



California HIV Prevention Indicators

4th Edition

A Collaborative Effort of the:

Universitywide AIDS Research Program
University of California Office of the President
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and the

HIV Prevention Research and Evaluation Section
Office of AIDS, California Department of Health Services
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Forward

The California HIV Prevention Indicators Synthesis Project is a collaborative effort of the California State Office of AIDS in the California Department of Health Services and the Universitywide AIDS Research Program in the University of California's Office of the President. Our purposes are to develop indicators for monitoring and assessing progress toward HIV prevention in California, and to compile and report on the associated data.

Among the initial research steps was an inventory and assessment of extant data resources. Findings from that assessment were reviewed by three technical advisory groups. Representation on the technical advisory groups included national and California researchers, staff from state and local health departments, and representatives of community based organizations. Comments from the technical advisory groups and their statements regarding priorities were further reviewed by a core advisory panel.

Background. An indicator is some quantity or factor that can be stated in quantitative or logical terms and that measures one aspect of a phenomenon.¹ Indicator-based reporting systems consist of direct and indirect information, usually from different sources, about structures, processes and outcomes of systems affecting health.² Health status indicators are measures of the wellness of the population. Health system indicators measure the functioning of the health delivery system.³ Just as indicators in the dashboard of an automobile – speed, distance, water temperature, oil pressure, and battery charge – provide information about the operation of a complex machine, health indicators provide key pieces of information about systems affecting health.

Health indicators have their origins in communicable disease surveillance and the tracking of vital data.⁴ In the years after World War II, the World Health Organization began publishing International Health Yearbooks, a series that included not only basic health data, but also information on health care.⁵ Ideas about health indicators further broadened in response to the social indicators movement of the 1960s,⁶ and the health planning movement of the 1970s.⁷ In the U.S., health indicators are employed to monitor progress toward achievement of national objectives for health promotion and disease prevention.⁸

In applying health indicators to the problem of monitoring national AIDS programs, the United Nations set forth a series of indicators built around four core concepts:

- Monitoring of program context and effort;
- Monitoring of knowledge, attitudes and sexual behavior;
- Monitoring of the availability and quality of health and other services; and
- Monitoring HIV, AIDS and STIs.⁹

Note that the four components reflect aspects of health policy, populations, health services, and disease outcomes.

¹ Palmer B. 1972. *An Advanced Health Planning System*. Springfield VA: National Technical Information Service.

² Blum HL, Stein SL. 1981. Assessment: measurement of where we are, where we are likely to be, and where we want to be. In: Blum HL. *Planning for Health: Generics for the Eighties*. New York: Human Sciences Press, pp 88-133.

³ Hyman HH. 1975. *Health Planning: A Systematic Approach*. Germantown MD: Aspen Systems Corp, p 67.

⁴ Larson JS. 1991. *The Measurement of Health: Concepts and Indicators*. New York: Greenwood Press, p 11.

⁵ Gear HS, Biraud Y, Swaroop S. 1961. *International Work in Health Statistics: 1948-1958*. Geneva: WHO.

⁶ See, for example: Bauer RA (ed). 1966. *Social Indicators*. Cambridge MA: MIT Press.

⁷ See, for example: Schwefel D (ed). 1987. *Indicators and Trends in Health and Health Care*. Berlin: Springer-Verlag.

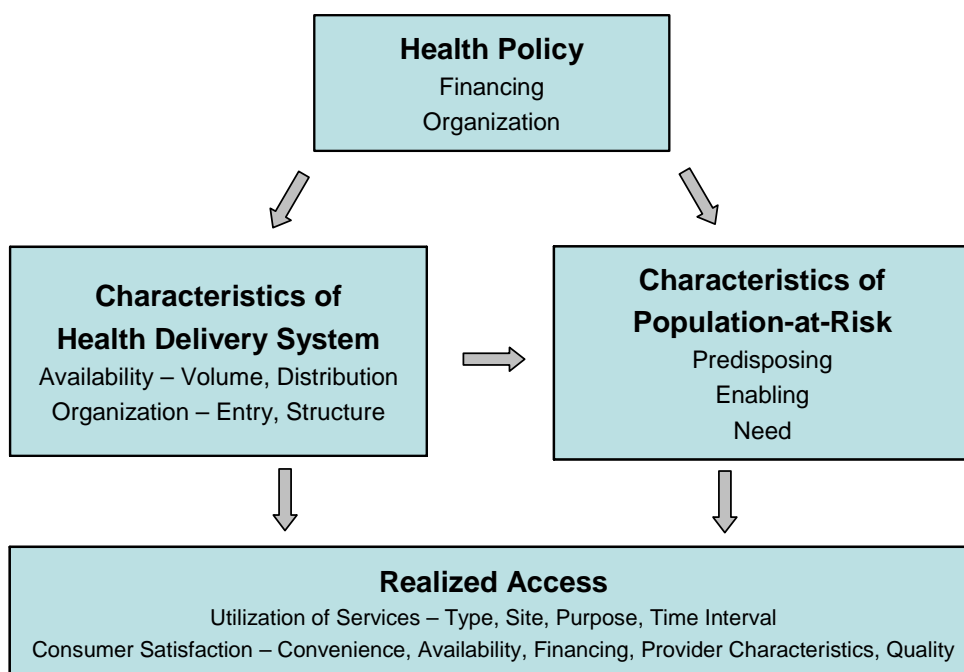
⁸ See, for example: U.S. Public Health Service. 1991. *Healthy People: National Health Promotion and Disease Prevention Objectives*. DHHS Pub No PHS 91-50212. Wash DC: U.S. Govt. Printing Office.

⁹ Joint United Nations Programme on HIV/AIDS. 2000. *National AIDS Programmes: A Guide to Monitoring and Evaluation*. Geneva: UNAIDS.

In the U.S., the Centers for Disease Control has worked on a system of HIV prevention Indicators. The approach organized indicators around four themes or domains (biological, behavioral, service, and sociopolitical) as applied to each of four target populations (high-risk heterosexuals, injection drug users, men who have sex with men, and childbearing women).¹⁰

Framework. In developing HIV prevention indicators for California, we wanted to organize our work to reflect those concepts employed by the UN and the CDC, and we wanted to employ a framework that can be easily understood and intuitively accepted as summarizing the complex relationships between people and preventive health systems. As a starting point, we looked to a Framework for Study of Access to Medical Care.¹¹ A simplified expression of the framework (Figure 1) has four components: Health Policy, Characteristics of the Health Delivery System, Characteristics of the Population-at-Risk, and Realized Access.

Figure 1
Framework for Study of Access to Medical Care



Adapted from: Aday LA, Andersen R, Fleming GV. 1980. *Health Care in the U.S.: Equitable for Whom*. Beverly Hills: Sage, p 35.

The framework starts with *Health Policy* because the interest of health planners and policy makers is fundamentally one of applying health policy to the problem of altering access to care. The two principal health policy considerations are financing and organization of health services. *Potential Access* to care is described by *Characteristics of the Health Delivery System* and *Characteristics of the Population-at-Risk*. The health delivery system is described by availability of resources and their organization, and associated

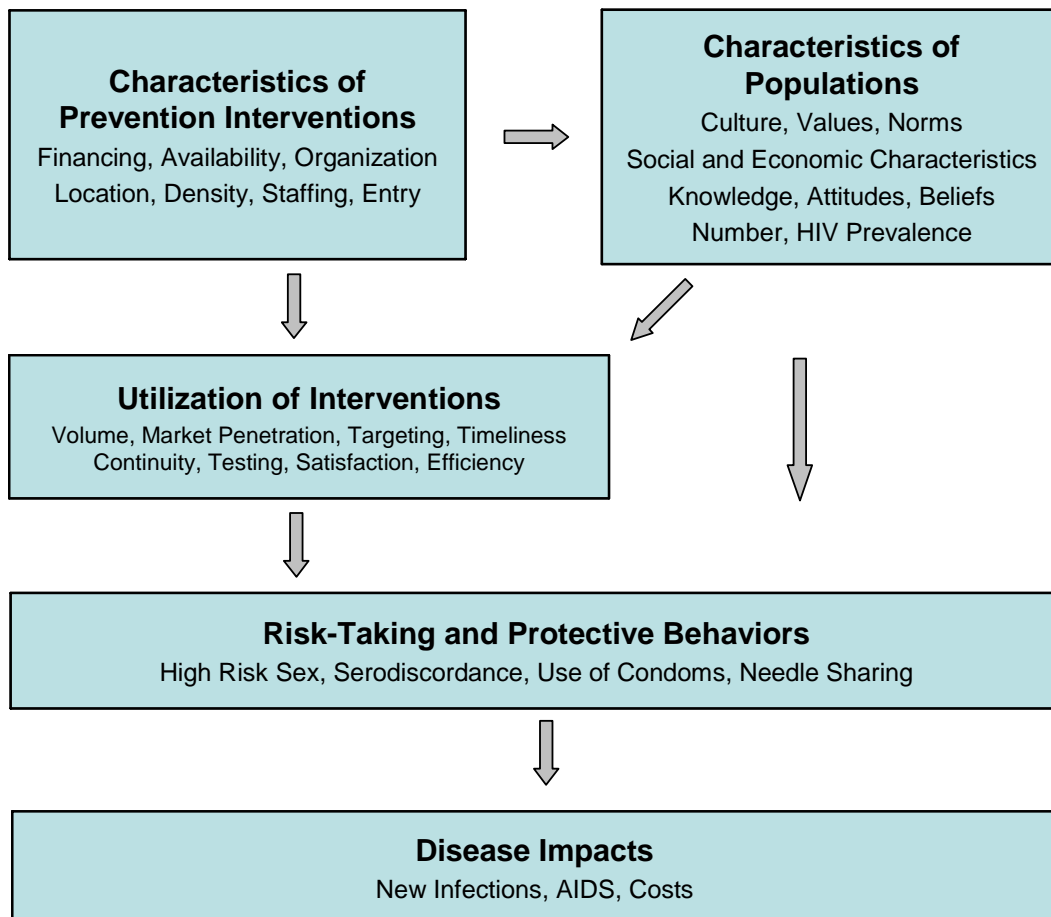
¹⁰ Rugg DL, Heitgerd JL, Cotton DA, et al. 2000. CDC HIV prevention indicators: monitoring and evaluating HIV prevention in the USA. *AIDS* 14:2003-13.

¹¹ Aday LA, Andersen R, Fleming GV. 1980. *Health Care in the U.S.: Equitable for Whom*. Beverly Hills: Sage, pp 25-45.

considerations can include volume, distribution, entry, and structural characteristics. The population-at-risk can be described in terms of a wide variety of characteristics that are categorized as either predisposing, enabling or need characteristics. Predisposing characteristics include variables that describe the propensity of individuals to use services. The enabling component refers to the means people have that support use of services. Enabling characteristics might include availability of health insurance and transportation. *Realized Access* may be divided into indicators of utilization and evaluations of the care received. Indicators might reflect such concerns as frequency of use, convenience or quality of care.

We adapted the access framework to the problem of measuring HIV prevention (Figure 2). For simplification, we considered that aspects of policy can be included with *Characteristics of Interventions*. Also, we considered that, in the field of HIV prevention, an underlying purpose of prevention interventions is to modify behaviors. So we added a box *Risk-Taking and Protective Behaviors* to the diagram to show that behaviors might stem from interaction of populations with any of a range of interventions, or behaviors might flow directly from population characteristics. Behaviors of greatest interest are high risk sexual activity and the sharing of needles among injection drug users. One more box *Disease Impacts* was added to reflect the consequences of risk-taking and protective behaviors. Thus, the addition of two boxes modifies the framework to consider the intended behavioral and health consequences of prevention interventions.

Figure 2
Framework for HIV Prevention Indicators



A second type of modification considers the contents of the individual boxes. We felt it important to adjust the contents to reflect issues of prevention, as opposed to the more curative issues of medical care. For example, the label *Characteristics of the Health Delivery System* was changed to *Characteristics of Prevention Interventions* and, in this context, interventions may include a broad range of activities such as social marketing as well the more conventional HIV prevention services. Similarly, the concepts included under *Characteristics of Populations* were broadened to reflect collective characteristics such as social norms in additions to concepts which simply reflect the aggregates of individual characteristics. The concept of HIV prevalence was added to the box describing population characteristics. Prevalence is viewed as representing a potential for HIV transmission and, consequently, prevalence describes need for prevention interventions.

It is important to maintain a clear distinction between behaviors that define a population and behaviors that are viewed as risk-taking or protective. For example, *men who have sex with men* (MSM) is a concept that can define a potentially high risk population. Thus, the concept is properly entered under characteristics of populations. *Risk-taking and protective behaviors*, on the other hand, reflect specific sex practices that are conducive to the spread of HIV infection. Similarly, *injection drug use* (IDU) is viewed as defining a high risk population, but *needle sharing* is viewed as risk-taking behavior.

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Indicator 1-1-1: Number of Gay and Bisexual Men

Category: Populations

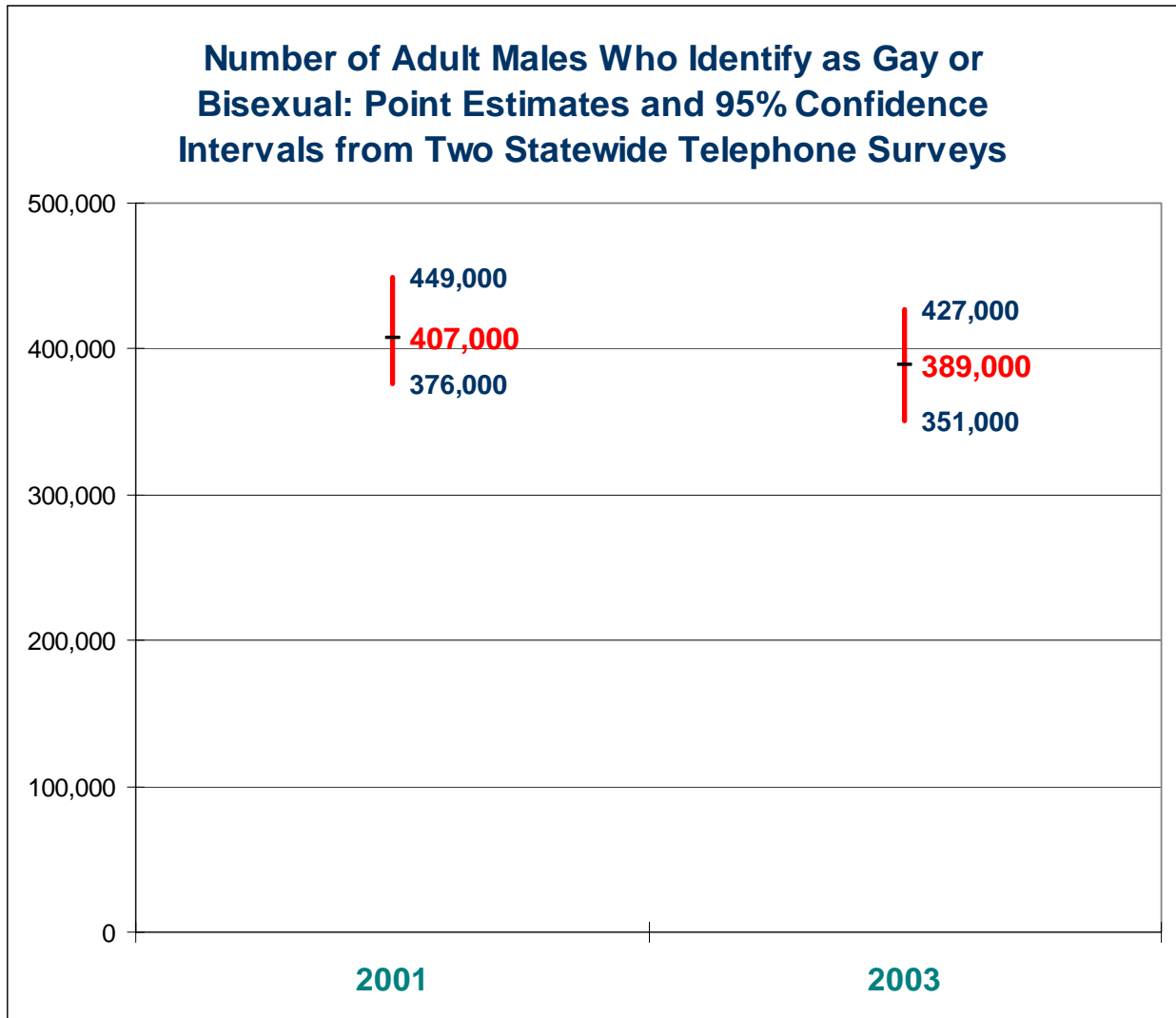
Domain: Numbers in High Risk Groups

Question: Men Who Have Sex with Men: How many are there?

Why it's important: In California, men who have sex with men (MSM) have been at high risk for HIV infection since the inception of the epidemic.

How it's measured: Adult males were asked "Are you gay or bisexual?" in the 2001 and 2003 California Health Interview Surveys (CHIS). The 2001 sample was limited to adult men under age 65.

Findings: Data for 2001 suggest a figure between 376,000 and 449,000. The 2003 estimate ranges from 351,000 to 427,000.



Strengths/Limitations: Telephone surveys have a number of limitations, particularly in connection with sensitive questions. Also, the questions asked for self-identification as a member of a group, not about sexual behavior.

Source: California Health Interview Surveys. <http://www.chis.ucla.edu/>

Indicator 1-1-2: Number of Injection Drug Users

Category: Populations

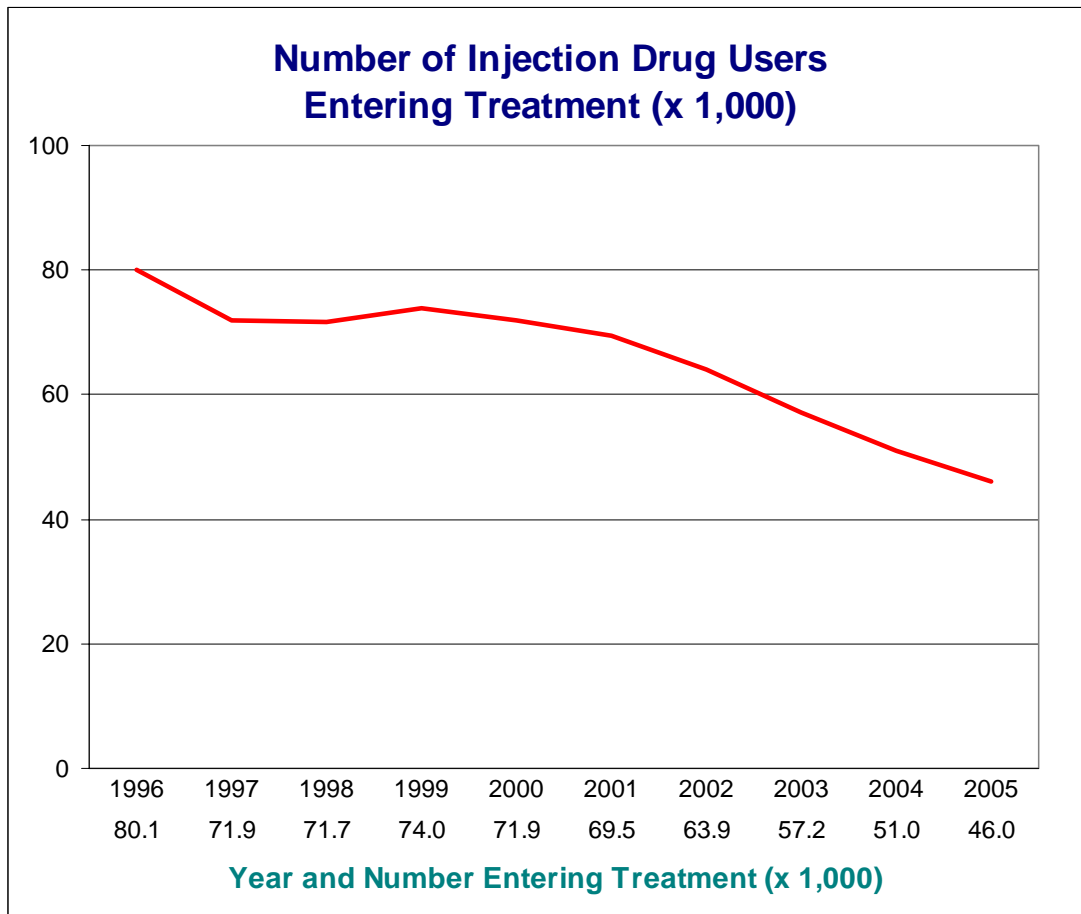
Domain: Numbers in High Risk Groups

Question: Injection Drug Users: How many are there?

Why it's important: Injection drug users (IDU) are at high risk for HIV infection.

How it's measured: Number of persons having a history in the past 12 months of illicit needle use who entered treatment at publicly funded or licensed alcohol or drug treatment programs.

Findings: The number of IDU entering treatment declined from 80,100 in 1996 to 46,000 in 2005.



Strengths/Limitations: The measure does not reflect all injection drug users. The numbers omit IDU who do not enter treatment during the year, and counts of those who enter treatment may reflect availability of services and propensity to enter treatment.

Additional measures: The AIDS KABB statewide telephone survey in 2000 yielded an estimate that 0.8% (95% CI: 0.3%-1.2%) of adults reported non-prescription injection drug use in the past 12 months, an estimate that suggests about 200,000 IDU in California. This figure is well below an expert consensus estimate of 300,000.

Sources: (1) California Alcohol and Drug Data System (CADDSS), California Department of Alcohol and Drug Programs. (2) Moskowitz JM, Henneman TA, Young Holt B. *California 2000 HIV/AIDS Knowledge, Attitudes, Beliefs, and Behaviors (KABB) Survey: Methods and Results*. Berkeley, CA: University of California, Berkeley, 2002. pp 65-66. (4) Facer M, Ritieni A, Marino J, Grasso P, Social Light Consulting Group. 2001. *Consensus Meeting on HIV/AIDS: Incidence and Prevalence in California*. Office of AIDS, California Department of Health Services, p 16.

Acknowledgment: Faith Boucher, Sally Jew

Indicator 1-1-3: Number of Methamphetamine Users

Category: Populations

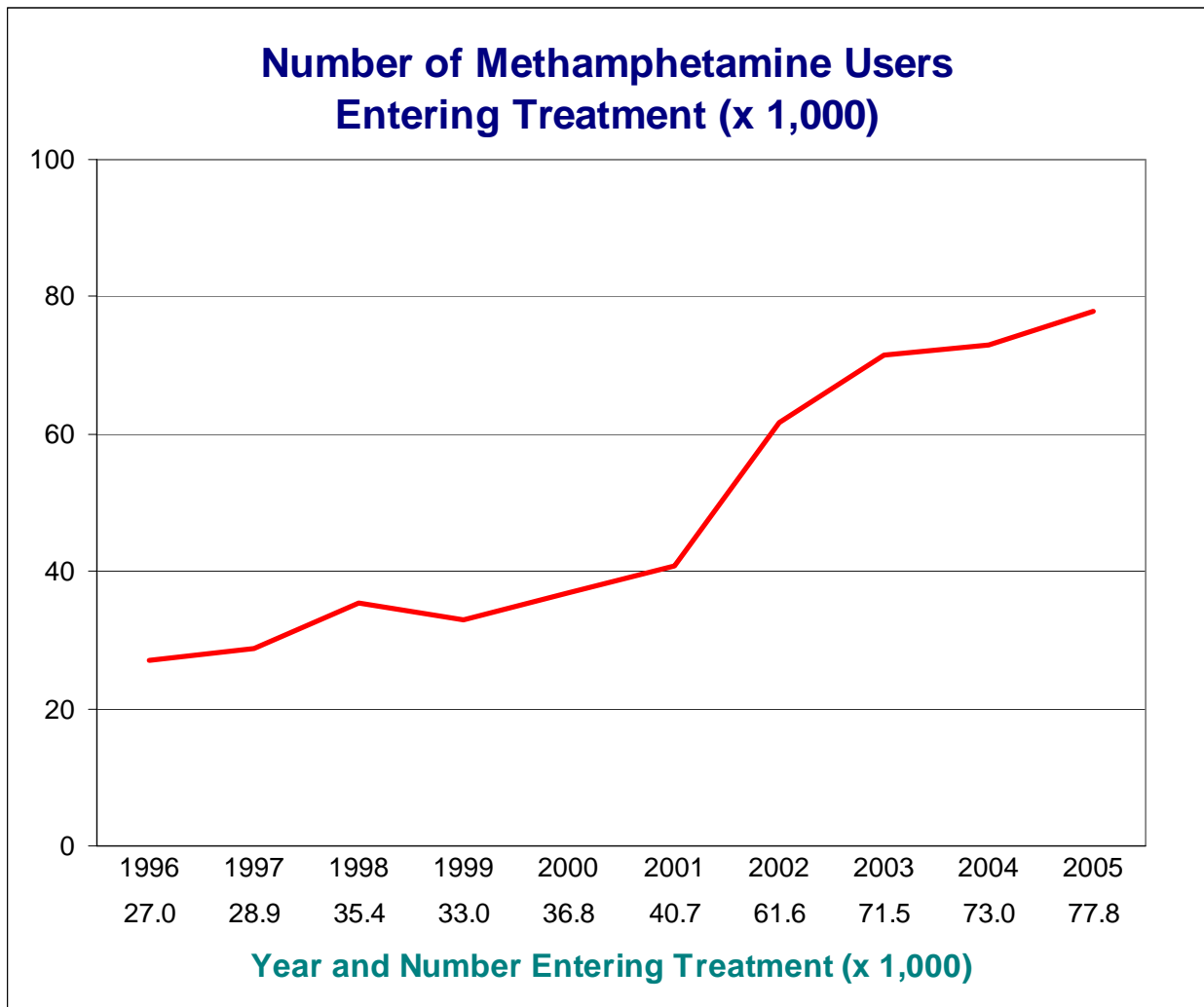
Domain: Numbers in High Risk Groups

Question: Methamphetamine users: How many are there?

