



Frequently Asked Questions

and

Resource Information

for

Austin/Travis County and Surrounding Areas

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Frequently Asked Questions and Resource Information for Austin/Travis County and Surrounding Areas

Table of Contents

	Page
What is hepatitis C?	5
What is the liver and what does it do?	7
Why is hepatitis C a major health problem?	7
What other health problems might persons with chronic hepatitis C experience?.....	8
Why do most persons with hepatitis C become chronically infected?	9
Is there a vaccine or other drug to help prevent hepatitis C infection?	9
Should people with hepatitis C be vaccinated against hepatitis A and B?.....	9
How can the healthcare provider obtain reimbursement for clients needing hepatitis A and B vaccines?	9
How does a person get infected with hepatitis C?	11
Who are the major high-risk groups for hepatitis C?	12
What resources are available at no cost for clinicians caring for patients with hepatitis C?	13
Are health care workers at increased risk for getting hepatitis C?	14
What should be done if a health care worker is exposed to HCV positive blood such as a needlestick?	14
Have persons caught the hepatitis C virus from having medical or dental procedures in the U. S.?	14
What should people do if they have hepatitis C or think they are at risk?	15
Persons with hepatitis C can protect their livers from further harm Persons with hepatitis C can reduce the risk of infecting others Persons who are injecting drug users	

Sterilizing/disinfecting equipment	
What are the drug treatment resources in our community?	16
What other information should persons with hepatitis C know?	16
General Information	
Support groups	
What are the most common blood tests available to check for hepatitis C?	17
Interpretation of Hepatitis C Test Results	18
Definitions	
What other tests might be done in diagnosing hepatitis C?	20
Liver biopsy	
Genotyping	
Who should be tested for HCV infection?	21
Persons who should be tested routinely for HCV infection based on their increased risk for infection	
Persons who should be tested routinely for HCV based on a recognized exposure	
Persons for whom routine testing for hepatitis C infection is of uncertain need	
Persons for whom routine testing is not necessary	
Where can I be tested?	22
What are the resources for Veterans?	22
What are the treatments for chronic hepatitis C infection?	23
What are the side effects of interferon therapy?	23
What are the side effects of ribavirin?	23
What can be done about the side effects of interferon or ribavirin?	24
Who should be treated?	24
Can children be treated for chronic hepatitis C?	25
What about herbal remedies - are they helpful or can they be harmful?	25

Where can I find information on alternative therapies?	25
What about diet?	26
What about liver transplants for persons with HCV?	27
How should a person who is diagnosed with HCV handle their work and employer?	27
How do I apply for disability?	28
I have no insurance. Can I obtain treatment?	28
Medicare	
Medicaid	
CHIP	
Texas Health Insurance Risk Pool	
Medical Assistance Program (MAP)	
Assistance with Medications	
What about clinical trials?	31
What are the reporting guidelines healthcare professionals must follow for infectious diseases including hepatitis C?	31
What is the government doing about the hepatitis C problem in the US? ...	32
How do I find out who my representatives are?	32
Which agencies in our community care for patients with hepatitis C?	33
Where can I find more information on hepatitis C?	38
Publications	
Web links and Telephone Resources	
Drug Company Web Sites	
Prepared by	40
Reviewed by	40
For information regarding this guide	40

Frequently Asked Questions about Hepatitis C

This website provides general information on hepatitis C along with testing and treatment resources for Travis County and the surrounding area.

What is hepatitis C?

“Hepatitis” is a general term that describes any kind of inflammation of the liver, a vital organ that has many functions. Viruses, bacteria, drugs, toxins, or excess alcohol intake can cause the inflammation. A virus is a small microorganism that is made up of nucleic acid (either RNA or DNA) and enclosed in an envelope of protein. It can multiply only within the cells of an animal host (or in plants with some types of viruses).

At this time there are five known viruses that cause hepatitis: A, B, C, D, and E. These viruses – which may all cause very similar symptoms – are very different. They differ in how they are transmitted and treated, as well as how severely they may impact the body.

Viral Hepatitis

	A	B	C	D	E
Transmission route	Fecal/oral route (ingestion of fecal material via contaminated food, water or oral/anal sex), or injection drug use	Contact with <ul style="list-style-type: none"> ◆ Infected blood ◆ Seminal fluid ◆ Vaginal secretions ◆ Injection drug use Infected mother to newborn	<ul style="list-style-type: none"> ◆ Contact with infected blood or body fluids ◆ Infected mother to newborn ◆ Not easily transmitted through sex 	<ul style="list-style-type: none"> ◆ Same as HBV ◆ <u>Requires</u> co-infection with HBV 	Fecal/oral (outbreaks associated with contaminated water supply in some other countries)
Incubation	15 – 50 days average 30 days	<ul style="list-style-type: none"> ◆ average 60 - 90 days ◆ range 45 – 180 days 	<ul style="list-style-type: none"> ◆ average 42 - 49 days ◆ range 14 – 182 days 	Range 21 – 90 days	<ul style="list-style-type: none"> ◆ average 40 days ◆ range 15 – 60 days
Symptoms	<ul style="list-style-type: none"> ◆ Young children usually have none ◆ Adults usually abrupt ◆ Light stools ◆ Dark urine ◆ Fatigue ◆ Fever ◆ Nausea ◆ Vomiting ◆ Abdominal pain ◆ Jaundice 	<ul style="list-style-type: none"> ◆ Same as HAV ◆ Adults more likely than children to have symptoms 	<ul style="list-style-type: none"> ◆ 60 – 70% without symptoms ◆ same as HBV 	<ul style="list-style-type: none"> ◆ usually abrupt ◆ same as HBV 	<ul style="list-style-type: none"> ◆ usually abrupt ◆ same as HAV

Mortality rate from acute disease	0.3% ~100 deaths/year in the U.S. (rare)	0.5% - 1.0%	0.2 – 0.4%	<ul style="list-style-type: none"> ◆ 2 – 20% with HBV co-infection ◆ up to 30% with HBV super-infection 	<ul style="list-style-type: none"> ◆ 1 – 2% in pregnant women
Chronicity	No	<ul style="list-style-type: none"> ◆ 6 – 10% (adults) ◆ 25 – 50% (children <5 years old) ◆ 70 – 90% (infants) 	<ul style="list-style-type: none"> ◆ 85% persistent infection ◆ 70% chronic liver disease 	2 – 70%	No
Vaccine	Yes	Yes	No	Indirectly: vaccination against HBV protects against D	No
Prevention	<ul style="list-style-type: none"> ◆ Vaccine ◆ Post-exposure immune globulin ◆ Washing hands ◆ Safe sex ◆ Not sharing IDU equipment; bleach & water clean-up 	<ul style="list-style-type: none"> ◆ Vaccine ◆ Post-exposure immune globulin ◆ Safe sex ◆ Not sharing personal items, IDU equipment ◆ IDU equipment bleach & water clean-up 	<ul style="list-style-type: none"> ◆ No vaccine ◆ Safe sex ◆ Not sharing personal items ◆ Not sharing IDU equipment; bleach & water clean-up 	<ul style="list-style-type: none"> ◆ Indirectly: vaccination against HBV protects against hepatitis D; ◆ Safe sex 	<ul style="list-style-type: none"> ◆ No vaccine ◆ Avoid potentially contaminated drinking water

Hepatitis C, an RNA virus, is one type of virus that can damage the liver. In fact, it is one of the leading known causes of liver disease in the United States. About one third of people with new hepatitis C infection develop symptoms which may include fatigue, mild fever, flu-like illness, nausea and vomiting, stomach ache, loss of appetite or jaundice.

Up to 70% of people who have just been infected with hepatitis C may have no symptoms. They may not even know they are infected. Many people first find out they are infected with this virus when they are tested at the time they donate blood or when they begin to have symptoms of liver damage. This is often years later.

People with new (acute) hepatitis C infection may be treated, but the timing of treatment and types of treatment to use are still being studied.

Between 60% and 85% of persons with hepatitis C infection develop chronic hepatitis C, which persists over a long period of time. Fatigue is the most common complaint of people with chronic disease. Other symptoms may include mild upper right abdominal pain, poor appetite, and muscle and joint pain.

What is the liver and what does it do?

The following is information from "CARING FOR YOUR LIVER," Hepatitis Foundation International, 30 Sunrise Terrace, Cedar Grove, NJ 07009 1-800-891-0707.

"The liver, the largest organ in your body, plays a vital role in regulating life processes. Its primary functions are to refine and detoxify everything you eat, breathe, and absorb through your skin. It is your body's internal chemical power plant, converting nutrients in the food you eat into muscles, energy, hormones, clotting factors and immune factors. It stores certain vitamins, minerals, and sugars, regulates fat stores and controls the production and excretion of cholesterol. The bile, produced by liver cells, helps you to digest your food and absorb important nutrients. It neutralizes and destroys poisonous substances and metabolizes alcohol. Before you were born it served as the main organ of blood formation. It helps you resist infection and removes bacteria from the blood stream, helping you to stay healthy. Storing iron is another important task it performs.

In essence your liver serves as your engine, pantry, refinery, food processor, garbage disposal and "guardian angel". Your liver is your silent partner, your internal chemical power plant, and a non-complaining organ. Unfortunately, it doesn't usually let you know it is in trouble until the damage is far advanced. It needs your help to keep it healthy.

One of the most remarkable accomplishments of this miraculous organ is its ability to regenerate. Three quarters of the liver can be removed and it will grow back in the same shape and form within a few weeks. However, overworking your liver can cause liver cells, the employees in your power plant, to become permanently damaged or scarred. This is called cirrhosis. Alcohol, drugs and even some prescribed and over the counter drugs such as acetaminophen, as well as viruses, environmental pollutants and some metabolic disorders can cause liver cell damage. Medicine should never be taken with alcoholic beverages. Remember they are all made up of chemicals and could be potentially hazardous to your precious liver cells.

