

Hepatitis B and Hepatitis C Surveillance Report, Connecticut, 2007-2009



Department of Public Health
HIV/AIDS and Hepatitis Surveillance
AIDS and Chronic Diseases
410 Capitol Ave, MS# 11ASV
Hartford, CT 06134
www.ct.gov/dph/hepatitis

Hepatitis B and Hepatitis C Surveillance Report, Connecticut, 2007-2009

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Prepared by
Suzanne Speers, MPH
Kristin Gerard, MPH
Nicholanna Prince, MS

HIV/AIDS and Hepatitis Surveillance
AIDS and Chronic Diseases
Public Health Initiatives Branch
860-509-7900

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Executive Summary

The purpose of this report is to provide descriptive statistics, to increase awareness and knowledge of hepatitis B (HBV) and hepatitis C (HCV), and to provide information for prevention. Approximately 4.4 million Americans are living with chronic viral hepatitis and an estimated 65,000 are living in Connecticut. Many are not aware of their infection. DPH has implemented screening, education, and vaccination, when applicable, in state funded STD clinics, HIV Counseling and Testing sites, and has worked with other providers in high-risk settings to provide these services. These public health endeavors have been moderately successful in identifying people living with viral hepatitis and preventing new infections. Expansion could ensure that more infected persons receive care to prevent or delay onset of liver disease and services to prevent further transmission.

- From 2007–2009, 87 acute HBV cases were reported in Connecticut. Males were infected at a rate of 1.2 per 100,000 person years compared to 0.5 for females. The black and Hispanic populations had rates of 2.2 and 0.9 respectively, compared to whites at 0.6 per 100,000 person years. The highest rate was seen in the 30 to 39 year old age group at a rate of 2.1 per 100,000 person years.
- Annual numbers of reported acute HBV cases have declined from 39 in 2007 to 17 in 2009. This is likely due to population-based vaccination in school-aged children and targeted vaccination programs in occupational and behavioral high-risk groups. However, missed opportunities for vaccination of high-risk groups continue to occur.
- Risk factors for HBV are trending away from traditional injection drug use and sexual exposures towards unidentified or other risk factors.
- From 2007-2009, 1,418 people were reported to be living with chronic HBV in Connecticut. The rate in males is 17.0 per 100,000 persons years compared to 10.1 for females. Asian/Pacific Islanders are disproportionately affected with a rate of 134.4 per 100,00 person years compared to 25.2 in blacks and 3.7 in whites. Rates by age group are 31.1 per 100,000 for people aged 30-39 and 21.7 for people aged 40-49.
- Being born in a country that is considered highly endemic or moderately endemic for HBV infections is the most common risk factor for people living with chronic HBV in Connecticut (29% of cases).
- During 2007-2009, 121 people with chronic HBV died.
- From 2007-2009, 93 acute HCV cases were reported in Connecticut. Men and women were infected at the same rate, 0.9 per 100,000 person years. The Hispanic population was disproportionately infected at a rate of 2.1 per 100,000 person years compared to whites at a rate of 0.8 per 100,000 person years, and the highest rates of infection were seen in the 20-29 age group with a rate of 2.7 per 100,000 person years followed by the 30-39 year age group at 1.9 per 100,000 person years.
- Acute HCV increased from 20 reported cases in 2007 to 54 reported in 2009. This may be a surveillance artifact due to enhanced surveillance methods implemented in 2008.
- Injection drug use or street drug use in the 6 months before onset was the most common risk factor for acute HCV infections (68% of cases).
- From 2007-2009, 6,918 people were reported to be living with chronic HCV in Connecticut. The rate in males was 84.8 and the rate in females was 47.0 per 100,000 person years. Hispanics and blacks had rates of 87.9 and 71.2, respectively compared to whites at 38.9 per 100,000 person years. Rates by age group were 152.1 per 100,000 person years for those aged 50-59 and 111.5 for people aged 40-49.
- Using injection or street drugs, even one time, was the most common risk factor (54% of cases) for people living with chronic HCV in Connecticut.
- During 2007-2009, 1,232 people with chronic hepatitis C died.

Introduction

The Hepatitis B and C Surveillance Report presents data the Department of Public Health (DPH) collected as part of core and enhanced surveillance for hepatitis B and C in Connecticut. These data are based on newly reported cases of acute and chronic hepatitis B and C reported to DPH during the years 2007 through 2009.

Connecticut law requires confidential case reporting to DPH for acute hepatitis B and acute hepatitis C by providers and confidential laboratory reporting of significant findings for hepatitis B surface antigen (HBsAg), IgM antibody to the core hepatitis B antigen (IgM anti-HBc), hepatitis C antibody (anti-HCV) with signal to cut off ratio, supplemental anti-HCV (RIBA), and polymerase chain reaction for hepatitis C RNA (PCR) used as a confirmation test. DPH staff actively follow all newly reported laboratory markers of hepatitis B and C with the ordering clinician to determine case status, reason for testing, and exposure. Individuals determined to have acute hepatitis B or C are contacted and interviewed to determine the source of exposure, educated regarding keeping the liver healthy and reducing transmission to others, and provided with referrals to care, if applicable.

Data are maintained in confidential hepatitis B and hepatitis C registries. The registries enable DPH to assess the burden of hepatitis in Connecticut, monitor trends in incidence and risk factors for disease, identify infected persons requiring counseling and medical follow-up, and identify and control outbreaks. The hepatitis B registry currently contains records for hepatitis B test results from 1992 – present. Prior to 2004, the registry included acute cases of hepatitis B, acute cases that became chronic, women of childbearing age with positive HBsAg test results, and perinatal infections. In 2004, collection of all chronic hepatitis B infections in Connecticut residents began. The hepatitis C registry contains records for positive hepatitis C test results from 1994–1996 and 1999–present. During 1997–1998, anti-HCV was removed from the list of laboratory reportable significant findings. Since 2004, cases are classified as acute or chronic/resolved.

DPH uses the Council of State and Territorial Epidemiologists (CSTE) 2000 acute hepatitis B confirmed case definition and the 2007 chronic hepatitis B confirmed case definition to identify cases of confirmed hepatitis B and the CSTE 2007 acute hepatitis C confirmed case definition and the 2005 past or present hepatitis C confirmed case definition to identify cases of confirmed chronic hepatitis C.

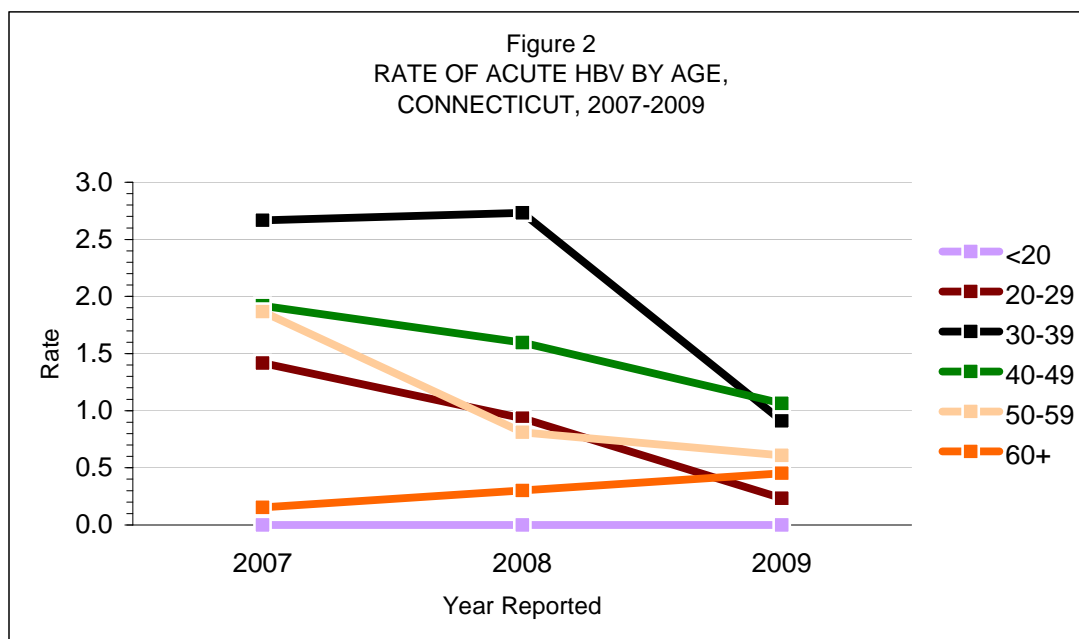
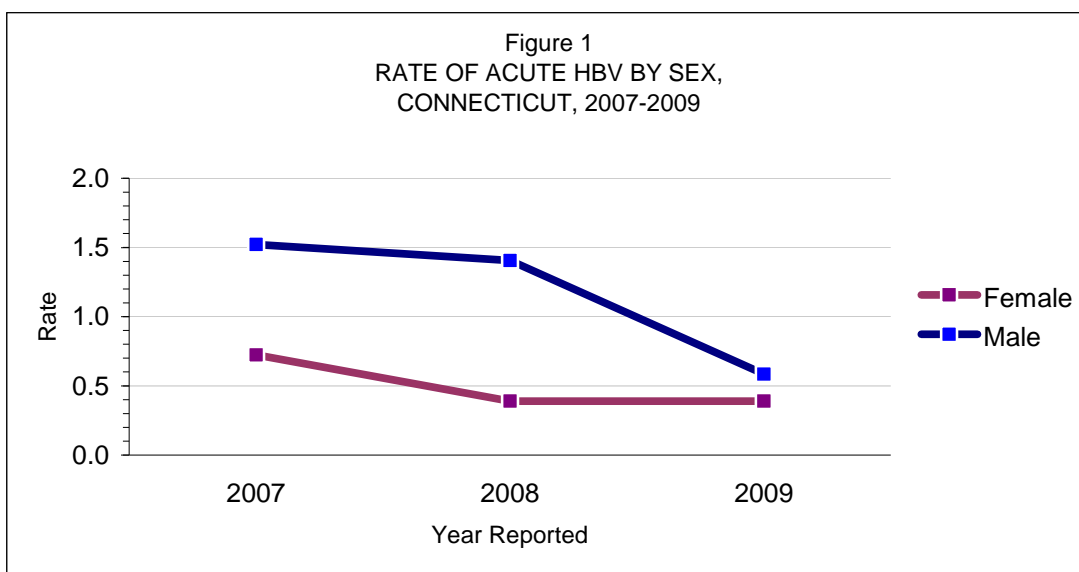
Please note, many individuals with acute infections of hepatitis B (30-50%) and C (90%) do not display symptoms or may not present to a clinician so the number of acute infections identified may under-represent the true incidence in Connecticut. The chronic viral hepatitis numbers do not represent incidence of chronic hepatitis in Connecticut; rather the data represent the number of cases reported to the Department of Public Health during the time frame analyzed. Many people newly reported with hepatitis B or hepatitis C were infected in the past and are being tested now because of illness or testing recommendations. In addition, the numbers in the chronic hepatitis disease registries may change slightly from year to year. The case status may change based on corrections or additional information received; therefore, year to year aggregate case counts and some data elements may change over time.