Why it's important: Methamphetamine users are often at high risk for HIV infection.

How it's measured: Number of persons having a history in the past 12 months of using methamphetamines who entered treatment at publicly funded or licensed alcohol or drug treatment programs.

Findings: The number of methamphetamine users entering treatment increased from 27,000 in 1996 to 77,800 in 2005.



Strengths/Limitations: The numbers omit users who do not enter treatment during the year, and counts of those who enter treatment may reflect availability of services and propensity to enter treatment. Nevertheless, the increased counts over time are interesting when compared with data on declining counts of IDU entering treatment over the same time period.

Sources: California Alcohol and Drug Data System (CADDSS), California Department of Alcohol and Drug Programs.

Acknowledgment: Faith Boucher, Sally Jew

Indicator 1-1-4: Number of Persons in State Prisons and Local Jails

Category: Populations

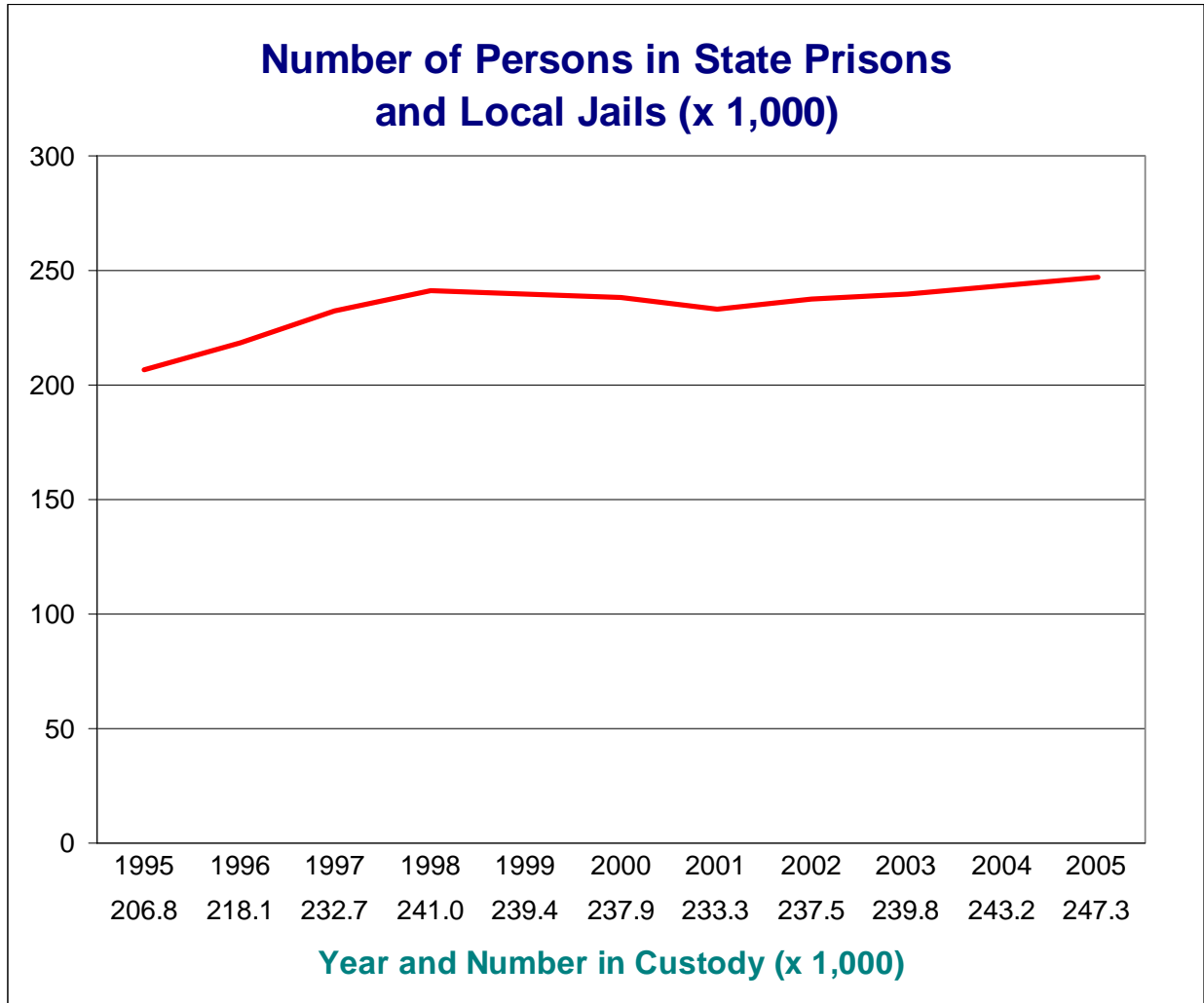
Domain: Numbers in High Risk Groups

Question: Incarcerated Persons: How many are there?

Why it's important: Incarcerated populations are at high risk for HIV infection.

How it's measured: Number of persons in custody of California state prisons at end of year plus average daily population in local jails.

Findings: In 1995, there were 206,800 individuals in custody. By 2005, the count increased to 247,300.



Strengths/Limitations: Some individuals may be double-counted if they are state prisoners housed in local jails.

Sources: (1) Data compiled from Bureau of Justice Statistics publications of the U.S. Department of Justice, Office of Justice Programs. (2) California Board of Corrections, Jail Profile Survey Reports.

Indicator 1-2-1: Estimated California Population Infected with HIV

Category: Populations

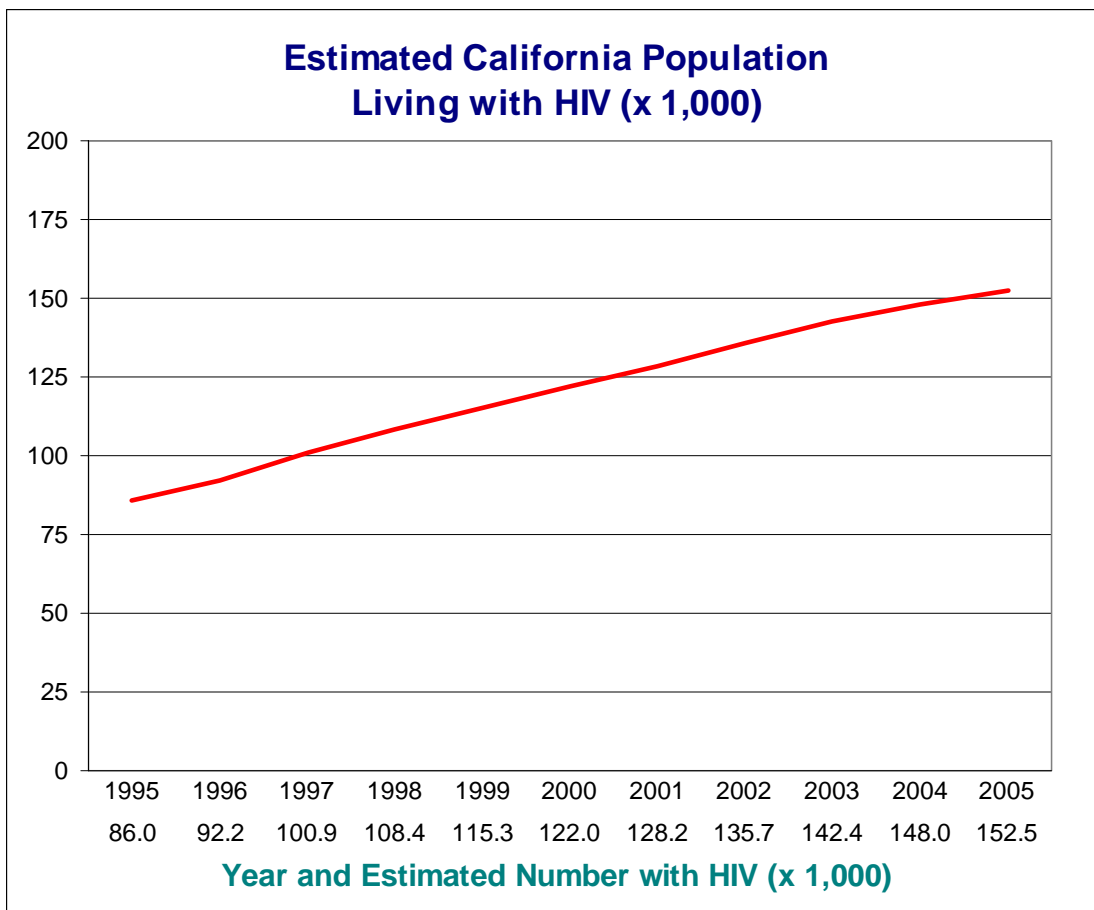
Domain: Prevalence of HIV Infection

Question: How many persons in California are infected with HIV?

Why it's important: The extent to which HIV is present in the community represents increased potential for new infections.

How it's measured: Models developed by the CDC placed the total number infected nationally at 1.0 to 1.2 million persons in 2003. On the basis of current and previous national models, UARP staff estimate that the total number of persons in California with HIV is about 2.6 times the number with AIDS. Conversations with CDC staff verify that the estimate is reasonable and perhaps even conservative. However, there is a possibility of a 5%-10% error in the estimate.

Findings: Over the past decade, the estimated number of persons in California living with HIV has increased from about 86,000 to about 152,500. On the basis of national data, we estimate that about 25% do not know they are infected.



Additional measure: An expert consensus estimate placed the total number of persons with HIV between 94,300 and 130,500 in 1997.

Source: (1) Derived from: Glynn M, Rhodes P. Estimated HIV prevalence in the United States at the end of 2003. National HIV Prevention Conference; June 2005; Atlanta. Abstract 595. See also: <http://www.cdc.gov/hiv/stats.htm> (2) Facer M, Ritieni A, Marino J, Grasso P, Social Light Consulting Group. 2001. *Consensus Meeting on HIV/AIDS: Incidence and Prevalence in California*. Office of AIDS, California Department of Health Services, p 5.

Acknowledgment: M. Glynn

Indicator 1-2-2: HIV Prevalence among Adults in a Statewide Telephone Survey

Category: Populations

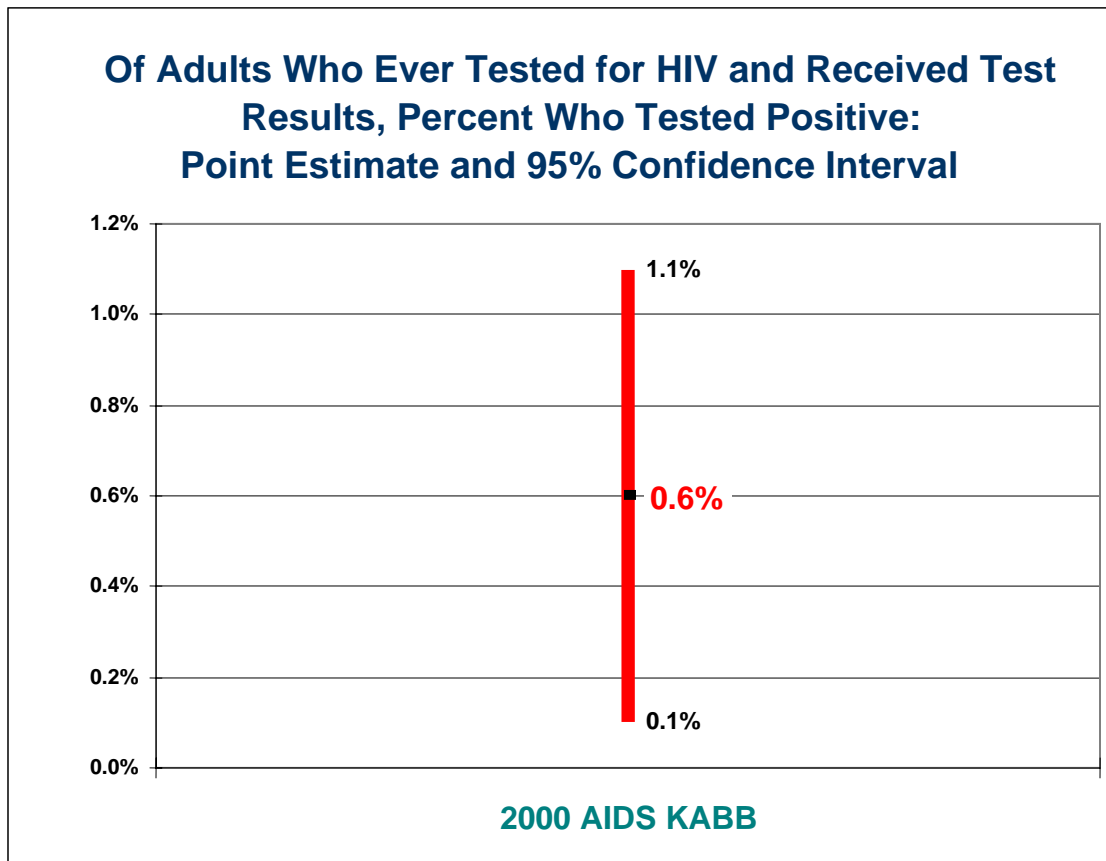
Domain: Prevalence of HIV Infection

Question: How many adults are infected with HIV?

Why it's important: The extent to which HIV is present in the community represents increased potential for new infections.

How it's measured: Respondents in a statewide telephone survey in the year 2000 who indicated that they had ever tested for HIV and received test results were then asked about the results of the test.

Findings: An estimated 0.6% of adults ages 18 and older responded that they tested positive. The 95% confidence interval ranged from 0.1% to 1.1%, suggesting that the number of persons with HIV infection might be about 150,000 with a range from 25,000 to 274,000.



Strengths/Limitations: The AIDS KABB is the only statewide sample survey that sheds light on HIV prevalence. However, telephone surveys have a number of limitations, particularly in connection with sensitive questions. Findings are limited by the very broad confidence interval.

Additional measure: Expert consensus estimates place the total number of persons with HIV between 94,300 and 130,500 in 1997.

Source: (1) Moskowitz JM, Henneman TA, Young Holt B. *California 2000 HIV/AIDS Knowledge, Attitudes, Beliefs, and Behaviors (KABB) Survey: Methods and Results*. Berkeley, CA: University of California, Berkeley, 2002. p 85. (2) Facer M, Ritieni A, Marino J, Grasso P, Social Light Consulting Group. 2001. *Consensus Meeting on HIV/AIDS: Incidence and Prevalence in California*. Office of AIDS, California Department of Health Services, p 5.

Indicator 1-2-3: HIV Prevalence among MSM Respondents in a San Francisco Street Survey

Category: Populations

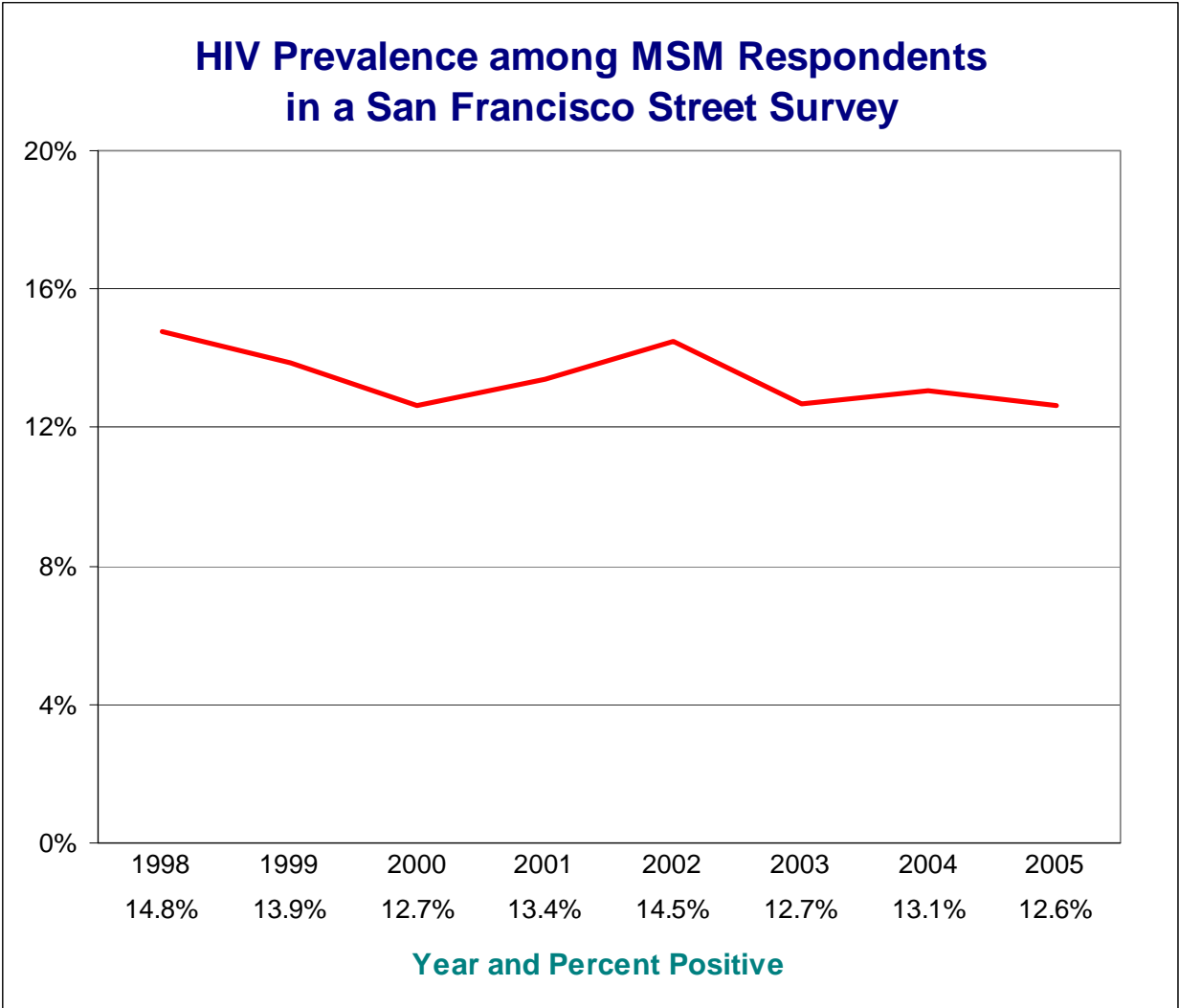
Domain: Prevalence of HIV Infection

Question: How common is HIV infection among MSM populations?

Why it's important: The extent to which HIV is present in the community represents increased potential for new infections.

How it's measured: MSM who indicate they are HIV positive as a proportion of those who indicate HIV status in an ongoing street survey in San Francisco.

Findings: The percentage who stated that they were HIV positive has changed little since 1997, with perhaps a small downward trend.



Strengths/Limitations: The sampling method is based on convenience of subjects. Findings are limited to persons who frequent survey locations, and the percentages cannot be interpreted as representing HIV prevalence within the MSM community.

Source: Stop AIDS Project, San Francisco

Acknowledgments: Sanny Chen, Roop Prabhu, San Francisco Department of Public Health

Indicator 1-2-4: HIV Prevalence among HIV Counseling and Testing Program Clients

Category: Populations

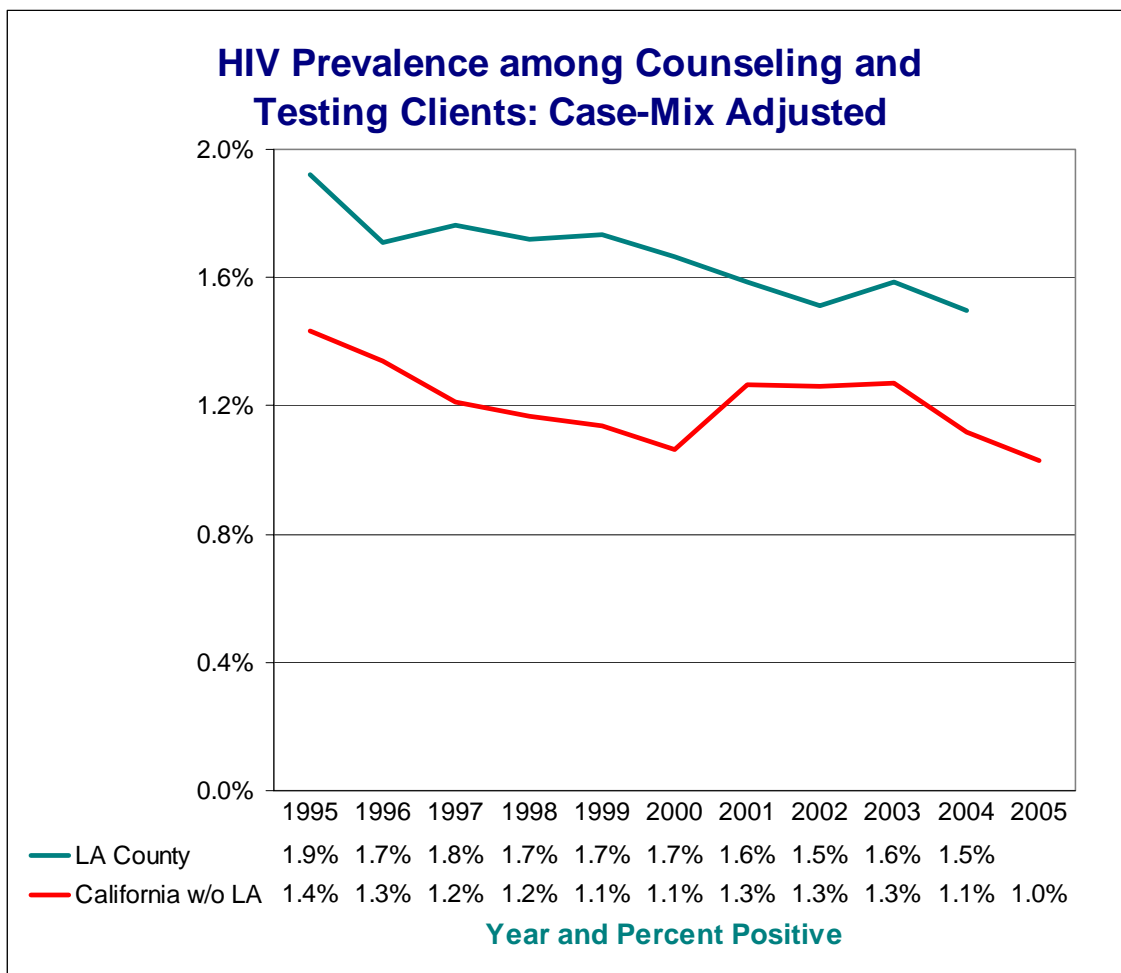
Domain: Prevalence of HIV Infection

Question: How common is HIV infection among testing populations?

Why it's important: The extent to which HIV is present in the community represents increased potential for new infections.

How it's measured: Positive HIV tests as a proportion of tests in the HIV Counseling and Testing Program. Analysis excludes repeated positive tests for the same individual. Data are adjusted for change in case mix over time by standardizing to the most recent year by client mix of 16 sub-populations tiered hierarchically on the basis of HIV risk (transgender, MSM who are IDU, etc).