Fumes from paint thinners, bug sprays, and other aerosol sprays are picked up by the tiny blood vessels in your lungs and carried to your liver where they are detoxified and discharged in your bile. The amount and concentration of those chemicals should be controlled to prevent liver damage. Make certain you have good ventilation, use a mask, cover your skin and wash off any chemicals you get on your skin with soap and water as soon as possible."

Why is hepatitis C a major health problem?

Hepatitis C is the most common chronic bloodborne infection in the United States. At least four million Americans are thought to have been infected with HCV. Of these, about 3 million are chronically infected. About 70% of persons with chronic hepatitis C infection develop liver disease, which can progress to cirrhosis (scarring), liver failure,

and/or cancer of the liver. Severe liver disease from hepatitis C infection accounts for most of the liver transplants in the U.S. Currently, persons aged 40 to 59 years have the highest number of cases of HCV infection, and in this age group, the number of cases is highest in African Americans (6.1 percent).

Estimates vary on the percentage of persons chronically infected with HCV who go on to develop cirrhosis. These projections can be as low as 2 to 4 percent in children and young women to as high as 20 to 30 percent in middle-aged people who had received blood transfusions. The following factors have been found to increase the risk of more serious liver disease in persons with chronic hepatitis C: older age at the time of infection; male gender; having a compromised immune system; being also chronically infected with hepatitis B; and higher levels of alcohol use.

Lower amounts of alcohol also may increase the risk of liver damage associated with HCV. Other factors, including iron overload, nonalcoholic fatty liver disease, schistosomal (parasite) co-infection, medications that may damage the liver, and environmental contaminants, also may have important effects.

It is estimated that 10,000 to 12,000 people in the United States die each year from chronic hepatitis C. The costs associated with hepatitis C are considerable. It is estimated that well over \$600 million are spent nationally each year on medical care and lost wages related to hepatitis C.

A study published by Wong and colleagues in the *American Journal of Public Health* (2000; 90:1562-1569), estimated the future hepatitis C morbidity, mortality, and costs in the United States for the years 2010 through 2019. They based these estimates on data from the third National Health and Nutrition Examination Survey, published literature on the morbidity and mortality from chronic liver disease and hepatocellular carcinoma, and cost estimates for patients with hepatitis C treated at a university hospital. Their conservative model projected 165,900 deaths from chronic liver disease attributable to HCV, 27,200 deaths from hepatocellular carcinoma, and 10.7 billion dollars in direct medical costs for this disease for the 10-year period. For the same time period, they projected 54.2 billion dollars cost to society from premature deaths of persons less than 65 and 21.3 billion dollars in cost incurred as the result of disabilities related to cirrhosis and liver cancer.

What other health problems might persons with chronic hepatitis C experience?

Persons chronically infected with hepatitis C might also occasionally experience the following health problems:

- ◆ Rheumatoid symptoms such as painful joints.
- ◆ Keratoconjunctivitis sicca—a drying and inflammation of the outer surfaces of the eyes as a result of insufficient tears.

- ◆ Lichen planus—a disorder of the skin consisting of violet-colored, flat lesions that are often itchy. The lesions usually occur on the wrists, shins, lower back, or the genital area and sometimes on the scalp.
- ◆ Glomerulonephritis—inflammation of the kidneys.
- ◆ Lymphoma—a type of cancer involving the lymphocytes.
- ◆ Cryoglobulinemia—a condition characterized by the presence of cryoglobulins (abnormal plasma proteins) in the blood. These cryoglobulins can cause restricted blood flow to the skin and to the vital organs (sometimes).
- ◆ Porphyria cutanea tarda—a condition characterized by the development of bullous lesions (blisters) following minor trauma or sun exposure to the skin.
- ◆ Psychological disorders—up to 30 to 40 percent of persons with hepatitis C infection experience depression.

Why do most persons with hepatitis C become chronically infected?

The hepatitis C virus mutates rapidly. Mutations or changes in the protein capsid (capsule) that surrounds the virus particle may help it evade the body's immune system.

Is there a vaccine or other drug to help prevent hepatitis C infection?

No vaccines or immune globulin products to prevent hepatitis C are currently available. Developing a vaccine will be difficult because the hepatitis C virus includes several genotypes, and the virus undergoes constant mutations.

Should people with hepatitis C be vaccinated against hepatitis A and B?

Persons with hepatitis C should get hepatitis A and B vaccines to protect the liver from being infected with these common viruses. Persons with chronic hepatitis C may suddenly develop life-threatening illness if also infected with another hepatitis virus. Vaccines for hepatitis A and B do not provide protection against hepatitis C.

How can the healthcare provider obtain reimbursement for clients needing hepatitis A and B vaccines?

(Show this to your physician)

Adapted from information from the Seattle-King County Department of Public Health in conjunction with Peter Shalit, MD.

If routine services are covered: hepatitis A and B vaccines, along with most other vaccines, are considered “routine injections” by most insurers. These injections are only covered if the insurer provides a benefit for “routine services” such as physicals and injections. Not all insurers provide a benefit category for “routine services”.

If routine services are NOT covered, vaccine may be reimbursed by using:

- ◆ CPT and ICD 9 codes: when any medical procedure is billed, such as immunizations, the procedure is given a code called a CPT code, and the associated

diagnosis is given an ICD 9 code. The key is to find the code that will allow immunizations to be covered by the insurer.

- ◆ For HIV+ clients use the immunosuppressed patient diagnosis code. In the case of HIV or other immune system disorders, most insurers will cover hepatitis A & B vaccines because of the risks and costs associated with these illnesses. For patients with HIV, hepatitis B vaccine has a specific CPT code (90747: hepatitis B vaccine for immunosuppressed patients). Most insurers cover hepatitis vaccines even if the patient doesn't have the "routine services" benefit. There is not yet a specific CPT code for hepatitis A vaccine for persons with HIV or other immune system disorders. To bill an insurer for the immunization, use the appropriate ICD-9 diagnosis code to identify HIV (ICD-9 code 042) or other immune system disorder, along with the appropriate CPT code (90747 for Hep B immunosuppressed or 90730 for Hep A).

For HIV-negative or unknown patient status, use the "exposure" diagnosis code. Insurers will consider payment for hepatitis A & B vaccines when a patient is exposed to hepatitis A or B but does not show signs and/or symptoms of the disease. In these cases you would use the appropriate CPT code (90730 for hepatitis A vaccine, 90746 for hepatitis B vaccine) and use the ICD-9 diagnosis code of "V01.9 = exposure to infectious agent" (*this diagnosis code is appropriate to use in many situations*).

If denied, identify an appropriate "high-risk group" for your client. This method usually requires a call to the insurance company and, in some cases, a letter written by the doctor following a denial of payment.

☞ See below for a comprehensive list of risk groups for Hepatitis A & B.

<p>Important: to protect your patient's confidentiality, discuss the Risk Factor/Group with the patient <i>prior</i> to contacting the insurance company!</p>
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Last: To reduce the number of instances where the insurance company will not cover the vaccine, inquire *prior* to sending the initial claim to the insurance company. Once a claim has been received and denied it will take a good deal more effort to receive reimbursement from the insurance company. At that point you would need to assess the cost and time associated with the appeal and the specific patient's situation; i.e., the patient's ability to pay for vaccine or whether the patient can be referred to another setting, such as a local STD Clinic.

Hepatitis A Risk Groups:

Persons in these groups are at risk for hepatitis A virus infection and should be vaccinated:

- ◆ Men who have sex with men
- ◆ Persons traveling to or working in countries that have high or intermediate rates of hepatitis A
- ◆ Children in communities that have high rates of hepatitis A and periodic hepatitis A outbreaks

- ◆ Illegal-drug users
- ◆ Persons who have occupational risk for infection
- ◆ Persons who have chronic liver disease
- ◆ Persons who have clotting-factor disorders

Hepatitis B Risk Groups:

Persons in these groups are at moderate or high risk for hepatitis B virus infection and should be vaccinated:

- ◆ Men who have sex with men
- ◆ Immigrants/refugees from areas of high HBV endemicity (Asia, Pacific Islands, Sub-Saharan Africa, Amazon Basin, Eastern Europe, Middle East)
- ◆ Children born in the United States to immigrants from areas of high HBV endemicity
- ◆ Alaska natives and Pacific Islanders
- ◆ Household contacts and sex partners of people with chronic HBV infection
- ◆ People who have or who have had sexually transmitted diseases
- ◆ Heterosexuals with more than one sex partner in six months
- ◆ Users of illicit injectable drugs
- ◆ Health care workers who have contact with blood and body fluids
- ◆ Adopted children from countries where HBV is endemic
- ◆ Hemodialysis patients
- ◆ Recipients of certain blood products
- ◆ Clients and staff of institutions for the developmentally disabled
- ◆ Inmates of long-term correctional facilities

References:

Centers for Disease Control and Prevention. Prevention of hepatitis A through active or passive immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1996; 45(No. RR-15): pp. 1-30.

Centers for Disease Control and Prevention. General Recommendations on Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1994; 43(No. RR-1): pp. 1-38.

Centers for Disease Control and Prevention. Hepatitis B virus: A comprehensive strategy for eliminating transmission in the United States through universal childhood vaccination. Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1991; 40 (No. RR-13): pp. 1-25.

For further Information on hepatitis A and B:

Centers for Disease Control and Prevention (CDC), Hepatitis Branch
 1-888-4 HEP-CDC (1-888-443-7232); toll free hotline
<http://www.cdc.gov/ncidod/diseases/hepatitis/hepatitis.htm>

Austin/Travis County Health & Human Services Department
http://www.ci.austin.tx.us/health/idp_hep.htm

How does a person get infected with hepatitis C?

A person infected with either acute or chronic hepatitis C may infect other people, especially if no safety measures are taken. The virus is found in the blood and is spread by direct contact with blood and blood products.

