



"HIV, HEPATITIS-C AND STDs"

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HIV, HEPATITIS-C AND STDs

3 CEU Credit Hours

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Course Description:

This course addresses current trends in HIV, hepatitis and STD transmission, risk factors and accepted treatment protocols.

Course Objectives:

At the conclusion of this course the professional will be able to:

- 1.) Understand the importance of Injection Drug Users in the transmission of HIV and Other Blood-borne Diseases
- 2.) Understand key risk factors for transmission of HIV
- 3.) Discuss important facts about Hepatitis C and its transmission
- 4.) Explore specific Sexually Transmitted Diseases
- 5.) Evaluate and follow current Universal Precautions

Purpose of this course:

The purpose of this CEU course is to provide a current understanding of issues relevant to the mental health counselor concerning HIV, hepatitis and STD transmission, risk and treatment protocol factors.

Course Outline:

- Part 1: Course organization, Documentation and Introduction.
- Part 2: Reading of 4 required articles on HIV/AIDS, Hepatitis and STD's.
- Part 3: Reading 1 article on Universal Precautions for the Caregiver
- Part 4: Synthesis of the accompanying materials and discussion
- Part 5: Administration and Completion of the Evaluation of Learning Quiz

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3 CE Credit Clock Hours

If you ever have any questions concerning this course, please do not hesitate to contact **PeachTree at (800) 390-9536.**



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INTRODUCTION

By Richard K. Nongard, LMFT

Counselors working with the chemically dependent client are certain to face issues surrounding the transmission and care of those affected by sexually transmitted diseases or blood borne illnesses such as HIV/AIDS or Hepatitis.

I encountered my first clients with AIDS early on in my career as a psycho-therapist. At the time, (the mid 1980's, in Oklahoma), AIDS was a disease feared by not only clients and society, but also by professionals. I found myself working with diagnosed clients in the hospital setting, and without a doubt, fear and misunderstanding by even the caregivers translated into stress, humiliation and confusion on the part of clients.

I found that during this time period, especially in Oklahoma rather than California or New York, I needed information - reliable information - to put my own mind at ease in caring for patients with disease, but also for my clients, to help assist them in choosing treatment options and preventing the further spread of disease.

Times have changed a lot since those early days of treatment, but some things have stayed the same. Universal precautions, to protect the healthcare worker, have changed very little in the past 15 years. Methods and advancement of medical treatment have changed rapidly, providing clients with greater longevity and normalization of life—despite the presence of disease.

This course has been developed to provide the clinician with current information from reliable sources on HIV/AIDS, Hepatitis, Sexually Transmitted Disease and Universal Precautions. This is not an all inclusive, comprehensive course. This is simply an update, a continuing education course providing useful information to clinicians. This information should be supplemented with clinical supervision and practical application of the materials. Some of the articles in this course are directed specifically to clinicians, and others could easily be copied and used for patient education.

Consider this course as a stepping stone. It provides information, but like any other subject matter, the material will have to be synthesized and applied to individual settings by the professional.

Much of this information comes from the Centers for Disease Control, and it may be reproduced. While developing this course I was asked why I relied so heavily on government publications for the content, and the answer is simple: It's reliable, informative, useful, and may be reproduced. It provides a nonjudgmental and unbiased collection of resources, and can help the professional create a platform for application of the content.

There are five articles within this text that you must read to complete this course. When you finish reading the materials, please answer the 20 Question True/False Quiz and submit your payment to receive CEU credit.

The 5 articles within this document that you must read are:

- 1.) Injection Drug Users are Important in the Transmission of HIV and Other Blood-borne Diseases**
- 2.) HIV and AIDS: Are You at Risk?**
- 3.) What You Should Know About Hepatitis C**
- 4.) Introduction to Sexually Transmitted Diseases**
- 5.) UNIVERSAL PRECAUTIONS**

I always appreciate your feedback about my courses, and if you have any thoughts or questions, please feel free to email me.

Enjoy!!

Sincerely,

Richard K. Nongard, LMFT

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ARTICLE 1

SOURCE: <http://www.cdc.gov/idu/idu.htm>

Injection Drug Users are Important in the Transmission of HIV and Other Blood-borne Diseases

Since 1981, **753,907** cases of AIDS have been reported to the Centers for Disease Control and Prevention (CDC). It is estimated that 650,000 to 900,000 Americans are now living with HIV and that about 40,000 new infections occur every year.

The figures on hepatitis are equally impressive: Between 1 and 1 1/4 million Americans have active hepatitis B; **130,000 to 320,000** new infections occur every year. Nearly **3 million** Americans have active hepatitis C.

Injection drug users (IDUs) are an important force in the continuing epidemics of these devastating diseases. IDUs become infected and transmit the viruses to others in two, often interconnected, ways:

- high-risk drug use—sharing blood-contaminated syringes and injection paraphernalia such as water, cookers, and cottons
- high-risk sex—unprotected sex, sex with many partners, failure to treat STDs

Women who become infected with HIV through sharing needles or having sex with an infected IDU can also transmit the virus to their babies before or during birth or through breastfeeding.

More effective prevention approaches will help IDUs. Society as a whole will benefit as well, because reduced transmission among IDUs means reduced transmission among their sex partners, their children, and ultimately, among the general population.

The Legal, Social, and Policy Environment Limits Options for IDUs

Many health departments, community-based organizations, agencies, and providers are working hard to reach and work with IDUs to help them change their behaviors and reduce or eliminate their risk of acquiring or transmitting infection.

The problem of injection drug use and transmission of blood-borne disease persists, however. Solutions are hampered by society's pervasive negative attitudes toward IDUs, a lack of understanding of drug addiction as a treatable biomedical and psychological disease, limited funding for prevention and treatment, restrictive laws and regulations, and polarized philosophical viewpoints among various organizations and providers.

Injection Drug Users (IDUs) are perhaps the single greatest contributors to the spread of blood-borne infectious diseases.

They are also among the most difficult to target for prevention measures.

There must be a comprehensive coordinated collaboration between all health care providers in order to positively impact this specific population.

Attitudes and misconceptions must be changed, and services must be tailored to meet their cultural and social needs.

The Solution: A Comprehensive Approach to Working with IDUs

If organizations and providers, public health staff, and prevention planners are to succeed in effectively reducing the transmission of HIV and other blood-borne infections, they must consider a comprehensive approach to working with IDUs. Such a comprehensive approach, now being advocated by the Centers for Disease Control and Prevention (CDC), incorporates a range of pragmatic strategies that take into account IDUs' various life circumstances, cultures and languages, behaviors, and readiness to change. It also incorporates several basic principles that serve as a framework for action.

THE PRINCIPLES

Ensure coordination and collaboration.

No single provider or institution can or does deliver all required services to IDUs, their sex partners, and their children. Coordination and collaboration are essential. Providers must work together, sharing their various expertise and outlooks, recognizing and overcoming their philosophical differences, building on existing relationships, and reaching out to groups with whom they may not have worked before.

Ensure coverage, access, and quality.

Interventions will not be effective if they do not reach a critical mass of people, if IDUs cannot or will not use them, or if they are of poor quality. If they hope to truly reach and work with IDUs, agencies and providers must consider ways to effectively deal with these issues as they plan, deliver, and monitor programs and services.

Recognize and overcome stigma.

Injection drug use is regarded with disapproval and fear, and a user's addiction is considered to be a moral failing. To successfully engage IDUs in prevention efforts and to advance public policy, these negative attitudes and misconceptions must be addressed. Addiction is now understood to be a treatable brain disease. This concept should be more widely known and accepted.

Tailor services and programs.

IDUs are diverse populations with different languages, cultures, sexual preferences, life circumstances, behaviors, and requirements for services. Many, though not all, are poor and live high-risk lives on the margins of society. In planning and delivering interventions, programs and providers must take into account the factors that characterize IDUs - who they are, where they are, what they do, what motivates them, and with whom they socialize. Tailoring services and programs and involving IDUs in their planning, implementation, and monitoring will make them more effective.

THE STRATEGIES

Most ALL addicted drug users must receive treatment in order to stop using.

Various methods of treatment, precautions and prevention measures must be employed to positively affect this population.

Substance Abuse Treatment – Why include it?

- most drug users cannot stop using without it
- treatment prevents transmission because it helps users reduce drug- and sex-related risk behaviors
- it has major positive effects on a user's life
- treatment is cost effective
- providers can reach IDUs with other messages and interventions during treatment
- society benefits from reduced drug use and associated crime

Community Outreach – Why include it?

- it reaches IDUs who don't participate in conventional service systems
- it provides services in settings that are familiar to IDUs
- outreach interventions help create a culture of risk reduction in the community, which helps to reinforce prevention messages
- peers, who are often used in community outreach, are likely to be trusted by IDUs
- it's relatively low cost

Access to Sterile Syringes – Why include it?

- the U.S. Public Health Service and other agencies and institutions recommend consistent, one-time only use of sterile syringes obtained from a reliable source as a central risk reduction strategy for IDUs who cannot or will not stop injecting
- the use of a sterile syringe every time helps ensure that IDUs who continue to inject will not acquire or transmit infection
- existing laws, regulations, and public and pharmacists' attitudes hamper IDUs' ability to obtain and safely dispose of syringes and therefore promote multiperson use of syringes
- access to sterile syringes does not increase drug use or attract new people to drug use
- ensuring access to sterile syringes involves working with pharmacists; addressing existing syringe laws and regulations; and syringe exchange programs

Services in the Criminal Justice System – Why include them?

- many IDUs are in jail or prison because of their drug use
- inmates have disproportionately high rates of HIV infection, STDs, and hepatitis
- high-risk sex and drug-use behavior occurs in jails and prisons
- interventions benefit inmates and the communities to which almost all will return

Education on Prevention Techniques must target all relevant areas of the Injection Drug User's Life, from Sexual Activities, to Treating Existing STD's to perhaps even Clean Needle Exchange Programs.

