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Changes in the Prevalence of Injection Drug Use Among Adolescents and Young Adults in Large U.S. Metropolitan Areas

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Abstract

Young injection drug users (IDUs) are at risk for acquiring blood-borne diseases like HIV and Hepatitis C. Little is known about the population prevalence of young IDUs. We (1) estimate annual population prevalence rates of young IDUs (aged 15–29) per 10,000 in 95 large U.S. metropolitan statistical areas (MSAs) from 1992 to 2002; (2) assess the validity of these estimates; and (3) explore whether injection drug use among youth in these MSAs began to rise after HAART was discovered. A linear mixed model (LMM) estimated the annual population prevalence of young IDUs in each MSA and described trends therein. The population prevalence of IDUs among youths across 95 MSAs increased from 1996 (mean = 95.64) to 2002 (mean = 115.59). Additional analyses of the proportion of young IDUs using health services suggest this increase may have continued after 2002. Harm reduction and prevention research and programs for young IDUs are needed.

Keywords

Injection drug use; Adolescents; Young adults; Metropolitan statistical area; Prevalence; Harm reduction

Introduction

Research indicates that young injection drug users (IDUs) differ in their risk behavior from their older counterparts, and have a very high risk for HIV, HCV, STIs and drug overdose [1–8]. They are less aware of the dangers of injecting drugs and how to reduce their risk, and more likely to share syringes and drug preparation equipment. They inject frequently, have multiple sexual partners, and exchange sex for money or drugs [9–12].

Increases in the number of young IDUs are likely to increase the numbers of HIV/AIDS, cirrhosis, and hepatocellular carcinoma cases, the number of IDUs needing social and medical services, and the number of overdose deaths [13]. Therefore, it is very important to monitor the prevalence of IDU among youth.

Data on the prevalence of young IDUs in US geographic areas are rare. The National Survey on Drug Use and Health (NSDUH) provides annual estimates of numbers of young IDUs in the US, but these data are not suitable to measure change as: (a) data are derived from a household survey with well-known sampling and self-report limitations; and (b) NSDUH acknowledge the data are not suitable for longitudinal analyses, given changes in data collection methods over time. These limitations have been discussed in detail elsewhere [14–18].

This study: (1) describes a method of estimating the population prevalence of young IDUs aged 15–29 in 95 large metropolitan statistical areas (MSAs) annually over an 11-year period (1992–2002); (2) validates the resulting population prevalence estimates; and (3) conducts exploratory analyses of a hypothesis that young IDU prevalence increased after HAART was discovered.

Providing public health and harm reduction advocates with young IDUs estimates can: (1) assist efforts to plan young IDU-related health services; (2) bring about a better understanding of young IDU drug-related health problems; and (3) assist research in exploring the social and structural determinants of young IDU-related prevalence [19, 20].

Methods

Unit of Analysis

The MSA is the unit of analysis. The U.S. Office of Management and Budget defines an MSA as a set of adjacent counties that collectively form a single cohesive socioeconomic unit and include at least one central city home to 50,000 people or more [21, 22]. We chose MSAs as a unit of analysis because they are salient epidemiologic units for the study of injecting: injection-related epidemics like HIV vary widely across MSAs, and many suburban injectors travel to the central city to receive services and engage in drug-related activity [23, 24].

This study includes 95 of the 96 U.S. MSAs whose population exceeded 500,000 in 1992. These are home to almost two thirds of the U.S. population. One MSA, San Juan, was excluded due to data unavailability.

Overview of the Data Series Used and Estimating Procedure

We used two data series to estimate the population prevalence of young IDUs. Both data-series report on service episodes rather than on unique individuals:

1. Substance Abuse and Mental Health Service Administration's (SAMHSA's) Treatment Entry Data System (TEDS). TEDS documents admissions to private and public drug treatment programs receiving state funds, certificates, or licenses [25].

2. The Centers for Disease Control and Prevention's (CDC's) HIV counseling and testing services data series (CTS). CDC provided data on numbers and ages of IDUs tested for HIV at CDC-funded counseling and testing sites for each MSA [26].

We used a 3-step approach similar to that used in some of our previous studies to estimate the annual population prevalence of young IDUs in each MSA from 1992 to 2002 [14, 27, 28].

Step 1: For both TEDS and CTS, separately, we calculated the annual proportions of IDUs receiving these services at drug treatment and HIV testing and counseling sites who were aged 15–29 years in each MSA.

Step 2: To calculate the number of young IDUs, we then multiplied these proportions of young IDUs by previously-calculated estimates of the total number of IDUs in each MSA and year [27].

To estimate the population prevalence of young IDUs for TEDS and CTS, we divided the number of young IDUs using each service by the size of their respective “at risk” populations (i.e., youth aged 15–29) for each MSA and year.

Step 3: For the final estimates, we used the predicted values from a linear mixed model (LMM) that included both TEDS and CTS based estimates.

Step 1 Estimating the proportions of young IDUs in TEDS and CTS—First, for TEDS, we calculated the proportion of young IDUs aged 15–29 among all IDUs (regardless of age) entering treatment in 95 MSAs from 1992 to 2002. We then calculated the proportion of young IDUs among all IDUs receiving HIV counseling and testing from the CTS data.

To avoid small denominator problems, the TEDS and CTS databases were processed with a criterion that, if any MSAs in any year from 1992 to 2002 had less than 5 IDUs (regardless of age), we marked that cell as missing. After applying the criteria, there were approximately 5% missing cells in TEDS and 8% missing cells in CTS.¹

Step 2 Estimating the numbers and population prevalence of young IDUs from TEDS and CTS proportions—To estimate the total number of young IDUs, previously published data on the total number of IDUs were used [28]. We briefly discuss how this earlier paper calculated the total numbers of IDUs in 96 MSAs for each year 1992–2002.

The study used a multiplier/allocation method to estimate the national population prevalence of IDUs from 1992 to 2002 from existing data on the number of injectors living in the U.S. in 1992 and in 1998, and from annual data on injectors'; encounters with health services and with the criminal justice system [27–29]. Then, to estimate the prevalence of IDUs in 96 large MSAs from 1992 to 2002, we allocated these totals among the 96 MSAs (and the rest of the country) using four different types of data: (1) Centers for Disease Control HIV CTS data; (2) SAMSHA's Uniform Facility Data Set (UFDS) and TEDS data; (3) CDC data on diagnoses of IDUs with HIV/AIDS; and (4) an estimate derived from published estimates of the number of injectors living in each MSA in 1992 [29] and in 1998 [28]. Each series was smoothed over time using loess regression and the mean value of the four component estimates was taken as the best estimate of the prevalence of IDUs for each MSA and year [27].

¹For each data series, cells were defined by year and MSA; 11 years × 95 MSAs = 1,045 cells.

Where data were not missing, we multiplied our estimated proportions of IDUs who were aged 15–29 in the TEDS data by these previous estimates of the total number of IDUs in each MSA annually from 1992 to 2002. Similarly, we then multiplied the proportion of IDUs who were young in the CTS data by the estimated total IDUs in the MSA to create a second estimate of the number of young IDUs.

We then calculated the population prevalence of young IDUs separately for each data series by dividing the estimated number of IDUs in the MSA by the population of young people aged 15–29 of that MSA in that year (and multiplying the result by 10,000), using data from the US Census Population Estimates Program [30].

Step 3 Final estimate, using a restricted-maximum-likelihood average based on LMM—To calculate the final estimates of young IDUs per 10,000 populations in each MSA in each year, we used LMM [31–34]. The LMM combined the population prevalence of young IDUs calculated from TEDS and CTS to form a single combined estimate while adjusting for missing data. Once we combined the data series we had 1,045 cells + 1,045 cells = 2,090 cells. To distinguish the two sources of data, we created a source indicator, coded 0.5 if representing TEDS and -0.5 if representing CTS. We describe our LMM briefly here:

$$E(Y_{ijk} | \text{time, data series}) = \beta_0 + \beta_1 * \text{time}_{ijk} + \beta_2 * \text{time}_{ijk}^2 + \beta_3 * \text{source}_{ijk} + \gamma_{jk} + \varepsilon_{ijk}$$

where $E(Y_{ijk} | \text{time, data series})$ is the mean population prevalence of young IDUs in i MSA, j year and k estimates from TEDS or CTS; β_0 the mean *population* prevalence of young IDUs in 1997; β_1 the population prevalence of young IDUs linear slope; β_2 the population prevalence of young IDUs quadratic slope; β_3 the difference in young IDU prevalence estimated from TEDS and CTS data; γ the unknown vector of random effect parameters; and ε is the unknown random error vector.

An important component in our estimation was the number of IDUs. Since Brady et al. [27] described the trend of population prevalence of IDUs as a quadratic polynomial, we chose the quadratic polynomial for study year as our best model. The study year was centered on 1997 to diminish correlations between study year polynomials [35]. Instead of using a simple average [14, 27] we used LMM to compute the restricted-maximum-likelihood average as our final estimates for the following three reasons: (1) The TEDS data-series had 5% missing cells and CTS had 8% missing cells. The LMM used all available data to estimate parameters under the assumption that data were missing at random (MAR) conditional on observed data; (2) Since we used health service data (i.e., TEDS data on treatment entry and CTS data on HIV counseling and testing), sudden increases or decreases in health services funding for IDUs might affect our prevalence estimates. LMM helped to smooth the data so the overall trend would not be unduly affected by temporary changes in services that did not reflect true changes in prevalence; and (3) LMM let us compute the uncertainty (standard error) associated with our estimations, which would not have been possible using simple averages.

Reliability—To assess the reliability of the final estimates, we examined the correlations between TEDS- and CTS-based estimates of young IDUs per 10,000 youth for each year.

Criterion Validity—Since injection drug use is associated with fatal overdose, we used overdose deaths among youth to test criterion validity [14, 36]. We examined two types of

overdose deaths; (a) drug-related deaths among young people aged 15–29; and (b) accidental and unintentional drug poisoning deaths among 15–29 year olds.

Our algorithm for “drug-related deaths” variable was adapted from the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA). They use ICD-9 and ICD-10 codes to capture “deaths happening shortly after consumption of one or more psychoactive drugs and directly related to this consumption” [37]. For “accidental and unintentional drug poisoning deaths,” we included only those overdose deaths that occurred due to consumption of cocaine, heroin, or psycho-stimulants.

The number of people dying from either of these causes in each MSA and year was extracted from the National Center for Health Statistics’; Multiple Cause of Death database, a census of all deaths in the U.S. [38]. This data series used the ICD-9 coding system to identify causes of death between 1992 and 1998; ICD-10 coding was used thereafter [38]. We restricted our analysis to overdose cases where residency (MSA) and death occurrence (MSA) matched. Neither the ICD-9 nor the ICD-10 coding systems identify the mode of drug administration, so we could not limit overdose cases to those that were IDU related.

