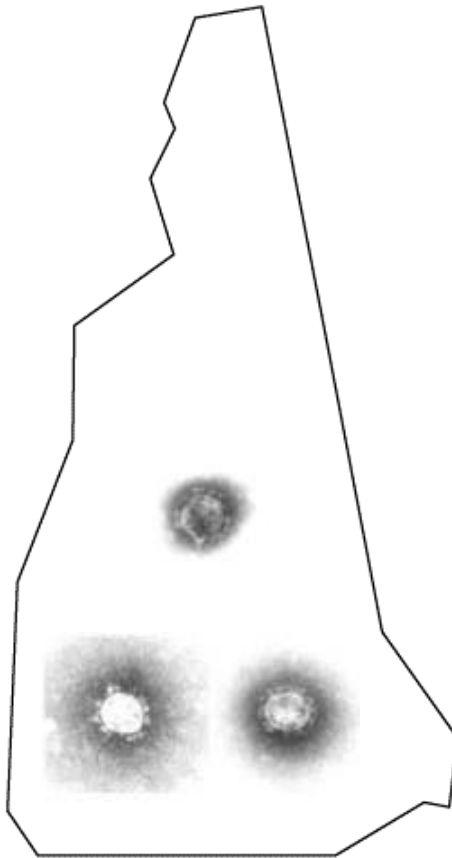


# Maimes Report on Hepatitis C Infection in New Hampshire

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“Incidence of hepatitis C in New Hampshire may be low, but prevalence is alarming.”



**March 2002**

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### **Maimes Report on Hepatitis C Infection in New Hampshire**

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Cover graphic: actual pictures of the hepatitis C virus within an outline of the state of New Hampshire

## Introduction

Hepatitis C virus (HCV) infection is a serious bloodborne chronic disease. There may be 15,000 to 25,000 people in New Hampshire infected with chronic hepatitis C. Most of these people are unaware of their infection because they are not clinically ill. As New Hampshire's population ages, more and more cases of clinical illness caused by HCV will arise.

When we talk about distribution of hepatitis C in New Hampshire, there are two primary measures: incidence and prevalence. Incidence reflects the occurrence of new infections; prevalence reflects the presence of the disease at a specified point in time.

This report will primarily discuss prevalence because incidence data is not currently available. Our conclusion is important to note: **Incidence of hepatitis C in New Hampshire may be low, but prevalence is alarming.**

In New Hampshire, the public health concern regarding hepatitis C is twofold: to prevent the disease from spreading and to control the progression of the disease. Preventing HCV from spreading to the general population is a problem that needs more attention especially in the areas of education and awareness. Controlling its progression is a larger problem and must be addressed sooner rather than later.

Very simply, to control the progression of hepatitis C in those infected, we must identify who is infected and provide them with education and medical alternatives. The disease is presently incurable, yet various treatments and alternatives exist.

If we compare hepatitis C to the HIV/AIDS epidemic in the United States:

**HIV/AIDS** – Approximately 1 million people are infected; at least 42 percent of them are either undiagnosed or untreated. Patients who delay treatment until they have full-blown AIDS have much higher death rates. Current annual estimates of deaths from AIDS are 18,000.

**HCV** - Approximately 5 million people are infected; probably over 90 percent of them are either undiagnosed or untreated. Current annual estimates of deaths are 15,000. CDC projections suggest that HCV may lead to a substantial health and economic burden in the next 10 to 20 years and deaths may increase to 38,000 nationwide in 2010. One study estimated deaths from HCV at 165,000 over the next 10 years (2002 to 2012).

It may be argued that controlling hepatitis C is not the concern of public health especially if those infected have no clinical symptoms of illness. We argue that controlling infectious disease is definitely a public health concern and needs to be addressed.

“Hepatitis C is a disease of major public health importance, and suitable and accurate diagnostic tests as well as behavioral and therapeutic interventions are available.” [CDC]

### Notes

HCV = hepatitis C virus

CDC = Centers for Disease Control and Prevention

References will appear in any future funded reports. Inquire if you need a specific reference.

## What We Know

1. Hepatitis C is a new disease. The virus that causes the disease was first identified in 1988. The blood test for it was developed in 1992, and the first drug treatments were approved in 1997.
2. Hepatitis C is a complex chronic disease for which epidemiology and treatment knowledge is changing rapidly.
3. Hepatitis C is a particularly challenging disease because it can be asymptomatic for the first 10 to 40 years of the infection. Because of the disease's slow progression, most are unaware of their infection.
4. This "silent infectious disease" is a major public health concern because a significant number of those infected are not receiving medical attention for this condition and are losing opportunities for preventive and therapeutic management.
5. In the absence of treatment, hepatitis C will cause serious complications, and possibly death, in approximately 20 percent of infected persons.
6. Transmission of hepatitis C continues in New Hampshire at an unknown rate, particularly among those currently injecting drugs.
7. Hepatitis C is a public health problem in New Hampshire. As many as 25,000 people in the state may be infected. All of them are carriers of the disease.

## What We Don't Know

1. Surveillance data
  - a. Incidence – new infections of hepatitis C, including information such as geographic variations (urban, rural) and demographic factors (such as age, race, sex, and socioeconomic status), as well as behaviors and environmental exposures.
  - b. Prevalence – number of people infected with hepatitis C. This report is the first attempt to identify such a number.

## Who This Report is For

1. Public health workers: municipal, state and federal
2. Healthcare providers: doctors and health professionals
3. Community health organizations: clinics, hospitals and other health care facilities
4. State government leaders and policymakers
5. Health-related groups, associations and medical educators
6. Corporate community: labs, insurance companies, educational and training businesses
7. Citizens
8. Hepatitis C patient advocates
9. Persons infected with hepatitis C

This report is a first step toward the publication of a **Hepatitis C Strategic Plan for New Hampshire**. It is not intended to be complete, but rather to conclude that hepatitis C infection in New Hampshire is a major public health problem that needs to be addressed sooner rather than later.

