

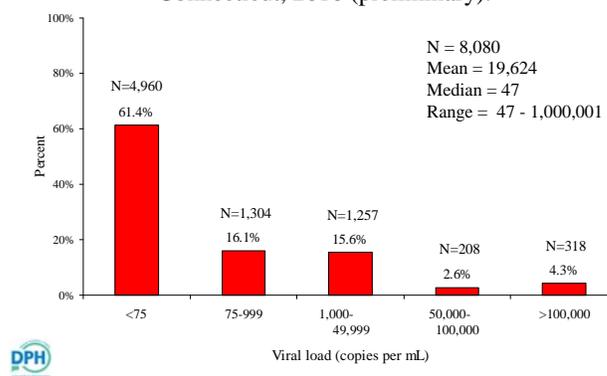
QuickStats

December 1, 2010

Community viral load (preliminary analysis)

- HIV viral load (VL) test results are laboratory reportable in Connecticut.
- The HIV/AIDS registry provides the 'most recent VL test result' in copies per milliliter (mL) based on the date of the test.
- For the analysis of 'community VL,'¹ HIV/AIDS cases that had a most recent VL test result reported in 2008-November 2010 were analyzed. Mean VL was calculated for demographic, behavioral, and geographic subgroups. VL was also categorized as <75 (designated as 'suppressed'), 75-999, 1,000-49,999, 50,000-100,000, and >100,000 copies/mL. For the calculation of means, VL test results that were beneath the level of detection were set at 47 and those that were above the level of detection were set at 1,000,001 reflecting a detectable range of 48-1,000,000 in the most commonly used test.
- Overall, 8,080 most recent VL test results were reported during 2008-Nov 2010 with 61.4% suppressed. The mean was 19,624.
- Of the 8,080 VL tests reported, 78.5% were from 2010 (mean 16,725; 65.1% suppressed), 14.0% from 2009 (22,753; 53.7%), and 7.5% from 2008 (41,816; 36.8%).
- These results should be interpreted cautiously and should not be compared to other states as analytic approaches vary. CDC is deliberating about the best way to conduct these analyses and guidance is expected in July 2011. At that time this analysis will be repeated with complete 2010 reporting of VL tests.
- In addition to its function as a population-based monitoring system, surveillance can also be used at the individual level to promote public health². VL reporting data could be used to identify individuals for case management to encourage compliance with medication and to identify barriers to care. Good candidates for this follow-up could include newly diagnosed cases that have not received a VL test (have not entered into care), cases with high VL values, or cases with a long interval since their last test. Follow-up that results in a decrease in VL levels could be expected to reduce the likelihood of transmission^{1, 3}.

Figure 1. Distribution of most recent HIV VL test results reported during 2008-November 2010, Connecticut, 2010 (preliminary).



Source: <http://www.ct.gov/dph/HIVsurveillance>

Connecticut Department of Public Health, AIDS and Chronic Diseases Section, HIV/AIDS Surveillance

Table 1. Mean and sum of ‘most recent’ HIV VL test results for tests reported in 2008-November 2010, Connecticut, 2010 (preliminary).

Case characteristics ¹	Number of VL tests reported ²	Mean of VL tests (copies/mL)	Sum of VL tests
Total	8,080	19,624	158,563,158
Case classification			
HIV	2,559	10,915	27,932,638
AIDS	5,521	23,661	130,630,520
Vital status			
Alive	7,669	17,517	134,339,973
Dead	411	58,937	24,223,185
Sex			
Male	5,201	18,479	96,107,028
Female	2,879	21,694	62,456,130
Race/ethnicity			
White	2,755	14,053	38,717,223
Black	2,708	20,877	56,533,708
Hispanic	2,500	22,866	57,163,820
Other	117	52,550	6,148,407
Risk group			
IDU	2,947	19,801	58,352,197
MSM	1,746	16,201	28,286,422
MSM/IDU	151	37,749	5,700,082
Hetero	1,851	18,960	35,095,188
Pedi	132	36,993	4,883,120
Oth/unk	1,253	20,947	26,246,148
Age group			
0-19	80	35,509	2,840,756
20-29	417	28,102	11,718,460
30-39	1,072	32,641	34,991,269
40-49	2,879	20,013	57,616,245
50-59	2,692	14,368	38,677,794
60+	940	13,530	12,718,634

¹ Characteristics as of November 2010.

² Number of cases with a ‘most recent’ VL reported during 2008-November 2010.

Table 2. Categories of ‘most recent’ HIV VL tests results for tests reported in 2008-
November 2010, Connecticut, 2010 (preliminary).