Hypothesis Development and Exploration—In preliminary analyses, we observed an apparent decline of young IDU prevalence between 1992 and 1996 and an increase thereafter. This led us to hypothesize that the prevalence of young drug injectors increased after HAART was discovered in 1996. To explore the hypothesis, a number of different analyses were performed:

1. A trend analysis on the percentages of 15–29 year olds who entered drug abuse treatment (TEDS) and reported that they were IDUs.
2. A trend analysis on the percentages of 15–29 year olds who received services at HIV counseling and testing sites (CTS) and reported that they were IDUs.

Two sets of models were calculated for each of these to see if 1996 was the starting point of a rise in IDU prevalence among young people: (1) a quadratic model on the percentages of young IDUs from 1992 to 2005; and (2) a linear model on the percentages of young IDUs from 1996 to 2005.

We also conducted trend analyses on the population prevalence of young IDUs in each MSA individually from 1996 to 2002. (We could not conduct such analyses for the later years, 2003–2005, because estimates of total IDU prevalence for the MSAs since 2002 have not been published.)

Results

Figure 1 shows the overall trajectory of young IDU population prevalence based on the LMM and considering both fixed effects and random effects. This figure also includes trajectories of young IDU population prevalence based separately on estimates from TEDS and from CTS data. Annual estimates for each MSA appear in the Appendix—supplementary material.

Table 1 shows the fixed effect and random effect parameters estimates where the study year was centered on 1997. Considering both the instantaneous rate of change parameter (1.72; $P = 0.01$) and curvature parameter (0.40; $P < 0.001$) the average population prevalence of young IDUs trajectory showed an increasing trend after 1995 (see Table 2). The fixed-effect coefficient for the source indicator (Table 1) indicates a significant difference, with the average estimate in 1997 based on CTS about 15 IDUs per 10,000 people aged 15–29 years greater than the estimate from TEDS. The estimated intercept suggests a prevalence of 97

young IDUs per 10,000 young people in 1997 when TEDS and CTS data are averaged by the LMM.

The average trajectory of young IDUs across all 95 MSAs was not necessarily indicative of the trend of population prevalence of young IDUs in a given MSA. Statistically significant variations in the prevalence of young IDUs in 1997 (variance = 2689), in the instantaneous rate of change (linear expression of time; variance = 39), and in the curvature (quadratic expression of time; variance = 0.28) of the trajectories across MSAs were observed. A comparison graph (Fig. 2) of estimates for the five largest MSAs illustrates such variation.

Table 2 describes the prevalence of young IDUs across 95 MSAs from 1992 to 2002. Young IDU prevalence varied across MSAs from 28 to 284 (mean = 98.34; SD = 57.06; median = 78; and interquartile range = 52–132) in 1992; 23 to 229 (mean = 95.64; SD = 51.65; median = 85; interquartile range = 53–130) in 1996; and 41 to 327 (mean = 115; SD = 60; median = 102; interquartile range = 68–140) in 2002.

Reliability—Table 3 shows Pearson correlations between TEDS- and CTS-based estimates of the population prevalence of young IDUs for each year. These correlations describe the extent to which our estimates for each data series produce consistent results. Correlations ranged from 0.74 to 0.89, which suggests that our estimates have acceptable to high reliability [39].

Criterion Validity—Table 4 shows that the population prevalence of young IDUs was significantly correlated each year with: (a) drug related deaths per capita; and (b) accidental and unintentional poisoning deaths per capita. These correlations were positive and in the expected direction, reflecting associations with medium to large effect sizes [40]. These results suggest our final estimates had acceptable validity.

Exploring the Hypothesis that IDU Prevalence Among Youth Increased After HAART was Discovered—To test this exploratory hypothesis we first examined the percentages of young IDUs in TEDS and CTS from 1992 to 2005 (Fig. 3). Trend analyses on percentages of young IDUs in TEDS and CTS for the years 1996–2005 showed significant increases (TEDS linear slope = 1.62, $P < 0.0001$; CTS linear slope = 0.54, $P < 0.0001$).

Trend analyses on the final estimates of young IDU population prevalence in each MSA for 1996–2002 were also performed. In TEDS, 42 MSAs increased significantly and 6 MSAs decreased significantly (at $P < 0.05$). In CTS, 27 MSAs increased significantly and 10 MSAs decreased significantly (at $P < 0.05$). These results suggest young IDU prevalence rates increased after 1996, with some local variation.

Discussion

These data suggest that the prevalence of IDUs among adolescents and young adults increased between 1995 and 2002. Further analyses of the proportions of IDUs entering treatment or receiving HIV counseling and testing who were young suggest that this trend may have continued through 2005. This contrasts sharply with our previous finding that the prevalence of IDUs of all ages decreased from the early 1990s to the early 2000s [27]. If the prevalence of IDUs among young people continues to increase, we would expect the overall prevalence of IDUs eventually to increase as well.

One possible explanation for the increase in young IDUs involves community learning, which has influenced drug use patterns in other circumstances [41, 42]. HAART led to dramatic declines in AIDS incidence and mortality, and this seems to have affected public

perceptions of the epidemic. Survey data find that the proportion of Americans who considered HIV/AIDS to be the “most urgent health problem facing this nation today decreased from 38% in 1997 to 17% in 2002” [43]. In neighborhoods where injection drug use was prevalent, this meant that children and youth no longer observed widespread HIV-related morbidity or mortality among older peers, relatives or neighbors. According to community learning theory, this would have reduced the deterrent effect of the fear of HIV/AIDS, which in turn might mean that young drug users would be more likely to try (and continue in) injecting their drugs. Parallel arguments have been made to explain decreases in condom use among men who have sex with men after HAART was discovered [44]. Future research should consider and test competing explanations for this trend. One such possible explanation might be the increasing use of prescription analgesics by youth to the extent that this leads them to take up injection [45].

Study Limitations

Data Limitations: Despite the fact that using different data sources helps to balance biases, as each data series has strengths and weaknesses [28], we could use only two data series due to lack of other usable data. Availability of additional sources might have strengthened our estimates. Since admissions, rather than individuals, are the units of analysis for TEDS data, an individual who entered drug treatment twice or more in a particular year was counted as two or more independent cases [25]. Similar double-counting is also a limitation for HIV counseling and testing data.

Further, since the TEDS and CTS systems only collect data from subsets of United States locations where drug treatment or CDC-HIV counseling and testing take place our estimates may be biased to the extent that the age distributions of IDUs using these sites differ from those at sites that were not included. For example, the HIV CTS data as a whole are considered to only represent somewhere in the range of about 10–17% of all HIV tests in the US. These limitations have been discussed in detail elsewhere [14, 27].

Our analyses of data on deaths from overdose had some limitations. Unfortunately, the data do not indicate whether the decedent injected drugs prior to death, or if other methods of administration were used. Since non-injection modes of drug administration are more common, we should not expect large associations between IDU prevalence estimates and overdose mortality data. In addition, changes in ICD coding from version 9 to version 10 may have resulted in increased measurement error during the later study years. In addition, our estimates of young IDUs include injectors of heroin, cocaine or other psycho-stimulants, and we have no way to construct accurate estimates of young IDUs by primary drug of choice. Since mortality rates due to overdose vary by the drug being used, this probably means that variations by MSA and by year in the relative distribution of drugs being used by young adults will tend to decrease the size of the correlations presented in Table 4—which may imply that our estimates of criterion validity are underestimates. Finally, overdose deaths in the young age range (15–29) were sparse in some MSAs, potentially reducing the reliability of overdose deaths as an indicator for IDU prevalence among young people.

Analytical Limitations: The rate of increase in the percentage of young IDUs entering treatment centers was considerably higher than the rate of increase in young IDUs attending HIV counseling and testing centers (Fig. 3). This finding could be due to causes other than an increase in young IDU prevalence in the population—for example, if younger IDUs increased in their propensity to enter treatment relative to older IDUs. (This could have occurred if treatment centers increasingly solicited young IDUs or if courts increasingly ordered young IDUs to enter treatment.) Thus our study results could be influenced by selection bias.

Conclusion

This study indicates that injection drug use among young people rose in recent years. Given the importance of sexual and injection behaviors as risk factors for HIV among young IDUs, this underscores previous suggestions that programs should implement interventions for younger IDUs [7, 46–48]. Failure to set up proper intervention programs could lead to widespread increases in HIV transmission that could parallel recent increases in HIV incidence among young MSM [49, 50]. Young IDUs often face other difficulties as well, such as dropping out of or being expelled from school, difficulty gaining training and experience that might help them get good jobs, and resulting difficulties in obtaining health care [1, 51, 52].

Drug abuse treatment is unlikely to have much impact on current young IDUs given the very low treatment coverage among IDUs overall from 1993 to 2002 in 90 large US MSAs [53]. Further, some studies have found that young IDUs have less access to drug treatment and to and counseling and testing services than older users [46–48].

We conclude with some suggestions for action: (1) Prevention programs including harm reduction programs, treatment programs, counseling centers should include young IDUs as a core focus of their intervention structure; (2) funding for such programs should be increased; and (3) future research should study what differentiates MSAs in which injection drug use among youth is decreasing from MSAs in which it is increasing.

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Appendix

Estimated number and population prevalence per 10,000 of injection drug users among people aged 15–29 in the 95 largest U.S. Metropolitan Statistical Areas, 1992 – 2002, and prevalence sub-estimates based on Treatment Entry Data System and HIV-Counseling and Testing data series. Missing data are indicated by blank spaces.