## Chapter 1

# Hepatitis C

Hepatitis C is a liver disease caused by the hepatitis C virus (HCV). HCV is one of the viruses (A, B, C, D, and E), which together account for the vast majority of cases of viral hepatitis all of which can attack and damage the liver.

Widely viewed as one of the most serious of the five, the HCV virus is spread primarily through contact with infected blood and can cause cirrhosis (irreversible and potentially fatal liver scarring), liver cancer or liver failure. Although the effects of HCV on the liver are the most visible, the virus also can affect other body systems and organs.

Hepatitis C is the most common chronic viral infection in the United States today – more common than HIV infection – and is the leading cause of silent liver inflammation (hepatitis), scarring (cirrhosis), and end-stage disease requiring liver transplantation. [CDC]

### Hepatitis C Infection in the United States

HCV infection was identified in 1988 and is the causative agent for what was formerly known as “non-A non-B hepatitis.” It is estimated to have infected as many as 242,000 Americans annually during the 1980s. Since 1989, the annual number of new infections has declined by more than 80 percent to approximately 41,000 in 1998. Relatively few infections are diagnosed in their acute stages.

### Consequences of Hepatitis C Infection

Our knowledge of the natural history of hepatitis C is still limited. It is estimated that 15 percent of persons with acute HCV resolve their infection without further problems. The remaining 85 percent develop chronic hepatitis. Many people who are chronically infected have no symptoms; others develop mild to serious symptoms. Acute and chronic HCV infection is largely silent.

Cirrhosis of the liver develops in 10 to 20 percent of persons with chronic hepatitis C over a period of 20 to 30 years, and hepatocellular carcinoma (liver cancer) in 1 to 5 percent. It is estimated that less than 5 percent of persons may die from the consequences of long term HCV infection (liver cancer or cirrhosis). HCV is the major reason for liver transplants in the United States and accounts for the majority of the 5,000 people who undergo liver transplantation each year.

Several factors have been shown to influence the natural course of hepatitis C.

The most significant of these seem to be:

- Age at infection – Persons infected over age 35 may have more progressive disease.
- Alcohol consumption – Alcohol appears to have a very negative effect on people affected by HCV.
- Gender – Overall women, especially those under age 50 do significantly better than men, with less severity of infection. Women also appear to spontaneously clear the virus better than men.
- Coinfection with hepatitis B or HIV leads to faster disease progression.

## Hepatitis C – the Numbers

United States	Hepatitis C
Annual new infections	30,000 – 40,000
Total infected	5.7 million*
Chronically infected	4.6 million*
Estimated deaths per year in 2002	15,000 †
Estimated deaths per year in 2010	19,000 †

### Other Facts:

- CDC projections suggest that hepatitis C may lead to a substantial health and economic burden in the next 10 to 20 years and deaths may increase to 38,000 nationwide in 2010.
- The estimate of HCV infections in prisons is 360,000 [*The New York Times* August 6, 2001]; other estimates are considerably higher. Prisoners and those released from prison may account for 15 percent of the total infected with HCV.
- It is estimated that 30 percent of individuals infected with HIV are also chronically infected with HCV.
- Incidence of HCV has been declining since its peak in 1989. However, because of the time lapse between HCV infection and the resulting liver damage, an increasing number of people may be diagnosed or begin to experience symptoms.

\* The CDC accepted estimates are 3.9 million infected and 2.7 million chronically infected. These numbers are based on data from the Third National Health and Nutrition Examination Survey (NHANES III) that measured civilian, non-institutionalized households between 1988 and 1994. Population was based on 1991 Census estimates. Overall prevalence was 1.84 percent. [Hereafter, this data is referred to as NHANES III].

This report updated the NHANES III numbers as follows using revised population data and adjustments: 1.84 percent prevalence times 285 million population equals 5.2 million infected. We added to this number an adjustment for those in prison (400,000); and others, including military and homeless (100,000). Regarding percentage of total infected that are chronically infected: CDC estimated 70 percent. Current estimates are 85 percent. We used 80 percent – 80 percent times 5.7 million infected equals 4.6 million chronically infected.

† Projected annual deaths – From 2002 to 2012 (10 years), estimated deaths from HCV are 165,000. [“Estimating Future Hepatitis C Morbidity, Mortality, and Costs in the U.S.” by J. Wong; *Am J Public Health*, October 2000]

## Chapter 2

# Epidemiological Description of Hepatitis C

### Introduction

Much of epidemiologic research is devoted to a search for causes and factors which influence one's risk of disease. The goal is to identify a cause so that appropriate public health action might be taken. With hepatitis C, we know that infection is caused by exposure to tainted blood.

Epidemiology has been defined as the study of the distribution and determinants of health-related states or events in specified populations, and the application of this study to the control of health problems.

The determinants (or risk factors and causes) of HCV have been identified by the CDC and others and will be discussed throughout this report.

When we talk about distribution of HCV in New Hampshire there are two primary measures: incidence and prevalence. Incidence reflects the occurrence of new infections; prevalence reflects the presence of the disease at a specified point in time.

This report will primarily discuss prevalence because incidence data is not currently available. Our conclusion is important to note: **Incidence of hepatitis C in New Hampshire may be low, but prevalence is alarming.**

### Numbers

Throughout this report we have used numbers from the federal government including the Centers for Disease Control and Prevention, National Institute of Health, Department of Health and Human Services, Department of Veterans Affairs, Department of Justice and the Census Bureau. We also have used numbers from other states and recent scientific studies.

We believe that these numbers are relevant as guides and indicators of hepatitis C infection in New Hampshire. New Hampshire is not an island. It borders three states: Massachusetts, Maine and Vermont, as well as Canada. It contains interstate and international traffic. It contains a growing population that has migrated from other states. Problems that affect the other states of our nation also affect New Hampshire. Viral infection has no borders.