Strategies to Prevent Sexual Transmission – Why include them?

- IDUs are an important source of sexual transmission of HIV and hepatitis B
- high-risk drug use and sex behaviors are often linked

Counseling and Testing Services, Partner Counseling and Referral Services, and Prevention Case Management – Why include them?

- they allow IDUs to find out whether they are infected with HIV
- they allow infected IDUs access to counseling and medical care and other services
- they help infected IDUs inform sex and drug-use partners
- they help public health officials follow the chains of transmission and reach those at high risk
- they help uninfected but high-risk IDUs reduce their risk behaviors

Services for IDUs Living with HIV/AIDS – Why include them?

- they can help infected IDUs reduce high-risk drug and sex behaviors
- IDUs should have access to comprehensive and quality health care
- HIV disease management is complex and long-term, requiring close monitoring
- infected IDUs who receive substance abuse treatment and other health services are more likely to comply with medication regimens

Primary Drug Prevention – Why include it?

- preventing first use of alcohol, marijuana, inhalants, and other drugs among youth can reduce the risk that they will go on to use injection drugs
- preventing injection drug use eliminates injection-related blood-borne virus transmission
- preventing alcohol and drug use and associated crime and injuries benefits society

ARTICLE 2

Source: <http://www.cdc.gov/hiv/pubs/brochure/atrisk.htm>

HIV and AIDS: Are You at Risk?

What is HIV and how can I get it?

HIV - the human immunodeficiency virus - is a virus that kills your body's "CD4 cells." CD4 cells (also called T-helper cells) help your body fight off infection and disease. HIV can be passed from person to person if someone with HIV infection has sex with or shares drug injection needles with another person. It also can be passed from a mother to her baby when she is pregnant, when she delivers the baby, or if she breast-feeds her baby.

What is AIDS?

AIDS - the acquired immunodeficiency syndrome - is a disease you get when HIV destroys your body's immune system. Normally, your immune system helps you fight off illness. When your immune system fails you can become very sick and can die.

What do I need to know about HIV?

The first cases of AIDS were identified in the United States in 1981, but AIDS most likely existed here and in other parts of the world for many years before that time. In 1984 scientists proved that HIV causes AIDS. Anyone can get HIV. The most important thing to know is how you can get the virus.

You can get HIV:

- By having unprotected sex- sex without a condom- with someone who has HIV. The virus can be in an infected person's blood, semen, or vaginal secretions and can enter your body through tiny cuts or sores in your skin, or in the lining of your vagina, penis, rectum, or mouth.
- By sharing a needle and syringe to inject drugs or sharing drug equipment used to prepare drugs for injection with someone who has HIV.
- From a blood transfusion or blood clotting factor that you got before

HIV destroys your body's immune system, making you far more likely to contract and have difficulty treating other kinds of diseases, especially other Sexually Transmitted Diseases.

1985. (But today it is unlikely you could get infected that way because all blood in the United States has been tested for HIV since 1985.)

- Babies born to women with HIV also can become infected during pregnancy, birth, or breast-feeding.

You cannot get HIV:

- By working with or being around someone who has HIV.
- From sweat, spit, tears, clothes, drinking fountains, phones, toilet seats, or through everyday things like sharing a meal.
- From insect bites or stings.
- From donating blood.
- From a closed-mouth kiss (but there is a very small chance of getting it from open-mouthed or "French" kissing with an infected person because of possible blood contact).

HIV has both high and low transmission risk potential, depending on the transmission method and the kinds of precautions taken.

How can I protect myself?

- Don't share needles and syringes used to inject drugs, steroids, vitamins, or for tattooing or body piercing. Also, don't share equipment ("works") used to prepare drugs to be injected. Many people have been infected with HIV, hepatitis, and other germs this way. Germs from an infected person can stay in a needle and then be injected directly into the next person who uses the needle.
- Don't have sex.
- Or, if you do make this decision, have sex only with one partner who you know doesn't have HIV and is only having sex with you. The more sex partners you have, the greater your chances are of getting HIV or other diseases passed through sex.
- Use a latex condom every time you have sex, including oral and anal sex. If you are allergic to latex, there is a polyurethane (a type of plastic) condom that you can try. There also is a condom that women can use to protect themselves. **Don't use lambskin condoms - they might not protect you against HIV.**
- Don't share razors or toothbrushes because of the possibility of contact with blood.
- If you are pregnant or think you might be soon, talk to a doctor or your local health department about being tested for HIV. Drug treatments are available to help you and reduce the chance of passing HIV to your

baby if you have it.

How do I know if I have HIV or AIDS?

**HIV / AIDS,
much
like
the
Hepatitis C
virus,**

**can sit
'dormant'**

**or
without
showing
symptoms
for
several
years.**

**You
usually
need
to be
tested
at least
twice
over
several
months
to know
for sure
that
you
do
not
have
HIV.**

You might have HIV and still feel perfectly healthy. **The only way to know for sure if you are infected or not is to be tested.**

Talk with a knowledgeable health care provider or counselor both before and after you are tested. You can go to your doctor or health department for testing or buy a home collection kit (for testing for HIV antibodies) at many pharmacies. To find out where to go in your area for HIV counseling and testing, call your local health department or the CDC National AIDS Hotline, at **1-800-342-AIDS (2437)**.

Your doctor or health care provider can give you a confidential HIV test. The information on your HIV test and test results are confidential, just as your other medical information. This means it can be shared only with people authorized to see your medical records. You can ask your doctor, health care provider, or HIV counselor at the place you are tested to explain who can obtain this information. For example, you may want to ask whether your insurance company could find out your HIV status if you make a claim for health insurance benefits or apply for life insurance or disability insurance.

In many states, you can be tested anonymously. These tests are usually given at special places known as anonymous testing sites. When you get an anonymous HIV test, the testing site records only a number or code with the test result, not your name. A counselor gives you this number at the time your blood, saliva, or urine is taken for the test, then you return to the testing site (or perhaps call the testing site, for example with home collection kits) and give them your number or code to learn the results of your test.

You are more likely to test positive for (be infected with) HIV if you:

- Have ever shared injection drug needles and syringes or "works."
- Have ever had sex without a condom with someone who had HIV.
- Have ever had a sexually transmitted disease, like Chlamydia or gonorrhea.
- Received a blood transfusion or a blood clotting factor between 1978 and 1985.
- Have ever had sex with someone who has done any of those things

If you have HIV, you can often live a reasonably healthy life by taking general health precautions.

Make sure your doctor specializes in diagnosing and treating these kinds of diseases.

What can I do if the test shows I have HIV?

Although HIV is a very serious infection, many people with HIV and AIDS are living longer, healthier lives today, thanks to new and effective treatments. It is very important to make sure you have a doctor who knows how to treat HIV. If you don't know which doctor to use, talk with a health care professional or trained HIV counselor. If you are pregnant or are planning to become pregnant, this is especially important.

There also are other things you can do for yourself to stay healthy. Here are a few:

- Follow your doctor's instructions. Keep your appointments. Your doctor may prescribe medicine for you. Take the medicine just the way he or she tells you to because taking only some of your medicine gives your HIV infection more chance to grow.
- Get immunizations (shots) to prevent infections such as pneumonia and flu. Your doctor will tell you when to get these shots.
- If you smoke or if you use drugs not prescribed by your doctor, quit.
- Eat healthy foods. This will help keep you strong, keep your energy and weight up, and help your body protect itself.
- Exercise regularly to stay strong and fit.
- Get enough sleep and rest.

How can I find out more about HIV and AIDS?

You can call the CDC National AIDS Hotline at 1-800-342-2437

(Spanish/ Español: 1-800-344-7432

TTY access: 1-800-243-7889).

The Hotline is staffed with people trained to answer your questions about HIV and AIDS in a prompt and confidential manner. Staff at the Hotline can offer you a wide variety of written materials and put you in touch with organizations in your area that deal with HIV and AIDS.

On the Internet, you can get information on HIV and AIDS from the CDC Division of HIV/ AIDS Prevention at <http://www.cdc.gov/hiv>. Other

sources of information are the CDC National Prevention Information Network, <http://www.cdcnpin.org> or the HIV/ AIDS Treatment Information Service, <http://www.hivatis.org>.

For more information about living with HIV or AIDS, call:

English	(800) 342-AIDS(2437) (24 hours/day)
Spanish	(800) 344-SIDA(7432) (8 am - 2 am EST) (including STDS)
TTY	(800) 243-7889 (Deaf and Hard of Hearing) (Monday -Friday/10 am-10 pm EST)

Free referrals and information:

CDC National AIDS Hotline

Getting Reliable Information and Education is the key to living healthy with HIV, AIDS and other such diseases.

Free materials:

CDC National Prevention Information Network
(800) 458-5231
1-301-562-1098 (International)
P.O. Box 6003
Rockville, MD 20849-6003

Free HIV/AIDS treatment information:

AIDS Treatment Information Service (ATIS)
(800) 448-0440

Drugs undergoing clinical trials:

AIDS Clinical Trials Information Service (ACTIS)
(800) 874-2572

Social Security benefits:

Social Security Administration **(800) 772-1213**

(You also may request a personal earnings and benefit estimate statement to help you estimate the retirement, disability, and survivor benefits

payable on your Social Security record).

Child Health Insurance Program
1-877-KIDS NOW
(1-877-543-7669)

ARTICLE 3

Cases of Hepatitis C are currently on the rise, largely due to the long term dormancy factor of the disease, as physical symptoms often do not appear for up to 20 years.

Source: <http://www.niaid.nih.gov/dmid/hepatitis/hepcfacts.htm>

What You Should Know About Hepatitis C

Scientists isolated and sequenced the hepatitis C virus (HCV) genome about 10 years ago. This led to the development of diagnostic tests to identify people infected with HCV.

Almost 4 million people in the United States or 1.8 percent are persistently infected, and the Institute of Medicine now includes hepatitis C virus in its list of emerging infectious diseases.