People who received blood transfusions before 1992 or blood products before 1987 account for the majority of hepatitis C cases in the United States. Today, however, this risk is very low as all donor blood is carefully tested in the laboratory for hepatitis C.

The highest risk of getting infected with hepatitis C now comes from injecting illegal drugs. Hepatitis C virus transmission might also occur via intranasal cocaine use, especially if there is sharing of instruments that are contaminated with blood from bleeding nasal membranes. People can be infected with the virus when they use needles, toothbrushes, and nail files that contain blood from an infected person. People who have acupuncture, body piercing, or tattooing done are at risk if the equipment used is not sterile and was used on persons infected with hepatitis C. These procedures should be done using proper infection control practices that include washing hands, using disposable gloves, disinfecting work surfaces, and using sterilized or disinfected instruments and materials.

A small proportion of people with hepatitis C infection report no known history of exposure to blood or to drug use. They might have been exposed when a cut or wound came in contact with blood from an infected person.

Hepatitis C may also be spread through sexual contact, although this is not a very efficient method of transmission. People who are co-infected with the HIV and hepatitis C viruses appear to transmit the hepatitis C virus more often through sexual contact than those without an HIV infection. People with many sex partners are at increased risk of contracting hepatitis C. A person with multiple sex partners, regardless of infection status, should use latex condoms to help prevent the spread of this virus as well as other infections that can be transmitted through sexual contact. People with hepatitis C infection who have one long-term sex partner do not need to change their practices. The partner's risk is low, but not absent. To lower this small risk, they can use barrier precautions such as latex condoms and ask their doctor about having their partner tested. More studies on sexual transmission are needed.

For every 100 infants born to HCV-infected mothers, between 2 and 7 become infected at the time of birth, depending on whether the mother is HCV RNA positive at delivery or not. In women who are co-infected with HCV and HIV, up to 20 percent of their babies will become infected with HCV. There is no treatment that can prevent this from happening. Avoiding fetal scalp monitoring and prolonged labor after rupture of membranes might help reduce the risk of HCV transmission to the infant. Most infants who are infected at birth have no symptoms and do well during childhood. More studies are needed to see if these children will have problems later.

Current information indicates that babies do not become infected with hepatitis C from their mothers' breast milk. However, mothers who have cracked or bleeding nipples should use formula feeding until their nipples are healed.

Who are the major high-risk groups for hepatitis C?

1. People who have been notified that they have received blood or blood products from a donor who tested positive for hepatitis C.

2. People who received a blood transfusion or solid organ transplant (such as a kidney, liver, or heart) before July 1992.
3. People with blood clotting problems who received treatment with a blood product made before 1987.
4. People who have ever injected street drugs, even once many years ago.
5. People who were ever on long-term kidney dialysis.
6. Persons with accidental injuries due to contaminated needles or other sharp objects, which have been exposed to blood from a hepatitis C positive person.
7. Children born to HCV-infected women.
8. Persons who have been injected with a syringe that has been used on others or other non-sterile medical practices. This is primarily a problem in developing countries.

What resources are available at no cost for clinicians caring for patients with hepatitis C?

Centers for Disease Control and Prevention:

- ◆ On-line training
- ◆ Fact sheet
- ◆ FAQ
- ◆ Recommendations
- ◆ Slide presentations
- ◆ Brochures and posters

www.cdc.gov/hepatitis

National Institutes of Health: www.niddk.nih.gov/health/digest/pubs/hep/hepc/hepc.htm

Texas Department of Health:

Hepatitis C brochure (#6-12C)

Fax order to (512) 458-7707, "Attention Warehouse Manager"

Or send written request to:

Texas Department of Health

1100 W. 49th Street

MAMD Warehouse

Austin, Texas 78756

Phone (512) 458-7761

www.tdhideas.org

Subscribe to Texas Department of Health *Disease Prevention News*:

www.tdh.state.tx.us/phpep/

Hepatitis Prevention Counseling Training modules for Disease Intervention Specialists and HIV/STD prevention counselors: www.tdh.state.tx.us/hivstd/

Click on Educational Resources

Click on Hepatitis C Prevention Counseling

Physicians' Hotline: 214-648-4801 (Dr. William Lee)

Are health care workers at increased risk for getting hepatitis C?

Health care workers who have had accidental needlesticks from sharps used on an infected source may develop hepatitis C. After needlestick or sharps exposure to HCV-positive blood, about 2 health care workers out of 100 will get infected with HCV. Recent surveys of health care workers, however, have shown them to have approximately the same prevalence of hepatitis C infection as the general population.

Any healthcare worker who is exposed to blood should receive the hepatitis B vaccine. After an accidental needle stick with infectious blood, less than one healthcare worker out of 100 (0.3%) will get infected with HIV, and 30 out of 100 will get Hepatitis B.

What should be done if a health care worker is exposed to HCV positive blood such as a needle stick?

At this time, anti-viral agents (such as interferon) or immune globulin are not recommended for post-exposure prevention of hepatitis C. The following steps should be taken after these types of exposures:

1. For the source, baseline testing for anti-HCV, HIV and HBV should be done.
2. For the person exposed to an HCV-positive source, baseline and follow-up testing should include:
 - a. Baseline testing for anti-HCV, HIV, HBV and liver enzymes (ALT activity).
 - b. Follow-up testing at 4 to 6 months for anti-HCV, HCV RNA and ALT activity.
 - c. HCV RNA testing can be done as soon as 2 weeks after exposure.
3. Limited data indicate that anti-viral therapy might be beneficial when started early in the course of HCV infection. When HCV infection is identified early, the person should be referred to a specialist in the management of the disease.

Have persons caught the hepatitis C virus from having medical or dental procedures in the U.S.?

Medical and dental procedures done in the U.S. do not pose a risk for the spread of HCV given that the standard infection control practices are adhered to. There have, however, been some isolated reports that HCV has been spread between patients in hemodialysis units where supplies or equipment may have been shared between patients, or in isolated incidents where sterile technique was not used in clinical settings. Several studies of the transmission of HCV in countries outside the U.S. have found evidence of HCV transmission from medical or dental procedures in which needles or other medical equipment were reused without adequate disinfection or sterilization.

What should people do if they have hepatitis C or think they are at risk?

Many people carry the virus for 20 – 40 years before serious symptoms appear. Most will never develop serious problems (though drinking alcohol can greatly increase the likelihood of developing serious problems).

Persons with hepatitis C can protect their livers from further harm by:

1. Getting a medical evaluation for chronic liver disease and possible treatment. (Persons are encouraged to discuss their disease with their primary healthcare provider. Gastroenterologists and hepatologists are health care providers who specialize in the treatment of liver diseases and other digestive organ diseases.)
2. Not drinking alcohol.
3. Consulting their physician or pharmacist before starting any new medicines, including over-the-counter and herbal medicines.
4. Getting vaccinated against hepatitis A and hepatitis B.
5. Avoiding work with or exposure to solvents, cleaners, pesticides, etc.

Persons with hepatitis C can reduce the risk of infecting others by:

1. Not donating blood, body organs, other tissue, or semen.
2. Not sharing toothbrushes, dental appliances, razors, manicure scissors, other personal care articles that might have blood on them.
3. Covering cuts and sores on the skin to keep from spreading infectious blood or secretions.

Persons who are injection drug users:

1. Should stop using and injecting drugs. If at all possible, they should enter and complete substance abuse treatment, including relapse-prevention programs
2. If they continue to use drugs, they can lessen their risk of getting hepatitis C or spreading it to others by:
 - a. Washing hands before and after giving injections.
 - b. Using a new sterile syringe each time they prepare and inject drugs.
 - c. Not reusing or sharing any equipment used to prepare or inject drugs such as syringes, needles, cottons, or water. Otherwise, used equipment should be sterilized or disinfected first (see below).
 - d. Using sterile water to prepare drugs. Clean tap water can be sterilized by boiling it for one minute.
 - e. Using a new or disinfected container (“cooker”) and a new filter (“cotton”) to prepare drugs.
 - f. Cleaning the injection site with a new alcohol swab before injection.

Sterilizing/disinfecting equipment

Sterilize needles, cookers, and other injection equipment between EACH use. Boiling for 20 minutes will sterilize equipment and kill HIV and many other disease-producing pathogens.

Clean all injection equipment with bleach. Although this process is less effective than using new equipment each time, or sterilizing between use, it is much easier, less time-consuming, and may offer a more realistic approach, especially when other options are not available.

Instructions for bleaching (note however that it is not known whether this will kill hepatitis C virus; therefore using new equipment each time, and NOT sharing any injecting equipment is always safest):

1. Fill syringe with water, shake well, then empty. Do not empty syringe back into the remaining water. Do this three times to flush out all residue.
2. Fill syringe with full strength chlorine bleach (normal liquid household bleach), shake well, then empty. Do not empty syringe into the remaining bleach supply. Do this three times to allow bleach to cover all surfaces.
3. Fill syringe with water, shake well, then empty. Do not use water previously used to flush the first time; use fresh. Do not empty syringe back into the remaining water. Do this three times to flush out all remaining bleach.

What are the drug treatment resources in our community?

- ◆ 1st Call for Help: Phone 2-1-1
www.uway-austin.org
Click on "Get Help"

What other information should persons with hepatitis C know?

1. HCV is not spread by sneezing, kissing, hugging, coughing, food or water, sharing eating utensils or drinking glasses, or casual contact such as shaking hands.
2. Having HCV is not a reason to be excluded from work, school, play, child-care, or other group settings. Persons with hepatitis C can handle food as part of their work without infecting others. Infected health care workers also can continue to work in a health care setting. As recommended for all health care workers, those who are HCV-positive should follow strict aseptic technique and standard precautions, including appropriate use of handwashing, protective barriers, and care in the use and disposal of needles and other sharp instruments.
3. As noted by Hepatitis Foundation International (HFI), "fatigue is a common problem. Finding a happy balance between relaxation and activities is helpful. Frequently, short naps between activities or outings prevent overwhelming fatigue at the end of the day. Don't plan too many activities for one day, instead

space them out over a week. Separate the activities requiring a lot of energy with less strenuous ones. Allow yourself time to regroup while still keeping busy. If your workday is exhausting, try arranging flexible hours or a work-from-home option. Telecommuting, the computer-modem connection, creates new opportunities everyday.”

