Introduction

Hepatitis C is a viral disease that primarily affects the liver. In its chronic (or long-lasting) form, the hepatitis C virus (HCV) can cause liver damage, cirrhosis (scarring of the liver), and liver cancer. These complications can lead to the need for transplant, and even death.1 And although it is estimated that between 3.2 and 5.2 million Americans are living with chronic hepatitis C,2 most are not aware of their HCV status, and so do not seek treatment until symptoms begin,3 sometimes decades after they became infected. New HCV therapies hold the promise of more efficient, successful treatment, with fewer side effects than current treatment regimens. But, as John Ward, director of the Centers for Disease Control and Prevention (CDC), recently stated, “The benefits of such improved treatment . . . cannot be realized if infected persons are not brought into care. Testing is the link . . . .”4

Prior issues of Perspectives have covered the topics of viral hepatitis (including hepatitis C), and have introduced the new rapid HCV test. This issue explores how the rapid HCV test offers HIV test counselors the opportunity to play a crucial role in linking people who may be living with HCV to further testing and care. It also discusses why HIV testing sites may want to offer rapid HCV testing to their clients.

Why Test for HIV and Hepatitis C Together?

The fact that rapid antibody screening tests are available for both HIV and HCV is only one of many reasons that it makes sense to test for HIV and HCV at the same time. Both are widespread, infectious, damaging, sometimes fatal diseases that may take years to show symptoms. Here are some additional reasons:

HIV and HCV are often transmitted in similar ways. The key route of transmission for hepatitis C is blood, and HCV is even more easily transmitted through blood contact than HIV is.5 This is because there is a greater quantity of HCV in blood than HIV, and because HCV can live longer than HIV outside the body.6 Some of the common ways that people come into contact with HCV in blood include sharing injection equipment and accidental needle sticks among health care professionals. Less commonly, HCV can be transmitted from an infected mother to her child during pregnancy and delivery. Sexual contact plays a bigger role in HIV transmission than in HCV transmission, but sex is a way that HCV infection can occur, particularly among people living with HIV.6 In the past, infected blood products or organ or tissue donations were also a source of infection, though these materials have now been screened against this possibility for more than 20 years.

Some of the same populations are disproportionately affected by HCV and HIV. This shared disparity is particularly stark among Black Americans, who have rates of HIV that are four times higher than the general population,7 and who are twice as likely to have ever been infected with the hepatitis C virus than the U.S. population as a whole.8

It is uncommon for a person who has injected drugs for many years not to have been exposed to HCV. Some studies suggest that as many as 70 to 96 percent of people who have injected drugs have been infected with HCV at some point.9 People who have been incarcerated experience both HIV and HCV disparities, which increases the likelihood both that a person will have AIDS and hepatitis C. Approximately half a million people are living with an AIDS diagnosis in the U.S., but the rate of AIDS among prisoners is 2.4 times higher than among the non-incarcerated population.10,11 The CDC estimates that between 13 percent and 35
percent of people currently in prison are chronically infected with HCV—a rate that is between eight and 22 times the average for the U.S. population as a whole.12

According to the CDC, HIV-infected individuals are particularly at risk for HCV infection. So are people who have other sexually transmitted infections, people who have “rough sex” (that could include skin tearing or other exposure to blood), and people with “multiple sexual partners.”6

It is crucial for people who may be living with HIV to learn not only their HIV status, but also their HCV status. The U.S. Public Health Service recommends that all HIV-positive people be screened for HCV infection.13

When a person is already living with HIV, it can make chronic HCV worse, so it is important to get into care where both conditions can be monitored and treated as necessary. Coinfection with HIV and HCV is common: it is estimated that one-quarter of HIV-positive people in the United States are also living with HCV.14

California who inject drugs want to know their HCV status. In 2003, CDHS/OA tested the idea that more people who inject drugs would access HIV testing if they could also learn their HCV status. Five local health jurisdictions (LHJs) that could serve large numbers of injection drug users were chosen: Fresno, Humboldt, Riverside, and Solano counties, and the city of Berkeley. The result was that HIV counseling and testing rates were more than three times higher when HCV testing was offered alongside HIV testing than when HIV testing was offered alone.14

No vaccine, but there is treatment. As with HIV, there is no vaccine for hepatitis C yet. However, there are treatments that are effective and lifesaving for many people, and the field of HCV treatment is rapidly advancing. Discovering HCV infection helps prevent transmission, and, with treatment, can often lead to a cure.