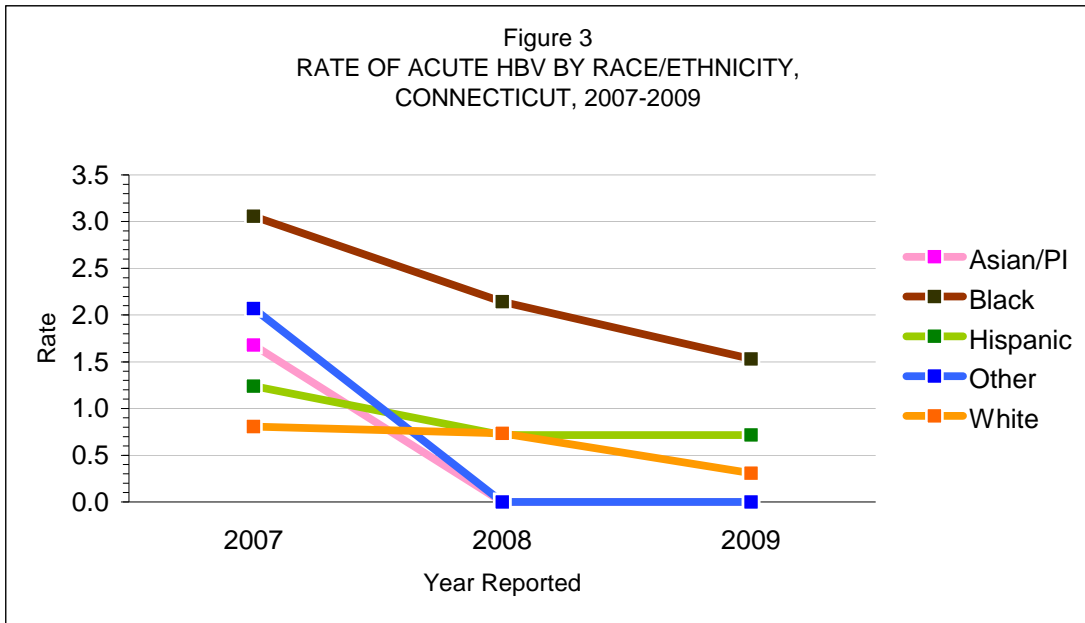
Hepatitis B – Acute

During 2007 and 2009, 87 acute hepatitis B cases were reported in Connecticut. Sixty-nine percent of cases were male and 62% were between 30 and 49 years of age. The black or African American population was disproportionately affected by acute HBV in Connecticut, with a rate three times higher than whites and two times higher than Hispanics. Risk factors for acute HBV are trending away from the traditional injection drug use (IDU) or sexual risk and towards unidentified risk factors.

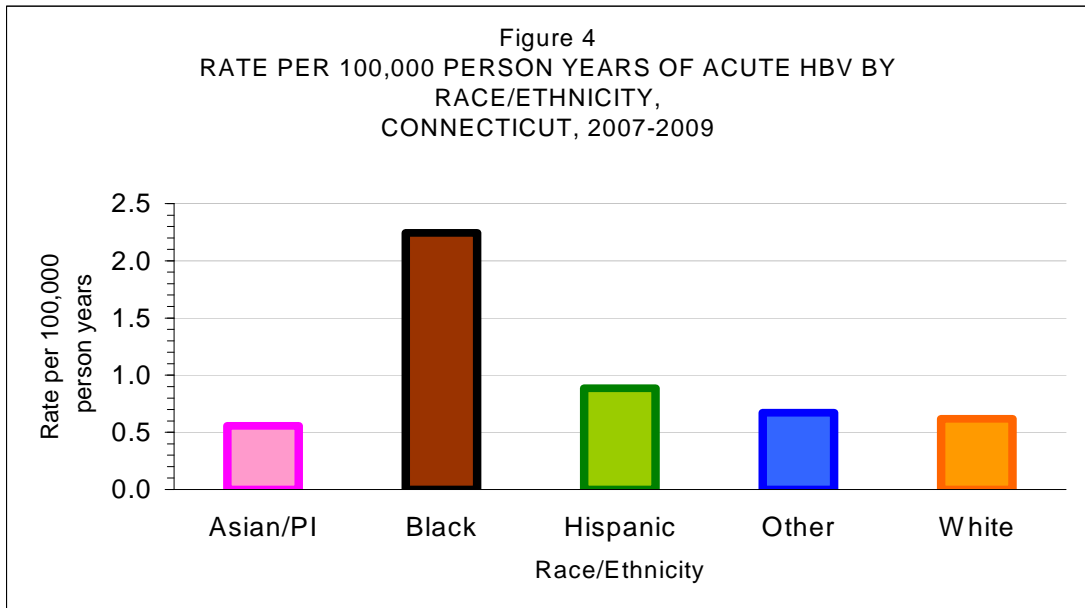
Acute hepatitis B cases have been declining in Connecticut and continued to decline in 2007 to 2009, from 39 to 17. This decline may be attributable to vaccinated school-aged children and increased vaccination efforts for people in high-risk groups, such injection drug users, men who have sex with men (MSM) and health care providers.

The surveillance case definition for acute HBV requires a discrete onset of symptoms. Only 30-50% of adults with acute HBV actually display symptoms, so the data here likely under-represent the true incidence in Connecticut.





3.5% (n=3) of acute HBV cases were reported with race as unknown.



3.5% (n=3) of acute HBV cases were reported with race as unknown.

Table 1. ACUTE HBV SEX, RACE, AGE BY RANKED RISK FACTOR, CONNECTICUT, 2007-2009

	<i>IDU/street drugs*</i>		<i>Sex contact</i>		<i>MSM*</i>		<i>Household contact</i>		<i>Other^</i>		<i>None/Unknown</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Total	18	20.7	10	11.5	8	9.2	3	3.4	25	28.7	23	26.4	87	100
<i>Sex</i>														
Female	7	8.0	3	3.4	--	--	1	1.1	10	11.5	6	6.9	27	31.0
Male	11	12.6	7	8	8	9.2	2	2.3	15	17.2	17	19.5	60	69.0
<i>Race/ethnicity</i>														
Asian	--	--	--	--	1	1.1	--	--	--	--	1	1.1	2	2.3
Black	3	3.4	3	3.4	2	2.3	--	--	8	9.2	6	6.9	22	25.3
Hispanic	2	2.3	2	2.3	1	1.1	--	--	4	4.6	2	2.3	11	12.6
Other	--	--	--	--	--	--	--	--	1	1.1	--	--	1	1.1
White	13	14.9	5	5.7	4	4.6	3	3.4	12	13.8	11	12.6	48	55.2
Unknown	--	--	--	--	--	--	--	--	--	--	3	3.4	3	3.4
<i>Age group</i>														
20-29	3	3.4	1	1.1	4	4.6	--	--	2	2.3	1	1.1	11	12.6
30-39	9	10.3	5	5.7	1	1.1	2	2.3	6	6.9	5	5.7	28	32.2
40-49	2	2.3	4	4.6	3	3.4	--	--	7	8.0	10	11.5	26	29.9
50-59	4	4.6	--	--	--	--	1	1.1	6	6.9	5	5.7	16	18.4
60+	--	--	--	--	--	--	--	--	4	4.6	2	2.3	6	6.9

*IDU = injection drug use; Street drugs = used drugs not prescribed by a physician and did not inject; MSM = man who has sex with men.

^ Other risk includes acupuncture, blood transfusion, body piercing, dental work, hospitalizations, incarceration>24 hours, incarceration >6 months ever, IV infusions/injections, multiple sex partners, occupational risk, other blood exposure, residence in a long term care facility, sexually transmitted disease ever, surgery, and tattoo.

No cases under 20 years of age were reported during 2007-2009.

Risk factors are mutually exclusive.

Presence of a risk factor does not necessarily indicate cause of disease and are asked to rule out potential outbreaks.

Table 2. ACUTE HBV CASES BY RISK FACTOR, CONNECTICUT, 2007-2009

Year	Number of Cases	Multiple Sex Partners	IDU*	Sex Contact	Street Drugs*	MSM*	Household Contact	Healthcare Related^	Other^^	None [†] /Unknown
Total	87	14	13	12	11	9	3	39	36	23
2007	39	8	6	7	6	3	2	10	11	11
2008	31	5	5	2	4	5	1	18	13	9
2009	17	1	2	3	1	1	0	11	12	3

*IDU = injection drug use; MSM = man who has sex with men; Street drugs = used drugs not prescribed by a physician and did not inject

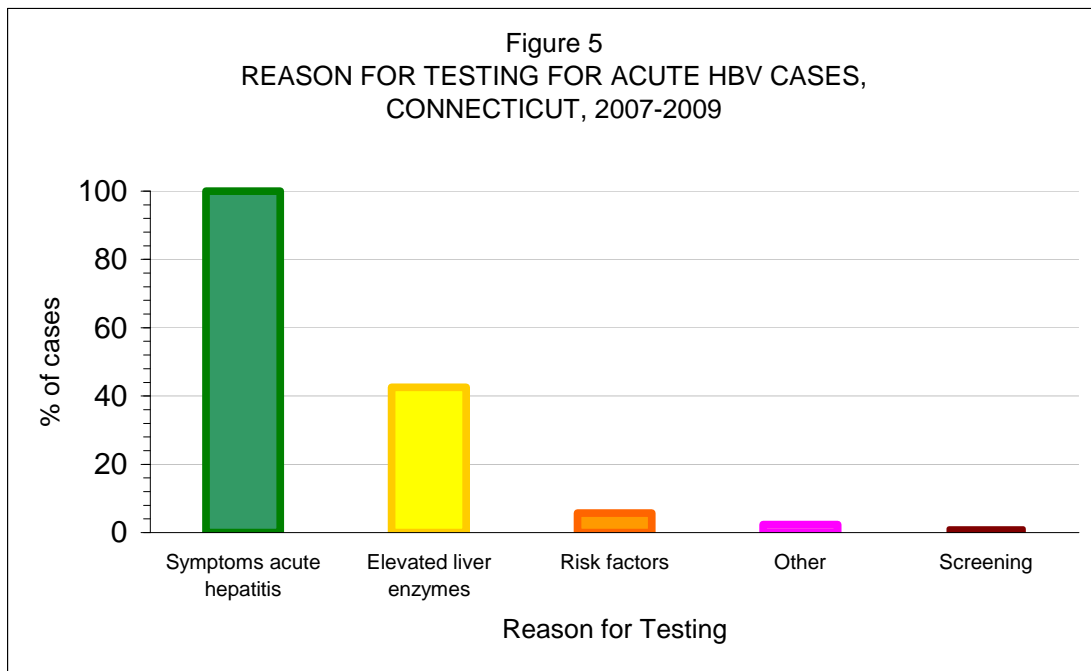
^Healthcare related includes acupuncture (1), blood transfusion (1), dental work (17), hospitalizations (2), IV infusions/injections (10), occupational risk (1), residence in a long term care facility (2), and surgery (5).

^^ Other includes body piercing (2), incarceration >24 hours (4), incarceration >6 months ever (8), other blood exposure (9), sexually transmitted disease ever (9), and tattoo (4).

[†]None determined (3).