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Akron, OH	1992	30	34	33	493
Akron, OH	1993	23	38	31	451
Akron, OH	1994	29	34	30	430
Akron, OH	1995	23	33	30	427
Akron, OH	1996	21	42	31	445
Akron, OH	1997	29	36	33	473
Akron, OH	1998	31	33	37	516
Akron, OH	1999	34	35	41	575

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Akron, OH	2000	34	48	47	648
Akron, OH	2001	67	73	53	740
Akron, OH	2002	64	47	61	849
Albany--Schenectady--Troy, NY	1992	44		45	873
Albany--Schenectady--Troy, NY	1993	32	37	42	803
Albany--Schenectady--Troy, NY	1994	32	53	41	755
Albany--Schenectady--Troy, NY	1995	37	38	40	725
Albany--Schenectady--Troy, NY	1996	50	39	40	711
Albany--Schenectady--Troy, NY	1997	39	30	41	716
Albany--Schenectady--Troy, NY	1998	47	39	43	741
Albany--Schenectady--Troy, NY	1999	54	43	45	779
Albany--Schenectady--Troy, NY	2000	58	43	49	836
Albany--Schenectady--Troy, NY	2001	54	43	53	922
Albany--Schenectady--Troy, NY	2002	70	46	58	1030
Albuquerque, NM	1992	223	266	238	3232
Albuquerque, NM	1993	223	266	232	3163
Albuquerque, NM	1994	223	239	226	3144
Albuquerque, NM	1995	185	225	220	3129
Albuquerque, NM	1996	182	197	215	3107
Albuquerque, NM	1997	209	229	210	3073
Albuquerque, NM	1998	190	257	206	3056
Albuquerque, NM	1999	222	236	202	3014
Albuquerque, NM	2000	205	170	198	2988
Albuquerque, NM	2001	158	207	195	2983
Albuquerque, NM	2002	151	232	192	3024
Allentown--Bethlehem--Easton, PA	1992	159	169	154	1894
Allentown--Bethlehem--Easton, PA	1993	142	157	155	1884
Allentown--Bethlehem--Easton, PA	1994	155	181	158	1897
Allentown--Bethlehem--Easton, PA	1995	155	174	162	1930
Allentown--Bethlehem--Easton, PA	1996	138	166	169	1993
Allentown--Bethlehem--Easton, PA	1997	158	165	176	2077
Allentown--Bethlehem--Easton, PA	1998	158	196	186	2182
Allentown--Bethlehem--Easton, PA	1999	226	220	197	2296
Allentown--Bethlehem--Easton, PA	2000	178	200	210	2431
Allentown--Bethlehem--Easton, PA	2001	280	251	225	2623
Allentown--Bethlehem--Easton, PA	2002	239	221	241	2863

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Ann Arbor, MI	1992	37	27	32	438
Ann Arbor, MI	1993	30	37	30	405
Ann Arbor, MI	1994	13	29	29	386
Ann Arbor, MI	1995	23	25	29	385
Ann Arbor, MI	1996	25	34	29	397
Ann Arbor, MI	1997	28	40	31	421
Ann Arbor, MI	1998	35	38	33	454
Ann Arbor, MI	1999	29	31	36	504
Ann Arbor, MI	2000	34	47	40	565
Ann Arbor, MI	2001	50	48	45	644
Ann Arbor, MI	2002	40	52	51	739
Atlanta, GA	1992	74		73	5473
Atlanta, GA	1993	53		68	5173
Atlanta, GA	1994	61	60	63	4921
Atlanta, GA	1995	58	55	59	4714
Atlanta, GA	1996	53	52	56	4553
Atlanta, GA	1997	89	47	53	4440
Atlanta, GA	1998	42	44	50	4365
Atlanta, GA	1999	55	47	48	4317
Atlanta, GA	2000	48	41	47	4305
Atlanta, GA	2001	53	42	46	4255
Atlanta, GA	2002	38	38	45	4227
Austin--San Marcos, TX	1992	165	252	200	5095
Austin--San Marcos, TX	1993	137	206	192	4977
Austin--San Marcos, TX	1994	152	232	183	4879
Austin--San Marcos, TX	1995	138	201	174	4796
Austin--San Marcos, TX	1996	188	205	164	4676
Austin--San Marcos, TX	1997	137	172	153	4536
Austin--San Marcos, TX	1998	122	146	142	4380
Austin--San Marcos, TX	1999	146	142	130	4201
Austin--San Marcos, TX	2000	105	104	117	3982
Austin--San Marcos, TX	2001	114	85	104	3644
Austin--San Marcos, TX	2002	89	71	90	3182
Bakersfield, CA	1992	210	339	257	3401
Bakersfield, CA	1993	156	300	247	3246
Bakersfield, CA	1994	170	346	238	3164

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Bakersfield, CA	1995	120	348	229	3051
Bakersfield, CA	1996	114	341	222	2974
Bakersfield, CA	1997	116	302	216	2952
Bakersfield, CA	1998	116	295	210	2951
Bakersfield, CA	1999	112	282	205	2983
Bakersfield, CA	2000	99	262	202	2991
Bakersfield, CA	2001	140	305	199	3044
Bakersfield, CA	2002	107	291	197	3144
Baltimore, MD	1992	120	151	135	7081
Baltimore, MD	1993	138	175	147	7503
Baltimore, MD	1994	131	167	161	8003
Baltimore, MD	1995	154	175	176	8604
Baltimore, MD	1996	165	187	193	9331
Baltimore, MD	1997	203	212	211	10176
Baltimore, MD	1998	259	252	231	11116
Baltimore, MD	1999	274	274	253	12225
Baltimore, MD	2000	279	256	276	13445
Baltimore, MD	2001	330	288	301	14797
Baltimore, MD	2002	363	302	327	16333
Bergen--Passaic, NJ	1992	100	90	93	2460
Bergen--Passaic, NJ	1993	91	94	88	2281
Bergen--Passaic, NJ	1994	91	71	84	2135
Bergen--Passaic, NJ	1995	89	67	82	2028
Bergen--Passaic, NJ	1996	95	58	79	1955
Bergen--Passaic, NJ	1997	93	69	78	1913
Bergen--Passaic, NJ	1998	89	70	78	1899
Bergen--Passaic, NJ	1999	100	63	78	1901
Bergen--Passaic, NJ	2000	88	61	80	1935
Bergen--Passaic, NJ	2001	94	60	82	1972
Bergen--Passaic, NJ	2002	99	76	85	2032
Birmingham, AL	1992	41	85	54	1022
Birmingham, AL	1993	28		53	1004
Birmingham, AL	1994	56		54	1010
Birmingham, AL	1995	40		55	1041
Birmingham, AL	1996	32		58	1098
Birmingham, AL	1997	37		62	1178

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Birmingham, AL	1998	67		67	1281
Birmingham, AL	1999	69		73	1402
Birmingham, AL	2000	83		81	1541
Birmingham, AL	2001	99		90	1694
Birmingham, AL	2002	82		100	1872
Boston, MA--NH	1992	64	72	78	10298
Boston, MA--NH	1993	89	103	87	11109
Boston, MA--NH	1994	70	82	96	12008
Boston, MA--NH	1995	103	113	106	13059
Boston, MA--NH	1996	113	124	117	14210
Boston, MA--NH	1997	132	138	128	15521
Boston, MA--NH	1998	161	159	140	16919
Boston, MA--NH	1999	125		153	18374
Boston, MA--NH	2000	191	170	167	19954
Boston, MA--NH	2001	139		181	21760
Boston, MA--NH	2002	208		197	23651
Buffalo--Niagara Falls, NY	1992	27		37	917
Buffalo--Niagara Falls, NY	1993	29	35	37	905
Buffalo--Niagara Falls, NY	1994	28	35	38	900
Buffalo--Niagara Falls, NY	1995	32	40	39	907
Buffalo--Niagara Falls, NY	1996	43	49	41	924
Buffalo--Niagara Falls, NY	1997	41	47	42	951
Buffalo--Niagara Falls, NY	1998	56	52	45	990
Buffalo--Niagara Falls, NY	1999	51	43	47	1037
Buffalo--Niagara Falls, NY	2000	65	51	51	1094
Buffalo--Niagara Falls, NY	2001	51	38	54	1175
Buffalo--Niagara Falls, NY	2002	67	37	58	1274
Charleston--North Charleston, SC	1992	47		43	585
Charleston--North Charleston, SC	1993	28		39	511
Charleston--North Charleston, SC	1994	27		36	458
Charleston--North Charleston, SC	1995	19		34	421
Charleston--North Charleston, SC	1996	23		33	404
Charleston--North Charleston, SC	1997	30	18	33	412
Charleston--North Charleston, SC	1998	32	28	35	436
Charleston--North Charleston, SC	1999	64	27	38	475
Charleston--North Charleston, SC	2000	51	34	41	520

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Charleston--North Charleston, SC	2001	50	48	46	579
Charleston--North Charleston, SC	2002	75	21	52	659
Charlotte--Gastonia--Rock Hill, NC--SC	1992	38	90	62	1738
Charlotte--Gastonia--Rock Hill, NC--SC	1993	39	67	57	1624
Charlotte--Gastonia--Rock Hill, NC--SC	1994	34	84	54	1537
Charlotte--Gastonia--Rock Hill, NC--SC	1995	37	60	51	1475
Charlotte--Gastonia--Rock Hill, NC--SC	1996	40	50	49	1431
Charlotte--Gastonia--Rock Hill, NC--SC	1997	36	46	47	1408
Charlotte--Gastonia--Rock Hill, NC--SC	1998	40	54	45	1397
Charlotte--Gastonia--Rock Hill, NC--SC	1999	52	53	45	1396
Charlotte--Gastonia--Rock Hill, NC--SC	2000	47	56	44	1414
Charlotte--Gastonia--Rock Hill, NC--SC	2001	42	35	45	1426
Charlotte--Gastonia--Rock Hill, NC--SC	2002	44	32	45	1456
Chicago, IL	1992	34	53	39	6759
Chicago, IL	1993	32	41	38	6457
Chicago, IL	1994	33	45	37	6338
Chicago, IL	1995	22	35	38	6427
Chicago, IL	1996	22	32	39	6711
Chicago, IL	1997	30	40	41	7176
Chicago, IL	1998	47	58	45	7854
Chicago, IL	1999	73	69	49	8685
Chicago, IL	2000	43	48	55	9701
Chicago, IL	2001	62	60	61	10814
Chicago, IL	2002	55	73	68	12071
Cincinnati, OH--KY--IN	1992	47	75	53	1788
Cincinnati, OH--KY--IN	1993	38	50	49	1656
Cincinnati, OH--KY--IN	1994	37	55	47	1562
Cincinnati, OH--KY--IN	1995	30	61	45	1521
Cincinnati, OH--KY--IN	1996	34	43	46	1525
Cincinnati, OH--KY--IN	1997	35	50	47	1575

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Cincinnati, OH--KY--IN	1998	38	57	50	1665
Cincinnati, OH--KY--IN	1999	42	73	53	1787
Cincinnati, OH--KY--IN	2000	38	64	59	1953
Cincinnati, OH--KY--IN	2001	69	81	65	2167
Cincinnati, OH--KY--IN	2002	70	69	72	2425
Cleveland--Lorain--Elyria, OH	1992	41	55	41	1847
Cleveland--Lorain--Elyria, OH	1993	25	33	40	1773
Cleveland--Lorain--Elyria, OH	1994	30	48	40	1731
Cleveland--Lorain--Elyria, OH	1995	26	47	40	1731
Cleveland--Lorain--Elyria, OH	1996	29	42	41	1765
Cleveland--Lorain--Elyria, OH	1997	43	48	43	1824
Cleveland--Lorain--Elyria, OH	1998	41	55	45	1910
Cleveland--Lorain--Elyria, OH	1999	50	67	48	2014
Cleveland--Lorain--Elyria, OH	2000	51	57	52	2146
Cleveland--Lorain--Elyria, OH	2001	58	51	57	2301
Cleveland--Lorain--Elyria, OH	2002	65	46	62	2504
Columbus, OH	1992	39	72	49	1686
Columbus, OH	1993	25	52	49	1673
Columbus, OH	1994	43	59	50	1703
Columbus, OH	1995	34	61	52	1783
Columbus, OH	1996	39	70	55	1905
Columbus, OH	1997	42	77	60	2078
Columbus, OH	1998	43	84	66	2299
Columbus, OH	1999	53	96	73	2555
Columbus, OH	2000	60	86	82	2860
Columbus, OH	2001	98	124	91	3193
Columbus, OH	2002	79	111	102	3575
Dallas, TX	1992	125	153	118	8051
Dallas, TX	1993	90	115	116	7894
Dallas, TX	1994	104	131	115	7904
Dallas, TX	1995	93	136	116	8101
Dallas, TX	1996	87	109	118	8490
Dallas, TX	1997	137	111	122	9085
Dallas, TX	1998	140	104	128	9849
Dallas, TX	1999	149	140	135	10743
Dallas, TX	2000	126	114	144	11759