What Can the Rapid HCV Test Tell Us?

The new OraQuick Rapid HCV test, like the OraQuick HIV-1/2 test, is an antibody test. That means that it is looking for antibodies to the hepatitis C virus, rather than the hepatitis C virus itself. As with HIV, it takes a person’s body a while to develop these antibodies, a span of time called the “window period.” See the figure labeled “Understanding the HCV Window Period” to compare the HCV and HIV window periods.

If a person had an exposure to HCV that was less than six months ago, and their HCV test result was nonreactive, they would need to come back for more antibody testing after the end of the window period to be sure that the exposure had not resulted in infection. They would also need to avoid getting blood from a person who is living with HCV inside their bodies during this time, in order to avoid opening a new window period. If someone has ongoing risk

Many Similarities, a Few Key Differences

Current rapid HIV test counselors will notice the great similarity between the OraQuick ADVANCE Rapid HIV-1/2 Antibody Test that California Office of AIDS-funded test sites currently use (on the left) and the OraQuick HCV Rapid Antibody Test (on the right). In fact, HCV rapid test materials are nearly identical to those used for the HIV rapid test. There are a few key differences:

- First, the HCV test must be done using blood; there is not the option to use oral fluid. As a result, the person running the test will have to conduct either a finger stick or a venipuncture to obtain a sample.
- Second, the appropriate storage temperature range for the HCV test kits is slightly different: 36 to 86 degrees Fahrenheit, instead of the 35 to 80 degrees for rapid HIV tests. If a site is storing both types of kits in the same location, the appropriate storage temperature range is 36 to 80 degrees.
- Third, the meanings of a “reactive” result for the hepatitis C and HIV tests are different, and require a different counseling message. When a client receives a “reactive” HCV antibody test result, he or she should then be immediately referred to a medical provider for further testing. This confirmatory testing will reveal whether the person is currently living with HCV infection, or was previously infected, but cleared the virus.

for HCV infection, such as continued sharing of injection equipment with partners who are (or may be) HCV-infected, they may want to test on a regular basis (for example, every six months) because they are never “out” of the window period.

When the rapid HCV test does find antibodies, the meaning is different from what it is for a preliminary positive HIV antibody test. On an HIV test, a preliminary positive result means that it is highly likely that the client is infected with HIV, and that a confirmatory test must be done (often on-site, at the same place that the rapid test was done). There is only a tiny chance that the confirmatory HIV test will reveal that the person is not actually infected. Once people get HIV, they always have it, even though treatment can greatly reduce HIV’s harmful effects.7

In contrast to HIV, about 15 percent to 25 percent of people who are initially infected with the hepatitis C virus actually “clear” the virus on their own. This means that their bodies fight off the infection without any treatment. The other 75 percent to 85 percent go on to develop chronic (or ongoing) hepatitis C infection.8 People who cleared the virus on their own are no longer living with hepatitis C, and can no longer transmit the virus to others. However, they will still show up as “hepatitis C antibody reactive” on the rapid HCV test. The HCV antibody test can only tell us if someone has ever been infected, not whether they are currently infected. So it is crucial that counselors advise people who test HCV-reactive to undergo further medical testing to determine whether they are living with chronic HCV.

Clinicians in primary care settings can order further tests that look for the virus itself to determine if a person is currently HCV-infected, and advise the client about treatment options if they are infected.16 The consequences of the progression of untreated HCV over time can be seen in the figure labeled, “Progression of Hep C.”

HCV Treatments

For HIV test counselors, it is less important to know the details of available HCV treatments (since counselors will not be giving clients medical advice) and more important to know that significant advances are being made—in terms of safety and effectiveness, duration of treatment, likelihood of being cured, and the ease of taking the treatment. At the same time, significant barriers to treatment, including cost, and the fact that 75 percent of those living with HCV do not know their status, remain.

Scientists have identified six major kinds of HCV—called “genotypes.” The kind of HCV a person is living with can greatly affect how their virus responds to different treatments. In the United States, genotype 1 (which is the hardest genotype to treat) makes up approximately 70 percent of HCV infections.7 It is also the kind that disproportionately affects Black Americans.

