Vol. 12, No. 1 *January 1999*

California HIV/AIDS Update

In This Issue:

Transgendered People: An "Invisible" Population*

Deanna L. Sykes, Office of AIDS

In terms of useful information for designing and implementing HIV prevention efforts, transgendered people may well be considered an "invisible" population. Very little empirical research specifically attempts to target this group, and systematically collected data from other sources are scarce, primarily because many standard data collection forms allow for only two genders, effectively obscuring information from any transgendered respondents.

Background

There are a number of reasons why transgendered people, as a group, may be especially at risk for behaviors that can lead to HIV infection. First, because transgendered people suffer an inordinate amount of discrimination/misunderstanding from mainstream society,[1] including, in many cases, from social service providers and potential employers, they have fewer social and financial resources with which to deal with life issues. In addition, many of them are rejected by their families as well,[2] and as a group have formed only an uncomfortable alliance with the gay community. This lack of social/financial support is likely to contribute to survival sex and drug use in any population; it is especially the case for transgendered youth and adults who may lack other options. In this sense, the hostile social context in which transgendered people exist may contribute to a climate that encourages riskier behaviors such as sex-for-pay.

Second, the majority of transsexuals (both in this sample and in the general population[3]) are Male to Female (MTF) transsexuals. Particularly for pre- and non-operational MTFs, sexual partners are likely to come from a group at high-risk for HIV: males who have sex with males. A preferred sexual role as a receptive partner

*Please see the Appendix (pages 83, 84, 85) for a discussion of transgender identity labels.

(particularly for anal sex) adds to the level of risk. This combination of high-risk sexual behaviors with high-risk partners increases the risk of HIV infection dramatically.

Finally, some transgendered people have a risk of contracting HIV from needles shared for hormone injections. This behavior occurs because many transgendered people do not have access to prescription hormones and needles (because of financial or other concerns).

Purpose

The primary purpose of the study was to collect information about knowledge, attitudes, and behaviors related to HIV/AIDS in a sample of transgendered people. This includes information about awareness of and access to HIV-related resources and information, as well as behaviors that more directly relate to HIV exposure and transmission, such as sexual and drug-related behaviors. Although this group has rarely been the target of previous research, the data that are available reveal that transgendered people as a group have a much higher prevalence of HIV infection than non-transgendered people. For example, a study in Israel found that 11.1% of MTF transgender prostitutes were HIV positive, compared with 1.1% of female prostitutes.[4] In another study from Canada, 50% of MTF transgenders recruited from the streets who had had HIV tests were HIV positive.[5]

One important goal of this study is to illuminate which specific risk factor(s) may be driving this higher-than-average rate of HIV infection. Ultimately this information will provide a basis for the design and implementation of interventions specifically targeting transgendered people.

Sample & Method

This study was part of a larger program funded by the State Office of AIDS in which 13 local sites conducted behavioral surveillance on one of four populations defined as priority groups in the *California HIV Prevention Plan*: substance users, sex industry workers, transgendered people, and people of color. Participants for this study were recruited in several northern California communities by local organizations from a variety of sources, including bars, nightclubs and businesses known to cater to transgendered people, transgender meetings and support groups, and street locations. Existing transgender contacts were used to post advertisements for participants as well. While this is a convenience sample and not a probability sample, the broad variety of recruitment sources should help to insure that the sample is not uni-dimensional, and is at least moderately representative of the transgendered population in the areas from which it was recruited.

Interviews were administered in a face-to-face setting by outreach workers who were trained for the task. These interviewers also provided post-interview HIV prevention education to the participants. The interview was developed by the State Office of AIDS and Nancy Corby, Ph.D., California State University, Long Beach, in conjunction with the local service organizations selected to participate. It consisted of seven sections covering 1) information specific to the population of interest, 2) demographic information (e.g., age, income, and education), 3) knowledge and attitudes about HIV/AIDS, 4) resources and education about HIV, 5) sex with main partner, 6) sex with other partners, including numbers and types of partners, and 7) substance use. A total of 287 interviews were conducted, but data collected by one of the interviewers was discarded due to recording irregularities. The data from the remaining 232 interviews were included in the analyses that follow.

Results

Participants in this study were primarily MTF transsexuals (based upon inconsistency between sex-at-birth and gender identification) who ranged widely in age and race. They endorsed a variety of transgender labels, highlighting the confusion and lack of consensus surrounding labeling in this population. The "typical" respondent was about 32 years old (SD. 12.3), was born male (84%) but identified

as female or both (75%). She was currently living, or had plans to live in her transgendered identity full-time (75%). She may be on hormone therapy (50%), but had probably not had genital surgery (97%). Of the 48% who were tested and received their results, 20% tested HIV positive, and another 4% refused to divulge their results.

Behavioral Risk Factors

There was little evidence that current needle-sharing behavior was driving the high prevalence of HIV infection in this group. Although almost 16% of these respondents had shared needles at some point in the past, less than 1% reported current needle-sharing for injection drug use, and under 5% reported ever sharing needles for hormone or silicone injections. Many respondents specifically mentioned that they had quit sharing needles, and/or quit using injection drugs as a result of the fear of contracting HIV/AIDS.

In contrast, there was ample evidence of sexual behaviors that put these respondents at risk for HIV. Nearly a quarter of the respondents (24%) reported earning money for sex during the previous six months. Since this typically involves high-risk behaviors with high-risk partners, participation in this practice could contribute significantly to the incidence of
HIV-infection. Given that sex-for-pay—sometimes termed "survival sex"—is often used as a last resort by people with no other resources, this high rate may be at least partly attributable to the barriers to social services experienced by this group.

Table 1

Percentage of respondents reporting one or more of the following types of partners	
Injection drug using partners	16%
Transgendered partners	13%
Male partners who have sex with (other) transgendered partners	12%
Male partners who have sex with men	10%
HIV+ partners	5%
At least one of the above	40%

Previous studies have provided evidence that people who are HIV positive, injection drug users, and men who have sex with men all pose an increased risk of exposing a sexual partner to HIV. Additionally, because the rate of HIV infection is quite high in the transgendered population, they may also be considered high risk partners. Table 1 shows the percentage of the respondents who reported sex with these partners during the past six months. It should be noted that these figures underestimate the actual incidence of several of the behaviors because a number of the participants responded "do not know" to questions regarding the gender(s) of their sexual partners' other partners, their partners' HIV status, and their partners' injection drug use.