4. HFI further goes on to say, “In addition to the physical symptoms, hepatitis can cause emotional stress. It is important to have people you can count on for support and encouragement. Talk to friends and loved ones about difficulties you experience and what you need from them. People are not mind readers, and open discussions can help minimize problems and misunderstandings. Support from loved ones and friends makes coping easier. Try not to set unreasonable standards for yourself or anyone else.”
5. Becoming involved with a support group may help both the HCV-infected person and his/her family and/or significant others.

Support Groups:

<p>Hyde Park United Methodist Church 4001 Speedway Austin, TX Every Wednesday at 6:30 PM Pam 512-894-0646</p>	<p>MHMR/C.A.R.E 1631-C East 2nd St Austin, TX Every Wednesday at 9:30 AM Charles 512-804-3659</p>
<p>Central Texas Blood and Tissue Center Every 3rd Tuesday Noon at 2 PM 4300 N Lamar Austin, TX Priscilla 327-1182; Janet 444-1249</p>	<p>Victory Medical 4303 Victory Drive 2nd floor Austin, TX Every 2nd Wednesday at 6 PM Ginger Busboom 462-3627</p>
<p>Central Texas Gastroenterology 2300 Round Rock Ave Round Rock, TX Suite 201 Every 1st and 3rd Thursday 6:30 PM Nicky 512-341-0900</p>	<p>Austin Gastroenterology Every 3rd Tuesday at 6:30 PM 7200 Wyoming Springs Suite 1300 Round Rock, TX Julie Neighbors 244-2273 ext. 12</p>

What are the most common blood tests available to check for hepatitis C?

Test	Full Name	Purpose of Test	Normal Range	Comments
EIA	Enzyme Immunoassay	Tests for antibody to HCV	Negative	Most widely available lab test to check for hepatitis C antibody. Can't tell if infection is new (acute), chronic, or no longer present. The rate of false positives is high in groups of people with low rates of infection. Antibody is detectable within 15 weeks in 80% of people and within 6 months in 97% of people. Negative result is sufficient to exclude HCV diagnosis in immune-competent persons. Inexpensive.
RIBA	Recombinant immunoblot	Supplemental test to confirm	Negative	Widely used in the past to confirm diagnosis of HCV antibody, a marker of past or current

	assay	anti-HCV reactivity		infection. PCR is now more widely used. Useful as supplemental test for persons screened in non-clinical settings and in persons with a positive EIA who test negative for HCV RNA.
PCR Qual	Polymerase chain reaction Qualitative	Detects actual presence of virus	Negative	Single negative result may only reflect a transient decline in viral level below the level of detection of the test. Repeat test in 6 months to rule out HCV. Once HCV infection is confirmed, repeat testing using a test with limit of 50 IU/mL or less is not helpful in management of untreated persons except for determining whether an acute infection has resolved spontaneously. A single positive test confirms active HCV replication.
PCR Quan	Polymerase chain reaction Quantitative	Detects amount of virus	Non-detectable	Significant variability exists between available tests. Should use same specific assay used initially. Little correlation between disease severity and progression with HCV RNA level but provides information to guide treatment.
ALT	Alanine aminotransferase	Elevation suggests liver injury or disease	Adult/child: 5 - 35 IU/L or 8 - 20 U/L (SI units) Elderly/Infant: may be twice as high as adult	Formally known as SGPT. Enzyme found primarily in the liver. Most ALT elevations are caused by liver abnormalities. Many commonly used drugs may cause increased ALT levels. Not specific for HCV. Approximately 30% of patients with HCV infection have normal ALT levels. Inexpensive but relatively insensitive means of assessing disease activity. Fasting is not required before the test.
AST	Aspartate aminotransferase	Liver injury or disease causes a release of this enzyme into blood stream	Adult: 8-20 U/L; 5-40 IU/L, females tend to have slightly lower values than males. Elderly: values slightly higher than adult. Child: values similar to adult. Newborn/infant: 15-60 U/L	Formerly known as SGOT, an enzyme that exists in liver cells. Pregnancy may cause decreased AST levels. Exercise may cause increased AST levels. Drugs may cause increased levels. Not specific for HCV.

The FDA has approved a home access testing system that is available at some area pharmacies. More information can be obtained at www.homeaccess.com/ 1-888-888-HepC.

Interpretation of Hepatitis C Test Results

TEST	RESULTS	INTERPRETATION	RECOMMENDATION
Anti-HCV (EIA)	Positive	Chronic hepatitis, hepatitis C recovered, recent acute hepatitis C, or false positive test	Further evaluation
Anti-HCV (EIA) Supplemental test (RIBA-3)	Positive Positive	Chronic hepatitis, hepatitis C recovered, recent	Further evaluation

		acute hepatitis C	
Anti-HCV (EIA) ALT Supplemental test (RIBA-3)	Positive Normal Positive	Chronic hepatitis, hep C recovered, or recent acute hepatitis C	Further evaluation by HCV RNA PCR test
Anti-HCV (EIA) ALT	Positive Elevated	Presume chronic hepatitis C	Further evaluation by HCV RNA PCR test
Anti-HCV (EIA) ALT Supplemental test (RIBA-3)	Positive Normal Negative	Presume false positive anti-HCV	No further testing needed (unless ongoing risk factors)
Anti-HCV (EIA) ALT Supplemental test (RIBA-3)	Positive Normal Indeterminate	Could be false positive, past infection, or chronic hepatitis C	Further evaluation by repeat RIBA-3 in 2 or more months, or HCV RNA PCR
Anti-HCV (EIA) ALT HCV RNA PCR	Positive Elevated Negative	Could be false positive, past infection (recovered), or chronic hepatitis C	Repeat HCV RNA PCR test – if negative second time, further evaluation for liver disease other than hepatitis C
ALT (no other symptoms)	Elevated	Possible fatty liver, chronic viral hepatitis, alcoholic liver disease, hemochromatosis, drug induced liver injury, other liver diseases	Further evaluation
AST (no other symptoms)	Elevated	Possible disease or injury of heart, liver, skeletal muscle, kidney, pancreas, spleen, lung, red blood cells or brain tissue	Further evaluation

Definitions:

- ◆ Anti-HCV: antibody to hepatitis C virus.
- ◆ ALT: Liver enzyme released from liver cells that are injured, e.g.: by virus, alcohol, fat, drug, etc.
- ◆ AST: enzyme released from cells or organs that are injured.
- ◆ RIBA-3: Supplemental test to detect antibody to hepatitis C virus.

- ◆ Indeterminate means 1 of 4 antigens positive.
- ◆ HCV-RNA test by polymerase chain reaction (PCR) determines whether the virus is multiplying.
- ◆ It is assumed that other forms of hepatitis are ruled out.

For further information on laboratory testing, go to the February 7, 2003 MMWR "Guidelines for Laboratory Testing and Result Reporting of Antibody to Hepatitis C Virus." at <http://www.cdc.gov/mmwr/PDF/rr/rr5203.pdf>.

What other tests might be done in managing hepatitis C?

Liver biopsy

Type of test: Microscopic examination of tissue.

Liver biopsy is a relatively safe, simple, and valuable method of determining the health of the liver. It can not be used to diagnose HCV infection.

For this procedure, a specially designed needle is inserted through the abdominal wall and into the liver. A piece of liver tissue is removed for microscopic examination. Liver biopsy is used in the diagnosis of various liver disorders such as cirrhosis, hepatitis, granuloma and tumors. Liver biopsy is often recommended for people with persistently high liver enzymes or who are known to have hepatitis.

The liver biopsy is performed by a physician and takes about 15 minutes. However, after the procedure is finished the patient will stay for observation for approximately 1 to 2 hours.

During the liver biopsy the patient lies on his/her back or left side. The area to be punctured is anesthetized locally. The patient is asked to exhale and hold the exhalation. This causes the liver to descend and reduces the possibility of a punctured lung. Frequently, the patient practices exhalation two or three times before insertion of the needle. While the patient is exhaling the physician rapidly introduces the biopsy needle into the liver to obtain liver tissue. The needle is then withdrawn from the liver. The procedure is generally not painful, but the patient may experience discomfort during the injection of the local anesthetic and during the needle insertion.

A small dressing is placed over the needle insertion sight and the patient will be instructed to lie on his/her right side. In this position the liver is compressed against the chest wall, thereby decreasing the risk of hemorrhage or bile leak. The patient's vital signs are checked frequently for evidence of hemorrhage (increased pulse, decreased blood pressure) and inflammation of the membrane lining the abdominal cavity (increased temperature).

The tissue sample is sent to the laboratory to be examined under a microscope. Abnormal findings (which may indicate liver disease) could include tumors, abscesses, cysts, hepatitis, or infiltrative diseases such as amyloidosis, hemochromatosis, fibrosis and cirrhosis.

Because a favorable response to current HCV therapy occurs in 80 percent of patients with genotype 2 or 3, it may not always be necessary to perform liver biopsy in these patients to make a decision to treat.

Genotyping

There are six known genotypes and more than 50 subtypes of the hepatitis C virus. The different genotypes vary by geographic region. Approximately 70 - 75% of persons in the United States have genotype 1, with frequency of subtype 1a predominating over subtype 1b. The genotype of infection is helpful in defining the epidemiology of hepatitis C.