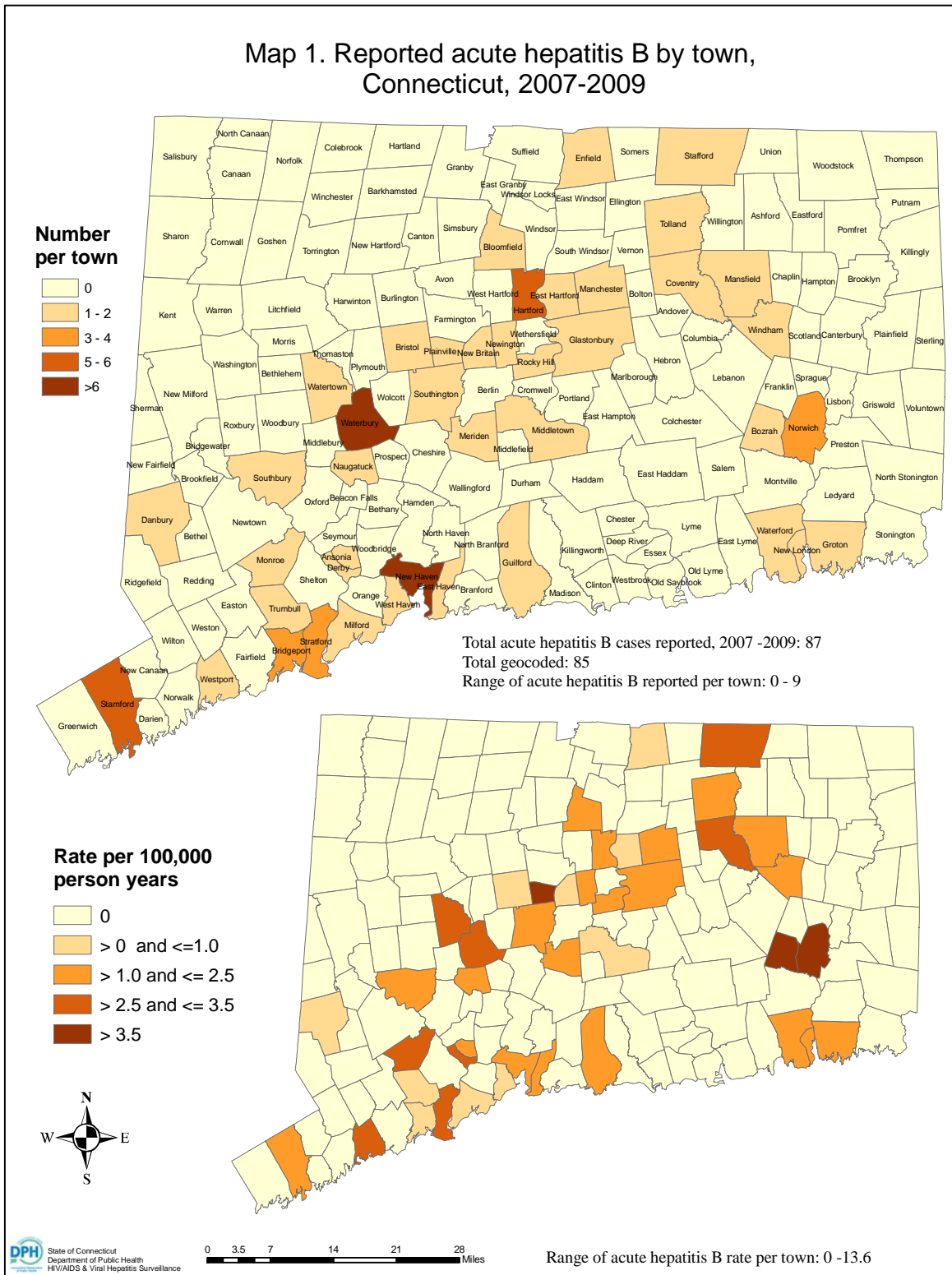
Risk factors are not mutually exclusive.

Presence of a risk factor does not necessarily indicate cause of disease and are asked to rule out potential outbreaks.



Reasons for testing are not mutually exclusive.

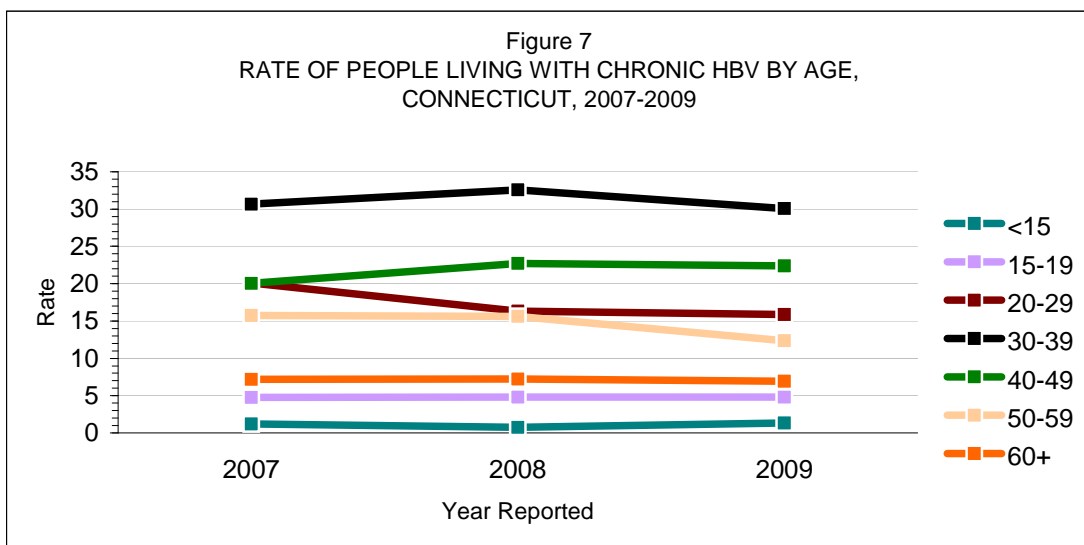
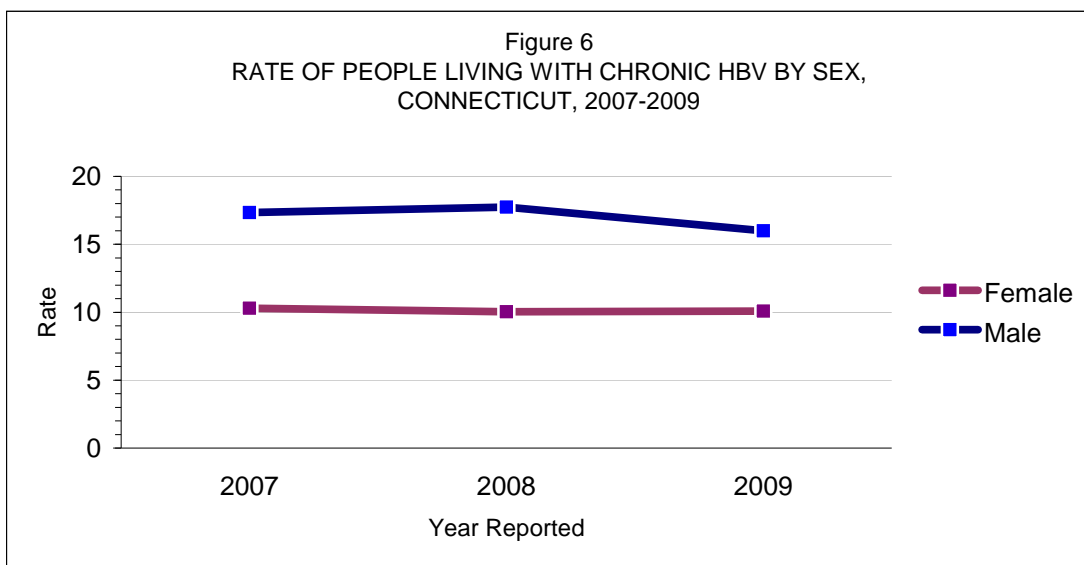
Map 1. Reported acute hepatitis B by town, Connecticut, 2007-2009

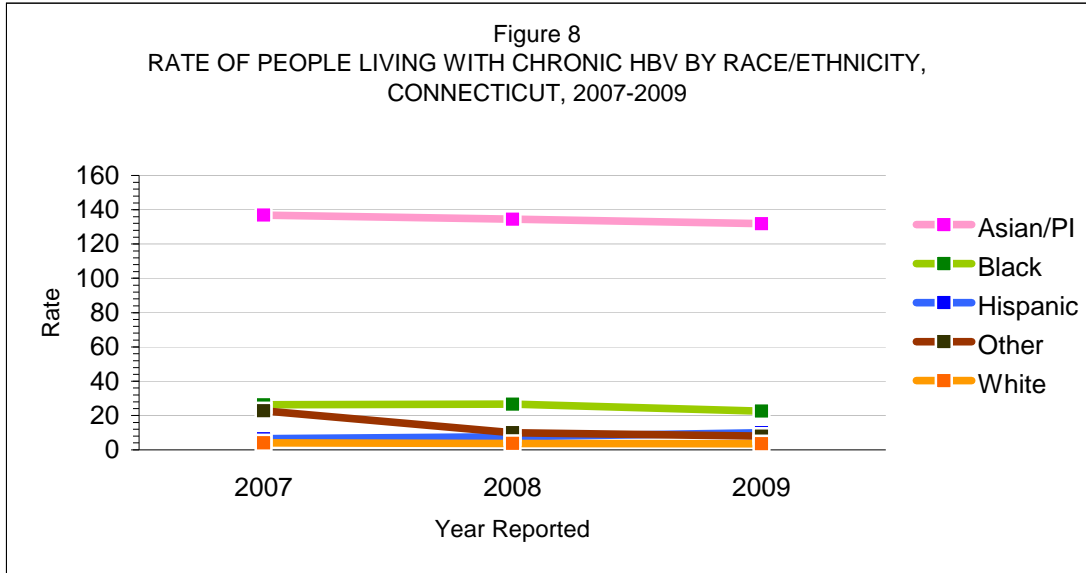


Hepatitis B - Chronic

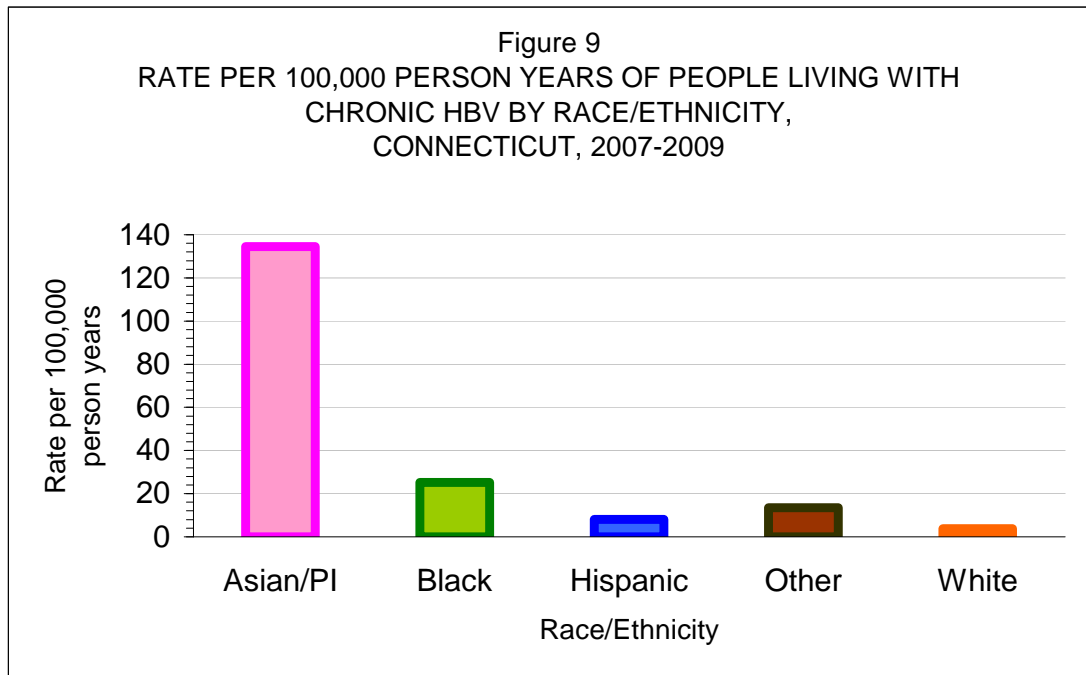
From 2007 through 2009, 1,418 chronic HBV cases were reported to be living in Connecticut. In Connecticut, people living with chronic HBV were 61% male and 54% were aged 30-49 years. Chronic HBV in Connecticut disproportionately affects the foreign born. In many African, Eastern European, and Asian Pacific countries, chronic HBV is endemic and may be passed through vertical transmission from a mother to her child or through household or sexual exposure.

