



# KY Hepatitis Connections

On behalf of the KY Adult Viral Hepatitis Prevention and Control Program, we wish you and your family a wonderful Easter holiday! Please see inside our April 2015 Edition of the KY Hepatitis Connections. You will find current information about viral hepatitis, opportunities for viral hepatitis continuing professional education and information about educational materials available. See all the exciting things happening here in Kentucky!

If you would like to share your favorite Kentucky landscape pictures for readers of our newsletter, send to me. As always, feel free to forward, copy and/ or distribute to other professionals in your network. Your knowledge and input are greatly valued, as we are committed to keeping you up to date on shared progress in the medical community on viral hepatitis and its impact on our families throughout the Commonwealth. We hope you enjoy the April newsletter.

Kathy Sanders, RN MSN

## **HCV: IN THE NEWS:**

### **Kentucky State University Partners with Northern Kentucky Independent District Health Department for a HCV Awareness, Education and Screening Project**

In March, Kentucky State University partnered with the Northern Kentucky Independent District Health Department to join forces for a hepatitis C awareness, education, and screening project. Funds from the project come from a SAMHSA grant awarded to Kentucky State University. The project targets minority youth between the ages of 18 to 24 years of age on Northern Kentucky University and Kentucky State University campuses. This is an exciting opportunity; if additional funding opportunities become available, future plans include implementing this model on college campuses throughout the Commonwealth.



Pictured Back Row: L to R: Derrick Gilmore, Director of Grants and Sponsored Programs, Kentucky State University; and Floarine Wilson, RN, APRN Kentucky State University Health Services Staff Director of Student Health Services. Front Row: L to R: Doug Thomas, RN BSN, Project Manager Northern Kentucky Health Department, Joyce Rice, RN MSPH Epidemiology Manager, Northern Kentucky Health Department, Jennifer Hunter, RN MSN, Director of Clinical Services Northern Kentucky Health Department, and Kathy Sanders, RN MSN, KY DPH Adult Viral Hepatitis Prevention Coordinator.

## Heroin bill passes with needle exchange

FRANKFORT, Ky. The months of anguished pleas from parents and former addicts — Kentucky families gripped in a noxious heroin epidemic — found some resolution Tuesday as a landmark bill to improve drug treatment and clamp down on dealers won passage in the legislature.

The long-negotiated compromise sailed out of the Democrat-led House on a unanimous vote and was approved by the GOP-controlled Senate 34-4. Gov. Steve Beshear is expected to sign the measure into law on Wednesday morning, allowing it to take effect immediately.

"Families are going to have some hope now," said Charlotte Wethington, who lost her 23-year-old son, Casey, to a heroin overdose in 2002. "Not only is the person who is addicted hopeless and helpless, but so are the families."

After months of debate, the final agreement includes modestly tougher penalties for drug traffickers along with language that will allow health departments to establish needle exchanges. Here's a breakdown of key provisions:

**Low-level traffickers:** Just like under current law, selling less than two grams of heroin is still considered a Class D felony. But dealers who are caught with at least two indicators of trafficking — such as large sums of cash or baggies — could have to serve at least half of their prison sentence, depending on the prosecution. Dealers who prove that they are selling to support a habit could be probated into treatment.

**High-volume dealers:** Selling between 2 grams and 100 grams still constitutes a Class C felony, but now convicts would have to serve at least half of their sentence. Selling 100 grams or more would be a Class B felony, and again, dealers would have to serve half their sentence. Also, importing any amount of heroin for the purposes of trafficking would be a Class C felony.

**Treatment:** Using savings from justice reforms enacted in 2011, the bill will provide more than \$20 million each year in the next budget for treatment and other anti-drug efforts. It also channels \$10 million toward those programs immediately and seeks to eliminate barriers to treatment.

**Needle exchanges:** Local health departments would have a new option to create needle exchanges, allowing addicts to trade out dirty needles for clean ones. But health departments would first need approval from city and county government.

**Good Samaritan:** Under a "good Samaritan" provision, people could seek medical help for overdose victims without fear of facing possession or paraphernalia charges.

**Naloxone:** The bill would increase access to naloxone, a drug that can reverse the effects of an overdose and prevent it from turning fatal. Pharmacists would now be able to prescribe naloxone to addicts and families of addicts to keep on hand.

Read more: <http://www.courier-journal.com/story/news/politics/ky-legislature/2015/03/24/heroin-bill-gov-steve-beshear-urges-kentucky-legislature-pass-legislation/70376936/>

## **Indiana governor to declare disaster for county hit by HIV outbreak- 35 miles North of Louisville**

Reuters) - Indiana Governor Mike Pence said on Wednesday he will declare a public health disaster in a small southern Indiana county that has seen a drastic increase in HIV cases tied to intravenous prescription drug abuse since December.

"This is a public health emergency," Pence said of the declaration for rural Scott County, located about 35 miles north of Louisville, Kentucky. "Now I'm evaluating all of the issues and all of the tools that may be available to local health officials in light of a public health emergency." Pence spoke to reporters after meeting with county officials and representatives from the U.S. Centers for Disease Control.

Since December, Scott County has had 72 confirmed HIV cases and seven preliminary ones. Officials fear potentially up to 100 cases could be identified. In past years, Scott County reported less than five new HIV cases each year and had just 21 residents with HIV in 2014, according to state statistics.