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Dallas, TX	2001	275	132	154	12882
Dallas, TX	2002	180	118	166	14026
Dayton--Springfield, OH	1992	28	47	32	677
Dayton--Springfield, OH	1993	20	30	28	579
Dayton--Springfield, OH	1994	19	25	25	509
Dayton--Springfield, OH	1995	13	27	23	472
Dayton--Springfield, OH	1996	15	33	23	463
Dayton--Springfield, OH	1997	21	35	24	480
Dayton--Springfield, OH	1998	21	22	26	527
Dayton--Springfield, OH	1999	20	27	30	596
Dayton--Springfield, OH	2000	37	23	35	690
Dayton--Springfield, OH	2001	38	38	42	806
Dayton--Springfield, OH	2002	58	63	50	956
Denver, CO	1992	114	189	140	5094
Denver, CO	1993	99	142	141	5197
Denver, CO	1994	124	147	141	5263
Denver, CO	1995	117	163	141	5414
Denver, CO	1996	118	172	141	5602
Denver, CO	1997	117	184	141	5821
Denver, CO	1998	119	192	142	6031
Denver, CO	1999	150	148	142	6254
Denver, CO	2000	161	156	142	6395
Denver, CO	2001	111	107	142	6456
Denver, CO	2002	134	154	142	6459
Detroit, MI	1992	35	54	40	3757
Detroit, MI	1993	25	38	39	3568
Detroit, MI	1994	27	36	38	3452
Detroit, MI	1995	35	39	38	3427
Detroit, MI	1996	37	42	39	3465
Detroit, MI	1997	46	44	40	3541
Detroit, MI	1998	45	53	42	3665
Detroit, MI	1999	39	46	44	3836
Detroit, MI	2000	46	53	47	4066
Detroit, MI	2001	46	38	51	4329
Detroit, MI	2002	64	47	56	4652
El Paso, TX	1992	308	347	284	4467

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
El Paso, TX	1993	234	273	260	4125
El Paso, TX	1994	220	295	238	3748
El Paso, TX	1995	173	240	217	3425
El Paso, TX	1996	77	237	198	3108
El Paso, TX	1997	157	241	180	2852
El Paso, TX	1998	116	168	164	2608
El Paso, TX	1999	146	159	150	2373
El Paso, TX	2000	105	177	137	2165
El Paso, TX	2001	111	145	125	1980
El Paso, TX	2002	102	130	115	1814
Fort Lauderdale, FL	1992	62	77	61	1515
Fort Lauderdale, FL	1993	56	61	60	1503
Fort Lauderdale, FL	1994	55	57	60	1509
Fort Lauderdale, FL	1995	44	51	61	1540
Fort Lauderdale, FL	1996	52	55	62	1600
Fort Lauderdale, FL	1997	69	68	64	1705
Fort Lauderdale, FL	1998	65	77	68	1836
Fort Lauderdale, FL	1999	81	93	71	1988
Fort Lauderdale, FL	2000	66	88	76	2171
Fort Lauderdale, FL	2001	79	92	82	2370
Fort Lauderdale, FL	2002	80	72	88	2598
Fort Worth--Arlington, TX	1992	218	281	209	6976
Fort Worth--Arlington, TX	1993	169	216	200	6601
Fort Worth--Arlington, TX	1994	181	224	193	6388
Fort Worth--Arlington, TX	1995	149	173	188	6273
Fort Worth--Arlington, TX	1996	120	187	184	6250
Fort Worth--Arlington, TX	1997	155	175	182	6336
Fort Worth--Arlington, TX	1998	179	185	181	6491
Fort Worth--Arlington, TX	1999	208	232	183	6703
Fort Worth--Arlington, TX	2000	192	194	185	6965
Fort Worth--Arlington, TX	2001	227	202	190	7272
Fort Worth--Arlington, TX	2002	171	171	196	7677
Fresno, CA	1992	108	220	192	3564
Fresno, CA	1993	131	283	187	3502
Fresno, CA	1994	83	238	180	3398
Fresno, CA	1995	103	315	173	3281

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Fresno, CA	1996	99	286	164	3183
Fresno, CA	1997	86	238	154	3068
Fresno, CA	1998	86	169	143	2916
Fresno, CA	1999	100	153	131	2734
Fresno, CA	2000	89	143	117	2514
Fresno, CA	2001	80	108	103	2245
Fresno, CA	2002	76	81	87	1961
Gary, IN	1992	75	115	71	930
Gary, IN	1993	53	65	69	901
Gary, IN	1994	64	68	69	894
Gary, IN	1995	48	67	71	917
Gary, IN	1996	45	56	74	964
Gary, IN	1997		97	79	1031
Gary, IN	1998		104	86	1118
Gary, IN	1999		102	94	1219
Gary, IN	2000		144	105	1339
Gary, IN	2001		128	117	1473
Gary, IN	2002		130	130	1637
Grand Rapids--Muskegon--Holland, MI	1992	25	47	36	792
Grand Rapids--Muskegon--Holland, MI	1993	24	40	34	735
Grand Rapids--Muskegon--Holland, MI	1994	28	37	32	697
Grand Rapids--Muskegon--Holland, MI	1995	17	32	30	678
Grand Rapids--Muskegon--Holland, MI	1996	21	35	30	677
Grand Rapids--Muskegon--Holland, MI	1997	28	33	30	691
Grand Rapids--Muskegon--Holland, MI	1998	29	35	31	720
Grand Rapids--Muskegon--Holland, MI	1999	35	42	32	764
Grand Rapids--Muskegon--Holland, MI	2000	29	39	35	825
Grand Rapids--Muskegon--Holland, MI	2001	38	38	38	901
Grand Rapids--Muskegon--Holland, MI	2002	35	33	41	995

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Greensboro--Winston-Salem--High Point, NC	1992	56	95	65	1616
Greensboro--Winston-Salem--High Point, NC	1993	39	66	61	1491
Greensboro--Winston-Salem--High Point, NC	1994	60	67	57	1400
Greensboro--Winston-Salem--High Point, NC	1995	41	50	54	1338
Greensboro--Winston-Salem--High Point, NC	1996	37	46	52	1301
Greensboro--Winston-Salem--High Point, NC	1997	44	55	51	1290
Greensboro--Winston-Salem--High Point, NC	1998	52	54	51	1302
Greensboro--Winston-Salem--High Point, NC	1999	61	69	52	1332
Greensboro--Winston-Salem--High Point, NC	2000	43	58	54	1390
Greensboro--Winston-Salem--High Point, NC	2001	61	54	57	1455
Greensboro--Winston-Salem--High Point, NC	2002	64	48	61	1544
Greenville--Spartanburg--Anderson, SC	1992	44		45	882
Greenville--Spartanburg--Anderson, SC	1993	33	40	41	810
Greenville--Spartanburg--Anderson, SC	1994	37		39	756
Greenville--Spartanburg--Anderson, SC	1995	26		37	725
Greenville--Spartanburg--Anderson, SC	1996	19		36	716
Greenville--Spartanburg--Anderson, SC	1997	32	33	36	722
Greenville--Spartanburg--Anderson, SC	1998	35	40	37	748
Greenville--Spartanburg--Anderson, SC	1999	49	44	39	791
Greenville--Spartanburg--Anderson, SC	2000	33	43	42	847
Greenville--Spartanburg--Anderson, SC	2001	52	40	45	916
Greenville--Spartanburg--Anderson, SC	2002	47	45	49	1001
Harrisburg--Lebanon--Carlisle, PA	1992	59	88	61	779
Harrisburg--Lebanon--Carlisle, PA	1993	50	76	74	929

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Harrisburg--Lebanon--Carlisle, PA	1994	59	100	87	1083
Harrisburg--Lebanon--Carlisle, PA	1995	61	78	101	1243
Harrisburg--Lebanon--Carlisle, PA	1996	83	94	115	1415
Harrisburg--Lebanon--Carlisle, PA	1997	144	130	130	1586
Harrisburg--Lebanon--Carlisle, PA	1998	179	156	146	1771
Harrisburg--Lebanon--Carlisle, PA	1999	229	189	162	1946
Harrisburg--Lebanon--Carlisle, PA	2000	209	174	179	2125
Harrisburg--Lebanon--Carlisle, PA	2001	269	153	197	2317
Harrisburg--Lebanon--Carlisle, PA	2002	211	147	215	2548
Hartford, CT	1992		162	149	3613
Hartford, CT	1993		149	146	3401
Hartford, CT	1994		149	143	3222
Hartford, CT	1995		142	140	3067
Hartford, CT	1996		153	137	2952
Hartford, CT	1997		158	135	2867
Hartford, CT	1998		142	133	2803
Hartford, CT	1999		143	132	2746
Hartford, CT	2000		142	130	2717
Hartford, CT	2001		124	129	2712
Hartford, CT	2002		130	128	2749
Honolulu, HI	1992	31		46	949
Honolulu, HI	1993	37		44	882
Honolulu, HI	1994	47		43	842
Honolulu, HI	1995	34		42	819
Honolulu, HI	1996	27		43	817
Honolulu, HI	1997	32		44	838
Honolulu, HI	1998	39		46	880
Honolulu, HI	1999	36		49	925
Honolulu, HI	2000	44		53	999
Honolulu, HI	2001	58		58	1090
Honolulu, HI	2002	53		64	1201
Houston, TX	1992	158	231	167	13893
Houston, TX	1993	117	160	156	13035
Houston, TX	1994	152	185	147	12288
Houston, TX	1995	114	131	138	11694
Houston, TX	1996	79	128	130	11240