Another factor that has been associated with increased risk for HIV is having multiple sex partners. A quarter of the respondents had 5 or more partners during the previous six months, and a small percentage (4%) reported 50 or more partners during that time period. However, the vast majority (87%) had 10 or fewer partners.

Of the nearly half of the respondents who had attempted to access social services of some type, 36% reported experiencing barriers such as having a bad experience in the past, or being told by the service agency that transgendered people were not welcome. Nearly 25% reported difficulties getting a job because of gender issues, and 28% were unemployed. These social circumstances could be contributing factors in the decisions that members of this group make about sex for pay and other risky behaviors.

Knowledge

Although respondents were generally knowledgeable about what constitutes safer sex, they were less realistic about their own level of risk. Over half of this group estimated their personal risk as "less than" most people, and only 15% estimated their risk as "greater than" most people. As a group, this constitutes an unrealistically optimistic assessment which could contribute to riskier behavior. Some of these

respondents reported relying on ineffective methods of risk-reduction. For example, a few reported trying to reduce their risk by making sure that a potential sexual partner "looks healthy." Although this particular practice did not appear to be widespread, the extent to which people rely on such false assurances as the apparent health of their partner can be an obstacle to effective risk-reduction. Subsequent research needs to explore these sorts of beliefs in a more systematic fashion.

Conclusions

Behavioral surveillance is a useful technique for illuminating the specific risk factors that are contributing to HIV seroconversion within a particular population. However, the next step may be to collect more data on the underlying causes, such as the risky thinking and unrealistic estimates of risk mentioned above. As we begin to understand the social and psychological barriers to behavior change within a particular population, we will be able to develop and implement programs that will more effectively reduce the impact of the AIDS epidemic on these communities.

Appendix

Population & Background

The transgendered population consists of a number of diverse segments, and the terminology used to describe this diversity can be confusing, both to those within and those outside the transgendered community. Therefore, it may be useful as a first step to lay out the more commonly accepted meaning of each term as specifically as possible.

The term "transgender" is generally considered to be an umbrella term, encompassing a number of smaller categories, including "transsexual," "transvestite," "cross dresser," "drag queen," "female impersonator," "intersex," and "gender-bender." Each of these smaller categories are intended to represent a more specific instance of a transgendered

Table 2. Transgendered Identity Labels[2,6]

	Dress as Non-Biological Sex?	Sexual Orientation	Motivation for Cross-Dressing	Identify as Non-Biological Sex?
Transsexual	Yes, usually full-time/ as much as possible	Any (most common is biological males who see themselves as heterosexual females)	To express core gender identity	Yes; frequently seeks gender confirmation surgery and/or hormone therapy
Transvestite	Yes, at least occasionally; may range from only select items of clothing (such as undergarments) to complete cross-dressed attire	Any (most common is heterosexual males, followed by homosexual males)	For sexual/erotic gratification and/or to express "non-core" gender identity (e.g., a biological male expressing the "feminine" side)	Primary gender ID is consistent with biological sex, but may secondarily identify with non-biological sex. These people typically do NOT seek surgery.
Cross dresser	Same as above	Any, but this term is rarely used in homosexual circles	Same as above	Same as above
Female/Male impersonator	Yes, usually for performances	Any, but this term is more often used in heterosexual circles	Ostensibly for performances, although oftentimes people in this category identify primarily as either transvestites or transsexuals	Not necessarily; see "motivation for cross-dressing"
Drag Queen/ King	Yes, usually for performances	Any, but this term is most often used in homosexual circles	Same as above	Same as above
Intersex/ Hermaphrodite	Born with biological characteristics of both sexes; may dress as preferred gender	Any	To express core gender identity	Yes, in the sense that biological sex is mixed and core gender ID is usually either male or female

"state." Table 2 delineates the important concepts associated with each of the labels used in this study.

Key Points About Identity Categories

The defining characteristic is gender identity**.** The primary difference between the two main subcategories—transsexuals and transvestites—is whether their core gender identification is consistent or inconsistent with their biological sex. Although transsexuals and transvestites both *present* the opposite of their biological sex, transsexuals are presenting who they feel they are, while transvestites are presenting an illusion. That is, at least part of the satisfaction for many transvestites comes from the sense of presenting a convincing image of what they are *not*. An old tradition in female impersonation is for the performer to take off the wig at the end, revealing (indeed, reveling in) the illusion. In contrast, a performing MTF transsexual would be unlikely to do anything to detract from her appearance of "female-ness."

Gender identity and sexual orientation are separate. The term "sexual orientation" describes a person's sexual (and/or emotional) attraction to the same sex, the opposite sex, or both sexes. Gender identity, in contrast, describes *what gender a person feels s/he is*. A great deal of confusion can be avoided by noting that these two concepts are independent of one another. That is, note that for each category in the table below, sexual orientation is listed as "any." In some cases, a term may have gay or straight "connotations" because it is used more often in those circles. However, it is inaccurate to assume, for example, that a MTF transsexual will become/is a "straight" female—one who prefers men as sexual partners. (This is often, but not always the case.) During and/or after transitioning, a MTF transsexual may prefer males, females. Or in a true feat of label-defying behavior, an MTF transsexual may prefer transgendered people as sexual partners. This is also true for female to male (FTM) transsexuals.

Cautions Regarding Labeling

Although I attempt to concisely define each of the labels in terms of its important features, there are some caveats surrounding labeling generally, and attempting to categorize transgendered people, specifically.

Many transgendered people fall outside of, between, or across categories. Transgendered people not only call into question the traditional dichotomy of male/female, but they also sometimes defy more sophisticated categorization. For example, how do we categorize someone who is biologically male, but whose core gender identity seems to be equally male and female? Is a MTF transsexual who performs as a female a "female impersonator?" (What if she is post-op?) Is someone who identifies as his/her non-biological sex, but never expresses this identification in terms of cross-dressing, hormone therapy, or surgery "really" a transsexual? There are many examples of people who do not quite "fit" into the tidy boxes we have created. Nonetheless, the structure can be useful to the extent that it helps us to understand the phenomenon. It is important, however, that we do not take it as proscriptive (that is, we understand that it does not mean that all transgendered people "should" fit into the boxes), and that we acknowledge that it is an imperfect structure (that is, we remember that some transgendered people do not fit into the boxes).

