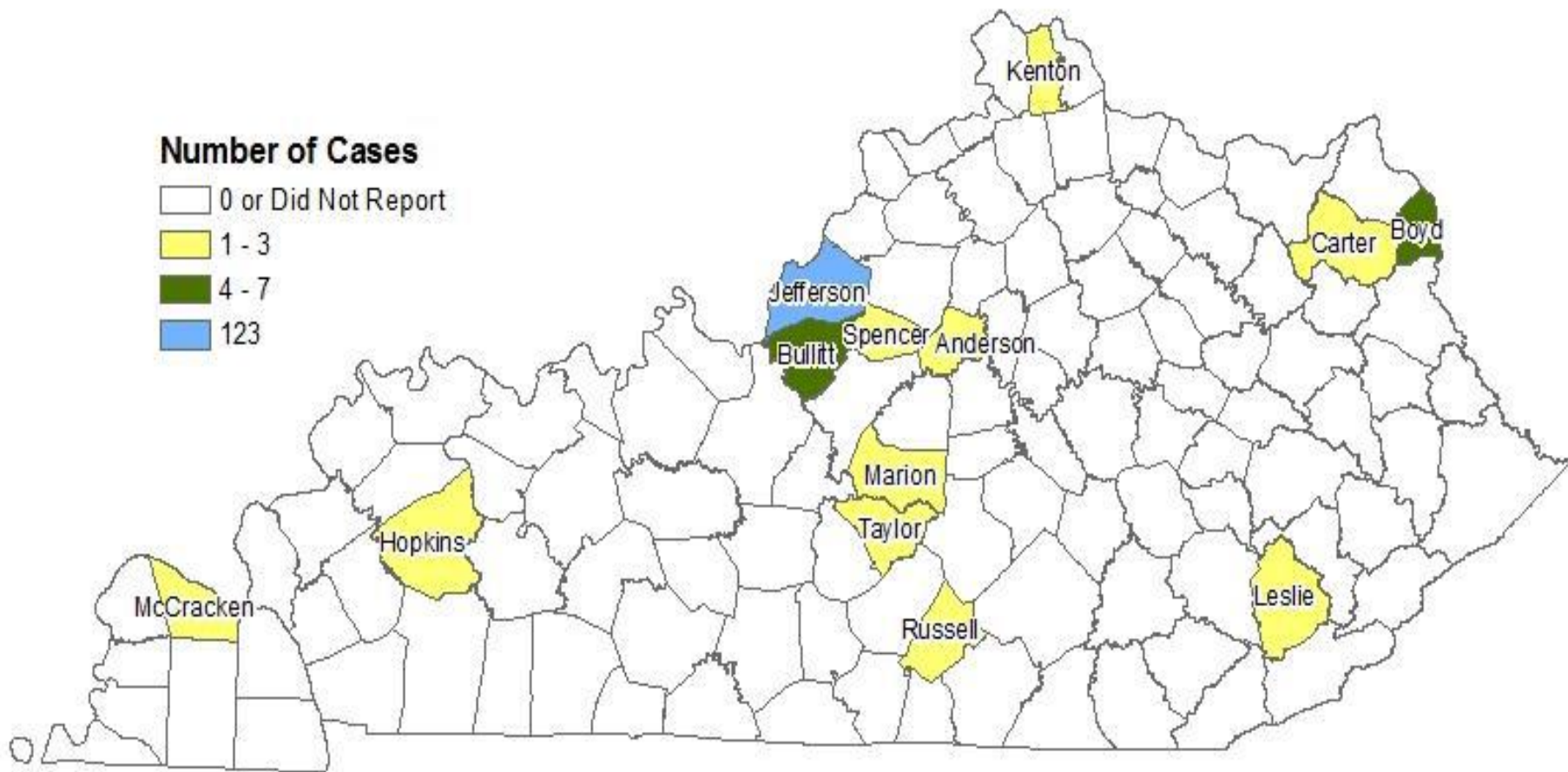
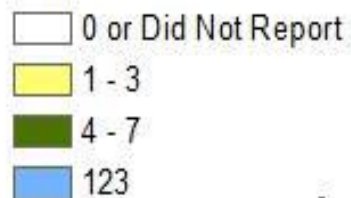
Kentucky Acute Hepatitis Weekly Report

In November 2017, the Kentucky Department for Public Health (DPH) identified an outbreak of acute hepatitis A.

- The increase in cases observed in Kentucky was well over the 10-year average of reported hepatitis A cases, and several cases have been infected with hepatitis A virus (HAV) strains genetically linked to outbreaks in both California and Utah.
- Similar to hepatitis A outbreaks in other states, the primary risk factors have been homelessness and illicit drug use. A contaminated food source has not been identified, and HAV transmission is believed to have occurred through person-to-person contact.

KY17-089 Distribution of Outbreak-Associated Acute Hepatitis A Cases by County, August 1, 2017 - March 3, 2018

Number of Cases





Frequent Risk Factors of Outbreak-associated Cases

**KY17-089 Risk Factors of Outbreak-Associated Acute
Hepatitis A Cases, August 1, 2017 – March 3, 2018**

Risk Factor	Number of Cases Reporting Risk Factor
Homelessness only	7
Illicit drug use only	48
Homelessness + illicit drug use	33
MSM only	1

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- Kentucky Department for Public Health, Division of Epidemiology and
Health Planning
- Kentucky Local Health Departments and Private Providers/ Birthing Centers
who voluntarily reported in 2013 and 2014 and reported after law became
effective in 2015
- Jens Rosenau, MD, Associate Professor of Medicine - UK