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Houston, TX	1997	113	126	123	10912
Houston, TX	1998	108	137	117	10685
Houston, TX	1999	129	159	112	10505
Houston, TX	2000	73	103	108	10334
Houston, TX	2001	112	121	105	10152
Houston, TX	2002	78	105	103	10133
Indianapolis, IN	1992	82	96	75	2419
Indianapolis, IN	1993	57	73	67	2157
Indianapolis, IN	1994	49	75	61	1950
Indianapolis, IN	1995	40	66	56	1805
Indianapolis, IN	1996	43	58	53	1719
Indianapolis, IN	1997		47	51	1685
Indianapolis, IN	1998	43	61	52	1702
Indianapolis, IN	1999	18	66	54	1771
Indianapolis, IN	2000	37	44	58	1895
Indianapolis, IN	2001	64	94	63	2074
Indianapolis, IN	2002	80	75	70	2318
Jacksonville, FL	1992	64	122	78	1683
Jacksonville, FL	1993	45	93	73	1534
Jacksonville, FL	1994	65	101	70	1444
Jacksonville, FL	1995	30	71	68	1407
Jacksonville, FL	1996	48	72	68	1448
Jacksonville, FL	1997	44	70	70	1515
Jacksonville, FL	1998	50	71	73	1608
Jacksonville, FL	1999	90	92	78	1727
Jacksonville, FL	2000	82	88	85	1899
Jacksonville, FL	2001	114	117	93	2109
Jacksonville, FL	2002	107	79	103	2378
Jersey City, NJ	1992	202	184	175	2468
Jersey City, NJ	1993	148	140	163	2280
Jersey City, NJ	1994	204	162	152	2113
Jersey City, NJ	1995	161	129	142	1978
Jersey City, NJ	1996	131	106	133	1870
Jersey City, NJ	1997	131	109	126	1788
Jersey City, NJ	1998	105	98	119	1717
Jersey City, NJ	1999	124	120	114	1656

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Jersey City, NJ	2000	118	97	110	1605
Jersey City, NJ	2001	116	97	107	1527
Jersey City, NJ	2002	126	91	105	1445
Kansas City, MO--KS	1992	75	65	61	2063
Kansas City, MO--KS	1993	51	41	60	2036
Kansas City, MO--KS	1994	53	36	60	2018
Kansas City, MO--KS	1995	55	40	59	2008
Kansas City, MO--KS	1996	56	71	59	2012
Kansas City, MO--KS	1997	71	108	58	2016
Kansas City, MO--KS	1998	59	80	57	2018
Kansas City, MO--KS	1999	54	61	57	2011
Kansas City, MO--KS	2000	42	46	56	1997
Kansas City, MO--KS	2001	54	55	55	1966
Kansas City, MO--KS	2002	48	37	54	1950
Knoxville, TN	1992	102	107	92	1268
Knoxville, TN	1993	84	85	89	1225
Knoxville, TN	1994	85	71	87	1201
Knoxville, TN	1995	81	87	86	1195
Knoxville, TN	1996	80	84	85	1204
Knoxville, TN	1997	93	83	86	1210
Knoxville, TN	1998	90	76	88	1237
Knoxville, TN	1999	101	75	90	1272
Knoxville, TN	2000	127	84	94	1322
Knoxville, TN	2001	126	86	98	1394
Knoxville, TN	2002	120	65	104	1482
Las Vegas, NV--AZ	1992	94	155	125	2613
Las Vegas, NV--AZ	1993	107	124	123	2617
Las Vegas, NV--AZ	1994	142	147	121	2721
Las Vegas, NV--AZ	1995	98	127	119	2819
Las Vegas, NV--AZ	1996	92	119	118	2933
Las Vegas, NV--AZ	1997	88	141	117	3118
Las Vegas, NV--AZ	1998	90	140	117	3308
Las Vegas, NV--AZ	1999	117	144	117	3511
Las Vegas, NV--AZ	2000	118	132	118	3738
Las Vegas, NV--AZ	2001	122	127	119	3872
Las Vegas, NV--AZ	2002	101	110	120	4022

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Little Rock--North Little Rock, AR	1992	198		180	2207
Little Rock--North Little Rock, AR	1993	152		173	2136
Little Rock--North Little Rock, AR	1994	175		167	2060
Little Rock--North Little Rock, AR	1995	166		162	2005
Little Rock--North Little Rock, AR	1996	114		158	1979
Little Rock--North Little Rock, AR	1997	145		155	1955
Little Rock--North Little Rock, AR	1998	142		152	1931
Little Rock--North Little Rock, AR	1999	160		150	1921
Little Rock--North Little Rock, AR	2000	146		149	1910
Little Rock--North Little Rock, AR	2001	151		149	1889
Little Rock--North Little Rock, AR	2002	128		149	1890
Los Angeles--Long Beach, CA	1992	79	127	103	23261
Los Angeles--Long Beach, CA	1993	80	121	99	21817
Los Angeles--Long Beach, CA	1994	62	108	95	20501
Los Angeles--Long Beach, CA	1995	69	126	92	19404
Los Angeles--Long Beach, CA	1996	69	121	89	18633
Los Angeles--Long Beach, CA	1997	65	120	87	18245
Los Angeles--Long Beach, CA	1998	63	115	85	18068
Los Angeles--Long Beach, CA	1999	60	96	84	17974
Los Angeles--Long Beach, CA	2000	58	97	83	17983
Los Angeles--Long Beach, CA	2001	58	96	83	17835
Los Angeles--Long Beach, CA	2002	63	107	83	17823
Louisville, KY--IN	1992	69	94	81	1676
Louisville, KY--IN	1993	59	51	82	1685
Louisville, KY--IN	1994	172	51	84	1719
Louisville, KY--IN	1995	157	73	87	1777
Louisville, KY--IN	1996	63	62	91	1856
Louisville, KY--IN	1997		80	96	1952
Louisville, KY--IN	1998		98	101	2068
Louisville, KY--IN	1999		83	108	2197
Louisville, KY--IN	2000	149	135	115	2332
Louisville, KY--IN	2001	155	142	123	2468
Louisville, KY--IN	2002	103	117	132	2638
Memphis, TN--AR--MS	1992	84	73	72	1728
Memphis, TN--AR--MS	1993	97	55	65	1562
Memphis, TN--AR--MS	1994	60	53	60	1442

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Memphis, TN--AR--MS	1995	57	36	57	1360
Memphis, TN--AR--MS	1996	71	38	55	1314
Memphis, TN--AR--MS	1997	40	50	54	1297
Memphis, TN--AR--MS	1998	41	48	54	1320
Memphis, TN--AR--MS	1999	89	49	56	1373
Memphis, TN--AR--MS	2000	56	57	60	1456
Memphis, TN--AR--MS	2001	62	59	64	1556
Memphis, TN--AR--MS	2002	89	62	70	1697
Miami, FL	1992	69	116	78	3442
Miami, FL	1993	52	70	74	3177
Miami, FL	1994	72	67	70	3019
Miami, FL	1995	58	64	67	2914
Miami, FL	1996	55	63	65	2848
Miami, FL	1997	65	71	63	2805
Miami, FL	1998	50	73	62	2789
Miami, FL	1999	69	76	62	2828
Miami, FL	2000	56	73	62	2885
Miami, FL	2001	57	70	63	2926
Miami, FL	2002	60	49	65	2991
Middlesex--Somerset--Hunterdon, NJ	1992	81	80	82	1878
Middlesex--Somerset--Hunterdon, NJ	1993	80	83	82	1833
Middlesex--Somerset--Hunterdon, NJ	1994	74	76	82	1808
Middlesex--Somerset--Hunterdon, NJ	1995	86	75	83	1809
Middlesex--Somerset--Hunterdon, NJ	1996	97	82	85	1833
Middlesex--Somerset--Hunterdon, NJ	1997	108	82	88	1884
Middlesex--Somerset--Hunterdon, NJ	1998	102	84	91	1957
Middlesex--Somerset--Hunterdon, NJ	1999	101	84	94	2046
Middlesex--Somerset--Hunterdon, NJ	2000	103	95	99	2154
Middlesex--Somerset--Hunterdon, NJ	2001	107	94	104	2272
Middlesex--Somerset--Hunterdon, NJ	2002	113	105	109	2401

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Milwaukee--Waukesha, WI	1992	71	43	56	1751
Milwaukee--Waukesha, WI	1993	59	37	50	1567
Milwaukee--Waukesha, WI	1994	85	36	46	1430
Milwaukee--Waukesha, WI	1995	33	34	44	1342
Milwaukee--Waukesha, WI	1996	61	31	42	1295
Milwaukee--Waukesha, WI	1997	29	37	42	1283
Milwaukee--Waukesha, WI	1998	52	35	43	1312
Milwaukee--Waukesha, WI	1999	32	40	45	1376
Milwaukee--Waukesha, WI	2000	39	36	49	1479
Milwaukee--Waukesha, WI	2001	100	40	54	1612
Milwaukee--Waukesha, WI	2002	70	48	60	1797
Minneapolis--St. Paul, MN--WI	1992	60	70	57	3345
Minneapolis--St. Paul, MN--WI	1993	51	50	54	3132
Minneapolis--St. Paul, MN--WI	1994	50	49	52	3000
Minneapolis--St. Paul, MN--WI	1995	50	44	51	2966
Minneapolis--St. Paul, MN--WI	1996	51	52	51	3014
Minneapolis--St. Paul, MN--WI	1997	41	54	53	3138
Minneapolis--St. Paul, MN--WI	1998	50	57	55	3339
Minneapolis--St. Paul, MN--WI	1999	63	65	59	3618
Minneapolis--St. Paul, MN--WI	2000	53	33	64	3970
Minneapolis--St. Paul, MN--WI	2001	67	138	70	4346
Minneapolis--St. Paul, MN--WI	2002	61	66	77	4811
Monmouth--Ocean, NJ	1992	98	117	95	1751
Monmouth--Ocean, NJ	1993	80	92	97	1750
Monmouth--Ocean, NJ	1994	95	95	100	1771
Monmouth--Ocean, NJ	1995	102	82	104	1826
Monmouth--Ocean, NJ	1996	122	91	109	1900
Monmouth--Ocean, NJ	1997	141	120	115	2004
Monmouth--Ocean, NJ	1998	140	119	122	2139
Monmouth--Ocean, NJ	1999	142	113	130	2295
Monmouth--Ocean, NJ	2000	165	134	139	2479
Monmouth--Ocean, NJ	2001	144	120	149	2724
Monmouth--Ocean, NJ	2002	187	152	161	3027
Nashville, TN	1992	79	94	79	1893
Nashville, TN	1993	63	80	76	1851
Nashville, TN	1994	80	78	74	1834