Many transgendered people do not identify with the "correct" category because they are not typical of the members of that category**.** The "typical" transsexual is a person who is born male, but identifies as a heterosexual woman. For a FTM transsexual who becomes a gay man, it may be difficult to identify with this label, in part because he is not what most people think of when they say "transsexual." In a similar way, a heterosexual male transvestite may have difficulty because people mistakenly assume that he is gay (although note that it is actually some-

what *less* common for transvestites/cross dressers to be gay than straight). Additionally, even a "typical" member of a particular category may simply not feel an affinity for that identity label.

Labels may carry stigma**.** The labels themselves may for some people have negative connotations. For example, many of the MTF respondents in this sample who did not identify with the transgender label explained that they identified simply as women. This included pre- as well as post-operative transsexuals. Given that this shift in identification often comes once the person begins successfully "passing" as the preferred sex, it may stem from the desire (and the newfound ability) to escape the stigma associated with transsexualism.[7] Ultimately, since the goal is to transition to the desired sex, as the trappings of the biological sex and sex role begin to fall away, it should be expected that the new identity will begin to play a more prominent role than the label which denotes the conflicted state.

References

1. Green J. Investigation Into Discrimination Against Transgendered People. Human Rights Commission, City and County of San Francisco. 1994.

2. Brown ML, Rounsley CA. True Selves: Understanding Transsexualism…: for Families, Friends, Coworkers, and Helping Professionals. San Francisco: Jossey-Bass; 1996.

3. Stuart KE. The Uninvited Dilemma: A Question of Gender. Lake Oswego, Oregon: Metamorphous Press; 1983.

4. Modan B, Goldschmidt R, Rubinstein E, Vonsover A, Zinn M, Golan R, et al. Prevalence of HIV antibodies in transsexual and female prostitutes. Am J Public Health 1992;82:590-2.

5. Rekart ML, Manzon LM, Tucker P. Transsexuals and AIDS. Int Conf AIDS 1993; 9(2):734. (Abstract no. PO-C21-3101.)

6. A Glossary of Gender from Transgendered Nation San Francisco: 1999.

7. Bolin A. In Search of Eve: Transsexual Rites of Passage. South Hadley, Mass.: Bergin & Barvey; 1988.

Estimating Waterborne Disease Prevalence and the Associated Risk Factors in HIV+ Individuals

Joseph N.S. Eisenberg, Tim Wade, Sandra Charles, Mai Vu, Peter Jensen, Jack Colford
University of California at Berkeley

Introduction

Diarrheal-related diseases are one of the most common and devastating problems for the HIV-infected individuals and are attributed to viral, bacterial, and protozoan infection.[1] The impact of these diseases has been well documented. For example, one of the most serious of the protozoan infections is caused by *Cryptosporidium* which is chronic in 10-15% of AIDS patients, 50% of whom may die of cryptosporidiosis.[2] It has been suggested that *Cryptosporidium* can be transmitted either through sexual contact, nonsexual contact, ingestion of contaminated drinking water, or contact with infected pets or animals.[3] There are, however, few data with which to estimate the relative epidemiological significance of any of these potential routes of transmission.

To better understand the contribution of these transmission routes to the overall incidence of waterborne disease, we have assembled a research team to study diarrheal diseases within HIV-positive individuals. Specifically, we are conducting a cross-sectional survey to measure various risk factors and their association with gastrointestinal symptoms. Using the data obtained from the survey, we plan to focus on one specific risk factor, drinking water, through a randomized blinded water intervention trial.

We are focusing on drinking water risks because there is heated debate in the United States about the extent to which waterborne infectious diseases may be transmitted to human beings through drinking water which has met federal standards for pathogen removal.[4] Outbreaks of disease linked to public water supplies with and without known lapses in water treatment have resulted in a number of deaths, the majority of which were in HIV-positive individuals.[5] In addition to these documented outbreaks, studies in Canada suggested that approximately 35% of endemic gastrointestinal illness in a community might be due to drinking water.[6,7] Although general survival characteristics of HIV-positive individuals have been extensively studied,[8] very little exists on drinking-water risks in nonoutbreak conditions.

Study Design

The survey is designed to assess whether self-reported gastrointestinal illnesses, within the previous 7 days, are associated with behaviors such as sexual practices, drinking water habits, medication, or contact with animals, lakes, well water, or diapers. For example, questions are asked about participant's sexual practices that may result in fecal-oral transmission, such as hand or mouth-to-genital contact, and about whether they treat their drinking water by boiling or filtering, or if they buy bottled water. Since some antiretroviral therapy can be a cause of diarrhea, we inquire about the specific medications they are taking. In addition to assessing risk factor behavior, some questions refer to knowledge of and attitudes towards drinking water risks for HIV-positive individuals. For example, we ask the participants whether or not they are aware of the CDC guidelines on drinking water for HIV/AIDS patients.

The descriptive results from this survey will be used to estimate the prevalence of diarrheal disease

and relevant risk factors in the population. These prevalence values will help us describe the study population and prepare for the intervention trial.

Intervention Trial

The intervention trial will consist of a group of HIV-positive individuals who will be randomly assigned (1:1) to a treatment group that receives a water treatment device for their kitchen sink and to a placebo group that will receive a "sham" device. This nonfunctioning device will be indistinguishable from the treatment device. Therefore, the participants will be blind in terms of their assignment to either the treatment or placebo group. Participants in both groups will receive the CDC guidelines on safe drinking water practices for HIV/AIDS individuals. These groups are followed for a period of 4 to 6 months, collecting survey information every week pertaining to their drinking water behavior and gastrointestinal illnesses. In the event that gastrointestinal symptoms are reported, a stool sample is collected and analyzed. In addition, serum is collected from all participants at the beginning of the study and from symptomatic individuals 10 days after the onset of the symptoms.

By addressing one of the possible transmission routes for waterborne pathogens, the water intervention trial will provide an estimate of the attributable risk associated with drinking water. The issue of waterborne transmission of disease through the consumption of drinking water is particularly appropriate for study through an intervention trial. Only an intervention trial can reliably remove confounding factors (jointly related to water consumption and gastrointestinal illness) that make this question nearly impossible to study through the use of case-control, observational cohort, or other non-intervention type designs.

Conclusion

An important outcome of our cross-sectional survey will be a better understanding of the behaviors and attitudes of HIV-positive individuals toward potential risks of waterborne disease. To further our understanding of drinking water risks, our initial intervention trial (N=190) is designed as a pilot study to assess the feasibility of conducting a larger trial. This larger trial will have a sample size large enough to detect a reduction in gastrointestinal illness of 33% (with a power of 0.8) when using a in-home water treatment device. Finding a significant difference in the incidence of gastrointestinal illness will suggest that the use of in-home water treatment device is protective for HIV positive individuals, whereas a negative finding will provide increased confidence in the microbial quality of home tapwater.

References

1. Gerba CP, Rose JB, Haas CN. Sensitive populations: who is at the greatest risk? Int J Food Microbiol 1996;30:113-23.
2. Clifford CP, Crook DW, Conlon CP, Fraise AP, Day DG, Peto TE. Impact of waterborne outbreak of cryptosporidiosis on AIDS and renal transplant patients. Lancet 1990;335:1455-6.
3. Petersen C. Cryptosporidiosis in patients infected with the human immunodeficiency virus. Clin Infect Dis 1992;15:903-9.
4. Craun GF. Waterborne disease outbreaks in the United States of America: causes and prevention. World Health Stat Q 1992;45:192-9.
5. Goldstein ST, Juranek DD, Ravenholt O, Hightower AW, Martin DG, Mesnik JL, et al. Cryptosporidiosis: an outbreak associated with drinking water despite state-of-the-art water treatment. Ann Intern Med 1996;124:459-68. (Published erratum appears in Ann Intern Med 1996;125:158.)
6. Payment P, Richardson L, Siemiatycki J, Dewar R, Edwardes M, Franco E. A randomized trial to evaluate the risk of gastrointestinal disease due to consumption of drinking water meeting current microbiological standards. Am J Public Health 1991; 81:703-8.
7. Payment P, Siemiatycki J, Richardson L, Renaud G, Franco E, Prevost M. A prospective epidemiological study of gastro-intestinal health effects due to the consumption of drinking water. Int J Health Res 1997;7:5-31.
8. Colford JM Jr, Ngo L, Tager I. Factors associated with survival in human immunodefiency virus-infected patients with very low CD4 counts. Am J Epidemiol 1994;139:206-18.

Excerpts from the Brochure "You Can Prevent Cryptosporidiosis: A Guide for People with HIV Infection"

This 14-page brochure has the "guidelines on drinking water for HIV/AIDS patients" from the Centers for Disease Control and Prevention referred to in the previous article. All diagrams, all tables, and some text have been deleted; ellipses (…) indicate where text has been deleted. The entire brochure can be found on the Web at http://www.cdc.gov/nchstp/hiv_aids/pubs/brochure/oi_cryp.htm or at http://www.cdc.gov/nchstp/hiv_aids/pubs/brochure/oi_crp.pdf.

What is cryptosporidiosis?

Cryptosporidiosis (krip-to-spo-rid-e-O-sis), often called "crypto," is a disease caused by a one-celled parasite, *Cryptosporidium parvum*, also known as "crypto." Crypto, which cannot be seen without a very powerful microscope, is so small that over 10,000 of them would fit on the period at the end of this sentence.

What are the symptoms of crypto?

Although sometimes persons infected with crypto do not get sick, when they do get sick they can have watery diarrhea, stomach cramps, an upset stomach, or a slight fever. In some cases, persons infected with crypto can have severe diarrhea and lose weight. The first symptoms of crypto may appear 2 to 10 days after a person becomes infected.

How does crypto affect you if your immune system is severely weakened?

In people with AIDS and in others whose immune system is weakened, crypto can be serious, long-lasting, and sometimes fatal. If your CD4+ cell count is below 200, crypto is more likely to cause diarrhea and other symptoms for a long time. If your CD4+ count is above 200, your illness may not last more than 1 to 3 weeks or slightly longer. However, you could still carry the infection, which means that the crypto parasites are living in your intestines, but are not causing illness. If your CD4+ count later drops below 200, your symptoms may reappear.

How is crypto spread?

You can get crypto by putting anything in your mouth that has touched the "stool" (bowel movement) of a person or animal with crypto. You can also get crypto by touching your mouth after touching the stool of infected persons or animals or touching soil or objects contaminated with stool. Drinking contaminated water or eating contaminated food can also give you crypto. Cryptosporidiosis is not spread by contact with blood.

Can crypto be treated?

Yes, but no drug has been found yet to cure it. Some drugs, such as paromomycin, may reduce the symptoms of crypto, and new drugs are being tested. If you think you have crypto, or if you just have diarrhea, talk with your health care provider about testing and treatment. Diarrhea can cause dehydration. You should drink plenty of fluids to prevent dehydration. Oral rehydration powders and sports-ade drinks can also help prevent dehydration.

How can I protect myself from crypto?

You can reduce your risk of getting crypto. The more steps you take, the less likely you are to get crypto. These actions will also help protect you against other diseases.

1. **Wash your hands.** ...

2. **Practice safer sex.** …

3. Avoid touching farm animals. …

4. Avoid touching the stool of pets. …

5. Be careful when swimming in lakes, rivers, or pools, and when using hot tubs. …

6. Wash and/or cook your food. …

7. Drink safe water. Do not drink water directly from lakes, rivers, streams, or springs. Because you cannot be sure if your tap water contains crypto, you may wish to avoid drinking tap water, including water and ice from a refrigerator ice-maker, which are made with tap water. Because public water quality and treatment vary throughout the United States, always check with the local health department and water utility to see if they have issued any special notices about the use of tap water by HIV infected persons. You may also wish to take some additional measures: boiling your water, filtering your water with certain home filters, or drinking certain types of bottled water. Processed carbonated (bubbly) drinks in cans or bottles are probably safe, but drinks made at a fountain might not be because they are made with tap water. If you choose to take these extra measures, use them all the time, not just at home. …

A. Boiling water: …

B. Filtering tap water: Not all available home water filters remove crypto. All filters that have the words "reverse osmosis" on the label protect against crypto. Some other types also work, but not all filters that are supposed to remove objects 1 micron or larger from water are the same. Look for the words "absolute 1 micron." Some "1 micron" and most "nominal 1 micron" filters will not work against crypto. Also look for the words "Standard 53" and the words "cyst reduction" or "cyst removal" for an NSF-tested filter that works against crypto.

To find out if a particular filter removes crypto, contact NSF international (3475 Plymouth Road, P.O. Box 130140, Ann Arbor, MI 48113-0140; telephone 1-800-673-8010; fax 313-769-0109), an independent testing group. Ask NSF for a list of "Standard 53 Cyst Filters." Check the model number on the filter you intend to buy to make sure it is exactly the same as the number on the NSF list. Look for the NSF trademark on filters, but be aware that NSF tests filters for many different things. Because NSF testing is expensive, many filters that may work against crypto have not been tested. Reverse osmosis filters work against crypto whether they have been tested by NSF or not. Many other filters not tested by NSF also work if they have an absolute pore size of 1 micron or smaller.

Filters collect germs from your water, so someone who is not HIV infected should change the filter cartridges for you; if you do it yourself, wear gloves and wash your hands afterwards. Filters may not remove crypto as well as boiling does because even good brands of filters may sometimes have manufacturing flaws that allow small numbers of crypto to get past the filter. Also, poor filter maintenance or failure to replace filter cartridges as recommended by the manufacturer can cause your filter to fail.

C. Bottled water: …

D. Home distillers: …

E. Other drinks: …

8. Take extra care when traveling. ...

Table 1. AIDS cases by age group, exposure category, and gender reported through January 1, 1997 and December 31, 1997; and cumulative totals by age group through December 31, 1998 in California.

	Male				Female				Total					
Adult/adolescent Exposure Category	Jan. 1997-Dec. 1997		Jan. 1998-Dec. 1998		Jan. 1997-Dec. 1997		Jan. 1998-Dec. 1998		Jan. 1997-Dec. 1997		Jan. 1998-Dec. 1998		Cumulative Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Homosexual/bisexual	4,283	71%	3,308	65%	-	-	-	-	4,283	63%	3,308	57%	78,197	71%
IDU (heterosexual)	671	11%	592	12%	237	33%	195	30%	908	13%	787	14%	10,866	10%
Homosexual/bisexual IDU	421	7%	378	7%	-	-	-	-	421	6%	378	7%	9,612	9%
Lesbian/bisexual IDU	-	-	-	-	9	1%	5	1%	9	0%	5	0%	126	0%
Coagulation Disorders	20	0%	28	1%	1	0%	1	0%	21	0%	29	1%	548	1%
Heterosexual	166	3%	147	3%	341	47%	279	42%	507	7%	426	7%	4,524	5%
Blood transfusion	42	1%	24	0%	24	3%	19	3%	66	1%	43	1%	1,585	1%
Other/undetermined	449	7%	647	13%	104	14%	157	24%	553	8%	804	14%	4,081	4%
Subtotal	6,052	100%	5,125	100%	718	100%	657	100%	6,770	100%	5782	100%	109,548	100%
Pediatric (<13 years old) Exposure Category	Jan. 1997-Dec. 1997		Jan. 1998-Dec. 1998		Jan. 1997-Dec. 1997		Jan. 1998-Dec. 1998		Jan. 1997-Dec. 1997		Jan. 1998-Dec. 1998		Cumulative Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Coagulation Disorders	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Blood transfusion	.	.	.	.	1	13%	.	.	1	5%	.	.	111	19%
Mother at risk: --IDU	3	27%	1	10%	1	13%	1	17%	4	21%	2	13%	148	26%
--Sex with IDU	.	.	4	40%	1	13%	1	17%	1	5%	5	31%	82	14%
--Sex w/bisexual male	.	.	.	.	.	.	.	.	.	.	.	.	27	5%
--Sex w/HIV infected	1	9%	2	20%	3	38%	1	17%	4	21%	3	19%	65	11%
--Blood transfusion	2	18%	1	10%	.	.	.	.	2	11%	1	6%	22	4%
--HIV infected	3	27%	1	10%	2	25%	2	33%	5	26%	3	19%	77	13%
Other/undetermined	1	9	1	10%	.	.	.	.	1	5%	1	6%	5	.
Subtotal	11	100%	10	100%	8	100%	6	100%	19	100%	16	100%	572	100%
TOTAL	6,063		5,135		726		163		6,789		5,798		110,120	

Table 2. AIDS cases by age group, exposure category, and race/ethnicity reported through December 31, 1998 in California.

Adult/adolescent Exposure Category	White		Black		Hispanic		Asian/ Pacific Is.		Native American		Not Specified		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Homosexual/bisexual	53,352	79%	9,123	50%	13,692	66%	1,645	74%	261	57%	124	75%	78,197	71%
IDU (heterosexual)	4,057	6%	4,427	24%	2,197	11%	100	4%	70	15%	15	9%	10,866	10%
Homosexual/bisexual IDU	6,187	9%	1,797	10%	1,451	7%	82	4%	89	19%	6	4%	9,612	9%
Lesbian/bisexual IDU	55	0%	44	0%	21	0%	2	0%	4	1%	.	.	126	0%
Coagulation Disorders	372	1%	43	0%	104	0%	24	1%	1	0%	4	2%	548	1%
Heterosexual	1,639	2%	1,423	8%	1,293	6%	148	7%	18	4%	3	2%	4,524	4%
Blood transfusion	915	1%	179	1%	372	2%	111	5%	4	1%	4	2%	1,585	1%
Other/undetermined	1,108	2%	1,152	6%	1,678	8%	121	5%	13	3%	9	5%	4,081	4%
Subtotal	67,689	100%	18,190	100%	20,810	100%	2,234	100%	460	100%	165	100%	109,548	100%
Pediatric (<13 years old) Exposure Category	**White**		**Black**		**Hispanic**		**Asian/ Pacific Is.**		**Native American**		**Not Specified**		**TOTAL**	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Coagulation Disorders	16	10%	1	1%	11	5%	2	13%	.	.	.	.	30	5%
Blood transfusion	42	26%	23	13%	39	18%	7	47%	.	.	.	.	111	19%
Mother at risk:														
--IDU	51	31%	68	39%	25	12%	.	.	4	80%	.	.	148	26%
--Sex with IDU	19	12%	20	11%	41	19%	1	7%	1	20%	.	.	82	14%
--Sex w/bisexual male	8	5%	5	3%	13	6%	1	7%	.	.	.	.	27	5%
--Sex w/HIV infected	9	6%	12	7%	40	19%	3	20%	.	.	1	100%	65	11%
--Blood transfusion	7	4%	3	2%	12	6%	.	.	.	.	.	.	22	4%
--HIV infected	11	7%	41	23%	24	11%	1	7%	.	.	.	.	77	13%
Other/undetermined	.	.	3	2%	2	1%	.	.	.	.	.	.	5	1%
Subtotal	163	100%	176	100%	212	100%	15	100%	5	100%	1	100%	572	100%
Total	67,852		18,366		21,022		2,249		465		166		110,120	

Table 3 **Adult/adolescent AIDS cases by gender, exposure category, and race/ethnicity, through December 31, 1998 in California.**

Male Exposure Category	White		Black		Hispanic		Asian/ Pacific Is.		Native American		Not Specified		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Homosexual/bisexual	53,352	82%	9,123	59%	13,692	72%	1,645	82%	261	63%	124	78%	78,197	77%
IDU (heterosexual)	2,997	5%	3,172	20%	1,814	9%	69	3%	46	11%	10	6%	8,108	8%
Homosexual/bisexual IDU	6,187	10%	1,797	12%	1,451	8%	82	4%	89	22%	6	4%	9,612	9%
Coagulation Disorders	357	1%	41	0%	102	1%	24	1%	1	0%	4	3%	529	1%
Heterosexual	456	1%	436	3%	408	2%	33	2%	5	1%	3	2%	1,341	1%
Blood transfusion	589	1%	87	1%	179	1%	63	3%	2	0%	3	2%	923	1%
Other/undetermined	935	1%	860	6%	1,459	8%	96	5%	9	2%	9	6%	3,368	3
Subtotal	64,874	100%	15,517	100%	19,106	100%	2,012	100%	413	100%	159	100%	102,081	100%
Female Exposure Category	**White**		**Black**		**Hispanic**		**Asian/ Pacific Is.**		**Native-American**		**Not Specified**		**TOTAL**	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
IDU	1,060	38%	1,255	47%	383	22%	31	14%	24	51%	5	83%	2,758	37%
Lesbian/bisexual IDU	55	2%	44	2%	21	1%	2	1%	4	9%	.	.	126	2%
Coagulation Disorders	15	1%	2	0%	2	0%	.	.	.	.	.	.	19	0%
Heterosexual	1,183	42%	987	37%	885	52%	115	52%	13	28%	.	.	3,183	43%
Blood transfusion	326	12%	92	3%	193	11%	48	22%	2	4%	1	17%	662	9%
Other/undetermined	173	6%	292	11%	219	13%	25	11%	4	9%	.	.	713	10%
Subtotal	2,815	100%	2,673	100%	1,704	100%	222	100%	47	100%	6	100%	7,467	100%
TOTAL	67,689		18,190		20,810		2,234		460		165		109,548	

Table 4 **AIDS cases in adolescents and adults under age 25, by exposure category reported January 1, 1997 through December 31, 1997 and January 1, 1998 through December 31, 1998; and cumulative totals by age group through December 31, 1998 in California.**

Exposure Category	13-19 years old						20-24 years old					
	Jan. 1997-Dec. 1997		Jan. 1998-Dec. 1998		Cumulative Total		Jan. 1997-Dec. 1997		Jan. 1998-Dec. 1998		Cumulative Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Homosexual/bisexual	11	31%	8	33%	98	31%	117	61%	77	47%	1,928	61%
IDU (heterosexual)	1	3%	4	17%	14	4%	20	10%	11	7%	304	10%
Homosexual/bisexual IDU	4	11%	1	4%	16	5%	6	3%	11	7%	374	12%
Lesbian/bisexual IDU	.	.	.	.	1	0%	.	.	.	.	5	0%
Coagulation Disorders	2	6%	3	13%	77	24%	1	1%	6	4%	68	2%
Heterosexual	3	9%	.	.	40	13%	26	14%	23	14%	295	9%
Blood transfusion	8	23%	2	8%	45	14%	.	.	.	.	36	1%
Other/undetermined	4	11%	4	17%	18	6%	22	11%	35	21%	175	5%
TOTAL	**35**	**100%**	**24**	**100%**	**316**	**100%**	**192**	**100 %**	**163**	**100%**	**3,185**	**100%**

Table 5. AIDS cases by gender, age at diagnosis, and race/ethnicity, reported through December, 31, 1998 in California.

Male Age at Diagnosis-- Years	White		Black		Hispanic		Asian/Pacific Is.		Native American		Not Specified		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0-4	47	0%	67	0%	71	0%	4	0%	2	0%	.	.	191	0%
5-12	40	0%	28	0%	39	0%	4	0%	.	.	.	.	111	0%
13-19	79	0%	36	0%	107	1%	9	0%	3	1%	.	.	234	0%
20-24	1,272	2%	455	3%	930	5%	68	3%	14	3%	5	3%	2,744	3%
25-29	7,103	11%	2,003	13%	3,508	18%	256	13%	76	18%	23	14%	12,969	13%
30-34	14,333	22%	3,536	23%	4,923	26%	428	21%	114	27%	32	20%	23,366	23%
35-39	14,954	23%	3,588	23%	4,003	21%	443	22%	100	24%	38	24%	23,126	23%
40-44	11,490	18%	2,660	17%	2,615	14%	374	19%	56	13%	25	16%	17,220	17%
45-49	7,269	11%	1,582	10%	1,383	7%	222	11%	25	6%	15	9%	10,496	10%
50-54	4,040	6%	842	5%	773	4%	89	4%	11	3%	8	5%	5,763	6%
55-59	2,214	3%	435	3%	450	2%	64	3%	8	2%	8	5%	3,179	3%
60-64	1,198	2%	221	1%	237	1%	31	2%	3	1%	2	1%	1,692	2%
65 or older	922	1%	159	1%	177	1%	28	1%	3	1%	3	2%	1,292	1%
Subtotal	64,961	100%	15,612	100%	19,216	100%	2,020	100%	415	100%	159	100%	102,383	100%
Female Age at Diagnosis-- Years	**White**		**Black**		**Hispanic**		**Asian/Pacific Is.**		**Native American**		**Not Specified**		**TOTAL**	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0-4	50	2%	65	2%	79	4%	4	2%	3	6%	1	14%	202	3%
5-12	26	1%	16	1%	23	1%	3	1%	.	.	.	.	68	1%
13-19	25	1%	23	1%	30	2%	4	2%	.	.	.	.	82	1%
20-24	140	5%	137	5%	153	8%	8	3%	3	6%	.	.	441	6%
25-29	416	14%	357	13%	324	18%	34	15%	9	18%	.	.	1,140	15%
30-34	600	21%	547	20%	350	19%	28	12%	12	24%	2	29%	1,539	20%
35-39	511	18%	612	22%	309	17%	47	21%	8	16%	1	14%	1,488	19%
40-44	412	14%	453	16%	218	12%	28	12%	6	12%	1	14%	1,118	14%
45-49	261	9%	276	10%	112	6%	30	13%	3	6%	1	14%	683	9%
50-54	136	5%	115	4%	78	4%	13	6%	4	8%	.	.	346	4%
55-59	79	3%	76	3%	62	3%	13	6%	1	2%	.	.	231	3%
60-64	71	2%	37	1%	38	2%	6	3%	.	.	.	.	152	2%
65 or older	164	6%	40	1%	30	2%	11	5%	1	2%	1	14%	247	3%
Subtotal	2,891	100%	2,754	100%	1,806	100%	229	100%	50	100%	7	100%	7,737	100%
TOTAL	67,852		18,366		21,022		2,249		465		166		110,120	

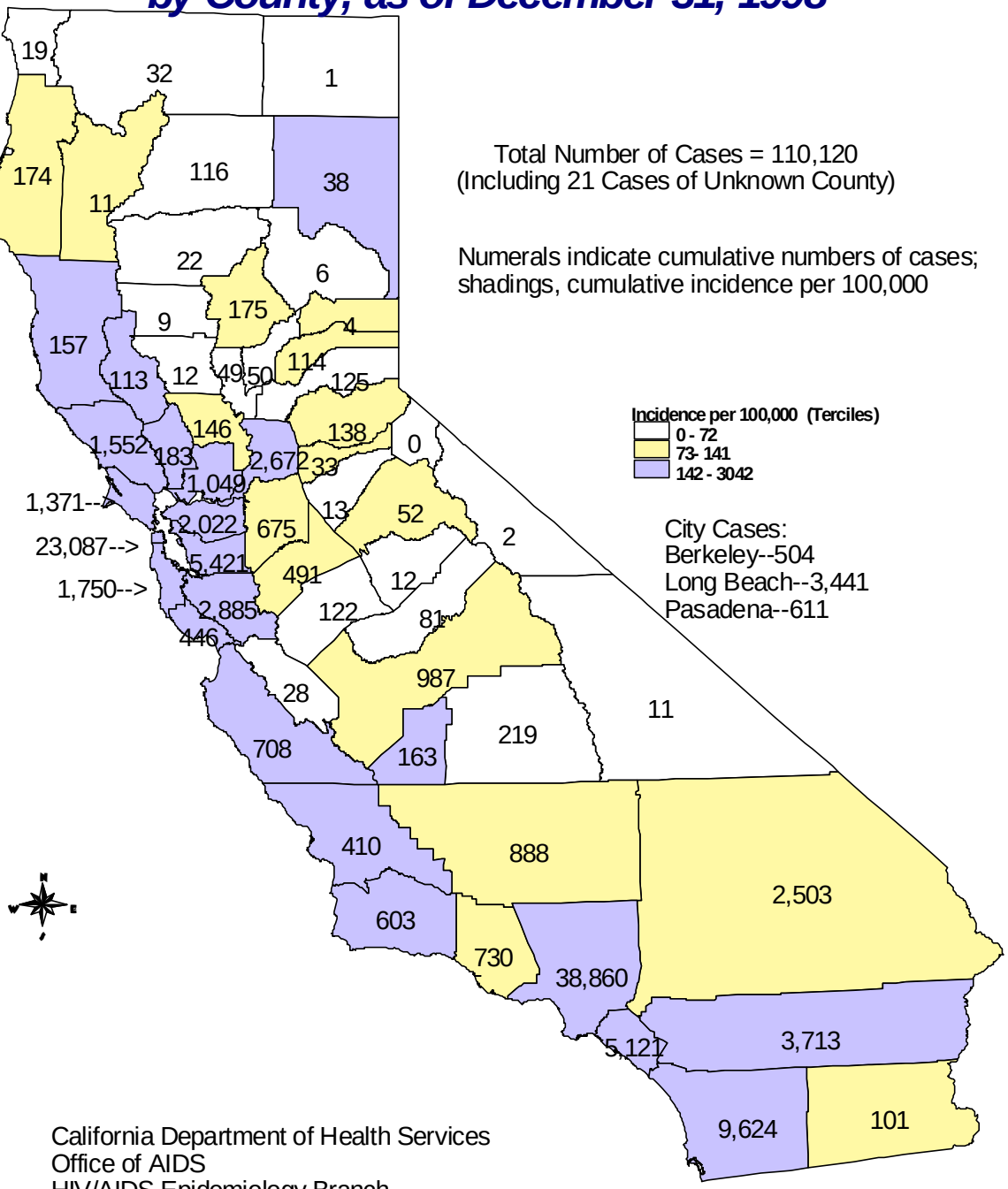
Table 6. AIDS cases, deaths, and case-fatality rates by half-year of diagnosis through December 31, 1998 in California.

Half-Year of Diagnosis	Number of Cases	Number of Deaths	Case Fatality Rate
Before 1983	306	291	95%
1983 Jan-June	294	284	97%
July-Dec	414	396	96%
1984 Jan-June	595	575	97%
July-Dec	815	784	96%
1985 Jan-June	1,163	1,123	97%
July-Dec	1,421	1,370	96%
1986 Jan-June	1,838	1,777	97%
July-Dec	2,233	2,137	96%
1987 Jan-June	2,767	2,646	96%
July-Dec	2,904	2,735	94%
1988 Jan-June	3,290	3,089	94%
July-Dec	3,442	3,170	92%
1989 Jan-June	4,092	3,698	90%
July-Dec	4,105	3,647	89%
1990 Jan-June	4,541	3,906	86%
July-Dec	4,484	3,808	85%
1991 Jan-June	5,272	4,302	82%
July-Dec	5,953	4,673	78%
1992 Jan-June	6,366	4,580	72%
July-Dec	6,291	4,236	67%
1993 Jan-June	6,320	3,812	60%
July-Dec	5,598	2,915	52%
1994 Jan-June	5,523	2,439	44%
July-Dec	4,801	1,741	36%
1995 Jan-June	5,031	1,365	27%
July-Dec	4,312	949	22%
1996 Jan-June	4,055	714	18%
July-Dec	3,165	432	14%
1997 Jan-June	2,929	333	11%
July-Dec	2,448	255	10%
1998 Jan-June	2,165	218	10%
July-Dec	1,187	65	5%
TOTAL	**110,120**	**68,465**	**62%**

