HEPATITIS A, B, AND C

INTRODUCTION

Hepatitis is a medical term that means infection and inflammation of the liver, and hepatitis is caused by infection with a virus. There are seven types of hepatitis, each one caused by a different virus: A, B, C, D, E, F, and G. Types A, B, and C are by far the most common. These infections are a worldwide health problem, and types B and C are of special interest to certified nursing assistants (CNAs) because these hepatitis viruses are very common, and they can be transmitted by contact with blood. The hepatitis viruses are called pathogens because they are capable of causing a disease.

Depending on the type of hepatitis, prevention and cures are available, but hepatitis is still a disease with potentially serious consequences.

Example: Hepatitis C is the most common blood-borne disease in the United States, and infection with hepatitis C is the leading cause of liver cancer in many countries.

Example: There is a highly effective vaccine that can prevent infection with hepatitis B, but an infection with this virus often requires lengthy treatment with medications that have highly unpleasant side effects.

Example: Hepatitis A, which could be considered the least dangerous of these three hepatitis infections, causes abdominal pain, jaundice, nausea, and vomiting that can occasionally last for months.

Caring for a patient who has hepatitis is not complicated. In most cases, these patients only require basic care and symptomatic, supportive therapy. The key issue when working with these patients is to remember that they are contagious, but transmission of the virus from one person to another can be prevented by strict adherence to infection control practices and by conscientiously using Standard Precautions and Safe Injection Practices.

LEARNING OBJECTIVES

After completing this module, the learner will be able to:

1. Provide a definition of hepatitis.
2. Identify the primary routes of transmission of hepatitis A, B, and C.
3. Discuss the treatments available for infection with hepatitis A, B, and C.
4. Discuss the progression of a typical case of hepatitis A, B, or C.
5. Discuss methods that can be used to prevent transmission of the hepatitis viruses.

HEPATITIS A

When compared to hepatitis B and C, hepatitis A could reasonably be considered the most benign of the three viruses. The great majority of the people who develop an
infection with hepatitis A will recover, those infected will not develop a chronic infection, the disease can be effectively treated with simple medical care, and there is a vaccine that can prevent infection with hepatitis A.

**How is Hepatitis A Transmitted?**

Hepatitis A is spread from person to person and the route of transmission is oral: the virus enters the body through the mouth. This happens most often when someone eats food or drinks liquids that are contaminated with feces that contain the hepatitis A virus. This is referred to as **fecal-oral transmission**. For this reason hepatitis A infections and outbreaks are often associated with the food service/food preparation industry and restaurants.

The idea of consuming food or liquids contaminated with feces is very unpleasant. However, the contamination of the food or liquid does not have to be obvious for fecal-oral transmission to occur, and in the vast majority of cases the contamination is not obvious and would never be suspected. The only requirements for fecal-oral transmission to occur are: 1) Someone is infected with hepatitis A; 2) That person does not practice good hand washing and his/her hands become contaminated with stool that contains the hepatitis A virus, and; 3) That person touches food or utensils with his/her contaminated hands.

Because hepatitis is caused by infection with a microorganism, the contamination of the skin does not have to be obvious. All it takes for fecal-oral transmission to occur is poor, inefficient hand washing.

Hepatitis A can also be transmitted through contact with infected blood or by certain types of sexual contact, but these routes of transmission are much, much less common than the fecal-oral route.

**Learning Break:** Exposure to hepatitis A is very common. One in three persons has the anti-hepatitis A antibody in his/her blood. Antibodies are proteins formed by the immune system that are designed to eliminate a specific bacteria or virus. An antibody that is detected in the blood is evidence that someone has been exposed to a particular bacteria or virus.

People most at risk for being infected with hepatitis A are people who live in conditions of poor hygiene, people who live in close contact with large groups of people (e.g., people who are incarcerated, military personnel), and people who have traveled overseas, as hepatitis A is much more common outside the United States.

Exposure to hepatitis A is obviously very common and the virus is easily transmitted, but active, symptomatic cases of hepatitis A are uncommon in the United States. In recent years the average number of cases per year that have been reported has decreased more than 90%, and it is estimated that there each year there are fewer than 6 cases per 100,000 people.
Signs and Symptoms of Hepatitis A/Diagnosing Hepatitis A

After the hepatitis A virus enters the body it infects and inflames the liver. The signs and symptoms of a hepatitis A infection begin to appear in two to six weeks after exposure.