Hepatitis B becomes chronic in 90% of infants infected at birth, 15-25% of children infected at ages 1-5 years, and in 5% of persons infected over the age of 5 years. Chronic infection can lead to cirrhosis and liver cancer. Many people remain asymptomatic for much of their life and may be unaware that they are infected.





19.5% (n=276) of chronic HBV cases were reported with race as unknown.



19.5% (n=276) of chronic HBV cases were reported with race as unknown.

Table 3. PEOPLE LIVING WITH CHRONIC HBV BY SEX, RACE, AGE BY RANKED RISK FACTOR, CONNECTICUT, 2007-2009[†]

	<i>IDU/street drugs*</i>		<i>Sex contact</i>		<i>MSM*</i>		<i>Household contact</i>		<i>Foreign born</i>		<i>Other[^]</i>		<i>None/Unknown</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Total	96	8.6	34	3.1	32	2.9	106	9.5	423	38.0	63	5.7	358	32.2	1112	100
<i>Sex</i>																
Female	18	1.6	18	1.6	1	0.1	45	4.0	204	18.3	18	1.6	149	13.4	453	40.7
Male	78	7.0	16	1.4	31	2.8	61	5.5	219	19.7	45	4.0	209	18.8	659	59.3
<i>Race/ethnicity</i>																
Asian	1	0.1	5	0.4	1	0.1	79	7.1	259	23.3	4	0.4	87	7.8	436	39.2
Black	18	1.6	12	1.1	9	0.8	10	0.9	72	6.5	24	2.2	60	5.4	205	18.4
Hispanic	29	2.6	2	0.2	5	0.4	1	0.1	14	1.3	5	0.4	35	3.1	91	8.2
Other	--	--	--	--	1	0.1	1	0.1	8	0.7	--	--	6	0.5	16	1.4
White	39	3.5	11	1.0	14	1.3	10	0.9	62	5.6	26	2.3	99	8.9	261	23.5
Unknown	9	0.8	4	0.4	2	0.2	5	0.4	8	0.7	4	0.4	71	6.4	103	9.3
<i>Age group</i>																
0-14	--	--	--	--	--	--	6	0.5	6	0.5	--	--	1	0.1	13	1.2
15-19	1	0.1	1	0.1	--	--	10	0.9	11	1.0	--	--	6	0.5	29	2.6
20-29	6	0.5	9	0.8	7	0.6	24	2.2	85	7.6	10	0.9	54	4.9	195	17.5
30-39	24	2.2	7	0.6	5	0.4	40	3.6	151	13.6	15	1.3	95	8.5	337	30.3
40-49	40	3.6	13	1.2	17	1.5	15	1.3	95	8.5	12	1.1	96	8.6	288	25.9
50-59	23	2.1	2	0.2	1	0.1	9	0.8	40	3.6	12	1.1	60	5.4	147	13.2

* IDU = injection drug use; Street drugs = used drugs not prescribed by a physician and did not inject; MSM = man who has sex with men
[^] Other includes blood transfusion, dental work, dialysis, employment in a medical or dental field, incarceration, IV infusions or injections, multiple sex partners, needle stick, other blood exposure, residence in a long term care facility, surgery, tattoo, and treatment for a sexually transmitted disease.

Risk factors are mutually exclusive.

Presence of a risk factor does not necessarily indicate cause of disease.

[†]Risk based on receipt of a follow-up form from a clinician. Overall response rate for the time period is 79%.

Table 4. PEOPLE LIVING WITH CHRONIC HBV BY RISK FACTORS, CONNECTICUT, 2007-2009[†]

Year	Number of			Multiple			Sex Contact	Street Drugs*	Healthcare Related [^]	Other ^{^^}	None [†] / Unknown
	Cases	Foreign Born	Household Contact	IDU*	Sex Partners	MSM*					
Total	1112	491	108	75	46	41	40	33	72	133	358
2007	368	161	32	27	9	13	18	3	18	34	126
2008	361	162	23	26	18	16	11	9	27	39	123
2009	383	168	53	22	19	12	11	21	27	60	109

* IDU = injection drug use; Street drugs = used drugs not prescribed by a physician and did not inject; MSM = man who has sex with men

[^] Healthcare related includes blood transfusion (32), dental work (2), dialysis (2), employment in a medical or dental field (30), IV infusions or injections (3), needlestick (1), residence in a long term care facility (1), and surgery (1).

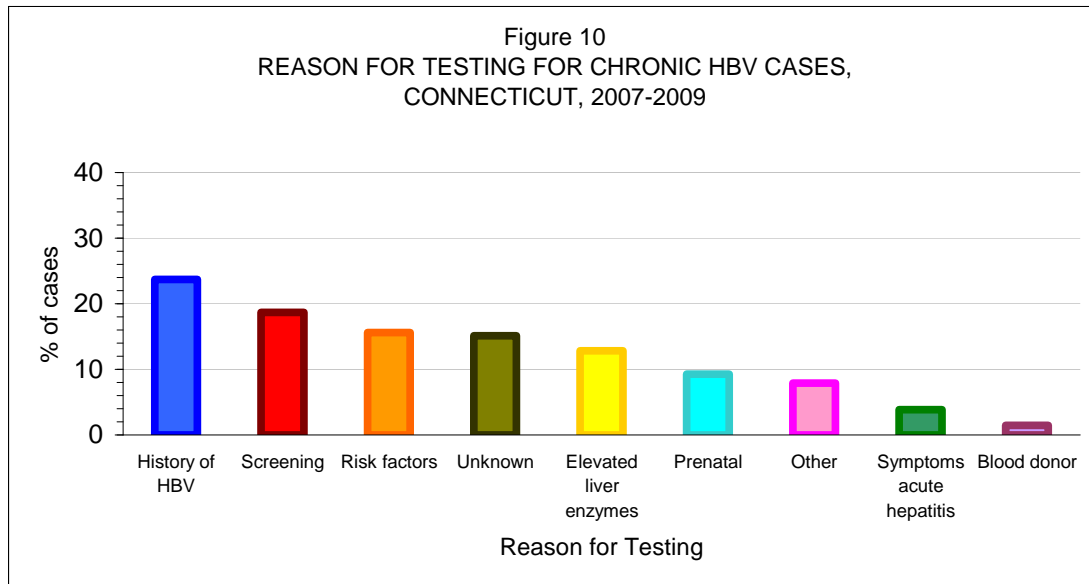
^{^^} Other includes incarceration (53), tattoo (37), treatment for a sexually transmitted disease (38), and other blood exposure (5).

[†]None determined (43).

Risk factors are not mutually exclusive.

Presence of a risk factor does not necessarily indicate cause of disease.

[†]Risk based on receipt of a follow-up form from a clinician. Overall response rate for the time period is 79%.

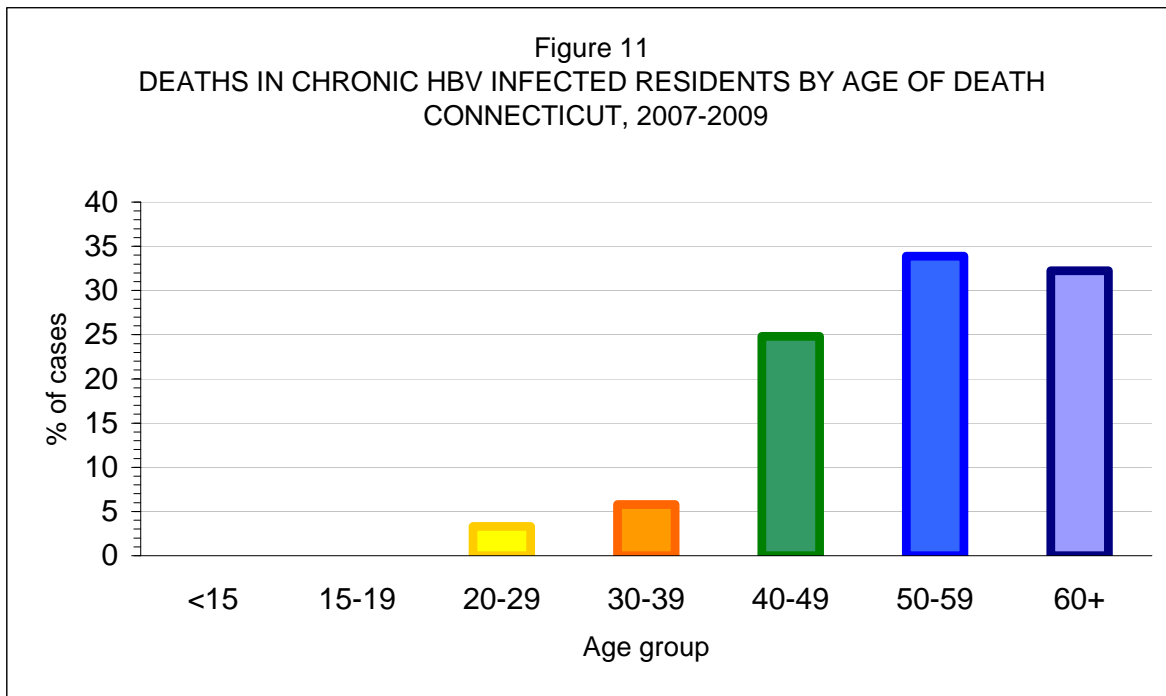


Reason for testing for cases in which a follow-up form was received. Reasons are not mutually exclusive.