Case characteristics ¹	N ²	VL categories (copies/mL)									
		<75 (suppressed)		75-999		1,000- 49,999		50,000- 100,000		>100,000	
		N	%	N	%	N	%	N	%	N	%
Total	8,080	4,960	61.4%	1,304	16.1%	1,257	15.6%	208	2.6%	351	4.3%
Case classification											
HIV	2,559	1,455	56.9%	395	15.4%	586	22.9%	65	2.5%	58	2.3%
AIDS	5,521	3,505	63.5%	909	16.5%	671	12.2%	143	2.6%	293	5.3%
Vital status											
Alive	7,669	4,768	62.2%	1,231	16.1%	1,190	15.5%	184	2.4%	296	3.9%
Dead	411	192	46.7%	73	17.8%	67	16.3%	24	5.8%	55	13.4%
Sex											
Male	5,201	3,262	62.7%	843	16.2%	763	14.7%	126	2.4%	207	4.0%
Female	2,879	1,698	59.0%	461	16.0%	494	17.2%	82	2.8%	144	5.0%
Race/ethnicity											
White	2,755	1,886	68.5%	399	14.5%	325	11.8%	65	2.4%	80	2.9%
Black	2,708	1,566	57.8%	462	17.1%	485	17.9%	71	2.6%	124	4.6%
Hispanic	2,500	1,445	57.8%	425	17.0%	425	17.0%	69	2.8%	136	5.4%
Other	117	63	53.8%	18	15.4%	22	18.8%	3	2.6%	11	9.4%
Risk group											
IDU	2,947	1,719	58.3%	552	18.7%	450	15.3%	86	2.9%	140	4.8%
MSM	1,746	1,214	69.5%	204	11.7%	238	13.6%	35	2.0%	55	3.2%
MSM/IDU	151	82	54.3%	28	18.5%	28	18.5%	3	2.0%	10	6.6%
Hetero	1,851	1,135	61.3%	285	15.4%	300	16.2%	45	2.4%	86	4.6%
Pedi	132	49	37.1%	22	16.7%	42	31.8%	8	6.1%	11	8.3%
Oth/unk	1,253	761	60.7%	213	17.0%	199	15.9%	31	2.5%	49	3.9%
Age group											
0-19	80	34	42.5%	13	16.3%	24	30.0%	2	2.5%	7	8.8%
20-29	417	155	37.2%	80	19.2%	137	32.9%	25	6.0%	20	4.8%
30-39	1,072	580	54.1%	177	16.5%	208	19.4%	30	2.8%	77	7.2%
40-49	2,879	1,729	60.1%	460	16.0%	477	16.6%	84	2.9%	129	4.5%
50-59	2,692	1,783	66.2%	446	16.6%	322	12.0%	50	1.9%	91	3.4%
60+	940	679	72.2%	128	13.6%	89	9.5%	17	1.8%	27	2.9%

¹ Characteristics as of November 2010.

² Number of cases with a ‘most recent’ VL reported during 2008-November 2010.

Table 3. Multivariate analysis¹ of HIV/AIDS case characteristics associated^{2,3,4,5} with a ‘most recent’ HIV VL of 1,000 copies/mL or higher reported in 2008-November 2010, Connecticut, 2010.

	Odds ratio	95% confidence interval
Sex		
Male	ref	--
Female	0.95	(0.82, 1.11)
Race/ethnicity ⁶		
White	ref	--
Black ^{2,3,4}	1.59	(1.36, 1.86)
Hispanic ^{2,3,4}	1.37	(1.16, 1.60)
Risk ⁷		
IDU	ref	--
MSM ^{2,3}	1.35	(1.12, 1.62)
MSM/IDU	1.21	(0.76, 1.93)
Het ³	1.21	(0.99, 1.50)
NIR ⁸	0.92	(0.73, 1.15)
Age ^{2,3,4,9}	0.97	(0.96, 0.97)
Diagnosis year ^{2,3,10}	1.03	(1.02, 1.04)
Ryan White service areas ¹¹		
Non-RW counties	ref	--
Hartford TGA	1.07	(0.85, 1.36)
New Haven EMA ^{3,4}	0.86	(0.69, 1.09)

¹ Multivariate analysis consisted of logistic regression using a robust forward selection method.

² Categorical variables were significantly different from the reference group at the p<0.05 level. Continuous variables, age and diagnosis year, were significant at the p<0.05 level.

³ Characteristics significant in the best-fit model.