- Abdominal pain
- Diarrhea
- Fatigue
- Fever
- Jaundice
- Loss of appetite
- Nausea

The signs and symptoms typically last for about two months, but some people - approximately 10-15% - who are infected will have a course of the illness that can last for up to six months.

Not everyone who is infected with hepatitis A will have signs and symptoms. Some people have a low level of the virus that is not cleared, and they do not have signs or symptoms. Others develop mild symptoms that resolve as the immune system clears the virus, and an infection with hepatitis A is never diagnosed. Because there are infected people who are not obviously sick and because someone who is infected can begin to shed the virus a week after she/he is infected - before the signs and symptoms begin - it is obvious that hepatitis A can easily be transmitted.

Learning Break: Jaundice is defined as a yellow tinge to the skin. In cases of hepatitis A it can be very pronounced. Jaundice happens because an infection with hepatitis A disrupts the ability of the liver to break down and eliminate bilirubin. Bilirubin is formed when red blood cells are recycled in the liver, and if bilirubin is not eliminated by the liver it accumulates in the skin and imparts a yellow color.

Hepatitis A is diagnosed by using a blood test that detects the presence of the hepatitis A antibody in the blood. Blood tests that measure how well the liver is functioning will also be done and depending on the circumstances the patient may be tested for the presence of hepatitis B and C, and HIV.

How Is Hepatitis A Treated? Is This a Dangerous Disease?

Hepatitis A is treated with measures that are commonly called symptomatic and supportive care. That phrase means that there are no specific medications or therapies that can eradicate the hepatitis A virus. Most people who have an infection with hepatitis A and are symptomatic respond well to fluids and medications such as ondansetron (Zofran®) that will stop nausea and vomiting. With good symptomatic, supportive care and with enough time, the patient’s immune system will eliminate the virus.

The outlook for most people who have a hepatitis A infection is very good. The disease runs its course, the virus is cleared, and antibodies are formed that provide life-long
immunity. One someone has had an infection with hepatitis A the risk of being infected again is very, very slight. There are no long-term effects and the liver heals completely. If someone is elderly or has pre-existing liver disease hepatitis A can be dangerous and these patients need close monitoring. Approximately 100 people in the United States die each year from hepatitis A.

**Can Infection with Hepatitis A be Prevented?**

Hepatitis A can be prevented by good personal hygiene and strict adherence to hand washing protocol. (Note: Hand washing will be discussed later in the module).

If someone has been exposed to a person who is known to be infected with hepatitis A, a medication called immune globulin that has antibodies against the hepatitis A virus is available, and it may be helpful in preventing an uninfected person from developing an infection.

**Learning Break:** It is important to remember that there is a difference between exposure to a virus and infection with a virus. Being exposed simply means that the virus has (probably) gained entry into your body. Being infected mean that your immune system was not able to eliminate the virus before it became stable and began to multiply.

There is a vaccine that can prevent infection with hepatitis A. The vaccine (Havrix® and VAQTA® are the trade names) is very safe, very effective, and provides protection against hepatitis A for at least 20 years. As with all vaccines it can prevent an infection, but it is not helpful for treating an infection. Unlike hepatitis B, routine vaccination against hepatitis A is not recommended for everyone. However, if someone is likely to be exposed to hepatitis A at work that person should be vaccinated. Also children between their first and second birthdays, men who have sex with men, people who have chronic liver disease, and people who use street drugs should be vaccinated against hepatitis A.

**HEPATITIS B**

Hepatitis B is a more serious disease than hepatitis A. The symptoms of a hepatitis B infection are more prolonged and more intense than those of a hepatitis A infection, and chronic hepatitis B is the cause of approximately 50% of all cases of liver cancer. There are drugs that can be use to treat a chronic hepatitis B infection, but they have very unpleasant side effects. And unlike most people who develop an infection with hepatitis A some people who develop an infection with hepatitis B will never clear virus and they are chronically infected. People who are chronically infected with hepatitis B are at risk for developing liver damage and as mentioned before, liver cancer.

**How is Hepatitis B Transmitted?**

The primary way that hepatitis B is transmitted is through contact with infected blood. This can happen in a health care facility if someone is stuck with a needle or cut with a medical sharp such as a scalpel blade, and these types of accidents are the most common mode of transmission. Infected blood can also be absorbed if it splashes on a mucous
membrane such as the lining of the mouth or nose, or if the infected blood contacts an area of the skin that is abraded or chapped. Transmission of hepatitis B is also a common consequence of IV drug use. Hepatitis B can also be transmitted by splash contact in the eye.