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Nashville, TN	1995	70	74	73	1846
Nashville, TN	1996	33	71	73	1884
Nashville, TN	1997	44	80	74	1948
Nashville, TN	1998	91	92	76	2026
Nashville, TN	1999	115	66	78	2115
Nashville, TN	2000	101	67	81	2228
Nashville, TN	2001	98	85	86	2352
Nashville, TN	2002	84	72	91	2481
Nassau--Suffolk, NY	1992	44	46	43	2357
Nassau--Suffolk, NY	1993	41	44	45	2375
Nassau--Suffolk, NY	1994	41	34	47	2430
Nassau--Suffolk, NY	1995	51	38	51	2530
Nassau--Suffolk, NY	1996	61	41	55	2670
Nassau--Suffolk, NY	1997	81	58	59	2859
Nassau--Suffolk, NY	1998	90	59	65	3098
Nassau--Suffolk, NY	1999	84	52	71	3361
Nassau--Suffolk, NY	2000	104	75	78	3674
Nassau--Suffolk, NY	2001	83	58	86	4096
Nassau--Suffolk, NY	2002	111	84	95	4573
New Haven--Meriden, CT	1992		147	135	4573
New Haven--Meriden, CT	1993		130	133	4352
New Haven--Meriden, CT	1994		131	130	4165
New Haven--Meriden, CT	1995		143	129	4019
New Haven--Meriden, CT	1996		144	127	3916
New Haven--Meriden, CT	1997		140	126	3855
New Haven--Meriden, CT	1998		141	126	3816
New Haven--Meriden, CT	1999		133	125	3780
New Haven--Meriden, CT	2000		136	125	3775
New Haven--Meriden, CT	2001		125	126	3786
New Haven--Meriden, CT	2002		127	126	3845
New Orleans, LA	1992	158	142	127	3726
New Orleans, LA	1993	113	144	133	3855
New Orleans, LA	1994	138	155	141	4068
New Orleans, LA	1995	117	140	151	4367
New Orleans, LA	1996	131	143	164	4719
New Orleans, LA	1997	154	143	179	5144

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
New Orleans, LA	1998	219	201	196	5632
New Orleans, LA	1999	241	258	215	6164
New Orleans, LA	2000	248	206	237	6722
New Orleans, LA	2001	336	296	261	7337
New Orleans, LA	2002	275	249	288	8057
New York, NY	1992	102	97	96	18978
New York, NY	1993	96	104	90	17764
New York, NY	1994	81	98	86	16874
New York, NY	1995	80	77	84	16368
New York, NY	1996	81	80	83	16306
New York, NY	1997	83	70	84	16686
New York, NY	1998	83	71	87	17470
New York, NY	1999	79	62	92	18512
New York, NY	2000	93	102	99	19852
New York, NY	2001	88	206	107	21348
New York, NY	2002	102	112	117	23133
Newark, NJ	1992	149	138	132	5350
Newark, NJ	1993	136	108	128	5060
Newark, NJ	1994	148	115	125	4822
Newark, NJ	1995	134	99	122	4657
Newark, NJ	1996	130	95	121	4563
Newark, NJ	1997	135	104	122	4537
Newark, NJ	1998	137	106	123	4574
Newark, NJ	1999	147	109	125	4652
Newark, NJ	2000	153	123	129	4762
Newark, NJ	2001	149	106	133	4908
Newark, NJ	2002	169	114	139	5117
Norfolk--Virginia Beach--Newport News, VA--NC	1992	25	70	44	1717
Norfolk--Virginia Beach--Newport News, VA--NC	1993	20		51	1948
Norfolk--Virginia Beach--Newport News, VA--NC	1994	26		58	2145
Norfolk--Virginia Beach--Newport News, VA--NC	1995	31		64	2346
Norfolk--Virginia Beach--Newport News, VA--NC	1996	57	72	70	2546

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Norfolk--Virginia Beach--Newport News, VA--NC	1997	67		76	2738
Norfolk--Virginia Beach--Newport News, VA--NC	1998	70	155	82	2911
Norfolk--Virginia Beach--Newport News, VA--NC	1999	92	160	88	3113
Norfolk--Virginia Beach--Newport News, VA--NC	2000	73	105	93	3326
Norfolk--Virginia Beach--Newport News, VA--NC	2001	108	79	99	3499
Norfolk--Virginia Beach--Newport News, VA--NC	2002	84	76	104	3738
Oakland, CA	1992	71	119	106	4985
Oakland, CA	1993	78	131	103	4753
Oakland, CA	1994	56	125	100	4529
Oakland, CA	1995	70	160	97	4341
Oakland, CA	1996	62	139	93	4185
Oakland, CA	1997	73	130	90	4078
Oakland, CA	1998	66	106	86	3988
Oakland, CA	1999	68	82	82	3871
Oakland, CA	2000	66	78	78	3746
Oakland, CA	2001	66	76	73	3572
Oakland, CA	2002	58	68	68	3303
Oklahoma City, OK	1992	85	126	103	2357
Oklahoma City, OK	1993	86	107	100	2294
Oklahoma City, OK	1994	90	98	97	2241
Oklahoma City, OK	1995	103	107	94	2210
Oklahoma City, OK	1996	82	92	93	2206
Oklahoma City, OK	1997	94	83	91	2221
Oklahoma City, OK	1998	74	99	91	2244
Oklahoma City, OK	1999	91	99	91	2280
Oklahoma City, OK	2000	90	105	91	2305
Oklahoma City, OK	2001	87	99	93	2356
Oklahoma City, OK	2002	91	83	94	2422
Omaha, NE--IA	1992	45	58	50	740
Omaha, NE--IA	1993	47	43	50	728
Omaha, NE--IA	1994	48	47	51	736
Omaha, NE--IA	1995	50	52	52	766

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Omaha, NE--IA	1996	44	58	54	816
Omaha, NE--IA	1997	54	73	57	876
Omaha, NE--IA	1998	50	82	61	945
Omaha, NE--IA	1999	60	70	66	1028
Omaha, NE--IA	2000	62	70	71	1120
Omaha, NE--IA	2001	72	88	78	1221
Omaha, NE--IA	2002	81	85	85	1342
Orange County, CA	1992	108	147	131	8032
Orange County, CA	1993	111	159	124	7441
Orange County, CA	1994	82	133	117	6931
Orange County, CA	1995	83	155	112	6522
Orange County, CA	1996	87	151	107	6200
Orange County, CA	1997	89	114	102	6040
Orange County, CA	1998	82	109	99	5920
Orange County, CA	1999	76	94	96	5769
Orange County, CA	2000	85	91	93	5679
Orange County, CA	2001	79	92	91	5544
Orange County, CA	2002	89	109	90	5451
Orlando, FL	1992	54	71	50	1486
Orlando, FL	1993	45	43	55	1637
Orlando, FL	1994	52	64	61	1833
Orlando, FL	1995	43	55	68	2070
Orlando, FL	1996	61	67	77	2376
Orlando, FL	1997	96	84	87	2766
Orlando, FL	1998	110	95	98	3213
Orlando, FL	1999	146	125	110	3705
Orlando, FL	2000	127	120	124	4283
Orlando, FL	2001	171	134	139	4911
Orlando, FL	2002	156	123	155	5602
Philadelphia, PA--NJ	1992	112	118	101	10801
Philadelphia, PA--NJ	1993	97	101	106	11095
Philadelphia, PA--NJ	1994	112	100	112	11563
Philadelphia, PA--NJ	1995	111	95	119	12207
Philadelphia, PA--NJ	1996	139	106	129	13007
Philadelphia, PA--NJ	1997	165	117	139	14007
Philadelphia, PA--NJ	1998	177	132	152	15164

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Philadelphia, PA--NJ	1999	208	153	166	16425
Philadelphia, PA--NJ	2000	218	143	181	17849
Philadelphia, PA--NJ	2001	234	179	198	19430
Philadelphia, PA--NJ	2002	252	180	217	21334
Phoenix--Mesa, AZ	1992		121	111	6060
Phoenix--Mesa, AZ	1993		108	107	5919
Phoenix--Mesa, AZ	1994		123	103	5942
Phoenix--Mesa, AZ	1995		115	100	6022
Phoenix--Mesa, AZ	1996		109	98	6126
Phoenix--Mesa, AZ	1997		98	96	6317
Phoenix--Mesa, AZ	1998		97	96	6526
Phoenix--Mesa, AZ	1999		95	96	6776
Phoenix--Mesa, AZ	2000		96	97	7076
Phoenix--Mesa, AZ	2001		108	100	7397
Phoenix--Mesa, AZ	2002		118	102	7799
Pittsburgh, PA	1992	39	56	42	1957
Pittsburgh, PA	1993	38	51	40	1844
Pittsburgh, PA	1994	33	48	41	1838
Pittsburgh, PA	1995	33	48	44	1940
Pittsburgh, PA	1996	34	53	49	2146
Pittsburgh, PA	1997	49	58	57	2450
Pittsburgh, PA	1998	46	52	67	2850
Pittsburgh, PA	1999	89	63	79	3320
Pittsburgh, PA	2000	114	61	94	3879
Pittsburgh, PA	2001	160	72	111	4540
Pittsburgh, PA	2002	184	115	130	5323
Portland--Vancouver, OR--WA	1992	220	220	213	7064
Portland--Vancouver, OR--WA	1993	226	222	208	7049
Portland--Vancouver, OR--WA	1994	170	188	204	7061
Portland--Vancouver, OR--WA	1995	198	221	201	7169
Portland--Vancouver, OR--WA	1996	178	221	200	7369
Portland--Vancouver, OR--WA	1997	177	233	199	7593
Portland--Vancouver, OR--WA	1998	178	235	200	7824
Portland--Vancouver, OR--WA	1999	158	211	201	8059
Portland--Vancouver, OR--WA	2000	175	241	204	8300
Portland--Vancouver, OR--WA	2001	164	237	208	8534

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Portland--Vancouver, OR--WA	2002	191	263	213	8827
Providence--Fall River--Warwick, RI--MA	1992	62		72	1531
Providence--Fall River--Warwick, RI--MA	1993	69		75	1558
Providence--Fall River--Warwick, RI--MA	1994	56	49	78	1591
Providence--Fall River--Warwick, RI--MA	1995	91	72	81	1626
Providence--Fall River--Warwick, RI--MA	1996	101	81	84	1670
Providence--Fall River--Warwick, RI--MA	1997	112	90	87	1720
Providence--Fall River--Warwick, RI--MA	1998	124	92	89	1777
Providence--Fall River--Warwick, RI--MA	1999	76	75	92	1824
Providence--Fall River--Warwick, RI--MA	2000	137	123	95	1883
Providence--Fall River--Warwick, RI--MA	2001	74	56	98	1960
Providence--Fall River--Warwick, RI--MA	2002	131	70	102	2046
Raleigh--Durham--Chapel Hill, NC	1992	82	90	74	1797
Raleigh--Durham--Chapel Hill, NC	1993	52	62	67	1661
Raleigh--Durham--Chapel Hill, NC	1994	59	68	61	1545
Raleigh--Durham--Chapel Hill, NC	1995	47	52	56	1454
Raleigh--Durham--Chapel Hill, NC	1996	55	49	52	1378
Raleigh--Durham--Chapel Hill, NC	1997	56	44	49	1321
Raleigh--Durham--Chapel Hill, NC	1998	45	42	46	1279
Raleigh--Durham--Chapel Hill, NC	1999	54	38	45	1254
Raleigh--Durham--Chapel Hill, NC	2000	40	48	44	1244
Raleigh--Durham--Chapel Hill, NC	2001	45	46	44	1255
Raleigh--Durham--Chapel Hill, NC	2002	40	37	44	1285
Richmond--Petersburg, VA	1992	79		77	1518
Richmond--Petersburg, VA	1993	53		82	1620
Richmond--Petersburg, VA	1994	69		88	1723
Richmond--Petersburg, VA	1995	60		95	1833
Richmond--Petersburg, VA	1996	99		101	1952
Richmond--Petersburg, VA	1997			107	2094
Richmond--Petersburg, VA	1998			113	2237