Those with the greatest risk of infection are individuals who ever experimented with injection drugs, even once or twice in the distant past, had multiple sexual partners, or received blood or blood products, for example, a transfusion prior to 1992.

The Disease

HCV damages the liver, one of the body's most important organs.

Symptoms of both acute and chronic infections are easily confused with less serious and shorter-term illnesses. In fact, most infected people are relatively free of physical symptoms -- signs of liver damage may not occur for a couple of decades. Unfortunately, by the time the disease becomes apparent, liver damage can be considerable and even irreversible.

HCV is not related to the other hepatitis viruses (A-E) and diagnostic tests readily distinguish them. The virus is usually detected by an antibody test. Unlike many other infections, the presence of antibodies in the blood does not mean recovery. Although rare, recovery does occur; it can be confirmed using highly sensitive diagnostic tests that detect the viral genome (RNA). Unfortunately, such tests are not yet licensed and there is laboratory variability.

Roughly 50 percent of chronic carriers do not even know they have hepatitis C, a disease that moves through specific stages of liver damage.

Currently, diagnosis of the stage requires a liver biopsy, i.e., removal of a very small piece of the liver, and evaluation of an even smaller piece using a microscope. The rate of progression is highly individual and can be characterized as slow, medium or fast. For most people it is slow, i.e., after 20 years of chronic infection, only 20 percent of individuals progress to cirrhosis.

Alcohol and other hepatitis viruses hasten progression of the disease. Thus, if they know they are infected, individuals can help themselves by not using alcohol, and by getting vaccinated to prevent hepatitis A and B.

There are several treatment options available, however, unfortunately, efficacy is limited, and many of the current drugs carry significant side effects.

Treatments

The Food and Drug Administration (FDA) has approved treatments that can get rid of the virus and make the liver more normal. Three are interferons and the fourth combines interferon and ribavirin.

Unfortunately, none of these drugs is very effective (approximately 5 percent of infections are eradicated with interferons and 35 percent with the combination) and all have significant side effects. Currently, there is no way to predict who will or won't respond. However, the best responses are seen in those patients with HCV variants (genotypes) 2 and 3, less severe fibrosis, and who are female or are under the age of 40 years. It is important to note that genotype 1, which predominates in this country, is least responsive to treatment.

Challenges and Research Priorities

Better treatment and prevention strategies will come from carefully designed, innovative, and cross-cutting research studies that will help us learn why some people recover from the infection and others do not; understand how the virus reproduces and causes disease in the body; and develop more effective and safer therapies as well as vaccines.

Importance of Increasing Awareness

The fact that most people lack symptoms and may have been infected years earlier, taken together with the drugs now available to treat the disease, make it important for individuals to report accurate personal histories to their physicians so that detection and treatment of hepatitis C begins as early as possible.

Hepatitis C virus infection is an increasing public health concern. Without more effective therapies that produce recovery, the Centers for Disease Control and Prevention (CDC) predicts that deaths due to HCV will double or triple in the next 15 to 20 years, due simply to the length of time most people in the United States have been infected.

Useful Information Sources

[Hepatitis Foundation International](#)

30 Sunrise Terrace

Cedar Grove, NJ 07009-1423

Tel: (800) 891-0707 or (201) 239-1035

[American Liver Foundation](#)

75 Maiden Lane, Suite 603

New York, NY 10038

Tel: 1-800-GO LIVER (465-4837) or (201) 256-2550

Source: http://consensus.nih.gov/cons/105/105_statement.htm

While physical symptoms may not present for years, the HC virus can be detected in blood in as little as 1 to 3 weeks after exposure.

This emphasizes the need for testing for those who have ever engaged in high risk behaviors.

1. What Is the Natural History of Hepatitis C?

The Virus

The hepatitis C virus is an RNA virus of the Flaviviridae family. Individual isolates consist of closely related yet heterogeneous populations of viral genomes (quasispecies). Probably as a consequence of this genetic diversity, HCV has the ability to escape the host's immune surveillance, leading to a high rate of chronic infection. Comparing the genomic nucleotide sequences from different HCV isolates enables classification of viruses into several genotypes and many more subtypes. The extensive genetic heterogeneity of HCV has important diagnostic and clinical implications, perhaps explaining variations in clinical course, difficulties in vaccine development, and lack of response to therapy.

Clinical Course

Data on the natural history of hepatitis C are limited, because the onset of infection is often unrecognized and the early course of the disease is indolent and protracted in many individuals. Prospective cohort studies are few, are typically small, include relatively few subjects whose date of infection can be well documented (e.g., blood transfusion recipients and victims of accidental needle sticks), and have relatively short follow-up.

The natural history of this disease appears to differ according to geography, alcohol use, virus characteristics (e.g., genotype, viral load), co-infection with other viruses, and other unexplained factors.

Acute Infection

After initial exposure, HCV RNA can be detected in blood in 1-3 weeks. Within an average of 50 days (range: 15-150 days), virtually all patients develop liver cell injury, as shown by elevation of serum alanine aminotransferase (ALT).

The majority of patients are asymptomatic and anicteric. Only 25-35 percent develop malaise, weakness, or anorexia, and some become icteric. Fulminant liver failure following HCV infection has been reported but is a rare occurrence. Antibodies to HCV (anti-HCV) almost invariably become detectable during the course of illness. Anti-HCV can be detected in 50-70 percent of patients at the onset of symptoms and in approximately 90 percent of patients 3 months after onset of infection.

HCV infection is self-limited in only 15 percent of cases.

Recovery is characterized by disappearance of HCV RNA from blood and return of liver enzymes to normal.

When tested, the extent of the fibrosis, if any, can help determine the stage of the disease, which can help predict progression to cirrhosis of the liver, which can be highly variable.

Chronic Infection

About 85 percent of HCV-infected individuals fail to clear the virus by 6 months and develop chronic hepatitis with persistent, although sometimes intermittent, viremia.

This capacity to produce chronic hepatitis is one of the most striking features of HCV infection. The majority of patients with chronic infection have abnormalities in ALT levels that can fluctuate widely. About one-third of patients have persistently normal serum ALT levels. Antibodies to HCV or circulating viral RNA can be demonstrated in virtually all patients.

Chronic hepatitis C is typically an insidious process, progressing, if at all, at a slow rate without symptoms or physical signs in the majority of patients during the first two decades after infection. A small proportion of patients with chronic hepatitis C -- perhaps less than 20 percent -- develop nonspecific symptoms, including mild intermittent fatigue and malaise. Symptoms first appear in many patients with chronic hepatitis C at the time of development of advanced liver disease.

In chronic hepatitis, inflammatory cells infiltrate the portal tracts and may also collect in small clusters in the parenchyma. The latter instance is usually accompanied by focal liver cell necrosis. The margin of the parenchyma and portal tracts may become inflamed, with liver cell necrosis at this site (interface hepatitis).

If and when the disease progresses, the inflammation and liver cell death may lead to fibrosis. Mild fibrosis is confined to the portal tracts and immediately adjacent parenchyma. More severe fibrosis leads to bridging between portal tracts and between portal tracts and hepatic veins. Such fibrosis can progress to cirrhosis, defined as a state of diffuse fibrosis in which fibrous septae separate clusters of liver cells into nodules.

The extent of fibrosis determines the stage of disease and can be reliably assessed. Severe fibrosis and necroinflammatory changes predict progression to cirrhosis. Once cirrhosis is established, complications can ensue that are secondary to liver failure and/or to portal hypertension, such as jaundice, ascites, variceal hemorrhage, and encephalopathy. The development of any of these complications marks the transition from a compensated to a decompensated cirrhosis.

The rate of progression is highly variable. Long-term studies suggest that most patients with progressive liver disease who develop cirrhosis have detectable ALT elevations; these can, however, be intermittent. The relationship is inconsistent between ALT levels and disease severity as

judged histologically.

Although patients with HCV infection and normal ALT levels have been referred to as "healthy" HCV carriers, liver biopsies can show histological evidence of chronic hepatitis in many of these patients.

Cirrhosis of the liver, liver cancer, arthritis, and other immunological problems are all associated with Hepatitis C.

Cirrhosis of the Liver

Chronic hepatitis C infection leads to cirrhosis in at least 20 percent of patients within 2 decades of the onset of infection. Cirrhosis and end-stage liver disease may occasionally develop rapidly, especially among patients with concomitant alcohol use.

Hepatocellular Carcinoma (HCC)

Chronic infection by HCV is associated with an increased risk of liver cancer. The prevailing concept is that hepatocellular carcinoma (HCC) occurs against a background of inflammation and regeneration associated with chronic hepatitis over the course of approximately 3 or more decades. Most cases of HCV-related HCC occur in the presence of cirrhosis.

The risk that a person with chronic hepatitis C will develop HCC appears to be 1-5 percent after 20 years, with striking variations in rates in different geographic areas of the world. Once cirrhosis is established, the rate of development of HCC increases to 1-4 percent per year. Among patients with cirrhosis due to hepatitis C, HCC develops more commonly in men than in women and in older than in younger patients.

Mortality and survival rates will vary, depending on blood transfusions, liver transplants, and compensated or decompensated cirrhosis of the liver.

Extrahepatic Manifestations of HCV

Patients with chronic hepatitis C occasionally present with extrahepatic manifestations or syndromes considered to be of immunologic origin, including arthritis, keratoconjunctivitis sicca, lichen planus, glomerulonephritis, and essential mixed cryoglobulinemia. Cryoglobulins may be detected in the serum of about one-third of patients with HCV, but the clinical features of essential mixed cryoglobulinemia develop in only about 1-2 percent of patients. Chronic hepatitis C may be a major underlying cause of porphyria cutanea tarda.

Mortality

After an average follow-up of 18 years, a prospective study of patients who received blood transfusions showed no difference in overall mortality between HCV-infected cases and non-infected controls.