Table 5. LIVING WITH CHRONIC HBV CASES BY AGE AND SELECTED TOWNS*, CONNECTICUT, 2007-2009

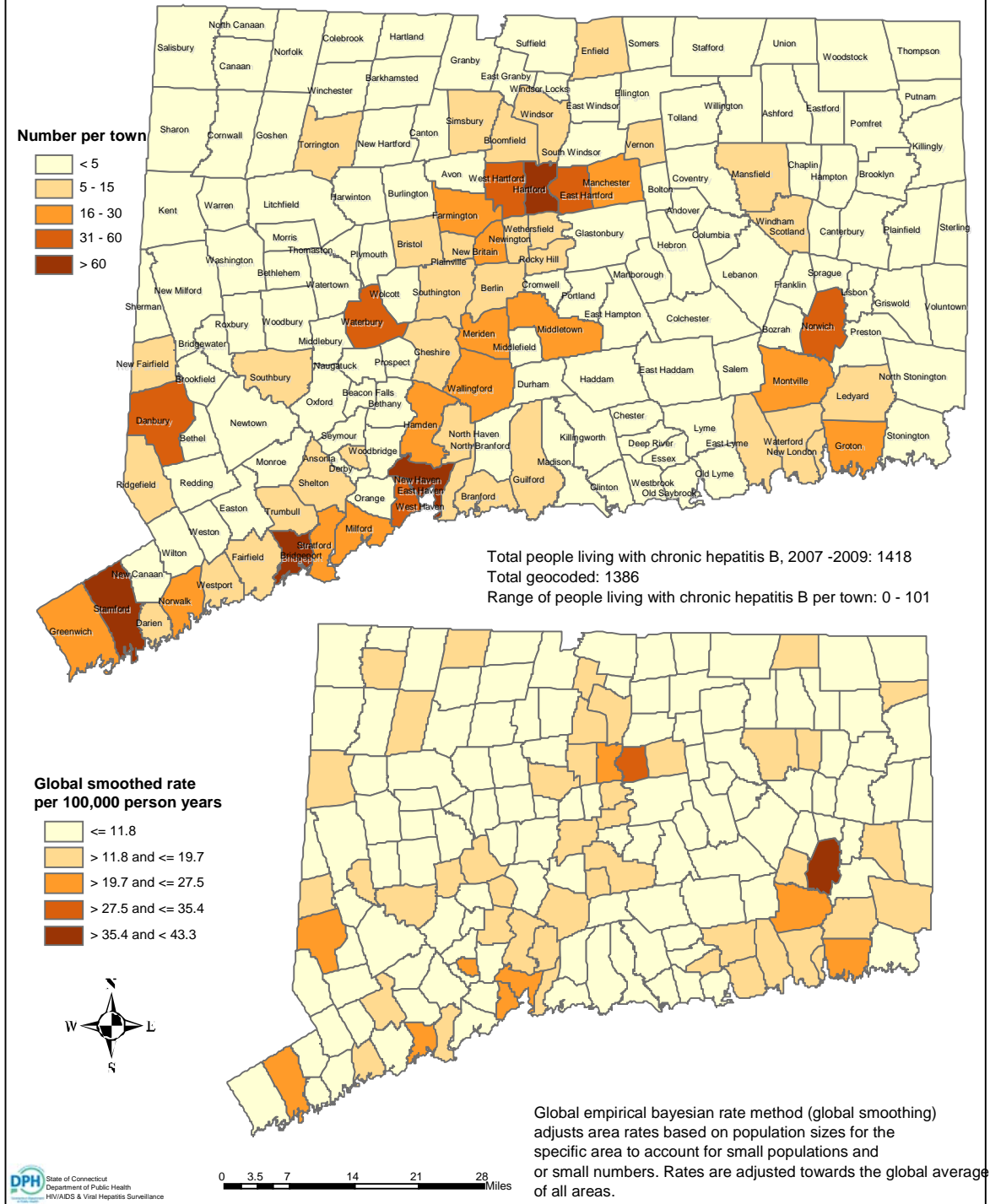
	0-14		15-19		20-29		30-39		40-49		50-59		60+		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total	8	1.0	22	2.8	144	18.0	254	32.0	199	25.0	106	13.0	62	7.8	795	100
<i>Towns</i>																
Bridgeport	1	0.1	3	0.4	18	2.3	24	3.0	25	3.1	7	0.9	5	0.6	83	10.4
Danbury	--	--	3	0.4	10	1.3	16	2.0	20	2.5	5	0.6	3	0.4	57	7.2
East Hartford	1	0.1	2	0.3	10	1.3	16	2.0	9	1.1	7	0.9	4	0.5	49	6.2
Groton	--	--	--	--	2	0.3	11	1.4	4	0.5	6	0.8	4	0.5	27	3.4
Hamden	--	--	1	0.1	1	0.1	12	1.5	5	0.6	4	0.5	7	0.9	30	3.8
Hartford	3	0.4	3	0.4	21	2.6	27	3.4	22	2.8	21	2.6	2	0.3	99	12.5
Manchester	--	--	--	--	4	0.5	11	1.4	6	0.8	3	0.4	2	0.3	26	3.3
New Britain	--	--	--	--	5	0.6	6	0.8	6	0.8	3	0.4	4	0.5	24	3.0
New Haven	2	0.3	3	0.4	24	3.0	37	4.7	21	2.6	8	1.0	6	0.8	101	12.7
Norwalk	1	0.1	2	0.3	--	--	10	1.3	3	0.4	8	1.0	--	--	24	3.0
Norwich	--	--	--	--	13	1.6	13	1.6	12	1.5	9	1.1	7	0.9	54	6.8
Stamford	--	--	1	0.1	13	1.6	30	3.8	22	2.8	12	1.5	8	1.0	86	10.8
Waterbury	--	--	1	0.1	12	1.5	17	2.1	17	2.1	8	1.0	1	0.1	56	7.0
West Hartford	--	--	3	0.4	6	0.8	7	0.9	11	1.4	5	0.6	4	0.5	36	4.5
West Haven	--	--	--	--	5	0.6	17	2.1	16	2.0	--	--	5	0.6	43	5.4

* Towns with ≥ 20 cases.



From 2007-2009, there were 121 deaths in Connecticut residents who were reported to be living with chronic hepatitis B at the time of their death. Cause of death is not noted in this figure.

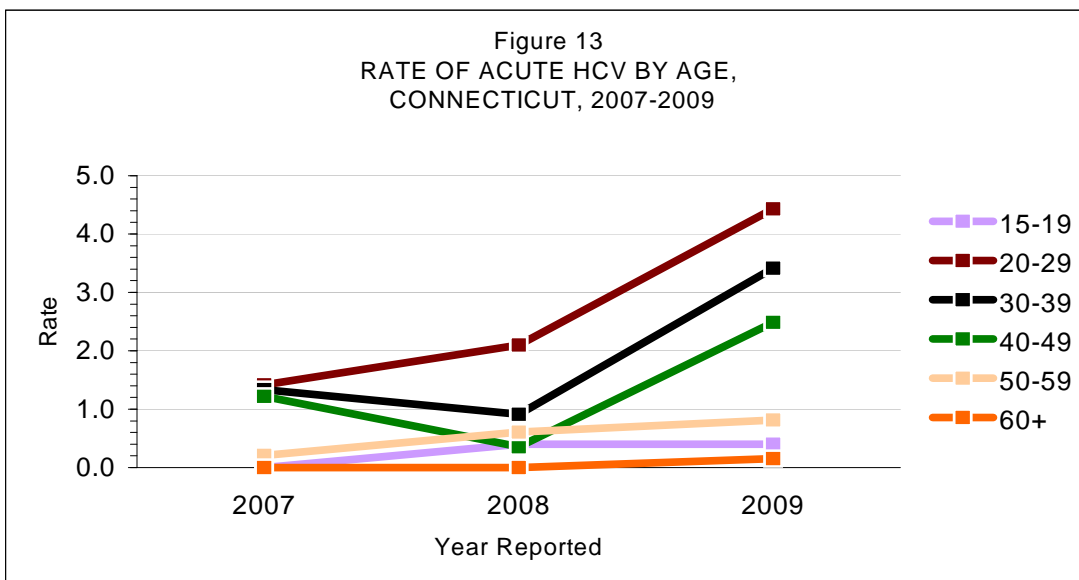
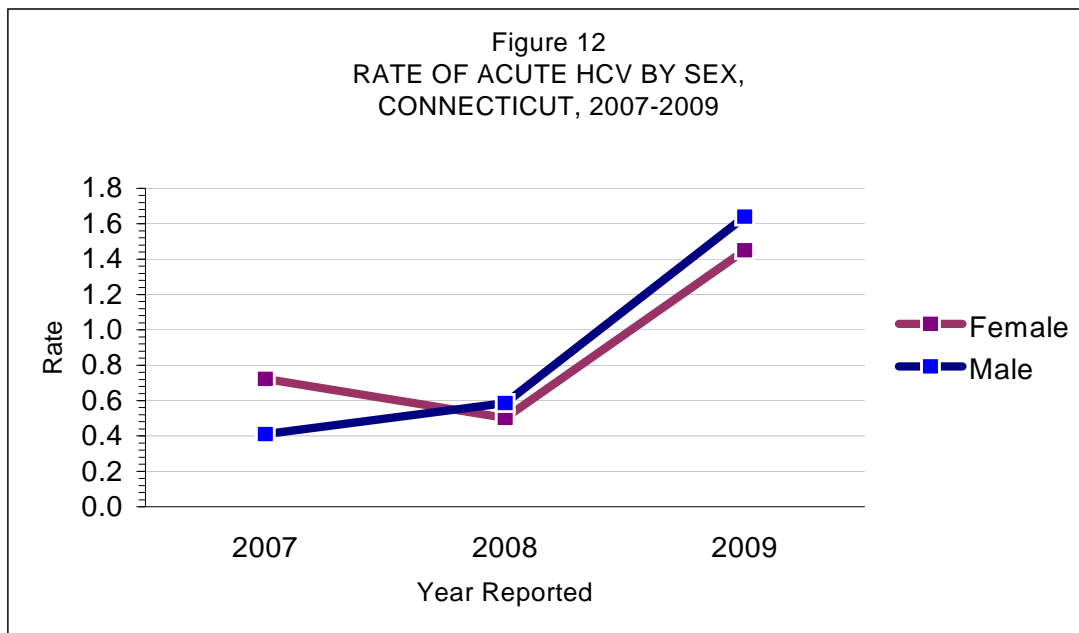
Map 2. People living with chronic hepatitis B by town, Connecticut, 2007-2009

