

Definition/Description:

Hepatitis C virus is a blood borne pathogen primarily transmitted through the sharing of contaminated needles and syringes by injection drug users. Risk of transmission is also possible through transfusion of blood or blood products before 1990 (prior to screening), as well as through needlestick injuries. In Manitoba, hepatitis C virus was added to the list of provincially notifiable diseases in January of 1999. All cases (acute and chronic) are reportable by laboratories and attending health care professionals to the Director of Communicable Disease Control at Manitoba Health.

Source:

- *Case Event (Numerator) Data:* Communicable Disease Control Unit, Public Health Branch, Manitoba Health
- *Population (Denominator) Data:* Decision Support Services, Health Information Management Branch, Manitoba Health
- *Tabulations:* Population Health and Health Systems Analysis Unit, Quality and Decision Support, Winnipeg Regional Health Authority

Findings:

Newly Detected Cases

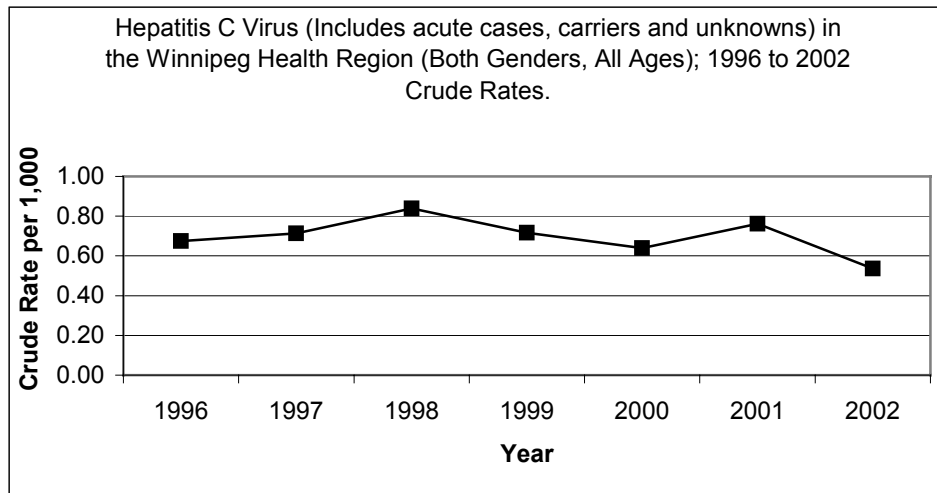
Since 1996, the number of newly detected cases of hepatitis C virus in the Winnipeg Health Region (WHR) has fluctuated between 346 and 534 (Table HCV1).¹ In 2002, 346 newly detected cases of hepatitis C virus were reported among residents of the WHR – an infection rate of 0.54 per 1000 population (Table HCV1; Figure HCV1). In 2000, the national rate of hepatitis C virus infection was 0.61 per 1000 population; the provincial rate was 0.44 per 1000 population.²

Table HCV1
Hepatitis C: Cases, Crude and Age-Adjusted Rates in the WHR, 1996-2002

Year	Frequency	Crude Rate per 1000	Age-adjusted Rate per 1000
1996	431	0.67	0.56
1997	456	0.71	0.70
1998	534	0.84	0.83
1999	456	0.72	0.71
2000	410	0.64	0.64
2001	490	0.76	0.76
2002	346	0.54	0.54

¹In Manitoba, a province-wide blood-recipient notification project was implemented in 2001 to identify new cases of hepatitis C virus among recipients of blood or blood products between January 1986 and July 1990.

²Notifiable Diseases On-Line, Health Canada, 2004.

Figure HCV1**Age and Gender**

From 1998 to 2002, 2236 newly detected cases of hepatitis C virus were reported in the Winnipeg Health Region. Of this number, 1340 (60%) cases occurred among males (Table HCV3). Overall, age-specific rates are greatest among individuals between the ages of 20 and 54 years (Table HCV2). Among females, age-specific rates are greatest for those 20 to 49 years; for males, age-specific rates are greatest for those cases 25-54 years of age (Table HCV2).

Geographical Variation

Cases, crude rates and age-adjusted rates of infection are summarized by Community Area and Neighbourhood Cluster for 1998-2002 and are presented in Table HCV3 and Table HCV4 respectively. Across Community Areas, the highest numbers of cases are reported in Downtown (796 cases; 35.6%) and Point Douglas (434 cases; 19.4%), accounting for more than half of all cases.