Liver-related mortality, although rare, was twice as high in the cases (3.2 percent vs. 1.5 percent).

A recent European study showed that survival among hepatitis C patients

with compensated cirrhosis was 91 percent after 5 years and 79 percent after 10 years.

Among patients developing decompensated cirrhosis, however, 5-year survival was only 50 percent.

A variety of tests are available to detect Hepatitis C, however they are not all fully reliable, and follow-up tests may be indicated for those clients who are at extremely high risk, and who receive Negative initial test results.

2. What Is the Most Appropriate Approach to Diagnose and Monitor Patients?

A variety of tests are available for hepatitis C diagnosis. Tests that detect antibody against the virus include the enzyme immunoassays (EIAs), which contain HCV antigens from the core and nonstructural genes, and the recombinant immunoblot assays (RIBAs), which contain the same HCV antigens as EIA in an immunoblot format. In addition, several polymerase chain reaction (PCR)-based assays for HCV RNA have been developed to detect the RNA virus directly. Liver biopsy can determine the extent of liver injury due to HCV. Although some histologic findings are characteristic of HCV infection, such as portal lymphoid aggregates, steatosis, and bile duct injury, these alone are not sufficiently specific to establish a diagnosis of hepatitis C. There are currently no reliable, readily available tests for detection of HCV antigens in the liver.

The EIA tests are reproducible and inexpensive and have been automated. They are suitable for screening low- and high-prevalence populations and as an initial test for patients with clinical liver disease. The RIBA test is most frequently used as a supplemental assay. Qualitative HCV RNA detection by reverse transcription (RT)-PCR is generally accepted as the most sensitive test, and a standardized assay has been developed.

However, significant variability of results among laboratories has been reported in proficiency surveys. Clinicians should be aware of the proficiency record of laboratories performing HCV RNA testing to ensure test accuracy for their patients.

Using carefully standardized research PCR tests for HCV RNA as a reference standard, the sensitivity of the second-generation enzyme immunoassay, EIA-2, is 92-95 percent. Its specificity has not been precisely established. Studies performed to date indicate that 25-60 percent of blood donors with no risk factors for hepatitis C who are positive by the EIA-2 test are also positive by the PCR test for HCV RNA. Of low-risk donors who are both EIA-2 and RIBA-positive, 70-75 percent are positive for HCV RNA. Positive predictive values are much higher in patients with hepatitis C risk factors, elevated ALT levels, or clinical liver disease.

Practitioners frequently encounter patients suspected of having HCV infection. In low-risk populations, such as blood donors who report no risk factors for HCV (e.g., parenteral drug use, history of transfusion, multiple sexual partners), a negative EIA test is sufficient to rule out infection.

Individuals with elevated ALT levels, or with any form of liver disease should be tested for Hepatitis C, but multiple kinds of tests may be necessary to confirm the diagnosis.

However, low-risk individuals with positive EIA tests should undergo supplementary RIBA testing. If the RIBA is negative, the anti-HCV EIA result is likely to have been a false positive, and the patient is unlikely to have hepatitis C. If the RIBA is positive, the patient can be assumed to have or to have had hepatitis C. These patients can benefit by testing for HCV RNA by PCR, the result of which will indicate whether the patient has ongoing viremia or not. A single positive assay for HCV RNA by PCR confirms HCV infection; unfortunately, a single negative assay does not prove that the patient is not viremic or has recovered from hepatitis C.

Follow-up testing for ALT levels and perhaps repeating the HCV RNA in the future may be needed. If the results of the RIBA are "indeterminate," follow-up testing is indicated to demonstrate whether HCV RNA is present. It is hoped that further advances in anti-HCV testing will eventually decrease the percentage of false-positive EIA and indeterminate RIBA results.

Individuals with even mildly elevated ALT levels, with or without risk factors for hepatitis C, should be tested for anti-HCV by EIA and, if positive, the results confirmed by either supplemental RIBA or qualitative HCV RNA by PCR. Obviously anti-HCV testing is very helpful in all patients with clinical liver disease.

In patients presenting with biochemical or clinical evidence of liver disease (e.g., repeatedly elevated ALT levels), a positive EIA test is sufficient to diagnose hepatitis C infection, especially if risk factors are present. A qualitative HCV RNA test can be used for confirmation. If the patient is being considered for antiviral therapy, liver biopsy is of value to assess disease severity.

Testing for serum ALT levels is the most inexpensive and noninvasive means of assessing disease activity. However, a single determination of ALT levels is not always accurate in reflecting the severity of the underlying liver disease. In most studies, there is only a weak association between ALT levels and severity of the histopathological findings on liver biopsy. Serial determinations of ALT levels over time may provide a better means of assessing liver injury, but the accuracy of this approach has not really been shown. Nevertheless, the resolution of elevated ALT levels with antiviral therapy does appear to be an important indicator of disease response, and serial determinations of ALT levels can be recommended as the general means of monitoring patients with this disease.

Testing for HCV RNA by PCR can be very helpful in initial diagnosis, but repeat testing over time is generally not helpful in management of untreated patients; almost all remain viremic, and a negative result may merely reflect a transient fall of viral titer below the level of detection rather than permanent clearance. On the other hand, repeat testing for HCV RNA during antiviral therapy can be helpful, because loss of HCV RNA

There are several different types of HCV RNA, and different types will have different responses to different kinds of treatments.

The best way to judge the severity of liver disease is through Liver Biopsy, although it is expensive.

with treatment is a strong predictor of a sustained beneficial response.

Testing for HCV RNA level (or viral load) by a quantitative assay, either quantitative PCR (qPCR) or the branched DNA signal amplification assay (bDNA), can provide accurate information on viral titer. In many studies, the likelihood of a response to interferon alfa has correlated with a low level of HCV RNA present before treatment. However, there is no level of HCV RNA that absolutely precludes the possibility of a response and there is little or no correlation between disease severity or disease progression and level or titer of HCV RNA. Furthermore, current assays are not as sensitive as the standard, qualitative PCR test and suffer from lack of standardization. Thus, sequential testing for HCV RNA levels is not clinically helpful in management of patients.

At least 6 genotypes and more than 30 subtypes of HCV RNA have been identified. HCV genotype may be an independent predictor of response to interferon alfa therapy. In many studies, patients with genotypes 2 and 3 are more likely to have a sustained treatment response than those with genotypes 1a or 1b. Methods of genotyping include PCR-based techniques and, more recently, less expensive serotyping (antibody) assays. However, both genotyping and serotyping should be considered research tools and not part of a diagnostic or therapeutic algorithm in clinical practice.

Liver biopsy is considered the gold standard for assessment of patients with chronic hepatitis. When combined with serial determinations of ALT levels, liver biopsy is very helpful in judging the severity or activity of the liver disease and the stage or degree of fibrosis.

Liver biopsy is recommended before treatment to assess the grade and stage of disease and to exclude other forms of liver disease or complications (such as concurrent alcoholic liver disease, medication-induced liver injury, and iron overload). However, liver biopsy is expensive and is associated with some morbidity. Therefore, serial ALT and qualitative HCV RNA testing are recommended for monitoring patients under treatment.

3. What Is the Most Effective Therapy for Hepatitis C?

Although several different forms of interferon have been evaluated in the treatment of patients with chronic hepatitis C, the bulk of available evidence pertains to the alpha interferons (interferon alfa). The efficacy of interferon alfa therapy currently is defined biochemically as normalization of serum ALT and virologically as loss of serum HCV RNA.

Serum ALT and HCV RNA are measured at two time points: at the end of treatment (End-of-Treatment Response [ETR]) and 6 months posttreatment (Sustained Response [SR]). Based on these markers,

randomized clinical trials have demonstrated that treatment with interferon alfa benefits some patients with chronic hepatitis C.

In terms of biochemical response, treatment with interferon alfa at a dosage of 3 million units administered subcutaneously three times weekly for 6 months has produced a biochemical ETR of 40-50 percent and a biochemical SR of 15-20 percent. In terms of virological response, the 6-month course of treatment has produced an ETR of 30-40 percent and an SR of 10-20 percent. The biochemical and virological improvement has been accompanied by histological improvement.

Unfortunately most treatments at this time are still hit and miss, and methods, durations, side effects and benefits must be continually evaluated, and often readjusted.

Increasing the duration of treatment to 12 months is not associated with higher biochemical or virological ETR, but the biochemical SR is increased to 20-30 percent. For patients who do not achieve a biochemical or virological ETR (nonresponders), retreatment with a standard dose of interferon alfa is rarely effective.

Further therapy with newer interferons and/or higher dosages may achieve a virological SR of only 10 percent. For patients who achieve a biochemical ETR with 6 months of treatment, but who relapse during followup, retreatment for 12 months has been associated with a biochemical ETR rate of 75-85 percent and an SR rate of 30-40 percent.

The benefit of treatment of longer duration is still being evaluated. It should be recognized that although interferon treatment may be associated with favorable effects on biochemical and virological markers, its effects on important clinical outcomes such as quality of life and disease progression remain undetermined.

Three months after beginning an initial course of therapy, patients who are unlikely to respond to that dosage and frequency can be identified by persistent elevation of serum ALT levels and presence of HCV RNA in the serum. In this situation, therapy should be discontinued because the likelihood of future response is extremely low. If either HCV RNA is negative or ALT levels are normal (or both), therapy should be continued for 12 months. Nonresponders should be encouraged to participate in clinical trials directed toward this difficult-to-treat group.

Most of the clinical trials in chronic hepatitis C have evaluated interferon alfa-2b. Other trials have used interferon alfa-2a, interferon alfa-n1, consensus interferon, interferon beta, and interferon alfa-n3. All forms of interferon appear to have similar efficacy in chronic hepatitis C.

Because most patients do not experience sustained response, attempts have been made to identify individuals who are more likely to respond to therapy. The important factors associated with a favorable response to treatment include HCV genotype 2 or 3, low serum HCV RNA level (less than 1,000,000 copies/ml), and absence of cirrhosis.