"Statistical models are sometimes misunderstood in epidemiology. Statistical models for data are *never true*. The question of whether a model is true is irrelevant. A more appropriate question is whether we obtain the **correct scientific conclusion** if we pretend that that process under study behaves according to a particular statistical model."

Scott L. Zeger, *American Journal of Epidemiology*

## New Hampshire – Conservative Estimates of Hepatitis C Prevalence

Criteria	Total	Prevalence <sup>†</sup>	Infected
<b>New Hampshire Population*</b>	1,236,000		
Less sub-groups (below)	(141,000)		
<b>TOTAL</b>	<b>1,095,000</b>	<b>0.92%</b>	<b>10,100</b>
<b>High-risk sub-groups</b>			
<b>Veterans in New Hampshire*</b>	135,000	5%	6,750
<b>State Prisoners*</b>	2,370	13%	300
<b>HIV/AIDS Co-infected</b>	1,000	20%	200
<b>State Mental Health Patients</b>	3,000	10%	300
<b>Total Conservative Estimate</b>	<b>1,236,000</b>	<b>1.43%</b>	<b>17,650</b>
CDC national prevalence applied to New Hampshire	1,236,000	1.84%	<b>22,740</b>

We could estimate that the range of hepatitis C infected in New Hampshire is between 15,000 and 25,000.

\*Sources: U.S. Census (2000), VA Department (June 2001), NH Department of Corrections (June 2001)

<sup>†</sup> Prevalence of NH population is calculated at 50 percent of the NHANES III rate (1.84 percent) or 0.92 percent. Prevalence of NH veterans is calculated as follows: 45,000 Vietnam veterans at 8 percent (3,600), 58,000 other-conflict veterans at 4 percent (2,320) and 32,000 non-war veterans at 2 percent (640) – equals 6,560 veterans or 4.9 percent. Prevalence is discussed in detail on the following pages.

## Estimates of Hepatitis C Infection From Other Northern New England States

State	Population	State estimated HCV prevalence	HCV infected	CDC prevalence
New Hampshire	1,236,000	1.43%	17,650	22,740
Maine	1,275,000	1.57%	20,000	23,460
Massachusetts	6,349,000	1.58%	100,300	116,820
Vermont	609,000	1.4%	8,500	11,200

Notes: Estimated numbers of HCV infected from the individual states are lower than the CDC national prevalence of 1.84 percent [NHANES III]. Massachusetts has a metropolitan city, but fewer veterans. Maine has more veterans. HCV patient advocates estimate prevalence of 3 percent in New England.

## **New Hampshire Population**

### **Prevalence of Hepatitis C**

To estimate prevalence of HCV in New Hampshire, we took several factors into consideration.

New Hampshire lacks characteristics that represent a higher prevalence, such as a metropolitan city (over 1 million) or a black population (NH is 0.7 percent), and has characteristics that represent a lower prevalence, such as below “normal” injection drug use, below “normal” poverty and generally high rankings for overall health quality.

Therefore, to be very conservative, we have used an estimated prevalence rate of 50 percent of the national CDC estimated prevalence rate (1.84 percent) or 0.92 percent.

<p><b>New Hampshire population</b> (less sub-groups) – 1,095,000 0.92 percent prevalence = 10,100</p>
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Prevalence data provides an indication of the extent of the HCV problem in New Hampshire and thus may have implications for the scope of health services needed in the state.

### **Epidemiology Demographic Characteristics**

Hepatitis C infection occurs among persons of all ages, but the highest incidence of acute HCV is found among males aged 20 to 39 years. In the general population, the highest prevalence of HCV infection is found among males aged 30 to 49 years. It is estimated that one-quarter of those infected with HIV/AIDS are also infected with HCV.

Since the causative agent of hepatitis C was first identified during the early 1990s, it has become clear that a significant proportion of Americans are chronically infected, and that many of them are at risk of developing life-threatening disease complications during the next several decades.

### **Two Categories of Risk**

We must distinguish between who is at risk of becoming infected and who is infected.

#### **At risk of becoming infected**

- All injection drug users - those who share contaminated needles, syringes, or drug preparation equipment
- Intranasal cocaine users
- Persons infected with HIV/AIDS
- Sexually active (multiple or homosexual partners) people
- Those who get tattoos or have body piercing
- Hemophiliacs
- Healthcare and other workers exposed to needle-sticks and blood
- Those who share household devices (razors, toothpaste) with someone infected
- Those born to an infected mother.

### **Risk profile of those currently infected**

- History of injection drug use (IDU)
  - Most of IDU-associated cases had relatively brief histories of needle sharing, and for many, those experiences occurred in the remote past (primarily during the late 1960s, 1970s and 1980s). Most are persons who are not currently injecting drugs and might not identify themselves, even to their physicians, as former injection drug users.
- Blood transfusions or organ transplants before 1992
- Veterans, especially Vietnam and wartime veterans and those with combat blood exposure
- HIV/AIDS patients
- History of intranasal cocaine use
- Hemophiliacs
- Former prison inmates
- Abnormal ALT levels (measured in blood)
- Healthcare and other workers exposed to needle-sticks and blood
- Prior history of sexual activity (multiple or homosexual partners) or history of sexually transmitted disease
- Severe mental illness
- Shared household devices (razors, toothpaste) with someone infected
- Having tattoos or body piercing
- Infants with an infected mother

### **Areas of greatest risk in New Hampshire – population over 30,000**

<b>Greater Area</b>	<b>County</b>	<b>Population</b>
Nashua	Hillsborough	186,000
Manchester	Hillsborough	174,100
Concord	Merrimack	122,100
Exeter	Rockingham	94,300
Derry	Rockingham	81,400
Mass. Border Towns	Rockingham	66,000
Keene	Cheshire	62,800
Dover	Strafford	62,700
Laconia	Belknap	62,500
Lebanon	Grafton	50,100
Rochester	Strafford	45,400
Peterborough	Hillsborough	35,200
Portsmouth	Rockingham	31,000

Source: Office of State Planning

Hepatitis C infection occurs among persons of all ages; 63 percent of New Hampshire's population (780,000 people) is between the ages of 18 and 64.

