Iowa Department of Public Health

Viral Hepatitis Plan

A Collaborative Plan for Action

2004

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Viral Hepatitis Task Force 2004

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Executive Summary

Viral hepatitis describes those infections that can cause inflammation of the liver, are infectious, and are caused by viruses. Common symptoms of viral hepatitis include jaundice, abdominal pain, fatigue, loss of appetite and nausea. All cases of viral hepatitis are potentially communicable, and can have devastating effects on the lives of those infected. Cases of viral hepatitis, most commonly hepatitis A, B or C, are reported to the Iowa Department of Public Health (IDPH) as mandated by the Iowa Code section 139A.3 and the Iowa Administrative Code 641, Chapter 1.

There were an estimated 93,000 cases of hepatitis A and 78,000 acute cases of hepatitis B in the United States in 2001. There is an additional 1.0 – 1.25 million Americans with chronic hepatitis B. Overall, it is estimated that there are 3.9 million cases of hepatitis C in the United States, with up to 85 percent of these cases being chronic.

According to the 2001 US Census, there were 2,941,287 people residing in the state of Iowa. The Centers for Disease Control and Prevention (CDC) cite that approximately 31.3 percent of the population, or 920,623 people in the state of Iowa, will become infected with the hepatitis A virus in their lifetime and 4.9 percent of the state's population, or 144,623 Iowans, will become infected with the hepatitis B virus. It is thought that 1.8 percent of the state's population, or 52,943 Iowans, have already been infected with the hepatitis C virus. To date, approximately 8,000 cases of hepatitis C have been identified by IDPH.

The financial burden caused by viral hepatitis nationally is anticipated to be devastating, as estimates of present and future costs of hepatitis C alone range between $600 million (CDC) to $14.1 billion in direct costs and up to another $21.3 billion due to disability and $54.2 billion due to premature mortality (Wong, 2004). This does not include disease burden due to costs through loss in wages, leave from employment, medical costs and overall health and quality of life deterioration suffered by persons infected with viral hepatitis.

In January 2004, the IDPH received funding from the Council for State and Territorial Epidemiologists to write a plan for approaching viral hepatitis in public health. The IDPH organized the viral hepatitis task force and began developing goals for the state of Iowa. The goals formalized in this plan detail recommendations on how Iowa will approach prevention and management of viral hepatitis in the state.

The ***mission statement*** of the task force identifies the following focus:

"To outline a comprehensive, culturally appropriate, and systematic approach that will prevent the spread of viral hepatitis infection in Iowa."

The task force utilized the following resources as the basis for the strategic plan goals:

- Task force members' experience and expertise in working with individuals infected and at risk of infection from viral hepatitis
- Experiences of individuals infected with viral hepatitis
- Experience and expertise of the IDPH staff members
- Council of State and Territorial Epidemiologists position statements regarding viral hepatitis
- *Healthy Iowans 2010* state plan
- *Healthy People 2010* national plan

The task force felt strongly that hepatitis C should be the primary focus of their strategy, due to the great need for programs addressing this virus, though the plan addresses hepatitis A and B issues as well.

A two-step process was undertaken to ultimately identify and formulate recommendations to the IDPH. First, committees were convened in the following five areas to identify strategies and goals: prevention, education, management, surveillance and hepatitis A and B. Goals and objectives for each of these five areas can be found in the Appendices under "*Individual Committee Goals and Objectives*".

Second, following the development of goals and objectives by areas of focus, the task force reconvened to formulate specific recommendations. These can be found in the "*Viral Hepatitis Task Force Recommendations*" section of the plan. Eight major areas were identified that the task force felt were either "urgent" or "very important" to address. They are: legislative, hepatitis A and B immunizations, education, program development, management of infected individuals, data reporting and analysis, evaluation, and needle access and disposal. They are listed in order of ranking of importance, although very few points separate any of the recommendations.

Overview of Viral Hepatitis

Introduction

Hepatitis literally means "inflammation of the liver" and is caused by a virus or toxin. The most common types of viral hepatitis infection are hepatitis A, hepatitis B and hepatitis C. Hepatitis A virus (HAV) is an acute infection that occurs through person-to-person contact with an infected person or by eating or drinking food or water contaminated with fecal matter. Hepatitis B virus (HBV) is an acute or chronic infection that is spread by direct or indirect contact with infected blood or body fluids. Hepatitis C Virus (HCV) is also acute or chronic and occurs when blood or body fluids from an infected person enter the body of a person who is not infected.

All identified forms of viral hepatitis are reportable to the Iowa Department of Public Health (IDPH) as required by law in the Iowa Code section 139A.3 and the Iowa Administrative Code 641, Chapter 1. Due to the infectious nature of each form of viral hepatitis, it is necessary that each case be reported so that prevention and control efforts may be initiated by the IDPH.

Hepatitis A Overview

According to the CDC, HAV continues to be one of the most frequently reported vaccine-preventable diseases in the United States. In the year 2001, an estimated 93,000 new HAV infections were diagnosed. Approximately 11 to 22 percent of persons infected are hospitalized and approximately 100 HAV-infected people die each year.

Symptoms of HAV include the following: jaundice, nausea, fatigue, diarrhea, abdominal pain, fever and loss of appetite. Signs and symptoms are more common in adults than in children. HAV occurs in epidemics nationwide and in communities. Though HAV is not considered a chronic or long-term infection, about 15 percent of people infected experience prolonged or relapsing symptoms over a six to nine month period. HAV is present in the blood within 10 to 12 days after exposure. The incubation period for hepatitis A lasts anywhere from 12 to 50 days.

Hepatitis A vaccine, which was licensed for use in 1996, is considered the best protection against contracting the virus. More than 95 percent of adults will develop protective antibody within four weeks of a single dose of vaccine. Vaccine is recommended for the following persons, two years of age and older, who are most at risk of becoming infected with HAV:

- Travelers to areas with increased rates of hepatitis A
- Men who have sex with men
- Injecting and non-injecting drug users
- Persons with clotting factor disorders
- Persons with chronic liver disease
- Children living in areas with increased rates of hepatitis A during the baseline period from 1987-1997
- Native American Indian populations, especially children

Hepatitis A Trends

The IDPH has been documenting reported cases of HAV since 1961, when a record-high 1,986 cases were reported. Rates of HAV reporting in the state of Iowa since that year have run much lower - indicating a low prevalence of the virus in the state. Reporting rates have ranged from a low of 40 cases in 2003 to a recent high of 490 cases in 1997. During the years of 1996 through 1998, Iowa experienced clusters or outbreaks of HAV, with significantly higher numbers of cases in Polk and Woodbury Counties.

HAV, in particular, is highly infectious, which could account for its spread during outbreaks among contacts of infected populations. Because of the limited time to protect exposed and potentially exposed contacts of infected persons, timely reporting of HAV cases is especially necessary in the provision of public health services. HAV cases are often reported by phone for these reasons. Contacts of infected individuals have up to 14 days from the date of contact to receive an immune globulin injection that will prevent them from becoming infected with the virus. Once a case has been reported to the IDPH, it is the local public health departments who provide follow-up. Phone calls are conducted to determine exposure risks, and to identify other persons who may have been infected.

The IDPH viral hepatitis task force members and other professionals have identified a need for increased efforts to provide preventative vaccination against hepatitis A to high-risk populations. Recent pilot projects of the IDPH have provided hepatitis A vaccination to high-risk populations at two juvenile detention facilities and through county health departments' STD/HIV clinics. Ongoing funding for HAV vaccination is necessary to continue and expand programs to meet this need in Iowa communities. Due to limited funding, these pilot projects have been small. Finding resources to provide additional HAV vaccine and immune globulin, for outbreaks or clusters of infections, falls on local health departments and the IDPH. The high costs of large quantities of such medicines are not accounted for in limited local and state health department budgets.

Hepatitis B Overview

Hepatitis B virus (HBV) is also a vaccine preventable disease, one that newly infected approximately 78,000 people in the United States in 2001. Approximately 1.25 million Americans suffer from chronic HBV infection. The common signs and symptoms of HBV include: jaundice, fatigue, loss of appetite, abdominal pain, nausea, vomiting and joint pain. Approximately 30 percent of persons have no signs or symptoms of the HBV infection. Without vaccination, infants and young children are afflicted most with chronic infection. Ninety percent of infants infected at birth and 30 percent of children infected before age five develop chronic infection. However, six percent of persons infected after age five develop chronic infection. An estimated 15 to 25 percent of infants infected with HBV through perinatal transmission will ultimately die of liver failure secondary to chronic active hepatitis, cirrhosis or primary liver cancer, according to the CDC's *Epidemiology and Prevention of Vaccine-Preventable Diseases* (Eighth Edition, January 2004).

HBV can be spread through exposure to infected blood, body fluids and sexual contact. This exposure can occur through sharing needles or "works" when "shooting" drugs, through exposures on the job, or passed from an infected mother to her baby during birth. Due to similar risk factors, those at risk for HBV may also be at risk for HCV or Human Immunodeficiency Virus (HIV). Tests can detect HBV in the blood 30 to 60 days after exposure to infection. The virus persists for variable periods and phases, and the incubation period can range from six weeks to six months (CDC, 2004).

Hepatitis B immune globulin can be administered within seven days of exposure, and may prevent infection by providing short-term protection for persons at high risk of being infected. HBV vaccine is the best prevention, as it provides long-term protection against transmission of HBV. After three intra-muscular doses of hepatitis B vaccine over a six-month period, 90 percent of healthy adults and more than 95 percent of children will develop adequate antibody response. The current recombinant HBV vaccine was licensed in 1986 and is recommended for the following risk groups:

- Persons with multiple sex partners or having a diagnosis of a sexually transmitted disease
- Men who have sex with men
- Injecting drug users
- Sex contacts of infected persons
- Household contacts of chronically infected persons
- Infants born to infected mothers
- Infants/children of immigrants from areas with high rates of HBV infection
- Health care and public safety workers
- Hemodialysis patients
- People with chronic liver disease

Hepatitis B Trends

The IDPH documentation of HBV cases began in 1961, when the first two cases of hepatitis B were reported in Iowa. Due to numerous advances in viral hepatitis testing since that time, reporting is more accurate at this time. Eighteen acute/new cases of HBV were reported to the IDPH in the year 2003 and the numbers of new reported cases have ranged from 18 to a high of 74 in 1996. Due to the low numbers of newly reported cases each year, the accuracy of such reported numbers in measuring HBV prevalence is questionable.

Reporting of HBV is necessary to identify other people at risk for infection, for documentation purposes and to identify the likelihood of high-risk factors contributing to further spread of the infection. The IDPH receives reports of new HBV cases by e-mail, postal mail or by phone. Reports are investigated to determine contacts who may also be infected and/or who are at risk of infection. The infected persons are interviewed by the local health departments to determine how they were exposed, how long they may have been infected, and to identify others exposed to the virus.

Since the early 1990's, the IDPH has been involved in implementing hepatitis B vaccination programs and strategies. Health care workers comprised the first risk group identified by the CDC to receive immunization. Then, in 1991, the IDPH received funding for hepatitis B vaccine and hepatitis B immune globulin for infants born to hepatitis B positive mothers. When the CDC did not detect significant decreases in new HBV cases despite these efforts, they expanded their recommendation to include universal vaccination of infants. The CDC later expanded this recommendation to promote the immunization of children. Iowa Code Section 139A requires children born on or after July 1, 1994 to show evidence of hepatitis B immunization prior to enrollment into school. In the 1990's, school-based clinics were implemented throughout Iowa to provide hepatitis B vaccination programs to adolescents. By 2012, it is anticipated that the majority of students going through the Iowa school system will have received HBV vaccinations.

The IDPH began gathering data on hepatitis B in 1999 to document cases of HBV infection among the general population in Iowa. The *Third National Health and Nutrition Examination Survey* (NHANES III, 1988-94) estimates that annually Iowa has 120 HBV-positive pregnant women. It is critical for these prenatal cases to be identified to ensure that newborns receive hepatitis B immune globulin and the first dose of hepatitis B vaccine prior to leaving the hospital. Follow-up with these babies should continue to ensure the second and third doses of vaccine are administered on time and that post testing is completed three to nine months later.

The CDC, the IDPH, and the viral hepatitis task force members, among other professionals, have identified a need for increased efforts to provide preventative vaccination against hepatitis B to high-risk populations. Recent pilot projects of the IDPH have provided hepatitis B vaccination to high-risk populations at two juvenile detention facilities and through several county health departments at their STD/HIV clinics. Ongoing funding for HBV vaccination and for hepatitis B immune globulin is necessary to continue to meet this need in Iowa communities. Due to lack of funding, the pilot projects have been limited, and many high-risk persons in need of vaccination have not had access. The high costs of such medicines for high-risk and general populations are not accounted for in limited local and state health department budgets.

Hepatitis C Overview

Hepatitis C Virus (HCV) is the most common chronic blood borne infection in the United States (CDC, 2004). Approximately 1.8 percent of the United States' population has been infected with HCV, according to *NHANES III* (1988-94). This amounts to 3.9 million people, 2.7 million of whom are chronically infected. The actual numbers may be higher as the estimates do not include homeless, institutionalized or incarcerated populations. Such populations may not be as likely to seek out or receive medical care and hence, may not be diagnosed.