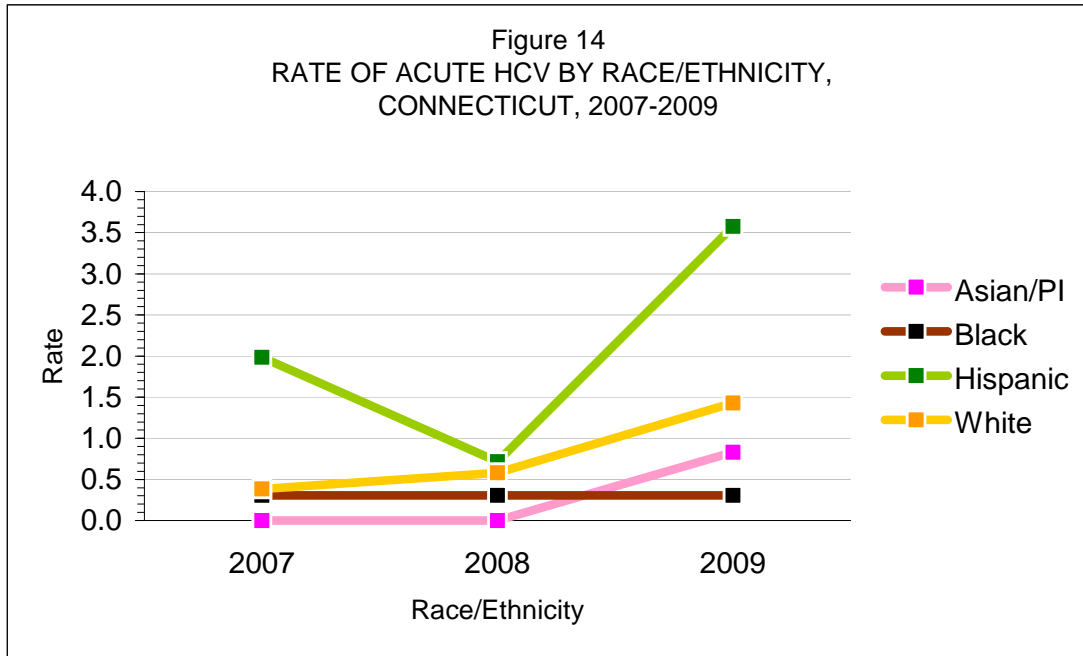


Hepatitis C - Acute

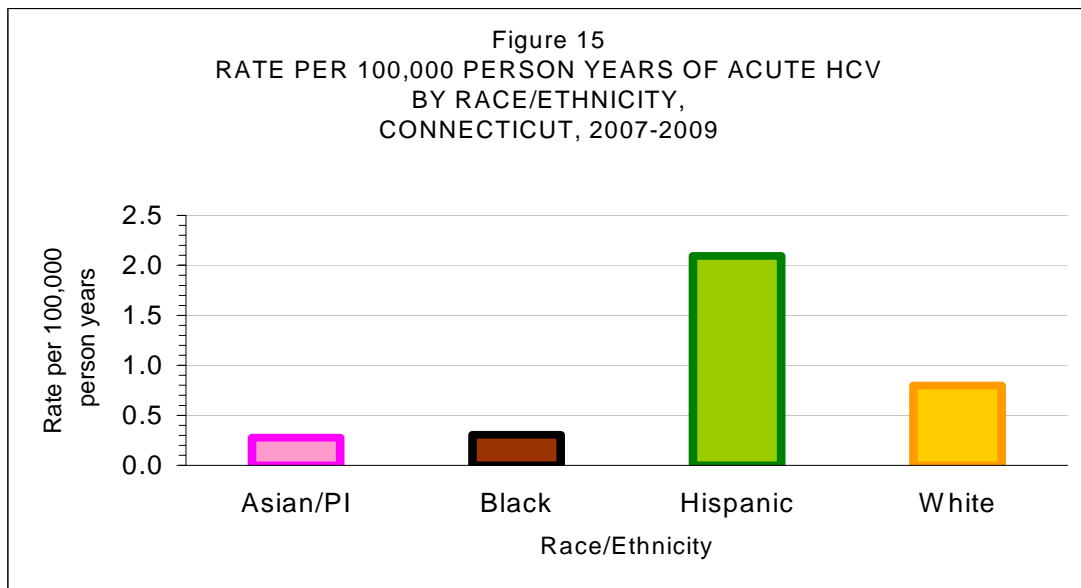
During 2007-2009, 93 residents of Connecticut were reported with acute hepatitis C. The acute hepatitis C picture over the last 3 years shows infection rates among men and women equally at 0.9 per 100,000 person years. A rise in new infections was seen in the 20-39 age groups, predominantly with a risk factor of injection drug and/or street drug use. In addition, the Hispanic population was disproportionately affected with acute HCV at a rate twice that of whites.

Acute HCV requires a discrete onset of symptoms to be classified as a case for surveillance purposes. The majority of acute hepatitis C cases, 90%, do not display symptoms or are not severe enough to present for medical care; therefore the data displayed below most likely under-represents the true incidence of acute hepatitis C in Connecticut.





1% (n=1) of acute HCV cases were reported with race as unknown.



1% (n=1) of acute HCV cases were reported with race as unknown.

Table 6. ACUTE HCV SEX, RACE, AGE BY RANKED RISK FACTOR, CONNECTICUT, 2007-2009

	<i>IDU/street drugs*</i>		<i>Sex contact</i>		<i>Household contact</i>		<i>Other^^</i>		<i>None/unknown</i>		<i>Total</i>	
	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>	<i>N</i>	<i>%</i>
Total	63	67.7	8	8.6	5	5.4	9	9.7	8	8.6	93	100.0
<i>Sex</i>												
Female	28	30.1	8	8.6	4	4.3	5	5.4	3	3.2	48	51.6
Male	35	37.6	--	--	1	1.1	4	4.3	5	5.4	45	48.4
<i>Race</i>												
Asian/PI	--	--	--	--	--	--	1	1.1	--	--	1	1.1
Black	1	1.1	--	--	--	--	--	--	2	2.2	3	3.2
Hispanic	14	15.1	5	5.4	1	1.1	1	1.1	5	5.4	26	28.0
White	47	50.5	3	3.2	4	4.3	7	7.5	1	1.1	62	66.7
Unknown	1	1.1	--	--	--	--	--	--	--	--	1	1.1
<i>Age group</i>												
15-19	2	2.2	--	--	--	--	--	--	--	--	2	2.2
20-29	29	31.2	2	2.2	2	2.2	1	1.1	--	--	34	36.6
30-39	18	19.4	2	2.2	1	1.1	1	1.1	3	3.2	25	26.9
40-49	12	12.9	2	2.2	2	2.2	2	2.1	5	5.4	23	24.7
50-59	2	2.2	1	1.1	--	--	5	5.4	--	--	8	8.6
60+	--	--	1	1.1	--	--	--	--	--	--	1	1.1

*IDU = injection drug use; Street drugs = used drugs not prescribed by a physician and did not inject

^^ Other risk includes accidental needle stick, blood transfusion, body piercing, dental work, hospitalizations, incarceration>24 hours, incarceration >6 months ever, IV infusions/injections, multiple sex partners, occupational risk, other blood exposure, residence in a long term care facility, sexually transmitted disease ever, surgery, and tattoo.

Risk factors are mutually exclusive.

The presence of a risk factor does not necessarily indicate the cause of disease and are asked to rule out potential outbreaks.

Table 7. ACUTE HCV CASES BY RISK FACTORS, CONNECTICUT, 2007-2009

Year	Number of Cases	IDU*	Healthcare Related^	Multiple Sex Partners	Sex Contact	STD Ever	Prison >6m	Household Contact	Street Drugs*	Other^^	None/Unknown
TOTAL	93	57	40	24	20	12	10	9	6	13	8
2007	20	11	5	4	3	2	2	4	1	3	4
2008	19	14	9	7	5	5	3	3	1	2	1
2009	54	32	26	13	12	5	5	2	4	8	3

*IDU = injection drug use; Street drugs = used drugs not prescribed by a physician and did not inject

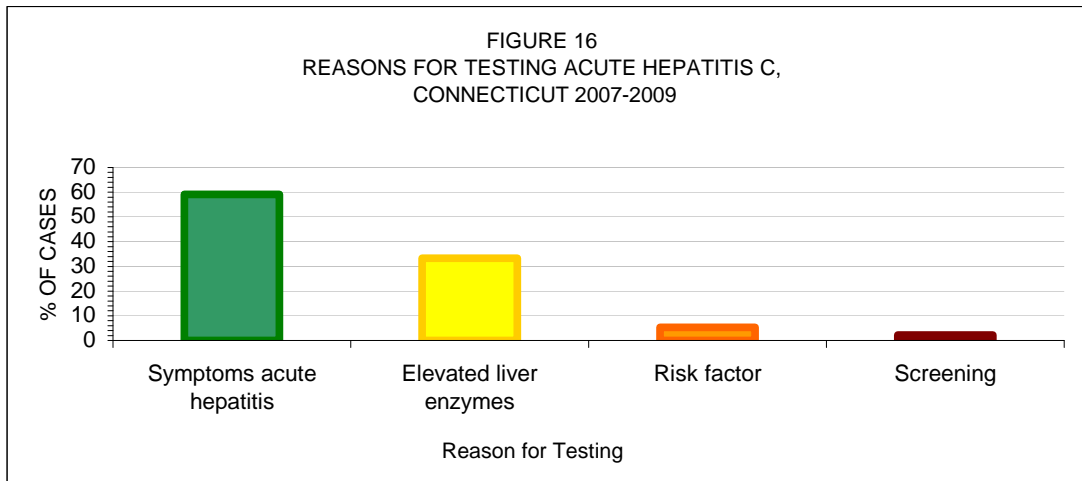
^Healthcare related includes accidental needle stick (1), dental work (14), hospitalizations (7), IV infusions/injections (10), occupational risk (3), residence in a long term care facility (2), and surgery (3).

^^ Other includes body piercing (2), incarceration >24 hours (1), other blood exposure (6), and tattoo (4).

‡None determined (2).

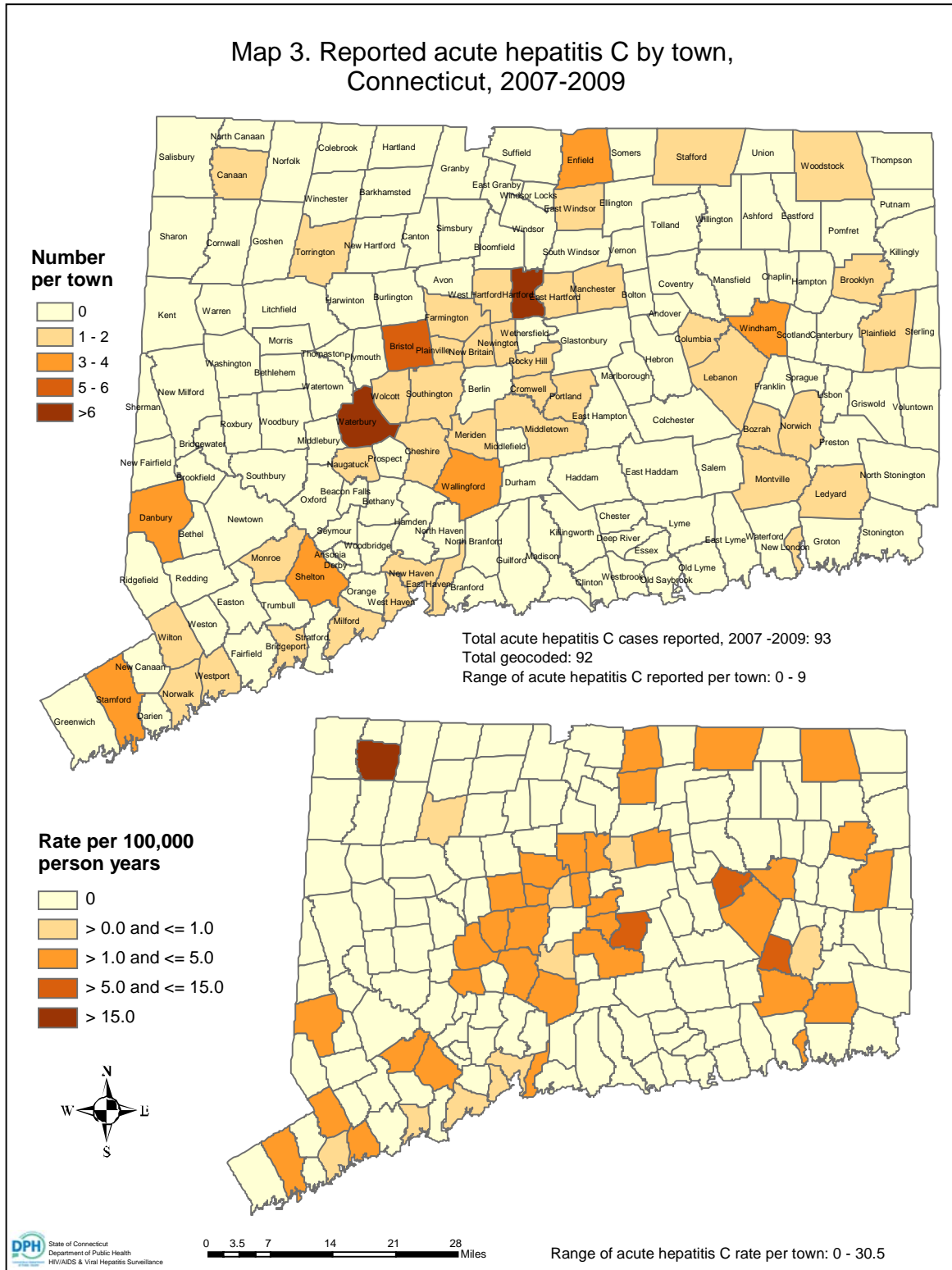
Risk factors are not mutually exclusive.