Findings: The percentage of tests that were positive has gradually declined. Prevalence among clients in Los Angeles County has been high compared to the rest of California.



Strengths/Limitations: This indicator is useful for monitoring change in number of new infections, rather than for estimating the absolute number of new infections. Findings are limited to persons who make use of the program, and are influenced by availability of services and propensity to use them. These percentages cannot be interpreted as representing HIV prevalence within the community.

Source: Counseling and Testing Program Data, California State Office of AIDS

Acknowledgment: Atsuko Nonoyama, David Webb, Christine Dahlgren

Indicator 1-2-5: HIV Prevalence in Sexually Transmitted Disease Clinics

Category: Populations

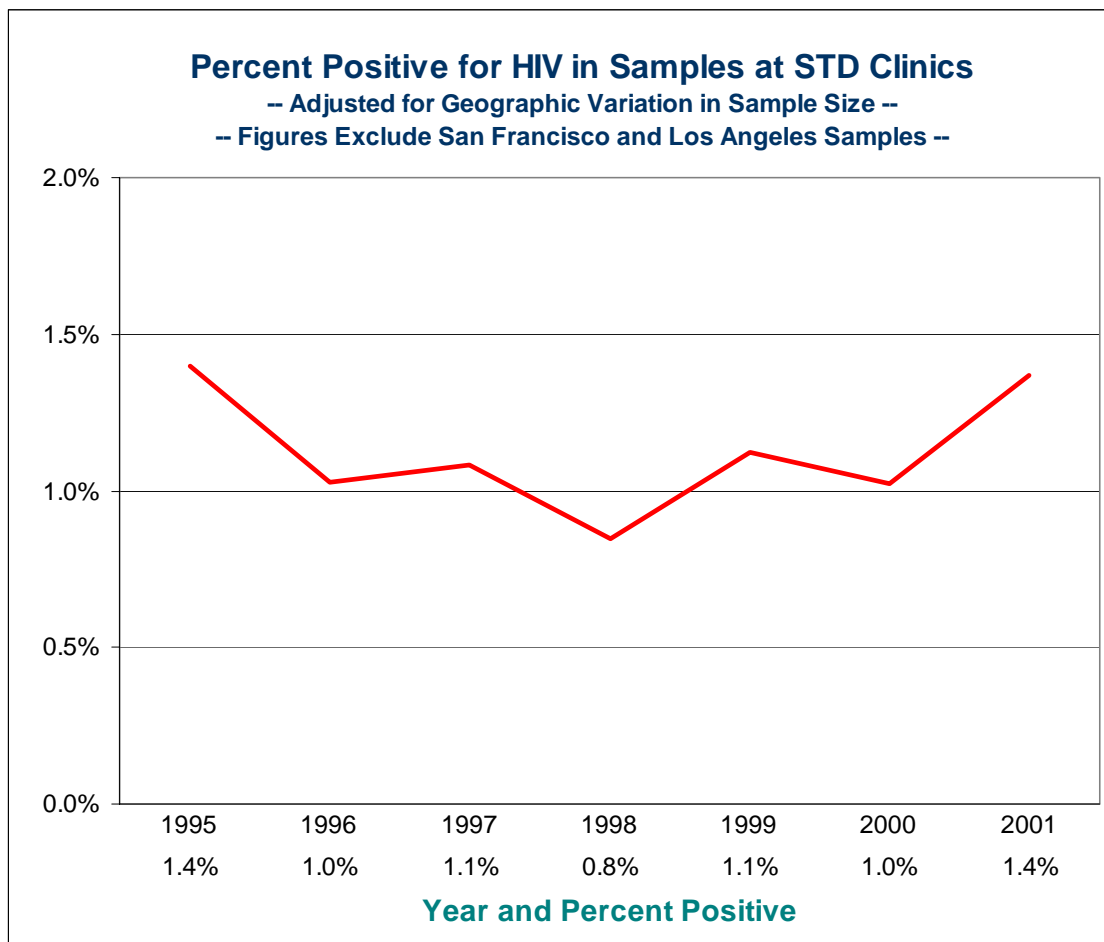
Domain: Prevalence of HIV Infection

Question: How common is HIV infection among sexually transmitted disease clinic users?

Why it's important: The extent to which HIV is present in the community represents increased potential for new infections.

How it's measured: HIV positive tests as a proportion of samples tested using specimens taken from sexually transmitted disease clinics at selected locations, excluding Los Angeles and San Francisco counties. Data are adjusted for change in the geographic distribution of samples across the state by standardizing to the geographic mix in 2001.

Findings: Adjusted data show a long term decline through 1998 and an increase through 2001.



Sample Size: The number of samples declined from 16,200 in 1992 to 4,300 in 2001.

Strengths/Limitations: This indicator is useful for monitoring change in the number of new infections, rather than for estimating the absolute number of new infections. Findings are limited to locations sampled, and those locations tend to reflect communities where HIV infection is of greatest concern. Because the samples were drawn from persons testing for sexually transmitted diseases, findings cannot be generalized to the overall population.

Source: California HIV Seroprevalence Annual Reports. Office of AIDS, California Department of Health Services

Indicator 1-2-6: HIV Prevalence among Women in the Counseling and Testing Program

Category: Populations

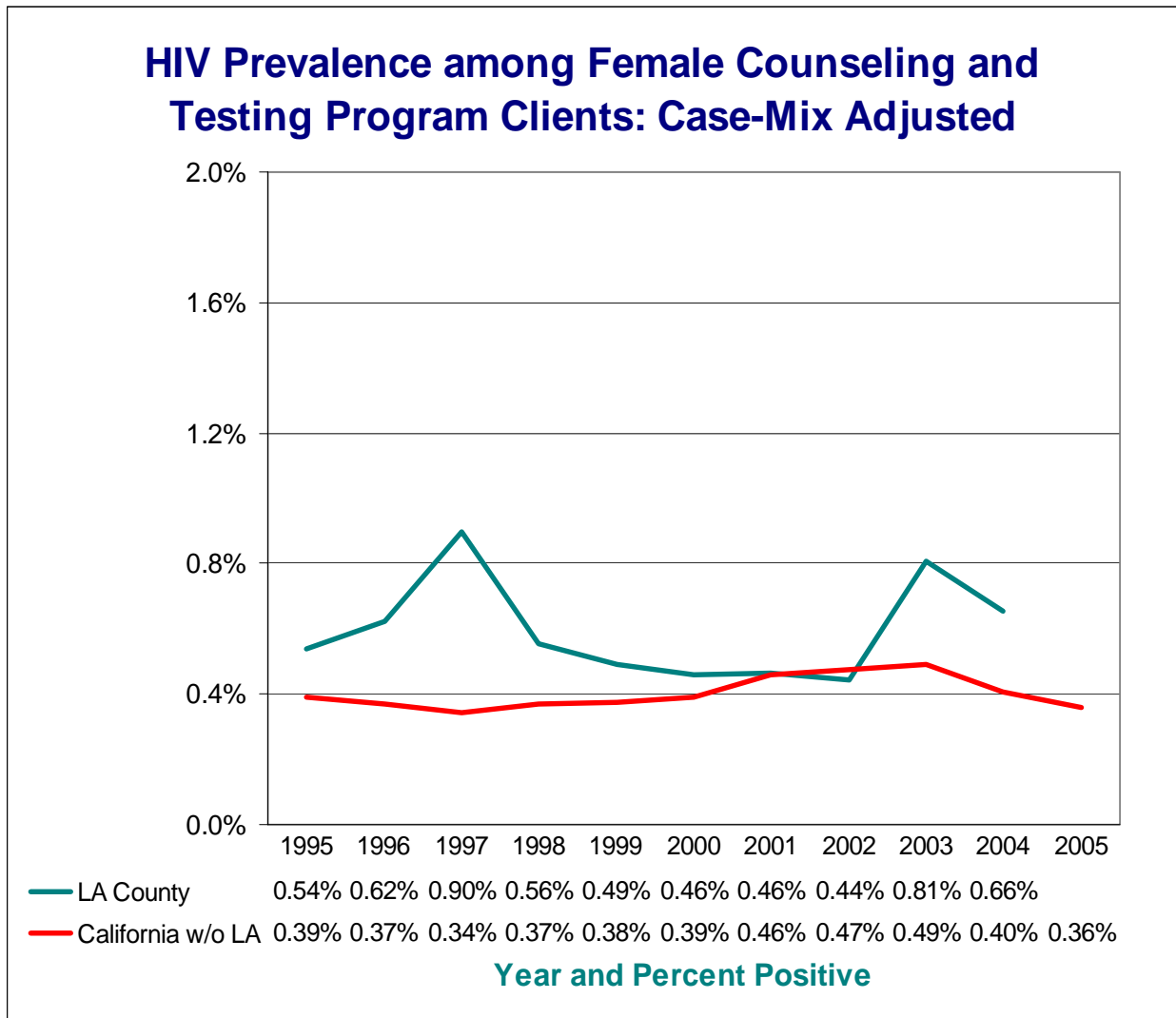
Domain: Prevalence of HIV Infection

Question: How common is HIV infection among women?

Why it's important: The extent to which HIV is present in the community represents increased potential for new infections.

How it's measured: Among women in the HIV Counseling and Testing Program, positive HIV tests as a proportion of tests. Analysis excludes repeated positive tests for the same individual. Data are adjusted for change in case mix over time by standardizing to the client mix in the most recent year.

Findings: The percentage of tests that were positive has been fairly level.



Strengths/Limitations: Findings are limited to persons who make use of the program, and are influenced by availability of services and propensity to use them.

Source: Counseling and Testing Program Data, California State Office of AIDS

Acknowledgment: Atsuko Nonoyama, David Webb, Christine Dahlgren

Indicator 1-2-7: HIV Prevalence among Childbearing Women

Category: Populations

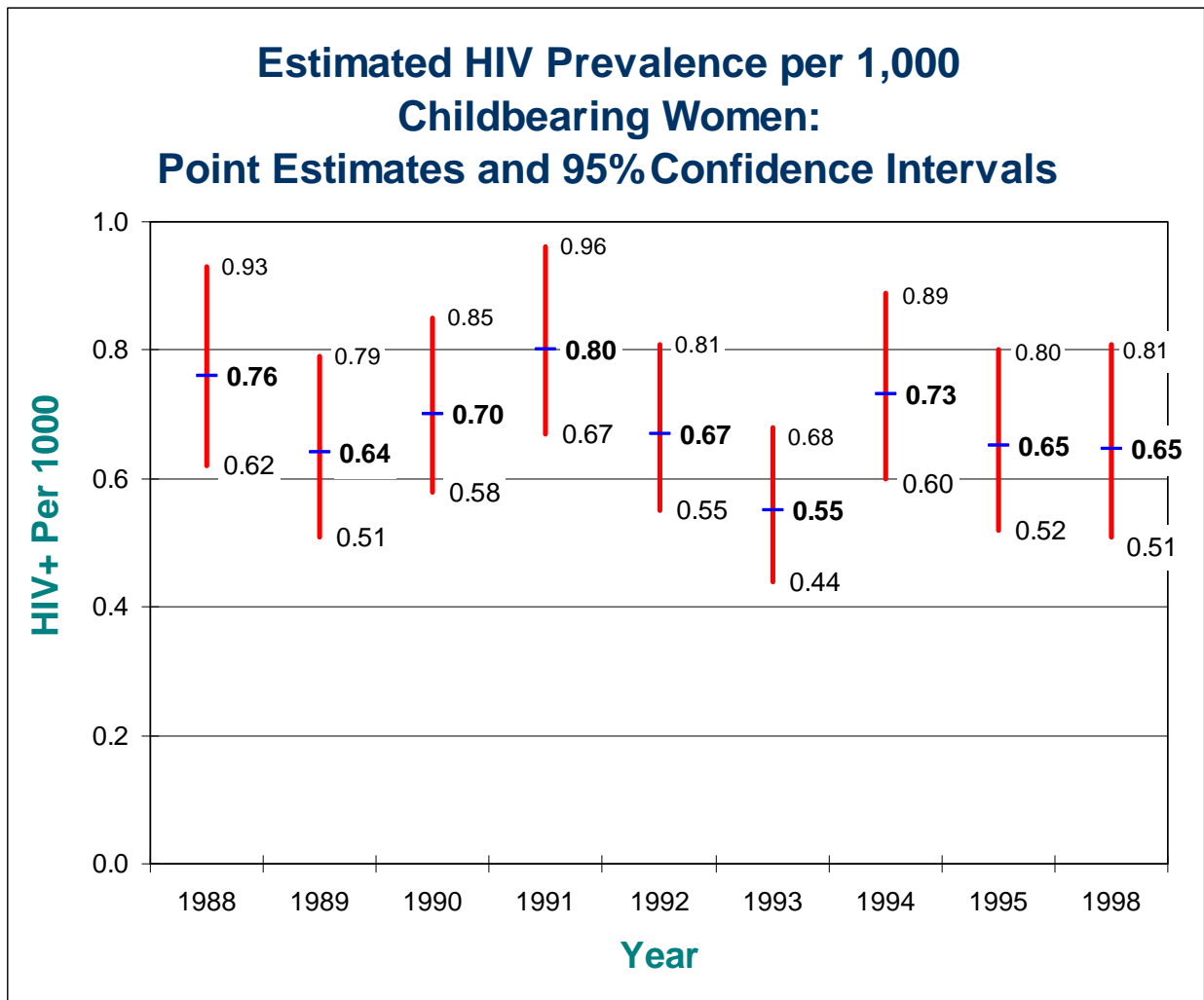
Domain: Prevalence of HIV Infection

Question: How many childbearing women are infected with HIV?

Why it's important: HIV among childbearing women represents potential for perinatal infection of newborns. Figures also inform about the extent to which women are infected.

How it's measured: About 25% of newborns to state residents were sampled for evidence of HIV exposure each year from 1988-1998, except that there was no testing in years 1996 and 1997.

Findings: Over the study years, estimated prevalence of HIV infection among childbearing women has fluctuated with a high of 0.80 per 1000 in 1991 and a low of 0.55 per 1000 in 1993, with no evidence of a trend. The estimated total number of infected childbearing women in any given year ranged from 322 to 488.



Strengths/Limitations: These are excellent data with minimal limitations.

Source: Zukowski D, Ruiz J. *California Childbearing Women: A Comparison of HIV Seroprevalence Data from the Third Quarters of 1992, 1995, and 1998 and Zidovudine Determination, 1998*. California Office of AIDS, Jan 2001.

Indicator 1-2-8: HIV Prevalence among Male Injectors in San Francisco

Category: Populations

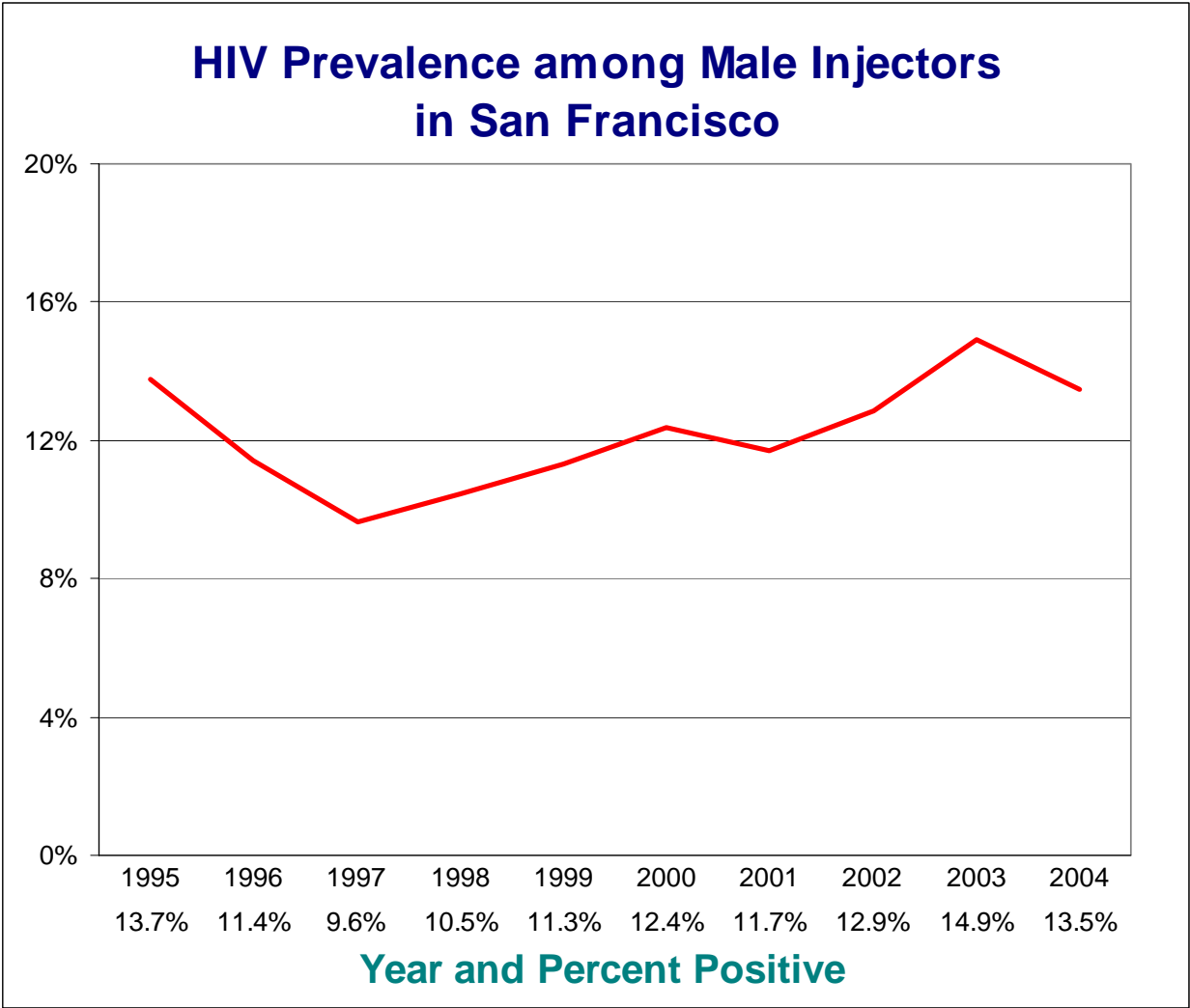
Domain: Prevalence of HIV Infection

Question: How common is HIV infection among IDU populations?

Why it's important: The extent to which HIV is present in the community represents increased potential for new infections.

How it's measured: Male IDU who test positive for HIV as a proportion of those participating in an ongoing street-based sample in San Francisco.

Findings: The percentage who tested positive appears to have increased since 1997.



Source: San Francisco Urban Health Study

Acknowledgment: Alex H. Kral, Jennifer Lorvick

Indicator 1-2-9: HIV Prevalence in State Prisons

Category: Populations

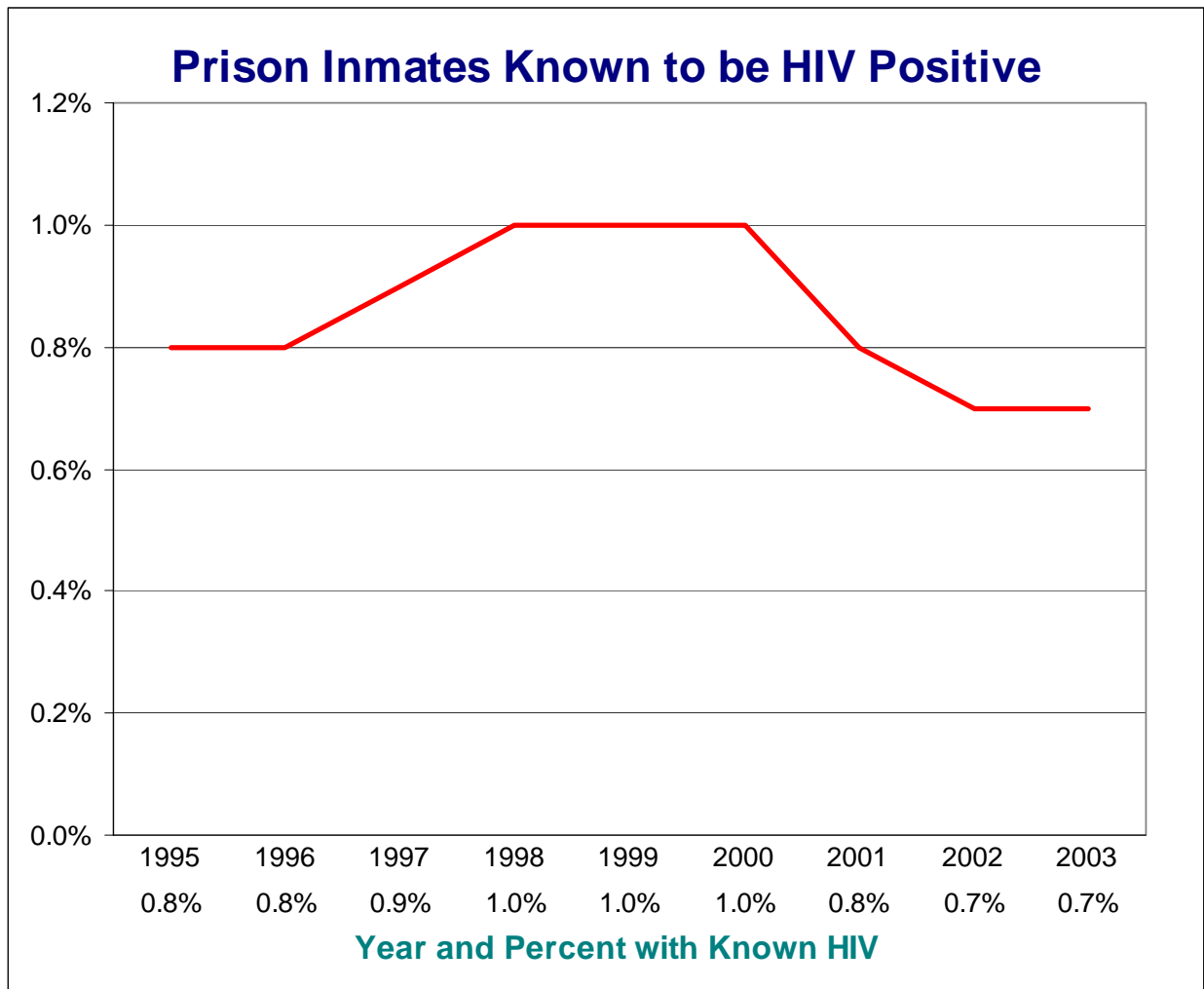
Domain: Prevalence of HIV Infection

Question: To what extent are prisoners infected with HIV?

Why it's important: The extent to which HIV is present in prisons represents increased potential for new infections.

How it's measured: Number of prisoners known to be positive for HIV divided by total number of prisoners.

Findings: The percent of state prisoners known to be positive for HIV trended upward through the year 1998, and has declined since 2000.



Strengths/Limitations: California has no routine HIV testing in prisons, and testing is only done at prisoners' requests, after a relevant incident, with medical indications, or under court order. Thus, we can be certain that prevalence is under-estimated, but do not know the extent of the error or whether there has been a change in the degree of error over time.

Sources: Data compiled from Bureau of Justice Statistics publications of the U.S. Department of Justice, Office of Justice Programs.