The state of Iowa has an estimated 52,943 cases of HCV infection, based on 2001 projected census information. Between January 1999 and March 2004, a total of 7,183 HCV cases were identified in the state. This accounts for 13.5 percent of projected cases. The number of reported cases continues to rise, as the IDPH receives an average of 114 HCV new cases reported each month.

Unfortunately, the majority of those infected with HCV do not know they are infected. About 80 percent of people have no signs or symptoms when the infection first develops. Infected individuals may have HCV for up to 10 to 20 years before they are aware or symptoms are recognized. In 75 to 85 percent of those infected, the virus persists in the body and the person develops chronic infection. Chronic HCV develops into chronic liver disease in 70 percent of those infected. Twenty percent of those chronically infected develop liver cirrhosis. Approximately three to five percent of HCV patients develop liver cancer. According to the CDC, approximately 8,000–10,000 deaths each year in the United States are attributable to HCV. Such deaths attributable to HCV-related chronic liver disease could increase substantially in the near future. In support of this prediction, John Wong, MD, of Tufts-New England Medical Center estimates that future HCV-related mortality may double during the next 10 to 20 years (Wong, 2004).

HCV was only first identified in 1989 as a distinctive organism that causes hepatitis. Prior to this time it was known only as hepatitis that differed from hepatitis A and hepatitis B and was called "non-A, non-B hepatitis." A laboratory detection test first became available for use in July 1992. People most at risk of having and/or for acquiring HCV infection include:

- Persons who have ever injected drugs, even once in their lifetime
- Injecting drug users who share needles or other equipment
- Persons participating in high-risk sexual practices, having multiple partners and with history of sexually transmitted diseases
- Persons who received blood transfusions or organ transplants prior to July 1992
- Persons who received clotting factor from plasma produced before 1987
- Persons who have ever been on long-term kidney dialysis
- Persons with undiagnosed liver problems
- Health care or emergency workers after known exposure to HCV positive blood
- Children born to HCV positive women

Unfortunately, there is no vaccine currently available for hepatitis C.

Hepatitis C Trends

The start of the hepatitis C program in Iowa three years ago has led to the state's focus on integration of services for hepatitis A, B, and C into existing programs. This integration has largely occurred through the provision of hepatitis A and hepatitis B immunizations and hepatitis C education, prevention and screening into existing HIV and STD services through partnerships and pilot programs with county health departments and local non-profit agencies.

HCV is a disease reportable to the IDPH. However, due to lack of funding, Iowa database entry and surveillance of laboratory reports did not begin until 2002. Since that time, data analysis and surveillance of HCV reports have been limited in the State of Iowa. Additional complications exist in that there are no laboratory tests that can pinpoint acute HCV infections. For a HCV case to be classified as acute, comprehensive documentation of symptoms and various HAV, HBV and HCV tests and liver enzyme tests must be conducted and reported to the IDPH.

Despite limited funding, the state of Iowa continues to move forward in planning goals for hepatitis C efforts and for viral hepatitis programming in general. In 2002, the hepatitis C strategic planning committee was formed. This committee met and identified several goals for the IDPH to consider in preventing and managing the spread of hepatitis C in Iowa. Although the committee generated numerous ideas, no formal plan was developed.

The Viral Hepatitis Task Force

An important component of IDPH's 2004 hepatitis activities has been the establishment of a viral hepatitis task force. In January 2004, the IDPH received funding from the Council of State and Territorial Epidemiologists (CSTE) to form a task force to review issues related to viral hepatitis program planning for Iowa. The task force formed consists of key stakeholders who provide services to persons potentially infected with viral hepatitis throughout Iowa and also includes individuals that are HCV positive. Members from the previous hepatitis C strategic planning committee were among those invited to participate. The 2004 task force was comprised of representatives from diverse backgrounds, including substance abuse, corrections, mental health, STD and HIV programs and clinics, and health care affiliates with local and state public health agencies and private institutions.

The task force held three meetings between March and July of 2004 to make recommendations regarding critical areas to address in viral hepatitis. The IDPH staff representing the hepatitis A, B, and C programs provided the task force with an overview of hepatitis planning in Iowa and nationally, reviewed currently existing Iowa programs, and worked with the task force and its members to provide input and assistance as needed.

The task force identified the following ***mission statement***, "*Our mission is to outline a comprehensive, culturally appropriate, and systematic approach that will prevent the spread of viral hepatitis infections in Iowa.*" After brainstorming and reviewing key elements and components for viral hepatitis planning, the task force chose to create committees to focus on five main areas of viral hepatitis planning: Prevention, Education, Surveillance, Management, and Hepatitis A and B-specific issues. These committees each identified recommendations and goals critical for effective programs to deal with viral hepatitis.

The task force utilized the professional and/or personal experience of the members in working with individuals infected and/or at risk of infection from viral hepatitis in developing the plan's goals. Additional IDPH staff members were consulted as well. The task force recognized the endorsements and recommendations of the following resources in developing goals, objectives and activities for the State Plan:

- The Council of State and Territorial Epidemiologists position statements regarding viral hepatitis
- *Healthy People 2010*, a comprehensive set of disease prevention and health promotion objectives for the United States to achieve in the first decade of the new century (This plan outlines public health priorities determined by scientists both inside and outside of the United States government)
- *Healthy Iowans 2010*, a state plan detailing Iowa's goals for promoting health and preventing disease in the beginning of the 21st century (It serves as a companion to the national plan)

- Guidelines and information from the Centers for Disease Control and Prevention, Division of Viral Hepatitis

After reviewing current state procedure regarding hepatitis A, B and C, the task force determined that the greatest needs for this plan lie in providing a structure to implement hepatitis C services. This determination was made because HCV is a major emerging public health issue, of which we are only recently coming to understand and which states are least prepared to deal with. Hence, while this plan covers all three infections, the majority of the content deals with HCV.

In April 2004, the Iowa State Legislature passed House Resolution 145 and Senate Resolution 139 recognizing May 2004 as hepatitis C awareness and education month and called for the IDPH to provide policy and program recommendations related to HCV to the General Assembly by December 31, 2004.

Viral Hepatitis Task Force Recommendations

1. Legislative and Policy Development

Goal 1: Identify effective, accessible and affordable case management and treatment services to prevent or limit the progression and complications of HCV infection and improve the affected individuals' quality of life in Iowa (Management Goal 1, page 45).

Objective 1: Establish HCV as a legislative priority.

Activities:

1. Increase legislative awareness and knowledge of the disease's prevalence, natural history, treatment options and outcomes, as well as its financial, human, and medical burden across many demographic groups in Iowa.
2. Raise awareness of necessity to address funding for increasing provider capacity.
3. Apply for funds to conduct surveillance.
4. Secure state, federal and private funding to assist in implementing activities to improve management of care for HCV patients.
5. Facilitate the expansion of HCV provider network and access of HCV patients to medical care.

Goal 2: Provide comprehensive preventative medical care for Iowa residents with HCV infection (Prevention Goal 4, page 38).

Objective 1: The IDPH will continue to advocate for state funding and policy initiatives to make HCV treatment services and pharmaceutical agents available to treatment candidates.

Activities:

1. Iowa HIV/AIDS and hepatitis C programs will educate state policy makers with scientifically-based information related to programs that make pharmaceutical agents available to HCV infected persons.

Objective 2: The IDPH will continue to advocate for state funding and policy initiatives for HAV and HBV immunizations for persons infected with HCV.

Activities:

1. Seek avenues of funding to provide adult HAV and HBV immunizations.
2. The Iowa immunization program will supply HAV and HBV vaccines to local health departments for administration to persons with HCV infection who are uninsured or under-insured.

Goal 3: Increase knowledge and awareness regarding HCV infection, screening, counseling, treatment and management in Iowa (Education Goal 3, page 41).

Objective 1: Accurate and culturally sensitive information about HCV infection, prevention, screening, treatment and management will be available to all who request it.

Activities:

1. The IDPH will apply for funding from various avenues, including grants, to implement the following educational activities:
    a. The IDPH will conduct a survey of agencies and a random sampling of the general public to assess its current knowledge and identify HCV education needs.
    b. The IDPH will review HCV educational information currently available and will distribute information that is appropriate, culturally sensitive and language sensitive.
    c. The IDPH will develop and assist in the development of accurate, culturally sensitive HCV educational materials.
    d. The IDPH will make HCV fact sheets or brochures available to provide clear and concise information and guidance.
    e. The IDPH will create and distribute a hepatitis newsletter.
    f. The IDPH, in concert with local health departments, will develop a schedule of statewide HCV related educational events and forums.
    g. The IDPH will make the Viral Hepatitis Plan available to the general public via the Internet or other modality.
    h. The IDPH will expand its existing website to include articles and links to HCV education information and fact sheets or brochures.
    i. The IDPH will initiate a hepatitis hotline available to the public and medical personnel to provide accurate, up-to-date information regarding HCV.

Objective 2: Faculty and students at Iowa's public and private schools, serving all educational levels, will have access to educational information about HCV infection, prevention and control measures.

Activities:

1. The IDPH and the Iowa Department of Education will discuss and promote opportunities to include HCV educational materials into the public school system by providing hepatitis materials to school nurses, principals and lead health teachers by mail or on the Department of Education website.
2. Mass mailings of HCV fact sheets or brochures will be sent to public and private educational institutions in the state of Iowa.
3. The IDPH and the Iowa Department of Education will implement blood-borne pathogen curricula in public schools and make the curricula available to private schools.

2. Increase Immunization Rates for Hepatitis A and B

Goal 1: Reduce new hepatitis A cases to an incidence of no more than 4.5 per 100,000 population in Iowa by 2010--in accordance with the *Healthy Iowans 2010* and *Healthy People 2010* goals (Hepatitis A Goal 1, page 50).

Objective 1: Pilot projects will be implemented to administer pre-exposure HAV vaccine to high-risk groups at the following potential sites:

- **a. Methadone clinics**
- **b. Inpatient or outpatient drug/substance abuse treatment facilities**
- **c. Correctional facilities**
- **d. Halfway house-type programs**
- **e. STD/HIV clinics**
- **f. Community-based HIV prevention sites**

Activities:

1. The IDPH will apply for funding to vaccinate high-risk groups.
2. The IDPH will contract with the specific agencies/sites to provide risk assessments, counseling and to administer the HAV vaccine.

Goal 2: Reduce or eliminate incidence of new cases of HBV in people under 25 years of age, working towards Healthy People 2010 and Healthy Iowans 2010 goals of zero new cases per 100,000 (Hepatitis B Goal 1, page 51).

Objective 1: Continue to improve upon current HBV vaccination efforts by increasing the percentage of youth ages 18 and under receiving vaccination to 90 percent.

Activities:

1. Educate health care providers regarding the importance of immunizing susceptible children 18 years of age and younger.
2. Increase the number of counties providing hepatitis B vaccination programs in public and private schools.

Objective 2: High-risk adolescents will have increased access to HBV vaccination.

Activities:

1. Contingent on funding: continue and expand pilot projects with all public juvenile detention facilities to provide vaccination.
2. Contingent on funding: continue pilot projects with STD clinics to target high-risk adolescents for vaccination.

Objective 3: High-risk young adults aged 19 to 25 will have increased access to HBV vaccination.

Activities:

1. The IDPH will apply for funding to provide HBV vaccine to young adults aged 19 to 25.
2. Continue and expand the number of sites providing vaccine to high-risk groups 19 years and older.
3. The IDPH will contract with local health departments to continue and expand the number of sites providing vaccine to young adults 19 to 25 years of age.

Goal 3: Reduce prevalence of new HBV among adult high-risk populations (Hepatitis B Goal 2, page 52).

Objective 1: The IDPH will implement pilot HBV programs to vaccinate high-risk adults by partnering with the following types of facilities:

a. Correctional facilities
b. Inpatient or outpatient drug and substance abuse treatment facilities
c. Methadone clinics (i.e. Polk County and Black Hawk County)
d. Halfway house programs
e. STD/HIV testing sites

Activities:

1. Apply for funding to conduct adult pilot programs.
2. Contract with corrections, treatment centers and STD/HIV sites to provide HBV vaccination.

Goal 4: To identify pregnant women who are hepatitis B surface antigen (HbsAg) positive to stop the transmission of hepatitis B virus from mother to baby during the delivery process (Hepatitis B, new goal)

Objective 1: Legislation will be passed to require that all pregnant women be tested for hepatitis B surface antigen before the birth of their baby.

Activities:

1. Gain support from staff in the HIV, STD, hepatitis C, and the Center for Acute Disease Epidemiology (CADE) programs to increase the knowledge of hepatitis B burden in Iowa.
2. Educate policy makers on the need to identify HBsAg positive pregnant women and the risk of transmission to the infant.

Objective 2: Newborn babies will receive hepatitis B immune globulin (HBIG) within 12 hours of birth and the first dose of hepatitis B vaccine within 24 hours after birth.