Presence of a risk factor does not necessarily indicate cause of disease and are asked to rule out potential outbreaks.



Reasons for testing are not mutually exclusive.

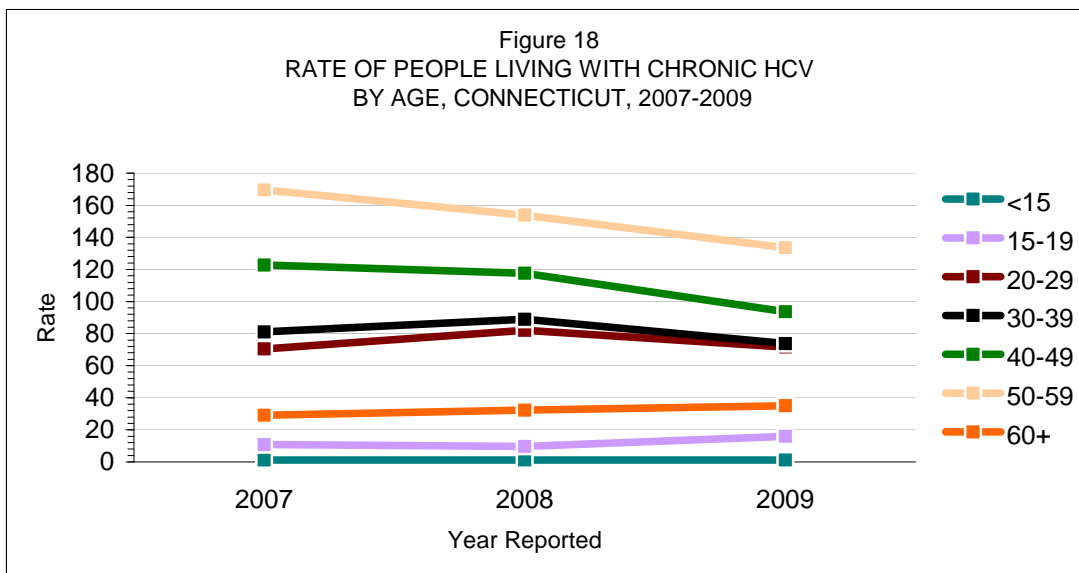
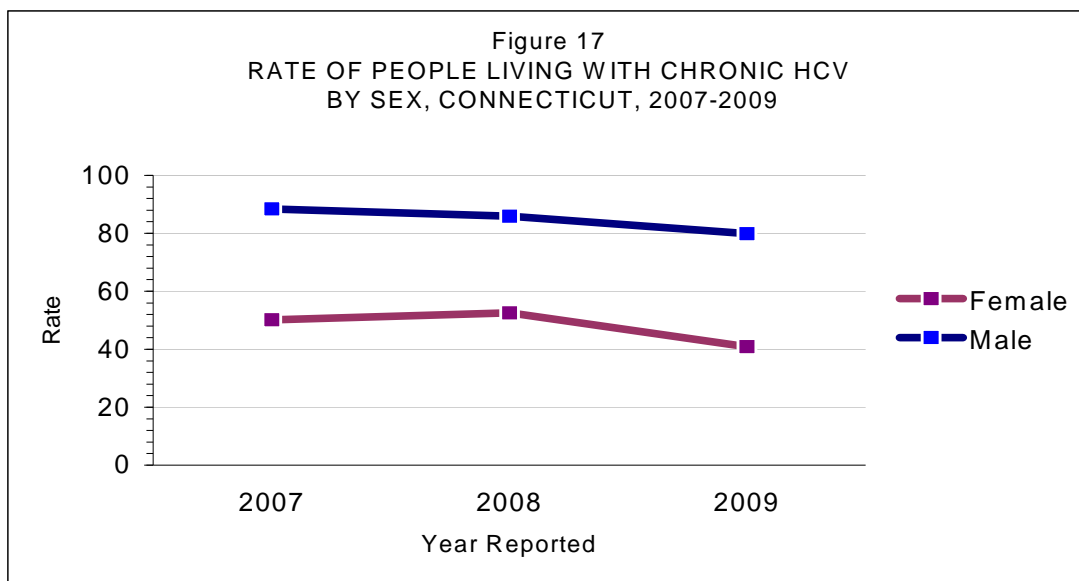
Map 3. Reported acute hepatitis C by town, Connecticut, 2007-2009

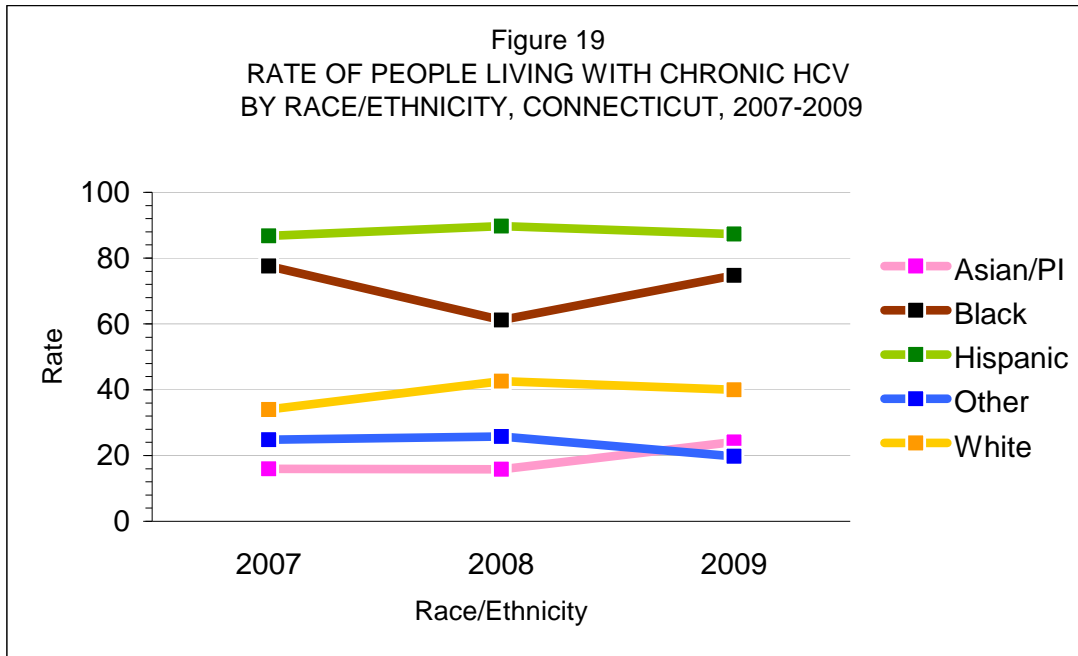


Hepatitis C - Chronic

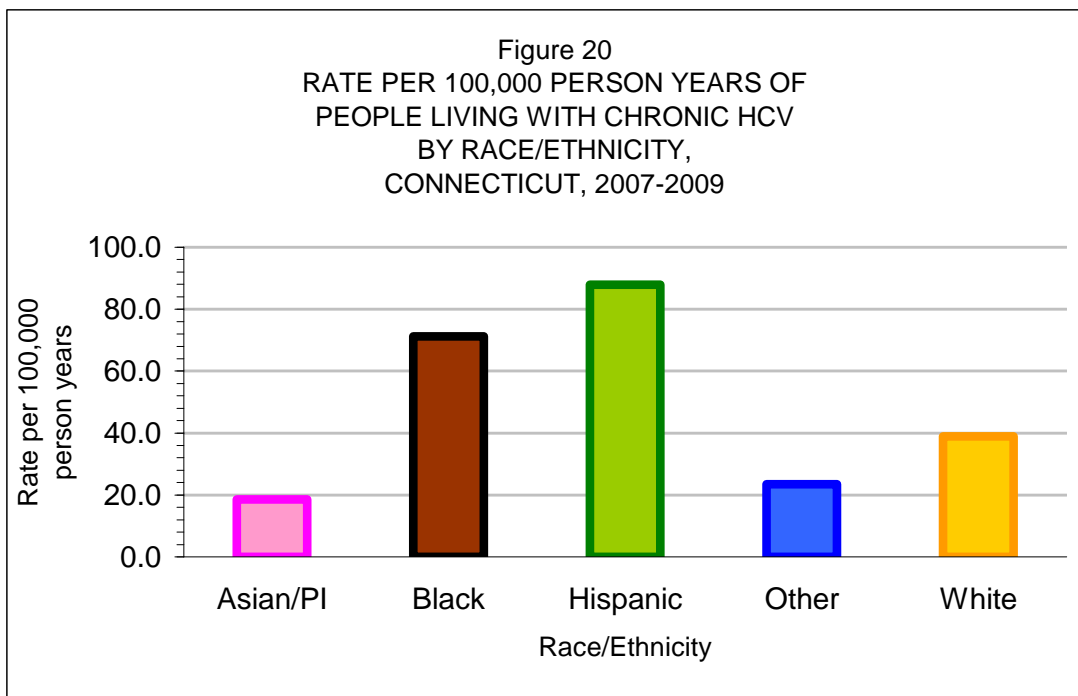
During 2007 – 2009, 6,918 people were reported as living with past or present chronic hepatitis C in Connecticut. The chronic hepatitis C picture in Connecticut showed 63% were male and 43% were aged 40-59. As with acute hepatitis C, the Hispanic population is living with the largest rate of chronic hepatitis C in Connecticut, 87.9 per 100,000 person years followed by the black or African American race at 71.2 per 100,000 person years. Both minority populations are living with chronic hepatitis C at a rate approximately twice that of whites.