Knowing the genotype or serotype (genotype-specific antibodies) of HCV is helpful in making recommendations and counseling regarding therapy. Patients with genotypes 2 and 3 are almost three times more likely to respond to therapy with alpha interferon or the combination of alpha interferon and ribavirin. Furthermore, when using combination therapy, the recommended duration of treatment depends on the genotype. For patients with genotypes 2 and 3, a 24-week course of combination treatment may be adequate, whereas for patients with genotype 1, a 48-week course is recommended. For these reasons, testing for HCV genotype is often clinically helpful.

Once the genotype is identified, it need not be tested again; genotypes do not change during the course of infection. There is little evidence showing differences in clinical outcomes of disease progression among people with different genotypes. It is possible to get re-infected by a second genotype.

Who should be tested for HCV infection?

The Centers for Disease Control and Prevention have developed the following set of recommendations for screening and testing for HCV:

Persons who should be tested routinely for HCV infection based on their increased risk for infection:

- Recipients of clotting factor concentrates before 1987
- Injecting drug users (including past users)
- Persons with persistently abnormal liver enzymes (alanine aminotransferase levels)
- Chronic hemodialysis patients
- Recipients of blood and solid-organ transplants before July 1992
- Persons notified that they received blood from a donor who later tested positive for HCV
- Persons with documented HIV infection

Persons who should be tested routinely for HCV based on a recognized exposure:

- Children born to HCV-infected women

- Health care, emergency medical, and public safety workers after needle stick, sharp, or mucosal exposures to HCV-positive blood

Persons for whom routine testing for hepatitis C infection is of uncertain need:

- Persons who have received transplanted tissue (e.g. corneal, musculoskeletal, skin, ova, sperm)
- Intranasal cocaine and other non-injecting illegal drug users
- Persons with a history of tattooing or body piercing
- Persons with a history of multiple sex partners or sexually transmitted diseases
- Long-term steady sex partners of hepatitis C-positive persons

Persons for whom routine testing is not necessary:

- Health-care, emergency medical, and public safety workers unless a needle stick or sharps exposure has occurred from a positive source
- Pregnant women unless they have risk factors for HCV infection
- Household (nonsexual) contacts of HCV-positive persons unless an exposure to a contaminated source has occurred such as razors or sharps from an HCV-positive household member

Where can I be tested?

Persons with insurance coverage, Medicare or Medicaid should see their physician for hepatitis C testing.

Free, confidential hepatitis C testing may be available for those at highest risk. Please call (512) 972-5580 for further information.

What are the resources for Veterans?

The Central Texas Veterans Health Care System serves clients from Hillsboro to San Marcos, with approximately 50,000 veterans in the central Texas area. Austin has a large clinic and there are smaller clinics in the surrounding area. It is estimated that there are 3,500 – 4,000 veterans with hepatitis C in this area, with approximately 35% of these in Austin.

Testing is done through the VA primary care clinics and the client is then referred to a hepatitis C clinic.

Clients are normally seen within 30 days of the initial consult with a primary care provider. Treatment is offered to eligible clients who meet treatment criteria based on NIH and VA guidelines. All clients are provided needed vaccines and followed up on a twice/year basis.

Clients with meld scores of 13 and above are referred for evaluation of liver transplantation. Portland is the transplant facility. Call (800) 423-2111 for more information.

What are the treatments for chronic hepatitis C infection?

In the U.S., four different treatment regimens have been approved for hepatitis C:

- Interferon used alone
- Combination therapy with interferon and ribavirin
- Pegylated Interferon used alone
- Combination therapy with pegylated Interferon with ribavirin

Combination therapy results in better treatment responses than with interferon alone, but the highest response rates have been achieved with pegylated interferon in combination with ribavirin. Genotype determinations influence treatment decisions. Currently the best indicator of effective treatment is a sustained viral response (SVR), defined by the absence of detectable HCV virus in the blood at 24 weeks after the end of treatment.

Sustained viral response rates of about 45 - 50% have been achieved in patients with genotype 1 compared to rates of about 75 – 80% in patients with genotypes 2 and 3. Twenty four weeks of treatment appears to be sufficient for persons with genotypes 2 and 3, while patients with genotype 1 need 48 weeks of treatment.

Ribavirin, when used alone, does not work. Interferon may be given several times a week or daily as an injection. Pegylated Interferon is given once a week as an injection. Ribavirin comes in capsules that are taken orally twice each day. Some studies suggest that treatment with interferon and ribavirin may help reduce the risk of liver cancer in HCV patients with cirrhosis, but more studies are needed to confirm this relationship.

What are the side effects of interferon therapy?

Periodic blood tests are required to monitor white blood cells and platelets because interferon may interfere with their production by depressing the bone marrow. Common side effects of interferon (occurring in more than 10 out of 100 patients) include: fatigue, muscle aches, headaches, nausea and vomiting, skin irritation at the injection site, low-grade fever, weight loss, irritability, depression, mild bone marrow depression (shows up in the white blood cell and platelet counts), and reversible hair loss.

Most of these side effects are mild to moderate in severity and can be managed. Interferon has an antigrowth effect that could be damaging to the developing embryo and fetus; therefore, it should not be taken during pregnancy.

What are the side effects of ribavirin?

The most common side effects of ribavirin are: anemia, fatigue and irritability, itching, skin rash, and nasal stuffiness, sinusitis, and cough. Ribavirin should not be given to women who are pregnant or who are not using an effective method of birth control. A

male patient should not impregnate a female partner while he is on ribavirin. Ribavirin has been found to cause birth defects in animal studies. This drug can also make some persons' skin more sensitive to the sunlight, so excessive sun exposure should be avoided while on ribavirin.

What can be done about the side effects of interferon or ribavirin?

You should report what you are feeling to your doctor. Giving interferon at night or lowering the dose of the drug may reduce some side effects. In addition, taking acetaminophen (e.g., Tylenol) can reduce flu-like symptoms. Antihistamines may relieve nasal stuffiness from ribavirin therapy. Check with your doctor, however, before using acetaminophen, antihistamines, or any other drugs to alleviate these symptoms.

Patient adherence is critical to success of treatment of hepatitis C. Patients and healthcare providers should both be alert to problems with side effects of treatment. Psychological conditions, particularly depression, are common among persons with hepatitis C and are frequent side effects of interferon. A person's mental health should be assessed before beginning therapy and monitored regularly during therapy. Antidepressants may be useful in the management of depression. People with a history of past IV drug use should be encouraged to obtain appropriate care before beginning interferon injections (such as 12-step programs, etc.).

Who should be treated?

The June 2002 NIH Consensus Statement states that all patients with chronic hepatitis C are potential candidates for therapy. Treatment is recommended for those with an increased risk of developing cirrhosis (when healthy liver cells are killed and replaced with scar tissue). This is defined as having viral load levels higher than 50 IU/mL, a liver biopsy with portal or bridging fibrosis (formation of fibrous tissue), and at least moderate inflammation and necrosis (tissue death).

Many people with chronic hepatitis C have not been treated because of their injection drug use, significant alcohol use, age, or other conditions. But it has been shown that HCV therapy has been successful even when people have been using drugs or alcohol, or are on daily methadone. Continued alcohol use during therapy affects response to treatment, and alcohol abstinence is strongly recommended before and during antiviral therapy. Treatment should be considered on a case-by-case basis.

A large number of HCV-infected persons in the United States are in prison. Also, people who are uninsured or have publicly funded healthcare may be more likely to be infected with HCV. Successful treatment may reduce transmission.

All HIV-infected persons should be screened for HCV. Patients with both chronic hepatitis C and HIV infection may have a faster course of HCV disease. Treatment is recommended on a case-by-case basis.

Many factors must be considered in starting treatment, including genotype, presence of fibrosis, motivation of person, symptoms, presence of other diseases, and the person's age.

Can children be treated for chronic hepatitis C?

Children should be screened for HCV if they are born to HCV-infected women, received transfusions prior to 1992, or have high-risk behavior. Children and adolescents with chronic HCV infection generally have no symptoms. Little is known about the treatment of children and adolescents. Children with hepatitis C should be referred to a Children's specialist in liver disease.

What about herbal remedies--are they helpful or can they be harmful?

It is important to check with your doctor or pharmacist before taking herbal medicines. Some herbal products can actually cause injury to the liver. Harmful products include (but are not limited to the following): comfrey; gordologo herbal tea; mate tea; Chinese herb medicinal tea; Jin Bu Juan; germander; chaparral leaf; chapparal, valerian root, skullcap; mistletoe; margosa oil; and pennyroyal oil (Reference: *Strader DB, Zimmerman HJ: Complementary and alternative medicine in hepatitis C. In: Hepatitis C, ed. By Liang TJ, and Hoofnagle JH, San Diego: Academic Press, 2000*).

Some of the herbal medicines that have been used in treating hepatitis C are CH100, *Glycyrrhiza glabra* (licorice), Gouou plus Yutan, Sho-saiko-to (TJ-9), Silymarin (milk thistle), Sophora (oxymatrine), thymus extracts, and 90-11 granules. Strader and Zimmerman (see above reference) note in their recent review that "these agents may be effective either in promoting recovery or in [lessening] the ongoing liver injury"; they caution, however, that none of these agents have been studied adequately for their effectiveness or safety.

All herbal and nonprescription drugs should be used with caution by persons with liver disease. An objective reference about different herbal remedies can be found in *PDR for Herbal Medicines*, 2nd edition, Montvale, NJ: Medical Economics Company, 2000.

U.S. Food & Drug Administration, Center for Food Safety & Applied Nutrition:
<http://www.cfsan.fda.gov/~dms/supplmnt.html>

Where can I find information on alternative therapies?

Acupuncture: <http://www.nccaom.org>

Massage: www.amtamassage.org

National Center for Complementary and Alternative Medicine: <http://nccam.nih.gov>

What about diet?