Activities:

1. Seek funding for the purchase of HBIG and hepatitis B vaccine to babies born to HBsAg positive mothers.

2. Distribute HBIG and hepatitis B vaccine to hospitals, public health departments and private practitioners that provide health care to these at-risk infants.

Objective 3: Medical information shall be shared with health care providers to ensure that the baby completes the three dose series of hepatitis B vaccine.

Activities:

1. Educate health care providers about the need to ensure that the baby is identified as needing to complete a three dose hepatitis B vaccine series and that information is collected and shared amongst practitioners who are serving these individuals.
2. Enroll health care providers in the immunization registry to conduct recall/reminder activities to ensure at-risk infants receive remaining immunizations on time.

3. Education

Goal 1: Increase knowledge and awareness regarding HCV infection, screening, counseling, treatment and management in Iowa (Education Goal 3, page 41).

Objective 1: Accurate and culturally sensitive information about HCV infection, prevention, screening, treatment and management will be available to all who request it.

Activities:

1. The IDPH will apply for funding from various avenues, including grants, to implement educational activities.
2. The IDPH will conduct a survey of agencies and a random sampling of the general public to assess their knowledge and needs concerning HCV education.
3. The IDPH will review HCV educational information currently available and will distribute information that is appropriate, culturally sensitive and in various languages.
4. The IDPH will develop and assist in the development of accurate, culturally sensitive HCV educational materials.
5. The IDPH will make HCV fact sheets or brochures available to provide clear and concise information and guidance.
6. The IDPH will initiate a hepatitis newsletter.
7. The IDPH, in concert with local health departments, will develop a schedule of statewide HCV related educational events and forums.
8. The IDPH will make the Viral Hepatitis Plan available to the general public via the Internet or other modality.
9. The IDPH will expand its existing website to include articles and links to HCV education information and fact sheets or brochures.
10. The IDPH will initiate a hepatitis hotline available to the public and medical personnel to provide accurate, up-to-date information regarding HCV.

Objective 3: Public and private organizations and their employees will be educated regarding HCV information.

Activities:

1. The IDPH will collaborate with various public and private organizations to ensure that HCV information is accessible by employees through appropriate employer packets and posters.

Goal 2: Increase awareness about the disease and significantly reduce the number of new infections in Iowa using effective primary preventive efforts (Prevention Goal 1, page 34).

Objective 1: Develop and implement a comprehensive statewide program, using multiple modalities, to increase awareness about hepatitis C and to provide risk reduction information to include education of the following groups:

- **a. General public**
- **b. High-risk individuals**
- **c. Health care professionals**
- **d. Persons infected with HCV**

Activities:

1. Identify high-risk populations and develop educational endeavors that make use of both educational theory and key principles of social marketing, including the following aspects:
    a. audience segmentation
    b. fitting the message to the target population
    c. the use of culturally sensitive materials
2. Determine baseline knowledge about hepatitis C in the general and high- risk populations.
3. Identify educational resources and current efforts.
4. Identify gaps in educational efforts.
5. Define roles for, and strengthen collaboration with, state and local government agencies, and private sector agencies and advocacy groups, to market risk reduction messages to high-risk populations.
6. Develop a strategy to solicit resources for educational purposes.
7. Target educational efforts to persons already infected, high-risk individuals, health care professional, and the general public.

4. Program Development

Goal 1: Inform Iowa residents who are at-risk for exposure to HCV about the advantages of HCV testing and offer them testing for HCV (Prevention Goal 3, page 37).

Objective 1: The IDPH will develop screening guidelines for programs that serve high-risk populations.

Activities:

1. Review the most recent screening and testing guidelines implemented by other states.
2. Draft and develop Iowa-specific screening, testing, and educational guidelines that are consistent with the hepatitis C plan.

Objective 2: The IDPH will make available information about national HCV screening recommendations and offer testing services to persons in high-risk groups for HCV served by local health departments, HIV/STD clinics, substance abuse and mental health treatment programs, and correctional facilities.

Activities:

1. Incorporate HCV screening and testing guidelines and directives into state contracts where appropriate.
2. Maintain community-based activities to locate, screen, and test people who may be hepatitis C positive.

Objective 3: The University Hygienic Lab (UHL) will provide support for HCV screening programs.

Activities:

1. Identify funding sources to support public laboratory HCV screening programs.
2. Maintain collaboration between the funded laboratories, the IDPH and community testing sites to provide HCV screening.

Goal 2: Increase awareness about the disease and significantly reduce the number of new infections in Iowa using effective primary preventive efforts (Prevention Goal 1, page 34).

Objective 1: Integrate HCV education, counseling, testing, referral, and offer HAV and HBV vaccinations in existing relevant programs that serve high-risk and other vulnerable populations.

Activities:

1. Incorporate hepatitis C prevention messages and interventions, including HCV screening, into existing HIV/AIDS, STD, harm reduction, substance abuse, and mental health treatment programs.
2. Write and disseminate standard hepatitis C specific guidelines, procedures, and protocols for screening.
3. Coordinate and cross train staff in hepatitis C prevention procedures.
4. Offer HAV and HBV vaccines in the above existing programs.
5. Identify funding sources to support these services.

5. Management

Goal 1: Provide comprehensive preventative medical care for Iowa residents with HCV infection (Prevention Goal 4, page 38).

Objective 1: Define the components of a comprehensive care model providing for hepatitis C screening, treatment, case management, patient education, substance abuse treatment and other related services.

Activities:

1. Identify public and private partnerships to develop a comprehensive care model.
2. Determine where hepatitis C services are not being provided.
3. Advocate for the delivery of comprehensive services to all populations in need through existing STD, HIV/AIDS, substance abuse, mental health and primary care programs.
4. Encourage the incorporation of a comprehensive care model into public and private sector medical practice.
5. Identify funding needs and funding availability for services.

Goal 2: Identify effective, accessible and affordable case management and treatment services to prevent or limit the progression and complications of HCV infection and improve the affected individuals' quality of life in Iowa (Management Goal 1, page 45).

Objective 1: Improve patient access to HCV diagnosis.

Activities:

1. Develop a targeted screening program for the following populations at risk of having or becoming infected with HCV:
    a. Prison population
    b. Injecting Drug Users
    c. HIV-infected patients
    d. Persons who received blood transfusions prior to July 1992
    e. Persons who received organ transplants prior to July 1992
    f. Persons with elevated liver function tests
2. Educate physicians about the need to request confirmatory testing by laboratories (i.e.: RIBA or PCR tests).
3. Improve communication of laboratory results related to HCV.
4. Provide education for laboratorians related to HCV diagnosis.
5. Distribute and reanalyze the previous IDPH hepatitis C algorithm.
6. Apply for funding for screening and surveillance activities.

Objective 2: Improve patient access to care of HCV.

Activities:

1. Conduct a survey to identify and update map of providers and institutions currently caring for hepatitis C patients.
2. Provide education to providers regarding need to improve access to care for hepatitis C patients.
3. Provide incentive for providers to continue to take care of hepatitis C patients and augment their capacity to do so.
4. Increase local provider capacity to follow-up patients.
5. Integrate physician extenders, such as Nurse Practitioners and Physician Assistants, into provider network.
6. Increase participation of Community Health Centers in providing access to care for persons with hepatitis C.
7. Integrate HCV testing and referral into the following types of existing programs:
    a. HIV Prevention
    b. STD Sites
    c. Substance Abuse
    d. Department of Corrections
    e. Community Health Centers
8. Integrate HCV care and treatment services into the following types of existing programs:
    a. Corrections
    b. Ryan White Title III Clinics
    c. AIDS Drug Assistance Programs (ADAP)
    d. Substance Abuse
    e. Community Health Centers

6. Data Reporting and Analysis

Goal 1: Increase reporting of viral hepatitis to the IDPH (Surveillance Goal 1, page 47).

Objective 1: Assess the current status of laboratory testing for viral hepatitis in Iowa and determine the percentage of test results that are reported to the IDPH.

Activities:

1. Develop a questionnaire to determine which laboratories process hepatitis tests and what diagnostic tests are being requested.
    a. Target laboratories in Iowa that are testing for HCV locally as well as reference laboratories that are conducting hepatitis testing on Iowa residents.
    b. Utilize the Iowa Laboratory Response Network (ILRN) that includes 139 private laboratories and nine commercial laboratories in Iowa. Also investigate using CLIA **(**Clinical Laboratory Improvement Amendments) records to target laboratories testing for hepatitis. Include Department of Corrections, Veterans Affairs, and tribal medical facilities in all inquiries and surveys.
2. Develop a questionnaire to determine the reporting practices of laboratories and physicians offices to determine by whom, and how, positive hepatitis results are transmitted to the IDPH. The questionnaire will be formatted electronically on the UHL website and a link to the questionnaire will be sent via electronic mail.
3. Circulate questionnaires by electronic mail to all laboratories, physician offices, and clinics in Iowa. Target circulation to infection control personnel by utilizing ILRN, CLIA, and Iowa Medical Society data to contact primary care physicians most likely to treat hepatitis patients. Primary care physicians targeted would include internists, gastroenterologists and other specialties likely to see and treat hepatitis positive patients.
4. The UHL Information Technology staff will tabulate questionnaire results and a report will be compiled.
5. The questionnaire results will be used to determine the following:
    a. Identify laboratories doing HCV testing whether in local test facilities, or by commercial laboratories outside Iowa.
    b. Determine if positive test results generated by laboratories or received from labs are being forwarded to the IDPH.

Objective 2: Educate laboratories and physicians on the importance and necessity of reporting viral hepatitis results to the IDPH.

Activities:

1. Target laboratory and infection control personnel to report patients with positive viral hepatitis laboratory results to IDPH by test name (Anti-HAV IGM, HbsAg, Anti-HBc IGM, Anti-HCV EIA, RIBA). Include Veterans Affairs, Corrections, and tribal personnel in all education efforts.

2. Identify venues to disseminate reports of positive hepatitis results. Consider vehicles such as the IDPH's weekly Epi-Update, the UHL's Hotline and newsletters for groups such as the Iowa Medical Society or nursing and infection control organizations.
3. Incorporate reporting procedures into hepatitis education and training materials for health care professionals working with hepatitis patients.
4. Stress the importance of reporting positive results to IDPH by laboratory and clinic personnel.
5. Assist health care providers in interpreting hepatitis laboratory results by submitting articles to newsletters and other educational materials.

Goal 2: Accurately measure the prevalence of hepatitis C, its determinates and its distribution in Iowa (Surveillance Goal 2, page 48).

Objective 1: Expand upon and implement a viral hepatitis reporting data analysis program.

Activities:

1. Apply for funding for a full-time data entry person for the IDPH to receive, process, and disseminate hepatitis reports to local health departments.
2. Educate health care providers on hepatitis reporting roles.
    a. Provide disease-reporting forms to these agencies.
3. Educate healthcare providers, labs, and local health departments on case definitions for acute and chronic hepatitis B and C.
4. Improve the disease reporting forms to include specific disease markers, including pregnancy status.
5. Implement an electronic hepatitis surveillance system as capabilities and funding become available.

Objective 2: Identify specific information needed for each case to be able to effectively control the spread of disease and to analyze trends in viral hepatitis.

Activities:

1. Pilot certain counties to complete detailed risk assessment forms for positive hepatitis cases.
2. Update the EPI-manual via the IDPH web site with improved data collection forms.
3. Through regional EPI information programs and continuing education programs, educate local health departments, public health agencies and infection control practitioners on evolving changes in hepatitis surveillance.

Objective 3: Report on hepatitis prevalence and incidence in Iowa.

Activities:

1. Compile and analyze data and prepare reports.

2. Use available hepatitis case report analysis to plan intervention and prevention strategies.
3. Complete an annual report on viral hepatitis which can be distributed through the IDPH website.
4. Data collection forms should reflect who is infected and how they were infected.
5. Provide policy makers, program managers and other interested parties with detailed summary of data on health impact of viral hepatitis.

Goal 3: Maintain and/or improve effectiveness of HBV reporting system to IDPH (Hepatitis B Goal 3, page 53).

Objective 1: Define current system of reporting HBV.

Activities:

1. Write summary of disease reporting.
2. Articulate system/make written summary available to physicians, health clinics, etc.
3. Integrate written summary into educational programs.

7. Evaluation

Goal 1: Increase awareness about the disease and significantly reduce the number of new infections in Iowa using effective primary preventive efforts (Prevention Goal 1, page 34).

Objective 1: Evaluate the effectiveness of hepatitis prevention programs.

Activities:

1. Identify key evaluation questions and standard measures of program effectiveness.
2. Provide guidance on how to evaluate primary prevention programs for hepatitis.
3. Provide technical support and training for contractors and health program staff so they can evaluate hepatitis prevention activities.
4. Evaluate the effectiveness of prevention strategies using appropriate formative, process and outcome measures.
5. Prepare and distribute reports resulting from evaluation of hepatitis primary prevention activities to local health departments, community based organizations, and other relevant agencies.

Goal 2: Increase awareness of risks and prevention of HAV among food service workers and at child care centers in Iowa. Food service and child care centers historically have been sources of HAV transmission (Hepatitis A Goal 2, page 51).