Crude rates of infection are greatest in Downtown (2.28 cases per 1,000) and Point Douglas (2.15 per 1,000). Rates of infection ranged from 0.20 and 0.70 per 1000 for the remaining Community Areas. Similar patterns across Community Areas are evident for both males and females (Table HCV3); however, the rate of infection among males exceeds that of females. Age-adjusted rates are similar to crude rates.

Rates of infection by Neighbourhood Clusters further illustrate geographical variation across the WHR. For example, Downtown East 11B (3.40 per 1000) and Point Douglas South 10B (3.75 per 1000) experience rates of infection twice that of their matching clusters (Table HCV4). This variation is further illustrated in Figure HCV2.

Table HCV2
Hepatitis C: Age-specific rates in the WHR per 1000 Population, 1998-2002

Age Group	Females		Males		Both Genders	
	Cases	Age-Specific Rate	Cases	Age-Specific Rate	Cases	Age-Specific Rate
4 and Under	2	0.02	0	0.00	2	0.01
5-9	2	0.02	1	0.01	3	0.01
10-14	3	0.03	2	0.02	5	0.02
15-19	34	0.34	13	0.12	47	0.23
20-24	83	0.76	48	0.45	131	0.60
25-29	107	0.94	93	0.83	200	0.88
30-34	168	1.42	202	1.71	370	1.57
35-39	160	1.19	242	1.79	402	1.49
40-44	119	0.90	276	2.09	395	1.49
45-49	87	0.71	227	1.92	314	1.30
50-54	50	0.47	135	1.32	185	0.88
55-59	16	0.20	33	0.44	49	0.32
60-64	13	0.20	25	0.42	38	0.31
65-69	13	0.2	11	0.2	24	0.2
70-74	13	0.2	13	0.3	26	0.2
75-79	15	0.25	12	0.32	27	0.28
80-84	4	0.1	5	0.22	9	0.14
85+	7	0.17	2	0.13	9	0.16

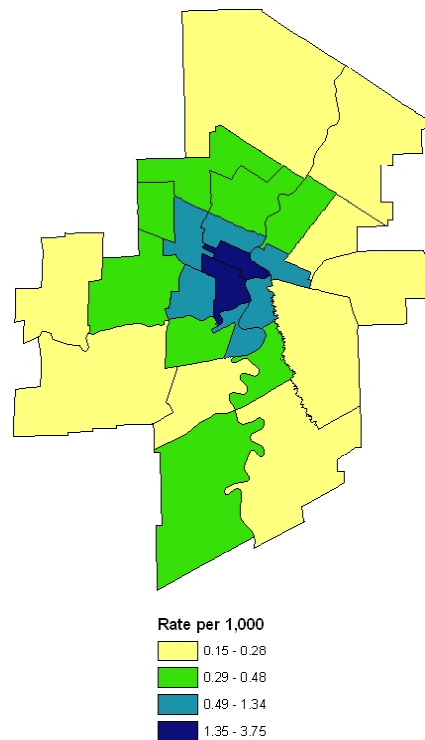
Table HCV3
Hepatitis C: Cases, Crude and Age-Adjusted Rates in the WHR by Community Area, 1998-2002

Community Area	Females			Male			Both Genders		
	Cases	Crude Rate	Age-Adjusted Rate	Cases	Crude Rate	Age-Adjusted Rate	Cases	Crude Rate	Age-Adjusted Rate
St.James Assiniboia (01)	38	0.24	0.25	43	0.30	0.31	81	0.27	0.28
Assiniboine South (02)	12	0.13	0.13	24	0.27	0.29	36	0.20	0.20
Fort Garry (03)	26	0.17	0.16	53	0.36	0.36	79	0.26	0.26
St. Vital (04)	39	0.25	0.24	46	0.32	0.31	85	0.28	0.28
St. Boniface (05)	36	0.30	0.30	67	0.59	0.57	103	0.44	0.44
Transcona (06)	13	0.17	0.16	22	0.29	0.28	35	0.23	0.22
River East (07)	85	0.36	0.37	110	0.50	0.51	195	0.43	0.44
Seven Oaks (08)	41	0.27	0.28	68	0.49	0.48	109	0.38	0.38
Inkster (09)	56	0.72	0.71	52	0.67	0.67	108	0.70	0.69
Point Douglas (10)	193	1.92	2.05	241	2.38	2.39	434	2.15	2.23
Downtown (11)	293	1.70	1.68	503	2.84	2.60	796	2.28	2.18
River Heights (12)	64	0.43	0.42	111	0.85	0.82	175	0.62	0.61
WHR TOTAL	896	0.54	0.55	1340	0.86	0.85	2236	0.70	0.70