⁴ Characteristics significant when HIV/AIDS cases were limited to those that had at least two VL tests with the first test of any date (not limited to 2008-November 2010) (p<0.001).

⁵ Cases were excluded if they were known to be residing out of Connecticut or if they were known to have died.

⁶ Cases with ‘other’ race were excluded from the analysis.

⁷ Cases with ‘pediatric’ or ‘other’ risk were excluded from the analysis.

⁸ NIR=No identified risk.

⁹ The OR for each 10-year increment in higher age is 0.77.

¹⁰ The OR for each 5-year increment in more recent diagnosis year is 1.93.

¹¹ Ryan White service areas: TGA=Transitional Grant Area; Hartford, Middlesex, and Tolland Counties. EMA=Eligible Metropolitan Area; New Haven and Fairfield Counties.

Figure 2. Mean of most recent VL (copies/mL) in towns with at least 50 most recent VL tests reported in 2008-November 2010, Connecticut, 2010 (preliminary).

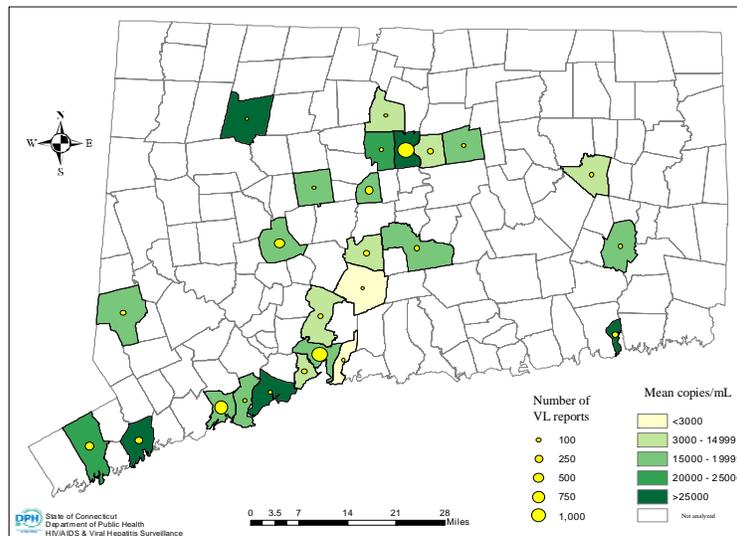


Figure 3. Percent of HIV/AIDS cases with most recent VL of <75 copies/mL in towns with at least 50 most recent VL tests reported in 2008-November 2010, Connecticut, 2010 (preliminary).

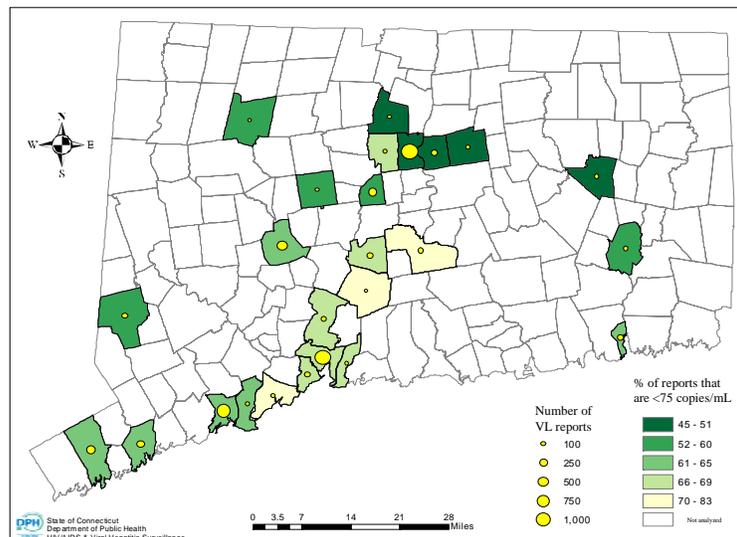


Figure 4. Sum of most recent VL test results in towns with at least 50 most recent VL tests reported in 2008-November 2010, Connecticut, 2010 (preliminary).