Objective 1: Education programs for food service workers regarding risks of transmission and prevention of HAV, including the need for pre-exposure vaccine, will be evaluated.

Activities:

1. The IDPH will apply for funding to evaluate education programs for food service workers.
2. Prepare/obtain educational materials about HAV specifically focused on food handling transmission risks.
3. In conjunction with local health departments, who are responsible for annual food service audits, let management know of the materials available and to offer training/education as needed.
4. The IDPH will provide, as requested, education/training related to HAV.

Objective 2: Education programs for Iowa child care centers and homes regarding risks of transmission and prevention of HAV, including the need for pre-exposure vaccine, will be evaluated.

Activities:

1. The IDPH will apply for funding to evaluate education programs for employees of child care centers and homes.
2. Prepare/obtain educational materials about HAV specifically focused on child care transmission risks.
3. In conjunction with local health departments, who are responsible for annual child care center audits, let management know of the materials available and to offer training/education as needed.
4. IDPH will provide, as requested, education/training related to HAV.

Goal 3: Demonstrate cost-effectiveness of hepatitis B vaccination versus treatment for acute and chronic illness in Iowa through evidence-based research (Hepatitis B Goal 4, page 53).

Objective 1: The IDPH will conduct a study to compile national and Iowa-specific data on the cost-effectiveness of HBV vaccination versus cost of treatment for chronic HBV.

Activities:

1. Apply for funding to conduct the study.
2. Hire intern to conduct the study.
3. Network with organizations/ review literature on cost-effective studies that have been conducted.
4. Determine measurable cost outcomes of HBV cases in various populations.
5. Determine cost of vaccination for various populations.

Goal 4: Demonstrate the cost-effectiveness of hepatitis C treatment versus no treatment for chronic illness in Iowa through evidence-based research (Hepatitis C, new goal).

Objective 1: The IDPH will conduct a study to compile national and Iowa-specific data on the cost-effectiveness of HCV treatment for chronic carriers versus the cost to society of no treatment.

Activities:

1. Apply for funding to conduct the study.
2. Hire intern to conduct the study.
3. Network with organizations/ review literature on cost-effective studies that have been conducted.
4. Determine measurable cost outcomes of HCV cases in various populations.

8. Needle Access and Disposal

Goal 1: Provide injecting drug users (IDUs) in Iowa with access to sterile injection equipment, in conjunction with prevention education and outreach services (Prevention Goal 2, page 36).

Objective 1: The IDPH will identify and work with stakeholders to make sterile injection equipment access and disposal available in conjunction with prevention education and outreach services.

Activities:

1. Research, in conjunction with the HIV/AIDS program, to identify stakeholders.
2. The Iowa HIV/AIDS and hepatitis C programs will educate state policy makers with science-based information related to programs that increase IDUs access to sterile syringes and encourage identification of resources to implement these services.
3. Develop implementation recommendations based upon standards outlined by the HIV Community Planning Group and found in the Iowa Comprehensive HIV Plan 2004-2006, p.283.
4. Assure that safe community needle disposal programs are established in local jurisdictions.
5. Establish strong linkage and partnerships with substance abuse, mental health treatment, and correctional facilities.

Objective 2: The IDPH will pursue programs to make sterile injection equipment available to injection drug users.

Activities:

1. Define the most appropriate contact points and venues to make sterile injection equipment access and disposal available.
2. HIV/AIDS and hepatitis C programs will distribute educational and training materials to health care providers, community based organizations, local health departments, and other settings that the general public and high risk persons access.
3. Secure funding to implement needle exchange and needle access and disposal for injection drug users.

Appendix A:
Individual Committee Goals and Objectives

Prevention

Prevention strategies assist populations in reducing their risk of contracting and spreading HCV infection. Strategies often involve education of the general public, health care professionals, high-risk individuals, and persons already infected with HCV. To be effective, HCV prevention strategies for Iowa must ultimately reach two groups: people who were infected in the past and do not know it; and people not currently infected but at high risk for becoming so in the future. Healthy People 2010 identifies a national goal of reducing the number of cases of HCV from 2.4 new cases per 100,000 in 1996 to 1 new case per 100,000 by 2010.

Primary Prevention: Primary prevention activities aim to reduce risks for contracting HCV infection. These activities focus on reducing or eliminating potential risk for HCV transmission from an infected person to an uninfected person.

Primary Prevention Goals and Objectives

Goal 1: Increase awareness about the disease and significantly reduce the number of new infections in Iowa using effective primary preventive efforts.

Objective 1: Develop and implement a comprehensive statewide program, using multiple modalities and culturally sensitive information in various venues, to increase awareness about hepatitis C and to provide risk reduction information to include education of the following groups:

a. General public
b. High-risk individuals
c. Health care professionals
d. Persons infected with HCV

Activities:

1. Identify high-risk populations and develop educational endeavors that make use of both educational theory and key principles of social marketing, including the following aspects:
    a. audience segmentation
    b. fitting the message to the target population
    c. the use of culturally sensitive materials
2. Determine baseline knowledge about hepatitis C in the general and high- risk populations.
3. Identify educational resources and current efforts.
4. Identify gaps in educational efforts.
5. Define roles for, and strengthen collaboration with, state and local government agencies, and private sector agencies and advocacy groups, to market risk reduction messages to high-risk populations.
6. Develop a strategy to solicit resources for educational purposes.
7. Target educational efforts to persons already infected, high-risk individuals, health care professionals, and the general public.

Objective 2: Increase knowledge of HCV reporting and prevalence in Iowa.

Activities:

1. The hepatitis C coordinator (IDPH) in collaboration with the Iowa Medical Society, the Iowa Nurses Association, and other reporter organizations, will develop a strategy to educate health care providers about the importance of accurately reporting positive hepatitis C laboratory tests to the IDPH.
2. Incorporate hepatitis C reporting information into newsletters or other appropriate venues to reach health care providers.
3. Assist health care providers in assessing whether cases should be reported as acute or chronic hepatitis C infection.
4. Assist health care providers in improving their understanding of interpretation of Anti-HCV screening test results, when more specific testing should be performed, and which tests should be considered for this purpose.

Objective 3: Integrate HCV education, counseling, testing and referral and offer HAV and HBV vaccinations in existing relevant programs that serve high-risk and vulnerable populations.

Activities:

1. Incorporate hepatitis C prevention messages and interventions, including HCV screening, into existing HIV/AIDS, STD, harm reduction, substance abuse, corrections, and mental health treatment programs.
2. Write and disseminate standard hepatitis C specific guidelines, procedures, and protocols for screening.
3. Coordinate and cross train staff in hepatitis C prevention procedures.
4. Offer HAV and HBV vaccines in the above existing programs.
5. Identify funding sources to support these services.

Objective 4: Develop alternative sources for the delivery of HCV primary prevention services for high-risk populations not served by HIV/AIDS, STD, and substance abuse programs.

Activities:

1. Conduct a needs assessment to determine what prevention services are available and what services are needed for effective interventions.
2. Review science-based interventions prioritized by the HIV Community Planning Group.
3. Provide training to those community-based service providers that reach the high risk and at risk populations to assure that their counseling and referral services provide current and accurate information.

Objective 5: Evaluate the effectiveness of hepatitis prevention programs.

Activities:

1. Identify key evaluation questions and standard measures of program effectiveness.
2. Provide guidance on how to evaluate primary prevention programs for hepatitis.
3. Provide technical support and training for contractors and health program staff so they can evaluate hepatitis prevention activities.
4. Evaluate the effectiveness of prevention strategies using appropriate formative, process and outcome measures.
5. Prepare and distribute reports resulting from evaluation of hepatitis primary prevention activities to local health departments, community based organizations, and other relevant agencies.

Goal 2: Provide injecting drug users (IDUs) in Iowa with access to sterile injection equipment, in conjunction with prevention education and outreach services.

Objective 1: The IDPH will identify and work with stakeholders to make sterile injection equipment access and disposal available in conjunction with prevention education and outreach services.

Activities:

1. Research, in conjunction with the HIV/AIDS program, to identify stakeholders.
2. The Iowa HIV/AIDS and hepatitis C programs will educate state policy makers with science-based information related to programs that increase IDU's access to sterile syringes and encourage identification of resources to implement these services.
3. Develop implementation recommendations based upon standards outlined by the HIV Community Planning Group and found in the Iowa Comprehensive HIV Plan 2004-2006, p.283.
4. Assure that safe community needle disposal programs are established in local jurisdictions.
5. Establish strong linkages and partnerships with substance abuse, mental health treatment, and correctional facilities.

Objective 2: The IDPH will pursue programs to make sterile injection equipment available to injection drug users.

Activities:

1. Define the most appropriate contact points and venues to make sterile injection equipment access and disposal available.
2. HIV/AIDS and hepatitis C programs will distribute educational and training materials to health care providers, community based organizations, local health departments, and other settings that the general public and high risk persons access.

3. Secure funding to implement needle exchange and needle access and disposal for injection drug users.

Secondary Prevention: Secondary prevention focuses on persons already infected with HCV. The aim of these activities is to reduce risks for liver complications and other chronic diseases. Secondary prevention activities include the testing of individuals most likely to have hepatitis C, and the provision of appropriate counseling about prevention and medical follow-up to HCV-infected persons.

Secondary Prevention Goals and Objectives

Goal 3: Inform Iowa residents who are at-risk for exposure to HCV about the advantages of HCV testing and offer them testing for HCV.

Objective 1: The IDPH will develop screening guidelines for programs that serve high- risk populations.

Activities:

1. Review the most recent screening and testing guidelines implemented by other states.
2. Draft and develop Iowa-specific screening, testing, and educational guidelines that are consistent with the hepatitis C plan.

Objective 2: The IDPH will make available information about national HCV screening recommendations and offer testing services to persons in high-risk groups for HCV served by local health departments, HIV/STD clinics, substance abuse and mental health treatment programs, and correctional facilities.

Activities:

1. Incorporate HCV screening and testing guidelines and directives into state contracts where appropriate.
2. Maintain community-based activities to locate, screen, and test people who may be hepatitis C positive.

Objective 3: The University Hygienic Lab (UHL) will provide support for HCV screening programs.

Activities:

1. Identify funding sources to support public laboratory HCV screening programs.
2. Maintain collaboration between the funded laboratories, IDPH and community testing sites to provide HCV screening.

Goal 4: Provide comprehensive preventative medical care for Iowa residents with HCV infection.

Objective 1: Iowa residents infected with HCV will be counseled about measures to prevent liver complications and other HCV-associated chronic diseases.

Activities:

1. The IDPH will develop and make available through multiple modalities, informational materials about secondary prevention targeted to infected persons, in support of counseling efforts.
2. The IDPH will develop a statewide HCV resource and referral directory.

Objective 2: Define the components of a comprehensive care model providing for hepatitis C screening, treatment, case management, patient education, substance abuse treatment and other related services.

Activities:

1. Identify public and private partnerships to develop a comprehensive care model.
2. Determine where hepatitis C services are not being provided.
3. Advocate for the delivery of comprehensive services to all populations in need through existing STD, HIV/AIDS, substance abuse, mental health and primary care programs.
4. Encourage the incorporation of a comprehensive care model into public and private sector medical practice.
5. Identify funding needs and funding availability for services.

Objective 3: The IDPH will continue to advocate for state funding and policy initiatives to make HCV treatment services and pharmaceutical agents available to treatment candidates.

Activities:

1. Iowa HIV/AIDS and hepatitis C programs will educate state policy makers with scientifically based information related to programs that make pharmaceutical agents available to HCV infected persons.

Objective 4: The IDPH will continue to advocate for state funding and policy initiatives for HAV and HBV immunizations for persons infected with HCV.

Activities:

1. Seek avenues of funding to provide adult HAV and HBV immunizations.
2. The Iowa immunization program will supply HAV and HBV vaccines to local health departments for administration to persons with HCV infection who are uninsured or under-insured.

Education

Approximately 53,000 persons in Iowa are estimated to be infected with HCV and many more could be at risk for infection. Despite the significant numbers of Iowans potentially infected with HCV, very few people are aware of how this virus is transmitted or how it can be prevented. There is a significant need in this state for information, education and communication about the disease.

The *Healthy Iowans 2010* HCV goal consists of making information on HCV available to healthcare providers by 2005, through pamphlets, programs, or other educational materials. *Healthy Iowans 2010* calls for actions to develop culturally, racially and ethnically sensitive educational materials and distribute them to health care providers. This plan follows the educational goals and objectives of state and national recommendations.

Goal 1: Increase accurate HCV information distributed to high-risk populations and those diagnosed with HCV.

Objective 1: The IDPH will collaborate with agencies serving people at high-risk of HCV infection to provide education. These agencies will include: public HIV and STD testing sites, drug treatment centers, public safety, correctional services and homeless shelters.