Table HCV4. Hepatitis C: Relative Ratios and Relative Differences in the WHR by NC for Both Sexes, 1998-2002

Community Area	Neighbourhood Cluster	Cases	NC Rate per 1000	Rate of WHR Excluding NC per 1000	Relative Ratio of each NC area as compared to the rest of the WHR	**Difference in Rate per 1000 between each NC Area and the rest of the WHR
St. James-Assiniboia	01A	36	0.22	0.72	0.3	-0.5
	01B	45	0.33	0.71	0.5	-0.4
Assiniboine South	002	36	0.20	0.73	0.3	-0.5
Fort Garry	03A	22	0.17	0.72	0.2	-0.6
	03B	57	0.33	0.72	0.5	-0.4
St. Vital	04A	58	0.43	0.71	0.6	-0.3
	04B	27	0.16	0.73	0.2	-0.6
St. Boniface	05A	69	0.89	0.69	1.3	0.2
	05B	34	0.22	0.72	0.3	-0.5
Transcona	006	35	0.23	0.72	0.3	-0.5
River East	07A	90	1.01	0.69	1.5	0.3
	07B	60	0.31	0.72	0.4	-0.4
	07C	39	0.28	0.72	0.4	-0.4
	07D	6	0.17	0.70	0.2	-0.5
Seven Oaks	08A	37	0.35	0.71	0.5	-0.4
	08B	69	0.43	0.71	0.6	-0.3
	08C	3	0.15	0.70	0.2	-0.6
Inkster	09A	33	0.38	0.71	0.5	-0.3
	09B	75	1.10	0.69	1.6	0.4
Point Douglas	10A	172	1.30	0.67	1.9	0.6
	10B	262	3.75	0.63	5.9	3.1
Downtown	11A	255	1.34	0.66	2.0	0.7
	11B	541	3.40	0.56	6.1	2.8
River Heights	12A	85	0.48	0.71	0.7	-0.2
	12B	90	0.86	0.69	1.2	0.2
Winnipeg Health Region		2236	0.70			

Figure HCV2
Hepatitis C: Crude Rates in the WHR by Neighbourhood Cluster, 1998-2002



Relative Ratios and Rate Differences

Relative ratios and rate differences were generated at the Neighbourhood Cluster level to identify the magnitude of variability in infection rates across the WHR (Table HCV4). Point Douglas South 10B, Downtown East 11B, Inkster East 09B, Point Douglas North 10A, Downtown West 11A, River East South 07A, River Heights East 12B and St. Boniface 05A experience rates of infection between 1.2 and 6.1 times greater than the remainder of the WHR.