### **New Hampshire Vital Statistics**

- Chronic liver disease and cirrhosis resulted in 105 deaths in 1998.
- The same year saw 13 deaths from AIDS.

### **Hepatitis C Prevalence in Neighboring States**

- Massachusetts' estimates more than 100,000 people are infected.
- Maine estimates more than 20,000 people are infected.

### **New Hampshire Faces Challenging Issues with Hepatitis C Infection**

1. Veterans, especially Vietnam War veterans, have the highest prevalence of HCV.
2. Prisons and jails throughout the United States have exceptionally high rates of HCV infection.
3. A growing number of persons diagnosed with HIV infection also suffer from HCV.
4. Insurance programs (including Medicaid systems and HMOs) are becoming increasingly burdened by the costs of HCV treatment and will be further challenged in the next 10 to 20 years by the costs of care for end-stage HCV-related liver disease.
5. It is believed that the most common risk factor for newly acquired HCV infection is shared needle use among persons injecting heroin, methamphetamine or other drugs.
6. Others at risk include patients undergoing inpatient or outpatient treatment for severe mental illness, the homeless and minorities.

### **Hepatitis C in the New Hampshire Media**

Searching all articles in the *Union Leader* (New Hampshire's statewide newspaper) for reference to "hepatitis C" the past two years found only a few very minor mentions of the disease – none that described the disease or provided health information. This indicates a potentially low level of awareness among the general population.

## Military Veterans in New Hampshire

There are approximately 135,000 veterans who live in New Hampshire according to the most recent statistics from the Veterans Administration [June 2001].

In this report, we have used a conservative prevalence rate of 5 percent of veterans infected with hepatitis C. This number indicates that approximately 6,750 veterans are infected with HCV in New Hampshire. Very few veterans have been tested for HCV and very few infected know that they have the disease.

<b>Veterans in New Hampshire - 135,000</b> 5 percent prevalence = 6,750
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### Prevalence Rates Among Veterans

Studies at the Veterans Administration Medical Centers [1998] in Washington, D.C. and San Francisco found that 20 percent and 10 percent of inpatients, respectively, were positive for hepatitis C infection.

In 1998, a national tracking system analyzed 95,000 hepatitis C tests taken at VA facilities. Of those who tested positive:

64%	Vietnam veterans
18.5%	Post-Vietnam veterans
4.5%	Korean veterans
4%	Post-Korean veterans
9%	Veterans from other periods of service

The VA has mounted the largest single hepatitis C screening and testing program in the world. VA screened nearly 540,000 veterans for risk factors of HCV and conducted over 650,000 blood tests in FY 1999 and FY 2000. An estimated 150,000 additional tests have been conducted in the first two quarters of FY 2001. This screening and testing has identified approximately 77,000 unique veterans with HCV [June 2001].

Yet, only a small percent of the veteran population has been tested. Of those tested, the VA [January 2002] reported that 80,000 veterans are infected with hepatitis C. [Note that these are "reported" cases only.]

The total veteran population is estimated to be more than 24 million [2000]. Of those, approximately 83 percent served during wartime (any major conflict) and one-third (8.1 million) served during the Vietnam period. Of the 8.1 million surviving veterans of the Vietnam War, 3.2 million were on active duty in Asia between 1964 and 1973. It is conservatively estimated that 10 percent of these Asian theatre veterans are now infected with HCV. Vietnam veterans are in the age range of 40 to 55 years as currently determined by dates of service.

In its continuing efforts to provide care to veterans infected with hepatitis C, the VA in January 2002 funded four new centers to evaluate and improve HCV screening, testing, clinical care and education. The centers are located in Minneapolis, San Francisco, West Haven, Conn., and Seattle, in conjunction with the Portland, Ore. VA medical center.

## Veterans in Northern New England

State	Total veterans*	Population <sup>†</sup>	% Veterans	Vietnam veterans <sup>†</sup>
<b>New Hampshire</b>	<b>135,000</b>	<b>1,236,000</b>	<b>10.9%</b>	<b>45,000</b>
Massachusetts	543,000	6,349,000	8.6%	162,000
Maine	154,000	1,275,000	12.1%	50,000
Vermont	59,000	609,000	9.7%	20,000
Total (4 states)	891,000	9,469,000	9.4%	277,000

\*Department of VA (2001)

<sup>†</sup>U.S. Census Bureau, Statistical Abstract of the United States (2001); Vietnam era was 1964-1973

### Combat veterans who served in Vietnam may not be aware of their hepatitis C status

Veteran's organizations inform us that veterans from the Vietnam era are more at risk for contracting HCV than those serving in any other war and prevalence may be more than 8 percent. There are a number of likely HCV risk factors for veterans who were in Asia during the Vietnam War:

- Blood transfusions were known to have been a major risk factor for HCV infection before accurate blood-screening tests became available in 1992. Three hundred thousand Americans were wounded and 153,000 were hospitalized during the Vietnam War. Between 1967 and 1969, 365,000 Americans in Vietnam received transfusions. It is estimated that a minimum of 10 percent of those received infected blood.
- An estimated 41 percent of all soldiers deployed to Vietnam were involved in combat.
- Vaccine contamination, airgun/jet injector inoculations, reusable syringes
- Recreational drug use – A CDC study of the health status of Vietnam veterans found that 3 percent had used “hard drugs.”
- There are (unofficial) estimates that up to 30 percent of active-duty combat veterans have tattoos. Many of these were acquired in countries where sanitation was substandard, such as Vietnam.
- Finger stick sampling, dental and medical procedures, surgery, tissue transplantation
- Sharing of razors, toothbrushes, sexual transmission, HCV transmission

### New Hampshire Veterans

In 2000, approximately 19,240 New Hampshire veterans received health care from the VA. That would indicate that approximately 85 percent of veterans (115,000) depended on non-VA health care or required no health care.