Activities:

1. The IDPH hepatitis C coordinator will collaborate with other state personnel to identify resources to increase the capacity of agencies to provide education to high-risk populations.
2. The IDPH will collaborate with other state agencies to provide the following education regarding HCV: train the trainer workshops, local, state and national resources providing written, telephonic or computer based education, and continued integration of HCV education into HIV staff curriculum.
3. The IDPH will establish a link with HIV outreach workers and provide them with additional training about hepatitis, risk reduction activities and testing site protocols.
4. The IDPH and other agencies will initiate distribution of hepatitis posters and flyers listing testing sites to bars and other venues identified through outreach worker recommendations and efforts.
5. The IDPH will collaborate with outreach workers to distribute pamphlets, posters and flyers to known injecting drug use sites.
6. The IDPH will collaborate with law enforcement to set up educational programs and information within jails for incarcerated individuals.

Objective 2: The IDPH will collaborate with Iowa agencies serving high-risk youth to provide education.

Activities:

1. The IDPH will collaborate with Iowa's juvenile detention centers and juvenile homes to offer HCV-related education to high-risk youth.
2. The IDPH will assist in development of educational materials targeting high-risk youth.

Goal 2: Raise awareness and increase knowledge regarding HCV prevention, control and management among public and private health care providers and other professionals who offer services to persons at risk for hepatitis C.

Objective 1: A statewide hepatitis C awareness and education campaign for health care providers will be implemented.

Activities:

1. The IDPH will apply for funding to develop and implement a healthcare provider survey and education campaign.
2. The IDPH will conduct a survey of a representative sample of Iowa health care providers to assess the following:
    a. The percentage of providers who know that HCV infections are a provider and laboratory reportable disease
    b. The level of primary and secondary HCV prevention services rendered
    c. Perceived barriers to primary and secondary HCV prevention services
3. The IDPH will develop or obtain educational materials, such as posters, written materials, public service announcements and educational videos for clinics and private medical offices.
4. Mail campaigns will be developed/expanded to include a targeted pamphlet, informational letters and algorithms for physicians.
5. The IDPH will provide the Iowa Medical Society with information on HCV counseling, testing and referral services.
6. The IDPH will make national HCV guidelines and other resources available to health care providers via the Internet or other modality, such as a statewide hepatitis hotline.
7. The IDPH will do HCV educational presentations for local health departments, hospitals, clinics, treatment centers, physician's offices and infection control staff.
8. Local health departments will provide HCV educational materials and training opportunities to the following organizations:
    a. community-based organizations under contract with IDPH
    b. other local health departments serving high-risk populations
    c. all drug treatment agencies serving injecting drug users
    d. all agencies serving clients with mental illness
9. The IDPH will establish linkages with local health service organizations on delivering updates to health care providers regarding HCV.

Objective 2: Offer increased HCV continuing education opportunities for health care workers in Iowa.

Activities:

1. The IDPH hepatitis C coordinator will work to connect local and national experts in HCV with health care providers and professionals statewide for continuing education presentations and seminars.
2. Educational activities regarding HCV will be implemented into various conferences, dinners, teleconferences and home study opportunities.
3. The IDPH and Iowa physician and nursing boards will provide physicians, nurses, and other licensed providers with information about HCV counseling, screening, and case investigation services.
4. The IDPH will work with the licensing boards to study the feasibility of requiring CME/CEU continuing education credit hours concerning viral hepatitis education, diagnosis and treatment.

Objective 2: Medical and nursing students in Iowa will have access to HCV infection, diagnosis and treatment information.

Activities:

1. The IDPH will collaborate with medical and nursing schools to ensure the most up-to-date material on HCV is available to the students.

Goal 3: Increase knowledge and awareness regarding HCV infection, screening, counseling, treatment and management in Iowa.

Objective 1: Accurate and culturally sensitive information about HCV infection, prevention, screening, treatment and management will be available to all who request it.

Activities:

1. The IDPH will apply for funding from various avenues, including grants, to implement the following educational activities:
    a. The IDPH will conduct a survey of agencies and a random sampling of the general public to assess their knowledge and needs concerning HCV education
    b. The IDPH will review HCV educational information currently available and will distribute information that is appropriate, culturally sensitive and language sensitive
    c. The IDPH will develop and assist in the development of accurate, culturally sensitive HCV educational materials
    d. The IDPH will make HCV fact sheets or brochures available to provide clear and concise information and guidance
    e. The IDPH will create and distribute a hepatitis newsletter
    f. The IDPH, in concert with local health departments, will develop a schedule of statewide HCV related educational events and forums
    g. The IDPH will make the Viral Hepatitis Plan available to the general public via the internet or other modality
    h. The IDPH will expand its existing website to include articles and links to HCV education information and fact sheets or brochures

i. The IDPH will initiate a hepatitis hotline available to the public and medical personnel to provide accurate, up-to-date information regarding HCV

Objective 2: A targeted statewide HCV media campaign will be implemented in Iowa.

Activities:

1. The IDPH will contact a marketing specialist to assist in planning and implementing a public education campaign.
2. A targeted statewide media campaign will be developed in Iowa to increase awareness and provide education about HCV.
3. The IDPH will look into billboards and bus advertising for public awareness.
4. A developed schedule of statewide HCV related educational events and forums will be distributed to all print and broadcast media and featured on the IDPH website.
5. The IDPH will contact CDC for information and guidance to secure public service announcements.
6. The IDPH will secure public service announcements and fact sheets regarding HCV and provide them to local health departments for distribution.
7. The IDPH will make available public service announcements to appropriate public and private broadcast media.

Objective 3: Public and private organizations and their employees will be educated regarding HCV.

Activities:

1. The IDPH will collaborate with various public and private organizations to ensure that HCV information is accessible to employees through appropriate employer packets and posters.

Objective 4: Faculty and students at Iowa's public and private schools, serving all educational levels, will have access to educational information about HCV infection, prevention and control measures.

Activities:

1. The IDPH and the Iowa Department of Education will discuss and promote opportunities to include HCV educational materials into the public school system by providing hepatitis materials to school nurses, principals, and lead health teachers by mail or on the Department of Education web site.
2. Mass mailings of HCV fact sheets or brochures will be sent to public and private educational institutions in the state of Iowa.
3. The IDPH and the Iowa Department of Education will implement blood-borne pathogen curricula in public schools and make the curricula available to private schools.

Goal 4: Increase knowledge and awareness regarding HCV, screening, counseling, vaccination and treatment among the Iowa State Legislature.

Objective 1: HCV educational information will be provided to state legislature.

Activities:

1. The IDPH will provide copies of the state viral hepatitis plan to the general assembly of the legislature.
2. The IDPH will develop and distribute, as requested, information on hepatitis issues to the Iowa State Legislature and other policy makers.

Management Committee

A public health approach to hepatitis C includes diagnosis and medical management by a physician. When the diagnosis of HCV infection has been made, referral for treatment and evaluation are warranted. Patients with HCV infection are all potential candidates for anti-viral therapy. The current approach calls for genotyping of the virus and viral load studies to determine treatment options and measure the progress and effectiveness of the treatment selected. Liver biopsies are sometimes done to determine staging and disease progression. Patients with a very mild disease may not require immediate treatment, while those with end-stage liver disease may best be served by liver transplantation. Nevertheless, it is recommended that all patients diagnosed with HCV be thoroughly evaluated by a physician familiar with this disease and its treatment. The newer treatments available today make it possible for infected individuals to rid themselves of the virus approximately 50 percent of the time. Treatment is rigorous and expensive, however, much money can be saved and quality of life improved for the infected individual if treatment is successful. In addition, regardless of the stage and progress of the disease, patients need on going, if not life-long, monitoring of the disease from a primary care physician.

By improving the medical management and quality of life for persons with HCV, their chances of leading a healthy, satisfying and economically productive life are increased. An effective medical management and rehabilitation system will reduce the likelihood that HCV patients will develop complications of the disease or be vulnerable to other harmful conditions.

Like most other chronic diseases, HCV can be costly to both providers and to patients on many levels. The Centers for Disease Control and Prevention estimates of medical and work-loss costs of HCV-related acute and chronic liver disease are upwards of $600 million annually. According to a recent study by Dr. John Wong of Tufts-New England Medical Center, projected direct medical care costs of HCV during the years 2010 to 2019 are estimated to be in the range of $6.7 to $14.1 billion. Dr. Wong also estimates that during the same time period, indirect costs for HCV infected persons under age 65 are projected to be $54.2 billion due to premature mortality and $21.3 billion from disability and that the HCV mortality rate may double over the next 10-20 years (Wong, 2004).

Unfortunately, HCV patients may not have access to proper treatment and many have not had access to testing to know they are infected. A good way to minimize the costs of HCV infection is to be proactive rather than reactive in patient management over the long-term. Other ways to decrease the costs of HCV treatment and management include: improving service provider access to information regarding HCV, improving patient access to HCV diagnosis and care, and establishing HCV as a legislative priority.

As services are developed for HCV patients, planning and training for long-term management of their needs becomes critically important. The outcome of this approach lies in treating the individuals and, as a result, limits the public health impact of this devastating disease.

Goal 1: Identify effective, accessible and affordable medical case management and treatment services to prevent or limit the progression and complications of HCV infection and improve the affected individuals' quality of life in Iowa.

Objective 1: Improve medical provider and general access to information regarding HCV.

Activities:

1. During year one, the IDPH web page will be expanded to provide direct links to recommended web sites.
2. During year one, service providers statewide will be surveyed to collect and compile information regarding services currently available for persons with hepatitis C, including: prevention, counseling, testing, medical management, alternative therapies, support group and insurance services.
3. During year two, a statewide hepatitis resource directory will be created based on the information collected from service providers and will be distributed statewide.
4. During year two, local community resource directories will be created based on the statewide information collected and collaboration with participating communities.
5. Ensure that physicians statewide are able to identify and make appropriate referrals and have access to the resource directory.

Objective 2: Improve patient access to HCV diagnosis.

Activities:

1. Develop a targeted screening program for the following populations at risk of having or becoming infected with HCV:
    a. Prison population
    b. Injecting drug users
    c. HIV-infected patients
    d. Persons who received blood transfusions prior to July 1992
    e. Persons who received organ transplants prior to July 1992
    f. Persons with elevated liver function tests
2. Educate physicians as to the need to request confirmatory testing by the laboratories (i.e.: RIBA or PCR tests).
3. Improve communication of laboratory results related to HCV.
4. Provide education for laboratorians related to HCV diagnosis.
5. Distribute and reanalyze the previous IDPH hepatitis C algorithm.
6. Secure funding for screening and surveillance activities.

Objective 3: Improve patient access to care of HCV.

Activities:

1. Conduct a survey to identify and update a map of providers and institutions currently caring for hepatitis C patients.
2. Provide education to providers regarding need to improve access to care for hepatitis C patients.

3. Provide incentive for providers to continue to take care of hepatitis C patients and augment their capacity to do so.
4. Increase local provider capacity to follow-up patients.
5. Integrate physician extenders, such as nurse practioners and physician assistants, into provider network.
6. Increase participation of community health centers in providing access to care for persons with hepatitis C.
7. Integrate HCV testing and referral into the following types of existing programs:
    a. HIV Prevention
    b. STD Sites
    c. Department of Corrections
    e. Substance Abuse
    f. Community Health Centers
8. Integrate HCV care and treatment services into the following types of existing programs:
    a. Department of Corrections
    b. Ryan White Title III Clinics
    c. Aids Drug Assistance Programs (ADAP)
    d. Substance Abuse
    e. Community Health Centers

Objective 4: Establish HCV as a legislative priority.

Activities:

1. Increase legislative awareness and knowledge of the disease's prevalence, natural history, treatment options and outcomes, as well as its financial, human, and medical burden across many demographic groups in Iowa.
2. Raise awareness of necessity to address funding for increasing provider capacity.
3. Apply for funds to conduct surveillance.
4. Secure state, federal and private funding to assist in implementing activities to improve management of care for HCV patients.
5. Facilitate the expansion of HCV provider network and access of HCV patients to medical care.

Surveillance

Surveillance collects information on infections and possible methods of transmission to help understand who is at risk, the geographic areas with the most infections, and changes in patterns of infections. This information helps identify successful interventions for populations at risk.

Reliable information on hepatitis reporting allows for the identification of efficient targeting of public health resources. Further, information on patient diagnosis assists in determining the long-term effects of treatment options. For effective hepatitis surveillance, infected individuals must be tested, accurately diagnosed, information collected in a timely manner, data reported, cases investigated and stored in a database. This requires the cooperation of physicians, hospitals, laboratories, local health departments and the IDPH.

The *Healthy People 2010* document identifies a national goal of increased reporting of the number of persons with chronic HCV infection identified by state and local health departments.

Goal # 1: Increase reporting of viral hepatitis to the IDPH.

Objective 1: Assess the current status of laboratory testing for viral hepatitis in Iowa and determine the percentage of test results that are reported to the IDPH.