Flulike symptoms (fever, chills, malaise, headache, arthralgia, myalgia,

Most treatment side effects are mild, and severe side effects occur in less than 2 percent of patients.

However, sometimes a side effect of treatment is an actual worsening of liver disease, or even death.

tachycardia) occur early in the majority of patients who receive interferon, but generally diminish with continued therapy. Later side effects include fatigue, alopecia, bone marrow suppression, and neuropsychiatric effects such as apathy, cognitive changes, irritability, and depression. Relapse of drug and/or alcohol abuse may occur.

Nocturnal administration of interferon reduces the frequency of side effects, and the flu-like syndrome is ameliorated by pretreatment with acetaminophen. A reduction in interferon dosage is required in 10-40 percent of patients because of side effects, and treatment must be discontinued in 5-10 percent. Higher dosages tend to be associated with higher rates of side effects.

Severe side effects are observed in less than 2 percent of patients. These include autoimmune disease (thyroid disease being most common), depression with suicidal risk, seizure disorder, acute cardiac and renal failure, retinopathy, interstitial pulmonary fibrosis, hearing impairment, and sepsis. Rare deaths have occurred due to liver failure or sepsis, principally in patients with cirrhosis.

An important side effect of interferon in hepatitis C is a paradoxical worsening of liver disease with therapy. This exacerbation of hepatitis is probably an autoimmune reaction, and it can be severe. Indeed, fatal occurrences have been reported. Thus, patients with hepatitis C whose serum ALT levels increase on therapy should be followed more carefully, and if levels rise to greater than twice the baseline, interferon should be promptly discontinued.

It is appropriate that a percutaneous liver biopsy be obtained before initiating therapy with interferon in order to assess the degree of necroinflammatory activity, the extent of fibrosis, and the presence of any other cause of liver injury. Laboratory tests that should be obtained before starting therapy include liver chemistries (serum ALT, bilirubin, albumin, prothrombin time), complete blood count (CBC) with differential and platelet count, antinuclear antibodies, thyroid stimulating hormone, serum HCV RNA, and glucose. Monitoring during therapy should be done at 2- to 4-week intervals with serum ALT and CBC. Both serum ALT and serum HCV RNA testing should be done after 3 months to assess whether the patient is responding to therapy. This should be repeated at the end of therapy to document end-of-treatment response. Follow-up testing, with serum ALT and serum HCV RNA, should be done 6 months after therapy is stopped to determine whether there has been a sustained response. Follow-up liver biopsy is not necessary.

Disappointing results with interferon have prompted interest in new treatment approaches to chronic hepatitis C. Early work with corticosteroids, ursodiol, and thymosin has produced scant or no evidence of sustained benefit. High concentrations of iron in liver tissue may blunt the response to interferon. This has sparked interest in iron reduction therapy, through phlebotomy or chelation, in an attempt to enhance the

response to interferon. Thus far, studies of iron reduction have been inconclusive.

The adjunctive drug of most promise, at present, is ribavirin, an oral antiviral agent that, when used alone, reduces serum ALT levels in approximately 50 percent of patients. However, ribavirin by itself does not lower serum HCV RNA levels, and relapses occur in virtually all patients when therapy is stopped.

Of greater promise are recent reports that the combination of interferon alfa and ribavirin leads to higher sustained virological response rates (40-50 percent) than interferon alfa alone in 6-month clinical trials. Ribavirin has not been licensed or approved for use in hepatitis C by the Food and Drug Administration.

Large-scale trials of the combination in hepatitis C are now under way. Combination therapy with ribavirin and interferon has also shown promise in the retreatment of those who relapse. Hemolytic anemia has been the major side effect of ribavirin, necessitating a dosage reduction in more than 10 percent of patients.

4. Which Patients With Hepatitis C Should Be Treated?

All patients with chronic hepatitis C are potential candidates for specific therapy. However, given the current status of therapies for hepatitis C, treatment is clearly recommended only in a selected group of patients. In others, treatment decisions are less clear and should be made on an individual basis or in the context of clinical trials.

Treatment is recommended for the group of patients with chronic hepatitis C who are at the greatest risk for progression to cirrhosis. These patients are characterized by persistently elevated ALT, positive HCV RNA, and a liver biopsy with either portal or bridging fibrosis and at least moderate degrees of inflammation and necrosis.

Indication for therapy is less obvious in other groups of patients. One such group consists of patients with persistent ALT elevations, but with less severe histological changes -- that is, no fibrosis and minimal necroinflammatory changes. In these patients, progression to cirrhosis is likely to be slow, if at all; therefore, observation and serial measurements of ALT and liver biopsy every 3-5 years is an acceptable alternative to treatment with interferon.

Another such group consists of patients with compensated cirrhosis (without jaundice, ascites, variceal hemorrhage, or encephalopathy), in whom current data do not definitively show that interferon therapy will prolong survival or delay development of hepatocellular carcinoma.

Similarly, firm recommendations on treatment with interferon cannot be

Because of complications or lack there of, stages of disease, probability for cirrhosis of the liver, and access to resources, not everyone is appropriate for treatment, and viable candidates are selected carefully after many issues are evaluated.

Hepatitis C patients who are drinking a lot of alcohol or using drugs should be clean for at least 6 months before they are treated.

made for patients below age 18 or over age 60 because of incomplete data. In all these groups of patients, treatment decisions should be made jointly between patient and physician, after full discussion of risks and benefits. However, where possible, treatment in these instances should be undertaken in the context of clinical trials, so that data become available for future decision making.

Patients with decompensated cirrhosis should not be treated with currently available therapy for hepatitis C and should be considered for liver transplantation. Therapeutic trials for hepatitis C in these patients should be performed only in the setting of clinical trials carried out in collaboration with liver transplant centers.

Data suggests a benefit from interferon treatment with higher clearance of HCV RNA in patients with acute hepatitis C. In light of these findings, interferon treatment of patients with acute hepatitis C could be recommended.

Current studies suggest that treatment of patients with persistently normal ALT is not beneficial and may actually induce liver enzyme abnormalities. Therefore, these patients should not receive therapy outside of placebo-controlled clinical trials.

Nonspecific symptoms such as fatigue are difficult to interpret and should not influence treatment decisions. However, patients with clinical evidence of essential mixed cryoglobulinemia could benefit from long-term therapy with interferon.

Because severity of disease or progression to cirrhosis has not been conclusively related to the mode of acquisition of hepatitis C or to particular risk groups, therapy should not be denied on the basis of these factors. However, treatment of patients who are drinking significant amounts of alcohol or who are actively using illicit drugs should be delayed until these habits are discontinued for at least 6 months. Such patients are at risk for the potential toxic effects of alcohol and other drugs and also present problems with compliance. Treatment for addiction should be provided prior to treatment for hepatitis C.

Patients with chronic hepatitis C and concurrent HIV infection may have an accelerated course of disease. Therefore, patients who have stable HIV infection with good clinical and functional status should be considered for treatment, according to guidelines outlined in this statement.

Even though high HCV RNA levels or genotype 1 predict a less favorable response to therapy, treatment should not be withheld on the basis of these parameters.

Contraindications to treatment with interferon that must be carefully considered are history of major depressive illness, cytopenias, hyperthyroidism, renal transplant, and convincing evidence of

autoimmune disease.

Methods of Prevention against the transmission of Hepatitis C are similar to the recommended precautions for all STD's and communicable diseases, primarily, Don't use dirty needles, Don't have unprotected Sex, and follow Universal Precautions.

5. What Recommendations Can Be Made to Patients to Prevent Transmission of Hepatitis C?

The large reservoir of individuals infected with HCV globally provides a source of transmission to others at risk. Prior to the identification of HCV, the majority of non-A, non-B hepatitis cases were associated with blood transfusion, injection drug use, health care, employment, or sexual or household exposure to a contact with hepatitis. HCV is now rarely transmitted by transfusion because of screening tests that exclude infectious donors.

Direct percutaneous exposure is the most efficient method for transmitting HCV. In drug users, HCV infection is acquired rapidly after beginning injection drug use, with 50-80 percent of new users becoming positive for antibody to HCV within 6-12 months. Injection drug use accounts for half of all new infections annually and perhaps greater than 50 percent of chronic infections. In addition, it is thought that the majority of the rest of the cases can be explained by transfusion prior to 1990, occupational exposures to blood, hemodialysis, high-risk sexual activity (multiple partners, history of sexually transmitted diseases), and noninjection illegal drug use (intranasal cocaine). Percutaneous exposures such as body piercing and tattooing are potential sources of transmission if contaminated equipment or supplies are used, although their role in transmission of HCV in the United States has not been confirmed. It is now considered that the route of transmission is unknown in less than 10 percent of newly acquired cases of hepatitis C.

Data regarding transmissibility by sexual contact have been conflicting. Based on studies in STD clinics, sexual transmission appears to occur; however, even with multiple sexual partners the risk is low. The risk appears to be increased by coinfection with HIV or other sexually transmitted diseases. Although transmission in long-term monogamous relationships may occur, the risk is thought to be minimal.

There is some evidence for occupational and nosocomial transmission of HCV infection. Health care workers have a higher prevalence than the general population, although many may have acquired it from other sources. However, inadvertent needle stick injuries and lack of application of universal precautions may be contributing factors. The risk of infection from needle sticks in hepatitis C is intermediate between that of HIV and hepatitis B. HCV transmission between patients in dialysis centers may be related to poor infection control practices. Although transmission from health care workers to patients has been documented, such transmission is thought to be rare.

There is a great need for further extensive Hepatitis C research into effective diagnostic techniques, better treatment methods, as well as for strategies to delay or reduce liver damage caused by the disease.

Perinatal transmission between mother and baby has been documented, although the risk is estimated at no more than 6 percent. The risk is increased if the mother is co-infected with HIV. Although data are limited, there is no evidence that breast-feeding transmits HCV from mother to baby.

