

Learning and Living with Hepatitis C

Lucinda Porter, RN

TEACHING ADULTS IS A responsibility commonly performed by HepSquads' readers. We all have our own teaching styles. These methods may vary according to the needs of the clients we serve. Keeping current, while continuing to learn ourselves, increases our effectiveness as teachers.

Effective educators are ones who adapt their styles to fit the needs of those they teach. Clients living with chronic hepatitis C virus infection (HCV) may be affected by numerous factors that impede their abilities to learn. Reasons include fatigue, anxiety, medication side effects, and so on. Each of these must be addressed so that we may increase our effectiveness as teachers.

Obstacles aside, the ways our clients learn also vary. In 1983, Howard Gardner, professor of education at Harvard University, identified eight different types of intelligence. Simply stated, each of us has specific strengths. Look at what you enjoy and you may find insight into your own intelli-

gence. Do you like words or math? Do you learn through your body? Is nature your favorite teacher? Are you "people smart?" Do you have a great deal of self-insight? Do you love music or art? These areas each use different types of intelligence.

In addition to varying types of intelligence, some learn better by reading, some by hearing, and others by "hands on" experiences. How we learn is a complex and interesting subject. The more we understand these differences, the more effective we are as teachers.

Retention is an essential element of learning. It is not enough merely to give information to our clients. If we want clients to use what we teach, they need first to be able to remember it. Recalled information arms our clients with more choices and tools.

Adults learn differently than children and adolescents. Malcolm Knowles, also referred to as "the father of adult education," has written extensively on the subject.

Knowles states that adults retain:

- 20% of what they hear
- 30% of what they see
- 50% of what they see and hear
- 70% of what they see, hear and say
- 90% of what they see, hear, say and do

This means that we can increase our adult clients' chances of retaining what we teach if information is delivered in ways that use the principles of seeing, hearing, saying and doing. Using "safer sex" as an example, we can describe how to use condom (hear), show how to use a condom (see), ask the client to review condom use (say), and have the client practice putting a condom on a banana (do).

These principles are incorporated into the Hepatitis C Support Project's (HCSP) trainings. Those who have attended trainings may recall that there were lectures and discussions (hear) accompanied by literature

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*Executive Director
Editor-in-Chief,
HCSP Publications*
Alan Franciscus

*Managing Editor,
Webmaster*
C.D. Mazoff, PhD

Contributing Writers
Liz Highleyman
Lucinda Porter, RN

Design and Production
Paula Fener / C.D. Mazoff

Contact information:
Hepatitis C Support Project
PO Box 427037
San Francisco, CA 94142-7037

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HEPSQUADS NEWS ROUNDUP

Liz Highleyman

HCV TREATMENT NEWS

A study of 182 previous non-responders and relapsers in the August Journal of Hepatology confirmed that patients treated previously with suboptimal therapy may respond better to the current standard of care. After 48 weeks of Peg-Intron plus ribavirin, 20% of previous non-responders and 55% of previous relapsers achieved sustained virological response (SVR) – 17% for genotype 1 and 57% for genotypes 2 or 3 in non-responders, 53% and 59%, respectively, for relapsers.

Looking at treatment length, a study in the August issue of Gastroenterology showed that 16-week treatment with Pegasys plus ribavirin was sufficient for patients with genotype 2 HCV or genotype 3 with low viral load; 82% of early responders who received the short course achieved SVR. In related news, the European Union's Committee for Medicinal Products for Human Use recommended approval of a 24-week course of Peg-Intron plus ribavirin for genotype 1 patients with low HCV viral loads and early virological response by week 4, as opposed to the 48 weeks usually recommended for genotype 1.

For “difficult-to-treat” patients with genotype 1 or 4, high HCV viral load, previous non-response, or cirrhosis, higher doses of pegylated interferon can improve SVR rates, according to a study reported in the September Journal of Viral Hepatitis. In this pilot study, 65 difficult-to-treat patients received either a standard course of Peg-Intron or higher-dose Peg-Intron twice weekly (both with ribavirin). Among those being treated for the first time, SVR rates were 72% in the high-dose arm and 25% in the standard-dose arm. While higher-dose interferon caused more side effects, the discontinuation rate was actually higher in the standard-dose group (32% vs 19%), since more stopped early due to non-response.

HEPATITIS C IN SPECIAL POPULATIONS

Veterans

HCV is more common among veterans – especially those who served during the Vietnam War era – compared with the population as a whole. Older surveys of veterans treated at VA medical centers found rates of 8-10%, but recent studies found rates of 5-7%. An estimated 60-70% of all HCV positive veterans served during the Vietnam years. Many

veterans have been deemed ineligible for hepatitis C treatment due to co-existing conditions such as psychiatric illness or substance use. Today, however, multidisciplinary care and appropriate side effects management allows many such patients to be treated successfully. For more on veterans and HCV, see the November HCV Advocate.

Latinos

Latinos are another group with higher hep C rates than the population at large. A study reported in the October American Journal of Gastroenterology found that, compared with Caucasians, Latinos were infected at younger ages and were about five times more likely to be coinfecting with HIV (20% vs 4%). Fibrosis progression was similar in both groups, but Latinos were more likely to have steatosis (fatty liver). Latinos more often met the criteria for hepatitis C treatment, but were less likely to actually start therapy, and those who did were more likely to stop early. Latinos as a group tended to have a lower SVR rate, but after controlling for other factors, race/ethnicity was not a significant predictor of treatment response. Unlike African Americans, Latinos do not appear to have biological factors that predispose them to poor response to interferon-based therapy. For more on Latinos and HCV see the November 2005 HCV Advocate.

Prisoners

Hepatitis C is widespread in correctional facilities, and an estimated 1.4 million HCV positive individuals are released from U.S. prisons each year. A study reported in the July 15 Clinical Infectious Diseases found that 34% of California prisoners were HCV positive. Current CDC recommendations call for HCV screening of inmates with a history of injection drug use or other risk factors. But according to a study in the October 2005 American Journal of Public Health, this policy may miss a large proportion of HCV infected individuals. Among inmates entering Rhode Island Department of Corrections facilities, 23% of men and 41% of women were HCV positive. But 66% of the HCV positive men and 44% of the women did not report injection drug use. The California study found that while 66% of prisoners who reported injection drug use had HCV, so did 10% of those with no self-reported injecting. The authors of both

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studies recommended that HCV testing should be offered to all inmates, not just those who report risk factors. The April *Clinical Infectious Diseases* featured an overview entitled "Opportunities to Address the Hepatitis C Epidemic in the Correctional Setting"; key findings from this report were summarized in the September *HCV Advocate*.

HCV TRANSMISSION NEWS

Sexual Transmission

Two recent articles shed light on the controversy over sexual transmission of HCV. While some studies show that sexual transmission is negligible, others suggest it occurs more often than usually recognized. A study in the November 1 *Journal of Infectious Diseases* analyzed the presence of HCV in the genital fluid of 71 HCV positive women. HCV genetic material was detected in 29% of the 58 HIV/HCV coinfecting women, but none of the 13 women with HCV alone. Women were more likely to have detectable genital fluid HCV if they had detectable plasma HCV and/or detectable genital HIV. Genital HCV was not associated with plasma HIV viral load, type of anti-HIV therapy, or number of CD4, CD8, or CD3 T-cells. Different HCV quasispecies (variants) were detected in genital fluid and plasma, suggesting that the genital tract may act as a "reservoir" or "sanctuary" site for local HCV replication. A complementary study in the November 4 issue of *AIDS* looked at HCV in the semen of 82 coinfecting men and 38 men with HCV alone. HCV RNA was found more often in the semen of the coinfecting men (38% vs 18%). Semen HCV viral load was not associated with plasma HIV viral load or CD4 cell count. In contrast to the female study, the researchers did not see evidence of local HCV replication in the male genital tract. HCV in genital fluids has implications both for sexual transmission and, in women, transmission from mother to child.

Mother-to-Child Transmission

Two recent studies by the European Paediatric Hepatitis C Virus Network looked at mother-to-child (vertical or perinatal) HCV transmission; most experts estimate the overall vertical transmission rate to be about 5%. A study in the July 1 *Clinical Infectious Diseases* followed 266 children who contracted HCV from their mothers from birth for up to 16 years. About one-quarter appeared to spontaneously clear HCV at a median age of 15 months, half had chronic asymptomatic infection, and one-third had chronic active infection (detectable HCV replication). About 10% percent were

coinfecting with HIV. In another study of 54 HCV-infected babies, 17 (31%) had detectable HCV RNA when tested within three days of birth. Among the remainder, 27 had detectable HCV RNA when tested again at three months, and nine more received their first positive HCV PCR result after three months. The authors hypothesized that infants who had detectable HCV RNA at day three were probably infected in the womb, while those who first tested PCR positive after three months were likely infected during the birth process. For more on mother-to-child HCV transmission, see the October *HCV Advocate*.