Hepatitis B can be transmitted sexually. It has been estimated that the transmission rate of hepatitis B during unprotected sex is 50-100 times that of HIV. Men and women who have multiple sex partners and men who have sex with men are especially at risk for sexual transmission of hepatitis B. The hepatitis B virus has been found in other body fluids such as bile, saliva, semen, and spinal fluid, but the risk of infection after contact with one of these fluids, if they are contaminated with hepatitis B, is very low. Hepatitis B can also be transmitted by an infected mother to a new born child.

Hepatitis B is not transmitted by casual contact. You cannot be infected by hepatitis B by hugging or touching someone, by a cough or a sneeze, or by sharing eating utensils.

Learning Break: You are helping an RN at the bedside, and you are stuck with a needle that was used to obtain a blood sample from a patient who is infected with hepatitis B. What are the chances that you might develop a hepatitis B infection? There are a lot of variables that determine whether or not the virus is transmitted and infection develops (These will be discussed later in the module), but the risk of developing an infection with hepatitis B from a needle stick has been estimated to between 6 to 31%.

What are the Signs and Symptoms of an Infection with Hepatitis B?

After someone has been infected with hepatitis B there is an incubation period of 60-150 days. During this time the infected person has no signs or symptoms. After the incubation period, someone infected with hepatitis B is likely to develop:

- Abdominal pain
- Dark colored urine
- Fever
- Fatigue
- Jaundice
- Loss of appetite
- Vomiting

These typically last for several weeks but they can last for up to six months. Some people who are infected do not become symptomatic.

Most people - approximately 95% - who have a normal immune system will clear the virus. The other 5% will develop a chronic infection.

Hepatitis B is diagnosed by using tests that measure the amount of viral DNA, the number of anti-hepatitis B antibodies, and specific parts of the virus (antigens) that are in the blood. Other blood tests that will be done that measure for liver damage, and if they have not been previously done or there is a specific need to do so, tests for the presence of hepatitis C and HIV may be performed. If the infection is chronic, a liver biopsy and a CT scan of the liver may be done.
How is Hepatitis B Treated? Is Hepatitis B a Dangerous Disease?

There are no medications available that can be used to treat an acute hepatitis B infection, but most people with an acute hepatitis B infection will clear the virus and there will be no long-term harm. Patients are treated with symptomatic and supportive care.

A chronic infection with hepatitis B, however, can be very serious. Chronic hepatitis B causes about 2000 to 4000 deaths in the United States each year. The infection can cause cirrhosis (scarring) of the liver and it is a major cause of liver cancer. People who have a chronic hepatitis B infection are 200 times more likely to develop liver cancer than someone who is not infected with hepatitis B. Chronic infection with hepatitis B is treated with anti-viral drugs. These drugs do not cure the disease, but they can prevent the patient from developing cirrhosis and liver cancer.

Can Infection with Hepatitis B be Prevented?

Infection with hepatitis B can be prevented by strict adherence to Standard Precautions, Safe Injection Practices, and by practicing safe sex.

There is a vaccine that can prevent infection with hepatitis B, and it is very effective. Vaccination against hepatitis B has greatly reduced the number of infections in the United States. It has been estimated that the number of health care occupational-associated infections with hepatitis B has been reduced by 95% because of the availability and effectiveness of the hepatitis B vaccine. The hepatitis B vaccine should be given to the following groups:

- Health care workers who may be exposed to blood or body fluids
- All children 19 years and younger, especially children who are born to mothers who are infected with hepatitis B
- People who live in large groups and in close contact, e.g., military personnel, people who are incarcerated
- People who have blood clotting disorders
- People who have liver disease or are infected with hepatitis C
- IV drug abusers
- Men who have sex with men
- Patients who require hemodialysis on a routine basis
- People who are infected with HIV
- Anyone who has, or has had a sexually transmitted disease
- Anyone living with someone who has a chronic hepatitis B infection

If someone is exposed to hepatitis B through a needle stick or a blood splash, that person should be given the hepatitis B vaccine series and hepatitis B immune globulin. If these treatments are promptly administered, there is an 80-90% chance that the exposed person will not become infected. The vaccine is very safe, and severe reactions are extremely rare. If in your job as a CNA you are or may be exposed to blood or body fluids, it is strongly recommended that you receive the hepatitis B vaccine. The vaccine is
typically offered free of charge by employers, and employers are often required to provide the vaccine to any employee who has had an exposure to blood or body fluids while at work.