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Richmond--Petersburg, VA	1999	164		120	2372
Richmond--Petersburg, VA	2000	155		127	2526
Richmond--Petersburg, VA	2001	154	145	133	2678
Richmond--Petersburg, VA	2002	128	81	140	2859
Riverside--San Bernardino, CA	1992	112	171	145	9112
Riverside--San Bernardino, CA	1993	116	195	135	8411
Riverside--San Bernardino, CA	1994	79	149	126	7755
Riverside--San Bernardino, CA	1995	84	159	117	7199
Riverside--San Bernardino, CA	1996	74	139	108	6682
Riverside--San Bernardino, CA	1997	66	138	99	6261
Riverside--San Bernardino, CA	1998	68	120	90	5886
Riverside--San Bernardino, CA	1999	60	97	82	5516
Riverside--San Bernardino, CA	2000	50	92	74	5139
Riverside--San Bernardino, CA	2001	43	77	66	4853
Riverside--San Bernardino, CA	2002	42	68	58	4522
Rochester, NY	1992	37		44	1043
Rochester, NY	1993	32	49	45	1054
Rochester, NY	1994	40	55	47	1080
Rochester, NY	1995	40	46	50	1126
Rochester, NY	1996	47	56	54	1194
Rochester, NY	1997	60	60	59	1283
Rochester, NY	1998	72	63	64	1392
Rochester, NY	1999	79	68	70	1515
Rochester, NY	2000	91	65	78	1668
Rochester, NY	2001	102	88	86	1853
Rochester, NY	2002	99	72	95	2069
Sacramento, CA	1992	95	199	154	4721
Sacramento, CA	1993	86	217	149	4480
Sacramento, CA	1994	80	187	144	4240
Sacramento, CA	1995	70	237	138	4070
Sacramento, CA	1996	81	203	132	3923
Sacramento, CA	1997	92	192	126	3808
Sacramento, CA	1998	94	133	120	3699
Sacramento, CA	1999	88	118	113	3577
Sacramento, CA	2000	89	132	106	3442
Sacramento, CA	2001	70	123	98	3358

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Sacramento, CA	2002	75	83	90	3249
St. Louis, MO--IL	1992	67	92	64	3413
St. Louis, MO--IL	1993	44	58	60	3133
St. Louis, MO--IL	1994	42	71	57	2933
St. Louis, MO--IL	1995	40	56	55	2823
St. Louis, MO--IL	1996	45	56	54	2789
St. Louis, MO--IL	1997	48	54	55	2827
St. Louis, MO--IL	1998	52	50	57	2926
St. Louis, MO--IL	1999	64	64	60	3089
St. Louis, MO--IL	2000	77	57	64	3317
St. Louis, MO--IL	2001	87	70	70	3623
St. Louis, MO--IL	2002	84	57	77	4010
Salt Lake City--Ogden, UT	1992	61	80	81	2246
Salt Lake City--Ogden, UT	1993	71	89	88	2531
Salt Lake City--Ogden, UT	1994	65	81	94	2821
Salt Lake City--Ogden, UT	1995	90	129	99	3099
Salt Lake City--Ogden, UT	1996	97	136	104	3362
Salt Lake City--Ogden, UT	1997	101	155	108	3604
Salt Lake City--Ogden, UT	1998	100	153	111	3796
Salt Lake City--Ogden, UT	1999	79	143	114	3957
Salt Lake City--Ogden, UT	2000	94	143	116	4091
Salt Lake City--Ogden, UT	2001	90	129	118	4156
Salt Lake City--Ogden, UT	2002	92	120	118	4210
San Antonio, TX	1992	200	287	210	6896
San Antonio, TX	1993	147	240	194	6363
San Antonio, TX	1994	159	213	180	5959
San Antonio, TX	1995	122	180	168	5628
San Antonio, TX	1996	105	172	157	5322
San Antonio, TX	1997	125	168	149	5105
San Antonio, TX	1998	144	139	142	4960
San Antonio, TX	1999	141	143	137	4857
San Antonio, TX	2000	122	117	134	4804
San Antonio, TX	2001	143		133	4800
San Antonio, TX	2002	124	157	133	4907
San Diego, CA	1992	73	120	104	6910
San Diego, CA	1993	83	125	102	6544

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
San Diego, CA	1994	81	116	101	6301
San Diego, CA	1995	84	132	99	6119
San Diego, CA	1996	86	121	98	6052
San Diego, CA	1997	91	121	98	6093
San Diego, CA	1998	86	103	98	6190
San Diego, CA	1999	91	87	98	6359
San Diego, CA	2000	109	86	99	6489
San Diego, CA	2001	107	99	100	6656
San Diego, CA	2002	102	98	102	6858
San Francisco, CA	1992	170	252	218	7655
San Francisco, CA	1993	178	268	221	7661
San Francisco, CA	1994	143	246	223	7583
San Francisco, CA	1995	168	264	223	7534
San Francisco, CA	1996	181	302	221	7477
San Francisco, CA	1997	174	303	218	7472
San Francisco, CA	1998	182	379	213	7387
San Francisco, CA	1999	156	232	207	7200
San Francisco, CA	2000	155	193	198	6953
San Francisco, CA	2001	166	227	189	6368
San Francisco, CA	2002	154	149	177	5649
San Jose, CA	1992	100	114	110	4030
San Jose, CA	1993	91	107	101	3644
San Jose, CA	1994	67	132	93	3286
San Jose, CA	1995	67	129	85	3001
San Jose, CA	1996	49	124	78	2767
San Jose, CA	1997	55	95	72	2579
San Jose, CA	1998	48	52	66	2399
San Jose, CA	1999	46	61	61	2222
San Jose, CA	2000	46	49	57	2069
San Jose, CA	2001	38	63	53	1870
San Jose, CA	2002	40	71	49	1661
Sarasota--Bradenton, FL	1992	38	87	60	446
Sarasota--Bradenton, FL	1993	33	87	71	518
Sarasota--Bradenton, FL	1994	74	122	83	602
Sarasota--Bradenton, FL	1995	51	83	97	702
Sarasota--Bradenton, FL	1996	69	122	112	816

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Sarasota--Bradenton, FL	1997	95	190	129	954
Sarasota--Bradenton, FL	1998	147	180	147	1112
Sarasota--Bradenton, FL	1999	170	179	167	1286
Sarasota--Bradenton, FL	2000	164	191	189	1484
Sarasota--Bradenton, FL	2001	234	227	212	1736
Sarasota--Bradenton, FL	2002	265	206	236	2035
Scranton--Wilkes-Barre--Hazleton, PA	1992	56	40	44	572
Scranton--Wilkes-Barre--Hazleton, PA	1993	41	38	46	588
Scranton--Wilkes-Barre--Hazleton, PA	1994	47	39	49	614
Scranton--Wilkes-Barre--Hazleton, PA	1995	51	43	53	654
Scranton--Wilkes-Barre--Hazleton, PA	1996	67	45	58	705
Scranton--Wilkes-Barre--Hazleton, PA	1997	78	58	64	765
Scranton--Wilkes-Barre--Hazleton, PA	1998	84	85	70	835
Scranton--Wilkes-Barre--Hazleton, PA	1999	80	66	78	911
Scranton--Wilkes-Barre--Hazleton, PA	2000	101	85	86	996
Scranton--Wilkes-Barre--Hazleton, PA	2001	90	79	96	1100
Scranton--Wilkes-Barre--Hazleton, PA	2002	127	93	106	1222
Seattle--Bellevue--Everett, WA	1992	115	142	157	7187
Seattle--Bellevue--Everett, WA	1993	147	187	163	7469
Seattle--Bellevue--Everett, WA	1994	128	183	169	7672
Seattle--Bellevue--Everett, WA	1995	139	240	173	7913
Seattle--Bellevue--Everett, WA	1996	150	258	176	8187
Seattle--Bellevue--Everett, WA	1997	151	247	178	8523
Seattle--Bellevue--Everett, WA	1998	147	241	179	8770
Seattle--Bellevue--Everett, WA	1999	115	207	179	8886
Seattle--Bellevue--Everett, WA	2000	119	227	178	8905
Seattle--Bellevue--Everett, WA	2001	108	234	176	8786
Seattle--Bellevue--Everett, WA	2002	118	214	172	8529
Springfield, MA	1992	108	125	115	1672
Springfield, MA	1993	106	141	124	1765

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Springfield, MA	1994	109	122	135	1874
Springfield, MA	1995	131	154	146	1995
Springfield, MA	1996	146	156	158	2124
Springfield, MA	1997	177	179	171	2280
Springfield, MA	1998	210	205	184	2454
Springfield, MA	1999	195		199	2638
Springfield, MA	2000	229		214	2845
Springfield, MA	2001	204		231	3074
Springfield, MA	2002	245		248	3370
Stockton--Lodi, CA	1992	189	165	161	1761
Stockton--Lodi, CA	1993	140	159	157	1708
Stockton--Lodi, CA	1994	122	162	154	1658
Stockton--Lodi, CA	1995	79	175	151	1631
Stockton--Lodi, CA	1996	92	207	148	1616
Stockton--Lodi, CA	1997	100	272	145	1625
Stockton--Lodi, CA	1998	121	190	143	1642
Stockton--Lodi, CA	1999	117	161	141	1673
Stockton--Lodi, CA	2000	119	134	140	1716
Stockton--Lodi, CA	2001	107	145	139	1808
Stockton--Lodi, CA	2002	107	179	138	1884
Syracuse, NY	1992	31		41	713
Syracuse, NY	1993	25	51	38	633
Syracuse, NY	1994	30	51	35	566
Syracuse, NY	1995	30	35	33	518
Syracuse, NY	1996	25	19	31	486
Syracuse, NY	1997	26	30	31	471
Syracuse, NY	1998	28	28	31	471
Syracuse, NY	1999	44	42	33	483
Syracuse, NY	2000	35	25	35	510
Syracuse, NY	2001	49	32	38	557
Syracuse, NY	2002	45	29	42	624
Tacoma, WA	1992	102	105	118	1649
Tacoma, WA	1993	92	142	121	1684
Tacoma, WA	1994	87	142	125	1728
Tacoma, WA	1995	103	178	127	1775
Tacoma, WA	1996	109	178	129	1813