Activities:

1. Develop a questionnaire to determine which laboratories process hepatitis tests and what diagnostic tests are being requested.
    a. Target laboratories in Iowa that are testing for HCV locally as well as reference laboratories that are conducting hepatitis testing on Iowa residents.
    b. Utilize the Iowa Laboratory Response Network (ILRN) that includes 139 private laboratories and nine commercial laboratories in Iowa. Also investigate using CLIA **(**Clinical Laboratory Improvement Amendments) records to target laboratories testing for hepatitis. Include Department of Corrections, Veterans Affairs, and tribal medical facilities in all inquiries and surveys.
2. Develop a questionnaire to determine the reporting practices of laboratories and physician's offices to determine by whom, and how, positive hepatitis results are transmitted to the IDPH. The questionnaire will be formatted electronically on the UHL website and a link to the questionnaire will be sent via electronic mail.
3. Circulate questionnaires by electronic mail to all laboratories, physician offices, and clinics in Iowa. Target circulation to infection control personnel by utilizing ILRN, CLIA, and Iowa Medical Society data to contact primary care physicians most likely to treat hepatitis patients. Primary care physicians targeted would include internists, gastroenterologists and other specialties likely to see and treat hepatitis positive patients.
4. The UHL Information Technology staff will tabulate questionnaire results and a report will be compiled.
5. The questionnaire results will be used to determine the following:

a. Identify laboratories doing HCV testing whether in local test facilities, or by commercial laboratories outside Iowa.
b. Determine if positive test results generated by laboratories or received from labs are being forwarded to the IDPH.

Objective 2: Educate laboratories and physicians on the importance and necessity of reporting viral hepatitis results to the IDPH.

Activities:

1. Target laboratory and infection control personnel to report patients with positive viral hepatitis laboratory results to the IDPH by test name (Anti-HAV IGM, HBsAg, Anti-HBc IGM, Anti-HCV EIA, RIBA). Include Veterans Affairs, Corrections, and tribal personnel in all education efforts.
2. Identify venues to disseminate reports of positive hepatitis results. Consider vehicles such as the IDPH's weekly Epi-Update, the UHL's Hotline and newsletters for groups such as the Iowa Medical Society or nursing and infection control organizations.
3. Incorporate reporting procedures into hepatitis education and training materials for health care professionals working with hepatitis patients.
4. Stress the importance of reporting positive results to the IDPH by laboratory and clinic personnel.
5. Assist health care providers in interpreting hepatitis laboratory results by submitting articles to newsletters and other educational materials.

Goal 2: Accurately measure the prevalence of hepatitis C, its determinates, and its distribution in Iowa.

Objective 1: Expand upon and implement a viral hepatitis reporting data analysis program.

Activities:

1. Apply for funding for a full-time data entry person for the IDPH to receive, process, and disseminate hepatitis reports to local health departments.
2. Educate health care providers on hepatitis reporting roles.
    a. Provide disease-reporting forms to these agencies.
3. Educate healthcare providers, labs, and local health departments on case definitions for acute and chronic hepatitis B and C.
4. Improve the disease reporting forms to include specific disease markers, including pregnancy status.
5. Implement an electronic hepatitis surveillance system as capabilities and funding become available.

Objective 2: Identify specific information needed for each case to be able to effectively control the spread of disease and to analyze trends in viral hepatitis.

Activities:

1. Pilot certain counties to complete detailed risk assessment forms for positive hepatitis cases.
2. Update the EPI-manual via the IDPH web site with improved data collection forms.
3. Through regional EPI information programs and continuing education programs, educate local health departments, public health agencies and infection control practitioners on evolving changes in hepatitis surveillance.

Objective 3: Report on hepatitis prevalence and incidence in Iowa.

Activities:

1. Compile and analyze data and prepare reports.
2. Use available hepatitis case report analysis to plan intervention and prevention strategies.
3. Complete an annual report on viral hepatitis which can be distributed through the IDPH website.
4. Data collection forms should reflect who is infected and how they were infected.
5. Provide policy makers, program managers and other interested parties with detailed summary of data on health impact of viral hepatitis.

Hepatitis A and B Goals

The Centers for Disease Control and Prevention (CDC) estimate that there were approximately 93,000 new hepatitis A cases and 78,000 new hepatitis B infections in the United States in 2001. Both HAV and HBV are considered to be vaccine-preventable diseases because existing immunizations can prevent both infections. Unfortunately, many populations at risk for developing these infections are not aware of their risks and do not have access to the vaccinations. With increased efforts towards universal immunization of individuals for HAV and HBV, Iowa can help alleviate the disease burden endured as a result of these infections in the United States.

A committee of the task force convened to focus on specific goals dealing with hepatitis A and hepatitis B. This committee utilized the endorsements and recommendations of the following documents in developing the state of Iowa's goals for HAV and HBV: the Center for State and Territorial Epidemiologists (CSTE)'s position statement 1998-ID 13 titled "Expanded use of Hepatitis A Vaccine," and position statement 1992-5 regarding Infectious Diseases, the State of Iowa's *Healthy Iowans 2010* and the United States' *Healthy People 2010*.

Hepatitis A Virus (HAV)

Goal 1: Reduce new hepatitis A cases to an incidence of no more than 4.5 per 100,000 population in Iowa by 2010--in accordance with the *Healthy Iowans 2010* and *Healthy People 2010* goals.

Healthy People 2010, *Healthy Iowans 2010* and the CDC identified the following adult groups as being at "high-risk" and most likely to benefit from receiving the hepatitis A vaccine: injecting drug users, men who have sex with men (MSM), people traveling to hepatitis A endemic countries, persons with chronic liver disease and persons with HIV or HCV.

Objective 1: Pilot projects will be implemented to administer pre-exposure HAV vaccine to high-risk groups at the following potential sites:

a. Methadone Clinics
b. Inpatient or outpatient drug/substance abuse treatment facilities
c. Correctional facilities
d. Halfway house-type programs
e. STD/HIV Clinics
f. Community-based HIV prevention sites

Activities:

1. The IDPH will apply for funding to vaccinate high-risk groups.
2. The IDPH will contract with the specific agencies/sites to provide risk assessments, counseling and to administer the HAV vaccine.

Goal 2: Increase awareness of risks and prevention of HAV among food service workers and at child care centers in Iowa. Food service and child care centers historically have been sources of HAV transmission.

Objective 1: Education programs for food service workers regarding risks of transmission and prevention of HAV, including the need for pre-exposure vaccine, will be evaluated.

Activities:

1. The IDPH will apply for funding to educate food service employees.
2. Prepare/obtain educational materials about HAV specifically focused on food handling transmission risks.
3. In conjunction with local health departments, who are responsible for annual food service audits, let management know of the materials available and to offer training/education as needed.
4. The IDPH will provide, as requested, education/training related to HAV.

Objective 2: Education programs for Iowa child care centers and homes regarding risks of transmission and prevention of HAV, including the need for pre-exposure vaccine, will be evaluated.

Activities:

1. The IDPH will apply for funding to evaluate education programs for employees of child care centers and homes.
2. Prepare/obtain educational materials about HAV specifically focused on child care transmission risks.
3. In conjunction with local health departments, who are responsible for annual child care center audits, let management know of the materials available and to offer training/education as needed.
4. IDPH will provide, as requested, education/training related to HAV.

Hepatitis B Virus (HBV)

Goal 1: Reduce or eliminate incidence of new cases of HBV in people under 25 years of age, working towards Healthy People 2010 and Healthy Iowans 2010 goals of zero new cases per 100,000 population.

Healthy Iowans 2010 and the CSTE's position statement 1992-5 on Hepatitis B identify that adolescents and young adults with high-risk behaviors are most in need of HBV vaccine. Such high-risk behaviors include having multiple sex partners, injection drug use, having a current STD, men who have sex with men, being incarcerated and being a household member of an infected person. It is important to include education regarding behaviors that increase the transmission of hepatitis B virus. All vaccine activities need to include education about hepatitis B virus.

Objective 1: Continue to improve upon current HBV vaccination efforts by increasing the percentage of youth ages 18 and under receiving vaccination to 90 percent.

Activities:

1. Educate healthcare providers regarding the importance of immunizing susceptible children 18 years of age and younger.
2. Expand hepatitis B vaccination programs in public and private schools.

Objective 2: High-risk adolescents will have increased access to HBV vaccination.

Activities:

1. Contingent on funding: continue and expand pilot projects with all public juvenile detention facilities to provide vaccination.
2. Contingent on funding: continue pilot projects with STD clinics to target high-risk adolescents for vaccination.

Objective 3: High-risk young adults aged 19 to 25 will have increased access to HBV vaccination.

Activities:

1. The IDPH will apply for funding to provide HBV vaccine to young adults aged 19 to 25.
2. Continue and expand the number of sites providing vaccine to high-risk groups 19 years and older.
3. The IDPH will contract with local health departments to continue and expand the number of sites providing vaccine to young adults 19 to 25 years of age.

Goal 2: Reduce prevalence of new HBV among adult high-risk populations.

Healthy Iowans 2010, *Healthy People 2010,* and the CDC have identified the following groups as most at risk of becoming infected with HBV: injection drug users, men who have sex with men, persons with a current STD, persons with multiple sexual partners, long-term hemodialysis patients, incarcerated persons and household and sexual partners of infected persons.

Objective 1: The IDPH will implement pilot HBV programs to vaccinate high-risk adults by partnering with the following types of facilities:

a. Correctional facilities
b. Inpatient or outpatient drug and substance abuse treatment facilities
c. Methadone clinics (i.e.: Polk County and Black Hawk)
d. Halfway house programs
e. STD/HIV testing sites

Activities:

1. Apply for funding to conduct adult pilot programs.
2. Contract with corrections, treatment centers and STD/HIV sites to provide HBV vaccination.

Goal 3: Maintain and/or improve effectiveness of HBV reporting system to the IDPH.

Objective 1: Define current system of reporting HBV.

Activities:

1. Write summary of disease reporting.
2. Articulate system/make written summary available to physicians, health clinics, etc.
3. Integrate written summary into educational programs.

Goal 4: Demonstrate cost-effectiveness of HBV vaccination versus treatment for acute and chronic illness in Iowa through evidence-based research.

Objective 1: The IDPH will conduct a study to compile national and Iowa-specific data on the cost-effectiveness of HBV vaccination versus cost of treatment for chronic HBV.

Activities:

1. Apply for funding to conduct the study.
2. Hire intern to conduct the study.
3. Network with organizations and review literature on cost-effective studies that have been conducted.
4. Determine measurable cost outcomes of HBV cases in various populations.
5. Determine cost of vaccination for various populations.

Appendix B:
Glossary of Acronyms

AIDS Acquired Immunodeficiency Syndrome

ADAP Aids Drug Assistance Programs

CADE Center for Acute Disease Epidemiology

CDC Centers for Disease Control and Prevention

CLIA Clinical Laboratory Improvement Amendments

CSTE Council of State and Territorial Epidemiologists

Epi Epidemiology

HAV hepatitis A virus

HBIG hepatitis B immune globulin

HbsAg hepatitis B surface antigen

HBV hepatitis B virus

HCV hepatitis C virus

HIV Human Immunodeficiency Virus

IDPH Iowa Department of Public Health

IDU Injecting Drug User

ILRN Iowa Laboratory Response Network

MSM Men who have sex with men

NHANES III The Third National Health and Nutrition Examination Survey

STD Sexually transmitted disease

UHL University Hygienic Laboratory

Appendix C: References

Centers for Disease Control and Prevention. *Epidemiology and Prevention of Vaccine-Preventable Diseases*. Atkinson, W., Hamborsky, J. & Wolfe, C., eds. 8th ed. Washington DC: Public Health Foundation, 2004.

Centers for Disease Control and Prevention official website www.cdc.gov

Centers for Disease Control and Prevention (2004). *Viral Hepatitis Index*. retrieved from www.cdc.gov/hepatitis

The Council of State and Territorial Epidemiologists official website http://www.cste.org

The Epidemiologic Follow-Up of Communicable Diseases in Iowa, "The EPI Manual" retrieved from: http://www.idph.state.ia.us/adper/cade_content/epimanual/default.htm

Healthy Iowans 2010 retrieved from: http://www.idph.state.ia.us/bhpl/healthy_iowans_2010.asp

Healthy People 2010 retrieved from: http://www.healthypeople.gov/document/tableofcontents.htm

Iowa Administrative Code 641, Chapter 1, retrieved from: www.legis.state.ia.us/IAC.html

Iowa Code (2003)/139A *Immunization of Children* retrieved from: http://www.legis.state.ia.us/IACODE/Current/

Iowa Department of Public Health (2004). *Bureau of Disease Prevention and Immunization*. Retrieved from www.idph.state.ia.us/ch/disease_prevention_immunization.asp

Iowa HIV Community Planning Group (2003). *Iowa Comprehensive HIV Plan (2004-2006*. retrieved from http://www.idph.state.ia.us/adper/hiv_aids_programs.asp

NHANES III (1988-1994) retrieved from www.cdc.gov/nchs/nhanes.htm

National Alliance of State and Territorial AIDS Directors official website www.nastad.org

National Institutes of Health, (2002). *Management of hepatitis C: 2002*. National Institutes of Health (NIH) Consensus State-of-the-Science Statements. 2002 June 10-12; 19(3) 1- 46.

Wong, J (2004). *The Hepatitis C Epidemic: An Awakening Giant?* Division of Clinical Decision Making, Tufts-New England Medical Center.