**Learning Break:** The risk of developing an infection with hepatitis B after a needle stick is 6-30%. However, not all exposures to blood are as obvious as a needle stick. Approximately two-thirds of all people infected with hepatitis B cannot recall a specific incident in which they were stuck by a needle or a sharp or were splashed with blood. Exposures to pathogens can be subtle.

**HEPATITIS C**

Hepatitis C is the most common blood-borne disease in the United States. There are approximately 5.2 million cases of hepatitis C infection in the United States. Hepatitis C infection is the most common cause of liver cancer in most Western countries, and approximately 40% of all liver transplantations are performed because of complications associated with hepatitis C infection.

Infection with hepatitis C can cause cirrhosis and liver cancer, as can hepatitis B, but there is a significant difference between these two infections that complicates the clinical picture of hepatitis C. People infected with hepatitis C can have the virus in their blood and liver for many, many years and during that time liver damage will be slowly occurring, but they will have no signs or symptoms. Hepatitis C infections can be treated, but treatment is much more effective if it is started sooner rather than later after the infection is contracted, and earlier treatment helps prevent liver damage, as well.

For many years hepatitis C infections were treated with a two drug protocol that was not highly effective. However, in the past several years, new medications have been developed that have almost doubled the success rate of therapy, and newer drugs that are even more effective and easier to tolerate will soon be available.

**How is Hepatitis C Transmitted?**

Hepatitis C is primarily transmitted by contact with infected blood, either by a needle stick/puncture injury or splash contact to a mucous membrane or splash contact to non-intact skin. The risk of becoming infected with hepatitis C after a needlestick injury or a puncture injury is approximately 1.8%, with a range of 0-7%. Transmission of the virus after a mucous membrane exposure is rare, and no transmission through intact or non-intact skin has been documented. Hepatitis C virus has been found in ascites, menstrual fluid, saliva, semen, spinal fluid, and urine. Transmission of the hepatitis C virus from these fluids has not been reported. However, if someone suffered a parenteral exposure to one of these fluids (Spinal fluid infected with hepatitis C splashed onto a laceration) or if someone was exposed to a large amount of one of these fluids, transmission could possibly occur.

Transmission of hepatitis C by sexual activity is a relatively complicated issue. Transmission of hepatitis C during sexual activity appears to be possible, but the chances of this happening are very low. A recent study estimated that the risk of becoming infected with hepatitis C from sexual activity is 1 in every 190,000 sexual encounters. People who have multiple sex partners have an increased risk of sexual transmission of
the virus. Sexual practices that involve exposure to blood increase the risk of transmission of hepatitis C, and if someone has genital ulcers or a sexually transmitted disease the risk of sexual transmission is increased. An infection with HIV increases the risk of sexual transmission of hepatitis C by increasing the amount of hepatitis C virus in the blood or semen and/or by compromising the immune system.

Hepatitis C can be transmitted from an infected mother to a newborn child.
Currently in the United States the most common way that hepatitis C is transmitted is by IV drug use and the sharing of needles.
Hepatitis C is not transmitted by casual contact. You cannot be infected by hepatitis B by hugging or touching someone, by a cough or a sneeze, or by sharing eating utensils.

What are the Signs and Symptoms of a Hepatitis C Infection?

Some people who are newly infected with hepatitis C may have mild signs and symptoms. These could easily be mistaken for infection with influenza or another relatively harmless illness, and if these signs and symptoms do occur they usually resolve in a week or two. Most people who are newly infected are asymptomatic.

The hepatitis viruses A, B, and C infect and inflame the liver. However, the hepatitis C virus can also cause diabetes, kidney disease, non-Hodgkin’s lymphoma, and skin and blood disorders.

HOW CAN YOU PROTECT YOURSELF AGAINST HEPATITIS?

Certified nursing assistants are exposed to blood and body fluids and so potentially exposed to hepatitis A, B, and C. However, by following standard precautions and safe injection practice guidelines, you can effectively eliminate the risk of developing an infection with one of these viruses. This module will cover only the basics of standard precautions and safe injection practices.