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Tacoma, WA	1997	126	176	131	1859
Tacoma, WA	1998	133	143	133	1913
Tacoma, WA	1999	118	151	134	1965
Tacoma, WA	2000	129	99	134	1997
Tacoma, WA	2001	120	153	134	2040
Tacoma, WA	2002	131	128	134	2086
Tampa--St. Petersburg--Clearwater, FL	1992	78	112	78	3095
Tampa--St. Petersburg--Clearwater, FL	1993	63	84	80	3100
Tampa--St. Petersburg--Clearwater, FL	1994	71	103	82	3170
Tampa--St. Petersburg--Clearwater, FL	1995	59	71	87	3334
Tampa--St. Petersburg--Clearwater, FL	1996	62	88	93	3578
Tampa--St. Petersburg--Clearwater, FL	1997	79	110	100	3933
Tampa--St. Petersburg--Clearwater, FL	1998	102	119	109	4375
Tampa--St. Petersburg--Clearwater, FL	1999	142	148	120	4872
Tampa--St. Petersburg--Clearwater, FL	2000	131	136	132	5447
Tampa--St. Petersburg--Clearwater, FL	2001	161	163	146	6118
Tampa--St. Petersburg--Clearwater, FL	2002	163	136	162	6898
Toledo, OH	1992	31	53	39	569
Toledo, OH	1993	24	45	36	524
Toledo, OH	1994	26	39	35	495
Toledo, OH	1995	28	36	34	485
Toledo, OH	1996	18	39	35	489
Toledo, OH	1997	38	45	36	508
Toledo, OH	1998	27	50	39	542
Toledo, OH	1999	28	44	42	586
Toledo, OH	2000		60	47	643
Toledo, OH	2001	67	47	52	716
Toledo, OH	2002	59	48	58	805
Tucson, AZ	1992		180	167	2678
Tucson, AZ	1993		165	166	2696

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Tucson, AZ	1994		160	166	2762
Tucson, AZ	1995		171	166	2831
Tucson, AZ	1996		193	167	2889
Tucson, AZ	1997		233	169	2978
Tucson, AZ	1998		189	171	3061
Tucson, AZ	1999		137	174	3161
Tucson, AZ	2000		134	178	3292
Tucson, AZ	2001		228	182	3425
Tucson, AZ	2002		205	187	3595
Tulsa, OK	1992	105	105	106	1639
Tulsa, OK	1993	98	90	107	1649
Tulsa, OK	1994	118	116	108	1657
Tulsa, OK	1995	110	107	109	1684
Tulsa, OK	1996	107	110	111	1735
Tulsa, OK	1997	116	126	113	1799
Tulsa, OK	1998	116	128	114	1868
Tulsa, OK	1999	127	121	116	1933
Tulsa, OK	2000	102	113	119	1974
Tulsa, OK	2001	123	131	121	2020
Tulsa, OK	2002	110	121	124	2077
Ventura, CA	1992	87	120	109	1637
Ventura, CA	1993	88	124	110	1607
Ventura, CA	1994	62	138	111	1598
Ventura, CA	1995	94	154	112	1591
Ventura, CA	1996	88	173	113	1604
Ventura, CA	1997	102	153	115	1645
Ventura, CA	1998	102	119	116	1693
Ventura, CA	1999	79	113	118	1754
Ventura, CA	2000	120	143	121	1826
Ventura, CA	2001	96	146	124	1893
Ventura, CA	2002	122	130	126	1995
Washington, DC--MD--VA--WV	1992	56	79	57	5779
Washington, DC--MD--VA--WV	1993	37	53	53	5283
Washington, DC--MD--VA--WV	1994	41	57	50	4939
Washington, DC--MD--VA--WV	1995	49	44	49	4741
Washington, DC--MD--VA--WV	1996	43	58	49	4718

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Washington, DC--MD--VA--WV	1997	40	46	50	4839
Washington, DC--MD--VA--WV	1998	51	57	52	5120
Washington, DC--MD--VA--WV	1999	50	54	56	5551
Washington, DC--MD--VA--WV	2000	55	62	61	6138
Washington, DC--MD--VA--WV	2001	66	72	68	6880
Washington, DC--MD--VA--WV	2002	69	92	76	7731
West Palm Beach--Boca Raton, FL	1992	136	146	114	1775
West Palm Beach--Boca Raton, FL	1993	86	96	117	1818
West Palm Beach--Boca Raton, FL	1994	139	114	120	1883
West Palm Beach--Boca Raton, FL	1995	83	95	125	1966
West Palm Beach--Boca Raton, FL	1996	123	116	130	2078
West Palm Beach--Boca Raton, FL	1997	173	136	136	2231
West Palm Beach--Boca Raton, FL	1998	168	136	144	2408
West Palm Beach--Boca Raton, FL	1999	204	145	152	2600
West Palm Beach--Boca Raton, FL	2000	175	135	161	2804
West Palm Beach--Boca Raton, FL	2001	191	192	171	3055
West Palm Beach--Boca Raton, FL	2002	161	161	182	3383
Wichita, KS	1992	53		56	595
Wichita, KS	1993	47	58	55	588
Wichita, KS	1994	38		56	592
Wichita, KS	1995	48		57	612
Wichita, KS	1996	52		60	650
Wichita, KS	1997	60		64	702
Wichita, KS	1998	64		68	772
Wichita, KS	1999	60		74	844
Wichita, KS	2000	73		81	921
Wichita, KS	2001	83		89	1012
Wichita, KS	2002	94		98	1125
Wilmington--Newark, DE--MD	1992	215	161	135	1652
Wilmington--Newark, DE--MD	1993	82	103	141	1706
Wilmington--Newark, DE--MD	1994	159	149	149	1789
Wilmington--Newark, DE--MD	1995	126	104	159	1908
Wilmington--Newark, DE--MD	1996	160	144	170	2049
Wilmington--Newark, DE--MD	1997	205	178	184	2216
Wilmington--Newark, DE--MD	1998	238	201	199	2409
Wilmington--Newark, DE--MD	1999	274	214	215	2625

MSA Name	Year	Sub-estimates		Final model-based population prevalence rate	Final model-based population estimate
		Prevalence estimated from Treatment Entry Data System	Prevalence estimated from HIV-Counseling and Testing data series		
Wilmington--Newark, DE--MD	2000	274	231	234	2865
Wilmington--Newark, DE--MD	2001	294	212	254	3113
Wilmington--Newark, DE--MD	2002	308	221	276	3392
Youngstown--Warren, OH	1992	22	40	28	325
Youngstown--Warren, OH	1993	14	27	26	295
Youngstown--Warren, OH	1994	20	26	25	281
Youngstown--Warren, OH	1995	19	30	25	280
Youngstown--Warren, OH	1996	21	39	26	294
Youngstown--Warren, OH	1997	21	35	29	319
Youngstown--Warren, OH	1998	23	45	33	358
Youngstown--Warren, OH	1999	27	34	37	406
Youngstown--Warren, OH	2000	31	52	44	466
Youngstown--Warren, OH	2001	47	39	51	538
Youngstown--Warren, OH	2002	89	50	59	624

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Fig. 1.
Estimated mean population prevalence of young IDUs per 10,000 15–29 year olds (1992–2002) for 95 large MSAs

Fig. 2.
Estimated population prevalence of young IDUs in five large US MSAs (and the mean across 95 large MSAs from 1992 to 2002)

Fig. 3.
The percentages of IDUs entering drug treatment (TEDS) and receiving HIV counseling and testing (CTS) who were aged 15–29 in 95 large MSAs (1992–2005)

Table 1
Linear mixed effects model to estimate the population prevalence of young IDUs in 95 MSAs, 1992–2002: restricted-maximum-likelihood estimates of fixed effect and random effect parameters

	Symbol	Estimates	Standard error	Lower bound (95% CI)	Upper bound (95% CI)
Intercept	β_0	96.96**	5.40	86.26	107.67
Time	β_1	1.72*	0.67	0.40	3.05
Time $\times$ time	β_2	0.40**	0.08	0.23	0.57
Source	β_3	-14.92**	1.18	-17.23	-12.60
Intercept variance	r_{00}	2688.93**	402.39	2046.52	3691.30
Time variance	r_{11}	39.10**	6.15	29.37	54.62
Time $\times$ time variance	r_{22}	0.28*	0.10	0.16	0.65
Correlation β_0 and β_1	r_{01}	0.003			
Correlation of β_0 and β_3	r_{02}	-0.16			
Correlation of β_1 and β_3	r_{12}	0.26			

Study year is centered at 1997

* $P < 0.05$;

** $P < 0.001$

Table 2
Descriptive statistics: IDUs per 10,000 persons aged 15–29 in 95 MSAs (1992–2002)

Year	Mean	Standard deviation	Median	Interquartile range	Minimum	Maximum
1992	98.34	57.05	78.54	52.50–132.06	27.95	283.91
1993	96.46	57.17	81.98	50.93–132.52	25.77	260.13
1994	95.39	53.59	84.41	50.58–130.50	24.73	237.88
1995	95.11	52.40	85.53	51.91–128.81	23.14	229.26
1996	95.64	51.65	85.24	52.80–129.94	22.89	221.92
1997	96.96	51.40	86.93	52.79–130.18	24.00	218.09
1998	99.09	51.73	89.47	54.28–140.30	26.44	231.23
1999	102.02	52.75	92.18	56.22–133.52	30.24	252.83
2000	105.74	54.55	93.62	58.53–134.07	34.64	276.02
2001	110.27	57.20	98.48	63.20–138.67	37.50	300.83
2002	115.59	60.76	101.94	68.29–140.28	41.04	327.24

Table 3
Reliability test: Pearson correlations of young IDU population prevalence estimates based on TEDS and on CTS

Year	Correlation (<i>r</i>)
1992	0.89
1993	0.89
1994	0.80
1995	0.75
1996	0.74
1997	0.76
1998	0.82
1999	0.84
2000	0.83
2001	0.78
2002	0.80

Table 4
Criterion validity: Pearson correlations between young IDU prevalence estimates and two measures of drug-related mortality

Year	Accidental and unintentional poisoning deaths per capita	Drug related deaths per capita
1992	0.55	0.49
1993	0.47	0.49
1994	0.51	0.50
1995	0.49	0.43
1996	0.40	0.40
1997	0.54	0.54
1998	0.50	0.51
1999	0.50	0.70
2000	0.39	0.52
2001	0.33	0.43
2002	0.21	0.29