Indicator 2-1-1: State Expenditures for HIV Prevention Programs

Category: Public Policy

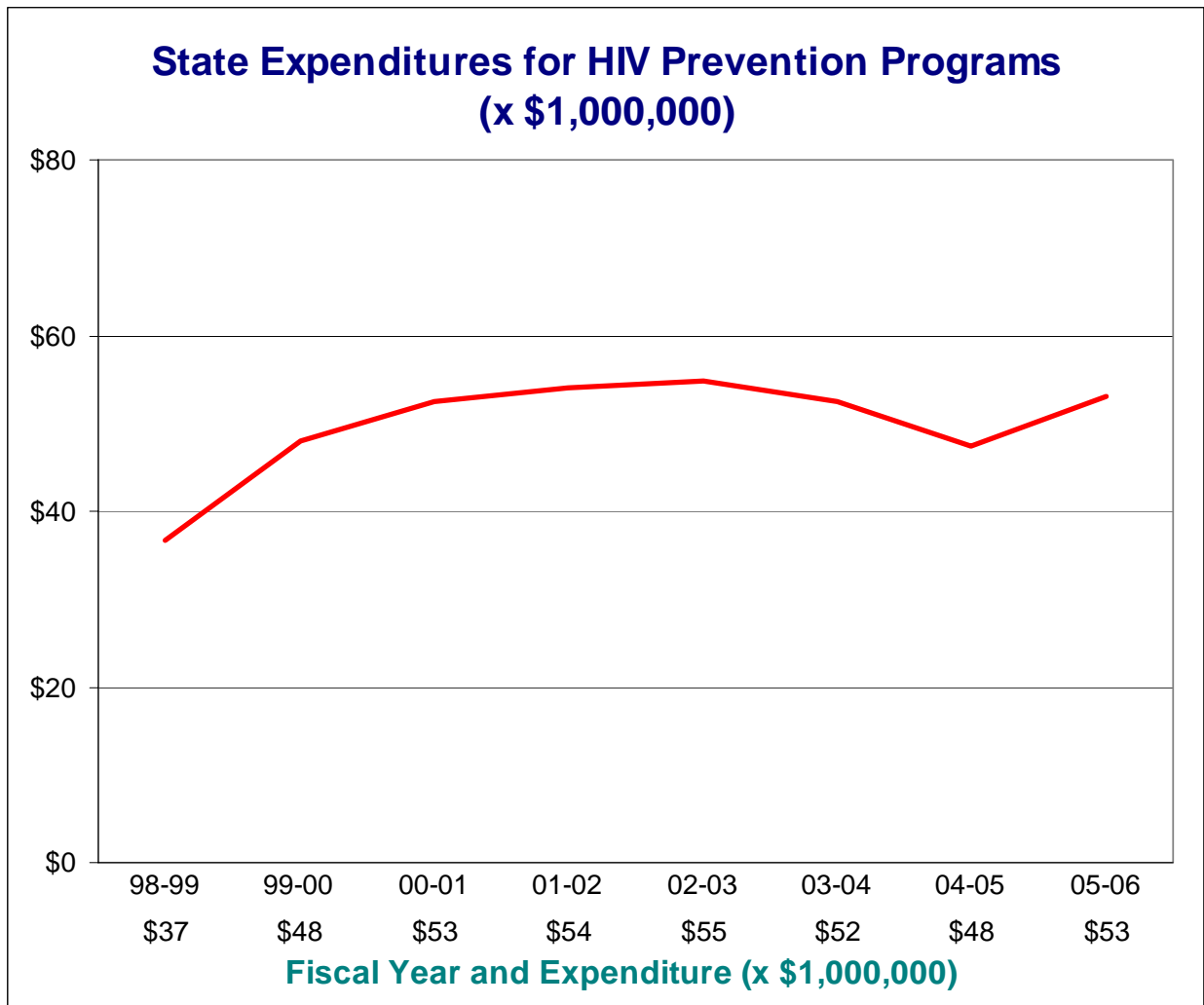
Domain: Prevention Effort

Question: How much money is spent on HIV prevention?

Why it's important: HIV prevention programs have been demonstrated to work and to be a cost-effective public investment.

How it's measured: Federal and state funds expended for HIV prevention programs by the California State Office of AIDS by fiscal year.

Findings: Federal and State funds spent annually for HIV prevention by the California State Office of AIDS increased up through fiscal year 02-03. The amount decreased in FY 03-04 and again in FY 04-05. The amount budgeted for the most recent fiscal year restored most of the previous cuts.



Strengths/Limitations: The measure does not include direct federal funding of local projects, nor does it include amounts contributed by local governments, corporations, foundations, or other not-for-profit entities. Year by year tracking of expenditures does not consider any gains in efficiency or effectiveness.

Source: California State Office of AIDS

Acknowledgment: Laurel Cima, Kevin Farrell

Indicator 2-1-2: State Expenditures for HIV Prevention per Estimated Population with HIV

Category: Public Policy

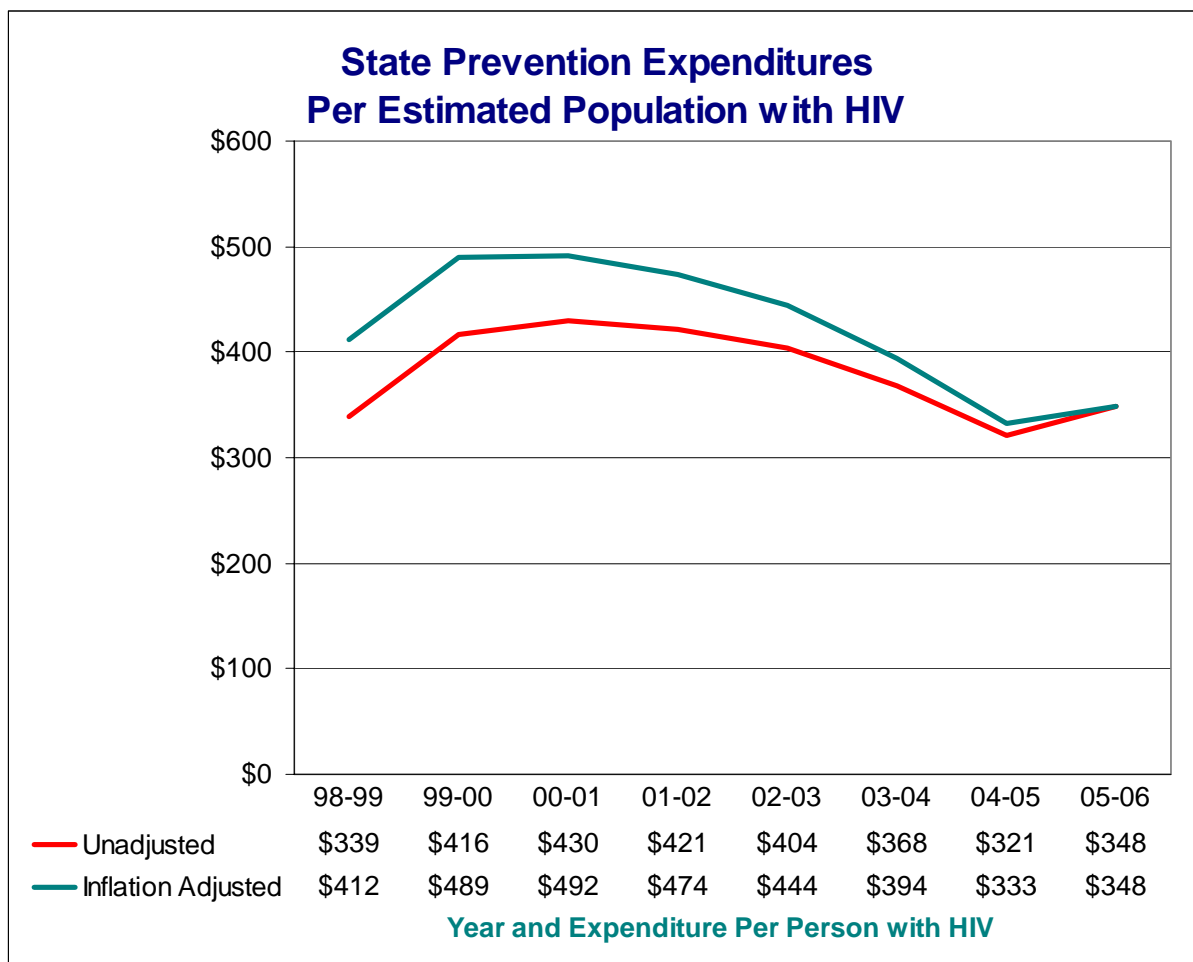
Domain: Prevention Effort

Question: How much money is spent on HIV prevention in relation to the growing need for prevention?

Why it's important: HIV prevention programs have been demonstrated to work and to be a cost-effective public investment. Because the total number of persons with HIV has increased, need for prevention also has increased.

How it's measured: Federal and state funds expended for HIV prevention programs by the California State Office of AIDS by fiscal year divided by the estimated number of persons with HIV.

Findings: In FY 00-01, the California State Office of AIDS spent \$430 per estimated person with HIV in California. By FY 05-06, expenditures decreased to about \$348 per person. When per capita expenditures are adjusted for inflation, the figures reveal a 29% decline over the past five years.



Strengths/Limitations: The measure does not include direct federal funding of local projects, nor does it include amounts contributed by local governments, corporations, foundations, or other not-for-profit entities. Year by year tracking of expenditures does not consider any gains in efficiency or effectiveness. While we are certain that the population with HIV has been growing, we are necessarily limited to estimation of the total number infected.

Source: Calculated from California State Office of AIDS expenditure data, and HIV infection estimates derived from national models developed by the CDC. See indicators 1-2-1 and 2-1-1.

Indicator 2-2-1: Adults Who Tested for HIV in the Past Year

Category: Interventions

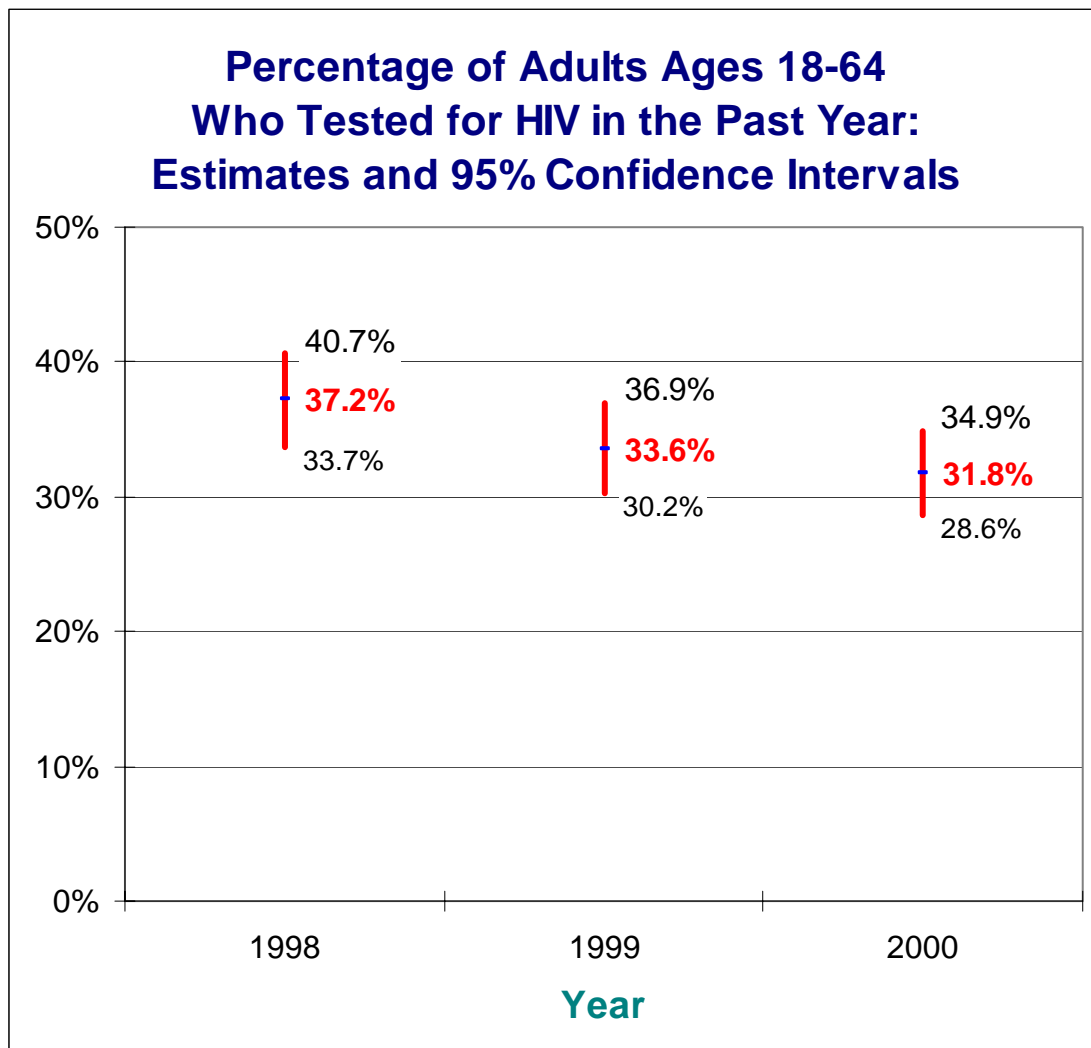
Domain: Availability and Utilization

Question: How many people access HIV testing services?

Why it's important: When people are aware of their HIV status, they are more likely to modify their behavior to protect themselves or others from infection.

How it's measured: Proportion of adult telephone survey respondents ages 18-64 who indicate that they tested for HIV in the past year.

Findings: From 1998 through the year 2000, the estimated percent of adults who tested for HIV in the past year declined slightly from 37.2% to 31.8%.



Strengths/Limitations: Telephone surveys have a number of limitations, particularly in connection with sensitive questions. Confidence intervals for these estimates are reasonably narrow. While the question was asked of all adults ages 18-64, we should recognize that many people have no need to test for HIV.

Source: Centers for Disease Control. Behavioral Risk Factor Surveillance System
<http://apps.nccd.cdc.gov/brfss/> accessed 1-29-03 and 12-9-03.

Indicator 2-2-2: High Risk Clients Referred to HIV Counseling and Testing Program by Outreach Projects

Category: Interventions

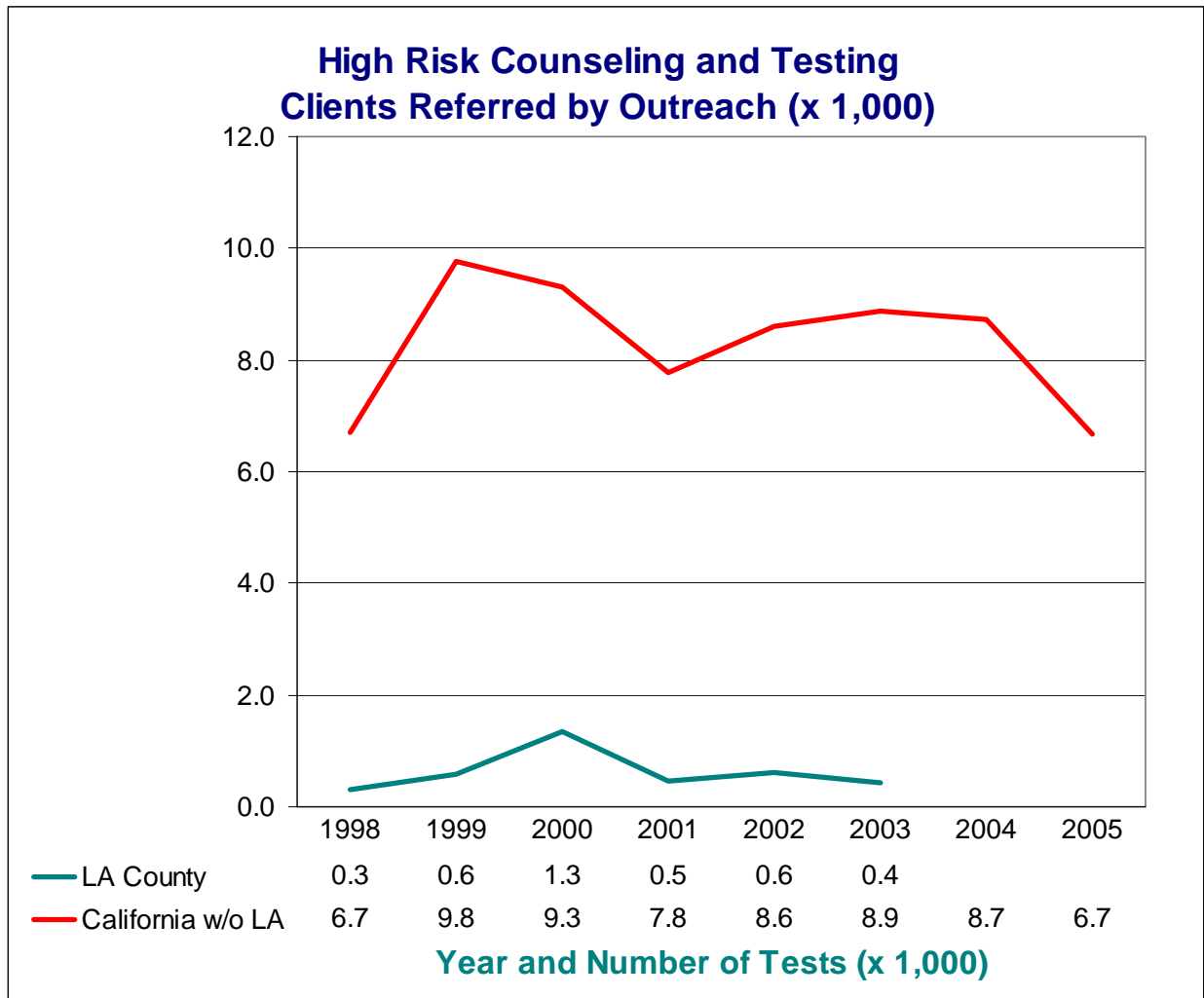
Domain: Availability and Utilization

Question: To what extent does outreach encourage high risk populations to enter prevention services?

Why it's important: Successful outreach with high risk populations helps the HIV Counseling and Testing program direct services toward those most in need.

How it's measured: Number of HIV tests of high risk clients in the Counseling and Testing program where the client indicates referral from outreach.

Findings: During each year 1999 and 2000, more than 10,000 HIV tests were delivered to high risk clients who had been referred by outreach projects. Numbers have since declined.



Strengths/Limitations: Findings are presented in absolute numbers, rather than as percents of all program clients.

Source: Office of AIDS, California Department of Health Services

Acknowledgment: Atsuko Nonoyama, David Webb, Christine Dahlgren

Indicator 2-2-3: HIV Tests of High Risk Clients in the Counseling and Testing Program

Category: Interventions

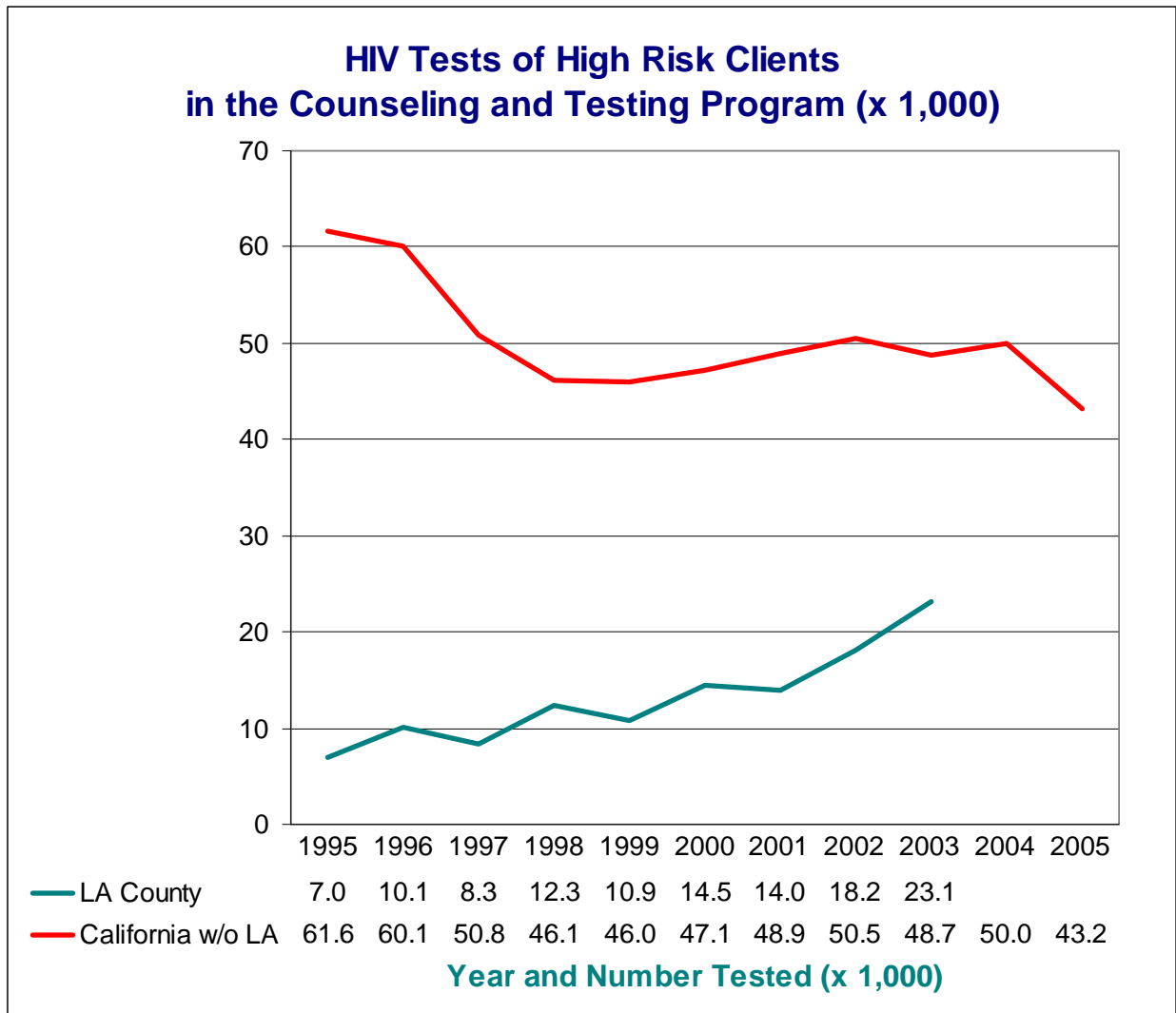
Domain: Availability and Utilization

Question: To what extent are publicly funded HIV testing services available and utilized by those most at risk?

Why it's important: HIV prevention services effectively reduce the number of new HIV infections.

How it's measured: Annual number of HIV tests provided to high risk clients under the HIV Counseling and Testing Program.

Findings: Los Angeles County substantially increased testing of high risk clients over the period from 1995 through 2003. Counts of high risk clients for the rest of California have trended down.



Strengths/Limitations: The numbers shown do not include services provided by other prevention programs, nor testing in private medical care.

Source: Office of AIDS, California Department of Health Services

Acknowledgment: Atsuko Nonoyama, David Webb, Christine Dahlgren

Indicator 2-3-1: HIV Tests Where Clients Did Not Return for Results

Category: Interventions

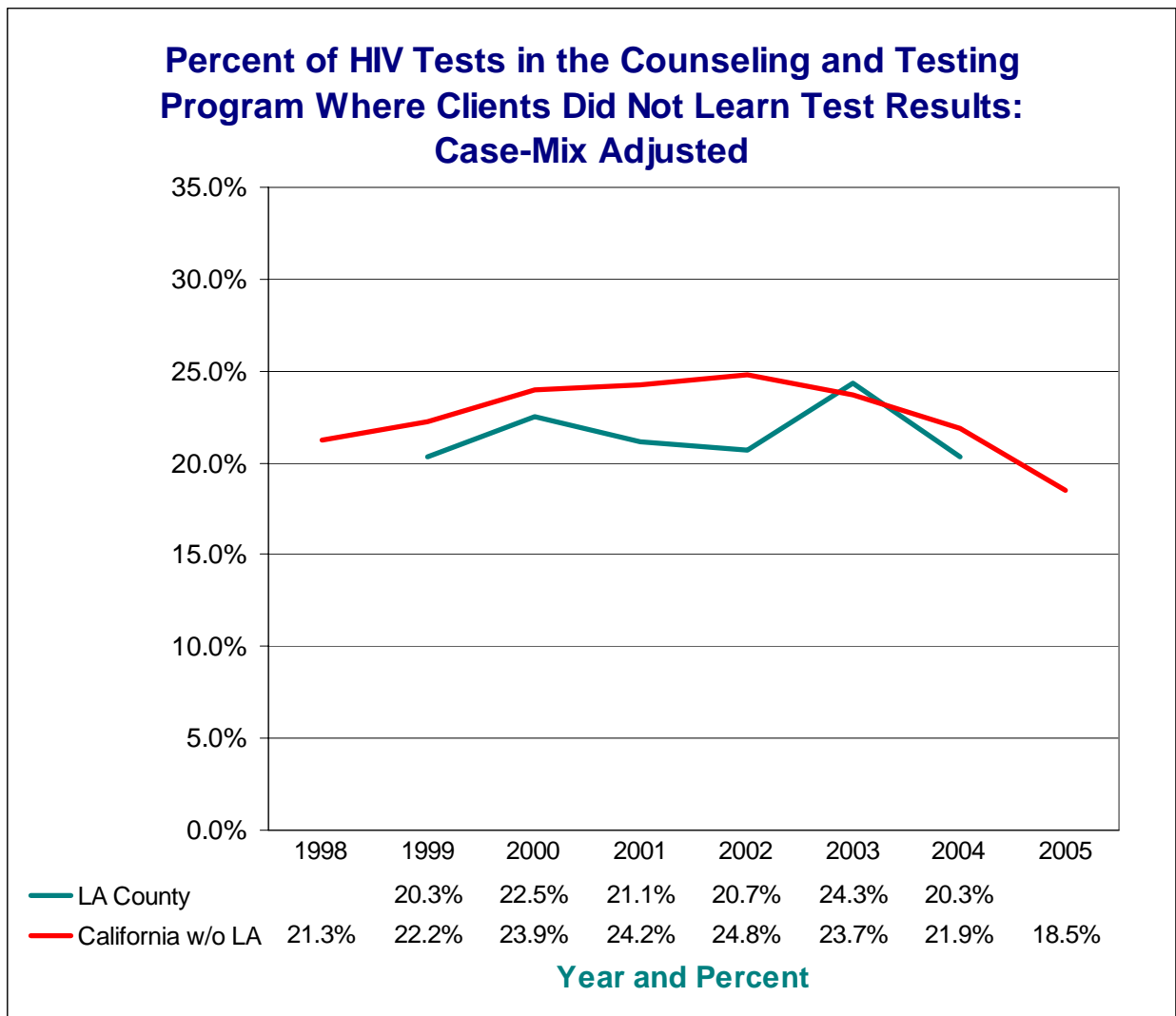
Domain: Timeliness and Continuity

Question: To what extent are high risk populations aware of their HIV status?