Hepatitis C becomes chronic in approximately 75% to 85% of people infected. Because only 10% of individuals infected with hepatitis C display symptoms during the acute phase, most people are unaware of their infections and are now only being tested due to testing recommendations or illness due to liver disease. Some people included in the chronic data may have a positive antibody test but no longer carry the virus due to a resolved infection and/or treatment (approximately 15%).





28% (n=2004) chronic HCV cases were reported with race/ethnicity as unknown.



28% (n=2004) chronic HCV cases were reported with race/ethnicity as unknown.

Table 8. PEOPLE LIVING WITH CHRONIC HCV SEX, RACE, AGE BY RANKED RISK FACTOR, CONNECTICUT, 2007-2009⁺

	IDU/ Street drugs*		Contact w/ HCV positive [^]		Transfusion, Transplant ^{††}		Healthcare Related ^{**}		Other [†]		None/ Unknown		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total	2376	54.0	206	4.7	199	4.5	70	1.6	351	8.0	1190	27.1	4392	100
Sex														
Female	745	17.0	131	3.0	100	2.3	40	0.9	139	3.2	455	10.4	1610	36.7
Male	1631	37.0	75	1.7	99	2.3	30	0.7	212	4.8	735	16.7	2782	63.3
Race														
Asian/PI	3	0.1	7	0.2	5	0.1	2	0.0	12	0.3	29	0.7	58	1.3
Black	267	6.1	20	0.5	19	0.4	11	0.3	72	1.6	162	3.7	551	12.5
Hispanic	571	13.0	41	0.9	20	0.5	7	0.2	64	1.5	196	4.5	899	20.5
Other	4	0.1	2	0.1	1	0.0	2	0.1	2	0.1	12	0.3	23	0.5
White	1334	30.0	127	2.9	143	3.3	44	1.0	168	3.8	618	14.1	2434	55.4
Unknown	197	4.5	9	0.2	11	0.3	4	0.1	33	0.8	173	3.9	427	9.7
Age Group														
<15	--	--	10	0.2	--	--	--	--	5	0.1	1	0.0	16	0.4
15-19	33	0.8	5	0.1	2	0.0	--	--	7	0.2	9	0.2	56	1.3
20-29	485	11.0	20	0.5	6	0.1	3	0.1	44	1.0	67	1.5	625	14.2
30-39	454	10.0	19	0.4	12	0.3	10	0.2	37	0.8	143	3.3	675	15.4
40-49	679	16.0	61	1.4	38	0.9	14	0.3	93	2.1	297	6.8	1182	26.9
50-59	610	14.0	74	1.7	74	1.7	32	0.7	127	2.9	503	11.5	1420	32.3
60+	115	2.6	17	0.4	67	1.5	11	0.3	38	0.9	170	3.9	418	9.5

*IDU = injection drug use; Street drugs = used drugs not prescribed by a physician and did not inject

[^]Contact with HCV positive = sexual or household contact with a known HCV positive person.

^{††}Transfusion, transplant = received a transfusion or organ transplant before 1992 or clotting factor concentrates before 1987.

^{**}Healthcare related = employed in medical or dental field or received long term hemodialysis.

[†]Other includes such risks as incarceration ever, tattoo, multiple sex partners, high-risk sexual partner, treated for a STD.

Note: The presence of a risk factor does not necessarily indicate the cause of disease.

Risk factors are mutually exclusive.

⁺Risk based on receipt of follow-up form from clinician.

During 2007, follow-up forms were sent to ordering clinicians of cases in Fairfield, Hartford, and New Haven counties.

Since 2008, follow-up forms are sent on all newly reported cases. Overall response rate for the time period is 74%.

Table 9. PEOPLE LIVING WITH CHRONIC HCV BY RISK FACTOR, CONNECTICUT, 2007-2009⁺

	<i>Number</i>	<i>IDU*</i>	<i>Tattoo</i>	<i>Prison Ever</i>	<i>Street Drugs*</i>	<i>Sex Contact</i>	<i>STD Ever</i>	<i>Transfusion Transplant[^]</i>	<i>Household Contact</i>	<i>Multiple Sex Partners</i>	<i>Healthcare Related^{^^}</i>	<i>Other⁺⁺</i>	<i>None[†]/Unknown</i>
Total	4392	1903	706	632	473	278	261	260	244	233	141	214	1190
2007	1057	416	135	101	97	63	57	86	65	58	34	32	334
2008	1590	699	263	243	177	96	102	98	94	81	60	61	421
2009	1745	788	308	288	199	119	102	76	85	94	47	121	435

*IDU = injection drug use; Street drugs = used drugs not prescribed by a physician and did not inject

[^]Transfusion, transplant = received a transfusion or organ transplant before 1992 or clotting factor concentrates before 1987.

^{^^}Healthcare related = accidental needle stick (10), employed in medical or dental field (117), received long term hemodialysis (14).

⁺⁺Other includes such risks as high-risk sexual partner and other blood exposures.

[†]None (4).

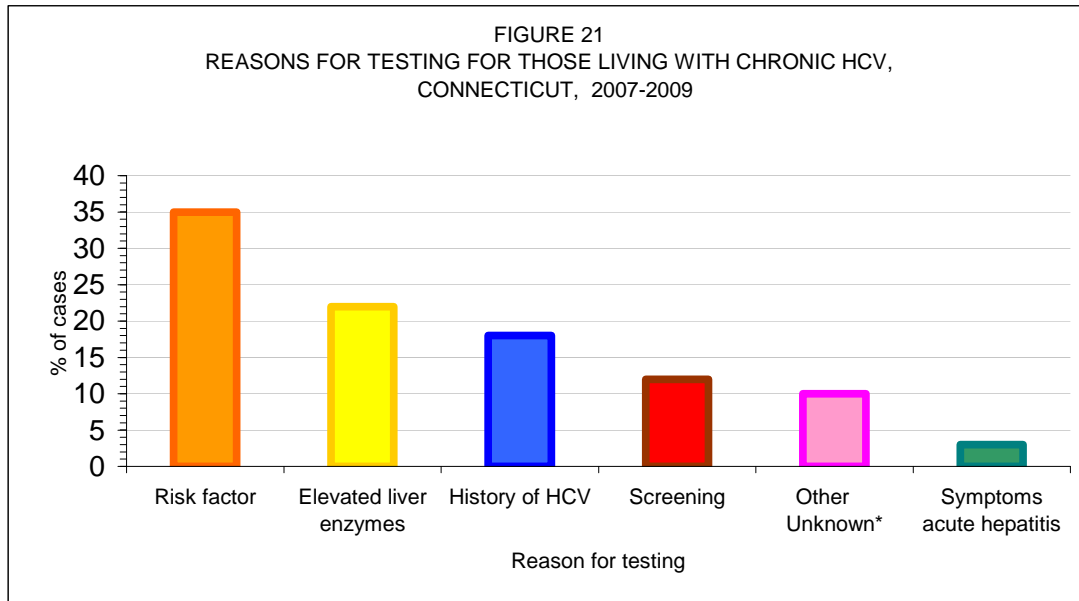
Note: The presence of a risk factor does not necessarily indicate the cause of disease.

Risk factors are not mutually exclusive.

⁺Risk based on receipt of follow-up form from clinician.

During 2007, follow-up forms were sent to ordering clinicians of cases in Fairfield, Hartford, and New Haven counties.

Since 2008, follow-up forms are sent on all newly reported cases. Overall response rate for the time period is 74%.



Reason for testing for cases in which a follow-up form was received. Reasons are not mutually exclusive.

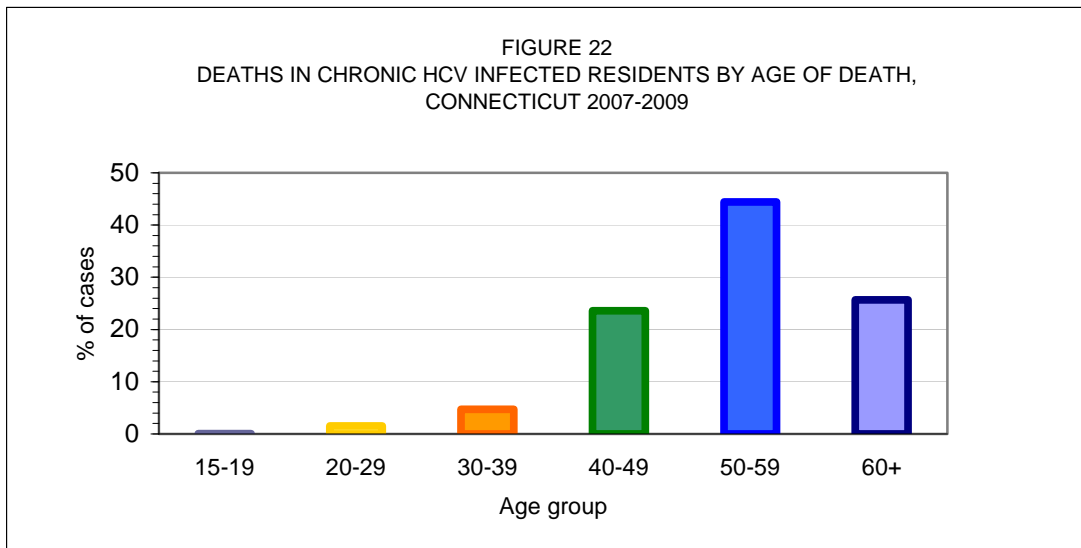
*Other/Unknown includes prenatal, blood donor or prenatal screen.

Table 10. PEOPLE LIVING WITH CHRONIC HCV BY AGE GROUP AND SELECTED TOWNS*, CONNECTICUT, 2007-2009

	20-29		30-39		40-49		50-59		60+		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Total	356	12.8	536	19.3	824	29.7	905	32.6	152	5.5	2773	100
Towns												
Bridgeport	47	1.7	84	3.0	123	4.4	172	6.2	54	1.9	480	17.3
Hartford	53	1.9	101	3.6	176	6.3	158	5.7	53	1.9	541	19.5
Meriden	--	--	--	--	47	1.7	48	1.7	--	--	95	3.4
New Britain	40	1.4	71	2.6	73	2.6	60	2.2	--	--	244	8.8
New Haven	46	1.7	63	2.3	142	5.1	151	5.4	45	1.6	447	16.1
Norwich	--	--	--	--	--	--	52	1.9	--	--	52	1.9
Stamford	--	--	--	--	--	--	44	1.6	--	--	44	1.6
Waterbury	51	1.8	88	3.2	117	4.2	123	4.4	--	--	379	13.7
West Haven	--	--	--	--	--	--	55	2.0	--	--	55	2.0
Corrections**	57	2.1	68	2.5	80	2.9	--	--	--	--	205	7.4
Facility**	62	2.2	61	2.2	66	2.4	42	1.5	--	--	231	8.3

*Towns with ≥ 40 cases. No cases under 20 years old reported in selected towns.

**Residence at time of report.



From 2007-2009, there were 1,232 deaths in Connecticut residents who were reported to be living with chronic hepatitis C at the time of their death. Cause of death is not noted in this figure.

Map 4. People living with chronic hepatitis C by town, Connecticut, 2007-2009