Learning Break: Hepatitis B and C are transmitted through exposure to infected blood. This may cause some people to be concerned about receiving a transfusion, but the risk of developing an infection with one of these viruses from a blood transfusion is extremely low: Approximately 1 in 350,000 transfusions for hepatitis B and approximately 1 in 2 million transfusions for hepatitis C.

Standard Precautions and Safe Injection Practices

Standard Precautions are steps and practices that are used to prevent the transmission of infectious microorganisms. Safe Injection Practices do so also, but their focus is on the safe use of needles, syringes and medical sharps (e.g., scalpel blades). Standard Precautions and Safe Injection Practices protect you and they protect the patients. The following are the key points of Standard Precautions and Safe Injection Practices you need to know. Learn them, follow them conscientiously, and you will be protected against infection with hepatitis.
1. Consider all blood as potentially infectious. Consider all body fluids, except sweat, as potentially infectious even if they are not visibly contaminated with blood.

2. Follow hand washing protocols. Studies have clearly shown that hand washing is the most effective way of preventing the transmission of infections. Wash your hands before and after performing patient care; wash your hands after removing PPE; alcohol-based hand rubs are acceptable unless your hands are visibly soiled and if that is the case, use soap and water.

3. Use personal protective equipment (PPE) when indicated, and use it properly. Personal protective equipment includes face masks/face shields, gloves, gowns, hair covers, masks, and shoe covers. Personal protective equipment can protect you but only if it is used properly: don’t take shortcuts.

4. Understand and use respiratory hygiene and cough etiquette.

5. Maintain a safe and clean environment to reduce the risk of contamination and transmission of pathogens. Hepatitis B can survive outside the body on environmental surfaces for approximately seven days. Hepatitis C can survive outside the body on environmental surfaces for approximately 16 hours.

6. Understand and follow safe injection practices. The three most important rules of safe injection practices are: 1) Never re-cap a needle;; 2) Syringes, needles, etc. that have been used for one patient should never be re-used, and; 3) Always place used needles and sharps in a sharps container. Never place them in an ordinary trash can.

7. If you are stuck with a needle or a sharp, or if you are exposed to blood or body fluid and you were not using PPE, tell your supervisor immediately.

If you would like to learn more about Standard Precautions, Safe Injection Practices, and hand washing, follow these links.


http://www.cdc.gov/injectionsafety/.

WHAT SHOULD YOU DO IF YOU HAVE BEEN, OR MIGHT HAVE BEEN EXPOSED TO HEPATITIS?

An exposure to a blood-bone pathogen is defined as:

- A needle stick or a puncture wound from a sharp object.
- Contact of a mucous membrane or non-intact skin with blood or a body fluid, or
- Any direct contact (i.e., PPE was not used) with blood or body that is known to be infected

These definitions describe almost every exposure situation, and these situations are very obvious if you are involved. However, if you have any doubt as to whether or not you have been exposed, notify your supervisor. Do not make the decision by yourself. As
was mentioned previously, approximately two-thirds of all people infected with hepatitis B cannot recall a specific incident in which they were stuck by a needle or a sharp or were splashed with blood. Infections with blood-borne pathogens can be prevented, but only if the proper treatment is started very soon after the exposure.

The risks of developing an infection with hepatitis B from a needle stick or puncture wound is approximately 6-31%, and the risk of developing an infection with hepatitis C from a needle stick or puncture is 1.8% with a range of 0-7%. These ranges reflect the fact that not all needle sticks and puncture wounds are the same. The risk of developing an infection depends on the nature of the virus but also depends on:

- How deep the wound is,
- Whether the needle was in artery or a vein,
- The type of needle. Large, hollow- bore needles are especially likely to transmit pathogens,
- If there was visible contamination with blood,
- The amount of blood involved,
- The amount of virus in the patient's blood,
- The type of body fluid. i.e., blood, spinal fluid, vomit, etc.,
- How long the mucous membrane or skin was exposed,
- How much blood or body fluid was involved,
- What part of the body was stuck, cut, or splashed, and
- The health and immune status of the person who was exposed.

The first thing to do if you have been exposed is to perform basic first aid. If you suffered a puncture wound or a cut, wash the area with soap and water. Do not use bleach or a disinfectant in an attempt to “sterilize” the wound or kill the pathogens. Squeezing the area to try and “bleed out” the pathogens is not helpful either, and antiseptic ointments or creams are not needed. If you were splashed in the eye, flush the eye for 15-20 minutes with tepid water or an eyewash solution. If a mucous membrane or the skin was exposed, flush the area with ordinary water for 15-20 minutes.