Why it's important: The effectiveness of HIV counseling and testing services is improved when clients return for test results. When individuals are not aware that they are infected, they are more likely to infect others.

How it's measured: Percent of HIV tests under the HIV Counseling and Testing Program where clients did not return for test results. Data are adjusted for change in case mix over time by standardizing to the client mix in the most recent year according to sixteen tiered groups with varying risk for HIV infection (transgender, MSM who are IDU, etc.).

Findings: Up through 2004, about 20%-25% of clients did not return for test results. There is substantial evidence of improvement in this measure over the past two years due to implementation of rapid testing.



Source: Office of AIDS, California Department of Health Services

Acknowledgment: Atsuko Nonoyama, David Webb, Christine Dahlgren, Deanna Sykes

Indicator 2-3-2: Positive HIV Tests Where Clients Did Not Return for Results

Category: Interventions

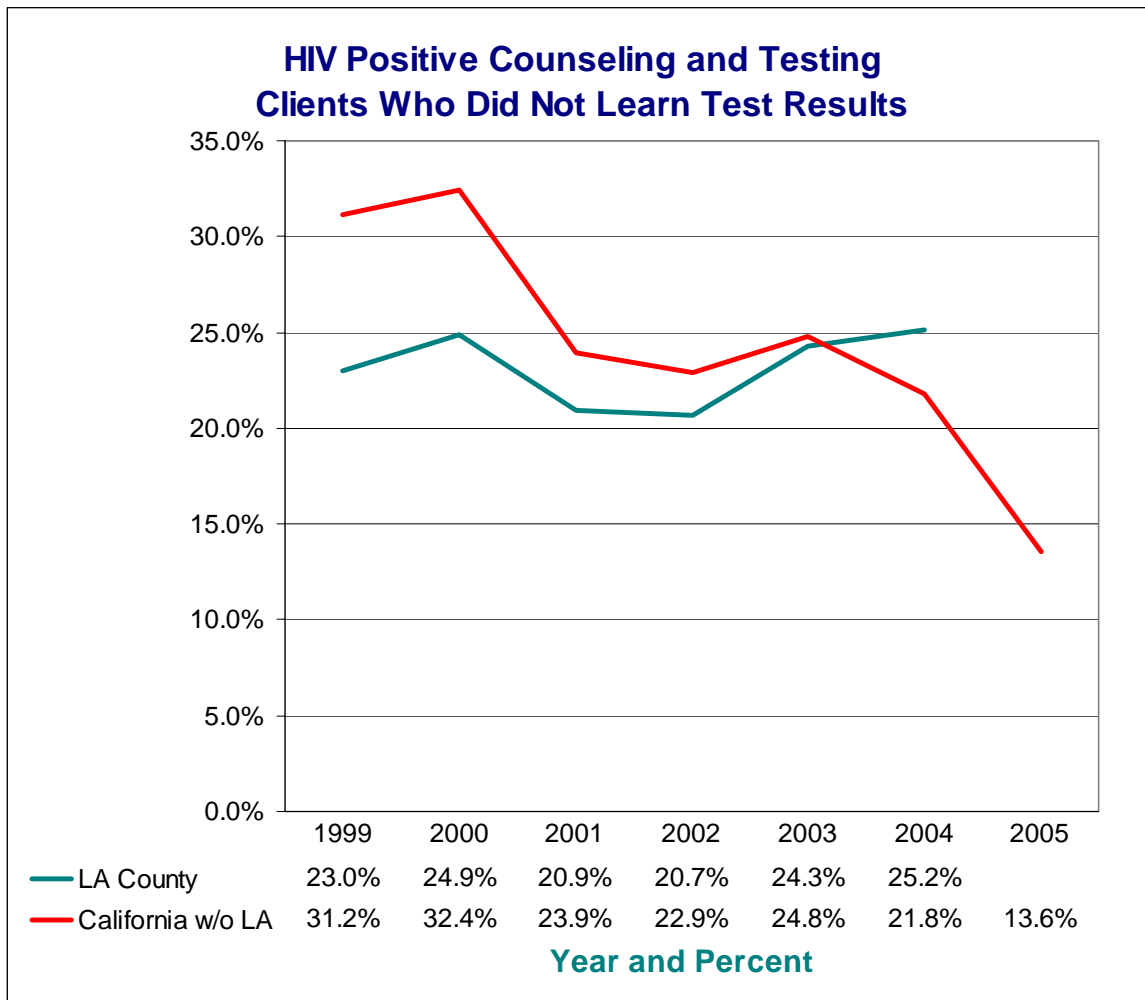
Domain: Timeliness and Continuity

Question: To what extent are persons with HIV aware of their HIV status?

Why it's important: The effectiveness of HIV counseling and testing services is improved when clients with HIV return for test results. When individuals are not aware that they are infected, they are more likely to infect others.

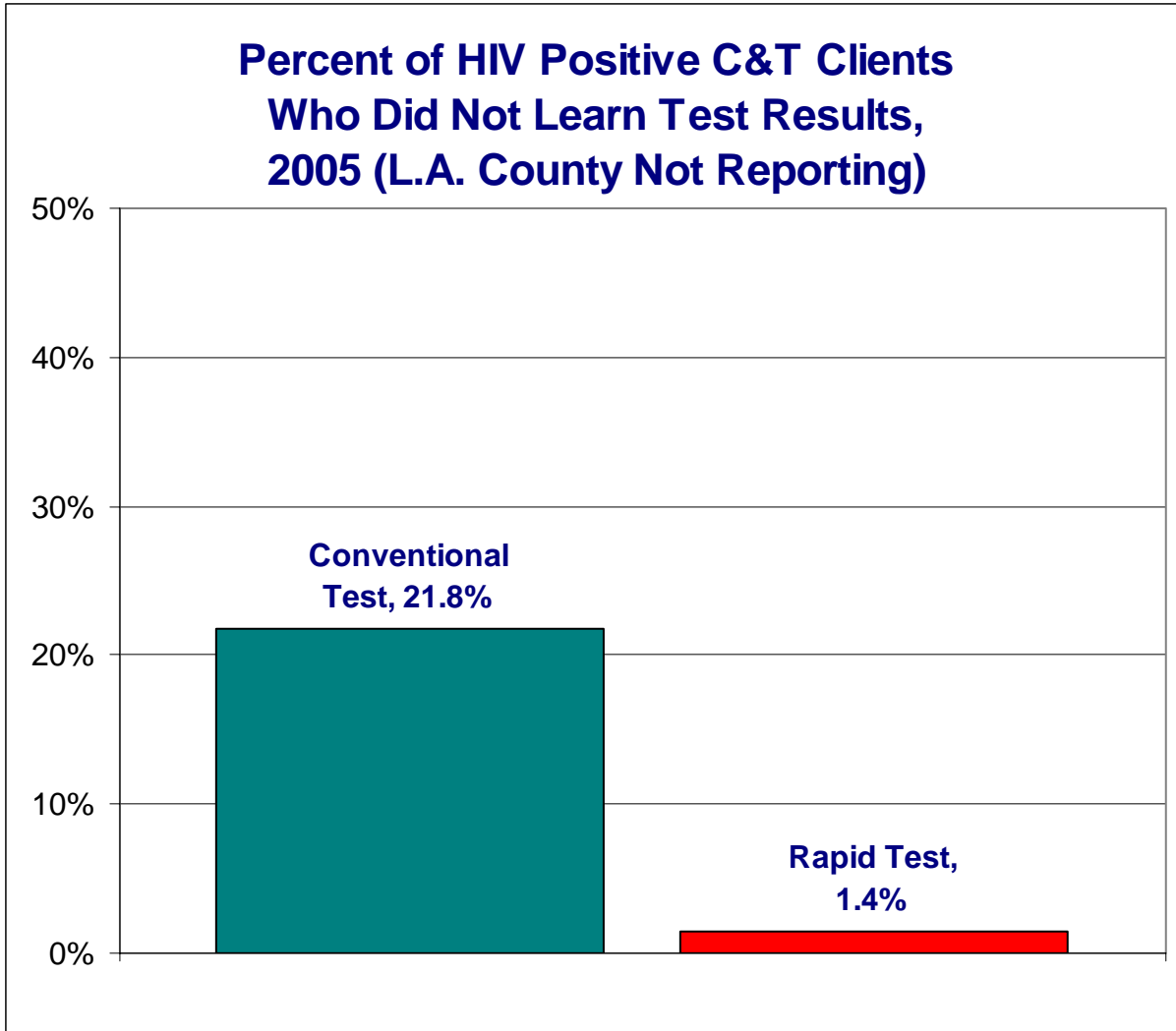
How it's measured: Percentage of positive HIV tests under the HIV Counseling and Testing Program where clients did not return for test results.

Findings: From 1999 through 2004, there was a decline in the percentage of positive HIV tests where clients did not return for test results. For the year 2005, the percentage for California (excluding Los Angeles County) plummeted due to deployment of rapid testing. More detailed analysis reveals that about one-third of HIV testing in 2005 employed the rapid test protocol; and, while 22% of HIV positive clients who used the conventional test did not return for test results, such was the case for only 1.4% of those using the rapid test (see chart on following page).



Source: Office of AIDS, California Department of Health Services

Acknowledgment: Atsuko Nonoyama, David Webb, Christine Dahlgren, Deanna Sykes



Findings: This chart illustrates the dramatic impact of rapid testing. In 2005, with data from Los Angeles County not yet available, more than one-fifth of HIV positive clients who used conventional testing did not return for test results. However, among the approximately one-third of HIV positive clients who used rapid testing, only a very small fraction did not receive test results.

Indicator 2-3-3: Earliest Positive HIV Test Was Less than or Equal to Six Months before AIDS Diagnosis

Category: Interventions

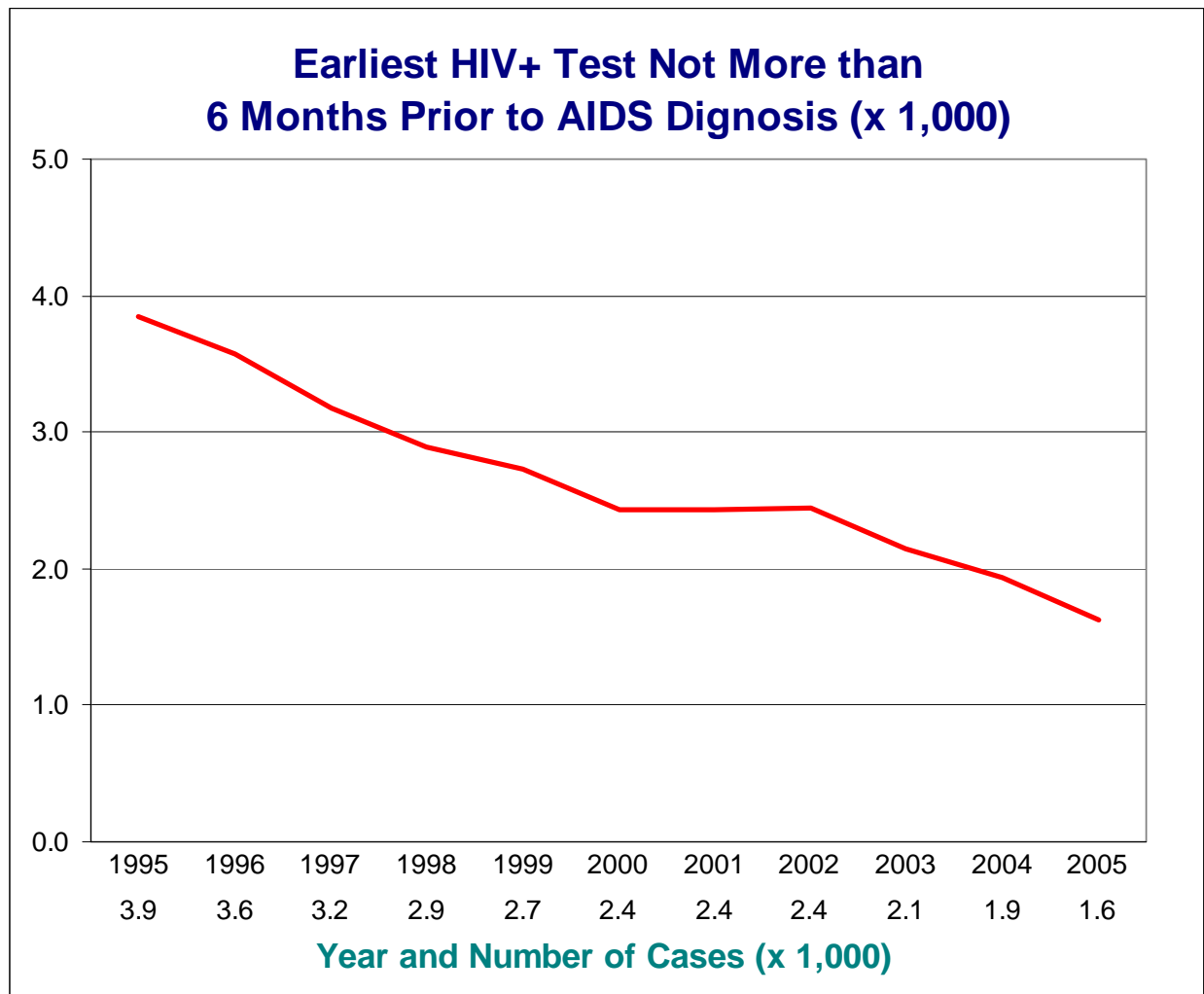
Domain: Timeliness and Continuity

Question: To what extent are people with HIV aware of their status?

Why it's important: Early access to care for those who are infected greatly improves their prognoses. When individuals with HIV are unaware of their HIV status, they are more likely to engage in behaviors that infect others.

How it's measured: Number of AIDS diagnoses where the earliest positive HIV test was less than or equal to six months before the AIDS diagnosis, by year of AIDS diagnosis. Cases where earliest positive HIV test are unknown are excluded.

Findings: The number of people with a late diagnosis of HIV has steadily decline over the past decade.



Strengths/Limitations: The decline in the number of people with a late HIV diagnosis parallels the general decline in the number of people diagnosed with AIDS.

Source: Office of AIDS, California Department of Health Services

Acknowledgment: Ann Nakamura

Indicator 2-3-4: Estimated Number of Untreated Childbearing Women with HIV

Category: Interventions

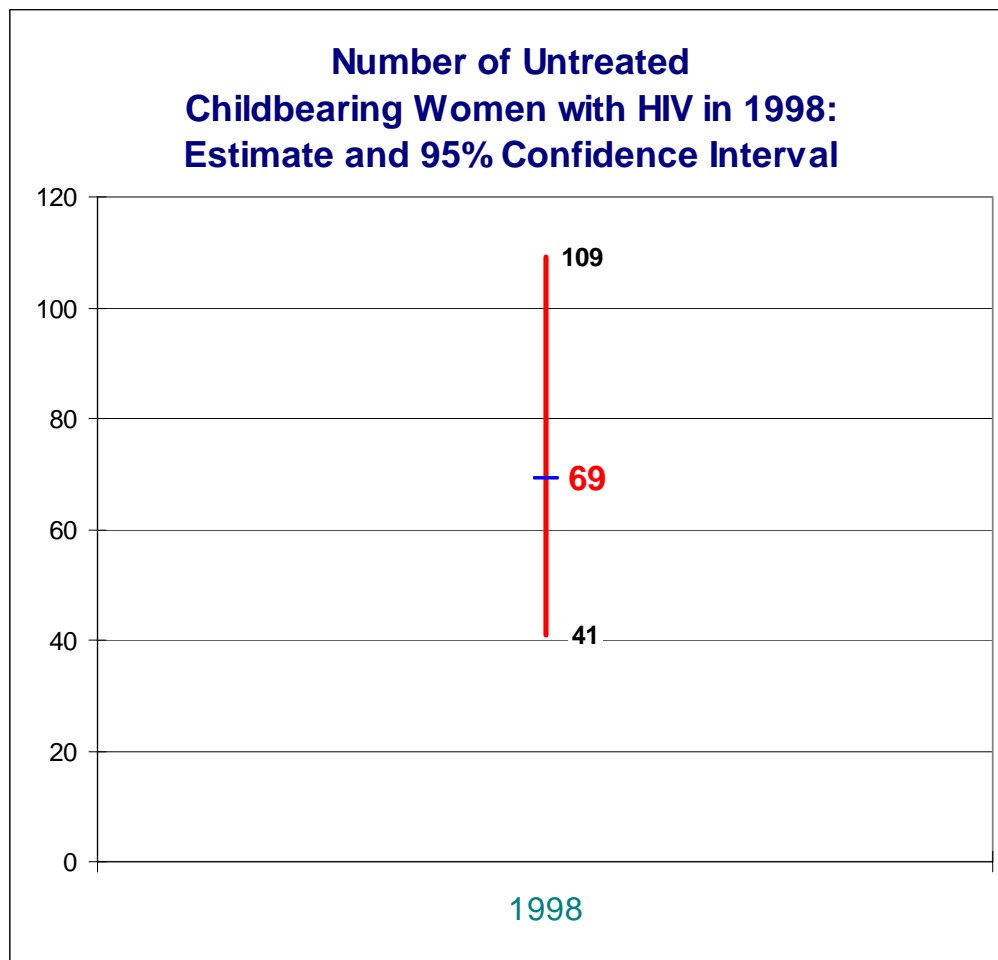
Domain: Timeliness and Continuity

Question: How many childbearing women are infected with HIV and are not treated prior to delivery?

Why it's important: Delivery of antiretroviral therapy to childbearing women substantially diminishes the likelihood that the baby will become infected.

How it's measured: In 1998, 135,991 resident newborns were tested for evidence that the mother was positive for HIV and for evidence of treatment.

Findings: Eighteen cases were identified as untreated newborns of women with HIV. Data presented here extrapolate findings to the total population of resident newborns for that year. An estimated 69 childbearing women with HIV were not treated prior to delivery, with a 95% confidence interval ranging from 41 to 109 women. The point estimate of 69 untreated women with HIV represents about 20% of the estimated number of childbearing women with HIV.



Strengths/Limitations: The estimates presented here should not be construed to mean that all of the newborns became infected with HIV. Untreated, about 25% of perinatally exposed infants will develop HIV infection.

Calculated from: Zukowski D, Ruiz J. *California Childbearing Women: A Comparison of HIV Seroprevalence Data from the Third Quarters of 1992, 1995, and 1998 and Zidovudine Determination, 1998.* California Office of AIDS, Jan 2001.

Indicator 3-1-1: MSM Intent to Use Condoms for Anal Sex in a San Francisco Street Survey

Category: Populations

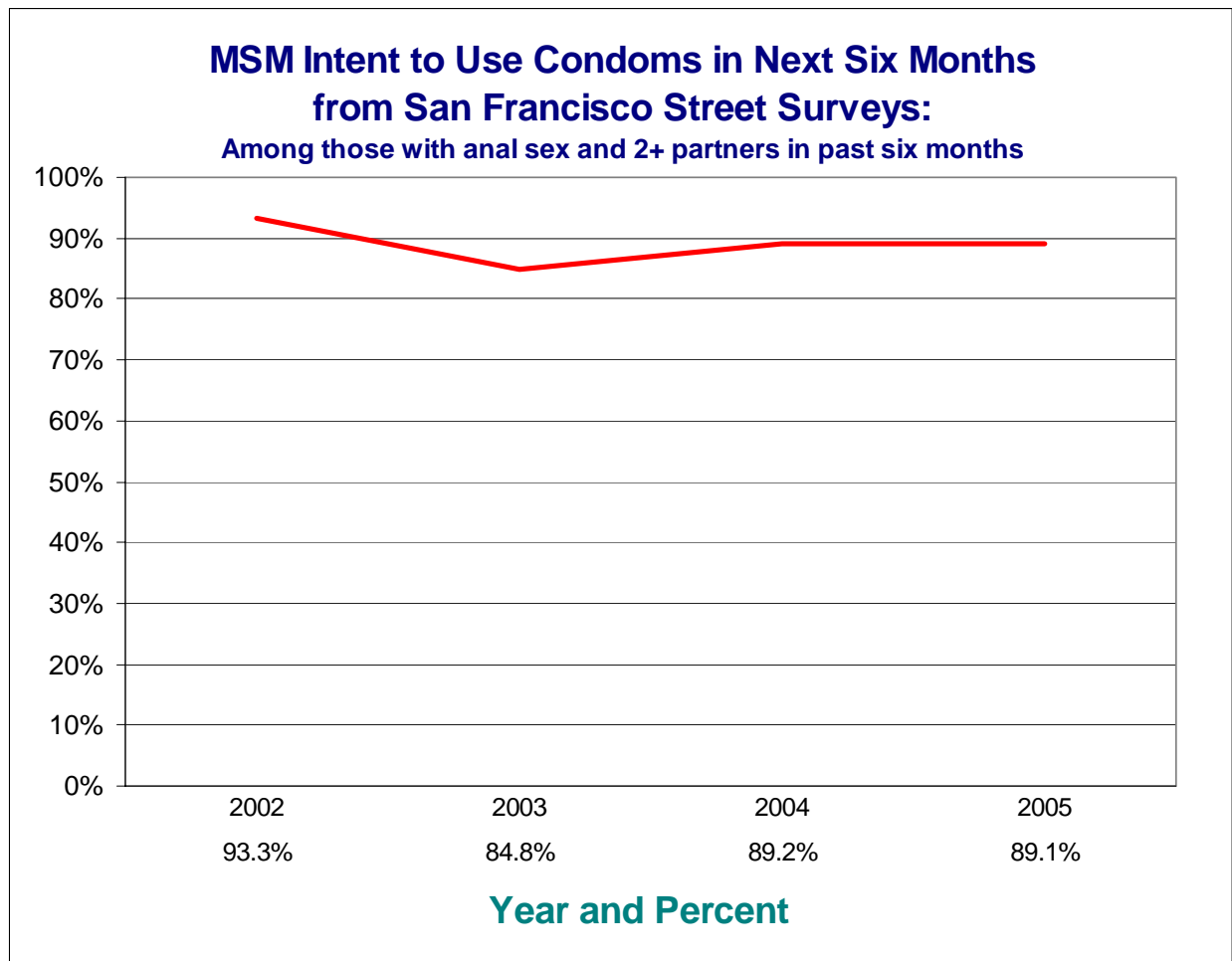
Domain: Intentions

Question: To what extent do MSM with a history of multiple partners and anal sex intend to use condoms for anal sex?

Why it's important: Unprotected anal intercourse is a common route for HIV infection.

How it's measured: Among MSM who indicate they had more than one sex partner in the past six months, and who practiced anal intercourse, the proportion who express intent to use condoms for anal sex in the coming six months.

Findings: The percentage who expressed intent to use condoms is high.



Strengths/Limitations: Findings from the convenience sample are limited to persons who frequent survey locations, and the percentages cannot be interpreted as representing condom usage within the MSM community.