## Prison Inmates in New Hampshire

The state prison population in New Hampshire was 2,370 in June 2001. Approximately 300 inmates were incarcerated for drug-related crimes (representing the highest risk for HCV infection).

Hepatitis C infection prevalence as reported by other states ranges from 9 percent to 40 percent.

<b>NH State Prisoners - 2,370</b> 13 percent prevalence = 300
--

### Other considerations

- HCV-infected prison inmates will be released from prison and integrated into the general population. They can and will spread the disease to others.
- New prisoners enter the state prison every year.
- There is also a county jail population throughout the state that includes a higher rate of HCV-infected inmates.

### National statistics - prevalence

- Studies conducted in California, Virginia, Connecticut, Maryland and Texas by state correctional systems report HCV infection rates ranging from 29 to 42 percent – 10 to 20 times the 2 percent infection rate among the general U.S. population. Other data [1996] shows that HCV infections are about 9 to 10 times higher than the general population.
- Women inmates are equally at risk – both California and Texas has a higher prevalence of women infected with HCV than men.
- “HCV prevalence among prison inmates is 3 to 5 times greater than in the general population.” [CDC 2001]

### Inmates Infected With Hepatitis C in State Prisons

State	Total inmates	HCV infected	Prevalence
Connecticut	17,500	2,600	15%
Rhode Island	3,300	825	25%
New York	69,000	9,700	14%
Pennsylvania	36,500	6,200	17%
Arizona	27,000	6,000	22%
(Source: <i>New York Times</i> , August 6, 2001, state corrections departments)			
<b>Statistics compiled from various sources:</b>			
Massachusetts	NA	NA	21%
Maryland	NA	NA	38%
Virginia	NA	NA	30-40%
Maine	1,680	NA	NA
<b>Estimate</b>			
<b>New Hampshire</b>	<b>2,370</b>	<b>310</b>	<b>13%</b>

## HIV/HCV Co-Infected in New Hampshire

### Estimates

The New Hampshire HIV/AIDS Surveillance Summary that includes “reported cases” through June 30, 2001 reports 452 HIV cases from 1991-2001 and 899 AIDS cases from 1981-2001 (with 401 deaths reported). These figures are confusing and only indicate “reported cases.”

Independent estimates of HIV/AIDS prevalence in New Hampshire range from 800 to 1500.

In 1999, the U.S. Public Health Service reported that 40 percent of Americans living with HIV infection were chronically infected with hepatitis C infection and it is their number one killer. Other national estimates are in the range of 25 percent.

<p style="text-align: center;"><b>NH HIV/AIDS Co-infected - 1,000</b> 20 percent prevalence = 200</p>
---

### Other insight

- In 1998, New Hampshire reported 13 deaths from AIDS and 105 deaths from liver disease.

### Maine

- Estimated number of people living in Maine with HIV: 1,200

**Connecticut Department of Public Health** conducted an anonymous HCV seroprevalence study [1999] among clients of HIV counseling and testing sites. The prevalence of HCV was 9.8 percent, compared with 1.3 percent for HIV, with significantly higher prevalence among clients of substance abuse treatment sites (40.2 percent), compared with other sites (6.9 percent).

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## Mental Health in New Hampshire

New Hampshire has 10 community mental health centers and the New Hampshire Hospital that provide services to patients with mental illness. New Hampshire Hospital is a psychiatric hospital with 158 beds for adults. Private facilities [no data available] also exist.

For fiscal year ending June 2001,

- Community mental health centers provided services to 27,169 adults. There were 2,422 admissions to the psychiatric units managed by the centers.
- New Hampshire Hospital had 871 adult admissions.

### Prevalence

One study [2001] reported prevalence of 19.6 percent for hepatitis C among 931 patients that were undergoing inpatient or outpatient treatment for severe mental illness in Connecticut, Maryland, New Hampshire or North Carolina.

<p style="text-align: center;"><b>State mental illness patients (inpatient) - 3,000</b> 10 percent prevalence = 300</p>
---

## Chapter 3

# Hepatitis C Prevention and Control Strategies

“Hepatitis C is a disease of major public health importance, and suitable and accurate diagnostic tests as well as behavioral and therapeutic interventions are available.” [CDC]

### Challenges in New Hampshire

- The biggest challenge posed by the hepatitis C epidemic is most people infected are unaware that they are infected. This is especially troublesome because 8 out of 10 of those infected will go on to develop chronic liver disease, including some who will suffer from significant liver disease (cirrhosis, fibrosis and possible liver cancer) as a result of HCV infection.
- Barriers to prevention and control
  1. Geographic – poor access to facilities
  2. Economic – uninsured, low income
  3. Awareness – lack of knowledge about hepatitis C
  4. Behavioral – injection drug use, alcohol

There are many effective strategies for prevention and control. This preliminary research will identify some of these areas but will not go into detail. Further research is needed.

### Why it is important to identify hepatitis C infected patients early

- Patients have a right to know during early stages of the disease so they can attempt to alter the course of the disease and plan for the future.
- Early treatments are beneficial, cost effective and improve prognosis.
- Further transmissions can be prevented. All people with HCV are carriers of the disease.

Public health’s mission is “to promote health and *quality of life* by preventing, and controlling disease, injury and disability.” [CDC]

## Prevention and Control Strategies

### Primary prevention

Reduce the risk of contracting hepatitis C

- Screen and test of blood, plasma, organ, tissue and semen donations
- Increase awareness and provide risk reduction information about HCV
- Implement and maintain infection-control practices
- Integrate HCV education, counseling and testing into existing relevant programs
- Encourage behavioral change for those at risk

### Secondary prevention

Identify, test, and counsel persons at risk; and manage infected persons’ treatment

- Narrowly focus outreach to persons at high risk for HCV infection through targeted screening, counseling and diagnostic testing.
- Increase awareness about testing options so the status of infection becomes known.
- For those who are HCV-infected, take measures to prevent other types of damage to the liver (avoiding alcohol and certain medications, getting vaccinated against hepatitis A and

hepatitis B) and ensure access to drug therapy, if such treatment is determined to be appropriate in consultation with a medical specialist.

### **Tertiary prevention**

- Act to reduce the limitations of disability from the disease
- Act to minimize the side effects of clinical drug treatment

### **State and local hepatitis C initiatives include of one or more of the following activities**

- Surveillance and research
- Screening, counseling and testing
- Education, including general public education as well as efforts targeting health professionals and those at highest risk
- Specialist consultation and other support for primary healthcare providers
- Provision of hepatitis A and B vaccines to those infected with hepatitis C
- Social support services, including peer-led support groups, advocacy and support in obtaining entitlements, and assistance in coordinating needed medical and behavioral health services
- Provision of medical care for the indigent and uninsured
- Needle exchange programs

### **Activities in Neighboring States**

#### **Surveillance**

Currently, there is hepatitis C surveillance in Maine, Massachusetts and Vermont.

- Maine: The Maine Bureau of Health began mandatory case reporting and expanded surveillance of chronic hepatitis C in 1997. Under the 1997 reporting rules, all healthcare providers were required to confidentially report cases of HCV to the state and to complete follow-up questionnaires regarding demographics, risk and clinical data for each patient. Through this effort, a more comprehensive picture of the nature and extent of HCV infection in the state was obtained.
- Massachusetts: Cases of HCV are reported to the Massachusetts Department of Public Health.
- Vermont: New acute cases of HCV with symptoms are reported to the Vermont Department of Health.
- New Hampshire: Hepatitis C is currently not a reportable disease.

#### **What Maine has been doing to address hepatitis C**

- In 1997, the Maine Bureau of Health initiated mandatory case reporting of chronic HCV infection.
- In December 1997, the Bureau convened the first quarterly meeting of the Maine Hepatitis C Working Group. This group included clinicians, patient advocates and public health professionals interested in sharing information about HCV. Most of its efforts focused on the education of primary care physicians.
- During 1999, in response to growing concern that a comprehensive approach to hepatitis C was needed, the Bureau convened a subcommittee of the Working Group to develop a needs assessment in Maine. This Needs Assessment Steering Committee ultimately included individual members of the HCV Working Group and other invited participants from the Department of Human Services, Bureau of Medical Services, the Maine Center for Public Health, the Department of Corrections, and the Department of Mental Health, Mental Retardation, and Substance Abuse Services.

- In November 2000 the results of the needs assessment were presented to the Steering Committee and these findings were reviewed and discussed. Through a consensus-building process, the Committee developed six recommendations for addressing hepatitis C in Maine.
- In February 2001, a comprehensive statewide needs assessment “At the Crossroads: Hepatitis C Infection in Maine,” was published. [Note: this report used information from the Maine assessment]

### **New Hampshire**

New Hampshire needs to recognize that hepatitis C is a disease of major public health importance and increase efforts in prevention and control. Currently [with a few exceptions], there is no statewide surveillance for HCV; no education of healthcare providers or the public; no screening, testing or counseling; no statistics; and no HCV coordinator for the state [currently 24 states have HCV coordinators]. Basically, hepatitis C is not a priority.

### **Education of Healthcare Professionals**

Knowledge about hepatitis C is complex and rapidly evolving. Healthcare professionals are often not aware of current information concerning diagnosis, medical management and prevention.

Therefore, ongoing access to the latest information must be provided. The state must commit resources to develop and distribute continuing education programs and materials for healthcare professionals.

### **Management of hepatitis C patients by primary care physicians in the U.S**

A survey to assess the knowledge of primary care physicians (PCP) regarding risk factors for hepatitis C, management of HCV patients and attitude regarding testing for HCV was published in 2001. A total of 1412 PCPs completed the survey.

- The vast majority, more than 90 percent, of PCPs correctly identified the most common risk factors for HCV.
- 59 percent indicated they ask all patients about HCV risk factors.
- 70 percent reported they test all patients with HCV risk factors and 78 percent test all patients with elevated liver enzymes for HCV.
- Most PCPs (72 percent) would refer an HCV-positive patient with elevated liver enzymes, but only 28 percent would refer an HCV-positive patient with normal liver enzymes to a specialist.
- One-fourth of the PCPs did not know what treatment to recommend for HCV patients.

Conclusion: Data suggest that hepatitis C patients may be under-diagnosed and under-referred. Specific educational initiatives and practice guidelines for PCPs are needed to optimize the recognition of patients at risk for hepatitis C and to ensure appropriate testing and referral.

Treatment options will be discussed in Chapter 4 – “Medical Management.”

## **Hepatitis C Prevention and Control Efforts - the CDC as a Resource**

### **Centers for Disease Control and Prevention**

The CDC has published a summary document, "National Hepatitis C Prevention Strategy: A Comprehensive Strategy for the Prevention and Control of Hepatitis C Virus Infection and its Consequences." [2001]

This CDC strategy serves to protect the public's health by preventing and controlling hepatitis C infection; enhancing health decisions by providing credible information on hepatitis C; and promoting healthy living through strong partnerships with national, state, and local organizations in both the public and private sectors.

#### **The principle components of the National Hepatitis C Prevention Strategy are:**

- Education of healthcare and public health professionals to improve the identification of persons at risk for HCV infection and ensure appropriate counseling, diagnosis, medical management and treatment.
- Education of the public and persons at risk for infection about risk factors for HCV transmission, and the need for testing and medical evaluation.
- Clinical and public health activities to identify, counsel and test persons at risk for HCV infection, and medical evaluation or referral for those found to be infected.
- Outreach and community-based programs to prevent practices that put people at risk for HCV infection and to identify persons who need to get tested.
- Surveillance to monitor acute and chronic disease trends and evaluate the effectiveness of prevention and medical care activities.
- Research to better guide prevention efforts.

#### **The goals of hepatitis C prevention and control efforts are:**

- To reduce the incidence of new infections by reducing HCV transmission.
- To reduce the risk of chronic liver disease in HCV-infected individuals through appropriate medical management and counseling.

Other useful CDC reference: Recommendations for prevention and control of hepatitis C virus infections and HCV-related chronic disease, MMWR 1988

## Chapter 4

# Medical Management

### Basic Public Health Goals

- Diagnosis and testing of those at risk or with symptoms.
- Counseling and education for those infected.
- Encourage medical management that has potential to slow the progression of HCV infection and limit health complications.

### Medical Management and Rehabilitation Goals

Slow the progression of hepatitis C, engage the patient and his or her family in disease management and rehabilitation, improve effective long-term management of hepatitis C, and improve the affected individual's quality of life.

### It is Important to Slow the Progression of the Disease

It is estimated that, of those chronically infected by hepatitis C, perhaps 10 to 20 percent will go on to suffer from significant liver disease (cirrhosis, fibrosis, and possible liver cancer).

Of those who suffer the adverse developments of hepatitis C, the disease progression may be partly altered by certain behaviors and complementary therapies. Persons who get an early diagnosis and take reasonable steps to protect their liver from controllable sources of damage may have a far less risk of developing severe liver damage.

Additionally, because alcohol use is one of the most important contributing factors to progression of chronic liver disease among persons with hepatitis C, it is important to identify infected individuals as early as possible so that they can be counseled to limit alcohol consumption and be offered treatment if appropriate.

### Medical Management

At the present time, most hepatitis C patients are seen by their primary care doctors and often referred to gastroenterologists. Many specialists do liver biopsies to determine staging and disease progress. They offer combination antiviral therapy to patients who follow their directions; people with drug and alcohol problems are often excluded because of their dependencies. Often, acute hepatitis C is not diagnosed and therefore not treated.

By improving the medical management and quality of life for persons with hepatitis C, their chances of leading a healthy, satisfying and economically productive life are increased for as long as possible. 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. It is especially important to set such a system in place because HCV most often manifests itself as a long-term chronic condition. Its symptoms, such as fibromyalgia or muscle pain and fatigue, make it difficult for patients to function effectively in the community.

## **Recognition of Factors that Influence the Natural Course of Hepatitis C**

The most significant of these seem to be:

- Age at infection – Persons infected over age 35 may have more progressive disease.
- Alcohol consumption – Alcohol appears to have a very negative effect on people affected by HCV.
- Gender – Overall women, especially those under age 50, do significantly better than men with less severity of infection. Women also appear to spontaneously clear the virus better than men.
- Coinfection – HCV infected who also have hepatitis B or HIV may experience faster disease progression.
- Fibrosis – Presence of fat in the liver is associated with higher degrees of fibrosis.
- Drugs – High consumption of acetaminophen (Tylenol) and other drugs can be damaging to the liver.

## **Drug Treatment**

- Expensive antiviral drug treatments (alpha-interferon and ribavirin) cost \$10,000 to \$25,000 per patient annually. This treatment shows signs of curbing the infection, but is effective in only 10 percent to 40 percent of cases, and sometimes makes patients sicker with side effects. It is considered to be chemotherapy and toxic.
- If a patient is using alcohol, drugs, or has a history of depression, cirrhosis, pregnancy, AIDS, or is under 18 or over 65, he or she may not be eligible for treatment [CDC]. Even if patients are eligible for treatment, they may be reluctant to initiate it because of a lack of HCV symptoms and fear of the side effects that may dramatically effect quality of life.
- There is presently no cure for hepatitis C and no vaccine is available.

## **Alternative Treatments**

- Alternative treatments are becoming more widespread and consist primarily of herbs and supplements to strengthen the immune system and protect the liver.
- There is little Western scientific evidence that complementary medicines have anti-viral properties or alter the immune response in a way that eradicates hepatitis C virus. Yet, the health benefits of complementary therapy are supported by expert opinion and a long history of use.
- Other treatments and alternatives will not be discussed in this report.

## **Limited Success of HCV Antiviral Therapy in United States Veterans**

The treatment of hepatitis C virus infection in veterans has become a major task for the VA Healthcare System.

Results of one recent study demonstrated that few veterans, regardless of their age or ethnic background, pursue evaluation and treatment of their HCV infection by specialists. A minority of those patients who undergo a comprehensive clinic evaluation meet the standard eligibility criteria for antiviral therapy. The overall efficacy of antiviral treatment, as measured by the sustained virological response rate, is substantially lower than previously reported in randomized clinical trials.

- HCV-infected veterans are characterized by a unique combination of risk factors that predict a poor response to antiviral therapy, including a preponderance of male gender, HCV genotype I, age over 40 years, and histologically advanced degrees of liver disease.
- The study demonstrates the limitations of outpatient HCV treatment initiatives in the veteran population and suggests that the overall impact of current HCV treatment programs may be small.

## Chapter 5

# A Brief Overview of the Economic Impact and Costs Associated with Hepatitis C

### Cost of Hepatitis C

The economic impact of hepatitis C may be gauged in two basic ways:

- The burden of disease which includes such costs as medical care and the loss of productive work time for patients and families.
- Costs of prevention activities which includes primary prevention (preventing uninfected individuals from acquiring HCV) and secondary prevention (identifying individuals already infected).

### Some Estimates

- According to one study [2001], the total costs associated with HCV in 1997 were \$5.46 billion. Direct medical costs were \$1.8 billion, plus indirect costs (lost earnings) \$3.7 billion.
- According to another study [2000], HCV cost the U.S. healthcare system about \$15 billion in 2000.
- The CDC conservatively estimates expenditures devoted to HCV to be more than \$600 million annually [1998].
- CDC projections suggest that HCV may lead to a substantial health and economic burden in the next 10 to 20 years and deaths may increase to 38,000 nationwide in 2010.