While HIV is considered a sexually transmitted virus, the Indiana epidemic is unique because officials say all cases have been tied to intravenous drug use. The initial cases were diagnosed after people injected themselves with the powerful painkiller Opana, which contains oxycodone. Officials said people also have become infected after injecting other drugs, such as methamphetamine.

Read More: <http://www.reuters.com/article/2015/03/25/us-usa-indiana-hiv-idUSKBN0ML2QU20150325?feedType=RSS&feedName=healthNews>

## **Hepatitis C Infections in Hospitals Show Need for Tight Infection Control Practices**

Two cases of hepatitis C infection that occurred during routine surgeries highlight the need for hospitals to tighten infection control to prevent more transmissions, officials said during a most recent interview on Friday February 27<sup>th</sup>, 2015.

In one case, two New Jersey patients (one of them had hepatitis C) received an injection of the anesthetic propofol from the same medication cart. In the other instance, two Wisconsin patients (one of them had hepatitis C) received kidneys that had been prepared for transplantation on the same machine, according to an article in the Feb. 27 issue of *Morbidity and Mortality Weekly Report*, a publication of the U.S. Centers for Disease Control and Prevention.

Read More: [http://www.nlm.nih.gov/medlineplus/news/fullstory\\_151201.html](http://www.nlm.nih.gov/medlineplus/news/fullstory_151201.html)

## HealthWise: Children with Hepatitis C

Rick Nash has had hepatitis C his entire 29 years of life. He didn't know about the infection until the summer prior to starting 7th grade. Rick wasn't even a teenager, and he was already showing signs of advanced liver disease from chronic hepatitis C virus (HCV). Rick acquired HCV when he was an infant. Approximately 6% of infants with HCV-positive mothers will acquire the virus perinatally: This is known as vertical transmission. When Rick learned that he had hepatitis C, his mother was diagnosed too. Up to 4000 children in the U.S. contract HCV vertically every year.

According to NHANES-III, about 0.17% of 6-11 year olds (31,000) and 0.39% of 12-19 year olds (101,000) are HCV antibody-positive. This amounts to roughly 23,000 to 46,000 children in the US with HCV. Vertical transmission is the most common way children acquire HCV. Another frequent HCV transmission mode is via drug use, which is infecting adolescents at alarming rates.

Before going further, it is important to note that information about HCV in the pediatric population is disturbingly minimal. The best source of information comes from the practice guidelines by the North American Society for Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN) published in June 2012. With no mention of the newest HCV treatments, the guidelines are outdated.

Read More: <http://hcvadvocate.org/news/newsLetter/2015/advocate0315.html#2>. **Additional Resources**

***NASPGHAN Practice Guidelines: Diagnosis and Management of Hepatitis C Infection in Infants, Children, and Adolescents*** – Cara L. Mack, et al. Journal of Pediatric Gastroenterology and Nutrition Volume 54, Number 6, June 2013

## FDA warns of serious bradycardia risk with amiodarone plus hepatitis C drugs

FDA has issued a warning about the risk of serious bradycardia when amiodarone is taken with either ledipasvir/sofosbuvir (Harvoni—Gilead) or with sofosbuvir (Sovaldi—Gilead) taken in combination with another direct acting antiviral for the treatment of hepatitis C virus infection. In addition, FDA is updating the labels for ledipasvir/sofosbuvir and sofosbuvir to include information about serious slowing of the heart rate. The agency is recommending that health care professionals not prescribe either of the drugs combined with another direct acting antiviral with amiodarone, an antiarrhythmic drug. In situations where alternative treatment options are not available, FDA recommends heart monitoring in an inpatient hospital setting for the first 48 hours, followed by daily monitoring through at least the first 2 weeks of treatment. Post-marketing adverse event reports indicated that patients can develop serious and life-threatening symptomatic bradycardia when ledipasvir/sofosbuvir or sofosbuvir combined with another direct acting antiviral is taken with amiodarone. According to the reports, one patient died due to cardiac arrest and three other required pacemakers to regulate their heart rhythms. Other patients recovered after discontinuing the hepatitis C drugs and/or amiodarone. Although the cause of these events could not be determined, FDA is continuing to monitor the situation.

Read More: <http://www.pharmacist.com/fda-warns-serious-bradycardia-risk-amiodarone-plus-hepatitis-c-drugs>

# Systematic Review: Patient-Reported Outcomes in Chronic Hepatitis C - The Impact of Liver Disease and New Treatment Regimens

**BACKGROUND:** Treatment for chronic hepatitis C (CH-C) is rapidly changing and moving away from an interferon and ribavirin-based therapy to interferon-free ribavirin-free all oral regimens. These regimens are simpler and shorter to administer with very high efficacy rates and better side effect profiles. As advances in the treatment of CH-C occur, it is imperative to capture both clinical outcomes (efficacy and safety) as well as patient-reported outcomes (PROs). In fact, PROs assesses and quantifies the impact of these regimens on patient experience. PROs assess patients' health-related quality of life (HRQOL) especially in the realms of fatigue and neuropsychiatric issues such as depression which can affect treatment adherence and work productivity.

**AIM:** To review the literature related to PRO's in HCV patients and summarise the impact of CH-C and its treatment on PROs.