6. What Are the Most Important Areas for Future Research?

Continued monitoring of the epidemiology of acute and chronic hepatitis C is necessary. Additional studies of the specific mode of transmission in minority groups, low socioeconomic groups, institutionalized individuals, and injection and intranasal drug users are needed, as well as more information on sexual, household, occupational, nosocomial, and perinatal transmission.

Large-scale, long-term studies are needed to better define the natural history of hepatitis C and especially to identify factors associated with disease progression to cirrhosis. Studies of the natural history are needed in special groups, such as minorities, children, those over 60, HCV-infected patients with normal ALT, HCV-infected patients coinfecting with HIV, and injection drug users. Information is also needed about the role of ultrasound and alpha fetoprotein monitoring for early detection of hepatocellular carcinoma in patients with chronic hepatitis C.

Studies are needed on the recovery from and persistence of viral infection as well as the pathogenesis and mechanism of liver cell injury by HCV. Is damage due to cytopathic effects of the virus on the liver cell, or is it immunologically mediated? What is the mechanism of hepatic fibrosis? Can fibrosis be separated from inflammation/necrosis of the liver? Such studies would be greatly facilitated by development of suitable animal and cell culture models. The mechanism of development of hepatocellular carcinoma in patients with hepatitis C needs elucidation.

Given the large number of persons who are already infected with HCV, there is an urgent need for effective antiviral therapeutics capable of inhibiting virus replication and stopping or delaying the progression of liver disease. A major bottleneck to the drug discovery process is the absence of a readily available cell culture system that is fully permissive for viral replication. Thus, development of such systems should be a high priority. An improved understanding of the molecular virology of HCV is also critically important to antiviral drug development. These studies should include the development of infectious molecular clones, which would allow analyses of structure-function relations among HCV nonstructural proteins that participate in the viral replication cycle. Alcohol ingestion clearly worsens the course of hepatitis C, but the reasons for this interaction are unknown. Studies of the interaction between HCV and obesity, diabetes mellitus, iron, and medications are also needed.

Education of high risk populations is the number one prevention strategy to stop the transmission of Hep-C to others.

Another key to prevention for Hepatitis C is to develop an effective and safe vaccine.

Unresolved questions remain regarding the diagnostic tests for hepatitis C. What is the prevalence of significant liver disease among RIBA-positive, HCV RNA-negative individuals? What should be the gold standard for HCV RNA assays? What is the frequency of intermittent viremia in untreated patients? What are the criteria for selecting patients for, or withdrawing patients from, treatment? How can the reliability of HCV RNA tests be improved? How can the dynamic range and intra-assay variability of the HCV RNA test be improved?

Future clinical trials should expand the range of outcomes studied to include quality of life from the patient's point of view, as well as costs and survival. In addition, those trials should include minorities, patients over age 60, patients under age 18, HIV-coinfected patients, and liver transplant patients. We need to identify effective, nontoxic therapeutic agents.

Clinical trials are also needed to identify optimal treatment regimens for those who do not respond to interferon therapy, or who relapse following interferon therapy. Prospective studies are needed to identify and test prospectively the factors that predict response to therapy. In addition, studies are needed of possible drug interactions, especially between the antiretroviral drugs used to treat HIV infection and those drugs used to treat hepatitis C.

Although continued education of risk groups and screening of blood, organs, tissue, and semen remain vitally important, the key to prevention is development of an effective and safe vaccine for hepatitis C. This will require a better understanding of the molecular determinants of both cellular and humoral immunity to HCV, the nature of antigenic variation as related to viral quasispecies diversity, and the mechanism(s) by which HCV regularly eludes the host immune system and establishes persistent infection.

Strategies should be developed to educate at-risk groups concerning transmission of disease, as well as provide access to diagnosis and treatment. It would be helpful also to evaluate the role of intranasal cocaine use as a possible route of infection.

Conclusions and Recommendations

Individuals who have a history of transfusions of blood or blood products prior to 1990, who are on chronic hemodialysis, who have a history of injection drug use, who have had multiple sexual partners, who are the spouses or close household contacts of hepatitis C patients, and who share instruments for intranasal cocaine use should be tested for hepatitis C.

Hepatitis C is a common infection with variable course that can lead to chronic hepatitis, cirrhosis, liver failure, and hepatocellular carcinoma.

The course of illness may be adversely affected by various factors, especially alcohol consumption. Therefore, more than one drink per day is strongly discouraged in patients with hepatitis C, and abstinence from alcohol is recommended. Those addicted to alcohol or drugs should be helped to obtain treatment for their addiction so that they might qualify for anti-HCV therapy.

An EIA test for anti-HCV should be the initial test for diagnosis of hepatitis C. In low-risk populations, a supplemental RIBA test and/or a qualitative PCR test for HCV RNA should be performed in those whose EIA test is positive. In patients with clinical findings of liver disease, HCV RNA by PCR can be used for confirmation.

Because of assay variability, qualitative and quantitative PCR testing for HCV RNA must be interpreted cautiously. Rigorous proficiency testing is recommended for clinical laboratories performing this assay. The branched DNA signal amplification assay for viral level has been standardized, but may fail to detect low titers of HCV RNA. Sequential measurement of HCV RNA levels (viral load) has not, to date, proven useful in managing patients with hepatitis C.

Liver biopsy is indicated when histologic findings will assist decision making regarding patient management. In patients who are not treated with antiviral therapy initially, liver biopsy can be considered to assess disease progression.

HCV genotyping and tests for HCV RNA levels (viral load) may provide useful prognostic information, especially regarding response to therapy, but at present must be considered research tools.

Currently available therapy for chronic hepatitis C is indicated for patients who have persistently abnormal ALT (greater than 6 months), a positive HCV RNA, and liver biopsy demonstrating either portal or bridging fibrosis and at least moderate degrees of inflammation and necrosis. Patients with milder histological disease, compensated cirrhosis, or who are under age 18 or over 60 should be managed on an individual basis or in the context of clinical trials. Patients with decompensated cirrhosis should not be treated with interferon but should be considered for liver transplantation. Patients with persistently normal ALT and minimal histologic abnormalities should not be treated outside clinical trials.

Contraindications to treatment of patients with interferon that must be considered are a history of major depressive illness, cytopenia, active alcohol use or illicit drug use, hyperthyroidism, renal transplantation, or autoimmune disease. Therapy should not be limited by mode of acquisition, risk group, HIV status, HCV RNA level, or genotype. Because 12-month regimens with interferon are more successful in achieving sustained responses, initial therapy with interferon alfa (or its equivalent) should be 3 million units three times weekly subcutaneously for 12 months.

**All
Hepatitis C
patients
should
be
referred
to
community
support
groups,

and
should
refrain
from
donating
blood,
organs,
tissues
or
semen

and
should
not
share
razors
or
toothbrushes
with
others.**

Nonresponders to interferon therapy can be identified early by assessing the serum ALT level and presence of serum HCV RNA after 3 months of therapy. If the ALT level remains abnormal and the serum HCV RNA remains detectable, interferon therapy should be stopped, because further treatment is unlikely to produce a response. Nonresponders should not be retreated with the same regimen, but should be considered for combination therapy or enrollment in investigational protocols using different dosages or agents.

Patients who have an end-of-treatment response to a 6-month course of interferon alfa, but then relapse, should receive retreatment with a 12-month course of interferon alfa or be considered for combination therapy with interferon plus ribavirin or other regimens, preferably in a clinical trial.

Hepatitis A and B vaccination is recommended for all HCV-positive patients.

Patient support groups should be encouraged, especially for those undergoing therapy, those who fail therapy, and also those recovering from addiction.

The following recommendations are made to avoid transmission of hepatitis C:

In health care settings, adherence to universal (standard) precautions for the protection of medical personnel and patients is essential.

HCV-positive individuals should refrain from donating blood, organs, tissues, or semen. In some situations, the use of organs and tissues from HCV-positive individuals may be considered. For example, in emergency situations the use of a donor organ in which the HCV status is either positive or unknown may be considered in a HCV-negative recipient after full disclosure and informed consent. Strategies should be developed to identify prospective blood donors with any prior history of injection drug use. Such individuals must be deferred from donating blood.

Safer sexual practices should be strongly encouraged in persons with multiple sexual partners, including the use of latex condoms. In monogamous long-term relationships, transmission is rare. Although HCV-positive individuals and their partners should be informed of the potential for transmission, there are insufficient data to recommend changes in current sexual practice in persons with a steady partner. It is recommended that sexual partners of infected patients should be tested for antibody to HCV.

In households with an HCV-positive member, sharing razors and toothbrushes should be avoided. Covering open wounds is recommended. Injection needles should be carefully disposed of using universal precaution techniques. It is not necessary to avoid close contact with family members or to avoid sharing meals or utensils. There is no

evidence to justify exclusion of HCV-positive children or adults from participation in social, educational, and employment activities.

Pregnancy is not contraindicated in HCV-infected individuals. Perinatal transmission from mother to baby occurs in less than 6 percent of instances. There is no evidence that breast-feeding transmits HCV from mother to baby; therefore, it is considered safe. Babies born to HCV-positive mothers should be tested for anti-HCV at 1 year.

Needle exchange and other safer injection drug use programs may be of benefit in reducing parenterally transmitted diseases. Expansion of such programs should be considered in an effort to reduce the rate of transmission of hepatitis C.

It is important that clear and evidenced-based information be provided to both patients and physicians regarding the natural history, means of prevention, management, and therapy of hepatitis C.

ARTICLE 4

Source: <http://www.niaid.nih.gov/factsheets/stdinfo.htm>

**22%
of
the
U.S.
Population
is
infected
by
an
STD
Each
Year.**

Introduction to Sexually Transmitted Diseases

Sexually transmitted diseases (STDs), once called venereal diseases, are among the most common infectious diseases in the United States today.

More than 20 STDs have now been identified, and they affect more than 13 million men and women in this country each year.