Other Risk Factors

Among individuals with hepatitis C, about 10% have an unknown route of infection. A study in the September issue of *Hepatology* looked at HCV transmission among more than 6,700 Egyptians from two rural villages. The HCV incidence rate was 6.8/1,000 person-years [PY] in the Nile Delta village, compared with 0.8/1,000 PY in the Upper Egypt village. The strongest predictor for contracting HCV was having an HCV-positive family member (true for 82% of newly infected individuals). The highest rate of new infections was seen in Nile Delta village children younger than age 10 living in households with an HCV positive parent. A study in the October *American Journal of Gastroenterology* looked at HCV risk factors in El Paso, on the Texas-Mexico border. Based on interviews with 320 HCV positive and 307 HCV negative subjects, having a tattoo was a significant independent risk factor for HCV. In this cohort, most patients with tattoos had them applied by friends, fellow jail or prison inmates, or by themselves, rather than in commercial tattoo parlors.

HIV/HCV COINFECTION NEWS

Several recent journal articles and conference presentations have addressed HIV/HCV coinfection, adding more conflicting evidence about how HIV and HCV interact. In the June 15 *Clinical Infectious Disease*, G. Antonucci and colleagues reported that coinfecting individuals were less likely than those with HIV alone to achieve CD4 count increases of at least 100 cells. Lisa Backus and colleagues, in the August 15 *Journal of Acquired Immune Deficiency Syndromes*, reported that coinfecting patients and those with HIV alone had a similar virological response to anti-HIV therapy, but CD4 cell increases were less in the coinfecting patients; the overall mortality rate was 22% in the coinfecting group, compared with 14% for HIV monoinfected patients.

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In the September 15 *Clinical Infectious Diseases*, Justin Stebbing and colleagues reported that HIV/HCV coinfecting patients were 52% more likely to develop an AIDS-defining illness or progress to a CD4 cell count below 200 cells. Based on a meta-analysis of eight trials involving 6,216 HIV-positive participants, Melissa Farmer Miller and colleagues concluded in the September 1 *Clinical Infectious Diseases* that coinfecting patients “do, in fact, have less immune reconstitution” than those with HIV alone. In contrast, Jürgen Rockstroh and colleagues reported in the September 15 *Journal of Infectious Diseases* that based on the latest data from the large EuroSIDA cohort, HIV/HCV coinfecting patients responded to combination anti-HIV therapy about as well as those with HIV alone. In the online edition of *Journal of Hepatology*, A. Moreno and colleagues reported that coinfection may impair response to HCV treatment: SVR to pegylated interferon plus ribavirin was 18% among coinfecting patients compared with 39% among HCV-monoinfecting individuals. At the International AIDS Society conference in Rio de Janeiro in July, B. Zanini and colleagues reported that coinfecting patients with genotype 2 or 3 HCV responded better to 48 weeks of pegylated interferon plus ribavirin, rather than the 24-week course typically recommended. Firouze Bani-Sadr and colleagues reported in the September 1 *Journal of Acquired Immune Deficiency Syndromes* that use of ddI (didanosine or Videx) in combination with ribavirin increases the risk of mitochondrial toxicity, and recommended that the two drugs not be used together. Finally, in the October 15 *Clinical Infectious Diseases*, K.E. Sherman and colleagues reported that the second-generation protease inhibitor Kaletra (lopinavir/ritonavir) was associated with a low level of liver toxicity; HCV viral load rose when treatment was initiated, but returned to baseline by week 48.

LEGISLATIVE UPDATE

On October 5, California Governor Arnold Schwarzenegger signed a bill (AB 296) that will require that all prisoners receive information about hepatitis C risk factors, prevention, testing, and treatment at the time of intake. AB 296 also directs the state’s Department of Corrections to provide confidential hepatitis C screening to all inmates who request it or who have known risk factors.

The same month, Schwarzenegger signed one needle exchange bill, but vetoed another. The successful bill (AB 547) will streamline the process for authorizing needle exchange programs. Currently, cities and counties must declare a state of emergency every 2-3 weeks; the new law will instead require local governments to hold annual hearings, which will

reauthorize needle exchange for an entire year. The failed bill (AB 1597) would have allowed local governments to use state HIV prevention money to purchase needles for their exchange programs, which is currently prohibited.