Appendix D:
Viral Hepatitis Fact Sheets

FACT SHEET Hepatitis A

(viral or infectious hepatitis)

What is hepatitis A?
Hepatitis A is a liver disease caused by hepatitis A virus. In children it may be very mild, but some adults who develop hepatitis A are ill enough to miss about four to six weeks of work.

Who gets hepatitis A?
Anyone can get hepatitis A, however, individuals who travel to countries where hepatitis A is common, intimate and household contacts of infected individuals, men who have sex with men and those who use illegal drugs are at an increased risk of becoming infected.

How soon do symptoms appear?
Time from infection to illness is 15 to 50 days with an average of 28 to 30 days.

How is the virus spread?
The hepatitis A virus is found in the feces (stool) of infected persons. It is usually spread by putting something in your mouth that has been contaminated by the stool of a person infected with hepatitis A. Hepatitis A may be spread by food that has been handled by infected persons who do not wash their hands carefully. Hepatitis A may also be spread by drinking water contaminated with human feces and the sharing of contaminated drug paraphernalia.

What are the symptoms of hepatitis A?
Fever, loss of appetite, nausea, vomiting, abdominal pains, and a general feeling of being ill are usually the first symptoms. These symptoms are typically followed in a few days by dark ("tea-colored") urine and jaundice (yellowing of the skin and the whites of the eyes). Infected persons usually feel better after one to two weeks, although they may continue to feel tired for a few more weeks. Infected children under the age of three often do not become ill.

How long can an infected person spread the virus?
An infected person can spread the virus for one to two weeks before symptoms appear and for one week after jaundice occurs. Occasionally infants and children may spread the virus for longer periods of time.

Can a person get hepatitis A again?
After infection with hepatitis A, a person generally will not become infected again. However, there are different kinds of hepatitis infections and infection with hepatitis A will not protect against getting other types of hepatitis.

Is there a vaccine to prevent hepatitis A?
Yes, the vaccine is recommended for travelers to areas where disease is common, men who have sex with men, users of injecting and non-injecting illicit drugs, residents of a community experiencing an outbreak of hepatitis A, individuals with chronic liver disease, and individuals with clotting-factor disorders.

What is the treatment for hepatitis A?
Once a person is ill, there are no special medicines that will help. Generally, bed rest is all that is needed. Since hepatitis is an illness of the liver, infected persons should avoid drinking alcohol or taking drugs or medicines (including aspirin and Tylenol) without first asking their doctor.

What can be done after a person comes in contact with a person infected with hepatitis A?
Immune globulin is a shot given to help prevent hepatitis A. Hepatitis A is not spread at school, work, or by brief casual visits to the home of an infected person so fellow workers, schoolmates, etc., will not need to get a shot. Immune globulin is recommended for all household members and close contacts (including

sexual and drug sharing contacts) of a person with hepatitis A. The shot should be given as soon as possible (within two weeks) after contact with someone who has hepatitis A.

How can the spread of hepatitis A be stopped?

The spread of hepatitis A can be stopped by always washing hands thoroughly with soap and warm water after using the toilet or changing diapers. Children should be taught to always wash their hands with soap after using the toilet. People with diarrhea, regardless of the cause should not prepare foods for others. **Washing hands before preparing any food is important**.

FACT SHEET HEPATITIS B

What is hepatitis B?
Hepatitis B is a virus that enters the bloodstream and then infects the liver. Clinical signs and symptoms occur more often in adults than in infants or children. Approximately 10% of all people infected with hepatitis B will stay infected for a lifetime. Long-term infection may result in liver disease or cancer.

Who gets hepatitis B?
Anyone can get hepatitis B. However, certain people have a greater chance of becoming infected; these people include IV drug users, babies born to infected mothers, sexual partners of infected persons, and medical and dental workers.

How is the virus spread?
The hepatitis B virus is usually spread through sexual activity, sharing of drug paraphernalia, or contact of open cuts and sores with contaminated blood. It can also be spread through close household contact and from infected mothers to their babies at birth.

What are the symptoms?
Symptoms may be mild or they may be very severe. Symptoms may include extreme tiredness, nausea, vomiting, fever, headache, skin rashes, stomach pain, tea-colored urine, and yellowing of skin and eyes. Most people infected with hepatitis B do not develop all symptoms and may never know they are infected.

How soon do the symptoms appear?
Loss of appetite and stomach pain commonly appears within 2 to 3 months, but can occur from 6 weeks to 6 months after infection.

How long can an infected person spread the virus?
A person can spread the virus as long as it remains in their blood. Most adults will get rid of the virus within 4 to 6 months; however, about 1 out of every 10 infected adults will become lifelong “carriers”, meaning they will probably never get rid of the virus. Nine out of 10 infected babies will become life-long "carriers". Most hepatitis B carriers have no symptoms of hepatitis, but some will develop serious liver disease years later. Most hepatitis B carriers do not look or feel sick. However, they may eventually develop serious liver diseases such as cirrhosis or liver cancer. Even though carriers may feel healthy, they can still spread the hepatitis B virus to other people.

How is hepatitis B diagnosed?
A blood test is used to detect infection with the hepatitis B virus.

Can a person get hepatitis B again?
If antibodies develop, one infection with the hepatitis B virus protects a person form getting it again. Carriers remain infected for life. However, there are different kinds of hepatitis; infection with hepatitis B will not stop a person from getting other types of hepatitis.

What is the treatment for hepatitis B?
There is no specific treatment for acute HBV infection. People who are sick with hepatitis B should see a doctor for advice about how to control their symptoms. 25-40% of adults with chronic HBV infection and liver disease achieve long-term remission after treatment with interferon-alfa.

What can be done if a person comes into contact with someone infected with hepatitis B?
Hepatitis B immune globulin (HBIG) and hepatitis B vaccine can prevent infection if given within 7 days after an exposure. This treatment is available from doctors in your community. Infants, whose mothers have

hepatitis B should begin vaccination at time of birth. Remaining vaccinations can be received at the infant's physicians' office or at the county health department through the Perinatal Hepatitis B Program.

How can infection with hepatitis B be prevented?

Never share needles for drug use, ear piercing, tattooing, or any other purpose. Avoid contact with the blood or wound drainage of any other person. Use condoms when having sex.

Is there a vaccine to prevent hepatitis B?

Yes, there is a vaccine to protect against hepatitis B. It is generally recommended for persons who are at high risk for infection, children, adolescents, and all newborn babies before they leave the hospital (usually within the first 24 hours of birth). It is for anyone wishing to lower his or her risk of getting hepatitis B. A three dose series will protect the majority of people who are vaccinated.

Information for persons with acute or chronic hepatitis B

What can you do to take care of yourself?

- Avoid alcoholic beverages and street drugs. They will damage your liver.
- Avoid taking prescription or over-the-counter medicines unless your doctor tells you it is OK.
- Eat a healthy diet (low fat) and get enough rest. If you are vomiting after eating tell your doctor.
- See your doctor for a check-up.
    a. Persons with acute hepatitis: Discuss with your doctor about having a blood test (6 months after you first became infected) to see if you have become a carrier of hepatitis B. Carriers may develop serious liver disease in the future and can pass the disease on to others.
    b. Persons with chronic hepatitis: Discuss with your doctor about having a blood test every 6-12 months to make sure your liver is healthy and there is not a liver cancer developing. Talk to your doctor about having a special test (called an "ultrasound") done on your liver occasionally.
        - If you get pregnant, tell your doctor you have hepatitis B.
    a. Persons with acute hepatitis: If you are still infected when the baby is born, the baby will need to receive hepatitis B immune globulin and the first dose of the hepatitis B vaccine at birth to prevent infection from occurring.
    b. Persons with chronic hepatitis: It is important that your baby receive hepatitis B immune globulin and the first dose of the hepatitis B vaccine immediately after birth to prevent infection from occurring.
        - Contact the American Liver Foundation for more information (toll-free: 1-800-223-0179).

What can you do to protect others?

- Cover all cuts and sores with a bandage and wash hands well after touching blood or body fluids.
- Throw away any items that have your blood on them, such as bandages and menstrual pads, in plastic bags and close tightly. Wash hands well after touching your blood or body fluids.
- Clean up blood spills with paper towels. Then again clean the area with a bleach solution (1 part bleach to 100 parts water, one-quarter cup bleach to a gallon of water).
- Tell your sex partner that you have hepatitis B and use a condom until that person has been tested and, if necessary, vaccinated against hepatitis B.
- Ask your sex partners and all those who living in your household to see a doctor for testing and for hepatitis B vaccination. Do not allow anyone to come into contact with your blood or body fluids.
- Do not share chewing gum, toothbrushes, razors, scissors, needles for ear piercing, nail files, or anything else that may come in contact with your blood or body fluids.
- Do not share food, drink, cigarettes, lipstick, or lip balm.
- Do not share syringes and needles.
- Do not donate blood, plasma, body organs, sperm or breast milk.

FACT SHEET HEPATITIS B

Information for Persons with Acute Hepatitis

What is hepatitis B?
Hepatitis B is a virus that enters the bloodstream and then infects the liver.

How is the virus spread?
Hepatitis B is most often spread fro m person to person through contact with infected semen, vaginal secretions, or blood. Having sex with an infected person and sharing needles for drug use are two very common ways that people become infected. Babies born to infected mothers and people who live in the house with a "carrier" of hepatitis B are also at risk.

What happens after a person is exposed to hepatitis B?
After a person is exposed to hepatitis B, several things may happen: 1) they may not become infected, 2) they may become infected but not get sick, or 3) they may become infected and get sick.

How soon do the symptoms appear?
It takes anywhere from 2 - 6 months after exposure before the symptoms of infection show.

What are the symptoms?
Symptoms include being **very** tired, nausea, vomiting, fever, stomach pain, tea-colored urine, and yellowing of skin and eyes. Symptoms may be mild or they may be very severe. **Remember**, most people infected with hepatitis B do not develop all these symptoms and may never know they are infected.

How long can an infected person spread the virus?
Most adults with hepatitis B will get rid of the virus within 4 to 6 months. They will no longer be capable of giving the infection to others and they can never get it again. However, about one out of every 10 infected adults, and as many as 9 of 10 infected babies, will become life-long "carriers" of hepatitis B, meaning that they do not get rid of the virus. Most hepatitis B carriers have no symptoms of hepatitis, but some will develop serious liver disease years later.

What can you do to take care of yourself?
Follow these instructions until your doctor tells you that you are no longer infected:

- Avoid alcoholic beverages and street drugs. They will damage your liver.
- Avoid taking prescription or over-the-counter medicines unless your doctor tells you it is OK.
- Eat a healthy diet (low fat) and get enough rest. If you are vomiting after eating tell your doctor.
- See your doctor and follow his/her instructions. Discuss with your doctor about having a blood test (6 months after you first became infected) to see if you have become a carrier of hepatitis B. Carriers may develop serious liver disease in the future and you can pass the disease on to others.
- If you get pregnant, tell your doctor you have hepatitis B. If you are still infected when the baby is born, the baby will need to start hepatitis B shots at birth to prevent him/her from getting hepatitis B.

What can you do to protect others?

- Cover all cuts and sores with a bandage.
- Throw away any items that have your blood on them, such as bandages and menstrual pads, in plastic bags and close tightly.
- Wash hands well after touching you blood or body fluids.
- Clean up blood spills with paper towels. Then again clean the area with a bleach solution (1 part bleach to 100 parts water, one-quarter cup of bleach to a gallon of water).
- Tell your sex partner that you have hepatitis B and use a condom until that person has been tested and, if necessary, vaccinated against hepatitis B, or until you are no longer infected.
- Do not allow anyone to come in contact with your blood or body fluids.
- Do not share chewing gum, toothbrushes, razors, scissors, needles for ear piercing, nail files, or anything else that may come in contact with your blood or body fluids.
- Do not share food, drink, cigarettes, lipstick, or lip balm.
- Do not share syringes and needles.
- Do not donate blood, plasma, body organs, sperm or breast milk.

FACT SHEET — HEPATITIS C
(Non A-Non B, Hep C, HCV)

What is Hepatitis C?
Hepatitis C is a virus that infects the liver.

Who is at risk for Hepatitis C?
IV drug users, persons receiving blood products (such as transfusions) or organ transplants prior to July 1992, persons receiving clotting factors before 1987, healthcare workers, chronic hemodialysis patients, infants born to infected mothers, and persons with multiple sexual partners are at highest risk for hepatitis C.

How do you get Hepatitis C?
The hepatitis C virus is spread through contact with contaminated blood. It can also be spread through close household contact. The role of sexual transmission is not clear, but high-risk sexual activity (multiple partners or history of STD's) is a risk factor. It can also be transmitted from a pregnant woman to her baby. The mode of transmission is unknown in about 10% of cases.

Can Hepatitis C be spread from person-to-person?
Yes. Several routes have been described, but the parenteral (blood to blood) route is the most common. Sexual transmission accounts for approximately 15% of all transmission, although it is not thought to be efficiently transmitted sexually. Mother to infant transmission does occur in about 5% - 6% of infants cases. There is no evidence that hepatitis C can be transmitted by casual contact, through foods, or by coughing or sneezing. There is also no evidence of hepatitis C being transmitted through breast milk.