The annual comprehensive cost of STDs in the United States is estimated to be well in excess of \$10 billion.

Understanding the basic facts about STDs - the ways in which they are spread, their common symptoms, and how they can be treated - is the first step toward prevention. The National Institute of Allergy and Infectious Diseases (NIAID), a part of the National Institutes of Health, has prepared a series of fact sheets about STDs to provide this important information. Research investigators supported by NIAID are looking for better methods of diagnosis and more effective treatments, as well as for vaccines and topical microbicides to prevent STDs.

**Nearly
2/3
of all
STD's
occur
in
people
under
25
years
old.**

It is important to understand at least five key points about all STDs in this country today:

1. STDs affect men and women of all backgrounds and economic levels. They are most prevalent among teenagers and young adults. Nearly two-thirds of all STDs occur in people younger than 25 years of age.
2. The incidence of STDs is rising, in part because in the last few decades, young people have become sexually active earlier yet are marrying later. In addition, divorce is more common. The net result is that sexually active people today are more likely to have multiple sex partners during their lives and are potentially at risk for developing STDs.
3. Most of the time, STDs cause no symptoms, particularly in women. When and if symptoms develop, they may be confused with those of other diseases not transmitted through sexual contact. Even when an STD causes no symptoms, however, a person who is infected may be able to pass the disease on to a sex partner. That is why many doctors recommend periodic testing or screening for people who have more than one sex partner.
4. Health problems caused by STDs tend to be more severe and more

STD's are extremely dangerous for women, as they often have few or no symptoms, and can cause cancer, tubal pregnancies, and can pass from mother to baby before, during or after birth, which can be fatal.

frequent for women than for men, in part because the frequency of asymptomatic infection means that many women do not seek care until serious problems have developed.

Some STDs can spread into the uterus (womb) and fallopian tubes to cause pelvic inflammatory disease (PID), which in turn is a major cause of both infertility and ectopic (tubal) pregnancy. The latter can be fatal.

STDs in women also may be associated with cervical cancer. One STD, human papillomavirus infection (HPV), causes genital warts and cervical and other genital cancers.

STDs can be passed from a mother to her baby before, during, or immediately after birth; some of these infections of the newborn can be cured easily, but others may cause a baby to be permanently disabled or even die.

5. When diagnosed and treated early, many STDs can be treated effectively. Some infections have become resistant to the drugs used to treat them and now require newer types of antibiotics. Experts believe that having STDs other than AIDS increases one's risk for becoming infected with the AIDS virus.

HIV Infection and AIDS

AIDS (acquired immunodeficiency syndrome) was first reported in the United States in 1981. It is caused by the human immunodeficiency virus (HIV), a virus that destroys the body's ability to fight off infection. An estimated **900,000** people in the United States are currently infected with HIV. People who have AIDS are very susceptible to many life-threatening diseases, called opportunistic infections, and to certain forms of cancer.

Transmission of the virus primarily occurs during sexual activity and by sharing needles used to inject intravenous drugs. If you have any questions about HIV infection or AIDS, you can call the AIDS Hotline confidential toll-free number: 1-800-342-AIDS.

Chlamydial Infection

This infection is now the most common of all bacterial STDs, with an estimated **4 to 8 million new cases occurring each year**. In both men and women, chlamydial infection may cause an abnormal genital discharge and burning with urination. In women, untreated chlamydial infection may lead to pelvic inflammatory disease, one of the most common causes of ectopic pregnancy and infertility in women. Many people with chlamydial infection, however, have few or no symptoms of infection. Once diagnosed with chlamydial infection, a person can be treated with an antibiotic.

Genital Herpes

Genital herpes affects an estimated 60 million Americans. Approximately **500,000 new cases of this incurable viral infection develop annually**. Herpes infections are caused by herpes simplex virus (HSV). The major

Herpes symptoms may be controllable with medications, but there is no cure for the virus.

symptoms of herpes infection are painful blisters or open sores in the genital area. These may be preceded by a tingling or burning sensation in the legs, buttocks, or genital region. The herpes sores usually disappear within two to three weeks, but the virus remains in the body for life and the lesions may recur from time to time. Severe or frequently recurrent genital herpes is treated with one of several antiviral drugs that are available by prescription. These drugs help control the symptoms but do not eliminate the herpes virus from the body. Suppressing antiviral therapy can be used to prevent occurrences and perhaps transmission. Women who acquire genital herpes during pregnancy can transmit the virus to their babies. Untreated HSV infection in newborns can result in mental retardation and death.

Genital warts can generally be cured with topical medications.

Genital Warts

Genital warts (also called venereal warts or condylomata acuminata) are caused by human papillomavirus (HPV), a virus related to the virus that causes common skin warts. Genital warts usually first appear as small, hard painless bumps in the vaginal area, on the penis, or around the anus. If untreated, they may grow and develop a fleshy, cauliflower-like appearance. **Genital warts infect an estimated 1 million Americans each year.** In addition to genital warts, certain high-risk types of HPV cause cervical cancer and other genital cancers. Genital warts are treated with a topical drug (applied to the skin), by freezing, or if they recur, with injections of a type of interferon. If the warts are very large, they can be removed by surgery.

Antibiotics can usually cure Gonorrhea.

Gonorrhea

Approximately 400,000 cases of gonorrhea are reported to the CDC each year in this country. The most common symptoms of gonorrhea are a discharge from the vagina or penis and painful or difficult urination. The most common and serious complications occur in women and, as with chlamydial infection, these complications include PID, ectopic pregnancy, and infertility. Historically, penicillin has been used to treat gonorrhea, but in the last decade, four types of antibiotic resistance have emerged. New antibiotics or combinations of drugs must be used to treat these resistant strains.

Syphilis is on a dramatic rise in certain urban populations.

Syphilis

The incidence of syphilis has increased and decreased dramatically in recent years, with **more than 11,000 cases reported in 1996.** The first symptoms of syphilis may go undetected because they are very mild and disappear spontaneously. The initial symptom is a chancre; it is usually a painless open sore that usually appears on the penis or around or in the vagina. It can also occur near the mouth, anus, or on the hands. If untreated, syphilis may go on to more advanced stages, including a transient rash and, eventually, serious involvement of the heart and central nervous system. The full course of the disease can take years. Penicillin remains the most effective drug to treat people with syphilis.

The best way to avoid getting or transmitting a Sexually Transmitted Disease is to Not Have Sex, or to Use Universally Recommended Precautions During All Sexual Activity.

If you are sexually active with more than one partner, you should be tested frequently for STDs.

Other diseases that may be sexually transmitted include trichomoniasis, bacterial vaginosis, cytomegalovirus infections, scabies, and pubic lice. STDs in pregnant women are associated with a number of adverse outcomes, including spontaneous abortion and infection in the newborn. Low birth weight and prematurity appear to be associated with STDs, including chlamydial infection and trichomoniasis. Congenital or perinatal infection (infection that occurs around the time of birth) occurs in 30 to 70 percent of infants born to infected mothers, and complications may include pneumonia, eye infections, and permanent neurologic damage.

What Can You Do to Prevent STDs?

The best way to prevent STDs is to avoid sexual contact with others. If you decide to be sexually active, there are things that you can do to reduce your risk of developing an STD.

- Have a mutually monogamous sexual relationship with an uninfected partner.
- Correctly and consistently use a male condom.
- Use clean needles if injecting intravenous drugs.
- Prevent and control other STDs to decrease susceptibility to HIV infection and to reduce your infectiousness if you are HIV-infected.
- Delay having sexual relations as long as possible. The younger people are when having sex for the first time, the more susceptible they become to developing an STD. The risk of acquiring an STD also increases with the number of partners over a lifetime.

Anyone who is sexually active should:

- Have regular checkups for STDs even in the absence of symptoms, and especially if having sex with a new partner. These tests can be done during a routine visit to the doctor's office.
- Learn the common symptoms of STDs. Seek medical help immediately if any suspicious symptoms develop, even if they are mild.
- Avoid having sex during menstruation. HIV-infected women are probably more infectious, and HIV-uninfected women are probably more susceptible to becoming infected during that time.
- Avoid anal intercourse, but if practiced, use a male condom.
- Avoid douching because it removes some of the normal protective bacteria in the vagina and increases the risk of getting some STDs.

Most cities have free STD testing centers, and many offer anonymous testing.

If you are diagnosed with an STD, treatments are readily available,

and the sooner you get treated, the less likely you are to experience advanced complications

Anyone diagnosed as having an STD should:

- Be treated to reduce the risk of transmitting an STD to an infant.
- Discuss with a doctor the possible risk of transmission in breast milk and whether commercial formula should be substituted.
- Notify all recent sex partners and urge them to get a checkup.
- Follow the doctor's orders and complete the full course of medication prescribed. A follow-up test to ensure that the infection has been cured is often an important step in treatment.
- Avoid all sexual activity while being treated for an STD.

Sometimes people are too embarrassed or frightened to ask for help or information. Most STDs are readily treated, and the earlier a person seeks treatment and warns sex partners about the disease, the less likely the disease will do irreparable physical damage, be spread to others or, in the case of a woman, be passed on to a newborn baby.

Private doctors, local health departments, and STD and family planning clinics have information about STDs. In addition, the American Social Health Association (ASHA) provides free information and keeps lists of clinics and private doctors who provide treatment for people with STDs. ASHA has a national toll-free telephone number, **1-800-227-8922**. The phone number for the **Herpes Hotline**, also run by ASHA, is **919-361-8488**. Callers can get information from the ASHA hotline without leaving their names.

Research

STDs cause physical and emotional suffering to millions and are costly to individuals and to society as a whole. NIAID conducts and supports many research projects designed to improve methods of prevention, and to find better ways to diagnose and treat these diseases. NIAID also supports several large university-based STD research centers.