Diet and Hepatitis C*

<i>Foods and Beverages</i>	<i>Recommendations</i>	
General Diet	Eat a well-balanced, low-fat diet. A diet high in complex carbohydrates may be helpful in providing calories to maintain weight. Frequent small meals may be more easily tolerated.	
Alcohol	Total avoidance of all alcohol is recommended. Excessive intake can lead to cirrhosis. Damage can occur in even some moderate "social drinkers."	
Iron	Avoid taking iron supplements and restrict intake of iron-rich foods such as red meats, liver, and iron-fortified cereals. Avoid cooking with iron-coated cookware and utensils. Excess iron can be damaging to the liver, and high iron levels can reduce the response rate of patients to interferon.	
Fat	Maintain normal weight. Overweight people often have liver-related abnormalities such as fatty deposits in the liver, which improve when weight is lost. Diabetics should follow a sugar-restricted diet.	
Sodium	Cirrhosis may lead to abnormal accumulation of fluid in the abdomen (ascites). Patients with this condition must restrict sodium (salt). Sodium intake should be 1000 mg. A day or less. Patients <u>without</u> ascites should not overindulge in salt intake, but restrictions are not as severe.	
Protein	Adequate intake is needed to build and maintain muscle mass and to assist in liver healing and repair. Individual intake is dependent on one's weight. *See chart below. Patients should consult their physician regarding specific recommendations.	
<i>Weight</i>	<i>Recommended average protein intake for regeneration of liver cells in non-cirrhotic patients</i>	<i>Maximum recommended protein intake for patients at risk for encephalopathy</i>
100 lbs.	45-68 gm. (6-9 oz. Meat or equivalent)	27 gm.
130 lbs.	59-87 gm. (8-12 oz. Meat or equivalent)	35 gm.
150 lbs.	68-103 gm. (9.7-14 oz. Meat or equivalent)	40 gm.
170 lbs.	77-116 gm. (11-16 oz. Meat or equivalent)	46 gm.
200 lbs.	91-136 gm. (13-19 oz. Meat or equivalent)	54 gm.

*Palmer, Melissa. Diet and Hepatitis C (Information Sheet), New York: American Liver Foundation, 1997.

What about liver transplants for persons with HCV?

Liver transplantation is surgery to remove a diseased liver and replace it with a healthy liver from an organ donor. A liver transplant is necessary when diseases such as chronic hepatitis C infection cause cirrhosis to such an extent that the liver stops working.

Liver transplantation is usually done when other medical treatment for end-stage liver disease cannot keep a damaged liver functioning. About 80 to 90 percent of people survive after liver transplantation. Survival rates have improved over the years because of drugs like cyclosporine and tacrolimus that suppress the immune system and keep it from attacking and damaging the new liver. The recurrence of HCV infection (as detected by polymerase chain reaction) almost always occurs after liver transplant in persons with HCV infection. However, despite re-infection, survival after transplant is fairly good. For more information regarding organ donation, call Texas Organ Sharing Alliance at 512-459-4848 or go to United Network for Organ Sharing at www.unos.org. For more information regarding transplantation, go to National Foundation for Transplants at www.transplants.org or TransWeb Organ Transplantation Information Site at <http://www.transweb.org>.

How should a person who is diagnosed with HCV handle their work and employer?

A person with hepatitis C infection can face challenges in the workplace. First, if coworkers or employers find out about his/her infection, they may become very concerned about the possibility of transmission of the virus to them. Education about transmission is important to reduce anxiety and help prevent discrimination against the employee with hepatitis C. Literature from local, state, or federal health agencies can also help clear up misconceptions about the disease such as “airborne spread” or being able to get it “from the restroom or telephone.”

It is important that the employee with hepatitis C not share personal items with coworkers such as combs, nail files, and toothbrushes. These items could have minuscule amounts of blood on them, which could transmit the virus to someone with non-intact areas of skin or mucous membranes.

HCV-infected employees will need to decide whether to inform their employers about their disease status. Each person needs to consider the impact that his/her disease will have on their job in terms of the effect of work on their health; the effect of their health condition on work performance; and chances of exposing other workers or customers to the virus (very low probability).

Under the Americans with Disabilities Act (ADA) an employer must help a person with hepatitis C identify ways to accommodate his/her disability. However, the employee must still be able to perform the essential functions of his/her job. Reasonable accommodations that may help a person with hepatitis C function optimally in his/her job include:

- ◆ Flex time

- ◆ Shorter workdays
- ◆ Telecommuting from home

To be protected under the ADA, a person must inform their employer that they have hepatitis C. If unable to work, a person with hepatitis C may need to apply for Social Security Disability Insurance (SSDI) or Supplemental Security Income (SSI). Americans with Disabilities Act: <http://www.usdoj.gov/crt/ada/adahom1.htm>.

How do I apply for disability?

Call 1-800-772-1213 or apply at 903 San Jacinto, #102, Austin, TX, 512-916-5404.

I have no insurance. Can I obtain treatment?

Persons with hepatitis C may be eligible for Medicare, Medicaid or CHIP, which would cover treatment.

Medicare is a federal program that may help to provide healthcare coverage for:

- people 65 years of age and older, and
- certain younger people with disabilities, and
- people with end-stage renal disease (people with permanent kidney failure who need dialysis or a transplant).

For more information, call 1-800-MEDICARE (1-800-633-4227). Information can be found on the Internet at www.medicare.gov.

To apply for Supplemental Security Income (SSI), which may come with Medicare: call 1-800-772-1213 or go to <http://www.trailblazerhealth.com/>.

Medicaid is a joint federal/state program that may help to provide healthcare coverage for people who are low-income and are:

- pregnant
- a child (up to age 19 years old)
- elderly
- disabled
- blind

To apply for Medicaid:

(1) Children (birth through age 18) may be eligible. Call TEXCARE Partnership at 1-800-647-6558 or go to www.texcarepartnership.com.

(2) Adults (pregnant women and adults with children in the household) should contact their local Texas Department of Human Services office to apply.

1165 Airport Blvd., Austin, 78702	(512) 929-7330
1601 Rutherford, Austin, 78754	(512) 339-8868
724 Eberhart, Austin, 78745	(512) 445-0022
1011 Gattis School Rd., Round Rock, 78664	(512) 244-1592

(3) Persons who receive Supplemental Security Income (SSI) will be notified by the Texas Department of Human Services if they are eligible for Medicaid. Contact the Social Security Administration at 1-800-772-1213 to apply for SSI if

you are elderly, disabled or blind. If you receive SSI, you will also receive Medicaid.

For more information, call your local DHS office or the Medicaid Hotline at 1-800-252-8263. Information can be found on the Internet at www.dhs.state.tx.us.

Children's Health Insurance Program (CHIP): Children (birth through age 18) who do not qualify for Medicaid may qualify for CHIP. Call TexCarePartnership at 1-800-647-6558 or go to www.texcarepartnership.com.

Texas Health Insurance Risk Pool: This program is designed to provide health insurance to those Texas residents who are unable to obtain adequate health coverage due to their medical condition or who are considered Federally Eligible Individuals as defined by the Health Insurance Portability and Accountability Act (HIPAA) of 1996.

Customer Service: Blue Cross and Blue Shield of Texas, Inc. & HealthCare Benefits, Inc.

P.O. Box 833956

Richardson, TX 75083-3956

1-888-398-3927 or go to www.txhealthpool.com.

Medical Assistance Program (MAP): The Medical Assistance Program is a service of the Austin/Travis County Health and Human Services Department. MAP provides access to health care through networks of established providers for those City of Austin and Travis County residents who meet eligibility criteria. Some services require a co-payment.

Who qualifies for a MAP card?

- ◆ City of Austin residents with family incomes at or below 100% of the Federal Poverty Index Guidelines, and who meet asset guidelines. This includes those Williamson County and Del Valle residents living in the City of Austin. (If they have Medicaid, they will not qualify for MAP.)
- ◆ Travis County residents with family incomes at or below 100% of the Federal Poverty Index Guidelines, and who meet asset guidelines. (If they have Medicaid, they may qualify for limited MAP benefits.)
- ◆ Disabled or elderly individuals, if their income is at or below 200% of the Federal Poverty Index Guidelines, and if they meet asset guidelines. (If they live in the City of Austin and have Medicaid, they will not qualify for MAP. If they live outside the City of Austin and in Travis County, they may qualify for limited MAP benefits.)
- ◆ Residents who receive Medicare and meet the income and asset guidelines. (They may qualify for limited MAP benefits.)

Where do I go for a MAP card?

See the chart below for the Eligibility Office nearest you.




*What do I have to bring to the MAP interview, for each member of my family?**

1. Birth certificate or U.S. passport



2. Identification (for example, Texas Driver's License/I.D., out-of-state ID, foreign ID, if applicable. This requirement is for adults only.)
3. Social Security card (if available)
4. Income verification – proof of earned or unearned income for past 4 weeks (for example, employment, Social Security, child support, TANF, unemployment benefits, proof of alien sponsor's income, etc.)
5. Insurance verification - Medicare, Medicaid or insurance card/letter (if it applies)
6. Address verification – lease agreement/rent receipt or current utility bill (except for people who are homeless)
7. Resource verification – current bank statement, property tax appraisal (if it applies)




*Call any Eligibility Office for other acceptable documents. Even if you do not qualify for MAP, you may be enrolled in other programs that can help you get health care at a reduced rate.