### Understanding the HCV Window Period

The average window period for hepatitis C is two months, and 97 percent of people develop antibodies by the end of six months. This figure shows both the window period for HIV and for HCV.

As you know, the window period for HIV is two weeks to six months, with many people developing detectable antibodies by the third month.

To make it easier for clients to understand, many counselors say: “Most people develop antibodies to both HIV and hepatitis C within three months. To be as sure as possible, retest six months after your last possible exposure to each disease.” Remember: Exposures that risk hepatitis C transmission are not necessarily the same as those that risk HIV transmission.
For many people, effective treatment can cure hepatitis C. When a person living with hepatitis C has an undetectable viral load 24 weeks after the end of treatment, it is called a “sustained virologic response” and is considered to be a cure. However, the combination of two standard drugs (pegylated interferon and ribavirin) that have been used to treat HCV has two major drawbacks. First, this combination works much less well for people who have genotype 1, as compared with other genotypes. Second, it has unpleasant side effects for many people, such as flu-like symptoms, pain, depression, and lowered white blood cell count (from interferon) and anemia and birth defects (from ribavirin). In addition, interferon must be injected once a week, for up to a year.

Since 2011, the FDA has approved four “direct-acting antivirals” (DAAs)—so called because they fight the hepatitis C virus directly by interfering with its life cycle. Generally, these drugs cannot be used without pegylated interferon and ribavirin because HCV quickly becomes resistant to them when they are used alone. When one of these drugs is used in combination with pegylated interferon and ribavirin, the resulting triple therapy has been more successful (60 percent to 70 percent cure rate) in curing genotype 1 than interferon and ribavirin alone (less than 50 percent cure rate).25,26

Because this treatment regimen generally requires adding a third drug to pegylated interferon and ribavirin, side effects may be more frequent and worsened, but treatment time is shortened (24 to 48 weeks for triple therapy vs. up to 52 weeks for dual interferon/ribavirin therapy).26

Simeprevir (one of the DAAs) is a new, “second generation” oral protease inhibitor that was approved by the FDA in November 2013 for patients with HCV genotype 1, for use in combination with pegylated interferon and ribavirin. The triple-therapy regimen runs for 12 weeks, followed by a period (12 weeks to 36 weeks) of pegylated interferon and ribavirin.25 Simeprevir is generally well tolerated, with the chief side effect being sensitivity to sun.25

Sofosbuvir was approved as the first polymerase inhibitor to fight HCV in December 2013. Like simeprevir, it is generally well tolerated and safe. The most common side effects are fatigue, headache, nausea, and insomnia.25 Significantly, sofosbuvir (in a once-daily oral dose) plus ribavirin is the first interferon-free HCV treatment, and is used to fight HCV genotypes 2 and 3. It is also approved for use in combination with ribavirin and pegylated interferon for people with HCV genotypes 1 and 4. And the FDA has said that dual therapy with sofosbuvir and ribavirin can be considered for patients with genotype 1 who cannot tolerate interferon.

Unlike simeprevir, sofosbuvir does not have many significant drug-drug interactions, and so it may be safer.
for people living with HIV/HCV coinfection to use. It is approved not only for use in coinfected individuals, but also for use in people with cirrhosis who are awaiting liver transplants—two groups who have historically been hard to treat safely and effectively.25

In the midst of all this promising news, the high cost of these new treatments remains a barrier to care. A 12-week course of simeprevir costs about $66,000 (on top of the other treatments used in the regimen, as well as any medications or other treatments to combat side effects), while a 12-week course of sofosbuvir is priced at about $84,000. For many HCV patients, insurance companies may only cover treatments for those who are already suffering liver damage,26 by which time HCV is often harder to treat. As with HIV medications, exorbitant prices have spawned protests. The companies that make these drugs have also begun patient assistance programs to help with medication and co-pay coverage.

Not everyone living with HCV needs immediate treatment. Some people with HCV who do not have serious liver damage are waiting for treatments that do not include interferon (called “interferon-sparing” treatments) to be FDA-approved. The decision about whether to start treatment now, or to wait for further HCV treatment advances, is one that people living with HCV need to make in consultation with their doctors. Whether or not someone decides to take HCV treatment, it is critical that people living with HCV maintain a healthful lifestyle, and see a doctor regularly to have their liver health monitored.