Source: Stop AIDS Project, San Francisco

Acknowledgment: Sanny Chen, Roop Prabhu, San Francisco Department of Public Health

Indicator 3-2-1: Counseling and Testing Program Clients with More than Five Sex Partners in Past Two Years

Category: Risk-Taking and Protective Behaviors

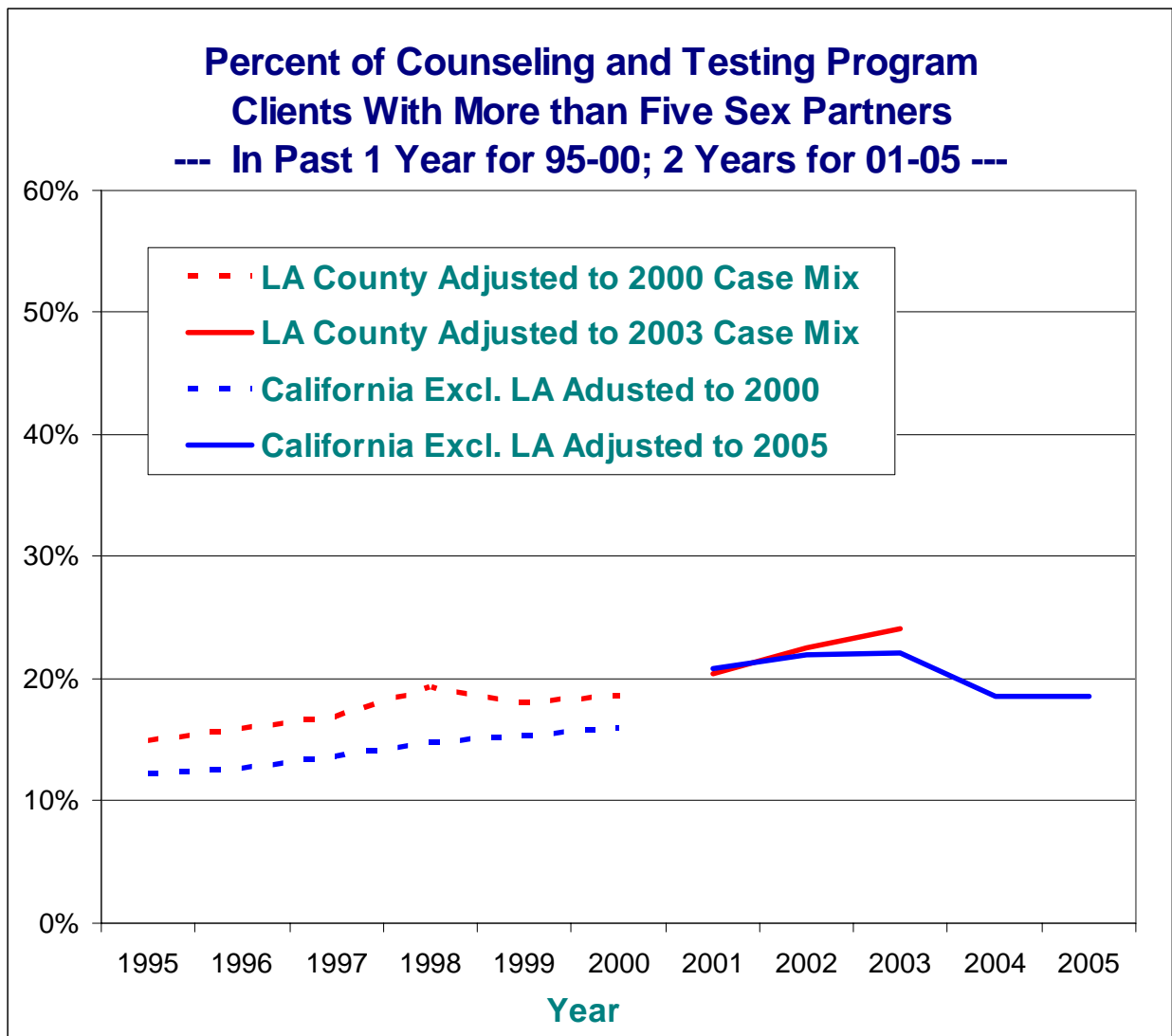
Domain: High Risk Sex

Question: To what extent do adult populations have multiple sex partners?

Why it's important: Having multiple sex partners increases the potential for HIV transmission.

How it's measured: Of Counseling and Testing Program clients, the percent with more than five sex partners in past twelve months (up to year 2000) or past two years (beginning 2001). Data are adjusted for change in case mix over time by standardizing to the client mix in the most recent year on the basis of sixteen tiered risk groups.

Findings: From 1995 through the year 2003, the percentage of clients with more than five sex partners steadily increased. In more recent years, the percentages have fallen.



Source: Counseling and Testing Program Data, California State Office of AIDS

Acknowledgment: Atsuko Nonoyama, David Webb, Christine Dahlgren

Indicator 3-2-2: Counseling and Testing Program Clients with Sex Partners who are Positive for HIV

Category: Risk-Taking and Protective Behaviors

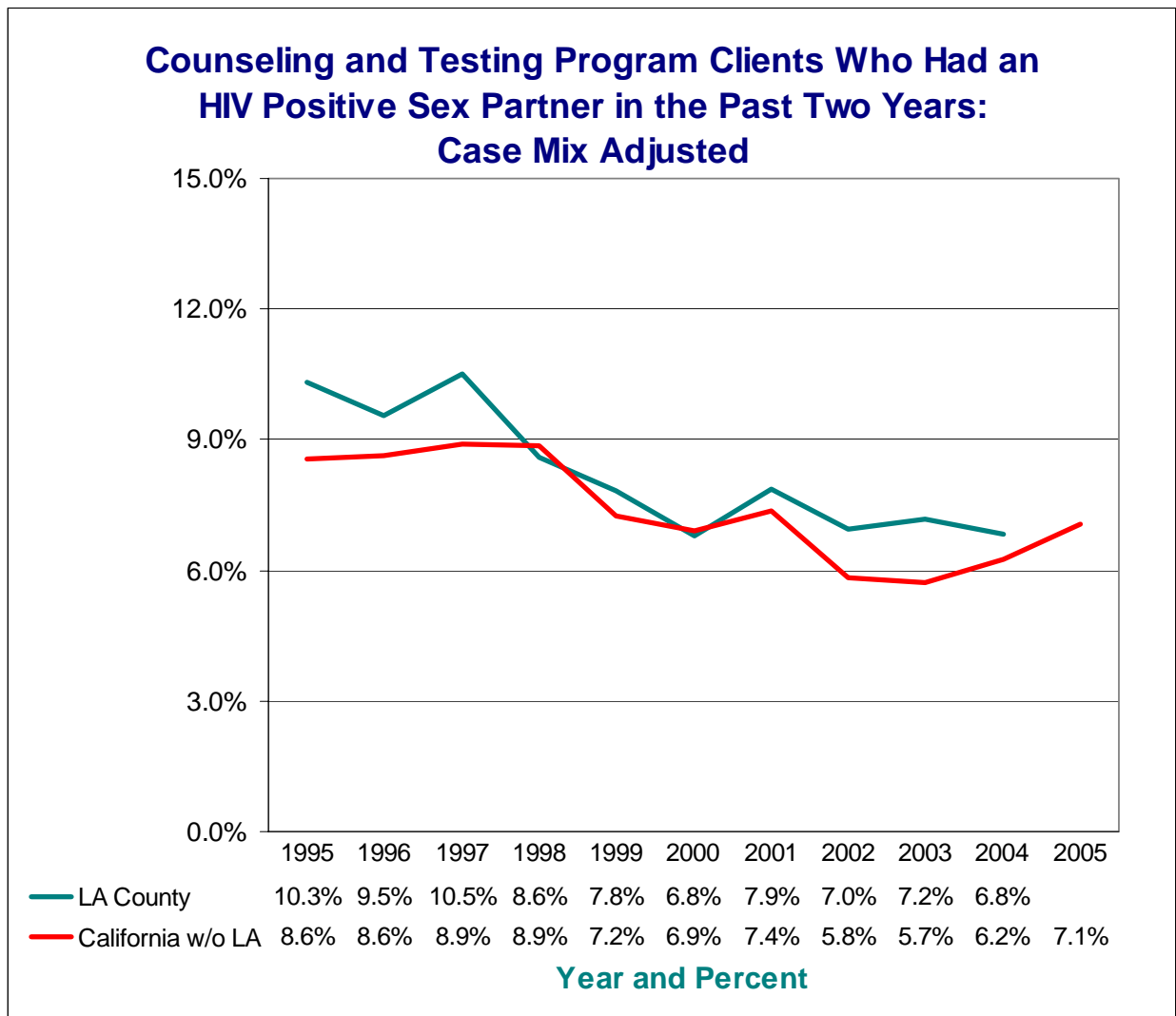
Domain: High Risk Sex

Question: To what extent do adults have sex partners who are infected with HIV?

Why it's important: Having a sex partner with HIV increases the potential for HIV transmission.

How it's measured: Of Counseling and Testing Program clients, the percent with HIV positive sex partners in the shorter of past two years or since last HIV test. Data are adjusted for change in case mix over time by standardizing to the client mix in the most recent year on the basis of fifteen tiered risk groups.

Findings: Adjusted data suggest that percentages have declined over time, with a possible increase in the past two years.



Source: Counseling and Testing Program Data, California State Office of AIDS

Acknowledgment: Atsuko Nonoyama, David Webb, Christine Dahlgren

Indicator 3-2-3: Adults Who Had a Casual Sex Partner and Did Not Use a Condom

Category: Risk-Taking and Protective Behaviors

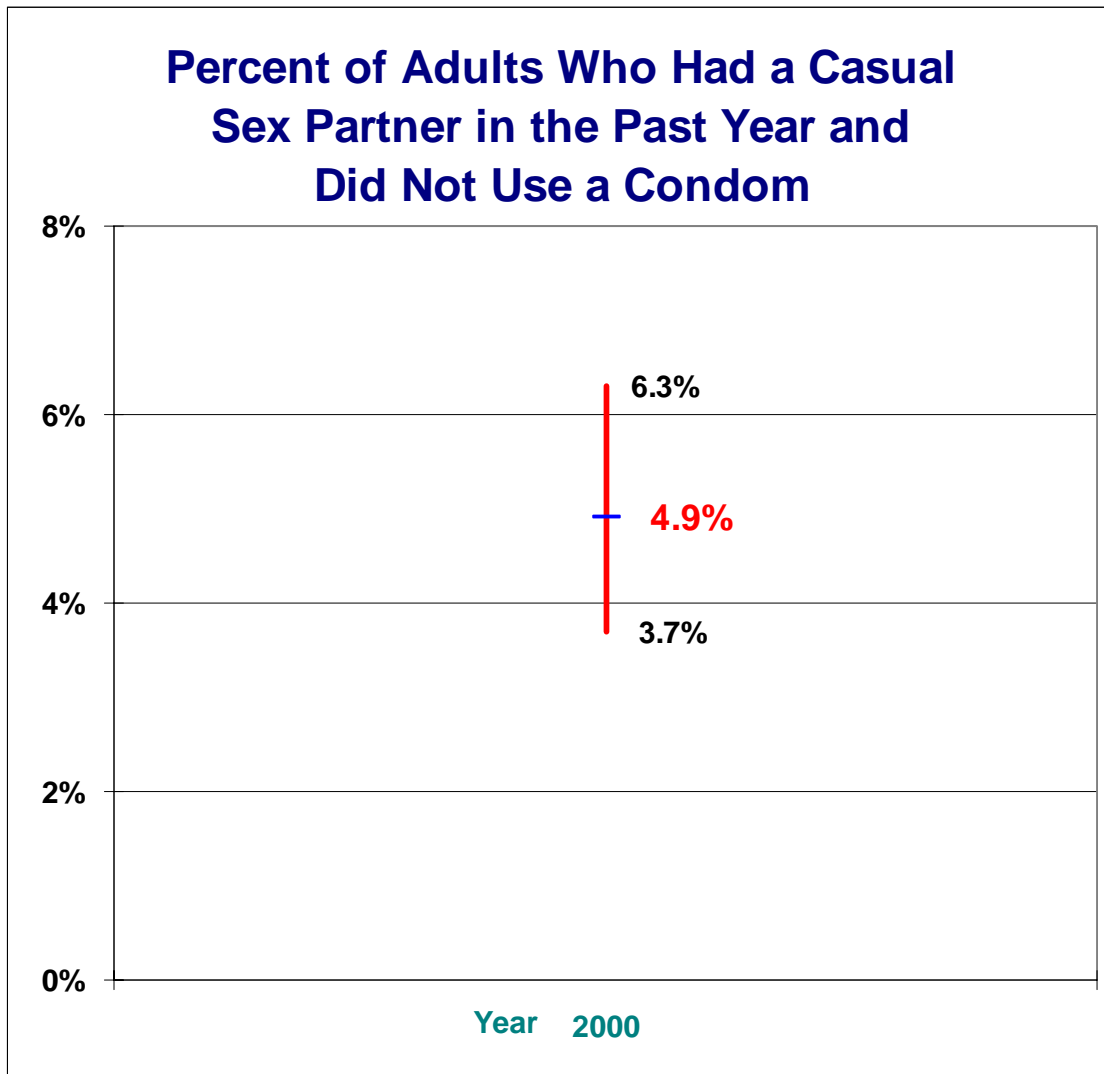
Domain: High Risk Sex

Question: To what extent does the population engage in casual sex while not using condoms?

Why it's important: Failure to use a condom with casual sex partners increases the potential for HIV transmission.

How it's measured: In a statewide telephone survey, percent of adults ages 18 and older who report having a casual sex partner in the past year and not using a condom.

Findings: An estimated 4.9% (95% CI: 3.7%-6.3%) of adults reported having a casual sex partner in the past year and not using a condom. This suggests that about 1.2 million (0.9-1.6 million) adults placed themselves at risk.



Strengths/Limitations: Telephone surveys have a number of limitations, particularly in connection with sensitive questions.

Source: Moskowitz JM, University of California, Berkeley. Personal communication 10-28-03. Data from the California 2000 HIV/AIDS Knowledge, Attitudes, Beliefs, and Behaviors (KABB) Survey.

Indicator 3-2-4: Unprotected Anal Intercourse among MSM Respondents in a San Francisco Street Survey

Category: Risk-Taking and Protective Behaviors

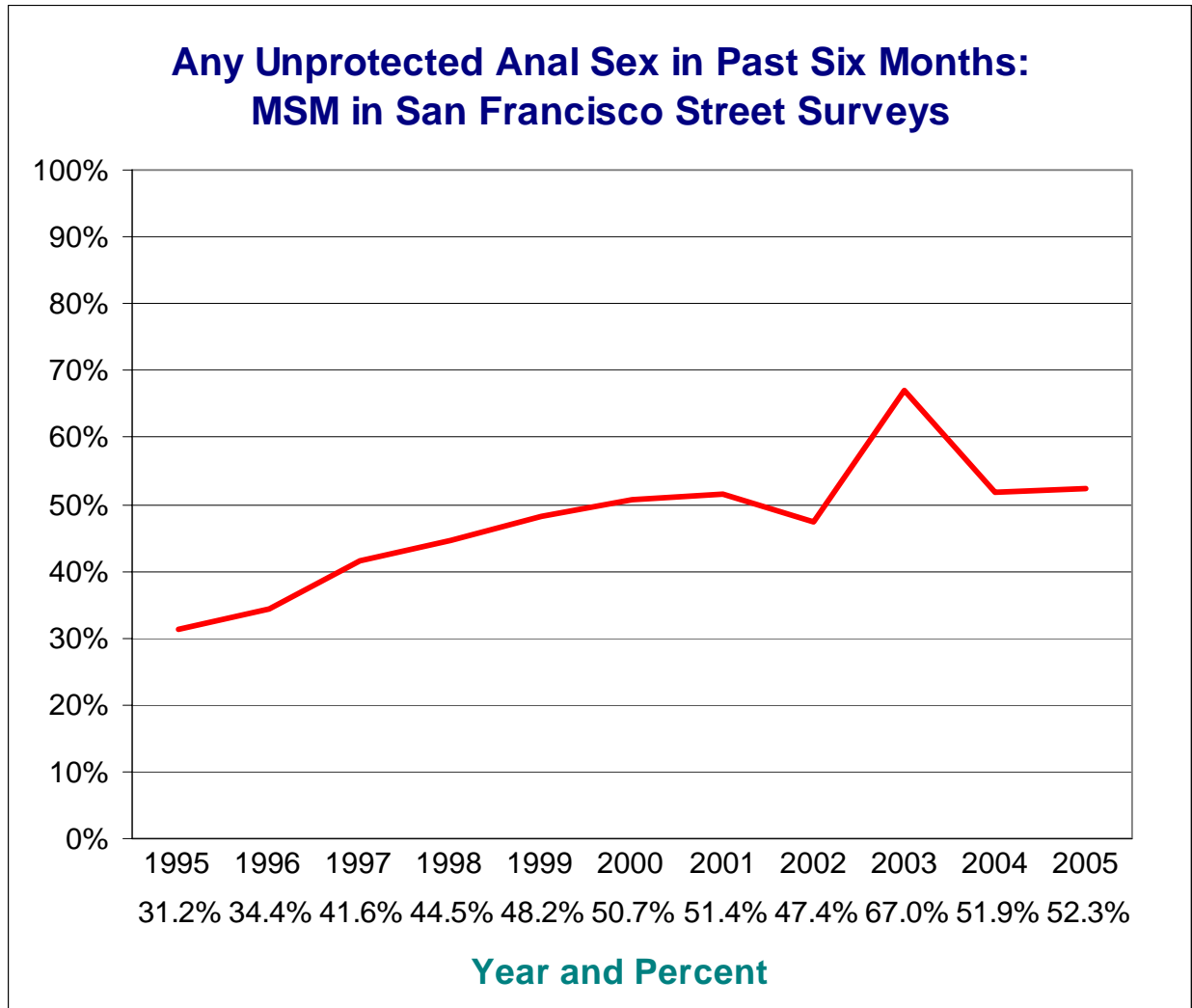
Domain: High Risk Sex

Question: To what extent do MSM engage in unprotected anal intercourse?

Why it's important: Unprotected anal intercourse is a common route for HIV infection.

How it's measured: Among MSM who indicate that they practiced anal intercourse in the past six months, the proportion who did not always use a condom.

Findings: Percentages have steadily increased over the years.



Sample Size: Findings are based on 600-2500 individuals in any given year who reported unprotected anal intercourse.

Strengths/Limitations: Findings from the convenience sample are limited to persons who frequent survey locations, and the percentages cannot be interpreted as representing condom usage within the MSM community.

Source: Stop AIDS Project, San Francisco

Acknowledgment: Sanny Chen, Roop Prabhu, San Francisco Department of Public Health

Indicator 3-2-5: Unprotected Anal Intercourse among MSM Injectors in San Francisco

Category: Risk-Taking and Protective Behaviors

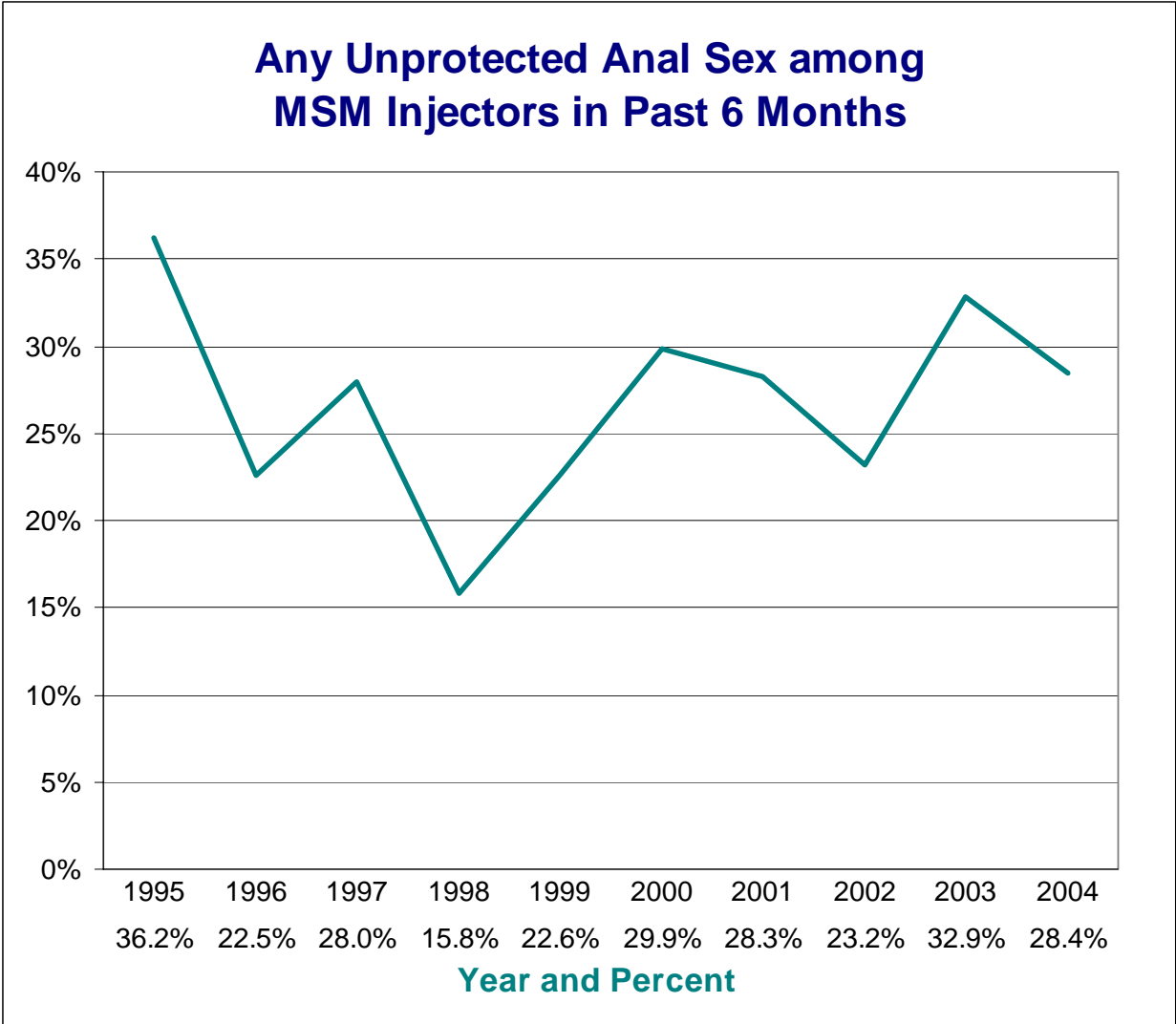
Domain: High Risk Sex

Question: To what extent do MSM engage in unprotected anal intercourse?

Why it's important: Unprotected anal intercourse is a common route for HIV infection.

How it's measured: Among MSM injectors, the proportion who had anal intercourse and did not a condom.

Findings: Percentages appear to have decreased up through 1998, and have since increased.



Strengths/Limitations: The sample is from continuing recruitment of injectors from San Francisco streets.