Within the past few years, NIAID-supported research has resulted in new tests to diagnose some STDs faster and more accurately. New drug treatments for STDs are under investigation by NIAID researchers. This is especially important because some STDs are becoming resistant to the standard drugs. In addition, vaccines are being developed or tested for effectiveness in preventing several STDs, including AIDS, chlamydial infection, genital herpes, and gonorrhea.

It is up to each individual to learn more about STDs and then make choices about how to minimize the risk of acquiring these diseases and spreading them to others. Knowledge of STDs, as well as honesty and openness with sex partners and with one's doctor, can be very important in reducing the incidence and complications of sexually transmitted diseases.

ARTICLE 5

UNIVERSAL PRECAUTIONS

**Universal
Precautions
can
help
stop
the
transmission
of
infectious
diseases
through
blood
and
other
bodily
fluids.**

What are universal precautions?

Universal precautions are infection control guidelines designed to protect workers from exposure to diseases spread by blood and certain body fluids.

The Laboratory Centre for Disease Control, Health Canada and the U.S. Centers for Disease Control have developed the strategy of "Universal Precautions" to prevent contact with patient blood and body fluids. Universal precautions stress that all patients should be assumed to be infectious for blood-borne diseases such as AIDS and hepatitis B.

Should universal precautions be applied to all workplaces?

In the workplace, universal precautions should be followed when workers are exposed to blood and certain other body fluids, including:

- semen
- vaginal secretions
- synovial fluid
- cerebrospinal fluid
- pleural fluid
- peritoneal fluid
- pericardial fluid
- amniotic fluid

Universal precautions do not apply to:

- feces
- nasal secretions
- sputum
- sweat
- tears
- urine
- vomitus
- saliva (except in the dental setting, where saliva is likely to be contaminated with blood)

**Universal
Precautions
involve
common
sense,

as
well
as
using
appropriate
physical
protocol,

and
adequate
sanitary
equipment.**

Universal precautions should be applied to all body fluids when it is difficult to identify the specific body fluid or when body fluids are visibly contaminated with blood.

How can workers prevent exposure to blood and body fluids?

Barriers are used for protection against occupational exposure to blood and certain body fluids.

**Health
Care
Workers
who
properly
utilize
Universal
Precautions
have
substantially
minimal
risk
of
contracting
infectious
diseases
from
the
patients
they
care
for.**

These barriers consist of:

- Personal protective equipment (PPE)
- Engineering controls
- Work practice controls

Personal Protective Equipment (PPE) - PPE includes gloves, lab coats, gowns, shoe covers, goggles, glasses with side shields, masks, and resuscitation bags. The purpose of PPE is to prevent blood and body fluids from reaching the workers' skin, mucous membranes, or personal clothing. It must create an effective barrier between the exposed worker and any blood or other body fluids.

Engineering Controls - Engineering controls refer to methods of isolating or removing hazards from the workplace.

Examples of engineering controls include: sharps disposal containers, laser scalpels, and ventilation including the use of ventilated biological cabinets (laboratory fume hoods).

Work Practice Controls - Refers to practical techniques that reduce the likelihood of exposure by changing the way a task is performed.

Examples of activities requiring specific attention to work practice controls include: hand washing, handling of used needles and other sharps and contaminated reusable sharps, collecting and transporting fluids and tissues according to approved safe practices.

COURSE CONCLUSION:

**Please
always
be
a
responsible
clinician
and
continue
to
seek
additional
training
and
supervision
in
the
specific
areas
of
HIV,
HEP-C
and
STDs
that
you
encounter
in
your
work
practice.**

As you can see, this course was an overview of important information the clinician needs to know about HIV, AIDS, Hep-C and Sexually Transmitted Disease risk factors, transmission rates, prevention measures, and treatment options.

It would be difficult to address every necessary component of all these issues in a three-week course, much less in three hours. That is why on-going additional specific and targeted education and clinical supervision is strongly recommended to the professional treating clients with these conditions.

The population you work with may see different trends in transmission rates of various diseases, as cultural, geographic, economic and social factors apply.

Educate your clients on risk factors for all of these kinds of diseases, local testing resources, and of course the available treatment options.

And please, always use the Universal Precautions outlined in Article 5 as a guideline for self and client protection.

-- END--

THANK YOU FOR YOUR PARTICIPATION IN THIS COURSE

To receive continuing education credit for this course, you must have read this entire text file.

You must also complete and return the Evaluation of Learning Quiz and pay the CEU fee. (Instructions are on the next page.)

We always appreciate constructive input from our customers - even when it's 'negative', so please feel free to fill in the "Additional Comments" section of the Grade This Course evaluation when you submit your quiz and payment.

*Richard K. Nongard, LMFT, CCH, CPFT
Executive Director*

"HIV, HEPATITIS and STDs

3 Continuing Education Clock Hours

Procedures to Receive CEU Credit:

- ⇒ This document contains all of the course materials you needed to read.
- ⇒ Now you must complete the required True/False Evaluation of Learning Quiz and submit it to our office along with your payment, in order to obtain your CEU certificate.

FOR ONLINE SUBMISSION:

Go back to www.FastCEUs.com and click the "QUIZ & PAY" button for this course (below the READ COURSE button you clicked to get this file). On the page that opens, enter your information and take the T/F Quiz. When you click SUBMIT, the program will instantly grade your quiz, and provided you pass by at least 80%, it will then charge your credit or debit card.

Immediately, a new web page will open containing your Receipt and Certificate info, and a Link will be provided to access a fancy Certificate for you to Print and/or Save to your computer.

You will also receive an Email containing this same information and the link.

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FOR FAX OR MAIL SUBMISSION:

Print the Quiz and Payment forms on the next few pages of this document, and complete the requested information.

Our 24-hour secure Fax number is **(888)-877-6020**.

If you fax your quiz and payment to us, please do NOT also mail it.

We process faxes within approximately 4 business hours after receiving them. Faxes submitted late in the day or after hours will be processed the next business morning. However, all certificates are dated the date we receive your course quiz and payment.

You will NOT receive a paper copy of your Certificate in the mail.

Enter either your fax number or an Email address and we will send your CEU Certificate to the contact info you provide.

If you prefer to use a check or money order, please Mail the quiz and payment to:

**PeachTree Professional Education, Inc.
15560 N. Frank L. Wright Blvd, #B4-118
Scottsdale, AZ 85260**

EVALUATION OF LEARNING QUIZ - PAGE 1 of 3

PRINT & FAX or MAIL THIS PAGE AND THE ANSWERS PAGES TO OUR OFFICE

*** * * * OR * * * ***

You may complete and submit this information **ONLINE** by following this link:

<https://www.fastceus.org/index.php?extension=hiv-std>

PLEASE NEATLY PRINT THE FOLLOWING INFORMATION:

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We will FAX or EMAIL your CEU Certificate (no copy will be mailed).

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(If you FAX us your Evaluations do NOT mail them. Please WRITE NEATLY so you get your CEUs.)

HIV, Hepatitis and STDs

This **3** Hour CEU Course is **\$49.00**

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EVALUATION OF LEARNING QUIZ - PAGE 2 of 3

Course Title: "HIV, HEPATITIS-C and STD's"

3 Hours of Approved Continuing Education Credit

The purpose of the following Evaluation of Learning questions is to:

- A.) Verify that you have read the required course materials
- B.) Demonstrate an understanding of the practical application of the course materials
- C.) Officially document your participation and completion of this course

➔ PLEASE ANSWER THE FOLLOWING EVALUATION OF LEARNING QUESTIONS.

- T F** 1.) I read through all of the required reading material for this course.
- T F** 2.) Universal precautions have changed very little in the past 15 years.
- T F** 3.) OVER 750,000 AIDS cases have been reported to the CDC.
- T F** 4.) About 3 million Americans have active Hepatitis-B.
- T F** 5.) High risk behaviors for transmission of HIV or Hepatitis include IV drug use and high risk sex.
- T F** 6.) According to the CDC, most drug users cannot stop without treatment.
- T F** 7.) Inmates have a disproportionately high incidence of HIV, STDs and Hepatitis.
- T F** 8.) T-helper cells are not the same thing as CD4 cells.
- T F** 9.) Sharing razors or toothbrushes is a possible transmission for HIV.
- T F** 10.) Hepatitis-C is on the list of rapidly emerging infectious diseases.
- T F** 11.) HCV (hepatitis C virus) damages the liver.
- T F** 12.) People with HCV can go undetected and without symptoms for many years.
- T F** 13.) HCV can be detected in blood 1-3 weeks following exposure.
- T F** 14.) Concomitant alcohol use in HCV patients can expedite cirrhosis of the liver.
- T F** 15.) Interferon, as a treatment for HCV, has very few side effects.
- T F** 16.) 50-80% of IV drug users test positive for HCV within a year of beginning IV drug use.
- T F** 17.) More than 20 STD's have been identified.
- T F** 18.) 60 million American have genital herpes alone.
- T F** 19.) Universal precautions are infection control guidelines designed to protect workers from exposure to diseases spread by blood and certain body fluids.
- T F** 20.) Nearly two-thirds of all STDs occur in people older than 25 years of age.

GRADE THIS ONLINE COURSE! – Page 3

*It is helpful to us if you return this form via snail mail or fax,
along with your Quiz and Payment. Thank-you!*

Participant Assessment of Home Study CEU Course

HIV, HEPATITIS-C AND STDs

3 Credit Hours

**Please Rate the Following Statements from 1-5
(1 being the Lowest, 5 being the Highest.)**

- _____ 1. I found the PeachTree Online Home Study Course Instructions simple to follow.
- _____ 2. I found the PeachTree Online Home Study Course materials to be of professional quality, and easy to read.
- _____ 3. I found the PeachTree Online Home Study Course materials to be of educational value, relative, and useful to my counseling practice.
- _____ 4. I completed the 3 Hour PeachTree Online Home Study Course in approximately 3 hours.
- _____ 5. I would take another PeachTree Online Home Study Course, and/or recommend them to a co-worker.

ADDITIONAL COMMENTS: