

III. Epidemiology and Surveillance of Viral Hepatitis

A. Epidemiological Profile

Number of Cases and Rates (per 100,000 persons) of HAV and HBV Infection in the U.S. and in Minnesota, 1988

	U.S (1988)		Minnesota (1988)	
	#	Rate/100,000	#	Rate/100,000
Hepatitis A	23,220	8.6	*N/A	3.85
Hepatitis B	10,258	3.8	N/A	1.4

*N/A: data not available

Hepatitis C chronic infection affects approximately 3.9 million people in the U.S., putting them at risk for chronic liver disease and primary hepatocellular carcinoma. The incidence of acute hepatitis C in Minnesota since 1998 ranges from 7 to 25 cases per 100,000. Since the test for HCV was put into use in 1989, over 15,000 Minnesotans have been diagnosed and reported. Based upon national estimates and given that many cases go undiagnosed and unreported, approximately 40,000 to 60,000 Minnesotans are estimated as being chronically infected with HCV.

Number of Cases and Rates (per 100,000 persons) of HAV Infection by Residence, Gender, & Race/Ethnicity Minnesota, 2000

	#	(%)	Rates (per 100,000)
Residence			
Seven-County Metro Area	131	(66%)	*N/A
Greater Minnesota	66	(34%)	N/A
<i>Total</i>	<i>197</i>		N/A
Gender			
Male	112	(57%)	N/A
Female	85	(43%)	N/A
<i>Total</i>	<i>197</i>		N/A
Race			
White	144	(73%)	3
Black	33	(17%)	19
Asian	6	(3%)	4
American Indian	3	(1.5%)	6
Other	3	(1.5%)	N/A
Unknown	8	(4%)	N/A
<i>Total</i>	<i>197</i>		N/A
Ethnicity			
Hispanic	16	(8%)	16
Non-Hispanic	181	(92%)	N/A
<i>Total</i>	<i>197</i>		N/A

*N/A: data not available

In the year 2000, 79 (40%) cases of hepatitis A were outbreak-associated. Of the five outbreaks investigated, three were common-source food-borne outbreaks, one occurred among homeless shelter residents, and one was a community outbreak. Of the remaining 60% not associated with an outbreak, factors included known contact with a confirmed case, foreign travel, men who have sex with men and a few incidences of consuming raw shellfish or injecting drug use.

**Number of Cases and Rates (per 100,000 persons) of Acute HBV Infection by Residence, Mode of Transmission, Gender, & Race/Ethnicity
Minnesota, 2000**

	#	(%)	Rates (per 100,000)
Residence			
Seven-county Metro Area	46	(79%)	*N/A
Greater Minnesota	12	(21%)	N/A
<i>Total</i>	58		N/A
Mode of Transmission			
Perinatal transmission	6	(12%)	N/A
Sexual contact: Male to Male	6	(12%)	N/A
Sexual contact: Heterosexual	11	(24%)	N/A
Injecting Drug Use	1	(2%)	N/A
Non-sexual contact with HBsAG-positive person	5	(10%)	N/A
Occupational Exposure	0	(0%)	N/A
Risk factors not identified	19	(39%)	N/A
<i>Total interviewed regarding modes of transmission</i>	4	(100%)	N/A
Gender			
Male	41	(71%)	N/A
Female	17	(29%)	N/A
<i>Total</i>	58		N/A
Race			
White	28	(48%)	0.6
Black	13	(22%)	7.6
Asian	10	(17%)	7.0
American Indian	1	(2%)	1.8
Other	-	-	N/A
Unknown	6	(10%)	N/A
<i>Total</i>	58		N/A
Ethnicity			
Hispanic	2	(3%)	1.4
Non-Hispanic	56	(97%)	N/A
<i>Total</i>	58		N/A

*N/A: data not available

Note: From 1995-1999, the average number of acute cases of HBV was 77 in Minnesota. MDH surveillance databases to date include more than 10,000 hepatitis B carriers (persons chronically infected with hepatitis B).

Acute & chronic hepatitis C cases and rates in Minnesota 1995-2002

Between 1995-1999, the average number of acute HCV cases in Minnesota was 14. Surveillance databases as of December 31, 2001 showed nearly 17,000 persons living with hepatitis C in the state, approximately 10,000 are believed to reside in the Twin Cities seven-county Metropolitan area. Outside of the seven-county metro area, Olmsted County has the highest number of residents infected with HCV. Of the 17,000 persons chronically infected with HCV, more than 11,000 are male.

In the year 2000, 15 acute cases of HCV were reported (.5 per 100,000 population). Among them, seven (47%) reported using needles to inject drugs, four (27%) had sexual contact with a known anti-HCV positive partner within 6 months prior to onset of symptoms, and one (6%) reported non-sexual contact with an anti-HCV positive person. No risk factor was determined for three (20%) cases. No cases related to occupational exposure were reported. In addition, more than 2,700 reports of newly identified anti-HCV positive persons were received in 2000, most of who are chronically infected.

The 2000 data for HCV in Minnesota show that the following demographics:

- Five (33%) cases resided in the seven-county Twin Cities metropolitan area and ten (67%) resided in Greater Minnesota;
- The median age among cases was 36 years (26 to 43 age range);
- Slightly more than half (53%) of cases were male;
- Twelve (80%) cases were white; one (7%) was black; one (7%) was American Indian and two were unknown.

Between 1990-2001, nearly 15% of infected persons were identified as Black, higher than the population percentage in Minnesota. In addition, incidence rates by race/ethnicity for acute hepatitis cases in 2001 reveal American Indians as disproportionately infected at 9.9 per 100,000, compared to Whites at .4 per 100,000.

B. Specific High-Risk Populations and Settings in MinnesotaSTD Clinics:

A pre-vaccination serologic survey of HBV infection among patients visiting public sexually transmitted disease (STD) clinics in the Twin Cities metropolitan area was conducted from 1994 to 1996. Of 3,508 persons screened, 63 (2%) were positive for HBsAg (i.e., chronic HBV carriers) and 447 (13%) were positive for anti-HBs (i.e., immunity to HBV, signaling history of disease or previous vaccination). Overall, 510 (15%) had evidence of previous HBV markers, suggesting a maximum prevalence of HBV infection of 14,538 per 100,000 in this population. The actual prevalence may be lower if a significant number of clients had a history of previous HBV vaccination, but clinic providers feel this is unlikely.

Community-Based Clinics:

In 2002, a telephone survey of community-based clinics funded by the MDH assessed the percentage of patients deemed “at risk for” viral hepatitis and “in need of” a vaccination for Hepatitis A or B. Clinic managers or head nurses contacted in a variety of clinics around the state provided the estimates below.

Percent at Risk for:

Clinic Name	Patient Encounters 2001	Estimate of Patient Population	Hepatitis A	Hepatitis B
Bloomington Public Health	--	600	8%	70%
Lake Superior Community Health	5,600	1,900	25%	60%
Model Cities Health Center	50,000	--	50%	50%
Nucleus Clinic	3,200	989	10%	10%
One to One Clinic	--	500	20%	100%*
Quiet Care Clinic	1,200	900	40%	65%
SEMCAC Winona County	2,000	1,600	55%	60%
Red Door Clinic	--	14,000	40%	100%*
Room 111 Clinic	--	7500	40%	80%

Percent at risk for:

Planned Parenthood	Patient Encounters 2001	Estimate of Patient Population	Hepatitis A	Hepatitis B
Albert Lea	4,300	4,000	25%	30%
Brainerd	2,200	2,000	5%	100%*
Fairmont	1,200	800	50%	50%
Grand Rapids	1,700	1,700	Less 5%	95%
Mankato	12,000	3,200	30%	40%
Moorhead	3,500	2,500	5%	25%
Owatonna	1,500	1,300	5%	20%
Red Wing	2,000	1,500	5%	10%
Rochester	8,000	--	40%	45%
St. Cloud	--	3,000	5%	12%
Thief River Falls	--	850	Less 5%	15%
Virginia	--	700	50%	65%
Willmar	--	2,600	12%	90%

*STD clinic seeing patients that present themselves as at risk for an STD, thus all are assumed to be at risk for hepatitis.

Inmate Populations:

A 1999 report to the commissioner of the Minnesota Department of Corrections (DOC) estimated that 20% of the inmate population in Minnesota is chronically infected with HCV, making it the most common serious chronic disease among the state's incarcerated offenders. Estimates at that time indicated that if 20% of the inmate population were infected and 10% of them might be eligible for treatment based on medical criteria, approximately 100 offenders may be in need of and eligible for medical treatment for HCV. More recent estimates project approximately 15% of the incarcerated inmate population as chronically infected with hepatitis C.

Following that report, in April 2000, the MDH began a collaborative pilot study with the DOC to screen all inmates for risk factors for HBV, HCV and HIV on intake to the corrections system. HBV and HCV tests were offered at the time of assessment, and correctional facility staff provided follow-up on inmates with identifiable risk factors but who initially refused tests.

MDH performed data management and analysis. Analysis is not yet complete, however preliminary screening data suggests that these inmates are at high risk for viral hepatitis and HIV. Of the 470 male and female adult inmates screened between April 18, and June 7, 2000, 116 (25%) confirm injection drug use and 283 (60%) report intranasal drug use. Of those inmates with injection drug use history, 62 recall sharing needles with other people. Two hundred seventy-one (58%) respondents report having had sex with multiple partners in the last year. Survival sex was noted for 67 (14%) of the respondents and 169 (36%) of respondents indicated past diagnosis with STDs. Overall, 429 (91%) inmates reported at least one behavior that put them at risk for viral hepatitis.

Injecting Drug Users

The Hennepin County methadone clinic sees about 50 clients a year for detoxification and about ten clients that they work with intensively for about two years. All of their clients receive HCV screening upon admittance to the clinic. In 1999, a review of their clients found that 86% tested positive for HCV in the initial screening. Current estimates for HCV are slightly lower now, possibly due to an increase in “snorting” drugs rather than injecting drugs and younger clients with a history of less drug use. Clients who test negative and are in the intensive program are repeat tested annually for two to three years to ensure clients are not engaging in high-risk behaviors. All clients also receive health education materials and counseling. Long-term needs include ongoing health education materials with simple and clear messages, geared toward low literacy individuals and with limited use of statistics.