CONFERENCE EXPLORES CRYSTAL METH LINK WITH AND HEPATITIS AND HIV

More than 900 public health officials, care providers, and advocates gathered in Salt Lake City in August for the first National Conference on Methamphetamine, HIV and Hepatitis. The meeting, hosted by the Harm Reduction Project, came under fire when Rep. Mark Souder (R-IN) protested federal funding for the conference. Patricia Case from Harvard Medical School, in her keynote address, questioned whether meth use is a new “epidemic,” arguing that stimulant use has long been widespread in the U.S. Attendees discussed the current state of methamphetamine research, as well as the need for more funding and better collaborative efforts to address meth use and its impact on the transmission of HIV and viral hepatitis.

HEP A AND FLU VACCINES

This summer’s hurricanes focused attention on the importance of hepatitis A vaccination. The hepatitis A virus (HAV), which can be contracted through contaminated food or water, usually resolves spontaneously without treatment. In people with pre-existing liver disease, however, it can cause life-threatening fulminant hepatitis. A safe, effective vaccine is available, but – as reported in the September issue of *Hepatology*, only 8% of chronic HCV patients have received it. All people with liver disease, including hep C, should consider getting the HAV vaccine. For more information, see the October HCV Advocate.

Influenza has also been in the news lately, as public health officials worry about the threat of a worldwide avian (bird) flu pandemic. Even without a pandemic, about 36,000 people die from flu-related complications each year. Influenza vaccines, which are made each year to fight the predicted flu strains, are available in the fall. The CDC advises that people at high risk for severe flu should get vaccinated first. This includes the elderly, babies, pregnant women, healthcare personnel, and people with certain chronic health conditions – not including hepatitis C. Though not considered a high-risk group, people with HCV should ask their doctors about whether they need a flu shot, which is safe and effective for HCV positive people, whether on or off interferon therapy. For more on influenza and flu vaccines, see the October HCV Advocate.

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and visual aids (see). Heparthy and reviewing “take home points” employ the concept of “saying.” Role-playing and developing action plans use “doing” concepts.

Here are some more guidelines for effective adult education. These can be used in one-on-one or group situations:

- Know your audience – Before you begin, make sure you assess your clients’ needs. Teaching something too basic or too complicated serves no one.
- Participation – This is the cornerstone of adult education. If you do nothing else, promote participation. This can be done in a variety of ways, such as by welcoming questions and comments, doing exercises and activities, and by inviting participants to share their experiences and support with you or each other.
- Provide variety – This addresses the differing learning styles of adults, enhances participation, and makes for a more interesting presentation for you and the participants.
- Keep it real – Adapt your material using information and real-life examples relevant to those you are teaching. An elderly adult woman who contracted HCV via a blood transfusion might not be able to relate to examples used while teaching a professional sex worker. People with different backgrounds can learn together, but use examples that are relevant to everyone.
- Reinforce information – This can be done using summaries, quizzes, discussion, handouts, role-playing, etc. Reinforcement provides opportunities to review information without being too boring. It can also be a time to clear up misinformation.
- Prioritize – Enthusiastic teachers sometimes err on the side of teaching too much. HCV is a huge subject. It is better to present a little information and present it well than it is to present a lot of information and not cover it well. Ask, “what is it you want participants to know most?” You can build on basic information. Without a good foundation, your presentation may crumble.
- Perform ongoing evaluations – Periodically, check out how your audience is receiving the information. For instance, if your client missed a basic concept, you may need to go back over an area before continuing

- Other areas to assess:
 - Can your audience hear you and see the material you are presenting?
 - Is your audience comfortable (temperature, lighting, healthy, etc)?
 - Does your audience need a break? Are they bored, hungry, distracted, etc?

Remember to evaluate your teaching process. An honest appraisal helps us to improve our teaching methods. Critical feedback can be hard to hear. Do not take criticism personally but do take it professionally. Remember that Edison successfully found a thousand ways not to make a light bulb before he found one that worked. Our clients are great teachers. Their feedback can help us become great teachers as well.

For more information:

Trainer’s Guide for Cancer Education, published by the National Cancer Institute
www.cancer.gov/clinicaltrials/resources/trainers-guide-cancer-education

This excellent free publication can be ordered by contacting the Publications Ordering Service either by phone-1-800-4-CANCER (-1-800-422-6237) or Internet: www.cancer.gov/publications Request publication P935

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San Francisco, CA 94142-7037