What’s Being Done

There is currently a major public health push to test Americans for hepatitis C. Treatment is advancing, making the options for people living with chronic hepatitis C better than they have ever been. At the same time, people living with chronic HCV who were infected in the 1970s and 1980s are now becoming ill. The sooner people know their HCV status, the sooner they can get into lifesaving treatment, if appropriate.

Getting Boomers Tested. People born between 1945 and 1965, the generation known as “Baby Boomers” are five times more likely to be living with HCV as adults of other ages. More than three out of four adults living with HCV were born during these years (see the Figure “Baby Boomers and HCV,” above.21 The CDC and the U.S. Preventive Services Task Force recommend that all Baby Boomers get tested at least once for hepatitis C, even if they are not aware of a specific risk for the virus.

Understanding More about Hepatitis C in California. In November 2013, the state of California released the first-ever report on chronic viral hepatitis among Californians with information about cases reported between 1989 and 2011. Like the rest of the United States, California’s HCV epidemic disproportionately affects Baby Boomers (who made up 56.4 percent of newly diagnosed people living with chronic HCV), and men (who made up more than two-thirds of new cases between 2007 and 2011). White, Black, and Native communities are disproportionately affected, while Latino and Asian/Pacific Islanders are underrepresented among those with chronic hepatitis C. Sixteen percent of all newly reported chronic HCV cases were from state prisons, with an increasing rate of newly reported prison cases among people 18 to 35 years old. You can read the full report, “Chronic Hepatitis B and Hepatitis C Infections in California: Cases Newly Reported Through 2011,” at http://cdph.ca.gov/programs/Documents/ChronicHepBandHepCinCalifornia,2011.final.pdf.22

What Counselors Can Do

Learn more. Sites that will be conducting rapid hepatitis C testing should send staff to an Office of AIDS training (see the sidebar on p. 6
Getting Trained in Rapid HCV Testing

In June 2010, the U.S. Food and Drug Administration (FDA) approved the first rapid test for HCV antibodies. The new OraQuick HCV Rapid Antibody Test is strikingly similar to the OraQuick ADVANCE Rapid HIV-1/2 Antibody Test that California Department of Public Health Office of AIDS (OA)-funded test sites currently use. California legislation passed in 2012 now allows HCV rapid testing at HIV testing sites by OA-trained HIV test counselors. The Office of AIDS has already trained many local health jurisdiction (LHJ) coordinators and site supervisors in running and reading the rapid HCV test. LHJ coordinators, site supervisors, and other certified HIV test counselors who have attended and passed OA’s “train-the-trainer” sessions are now able to train other certified test counselors. OA encourages existing certified test counselors who wish to become proficient in rapid HCV testing to contact their LHJ coordinator.

Beginning in March 2014, the UCSF Alliance Health Project will train new HIV test counselors working at OA-funded sites in both rapid HCV and HIV testing as part of the Basic Counselor Skills Training (BCST). Finger stick blood collection skills are also essential for any site that wishes to perform rapid HCV testing, and the four-day BCST already includes Finger Stick Proficiency Training. Supervisors who are interested in having their staff attend a training can contact their county coordinators, who will in turn contact Karin Hill, CDHS/OA training coordinator, at Karin.Hill@cdph.ca.gov.

- Get comfortable talking about drug use and harm reduction.

Shared injection equipment is the primary way that HCV is transmitted, and it is important for counselors to be neutral and open to discussing options for reducing harm for individuals who actively inject drugs. It’s also important to remember that blood-contaminated needles are not the only way that people come into contact with HCV-infected blood. Other drug preparation materials (including cookers, filters, rinse water, mixing water, alcohol swabs, and tourniquets) that hold HCV-infected blood are a potential source of infection. Because HCV can live for so long in the open air, the best approach is for people who inject drugs to use “a new kit for every hit.” Posters such as “How Can You Prevent Hep C?” from the Harm Reduction Coalition (see page 5) reinforce the message that hepatitis C prevention is possible even when a person continues to use injection drugs.

- Help clients who test antibody-reactive take the next step—confirmatory testing through a medical provider.