What are the symptoms of Hepatitis C?
Most people who are infected with hepatitis C do not have symptoms and lead normal lives. Infection with hepatitis C may cause mild symptoms, which usually develop slowly and may include feeling very tired, loss of appetite, stomach pain, nausea and vomiting. Jaundice (yellow skin and eyes) does not commonly occur. Rarely, hepatitis C may result in death.

How soon do symptoms appear?
It takes from 2 weeks to 6 months (usually 6 - 9 weeks) after exposure before symptoms appear. Only about 25% - 35% of infected persons will develop symptoms however.

How long will symptoms last?
Approximately two thirds of people infected with hepatitis C will continue with chronic infection and could potentially develop symptoms related to liver disease. It is estimated that approximately 20% of those people chronically infected with hepatitis C will develop cirrhosis, with the risk of liver cancer increasing to 1-4% per year once a person has cirrhosis. About 1% - 4% of HCV infected people die due to the disease.

How is Hepatitis C diagnosed?
Infection by the hepatitis C virus can be determined by a simple and specific blood test that detects antibodies against HCV. The antibody is insufficient to provide immunity and the test does not distinguish between acute or chronic infection. If the initial test is positive, a second test should be done to confirm the diagnosis and exclude laboratory error. A liver biopsy can determine the extent of liver damage done by the virus.

How is Hepatitis C treated?
At this time, long-acting pegylated interferon, or a combination of pegylated interferon with Ribavirin are being used to treat hepatitis C. Depending on the type of hepatitis C (genotype) a patient has, treatment

can last from 24 - 48 weeks. Effectiveness rates vary from 50% - 80% depending on the type of hepatitis C and how well the patient is able to tolerate the treatment program.

How can Hepatitis C be prevented?

There is no vaccine available for hepatitis C.

- Don't share IV drug needles, syringes, water or works.
- Avoid handling or sharing anything that may have the blood of an infected person on it, such as toothbrushes, razors, straws used for cocaine, needles used for piercing or tattooing, or other personal care articles.
- If you are a healthcare worker, always follow routine barrier precautions and safely handle needles and other sharps.
- A 10% solution of household bleach is believed to kill the virus, and is recommended for the cleaning up of blood spills.

HEPTATITIS C

Also known as Non-A Non-B Hepatitis, HCV Infection

Responsibilities:
Hospital: Report by facsimile, mail or phone
Lab: Report by facsimile, mail or phone
Physician: Report by facsimile, mail or phone
Local Public Health Agency: Follow-up required

Iowa Department of Public Health
Disease Reporting Hotline: (800) 362-2736
Secure Fax: (515) 281-5698

1) THE DISEASE AND ITS EPIDEMIOLOGY

A. Etiologic Agent

Hepatitis C is caused by an RNA virus (in the *Flaviviridae* family). Multiple hepatitis C virus (HCV) genotypes exist, with type 1 being most common in the United States.

B. Clinical Description

Hepatitis C is a disease with varying rates of progression. In general, its course is slowly progressive. For people who are recently infected, only 20% - 30% will experience any related acute symptoms. Therefore, it is uncommon for people to be diagnosed with HCV infection in the acute stage. About 15% of HCV-infected individuals completely recover spontaneously (reasons for this are still unknown), however the remainder develops chronic infection.

Most people are asymptomatic during the first decade or two of chronic hepatitis C. Some patients will experience a range of symptoms including fatigue, headaches, joint aches, muscle aches, nausea, jaundice, loss of appetite, and/or abdominal pain. Of those chronically infected, about 20% eventually develop cirrhosis or cancer of the liver [hepatocellular cancer (HCC)]. Cirrhosis can lead to liver failure in some people and predispose them to the development of liver cancer. Attachment A at the end of this chapter illustrates the natural history of hepatitis C. Factors related to more serious clinical outcomes include drinking alcohol, coinfection with hepatitis A, hepatitis B, or HIV, and taking medications or food supplements that harm the liver.

Treatment of chronic hepatitis C with pegylated interferon with or without ribavirin is indicated for some individuals and may result in a sustained response with elimination of virus in up to 50% - 80% of those receiving a full 6 - 12 months of treatment.

C. Reservoirs

Infected humans are the only known source of this disease.

D. Modes of Transmission

Hepatitis C is a bloodborne pathogen; it is predominantly spread via percutaneous exposure to infectious blood or blood products. Currently, the most prevalent mode of transmission is sharing needles or syringes to inject illicit drugs. Blood transfusions pose an extremely limited risk today, but for those patients who received a blood transfusion prior to July 1992, the risk was approximately 1 in 200 transfused units. Sexual transmission of hepatitis C does occur, but does not appear to be an

efficient mode of transmission. Other potential risks for transmission include long-term hemodialysis, sharing straws for intranasal cocaine use, vertical (mother to infant) transmission, occupational blood exposure, and tattooing or body piercing with non-sterilized equipment. Hepatitis C is not spread via casual contact, kissing, sneezing, hugging, breast milk, and sharing glasses or utensils.

E. Incubation Period

The incubation period for hepatitis C ranges from 2 weeks to 6 months, with an average incubation period of 6 - 9 weeks.

F. Infectious Period

Infectiousness with HCV is variable; anyone with a positive test for HCV antibody should be considered infectious until more extensive testing can be done to rule out the presence of the virus in the blood. The virus can usually be detected in an infected person's blood within 1 - 3 weeks after the initial exposure. The degree of correlation between quantity of circulating virus and infectiousness is not clearly established.

G. Epidemiology

Hepatitis C has a worldwide distribution. In the United States an estimated 4,million people are infected with HCV. It is thought that there are currently about 25,000 new cases of hepatitis C infection each year. HCV infection occurs among persons of all ages, with the highest incidence of acute hepatitis C (new cases) occurring among persons aged 20 - 39 years. Prevalence is highest among groups with specific risk factors, especially injection drug users, patients with hemophilia or on long-term hemodialysis, prisoners, and people who received blood or organ products prior to July 1992. HCV infection is highly prevalent (50% – 95%) among injection drug users (IDUs) and rapidly acquired after drug users first inject drugs. Several studies have now shown that HCV transmission among IDUs is associated with both direct and indirect sharing3 of injection equipment such as cookers and cotton. The risk of occupational exposure for healthcare workers has been estimated to be 1.8% per incident of hollow-bore needle stick exposure to HCV-infected blood. Perinatal transmission is estimated as being about 5%, although if the mother is coinfected with HIV, the risk may be increased to approximately 15%.

Hepatitis C is a reportable disease in Iowa. The majority of newly reported cases are not people with new (acute) disease, but those with chronic infection. There is a large population of undiagnosed people who were infected in the past.

H. Bioterrorism Potential

None.

~~3)~~2) DISEASE REPORTING AND CASE INVESTIGATION

~~A.~~Purpose of Surveillance and Reporting

- To provide information to HCV-infected persons on how to prevent exposing others.
- To identify HCV-infected patients to ensure that they are educated on the need for medical evaluation, how to reduce disease progression, and to provide referrals to medical or support services.
- To determine the prevalence of HCV in specific populations and geographic locations to better direct HCV prevention and service activities.

B. Laboratory and Healthcare Provider Reporting Requirements

Iowa Administrative Code 641-1.3(139) stipulates that the laboratory and the healthcare provider must report cases of hepatitis C. Report any case with a positive result on any of the following tests:

- EIA (ELISA) HCV antibody
- RIBA
- Viral RNA by RT-PCR or bDNA

Note: Please feel free to consult with the Hepatitis C Coordinator at the Bureau of Disease Prevention and Immunization at (515) 281-5027 for assistance in interpreting laboratory results or if you have any other questions regarding a case of hepatitis C infection.

The reporting number for IDPH Center for Acute Disease Epidemiology (CADE) is (800) 362-2736; fax number (515) 281-5698; mailing address:

IDPH, CADE
Lucas State Office Building, 6th Floor
321 E. 12th St.
Des Moines, IA 50319-0075

Postage-paid disease reporting forms are available at no charge from the clearinghouse.
Call (888) 398-9696 to request a supply.

Laboratory Testing Services Available

The University Hygienic Laboratory (UHL) does not provide routine HCV antibody testing for the general public. Testing is generally conducted through hospital and commercial clinical laboratories. Some county health departments are currently offering the HCV EIA antibody test. Please contact the Hepatitis C Coordinator at the Bureau of Disease Prevention and Immunization at (515) 281-5027 for the listing of county health departments offering this service.

3) CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements

Minimum Period of Isolation of Patient

No restrictions except for exclusion from organ and blood donation and counseling to modify activities in order to prevent transmission.

Note: Sexual transmission of hepatitis C does occur, but is infrequent.

Minimum Period of Quarantine of Contacts

None

B. Protection of Contacts of a Case

Personal surveillance for high-risk contacts is recommended. Personal surveillance is defined as the practice of close medical or other supervision of contacts without restricting their movements in order to promote recognition of infection or illness.

Standard precautions for cases are recommended to prevent exposing others to blood and body fluids. IG prophylaxis is not effective and is not recommended for those exposed to HCV-infected individuals, such as healthcare workers who receive a needle stick with a contaminated needle.

C. Managing Special Situations

There are no specific regulations regarding HCV infection in child care settings, food service environments, or in schools or community residential programs. HCV is not spread via casual contact or through food or water. As long as standard precautions are maintained, HCV will not be spread to others in these settings. No one who is HCV-infected should be excluded from attending or working in any of these settings on the basis of their HCV infection.

D. Preventive Measures

The role of the local health department in managing hepatitis C is largely educating infected persons how to care for themselves and avoid spreading infection to others. Little epidemiologic investigation is required except data collection for case reports. Prevention and education includes information on how the disease is transmitted, how to avoid transmitting it, and how patients can protect themselves from more liver damage.

Offer the information and support below to newly identified cases.

1. Provide basic instruction on transmission of HCV and emphasize the need for ongoing medical evaluation. Treatment is available and the patient should be referred to their healthcare provider for treatment options.
2. If the patient is a current injection drug user, provide referrals to needle access and disposal programs and drug treatment programs. This will help prevent the spread of hepatitis C to other individuals.
3. Educate on the need to completely abstain from alcohol to help protect the liver. If a patient needs or wants support to stop drinking, provide referrals to appropriate treatment or support services.
4. Discuss medications that should be avoided (*e.g.,* acetaminophen) as high doses of certain medications can damage the liver. All patients should discuss any medications (including over-the-counter medications), dietary supplements, and herbs with a healthcare provider prior to taking them to be certain they will not damage their liver.
5. Provide information on hepatitis A and B immunization. (Refer to the Hepatitis A and B chapters in this manual.)
6. Discuss sexual transmission of HCV. Indicate that HCV may be transmitted during sex. All contact with blood during sex should be avoided. Emphasize latex barrier protection as a way to prevent the spread of HCV, as well as being a way to prevent the exposure to and transmission of other pathogens.
7. Discuss household transmission of HCV. Household transmission is rare, but to ensure that it does not happen, the patient should not share razors, toothbrushes, nail clippers, or any other item that could be contaminated with blood with other household members.
8. Inform the patient that they should not be restricted from working, preparing food, or taking part in their daily activities unless they have specific symptoms that make it difficult to do so. There are no recommendations suggesting that HCV-infected persons change their exercise routines or have any dietary restrictions.

4) ADDITIONAL INFORMATION

The following is the formal CDC case definition for acute HCV infection. It is provided for your information only and should not affect the investigation or reporting of a case. CDC case definitions are used by the state health department and CDC to maintain uniform standards for national reporting. The CDC does not currently have guidelines for the reporting of non-acute hepatitis C infection.

Clinical case definition for acute HCV infection

An acute illness with a) discrete onset of symptoms consistent with acute viral hepatitis, b) jaundice or elevated serum aminotransferase levels, and c) the laboratory criteria for diagnosis.

Laboratory criteria for diagnosis of acute HCV infection

- Positive HCV antibody test verified with a supplemental test (*e.g.,* RIBA or PCR for viral RNA)
- Serum aminotransferase levels greater than 7 times the upper limit of normal
- Negative for IgM anti-HAV
- Negative for IgM anti-HBc (if done) or HBsAg

References

American Academy of Pediatrics. *2003 Red Book: Report of the Committee on Infectious Diseases, 26th Edition*. Illinois, American Academy of Pediatrics, 2003.

CDC. Case Definitions for Infectious Conditions Under Public Health Surveillance, *MMWR*. 1997; 46:RR-10.

CDC. Recommendations for Prevention and Control of Hepatitis C Virus (HCV) Infection and HCV-Related Chronic Disease, *MMWR*. 1998; 47:RR-19.

Chin, J., ed. *Control of Communicable Diseases Manual, 17th Edition*. Washington, DC, American Public Health Association, 2000.

National Institutes of Health. Management of Hepatitis C. *NIH Consensus Statement*. March 24-26, 1997; 15(3):1-41.