### Treatment Costs

- Expensive antiviral drug treatments (alpha-interferon and ribavirin) cost \$10,000 to \$25,000 per patient annually, plus additional costs for medical management.
- Liver protective therapies that use herbs and supplements to protect the liver and strengthen the immune system cost approximately \$1,200 year.
- Maine Medicaid costs (drug and non-drug) for individuals with HCV diagnoses increased substantially from 1996 to 1999. In 1999, Medicaid made payments of \$10.3 million for 644 HCV-positive patients, an average of \$16,000 per client [expenditures represent costs for all medical needs of persons with hepatitis C diagnoses].

### Veterans Receiving Treatment from the VA

- Reimbursement for the care of veterans on drug therapy for hepatitis C has been at the complex level under the VERA model, equaling approximately \$43,000 per year per patient [FY2000].

## Chapter 6

### Conclusions and Next Steps

**“Incidence of hepatitis C in New Hampshire may be low, but prevalence is alarming.”**

#### Key Findings of this Report Include

- Hepatitis C viral infection is a serious bloodborne chronic disease and a disease of major public health importance in New Hampshire.
- 20,000 New Hampshire residents may be infected with hepatitis C.
- Most of these people are unaware they have the virus.
- Persons who get an early diagnosis and take reasonable steps to protect their liver may have less risk of developing severe liver damage.
- Without successful treatment, hepatitis C will cause serious complications in approximately 20 percent of infected persons.

This report has provided knowledge of hepatitis C including information on epidemiology, prevention, control, medical management and economic impact.

#### What are the Next Steps?

New Hampshire stakeholders need not wait for the State of New Hampshire to provide guidance. They can begin to improve hepatitis C-related services now by identifying opportunities for moving forward.

We need a plan, a response, financial help and research. We also face several challenges. Most important we must not stand still.

#### We Need a Plan of Action

It is the intention of this report to call attention to the fact that hepatitis C is a major public health problem in New Hampshire that needs to be addressed sooner rather than later.

A strategic plan would be the way to begin. Interested parties/stakeholders are needed to form a working group that would together outline a plan of action to address the problem. That group could prepare a **Hepatitis C Strategic Plan for New Hampshire** to detail both plans and actions. It is not enough to have a plan, but it is a necessary first step.

#### We Need a Response

In New Hampshire, there are many individuals, professionals and organizations committed to providing health care and preventing disease. Now is the time for individuals and organizations to step forward and respond to the hepatitis C problem in New Hampshire. One way to respond would be with a policy statement or a letter of support. Other ways would be to join the working group, help to seek funding, provide educational resources, provide training, provide testing or organize patient support groups.

- The New Hampshire Department of Health and Human Services, Bureau of Communicable Disease Control could develop a policy statement.
- Health-related associations/foundations such as NH Public Health Association, NH Hospital Association, Bi-State Primary Care Association, The Twin States Network, NH

Medical Society, Foundation For Healthy Communities and Foundation for Seacoast Health could participate. Also, a representative from the NH legislature or Executive Council could become a champion for the cause.

### **We Need Financial Help**

Unfortunately, New Hampshire does not have adequate funds to support all programs that need support. Yet, if we can acknowledge that we have a problem and that we need help. We can move forward rather than stand still.

Corporations, foundations and federal government resources need to be tapped. Those who are influential must step forward and help.

### **We Need Research**

Primary care health professionals and gastroenterologists need to be surveyed regarding their knowledge, attitudes, beliefs and practices for managing people with HCV infection.

Interviews with medical providers, substance abuse treatment providers, HIV/AIDS community service agencies and people living with HCV infection are needed to address current needs and availability of resources.

### **We Face Challenges as the Demand for Intervention Increases**

- Funding is currently lacking to effectively intervene.
- Health professionals (public, behavioral, medical) are not prepared to respond to the emerging demand for their services from HCV-infected patients.
- There will also be a need for a comprehensive, coordinated system of prevention and care for those living with HCV infection. At the time of this report no such system exists.
- Political barriers also exist within the New Hampshire legislature.

**In New Hampshire, we have given serious attention to the infectious disease called HIV/AIDS that may infect 1,000 people. We also must give serious attention to hepatitis C that may infect 20,000 people.**

**PLEASE RESPOND AS YOU KNOW BEST**

# Appendix

## Steven Maimes

Founded Salam Research in 1999

- Hepatitis work includes working as a hepatitis C patient advocate and researcher in New Hampshire and working on a global hepatitis project that aims to contribute to the prevention and cure of the hepatitis C and hepatitis B viral infections by developing vaccines and immunotherapies.
- Other research in 2002 includes work on a New Hampshire project identifying infectious diseases that have the potential of becoming epidemics.
- A resident of Rochester since 1986; and a native of California.

## Salam Research

Provides outsourced research with two separate focuses:

- Health and medical research
  - Including hepatitis and alternative/complementary medicine
- Business research
  - Including media research and analysis, competitive intelligence, public relations intelligence, and general industry research and analysis
  - Previous media analysis research projects include work for MasterCard, Allstate Insurance, Phillips Petroleum, Corning, Kaiser Permanente and Pfizer.
- Available part-time and contract for research, freelance writing, preparation of reports and hepatitis C advocacy work.

## In Order to Continue Hepatitis C Research and Education

- We need funding and/or a non-profit organization to act as a fiscal agent to receive grant money. Please let us know if you can help.
- We welcome correspondence.

## Working Group - Hepatitis C Strategic Plan for New Hampshire

If you are interested in being part of a Working Group to help create a strategic plan, please let us know – even if you are only willing to offer occasional advice. We will coordinate efforts until such a Group is formed.

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