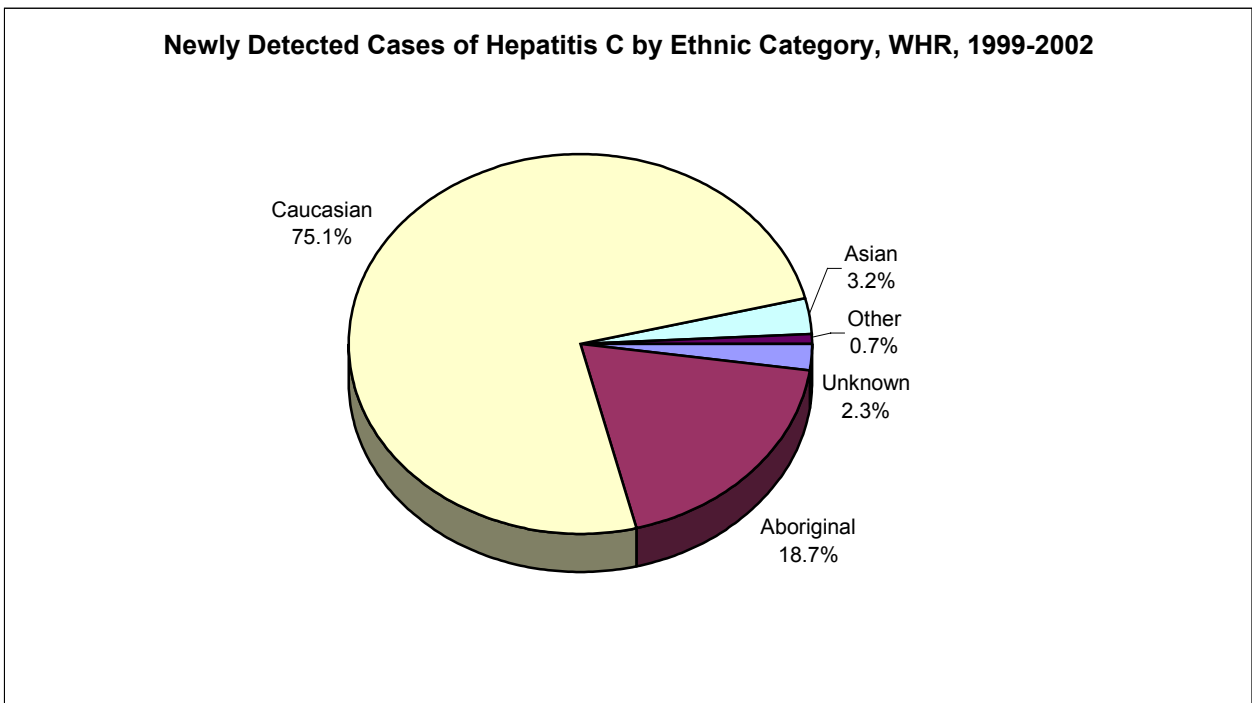
Differences in the rate of infection between Neighbourhood Clusters reflect the actual number of cases per 1000 population (Table HCV4). In Point Douglas South 10B, a rate difference of 3.1 translates into approximately 3 more persons with hepatitis C virus per 1000 population than the remainder of the region. Conversely, St. Boniface East 05B experienced a rate difference of -0.5 , which translates into less than 1 (fewer) case of hepatitis C per 1000 population than the rest of the region.

Ethnic Origin

Beginning in January 1999, hepatitis C virus was officially added to the provincial list of reportable diseases and the *Viral Hepatitis Investigation Form* was introduced to collect epidemiological information for each newly detected case (e.g., ethnicity, mode of transmission).

From 1999-2002, the predominant ethnic categories reported among newly detected cases of hepatitis C were Caucasian (75.1%) and Aboriginal (18.7%) (Figure HCV3). Of note, information that describes ethnicity was missing or unknown for 2.3% of cases reported between 1999 and 2003.

Figure HCV3



Mode of Transmission

The predominant mode of transmission among newly detected cases of hepatitis C virus is injection drug use. From 1999 to 2002, over 40% of newly detected cases were attributed to injection drug use and this value increases to 56% when cases with missing or unknown mode of transmission are excluded (Table HCV5).

Table HCV5
Hepatitis C: Number of Newly Detected Cases by Mode of Transmission,
Winnipeg Health Region, 1999-2002

(Includes Missing and unknown)

Risk Factor	Number	Percentage
IV Drug Use	688	40.4
Unknown/Missing	469	27.6
Recipient of Blood	207	12.2
Tattoos, ear/body piercing	131	7.7
NIR	121	7.1
Possible Sexually Transmitted	73	4.3
Needle stick	13	0.8
Total	1702	100.0

Highlights:

- In 2002, 346 newly detected cases of hepatitis C virus were reported among residents of the WHR – *an infection rate of 0.54 per 1000 population.*
- Overall, age-specific rates are greatest among individuals between the ages of *20 and 54* years. Among *females, age-specific rates are greatest for those 20 to 49 years*; for *males, age-specific rates are greatest for those cases 25-54 years of age.*
- Crude rates of infection are greatest in *Downtown (2.28 cases per 1,000)* and *Point Douglas (2.15 per 1,000)*. In *Downtown East 11B (3.40 per 1000)* and *Point Douglas South 10B (3.75 per 1000)*, rates of infection are twice that of their matching clusters.
- The predominant ethnic categories reported among newly detected cases of hepatitis C were *Caucasian (75.1%)* and *Aboriginal (18.7%)*.
- The predominant mode of transmission among newly detected cases of hepatitis C virus is *injection drug use.*

ⁱ Additional information describing communicable diseases (including sexually transmitted and blood-borne infections) and immunization in the Winnipeg Health Region is available in **Report on Communicable Diseases and Immunization in the Winnipeg Health Region, 2004** [available fall 2004].