City of Austin residents should contact a City Eligibility Office below:

<p>A Cesar Chavez 1111 E. Cesar Chavez Austin, 972-5300 (Call Center) Hours: Call for hours open Located at E. Cesar Chavez and Waller St.</p> <p> #17, Johnston, #21, Exposition and #22, Chicon</p>	<p>B South Austin Neighborhood Center 2508 Durwood Austin, 972-5300 (Call Center) Hours: Call for hours open Located at Durwood and W. Oltorf</p> <p> #10, South First</p>
<p>C Northeast Austin Health Center 7112 Ed Bluestein Blvd., Suite 155 Austin, 972-5300 (Call Center) Hours: Call for hours open Located at Ed Bluestein Blvd. (183 North) and Springdale Rd.</p> <p> #20, Manor Road, #37, Colony Park and #23, Johnny Morris</p>	<p>Note: All sites are closed on the third Thursday of each month from 8:00 a.m. until 1:00 p.m.</p> <p>Travis County and the City of Austin are committed to compliance with the Americans with Disabilities Act. Reasonable modifications and access to communications will be provided upon request</p>

Travis County residents must contact a Travis County Eligibility Office below:

<p>East Rural (Manor) Community Center 600 W. Carrie Manor Manor, 272-5561 Hours: Call for hours open Located near W. Carrie Manor and FM 973</p> <p> #990, Northeast Express or call CARTS, 478-7433</p>	<p>B South Rural (Del Valle) Community Center 3518 S. FM 973 Del Valle, 247-4407 Hours: Call for hours open Located south of the corner of Hwy. 71 and FM 973</p> <p> #350, Airport or call CARTS, 478-7433</p>
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<p>C North Rural (Pflugerville) Community Center 15803 Windermere, Suite 300 Pflugerville, 251-4169 Hours: Call for hours open Located at Windermere and FM 1825</p> <p> Call CARTS, 478-7433</p>	<p>D West Rural (Oak Hill) Community Center 5446 Hwy. 290 West, Suite 203 Austin, 892-0226 Hours: Call for hours open Located at Hwy. 290 and Industrial Oaks</p> <p> #333, William Cannon or call CARTS, 478-7433</p>
<p>E Northwest Rural (Jonestown) Community Center 18649 FM 1431 Jonestown, 267-3245 Hours: Call for hours open Located at FM 1431 and Park Rd.</p> <p> #214, Lago Vista Feeder or call CARTS, 478-7433</p>	<p>Note: All sites are closed on the third Thursday of each month from 8:00 a.m. until 1:00 p.m.</p> <p>Travis County and the City of Austin are committed to compliance with the Americans with Disabilities Act. Reasonable modifications and access to communications will be provided upon request</p>

Assistance with Medications:

Amgen’s Compass Program 800-577-9112
Roche’s Hepline Reimbursement Hotline (Roferon A) 800-443-6676
Roche’s Reimbursement Hotline (Pegasys) 877-PEGASYS
Schering’s Commitment To Care 800-521-7157

Other prescription drug assistance programs:

- www.rxassist.org
- www.themedicineprogram.com
- www.needymeds.com

What about clinical trials?

Some physicians have access to clinical trial programs that can cover the costs of your doctor visits and/or your medications. Ask your doctor for further information.

Local clinical trials might be available at:
Austin Gastroenterology (512) 448-4588
Central Texas Gastroenterology (512) 341-0900

National Institutes of Health Clinical Trials Database: www.clinicaltrials.gov

What are the reporting guidelines healthcare professionals must follow for infectious diseases including hepatitis C?

As of 12/20/00, all newly diagnosed cases of hepatitis C are to be reported to the local, regional or state health departments.

Health professionals may call call (512) 458-7676 or (800) 705-8868 for information and obtain reporting forms at www.tdh.state.tx.us/ideas/report/report.htm

What is the government doing about the hepatitis C problem in the US?

More and more federal money is being earmarked for prevention of HCV and for research into more effective treatments for this disease.

In 1999, the Texas legislature passed House Bill 1652 that earmarked state money for seroprevalence studies, public and professional education concerning hepatitis C, and provided funds for screening persons for HCV.

In 2001, the following bills were passed in Texas:

House Bill 767 requires six hours of training during each two-year licensing period relating to HIV, hepatitis C, and sexually transmitted diseases in continuing education for chemical dependency counselors.

House Bill 768 amends the Health and Safety Code to change the name of the HIV/AIDS Interagency Coordinating Council to the Interagency Coordinating Council for HIV and Hepatitis, and to include policies and program activities relating to hepatitis among the council's concerns. The bill adds the Texas Department on Aging and the Texas Workforce Commission to the list of agencies represented on the council.

Senate Bill 338 Requires the Texas Department of Health to develop a state plan for the prevention and treatment of Hepatitis C.

House Bill 2650 amends the Occupations Code to require a licensed nurse who renews a license on or after June 1, 2002 to participate in at least two hours of continuing education related to hepatitis C in a two-year licensing period. *The CDC offers free (3 hours) training for nurses on their website at www.cdc.gov/hepatitis*

Senate Bill 1006 requires a licensed hospital, in a case of accidental exposure of certified emergency medical services personnel, a firefighter, a peace officer, or a first responder who renders assistance at the scene of an emergency or during transport to the hospital, to blood or other body fluids of a patient who is transported to the hospital, to take reasonable steps to test the patient for hepatitis B or hepatitis C if the report shows there is significant risk to the person exposed.

In January 2003, a federal bill "The Hepatitis C Epidemic Control and Prevention Act" was drafted. This bill closely mirrors the Texas House Bill 1652 passed in 1999.

For more information on Texas bills relating to hepatitis C, go to www.capitol.state.tx.us/capitol/legis.htm

How do I find out who my representatives are?

Find your representatives at the following web site:
www.capitol.state.tx.us

Which agencies in our community care for patients with hepatitis C?

Austin/Travis County Health & Human Services Department

15 Waller St

Austin, TX 78702

Hepatitis C Prevention and Control

(512) 972-5596

Fax (512) 972-5451

Website Address: http://www.ci.austin.tx.us/health/idp_hep.htm

Email Address: karen.mueller@ci.austin.tx.us

Location Served: Travis County and surrounding area

Type of Services:

- Austin Area Hepatitis C Network meetings every 2nd Thursday of the month (except July and December) from 9 – 11 AM, 2005 Salina.
- Hepatitis C awareness activities/education
- Hepatitis C counseling. Call (512) 972-5580 to see if free testing is available.

Communicable Disease Unit

(512) 972-5430

Fax: (512) 972-5451

Website Address: http://www.ci.austin.tx.us/health/idp_hep.htm

Location Served: Travis County and surrounding area

Type of Services:

- Sexually Transmitted Disease Clinic
- Tuberculosis Clinic
- Outreach education
- Counseling
- Testing
- Case management
- Partner services

Clientele: General population. No residency or income requirements

Hours of Operation: 8:00 AM – 5:00 PM (some evening and weekend locations for HIV counseling and testing). Call 512-972-5430 for an appointment.

Cost: Free at most locations.

AIDS Services of Austin

7215 Cameron Road

Austin Texas 78752

(512) 458-AIDS or 458-2437

Fax: (512) 458-FAXX or 458-3299

Email Address: ASA.Mail@asaustin.org

Website Address: www.asaustin.org

Location Served: Primarily Travis County, with coordinated services in surrounding 9 counties.

Type of Services:

- Case management services to AIDS diagnosed or symptomatic HIV + individuals, including financial assistance with rent, medications, medication co pay, health insurance premiums, utility assistance.

- Information and referral services
- HIV information telephone line 458-AIDS
- Legal services for HIV+ people with non-criminal situations such as medical power of attorney, insurance disputes, child support. Program has income eligibility guidelines.
- Food pantry for HIV+ symptomatic & AIDS diagnosed individuals
- Nutritionist consultation for HIV+ people
- Prevention and outreach
- Women Rising: HIV+ support group
- AMP / Austin Men's Project: Empowerment and prevention for HIV-negative gay men
- Peripheral neuropathy support group
- Wellness education
- Home Health Aides: limited assistance including light housekeeping and cooking, personal attendance/bathing for homebound clients
- Wellness Program: RN coordinates activities, answers wellness questions, sets up medication boxes, develops strategies for improved adherence
- Spanish speaking staff available

Clientele: HIV+ or AIDS diagnosed. Information/referral and outreach/prevention to general public and those at risk for HIV infection.

Hours of operation: Monday through Friday 9 AM to 6 PM

Cost: No fee for services

American Liver Foundation, South Texas Chapter

2425 West Loop South, Suite 660

Houston, TX 77027

(713) 622-1318

(800) GO-LIVER

Fax: (713) 622-1376

Email Address: LiverSTX@aol.com

Website Address: www.liverfoundation.org

Location served: Texas

Type of services:

- Patient and professional education programs- "Liver Updates"
- Local, state and national advocacy for persons with hepatitis and all liver diseases
- State and national research programs
- Support groups – local, statewide and national
- Free educational brochures about hepatitis and other liver diseases
- Foreign language hepatitis brochures – Spanish, Chinese, Japanese, Vietnamese
- Physician referrals
- Resource information – screening, medications, support
- Health promotion through corporate and neighborhood health fairs

Clientele: All

Hours of operation: 9 AM – 5 PM

Cost: None

The Clinic at Brackenridge, Hepatitis C Screening Clinic

Brackenridge Professional Office Building

1313 Red River, Suite 220

Austin, Texas 78701

(512) 324-7300

Fax: (512) 324-7857

Email Address: dmurray@seton.org or kmccarthy@seton.org

Location Served: Austin/Travis County

Type of Services:

- Screening for treatment candidacy and hepatitis C education
- One-on-one screening visit with nurse practitioner
- Spanish-speaking staff available
- Requires basic work-up with results sent on referral: abdominal ultrasound, liver function tests, CBC (complete blood count), PT (Protime), Hepatitis Serology Panel, hepatitis C viral load (HCV RNA by PCR quantitative)
- Further tests and necessary procedures ordered (e.g. genotype, liver biopsy, etc.)
- Case discussion and necessary referral made with Hepatologist (Hepatitis Specialist)
- Treatment recommendations made to primary care providers by Hepatologist (for appropriate treatment candidates)
- Hepatitis C resource to primary care providers

Clientele: Referral from Community Health Centers of Austin/Travis County; referral from Seton Community Health Centers; referral from Brackenridge Hospital/Clinics

Hours of Operation: Tuesdays and Fridays from 12:45 - 5:00 PM

Cost: Varies, depending on financial screening and client resources

Hep C Advocate Network, Inc. (HepCAN)

1400 H. G. Mosley #911

Longview, Texas 75604

(903) 238 9273

Fax (903) 757-8618

Email Address: hepcan1@aol.com

Website Address: www.hepcan.org

Location Served: Texas, U.S.