Source: Urban Health Study, San Francisco

Acknowledgment: Alex J. Kral, Jennifer Lorvick

Indicator 3-2-6: Unprotected Receptive Anal Intercourse

Category: Risk-Taking and Protective Behaviors

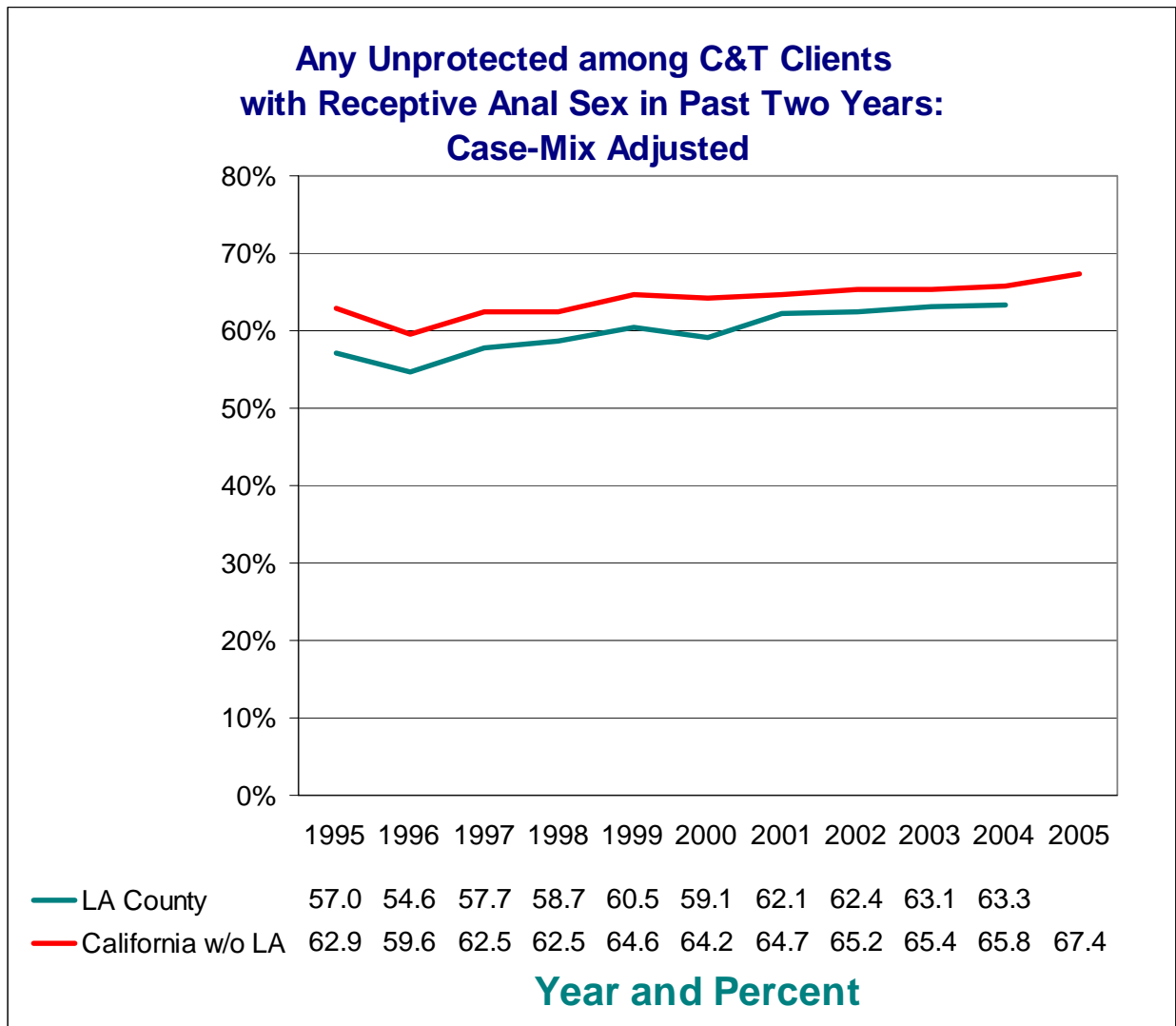
Domain: High Risk Sex

Question: To what extent do those who engage in receptive anal intercourse neglect to use condoms?

Why it's important: Failure to use a condom during anal intercourse substantially increases the risk of HIV transmission.

How it's measured: Among Counseling and Testing Program clients who report receptive anal intercourse in the shorter of the past two years or since last HIV test, percent who report not always using a condom. Data are adjusted for change in case mix over time by standardizing to the client mix in the most recent year based on sixteen tiers of risk groups.

Findings: Overall percentages are high. Adjusted data suggest a long term increase since 1996.



Strengths/Limitations: The data do not consider whether sex was within monogamous relationships or with casual partners.

Source: Counseling and Testing Program Data, California State Office of AIDS

Acknowledgment: Atsuko Nonoyama, David Webb, Christine Dahlgren

Indicator 3-3-1: Needle Sharing among Injection Drug Users in San Francisco

Category: Risk-Taking and Protective Behaviors

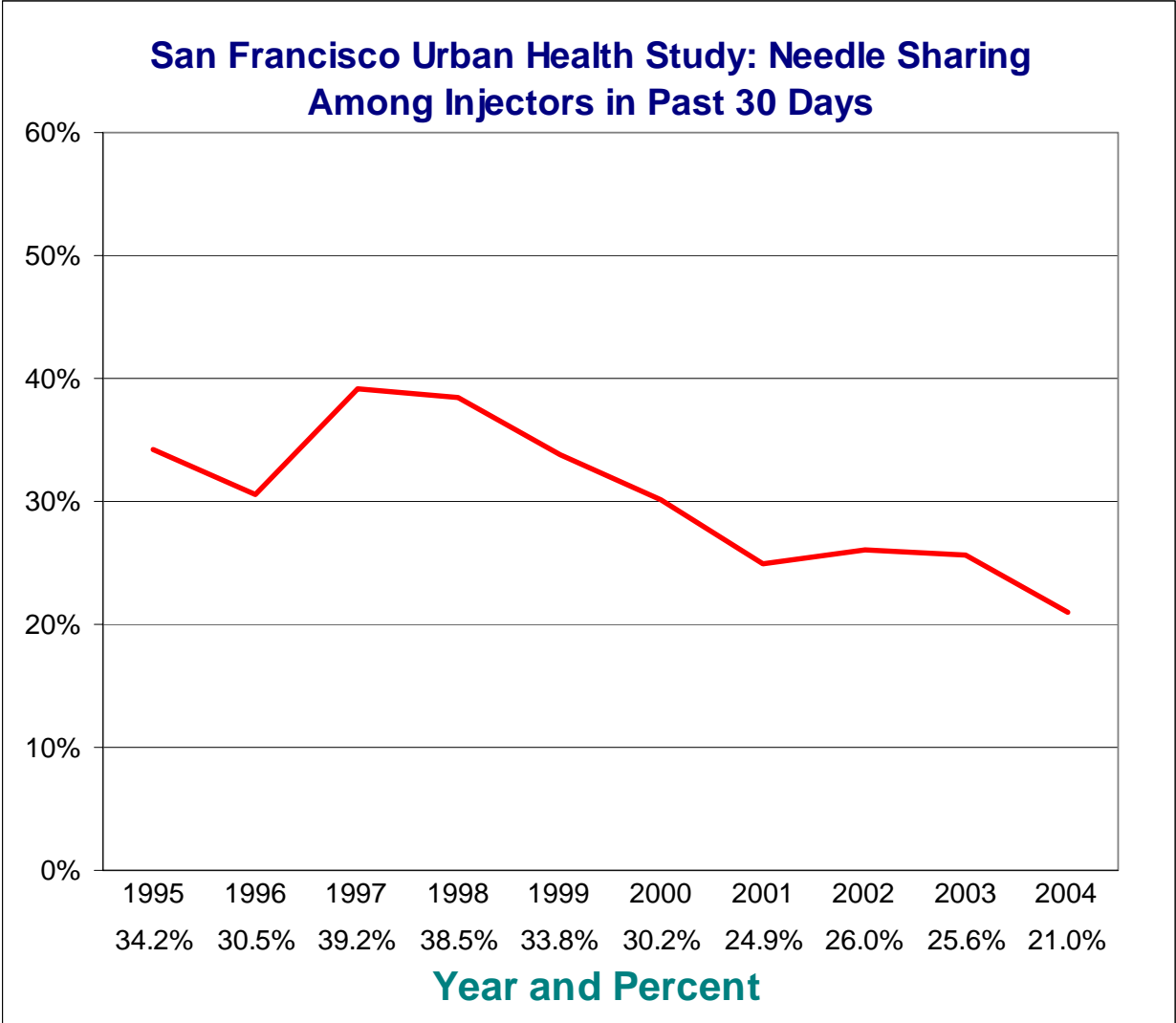
Domain: Needle Sharing

Question: To what extent do injection drug users share needles?

Why it's important: Needle sharing among injection drug users carries a risk of HIV transmission.

How it's measured: Among injection drug use in San Francisco, the percent who report sharing needles in the past 30 days.

Findings: Overall percentages are high, with a generally declining trend.



Strengths/Limitations: The data do not consider whether needle sharing included bleaching of apparatus or sharing with exclusive partners.

Source: Urban Health Study, San Francisco

Acknowledgment: Alex J. Kral, Jennifer Lorvick

Indicator 3-3-2: Needle Sharing among Injection Drug Users in the Past Two Years

Category: Risk-Taking and Protective Behaviors

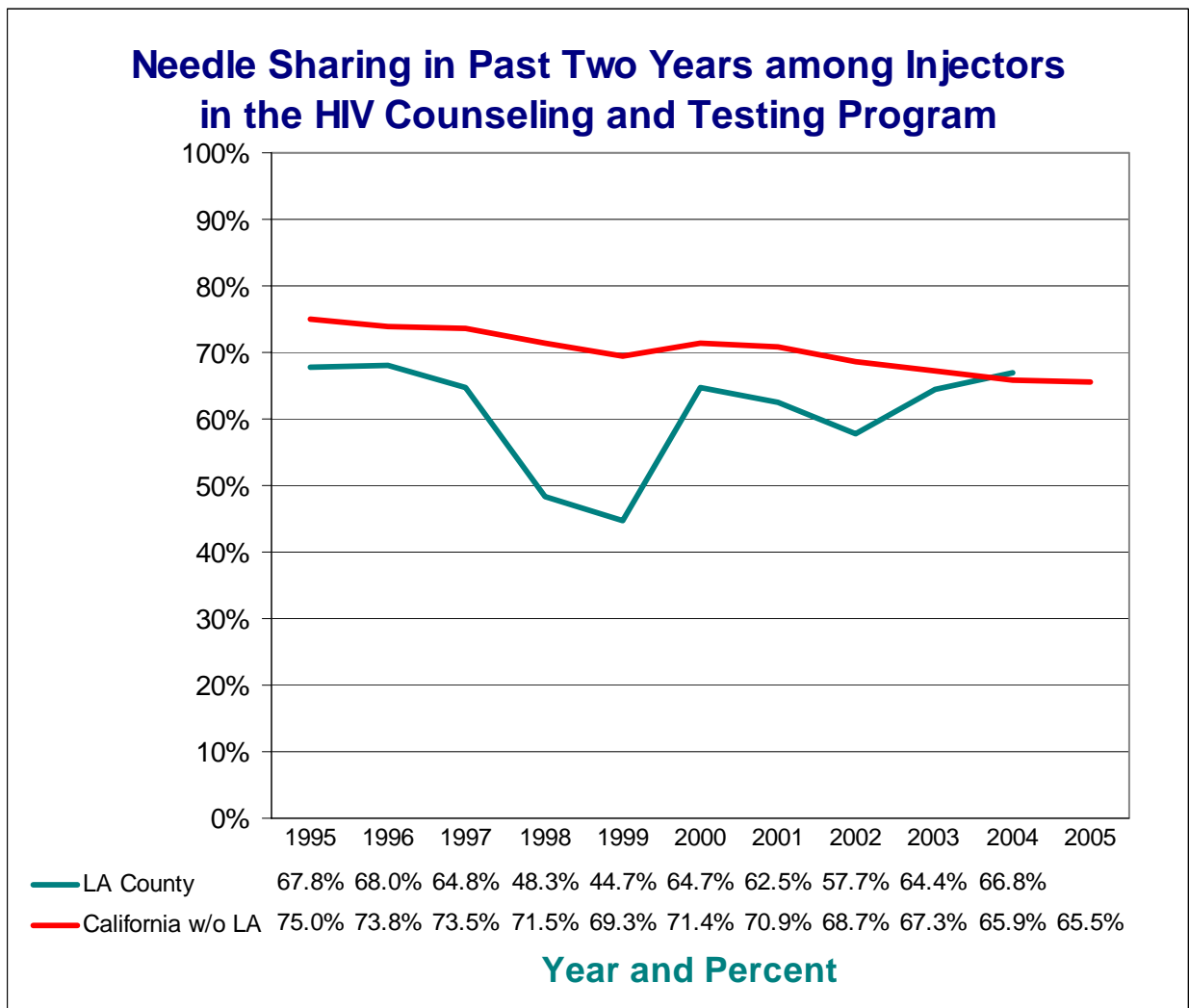
Domain: Needle Sharing

Question: To what extent do injection drug users share needles?

Why it's important: Needle sharing among injection drug users carries a risk of HIV transmission.

How it's measured: Among Counseling and Testing Program clients who report injection drug use (IDU) in the shorter of the past two years or since last HIV test, percent who report sharing needles.

Findings: For California, excluding Los Angeles County, overall percentages are high with a generally declining trend. Percentages appear to have increased in Los Angeles County



Strengths/Limitations: Findings may reflect a change in the composition of program clients. The data do not consider whether needle sharing included bleaching of apparatus or sharing with exclusive partners.

Source: Counseling and Testing Program Data, California State Office of AIDS

Acknowledgment: Atsuko Nonoyama, David Webb, Christine Dahlgren

Indicator 4-1-1: New HIV Infections Detected by the Counseling and Testing Program

Category: Disease Impacts

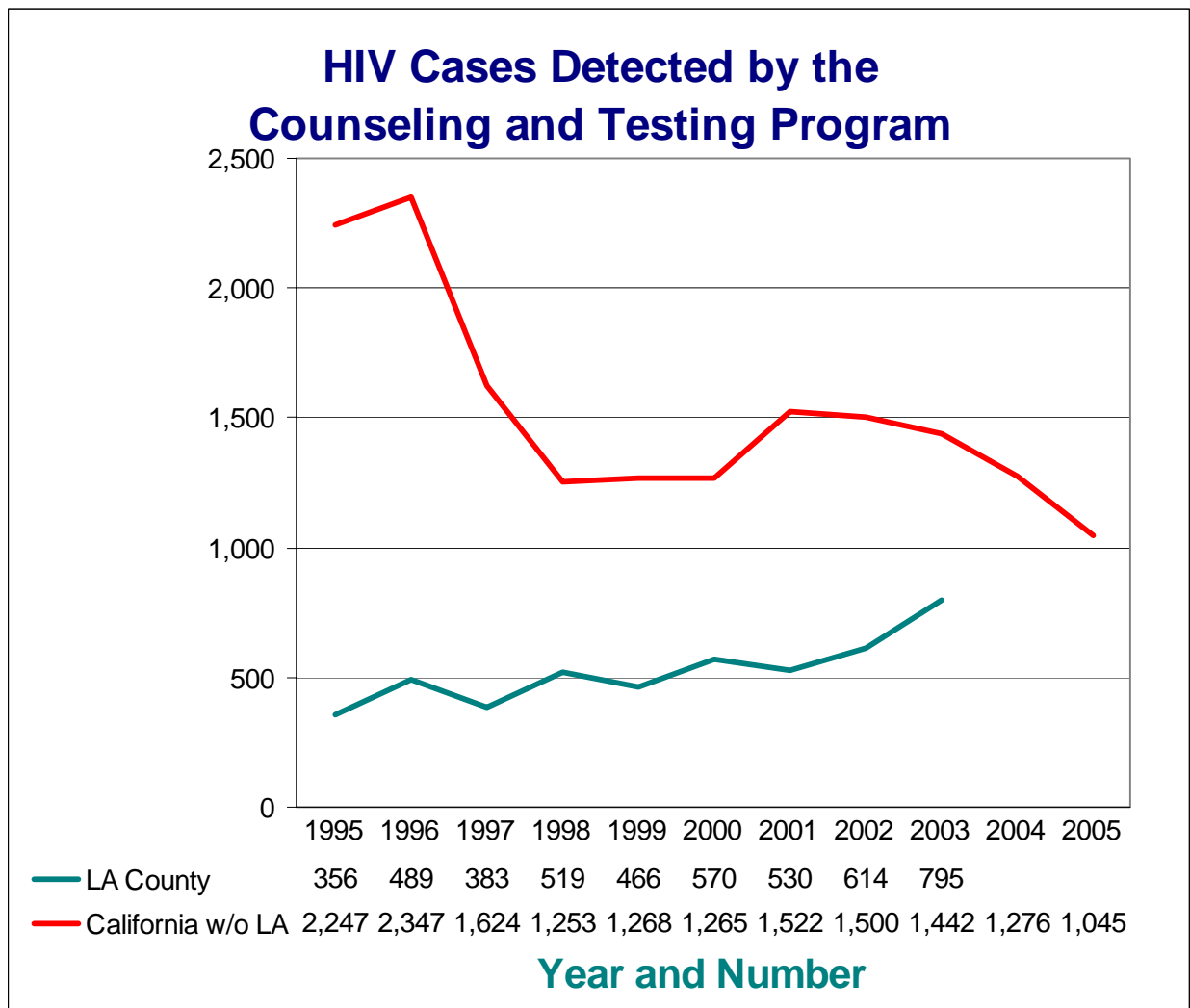
Domain: New Infections

Question: To what extent has the number of new HIV infections changed over time?

Why it's important: Successful HIV prevention reduces the rate of new HIV infections.

How it's measured: Number of new HIV infections detected by the California HIV Counseling and Testing Program.

Findings: For California, excluding Los Angeles County, there has been a long-term trend toward finding fewer cases. Counts have been increasing in Los Angeles County.



Strengths/Limitations: Detection of cases depends on the volume of testing, and these findings reflect increased volume of service in Los Angeles County and a decrease for the rest of the state.

Source: Counseling and Testing Program Data, California State Office of AIDS

Acknowledgment: Atsuko Nonoyama, David Webb, Christine Dahlgren

Indicator 4-1-2: New HIV Infections per 100 Person-Years at Risk

Category: Disease Impacts

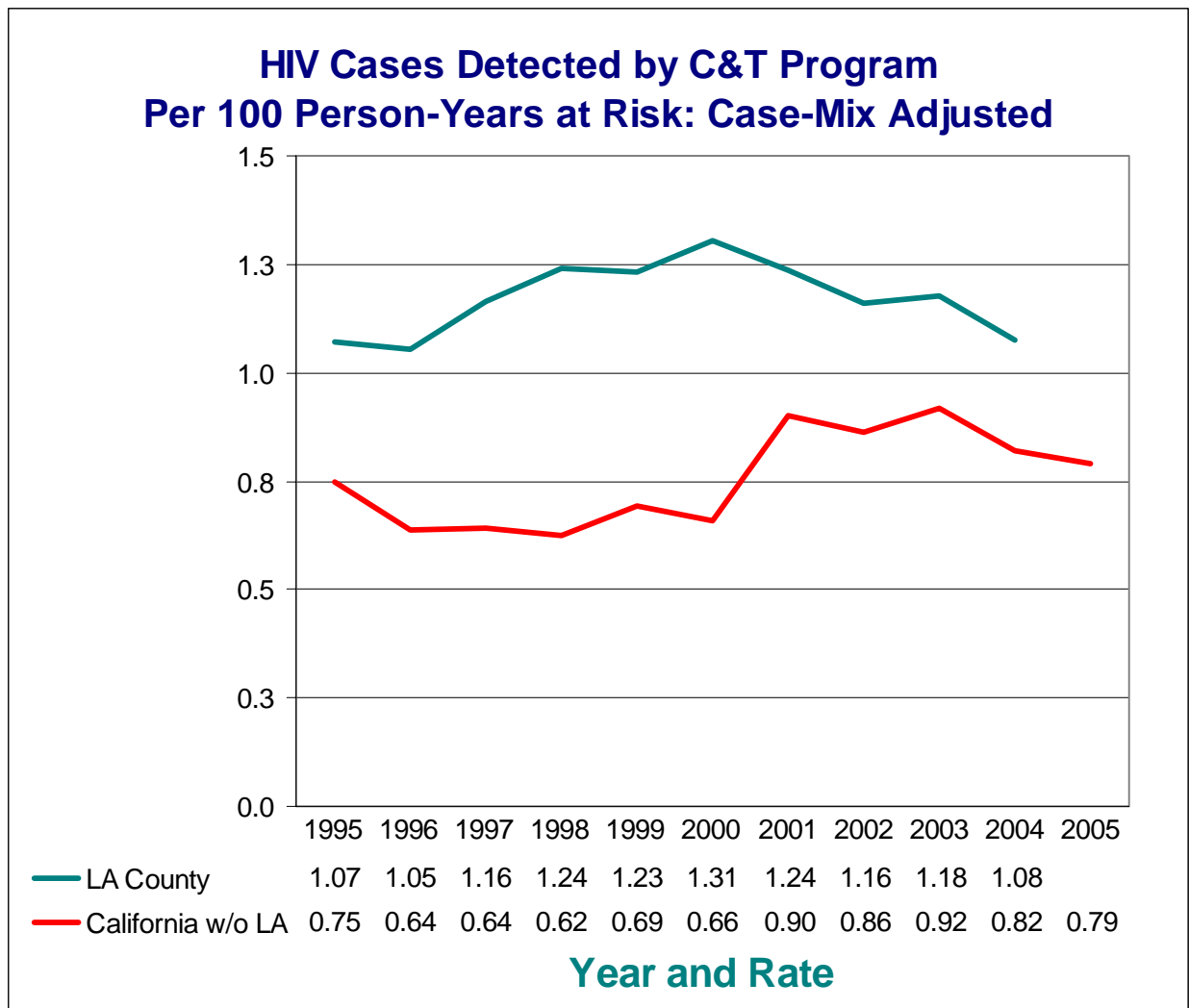
Domain: New Infections

Question: To what extent has incidence of new HIV infection changed over time?

Why it's important: Successful HIV prevention reduces the rate of new HIV infections.

How it's measured: Number of positive HIV tests per 100 person-years at risk among Counseling and Testing Program clients who state that they had a prior negative test and give the date of that test as at least two months ago and not more than 5 years ago. Data are adjusted for change in case mix over time by standardizing to the client mix in the most recent year based on 16 tiers of risk groups.

Findings: Rates have been trending downward in recent years.



Strengths/Limitations: The reader is advised to be cautious about over-interpreting year to year changes. Measurement is limited to repeat testers, who are assumed to be at higher risk. The calculations slightly underestimate the rate of new infections.

Source: Counseling and Testing Program Data, California State Office of AIDS

Acknowledgment: Atsuko Nonoyama, David Webb, Christine Dahlgren

Indicator 4-1-3: Primary and Secondary Syphilis Rate Per 100,000

Category: Disease Impacts

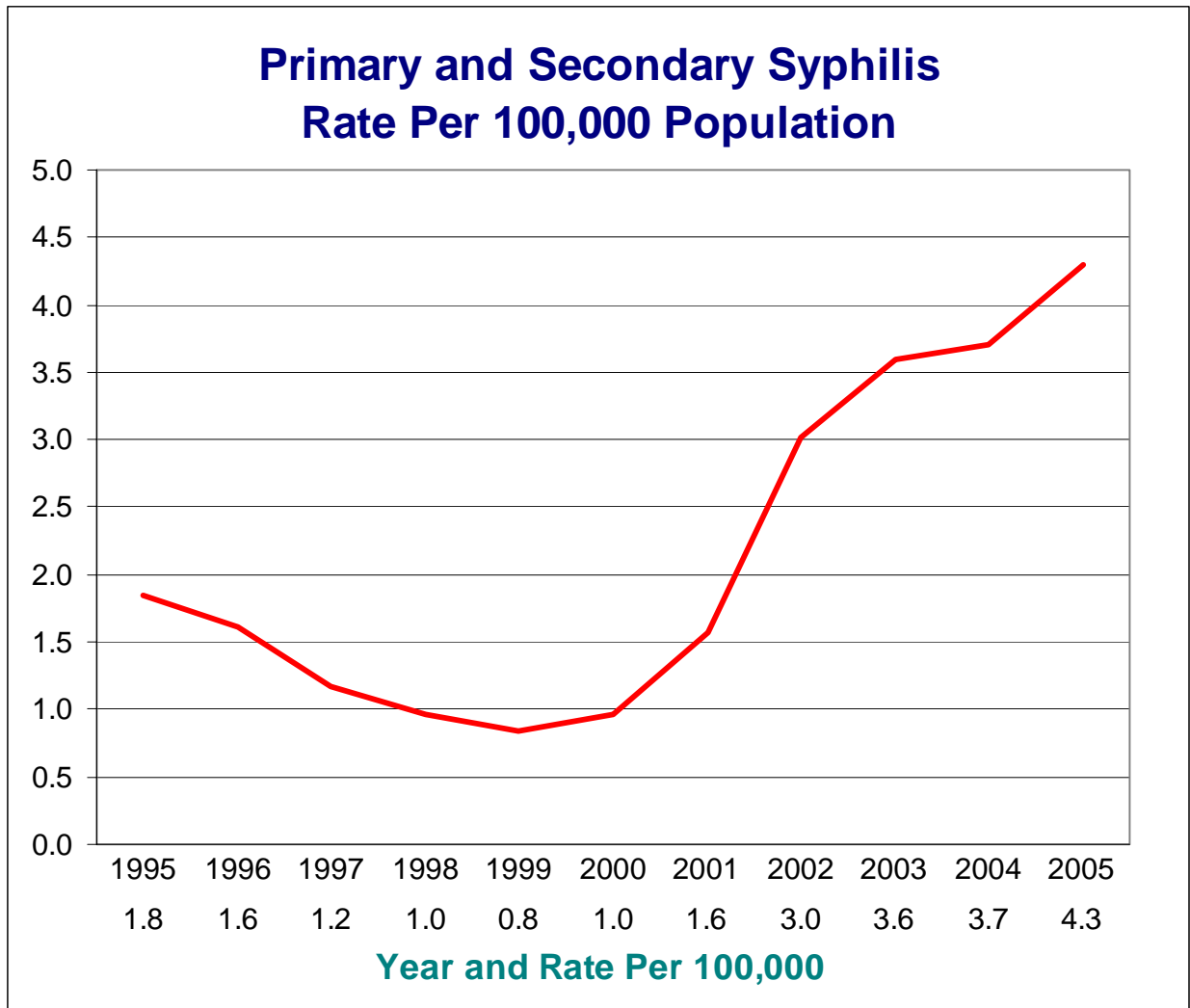
Domain: New Infections

Question: To what extent has incidence of syphilis infections changed over time?