Clearly deliver the message that a reactive test does not necessarily mean that the client is living with chronic HCV, but that a medical provider can let the client know for sure. Let the client know that if it turns out that they do have chronic HCV, treatments are better than ever, new treatments are in the pipeline, and that their medical provider can talk with them about the options.

- Empower your clients.

Let clients know that if it turns out they are living with HCV, there are steps they can take to keep their livers as healthy as possible, including reducing or eliminating alcohol use, and asking a doctor before taking medications, herbs, and vitamins or other supplements. In addition, your client may want to get vaccinated for hepatitis A and B, if he or she is not already immune, because having more than one kind of viral hepatitis can make liver damage more likely and more serious. Be aware that even when clients are successfully treated for HCV, it is possible for them to become re-infected, so ongoing prevention is important. When a client tests “non-reactive,” talk with them about how they would like to stay HCV-negative, just as you would discuss HIV risk reduction with HIV-negative clients who engage in activities that could put them at risk of infection.

- Know the available resources, both for clients who test HCV-antibody
reactive, and for HCV prevention.

Have resources for confirmatory testing in your area, hepatitis A and B vaccination sites, and resources that can help clients who are uninsured obtain medical care. Know the availability of syringe access services (for example, community-based needle exchange sites, and pharmacies that sell syringes without a prescription). Offer referrals, when available, to supportive services such as housing, food, peer support, and substance and mental health treatment for clients who request such services. Know which services are available to people with HCV who are not coinfected with HIV.

Understand your important, but limited, role. It can be difficult to counsel clients who test HCV-antibody reactive in areas where resources for living with hepatitis C are scarce.

Conclusion

The damage that chronic hepatitis C can cause is a major and increasingly significant public health concern. Although HCV has been a “hidden epidemic” for some time, public health campaigns and rapid testing technologies have the potential to raise HCV status awareness, allowing those with chronic HCV to assess their options with a medical provider. At the same time, researchers are making significant treatment breakthroughs that hold the promise of a cure for many. HIV test counselors who integrate HCV testing into their sessions can help clients learn their antibody status, prevent HCV transmission, and link to care if needed.

References

Test Yourself

Review Questions
1. **True or False**: Similar to the HIV rapid test, the HCV rapid test can also use blood or oral fluid.
2. **Which type of test is the new OraQuick rapid HCV test?** a) Conventional test; b) Antibody test; c) RNA test; d) None of the above
3. **True or False**: A reactive result on a rapid HCV test means the client is almost certainly currently infected with HCV.
4. **Why is HCV more easily transmitted through blood contact than HIV is?** a) There is a greater quantity of HCV in blood than HIV; b) The hepatitis C virus can live longer than HIV outside the body; c) Both a and b; d) Unlike HIV, HCV can be transmitted during pregnancy.
5. **True or False**: Living with HIV can make chronic HCV worse for the individual.
6. **Chronic hepatitis C infection can lead, over time, to which of the following health complications?** a) Chronic liver disease; b) Liver cancer; c) Death; d) All of the above.
7. **The CDC now recommends people born in this year range be tested at least once for hepatitis C:** a) 1925–1945; b) 1945–1965; c) 1965–1985; d) 1985–2005.
8. **The primary way that HCV is transmitted is through:** a) sex, especially vaginal secretions or ejaculate (cum); b) sex, especially if it involves blood-to-blood contact; c) shared injection equipment; d) shared tattoo equipment, especially in prison settings.

Discussion Questions
1. What are some of the reasons that a person living with chronic HCV might choose to delay treatment?
2. What referrals in your area would be useful for an HCV test counselor to have on hand?
3. In what ways are the counseling techniques of HIV testing, similar to that of HCV testing? What do you see as some new challenges?
4. What harm reduction strategies might a client who wants to avoid HCV infection use?
5. How might your beliefs on injection drug use influence your integrated HIV/HCV session with your client?

Answers
1. False. The HCV rapid test can only be used with blood samples.
2. b
3. False. Approximately 15 percent to 25 percent of people who become infected with HCV clear the virus on their own without treatment. Yet they still have HCV antibodies that show up on the HCV rapid test, although they are no longer living with HCV infection.
4. c
5. True
6. d
7. b
8. c