The next step is to notify your supervisor or whoever is in charge of handling occupational exposures to blood-borne pathogens and/or body fluids. It cannot be stressed enough how important it is to immediately report exposures or potential exposures. Post-exposure prophylaxis (PEP) may be needed, and documentation of the incident is important for your health and for medical-legal reasons. The time of the exposure, the circumstances, i.e., how it happened, and detailed medical information about your health and medical history and of the health and medical history of the source will all be needed. Your tetanus immunization status and hepatitis B immunization status will be reviewed, and you will need to provide information about any medical problems you have, what prescription medications you take, and whether or not you might be pregnant or if you are nursing.

What Happens If There Is A Significant Risk Of Infection From My Exposure?

If you were definitely exposed to hepatitis A, or there it has been decided that there is a strong possibility of an exposure, the treating physician will order blood tests to check for
the presence of hepatitis A, B, and C, an (possibly) HIV, and she/he will also order blood tests to evaluate the health of your liver (Liver functions tests, a.k.a., LFTs). The physician will probably prescribe an injection of immune globulin, as well. This should be given within 14 days of the exposure. It is not needed if at least 1 dose of hepatitis A vaccine was given at ≥1 month before the exposure. Follow-up care to determine if an infection develops and to make sure you are healthy will be arranged.

If you were definitely exposed to hepatitis B, or it has been decided that there is a strong possibility of an exposure, the treating physician will order blood tests that measure the amount of viral DNA, the number of anti-hepatitis B antibodies, and specific parts of the virus (antigens) that are in the blood. Liver functions tests will be done and if they have not been previously done or there is a specific need to do so, tests for the presence of hepatitis C and HIV may be performed. If you have been vaccinated against hepatitis B and the vaccine has produced an adequate level of antibodies against the virus, you would be considered a known responder and no treatment would be needed. If you had not been vaccinated or your antibody response was less than optimal, you would be given hepatitis B immune globulin and the hepatitis B vaccine. The source of the exposure would be checked, but everyone who was exposed who was not vaccinated would be treated, even if the source did not test positive for hepatitis B. The hepatitis B immune globulin should be given within 24 hours of an exposure and the vaccination series should be started within three days of an exposure. The hepatitis B immune globulin is given a one-time injection. The hepatitis B vaccine is a series of three injections: one at the time of the exposure, the next at one month post-exposure, and the third at six months post-exposure.

If you were definitely exposed to hepatitis C, or it has been decided that there is a strong possibility of an exposure, you would be tested for the presence of hepatitis B, C, and (possibly) HIV. Liver function tests would be done. There is no treatment that can prevent an infection with hepatitis C from developing. However, once an infection has occurred there are treatments that can eliminate the virus, so the patient will need to have close medical follow-up in the weeks and month after the exposure. If the infection is detected soon after it begins, the available medications will eliminates the virus in approximately more than 90% of all new cases of infection. Approximately 25% of all people who are infected will spontaneously clear the virus.

HEPATITIS A, B, AND C: A SUMMARY OF THE DIFFERENCES AND SIMILARITIES

- All three of the hepatitis viruses cause infection and inflammation of the liver.

- The signs and symptoms of an infection with hepatitis A or B happen relatively soon after an infection develops. The signs and symptoms of an infection with hepatitis C may take years or decades to develop.

- Hepatitis A is transmitted via the fecal-oral route. Hepatitis B and C are transmitted by contact with infected blood and to a lesser degree, sexual activity.
• Sexual transmission of these hepatitis viruses is possible, but it is not considered to be a highly efficient or likely mode of transmission.

• There are vaccines available that can prevent infection with hepatitis A and B. There is no vaccine available that prevent an infection with hepatitis C.

• There are specific medications available for treating an infection with hepatitis C. A hepatitis A infection is treated with symptomatic and supportive care, and a hepatitis B infection is treated with symptomatic and supportive care.

• Hepatitis A rarely causes death or serious health consequences. Hepatitis B and C are associated with much higher fatality rates than hepatitis A and serious complication such as cirrhosis and liver cancer are relatively common with an infection with hepatitis C.

• Hepatitis A infections are uncommon. Infections with hepatitis B and C are very common.

• Infection with hepatitis A, B, and C can be prevented by conscientious use of Standard Precautions and Safe Injection Practices.