Type of Services:

- State and National advocacy for persons living with HCV and their families
- Professional and public education programs
- Collaboration with states and federal government to recognize need for public HCV screenings
- Outreach and resources for the uninsured and working poor
- Advocacy for research and treatment resources
- Organ donor awareness programs

Clientele: General public

Cost: None

Liver Foundation of Central Texas

400 West 15th Street Suite 200

Austin, TX 78701

(512) 391-3415

Email address: vbusboom@aol.com

Website: www.liverfoundationcentraltexas.org

Location Served: Travis County

Type of Services:

- Public and patient awareness and education
- Support group network
- Funds to provide testing and treatment for unfunded patients
- Assistance with medications
- Clientele: HCV positive clients without funding
- Hours of Operation: 8:30 AM to 5:30 PM
- Cost: Minimal co-pay based on income

Texas Department of Health (TDH), Infectious Disease, Epidemiology & Surveillance Division (IDEAS)

1100 West 49th Street

Austin, Texas 78756

(512) 458-7676

Fax (512) 458-7616

Email Address: Alma.Thompson@tdh.state.tx.us

Website Address: www.tdhideas.org

Location Served: State of Texas

Type of Services

- Distribution of limited educational materials in English and Spanish (brochures, posters and videos)
- Toll-free hepatitis infoline (1-866-4HEPABC)
- Hepatitis C State Workgroup (meets quarterly)
- Hepatitis C surveillance
- Hepatitis web-based system (database for hepatitis rates statewide)
- Phone calls from general public

Hours of Operation: Monday - Friday, 8:00 AM. – 5:00 PM

Cost: None

Texas Liver Coalition

One Riverway, Suite 2460

Houston, Texas 77056

1-800-LIVER (800) 725-4837

Fax: (713)-626-4960

Email Address: mail@texasliver.org

Website Address: www.texasliver.org

Location Served: State of Texas

Type of Services:

- Statewide network of support groups, serving patients with hepatitis and liver disease through education and support

- Toll-free Helpline – 800-72-LIVER – advice and assistance from our Community Health Education Coordinator
 - Public information – resource information for callers
 - Online resources – E-mail answers, advice and assistance online at mail@texasliver.org
 - Health education – free printed materials covering most aspects of liver disease on request
 - Speakers bureau – board members, physicians and selected patients for speaking at civic, community and business groups
 - Work-site health promotion – hepatitis awareness programs for company employees
- Clientele: general public.

Hours of Operation: Monday – Friday 9 AM – 5 PM

Cost: all services provided at no cost

Travis County Comprehensive Underage Drinking Prevention Program

314 W. 11th Street

Austin, Texas 78701

(512) 854-4229

Fax: (512) 854-9316

Email Address: gloria.souhami@co.travis.tx.us

Location Served: Travis County

Type of Services:

- Free presentations – “Why Risk It” for students grades 9 – 12
- “Busted” for students grades 6 - 8
- Information on legal and social consequences of underage drinking including issues such as violence, HIV, teen Pregnancy, fetal alcohol syndrome, and hepatitis C exposure

Clientele: Grades 6 through high school, parents and teen parents

Cost: None

Workers Assistance Program-Texas HIV Connection

3410 Far West Blvd. # 250

Austin, Texas 78731

(512) 343-9595

Fax: (512)-372-8816

Email Address: msowder@hivconnection.org

Website Address: www.workersassistanceprogram.org, www.hivconnection.org

Location Served: Texas

Type of Services:

- Provide training to providers on all Hepatidities including Hepatitis C (signs, symptoms, prevention, prevalence, relationship to other diseases, substance abuse)

Clientele: Primarily providers who work with substance abusers. Can be adapted to any provider of social service programs.

Hours of Operation: 8 AM – 5 PM, Monday -Friday

Cost: No cost for persons funded by the Texas Commission on Alcohol and Drug Abuse. Others - \$800.00/day plus all travel related expenses.

The Wright House Wellness Center

4301-B North IH - 35

Austin, Texas 78722

(512) 467-0088

Fax: (512) 467-0829

Email Address: info@thewrighthouse.org

Website Address: www.thewrighthouse.org

Location Served: Travis, Llano, Burnet, Williamson, Lee, Fayette, Bastrop, Caldwell, Hays, and Blanco counties

Type of Services:

- Emotional support: therapeutic support groups, peer counseling for HIV+ individuals and persons affected by HIV
- Fitness programs: Physical Conditioning and Hatha yoga classes
- Educational programs: exercise classes and personal training advise
- Community education: topics upon request
- Holistic treatments: acupuncture, massage, cranial sacral, chiropractic care, reiki
- Communities Together: HIV Health and Information Center (serving the needs of the African American and Latino Communities whose lives are impacted by HIV/AIDS). Provides peer based treatment education and advocacy
- Spanish-speaking staff

Clientele: persons living with HIV/AIDS, hepatitis C and cancer.

Hours of Operation: Office hours are Monday - Friday 9:00 AM. - 5:00 PM.

Many services are offered at other times.

Cost: Services offered on a sliding-fee scale based on income or at a reduced flat fee.

Where can I find more information on hepatitis C?

Publications:

The First Year: Hepatitis C, (Cara Bruce and Lisa Montanarelli), 2002

Hepatitis C (edited by T. Jake Liang, Jay H. Hootnagle), Academic Press, 2000

Hepatitis C Handbook (Matthew Dolan), 1999

The Hepatitis C Help Book (Misha Ruth Cohen, Robert Gish, Kalia Doner), 2000

Hepatitis Liver Disease (Melissa Palmer, MD), 2000

Hepatitis Magazine 888-711-3911

Living with Hepatitis C, A Survivor's Guide (Dr. Gregory T. Everson and Hedy Weinberg), 2002

A Personal Guide to Good Health (Beth Petro Roybal), 2002

Triumph Over Hepatitis C (Lloyd Wright), 2000

Web links and Telephone Resources:

American Association for the Study of Liver Diseases <http://www.aasld.org/>

American College of Gastroenterology www.acg.gi.org

American Liver Foundation www.liverfoundation.org 800-465-4837

Americans with Disabilities Act (ADA) <http://www.usdoj.gov/disabilities.htm>

(800) 514-0301
Austin/Travis County Health & Human Services Department
http://www.ci.austin.tx.us/health/idp_hep.htm
CDC *Morbidity and Mortality Weekly Report* <http://www.cdc.gov/mmwr/>
Centers for Disease Control and Prevention www.cdc.gov/hepatitis
CenterWatch Clinical Trails Listing Service www.centerwatch.com
Digestive Health Initiative <http://www.gastro.org/>
Equal Employment Opportunity Commission www.eeoc.gov 1-800-669-4000
HCV Advocate www.HCVadvocate.org
Harm Reduction Coalition www.harmreduction.org
Health Care Information Resources—Hepatitis
<http://www-hsl.mcmaster.ca/tomflem/hepat.html>
Health Fraud www.quackwatch.com
Hepatitis Foundational International www.hepfi.org 800-891-0707
The Hep C Advocate Network www.hepcan.org
Hep C Alert! www.hep-c-alert.org 877-435-7443
Hep C Connection www.hepc-connection.org
Hepatitis Central www.hepatitis-central.com
Hepatitis Magazine www.hepatitismag.com
Hepwatch <http://www.hepwatch.com/>
HIV and Hepatitis.Com <http://hivandhepatitis.com>
Instant Advocacy Initiative www.hepatitisactivist.org
Melissa Palmer, M.D. www.liverdisease.com
The Hepatitis Education Project www.scn.org/health/hepatitis 206-732-0311
The Hepatitis Information Network www.hepnet.com
Immunization Action Coalition www.immunize.org
The Journal of the American Medical Association www.jama.com
Latino Organization for Liver Awareness (LOLA) www.lola-national.org
1-888-367-5652
Mayo Clinic www.mayoclinic.com
Medscape Daily News & Feature Updates www.medscape.com
Merck Manual of Medical Information-Home Edition www.merckhomeedition.com
National AIDS Treatment Advocacy Project www.natap.org
National Digestive Diseases Information Clearinghouse www.niddk.nih.gov
National Foundation for Infectious Diseases www.nfid.org
National Hepatitis C Advocacy Council www.hepcnetwork.org
National Hepatitis C Prison Coalition www.hcvinprison.org
National Institutes of Health Clinical Trials Database www.clinicaltrials.gov
National Institutes of Health/Hepatitis C
www.niddk.nih.gov/health/digest/pubs/hep/hepc/hepc.htm
NIH Hepatitis C Consensus Statement June 2002
http://odp.od.nih.gov/consensus/cons/116/116cdc_intro.htm
The National Library of Medicine www.nlm.nih.gov
Parents of Kids with Infectious Diseases <http://www.pkids.org>
Substance Abuse & Mental Health Services Administration
www.findtreatment.shmhsa.gov

Texas Department of Health www.tdhideas.org 1-866-4HEPABC
Texas Liver Coalition www.texasliver.org
United Network for Organ Sharing www.unos.org
Veterans Administration National Hepatitis C Program www.va.gov/hepatitisc/
Veterans Health Administration www.va.gov/vbs/health
Veterans Helping Veterans www.geocities.com/pentagon/bunker/2704 805-524-5438
WebMD www.webmd.com
World Health Organization www.who.int/home-page

Drug Company Web Sites:

www.infergen.com
www.rebetron.com
www.rocheusa.com

Additional copies of this document may be reproduced via the web at
http://www.ci.austin.tx.us/health/downloads/hepc_manual.pdf

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