**METHODS:** Databases Ovid MEDLINE and PubMed were searched from 1990 to October 2014 using a combination of MESH, thesaurus terms and relevant text words: hepatitis C, CH-C, treatment, quality of life, health-related quality of life, fatigue, work productivity, adherence, patient-reported outcomes, direct acting anti-viral agents and second generation direct acting anti-viral agents. Each manuscript was assessed for pertinence to the issue of PROs in CH-C as well as the quality of study design and publications.

**RESULTS:** From the literature, it is evident that CH-C patients have baseline PRO impairment. Furthermore, treatment with interferon with or without ribavirin and first generation DAAs causes additional PRO burden which can negatively impact treatment adherence and indirectly, treatment efficacy and work productivity. The new treatment regimens with interferon- and ribavirin-free regimens not only have very high efficacy, but also result in the improvement of PRO scores as early as 2 weeks into treatment as well as possibly better adherence to treatment regimens.

**CONCLUSIONS:** CH-C and its treatment have been associated with patient-reported outcome impairment. The new IF-free and RBV-free regimens are associated with high efficacy and substantial improvement of patient-reported outcomes in clinical trial setting. Although very encouraging, more data are needed to assess patient-reported outcomes, adherence and work productivity of CH-C patients in the real world setting of clinical practice

<http://www.ncbi.nlm.nih.gov/pubmed/25616122>



# Hepatitis C Virus Infection: A Risk Factor for Parkinson's Disease

## Abstract

Recent studies found that hepatitis C virus (HCV) may invade the central nervous system, and both HCV and Parkinson's disease (PD) have in common the overexpression of inflammatory biomarkers. We analyzed data from a community-based integrated screening program based on a total of 62 276 subjects. We used logistic regression models to investigate association between HCV infection and PD. The neurotoxicity of HCV was evaluated in the midbrain neuron-glia co-culture system in rats. The cytokine/chemokine array was performed to measure the differences of amounts of cytokines released from midbrain in the presence and absence of HCV. The crude odds ratios (ORs) for having PD were 0.62 [95% confidence interval (CI), 0.48-0.81] and 1.91 (95% CI, 1.48-2.47) for hepatitis B virus (HBV) and HCV. After controlling for potential confounders, the association between HCV and PD remained statistically significant (adjusted OR = 1.39; 95% CI, 1.07-1.80), but not significantly different between HBV and PD. The HCV induced 60% dopaminergic neuron death in the midbrain neuron-glia co-culture system in rats, similar to that of 1-methyl-4-phenylpyridinium (MPP<sup>+</sup>) but not caused by HBV. This link was further supported by the finding that HCV infection may release the inflammatory cytokines, which may play a role in the pathogenesis of PD. In conclusion, our study demonstrated a significantly positive epidemiological association between HCV infection and PD and corroborated the dopaminergic toxicity of HCV similar to that of MPP<sup>+</sup>

<http://www.ncbi.nlm.nih.gov/pubmed/25608223>

## Transmission of Hepatitis C Virus Associated with Surgical Procedures — New Jersey 2010 and Wisconsin 2011

Incidents of health care–associated hepatitis C virus (HCV) transmission that resulted from breaches in injection safety and infection prevention practices have been previously documented (1,2). During 2010 and 2011, separate, unrelated, occurrences of HCV infections in New Jersey and Wisconsin associated with surgical procedures were investigated to determine sources of HCV and mechanisms of HCV transmission. Molecular analyses of HCV strains and epidemiologic investigations indicated that transmission likely resulted from breaches of infection prevention practices. Health care and public health professionals should consider health care–associated transmission when evaluating acute HCV infections.

An estimated 3.2 million U.S. residents have chronic HCV infections; during 2011, approximately 16,500 acute HCV infections were diagnosed. Molecular analyses of HCV strains have enhanced investigations of health care–associated transmission (3–5) by determining the relatedness of strains infecting persons with acute and chronic HCV infection. Two investigations of HCV infection among patients who had surgical procedures highlight the potential for HCV contamination of medications or equipment, which can result in transmissions that are difficult to recognize.

Read More: [http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6407a1.htm?s\\_cid=mm6407a1\\_e](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6407a1.htm?s_cid=mm6407a1_e)

## **CROI 2015: Liver Disease Progression Is Common Among Baby Boomers with Hepatitis C**

The burden of hepatitis C virus (HCV) infection is high in the U.S., with a nearly half of individuals born between 1945 and 1965 having severe fibrosis or cirrhosis and therefore being at high priority for treatment, according to a report presented at the 2015 Conference on Retroviruses and Opportunistic Infections (CROI) last week in Seattle.

Over years or decades chronic HCV infection can lead to serious liver disease including cirrhosis (scarring), hepatocellular carcinoma (a type of primary liver cancer), and end-stage liver failure, with some patients requiring a liver transplant or dying from liver-related causes.

The advent of highly effective and well-tolerated interferon-free direct-acting antiviral therapy has brought about a revolution in hepatitis C treatment in recent years. The high cost of the new drugs has led to restrictions on their use, however, with some insurers and public payers only covering treatment for the sickest patients. While a growing number of providers and advocates argue that everyone living with hepatitis C should be eligible for treatment, guidelines say that people with advanced liver disease should be prioritized when resources are limited.

Read More: <http://www.hivandhepatitis.com/hepatitis-c/hepatitis-c-topics/hcv-disease-progression/5086-croi-2015-liver-disease-progression-is-common-among-baby-boomers-with-hepatitis-c>

## **CROI 2015: Interferon-Free Regimens Show High Cure Rates for HIV/HCV Coinfected**

A pair of 2-drug, 12-week regimens containing neither interferon nor ribavirin -- sofosbuvir (Sovaldi) plus either ledipasvir (the Harvoni co-formulation) or daclatasvir (Daklinza) -- cured more than 95% of HIV/HCV coinfecting people with various hepatitis C genotypes, according to presentations at the 2015 Conference on Retroviruses and Opportunistic Infections (CROI) this week in Seattle. These findings confirm that hepatitis C patients with HIV can be treated the same as those with HCV alone.

The advent of oral direct-acting antiviral agents (DAAs) that target different steps of the hepatitis C virus (HCV) lifecycle has revolutionized treatment, offering therapy that is shorter, better tolerated and more effective than interferon-based treatment. This is particularly beneficial for HIV/HCV co-infected people who tend to have more rapid liver disease progression and do not respond as well to interferon.

Read More: <http://www.hivandhepatitis.com/hiv-hep-coinfection/hiv-hcv-coinfection/5077-croi-2015-interferon-free-regimens-show-high-cure-rates-for-hivhcv-coinfected-people>

## HIV testing in ED serves as link to care

An HIV testing program in an ED, which was originally implemented to describe the local epidemic, played a significant role in linking individuals to care, according to data presented at CROI 2015.

Over a 25-year period, the program evolved, and this change is partially evidenced by declining undiagnosed HIV infection, increased use of antiretroviral therapy, increased viral suppression and decline in HIV incidence,” Thomas C. Quinn, MD, of the National Institute of Allergy and Infectious Diseases, said during his presentation.

Quinn and colleagues examined local trends in HIV and hepatitis C in the Johns Hopkins Hospital ED population for a 25-year period. They conducted 6- to 8-week identity-unlinked serosurveys in the ED in 1987, 1988, 1992, 2001, 2007, and 2013. The study included 18,144 eligible patients who required a blood draw for a medical reason. Excess sera were collected, and specimens underwent ELISA testing followed by Western blot (from 1992-2013). The specimens also were tested for HCV in 1988 and from 2001 to 2013.

Read More: <http://www.healio.com/infectious-disease/hiv-aids/news/online/%7Bfe3690e4-9400-4210-8d62-685b6c8922cb%7D/hiv-testing-in-ed-serves-as-link-to-care>

## Gilead Announces SVR12 Rates From Phase 3 Study Evaluating Harvoni® for the Treatment of Chronic Hepatitis C in Patients Co-Infected With HIV

SEATTLE--(BUSINESS WIRE)--Feb. 26, 2015-- Gilead Sciences, Inc. (NASDAQ:GILD) today announced results from a Phase 3 study, ION-4, evaluating the once-daily single tablet regimen Harvoni® (ledipasvir 90 mg/sofosbuvir 400 mg) for the treatment of genotypes 1 or 4 chronic hepatitis C virus (HCV) infection among patients co-infected with HIV. In the trial, 96 percent (n=321/335) of HCV patients achieved a sustained virologic response 12 weeks after completing therapy (SVR12). Patients who achieve SVR12 are considered cured of HCV infection. These data were presented in a late-breaker oral session (Session 152LB) at the 22<sup>nd</sup> Conference on Retroviruses and Opportunistic Infections (CROI) in Seattle.

“This trial provides strong evidence that people who are co-infected with HIV can achieve very high rates of hepatitis C cure with a combination direct-acting antiviral regimen,” said Susanna Naggie, MD, MHS, Director of Infectious Diseases Research at Duke Clinical Research Institute and Principal Investigator for the ION-4 study. “These high cure rates were observed in most of the historically difficult-to-treat sub-populations, including those who failed previous treatment and those with cirrhosis. We are greatly encouraged by these findings.”

Read More: <http://gilead.com/news/press-releases/2015/2/gilead-announces-svr12-rates-from-phase-3-study-evaluating-harvoni-for-the-treatment-of-chronic-hepatitis-c-in-patients-coinfected-with-hiv>

## HCV Drugs Cost-effective, but Who Should Get Them?

Expensive new drugs for hepatitis C virus (HCV) are cost-effective for most patients, according to two new studies published in the March 17 issue of the *Annals of Internal Medicine*. However, the authors of one study add that paying for the drugs is unsustainable with current resources and growing demand.

The studies stir the debate about who should get the drugs, who should pay, and whether a traditional cost-effectiveness analysis is really the measure that should be used.

### Estimates Reach \$27 Billion per Year

The new treatments would cost private insurers and the government \$136 billion during the next 5 years, according to an article by Jagpreet Chhatwal, PhD, from the Department of Health Services Research, University of Texas MD Anderson Cancer Center in Houston, and colleagues. That would be \$65 billion more than the cost of treating the same number of patients with the older drugs. The authors calculate downstream cost offsets, including fewer HCV complications, at \$16 billion.

Read More: <http://www.medscape.com/viewarticle/841590>

## Tattoos and Hepatitis C: What Are the Risks?

Unsterile tattooing can transmit the blood borne hepatitis C virus (HCV), and though it is unclear exactly what percent of people with the virus got it through tattooing, a study last year found that people with hep C were almost four times more likely to report having a tattoo, even when other major risk factors were taken into account. What do you need to know to avoid giving or getting hep C during tattooing? We researched six common questions on the topic and found what might be some surprising results.

### How can hep C be spread through tattooing?

Hepatitis C can be spread if poor infection control methods are used. Make sure you are visiting a licensed, professional tattoo parlor. When you receive a tattoo, your skin is being pierced by a needle and injected with small amounts of ink. Make sure that the needle is coming out of a new, sterile package, that the tattoo artist is wearing latex gloves, and that all other tattooing equipment has been sterilized.

### What percentage of all people with hep C get it through tattooing?

There is not enough research to determine the percentage of people with hepatitis who got it through tattoos. However, a recent study discovered that people with hep C were close to four times more likely to report having a tattoo, even when other risk factors were accounted for. (Hepatitis C is transmitted mainly through injection drug use or blood transfusions given before 1992.)

Other studies have shown no evidence of an increased risk in infection if tattoos were given in a professional parlor with proper infection control. If the tattoo was done in a prison or non-professional setting, the risk was significantly greater.

Read More: [http://www.hepmag.com/articles/tattoo\\_hcv\\_2502\\_25887.shtml](http://www.hepmag.com/articles/tattoo_hcv_2502_25887.shtml)

## Registration Now Open:

### HCV Advocate Training

June 11<sup>th</sup>: Florence Government Center

June 12<sup>th</sup>: Lake Cumberland District Health Department

### Register on TRAIN

### HCV Training Workshop # 1056287

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Topics include: HCV Diagnostic Test, HCV Transmission & Prevention, HCV Symptoms, Disease Progression & Management, and Medical Treatments for HCV including upcoming new therapies!

For additional information contact [KathyJ.Sanders@ky.gov](mailto:KathyJ.Sanders@ky.gov)

**SAVE THE DATE! July 28, 2015**

**The 2015 Kentucky Conference on  
Viral Hepatitis**

**Hepatitis: Preventing**

**The Silent Epidemic in Kentucky**

**Embassy Suites in  
Lexington, Kentucky**

**July 28, 2015**

This conference aims to educate attendees on prevention, diagnosis, and treatment of those affected by hepatitis B and hepatitis C.

For more information, contact Kathy Sanders ([KathyJ.Sanders@ky.gov](mailto:KathyJ.Sanders@ky.gov)) or Julie Miracle ([Julie.Miracle@ky.gov](mailto:Julie.Miracle@ky.gov)) or (502) 564-4478

# REMINDER: HEPATITIS C Reporting:

## Hepatitis C: Perinatal and Children Aged Five Years or Less

Health care providers should report

- all HCV-positive pregnant women;
- all infants born to HCV-positive women; and
- all HCV-positive infants and children 5 years old and younger seen in birthing hospitals, medical practices and clinics

Remember: Routine testing for HCV is not recommended for all pregnant women. Pregnant women with a known risk factor for HCV infection should be offered counseling and testing. Data from the CDC states that approximately 6 out of every 100 infants born to HCV infected woman become infected. The risk is greater, 2 to 3 times, if the woman is co-infected with HIV. There is currently no HCV treatment approved for pregnant women.

<http://www.cdc.gov/std/treatment/2010/hepc.htm>

### Infant born to mothers with HCV

Infants born to HCV-positive mothers should be tested for HCV infection. Children born to HCV-positive mothers can be tested with the **HCV RNA tests at 2 months of age or older** (at a routine well-child visit) or **HCV antibody testing can be done at 18 months of age** (wait until 18 months of age to avoid detecting maternal antibody).

<http://www.cdc.gov/hepatitis/hcv/hcvfaq.htm>

Thank you for your continued support of this project and your ongoing assistance to report pregnant women and children aged five years and less who are infected with hepatitis C virus (HCV), seen in birthing hospitals, medical practices, and clinics throughout the Commonwealth.

Complete and fax the reporting form at the end of this newsletter.

**Fax forms to 502-696-3803**



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# HCSP FACT SHEET

• HCV AND WOMEN •

## *An Overview of Women and HCV*

Written by: Lucinda K. Porter, RN

### *Foreword*

Hepatitis C (HCV) is an equal opportunity virus. It affects men and women from all ethnic backgrounds. In the United States, there is a higher prevalence of HCV among men. Although more people will die with HCV than of HCV, it is a complicated disease with a challenging treatment regimen. Women living with HCV have issues that differ from men's.

Women are more likely to clear HCV than men are. This means that after they contracted HCV, their bodies successfully fight it off. They will test positive for HCV antibodies, but further tests will show they do not actually have it.

Liver disease tends to progress more slowly in women than in men. Women are less likely to die from HCV than men are. Avoiding alcohol is one of the most important steps you can take in order to help your liver. The amounts of alcohol for healthy women (without HCV) are lower than the amounts for men. Women are more susceptible to alcohol-related health problems. Mix alcohol with hepatitis C and you have a recipe for disaster.

HCV is often a silent disease. Some people report feeling free of symptoms and are often surprised when they learn they have HCV. Sometimes the only sign of HCV is found when a blood test is done. This may occur when one of the liver enzymes, ALT, is abnormally high. This suggests that the liver might be inflamed, so more lab tests are ordered to find out the reason for the inflammation. Sometimes a person can be HCV+ and have normal ALT levels. This means that their medical providers will not have one of the usual clues that would suggest the need for further testing.

Why is this important for women to know? Some experts believe that the cut-off number for abnormal liver tests should actually be lower for women than the numbers most labs use. If you are a woman with any risk factors for HCV or your liver enzymes are on the high side of normal, get tested.

### **HCSP FACT SHEET** *A publication of the Hepatitis C Support Project*

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The information in this fact sheet is designed to help you understand and manage HCV and is not intended as medical advice. All persons with HCV should consult a medical practitioner for diagnosis and treatment of HCV.

This information is provided by the Hepatitis C Support Project a nonprofit organization for HCV education, support and advocacy

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## Women and HCV

Although some people do not have any symptoms, there are HCV+ women who might not know they have it because their physical complaints are similar to other medical conditions. A classic example is menopause. Some women notice multiple changes at menopause as well as the years before menopause. These can include fatigue, body aches, and difficulty thinking clearly. These are also common HCV symptoms.

It is important to consult a medical provider about health changes. It is easy to confuse HCV symptoms for something else. The reverse is also true. Do not blame everything on HCV. Many medical conditions have similar symptoms to HCV. Some of these are very easy to treat.

Approximately 5 to 8% of the population has some sort of autoimmune disease; roughly, 3 out of 4 of these are women. Some autoimmune diseases share similar symptoms with HCV. Autoimmunity has been linked to HCV, but the relationship is not well-understood. Autoimmunity is a confused immune system in which the body starts attacking its own cells.

This sounds frightening, but not all autoimmune diseases are serious if treated. The most common autoimmune disease causes a low thyroid problem. For most people, this can be treated easily. There are other more serious autoimmune diseases, such as lupus. Talk to your medical provider about this, especially if you have a family history of autoimmune diseases.

Women with HCV want to know if it is okay to take hormones, such as birth control pills or hormone replacement therapy (HRT). From an HCV perspective, the answer is yes. HRT is controversial

for other reasons not related to liver disease. Talk to your medical provider about this.

If you take medication for menstrual cramps or other causes of pain, ask your medical provider what the best medications are for pain management. Although acetaminophen is generally safe if taken as directed, it can cause liver damage if the dose is exceeded, or if taken with alcohol. Some pain medications, such as hydrocodone, are combined with acetaminophen. Find out how to use all medications safely, especially if you are undergoing HCV treatment.

### **HCV Transmission**

- **Household Risk** – Although there hasn't been a documented case, theoretically HCV can be passed via personal items. Do not share razors, cuticle scissors, nail clippers, toothbrushes or other items that might be exposed to blood. Feminine hygiene products should be discarded properly.
- **Occupational Risks** – Some predominately-female occupations may present more opportunities for blood-to-blood contact. Some of these are nursing and other healthcare professions; those in the janitorial and housecleaning industries; and those in the cosmetic and personal care industry. If you work closely with blood, follow the safety guidelines for your work situation.

*Female sex workers, especially those who trade sex for drugs are at an increased risk of HCV. Sex workers who use injectable drugs are encouraged to learn how to do so safely. Community Needle Exchange and Harm Reduction programs offer education and services that promote safer drug use.*

## Women and HCV

- **Sexual Risk** – HCV sexual transmission rates are quite low. Women who are in exclusively monogamous relationships, have a near zero risk of transmitting or being infected with HCV. The risk increases if you or your partner has HIV, other sexually transmitted diseases, or open sores, cuts, or wounds. Anal sex may have a higher risk, particularly if any tissue is torn. Oral sex appears to be without risk for HCV. Current recommendations are that people in stable monogamous relationships do not need to change their sexual practices. The risk may be higher during a woman's menstrual cycle, and many experts advise using protection during these periods. Safer sex is recommended for those engaged in sex with multiple partners. Although there is no guaranteed prevention method, the use of barrier protection is advised.
- **Transfusion Risks** – Prior to 1992, the blood supply in the U.S. was contaminated with HCV. Approximately 250,000 women are infected with HCV because they received blood for caesarean sections prior to 1992. The blood supply in the U.S. has been very safe since 1992.

### **HCV and Supplements Commonly Used by Women**

Herbs and dietary supplements may seem appealing, but some can cause serious harm. If you have HCV, be sure to tell your health care provider all the dietary supplements you take. People who are undergoing HCV treatment or have cirrhosis should never use herbs except under strict medical the advice.

Make wise, informed choices before taking any dietary supplements. Before you take an herb or supplement, find out if it is compatible with other drugs or supplements you are taking. Verify that

the supplement is not contraindicated for any other condition you may have. Apply the same caution and commonsense approach to supplements that you would to any drug.

The best way to take vitamins and minerals is by eating a nutritional diet. Never take high doses of vitamins, minerals, or other supplements unless you do so under medical care, and it has been cleared by the specialist who is following your liver disease.

- **Multivitamins and minerals** – Choose a no or low iron version unless your medical provider wants you to have the additional iron. Pre-menopausal women may need iron supplementation.
- **Vitamin A** – Best from food or beta-carotene supplements; limit retinol intake to 700mcg or 2,333 IU daily.
- **Calcium** – It will not damage your liver if you take the recommended daily allowance of calcium. Talk to your medical provider about the correct dose for your needs.
- **Black Cohosh** – This herb is sometimes used for premenstrual complaints, painful periods, and management of menopause symptoms. In Australia, there were three reports of severe hepatitis linked to black cohosh use, two of which resulted in liver failure requiring transplant surgery. Black cohosh should not be taken by pregnant or lactating women. Black cohosh may interact with a number of other drugs, herbs and dietary supplements.
- **Vitamin D** – This vitamin is often used, especially for those with liver disease. Vitamin D appears to be safe for the liver. Health care providers make dosage recommendations based on lab results.

## Women and HCV

### **Pregnancy, Childbirth, and Breastfeeding**

The only recommendations against pregnancy for HCV-positive women pertain to those taking ribavirin. There are no recommendations regarding vaginal versus Cesarean section delivery. There may be a higher mother-to-infant transmission risk for those with both HCV and HIV.

Pregnancy does not change HCV progression except if cirrhosis is present. Lab tests measuring liver function (liver enzymes) may fluctuate during pregnancy. The amount of virus in the blood (viral load) may also fluctuate during pregnancy. It is recommended that women needing a viral load test should wait until after the postpartum period.

If pregnancy occurs while taking ribavirin, or six months after treatment has stopped, tell your medical provider. All pregnancies should be reported to the Ribavirin Pregnancy Registry. You or your doctor can do this. This is confidential, free, and important. Ribavirin: Pregnancy Registry 1-800-593-2214; [www.ribavirinpregnancyregistry.com](http://www.ribavirinpregnancyregistry.com)

After the birth, the mother should tell her infant's pediatrician. The Centers for Disease Control and Prevention (CDC) recommends testing for children born to HCV+ mothers. Some babies may be born with the HCV antibody but they may actually lose this by the time they are 18 months old. It is advised to wait for 18 months after the birth before doing this test.

There are no recommendations against breastfeeding for HCV-positive women, unless they are taking ribavirin. Practice good nipple care. If your nipples are cracked or bleeding, stop breastfeeding until you are healed.

### **HCV Treatment**

HCV infection is curable. Current HCV treatments have high success rates, are easier to tolerate, and have shorter treatment lengths. If you are a woman thinking about treatment, learn about the risks and benefits. Above all else, know the warnings about pregnancy and breastfeeding, especially if your medical provider prescribes ribavirin.

Many factors influence when to start HCV treatment. Depending on your situation, treatment typically lasts 12 to 24 weeks. Women with children are constantly trying to balance work and family issues. HCV treatment can upset this balance, particularly if ribavirin or peginterferon are prescribed. There may not be a perfect time to start, but it is important that you have good support and a life that is somewhat settled and flexible.

### *What to Consider When Making Treatment Decisions*

- If pregnancy or breastfeeding may occur during your HCV treatment, tell your health care provider. Ribavirin should not be taken during pregnancy and for an additional six months after treatment. Use two reliable forms of birth control during this time. Do not breastfeed during HCV treatment unless your pediatrician has said your medications are safe for your baby.
- If you have been diagnosed with an autoimmune disease or if you suspect you have one, tell your medical provider. Although peginterferon is rarely used for HCV treatment any longer, it can aggravate autoimmune diseases and should be avoided in these cases.
- Anemia is a side effect of ribavirin. Women who are menstruating may become anemic more easily because of the blood they lose.

***Women and HCV***

every month. If your medical provider prescribes ribavirin and you are prone to anemia, mention this to him or her.

Some of the new HCV medications may interact with hormones, including contraceptives. Ask your doctor if you need to adjust or change your hormones. Sometimes it is simply a matter of delaying the time between when you take your HCV medication and your hormones.

**Conclusion**

You are not alone. There are millions of women in the world living with hepatitis C. By gathering information, you have already begun the process of learning how to live with HCV. Add in good medical care, support and a healthy lifestyle, and you have a formula that may keep you healthy for years to come.

***Related publications:***

- **Women and Hepatitis C: An HCSP Guide**  
[www.hcvadvocate.org/hepatitis/factsheets\\_pdf/Women\\_Guide.pdf](http://www.hcvadvocate.org/hepatitis/factsheets_pdf/Women_Guide.pdf)
- **Being a Positive Mother**  
[www.hcvadvocate.org/hepatitis/factsheets\\_pdf/Wm\\_Mother.pdf](http://www.hcvadvocate.org/hepatitis/factsheets_pdf/Wm_Mother.pdf)
- **Pregnancy Drug Categories**  
[www.hcvadvocate.org/hepatitis/factsheets\\_pdf/Treat\\_pregcat.pdf](http://www.hcvadvocate.org/hepatitis/factsheets_pdf/Treat_pregcat.pdf)

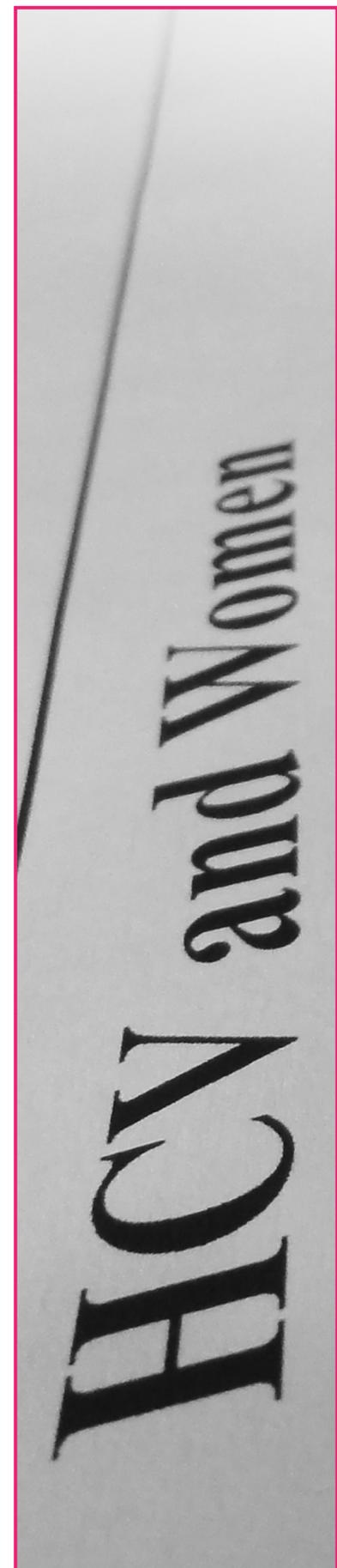
***For more information***

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• <b>Centers for Disease Control and Prevention</b><br/><a href="http://www.cdc.gov">www.cdc.gov</a></li> <li>• <b>Help4Hep</b><br/>(877) HELP4HEP (877) 435-7443<br/><a href="http://www.help4hep.org">www.help4hep.org</a></li> </ul> | <ul style="list-style-type: none"> <li>• <b>Planned Parenthood</b><br/>1-800-230-7526<br/><a href="http://www.plannedparenthood.org">www.plannedparenthood.org</a></li> <li>• <b>Ribavirin: Pregnancy Registry</b><br/>1-800-593-2214;<br/><a href="http://www.ribavirinpregnancyregistry.com">www.ribavirinpregnancyregistry.com</a></li> </ul> |
|--|--|

***Visit our websites to learn more about viral hepatitis:***

**[www.hcvadvocate.org](http://www.hcvadvocate.org) • [www.hbvadvocate.org](http://www.hbvadvocate.org)  
[www.hepatitistattoos.org](http://www.hepatitistattoos.org)**

***Get Tested. Get Treated. Get Cured.***





# Kentucky Reportable Disease Form

**Department for Public Health  
Division of Epidemiology and Health Planning  
275 East Main St., Mailstop HS2E-A  
Frankfort, KY 40621-0001**

**Hepatitis Infection in Pregnant Women or Child (under the age of five)  
Fax Form to 502-696-3803**

DEMOGRAPHIC DATA					
Patient's Last Name	First	M.I.	Date of Birth	Age	Gender <input type="checkbox"/> M <input type="checkbox"/> F <input type="checkbox"/> Unk
Address		City	State	Zip	County of Residence
Phone Number	Patient ID Number	Ethnic Origin <input type="checkbox"/> His. <input type="checkbox"/> Non-His.		Race <input type="checkbox"/> W <input type="checkbox"/> B <input type="checkbox"/> A/PI <input type="checkbox"/> Am.Ind. <input type="checkbox"/> Other	

DISEASE INFORMATION			
Describe Clinical Symptoms:	Date of Onset: / /	Jaundice: <input type="checkbox"/> Yes <input type="checkbox"/> No	Date of Diagnosis: / /
Is Patient Pregnant? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, # wks _____	Expected Date of Delivery: / /	Name of Hospital for Delivery:	
Physician Provider Name: Address: Phone:			

LABORATORY INFORMATION				
Hepatitis Markers	Results	Date of test	Viral Load *if applicable	Name of Laboratory
HBsAg	<input type="checkbox"/> Pos <input type="checkbox"/> Neg	/ /		
IgM anti-HBc	<input type="checkbox"/> Pos <input type="checkbox"/> Neg	/ /		
HBeAg	<input type="checkbox"/> Pos <input type="checkbox"/> Neg	/ /		
IgM anti-HAV	<input type="checkbox"/> Pos <input type="checkbox"/> Neg	/ /		
HCV Antibody	<input type="checkbox"/> Pos <input type="checkbox"/> Neg	/ /		
HCV RNA Confirmation	<input type="checkbox"/> Pos <input type="checkbox"/> Neg	/ /		

SERUM AMINOTRANSFERASE LEVELS				
Patient	Reference	Date of test	Name of Laboratory	
AST (SGOT) U/L	U/L	/ /		
ALT (SGPT) U/L	U/L	/ /		

<p>Mother: Hepatitis Risk Factors  <input type="checkbox"/> IDU <input type="checkbox"/> Multiple Sexual Partners <input type="checkbox"/> Tattoos <input type="checkbox"/> STD  <input type="checkbox"/> HIV <input type="checkbox"/> Foreign Born/ Country _____  <input type="checkbox"/> Exposure to known HBV/HCV Pos contact</p>	<p>Child: Hepatitis Risk Factors  <input type="checkbox"/> Mother HBV Pos <input type="checkbox"/> Household member exposure HBV Pos  <input type="checkbox"/> Mother HCV Pos <input type="checkbox"/> Household member exposure HCV Pos  <input type="checkbox"/> Foreign Born / Country _____</p>
<p>Mother: Hepatitis A vaccination history: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Refused Dates Given: / /                  Hepatitis B Vaccination history: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Refused                  If yes, how many doses <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 Year completed: / /</p>	
<p>Child: Hepatitis A vaccination history: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Refused Dates Given: / /                  Hepatitis B Vaccination history: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Refused Dates Given: / /                  Was PEP Infant of Positive HBV mother given at birth? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>	