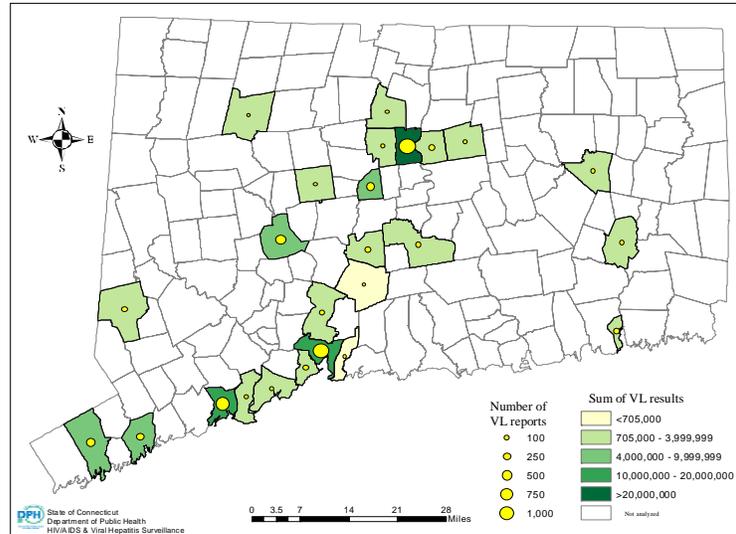


Figure 5. Mean of HIV/AIDS cases residing in Hartford County, who were initially diagnosed in 2007-2009, and who had a most recent VL reported in 2008-November 2010, by census tract, Connecticut, 2010 (preliminary).

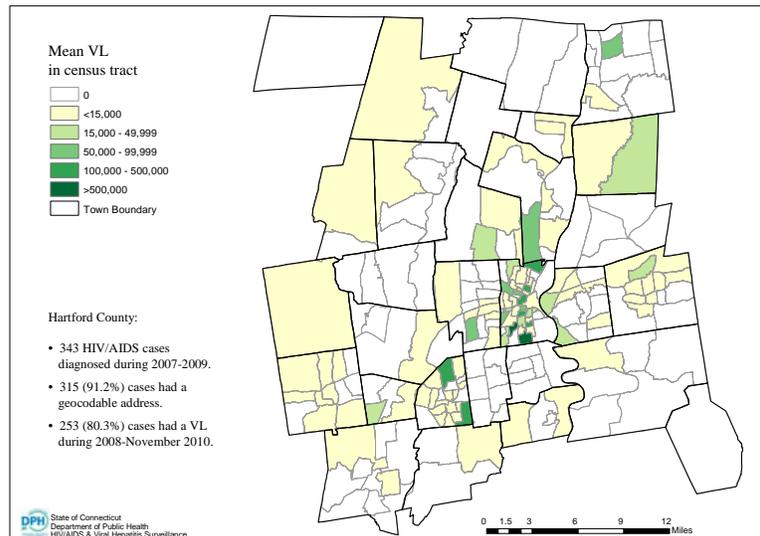


Table 4. Mean and sum of VL for HIV/AIDS cases residing in the City of Hartford, who were initially diagnosed in 2007-2009¹, and who had a most recent VL² reported in 2008-November 2010, by census tract, Connecticut, 2010 (preliminary).

Census tract ³	Number of tests	Mean of VL	Sum of VL
1	8	17,636	141,091
2	7	31,824	222,767
3	6	4,679	28,071
4	5	63,558	317,791
5	5	21,961	109,806
6	5	8,328	41,641
7	5	112,183	560,915
8	5	57,364	286,819
9	5	127,511	637,556
10	5	4,601	23,004
11	4	12,667	50,668
12	4	24,961	99,844
13	4	52,401	209,604
14	4	675	2,701
15	4	2,033	8,133
16	4	1,824	7,294
17	4	822	3,289
18	4	4,354	17,417
19	4	11,144	44,574
20	3	3,402	10,207
21	3	455	1,366
22	3	235,169	705,507
23	3	948	2,844
24	3	202,720	608,159
25	3	333,365	1,000,095
26	2	174	347
27	2	101	202
28	2	16,395	32,790
29	2	824	1,647
30	2	1,860	3,720
31	2	16,111	32,222
32	1	1,000,001	1,000,001
33	1	83,300	83,300
34	1	39,300	39,300
35	1	1,000,001	1,000,001
36	1	214	214
Total	127	57,755	7,334,907

¹ As of August 2010, 172 cases were reported that were diagnosed during 2007-2009 in Hartford. Of these, 161 (93.6%) had geocodable addresses and of these 127 (78.9%) had a VL reported during 2008-November 2010.

² Given that the number of most recent VL reports per census tract ranged from 1-8 and VL values for individual cases ranged from 47 to 1,000,001, the means can be expected to have significant fluctuations over time, with large differences between census tracts. Mean VL may not be the best measure of community VL at the neighborhood level.

³ Census tract numbers have been removed to protect confidentiality.

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