Why it's important: Changes in the rate of new syphilis infections may parallel changes in the rate of new HIV infections.

How it's measured: Number of newly detected cases of primary and secondary syphilis per 100,000 population.

Findings: Rates substantially declined up through 1999, but have since increased. Increases in recent years have been almost entirely among the male population.



Strengths/Limitations: Measurement does not include cases that elude detection in the early stages.

Sources: Data compiled from various publications of the California Department of Health Services STD Control Branch. <http://www.dhs.ca.gov/ps/dcdc/STD/stdindex.htm>

Indicator 4-1-4: HIV among Primary and Secondary Syphilis Cases among MSM

Category: Disease Impacts

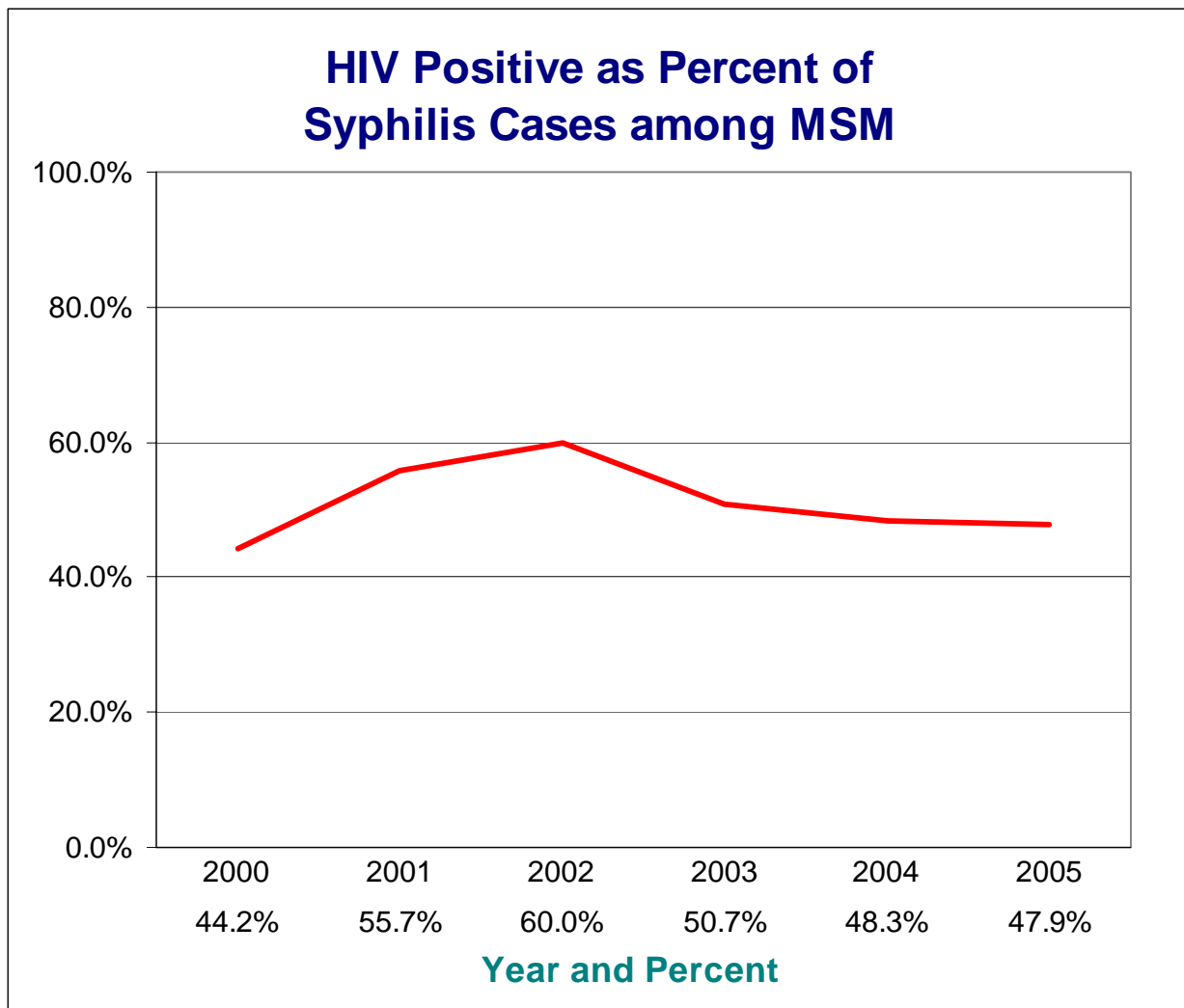
Domain: New Infections

Question: To what extent are new HIV infection and new syphilis infections linked?

Why it's important: Changes in the rate of syphilis infections may parallel changes in the rate of new HIV infections.

How it's measured: Among men who have sex with men, the percent of primary and secondary syphilis cases with a positive HIV test.

Findings: About half of Primary and Secondary Syphilis Cases among MSM also test positive for HIV.



Strengths/Limitations: Measurement does not include cases that elude detection in the early stages. HIV status is unknown for large numbers of syphilis cases.

Sources: Lo TQ, Samuel MC. *State of California Syphilis Elimination Surveillance Data*. California Department of Health Services, Syphilis Elimination Branch.

<http://www.dhs.ca.gov/ps/dcdc/STD/stdindex.htm>

Indicator 4-2-1: New Diagnoses of AIDS

Category: Disease Impacts

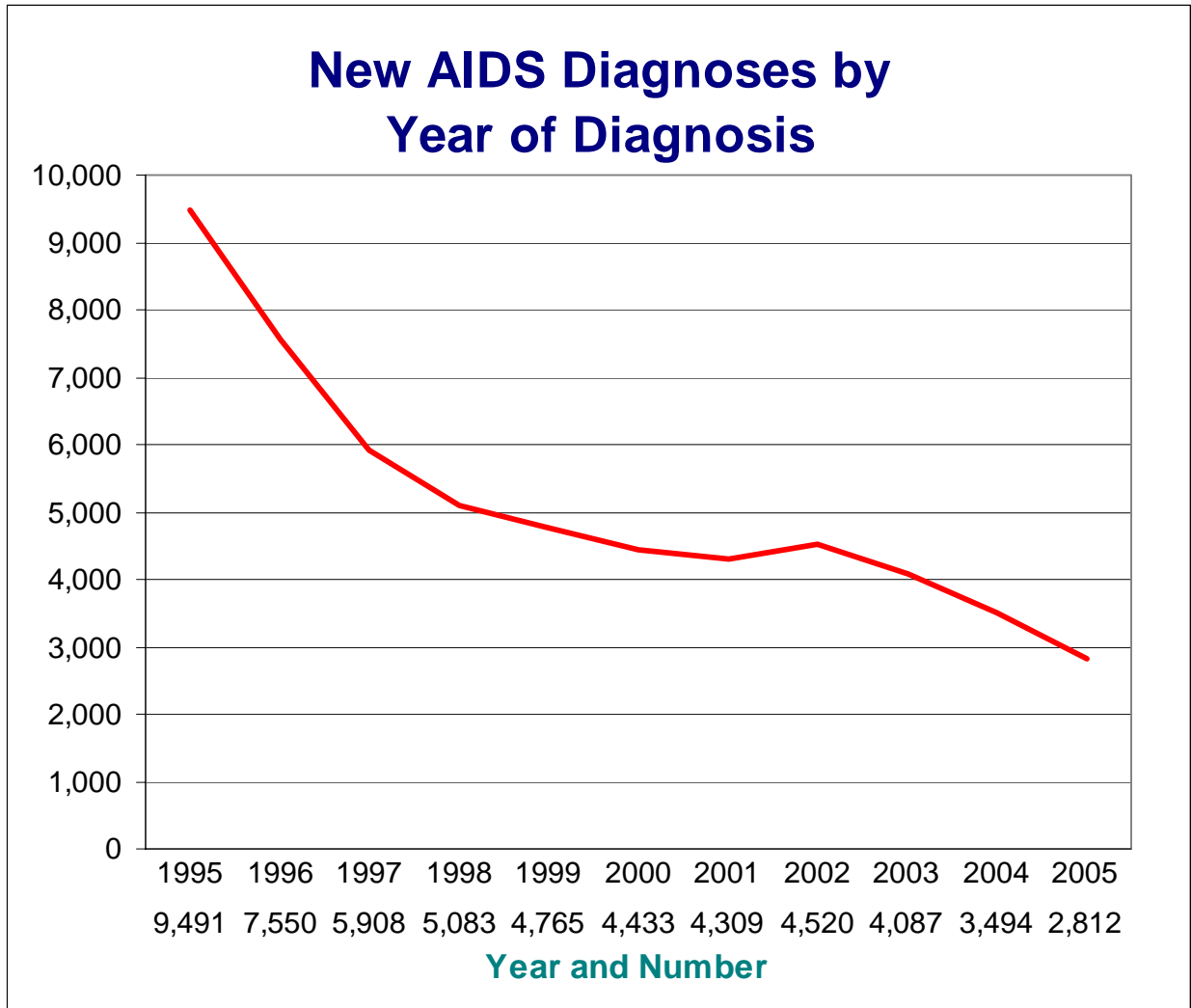
Domain: AIDS

Question: How many new cases of AIDS are diagnosed annually?

Why it's important: Over the longer term, HIV prevention reduces the number of new AIDS cases.

How it's measured: Number of newly diagnosed AIDS cases by year of diagnosis.

Findings: Since the introduction of antiretroviral therapy, the annual number of new AIDS diagnoses has substantially declined.



Strengths/Limitations: Findings for recent years are subject to upward revision due to late reporting of new cases. The decline in the number of new AIDS cases since 1992 results from widespread use of anti-viral medications and a decline in HIV incidence in the mid- to late-1980's, and thus tells us little about the current spread of HIV.

Source: California Department of Health Services, Office of AIDS-HIV/AIDS Case Registry

Acknowledgment: Ann Nakamura

Indicator 4-2-2: Number of Persons Living with AIDS

Category: Disease Impacts

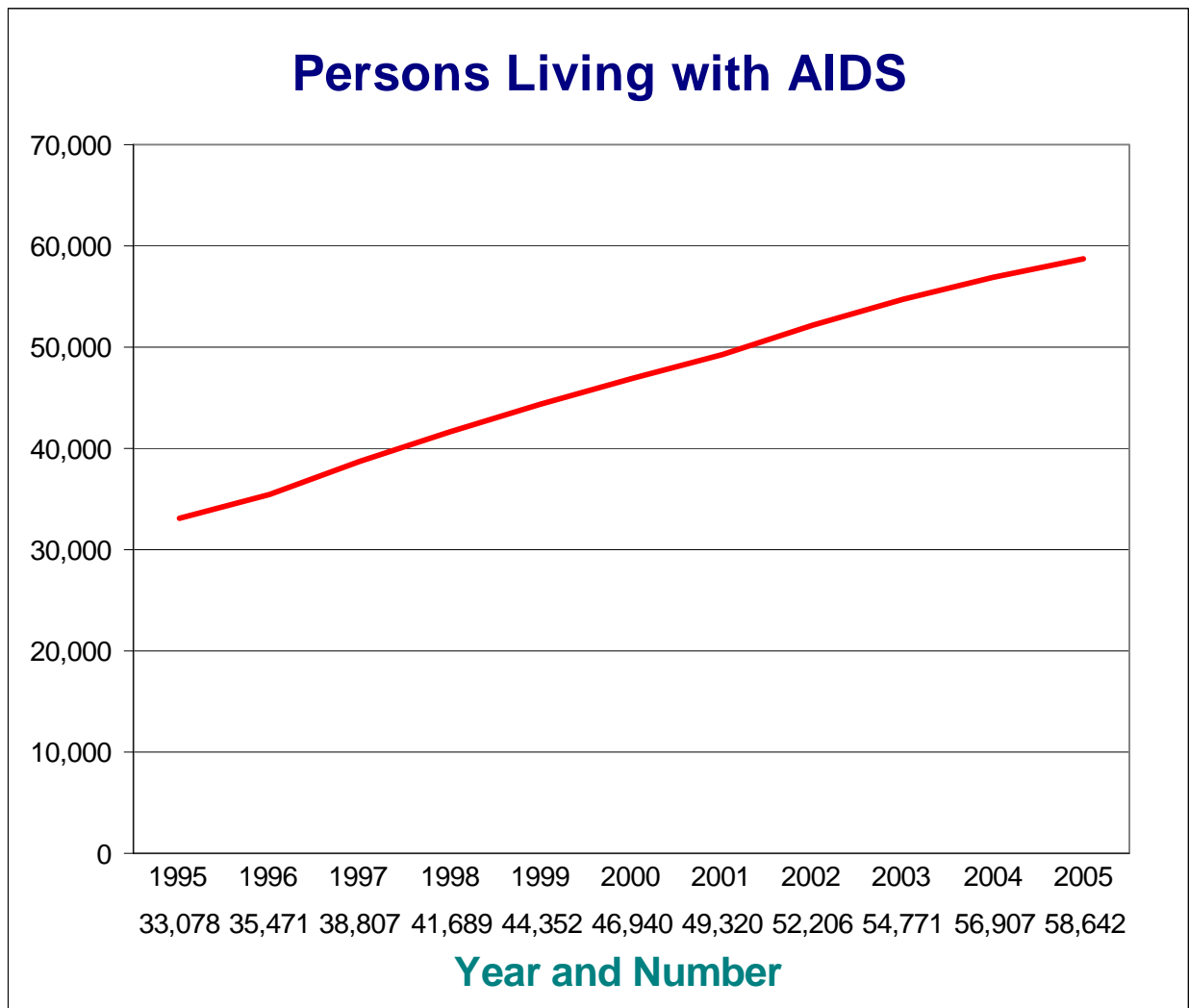
Domain: AIDS

Question: How many people are living with AIDS?

Why it's important: The number of persons living with AIDS is an important marker of the burden of the epidemic on the health services system, and it is used as a measure to allocate Federal and State resources.

How it's measured: Number of persons living with AIDS at end of year.

Findings: The number of persons living with AIDS is increasing at a regular pace, and exceeded 58,600 at the end of 2005.



Strengths/Limitations: The estimated number of persons living with AIDS relies on the AIDS Case Registry and is calculated from annual new cases and annual reported deaths. The measure tells us little about the current spread of HIV. The measure may be inaccurate in recent years due to reporting delays.

Sources: California Department of Health Services, Office of AIDS-HIV/AIDS Case Registry

Acknowledgment: Ann Nakamura

Indicator 4-2-3: Deaths of Persons with AIDS

Category: Disease Impacts

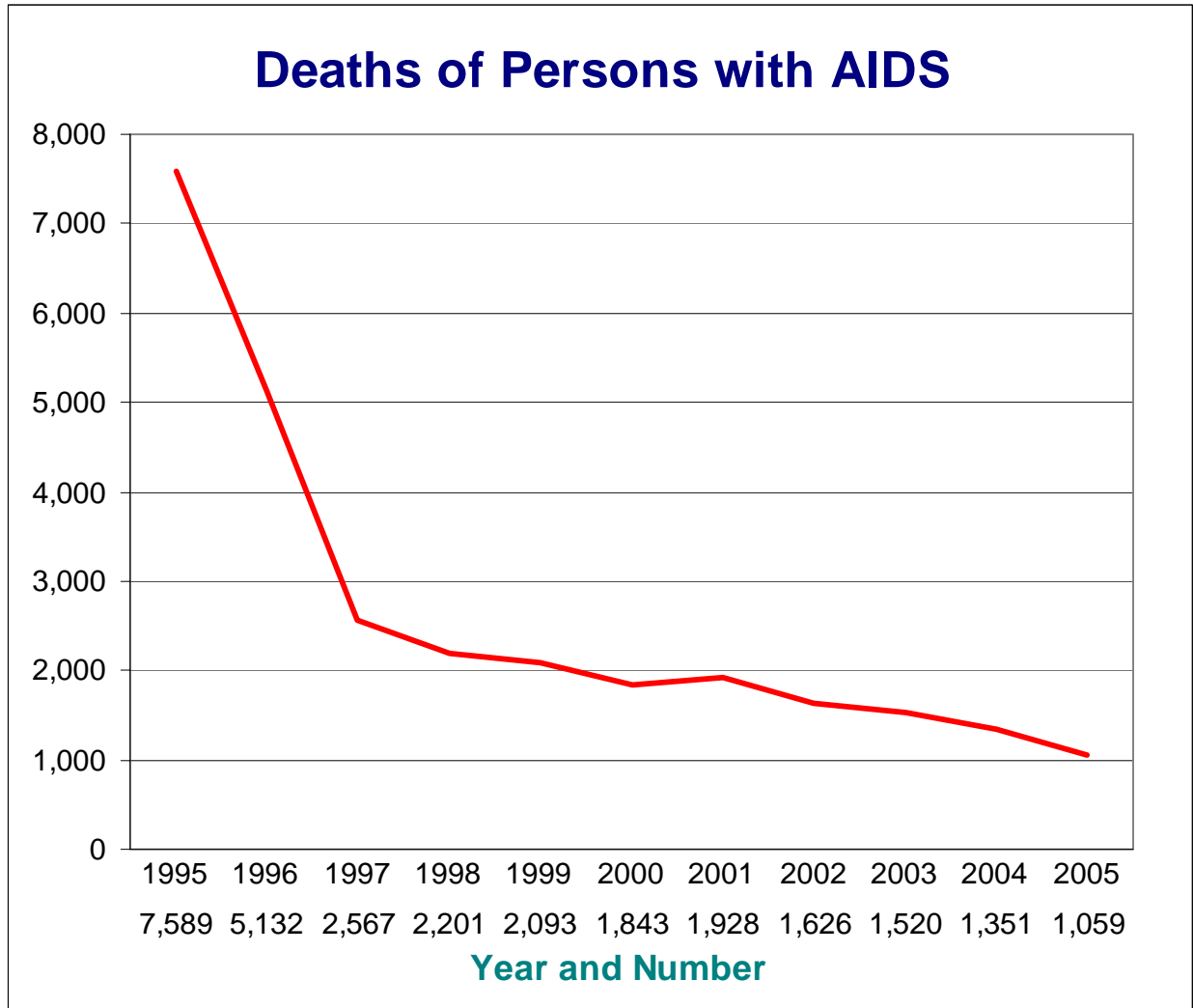
Domain: AIDS

Question: How many people with AIDS die each year?

Why it's important: Over the longer term, HIV prevention reduces the number of persons with HIV. New treatments have reduced the number of deaths among persons with AIDS.

How it's measured: Annual number of deaths among people with AIDS without regard to cause of death.

Findings: With the introduction of anti-retro viral treatments, the annual number of deaths dropped precipitously. From 1997 to date, the number of deaths continues to fall.



Strengths/Limitations: The measure includes all deaths of persons with AIDS, and does not restrict to deaths as a consequence of AIDS. The rapid decline in the number of deaths after 1994 results from widespread use of anti-viral medications and, thus, tells us little about the current spread of HIV.

Findings for the most recent years are subject to upward revision due to late reporting.

Sources: California Department of Health Services, Office of AIDS-HIV/AIDS Case Registry.

Acknowledgment: Ann Nakamura

Indicator 4-3-1: Cost of Drugs under the AIDS Drug Assistance Program

Category: Disease Impacts

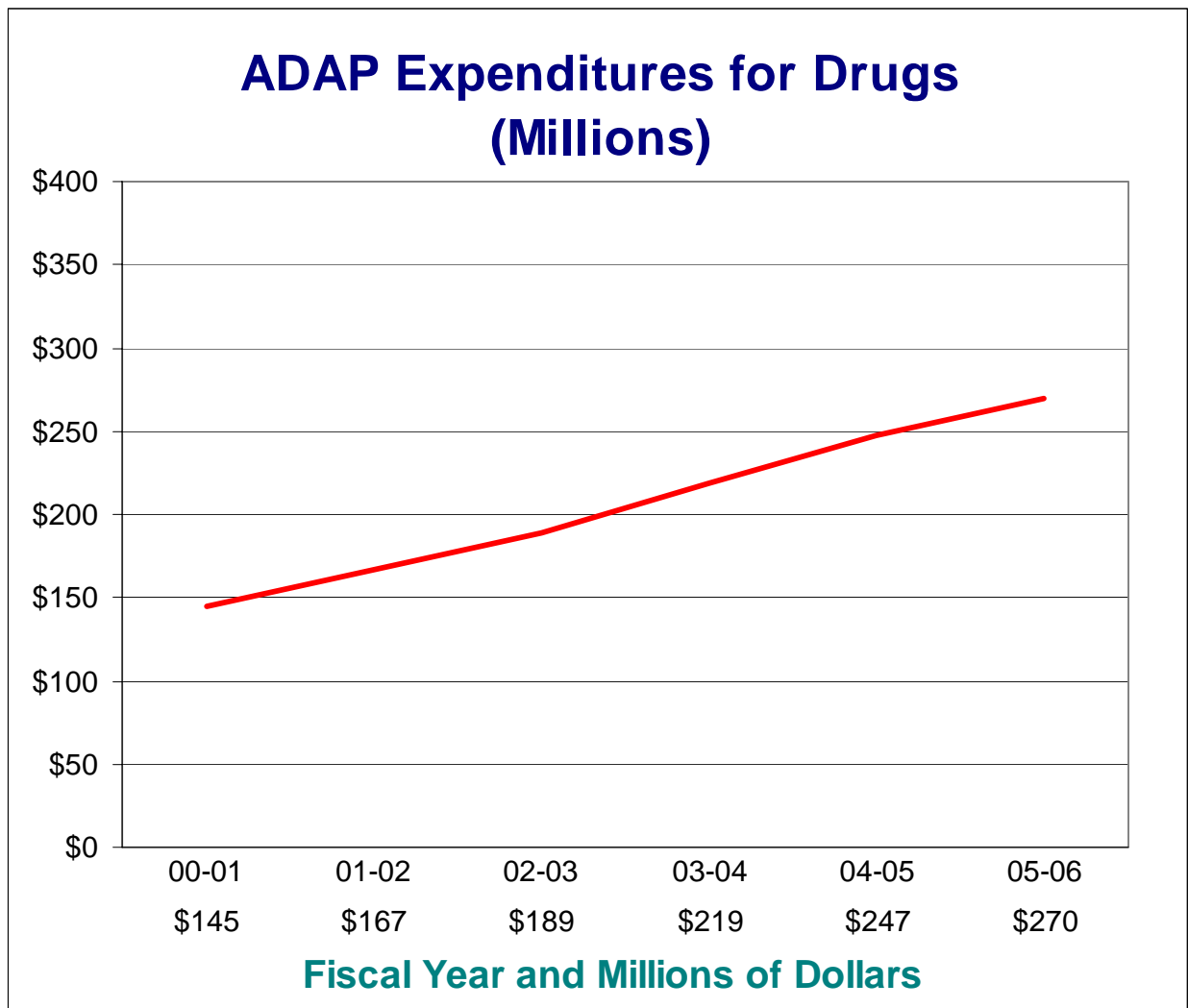
Domain: Cost of Care

Question: How much money is spent on HIV-related drugs for lower income Californians?

Why it's important: HIV prevention programs can substantially reduce future costs of care for persons with HIV/AIDS.

How it's measured: Funds expended for drugs for the AIDS Drug Assistance Program (ADAP) by the California State Office of AIDS by fiscal year.

Findings: Amounts spent annually are rapidly increasing.



Limitations: The total cost of ADAP drugs also depends on drug prices.

Source: California State Office of AIDS