Table 7. AIDS Cases & Cumulative Incidence 1981 through December 31, 1998 in California

COUNTY *CITY*	AIDS Cases	Deaths	Case Fatality Rate	Incidence Per 100,000	COUNTY	AIDS Cases	Deaths	Case Fatality Rate	Incidence Per 100,000
Alameda	5,421	3,325	61.3%	389.13	**Orange**	5,121	2,838	55.4%	188.78
Berkeley	504	332	65.9%	480.46	**Placer**	125	68	54.4%	57.22
Alpine	0	0	0.0%	0.00	**Plumas**	6	3	50.0%	27.49
Amador	33	19	57.6%	99.37	**Riverside**	3,713	1,900	51.2%	239.32
Butte	175	115	65.7%	85.86	**Sacramento**	2,672	1,662	62.2%	219.73
Calaveras	13	8	61.5%	29.70	**San Benito**	28	14	50.0%	63.14
Colusa	12	11	91.7%	62.38	**San Bernardino**	2,503	1,416	56.6%	140.66
Contra Costa	2,022	1,303	64.4%	222.30	**San Diego**	9,624	5,640	58.6%	353.04
Del Norte	19	10	52.6%	61.57	**San Francisco**	23,087	15,903	68.9%	3,041.87
El Dorado	138	88	63.8%	87.65	**San Joaquin**	675	413	61.2%	120.20
Fresno	987	616	62.4%	119.26	**San Luis Obispo**	410	193	47.1%	177.28
Glenn	9	6	66.7%	31.57	**San Mateo**	1,750	1,076	61.5%	246.13
Humboldt	174	103	59.2%	132.20	**Santa Barbara**	603	420	69.7%	151.54
Imperial	101	49	48.5%	75.39	**Santa Clara**	2,885	1,715	59.4%	177.01
Inyo	11	7	63.6%	56.38	**Santa Cruz**	446	271	60.8%	185.09
Kern	888	412	46.4%	130.65	**Shasta**	116	86	74.1%	65.25
Kings	163	56	34.4%	144.30	**Sierra**	4	4	100.0%	119.40
Lake	113	58	51.3%	184.04	**Siskiyou**	32	17	53.1%	68.14
Lassen	38	14	36.8%	141.50	**Solano**	1,049	564	53.8%	252.59
Los Angeles	38,860	24,432	62.9%	403.26	**Sonoma**	1,552	982	63.3%	352.65
Long Beach	3,441	2,109	61.3%	785.98	**Stanislaus**	491	283	57.6%	108.42
Pasadena	611	383	62.7%	454.61	**Sutter**	49	30	61.2%	61.69
Madera	81	45	55.6%	71.84	**Tehama**	22	11	50.0%	37.35
Marin	1,371	736	53.7%	568.01	**Trinity**	11	8	72.7%	77.64
Mariposa	12	3	25.0%	67.43	**Tulare**	219	152	69.4%	57.78
Mendocino	157	108	68.8%	173.02	**Tuolumne**	52	32	61.5%	92.80
Merced	122	73	59.8%	56.90	**Ventura**	730	458	62.7%	99.11
Modoc	1	1	100.0%	9.23	**Yolo**	146	92	63.0%	91.98
Mono	2	2	100.0%	18.48	**Yuba**	50	31	62.0%	71.66
Monterey	708	404	57.1%	186.08	**Unknown**	21	6	28.6%	
Napa	183	111	60.7%	151.79					
Nevada	114	62	54.4%	118.37	**TOTAL**	**110,120**	**68,465**	**62.2%**	**327.37**

Cumulative AIDS Cases in California by County, as of December 31, 1998



Total Number of Cases = 110,120
(Including 21 Cases of Unknown County)

Numerals indicate cumulative numbers of cases; shadings, cumulative incidence per 100,000

City Cases:
Berkeley--504
Long Beach--3,441
Pasadena--611

California Department of Health Services
Office of AIDS
HIV/AIDS Epidemiology Branch

http://www.dhs.ca.gov/AIDS/

MEETINGS/ANNOUNCEMENTS

May 18, 1999 Lessons & Innovations: From HIV/AIDS to Chronic Care, Los Angeles, CA. Topics include transprofessional model of care, model program for end-of-life care and current issues on building a health care system. Contact: Michelle Kiefer, VNA Foundation, 101 S. 1st St., Ste. 407, Burbank, CA 91502; Tel: (818) 526-1780, FAX (818) 526-1788, e-mail: mkiefer@vnafound.org.

June 3-6, 1999 9th Annual Clinical Care Options for HIV Symposium, Laguna Niguel, CA. Meeting is designed for frontline primary HIV care physicians, clinical researchers and other frontline clinicians actively treating HIV+ individuals. Contact: Melanie Moore, Healthcare Communications Group, 430 Franklin Village Dr., Ste. 105, Franklin, MA 02038; Tel: (888) 391-3996, FAX (508) 528-7880, e-mail: registration@healthcg.com.

May 10-June 4, 1999 Implementing AIDS Programs, Santa Cruz, CA. This workshop will provide an opportunity to share resources and strategies that have been demonstrated to be effective in preventing HIV infection. Contact: International Health Programs, 210 High St., Santa Cruz, CA 95060-3713; Tel: (831) 427-4965, FAX (831) 458-3659, e-mail: ihp@cruzio.com.

June 5-11, 1999 1999 American Industrial Hygiene Conference & Exposition, Toronto, CA. Topics of this conference will include epidemiology, laboratory safety, etc. Contact: American Industrial Hygiene Assoc., 2700 Prosperity Ave, Ste. 250, Fairfax, VA 22031; Tel: (703) 849-8888, FAX (703) 207-3561, e-mail: infonet@aiha.org.

California HIV/AIDS Update is a publication of the:

Department of Health Services
Office of AIDS
P.O. Box 942732
Sacramento, CA 94234-7320
(916) 445-0553
http://www.dhs.ca.gov/AIDS/ or
http://www.dhs.cahwnet.gov/org/ps/ooa/ooaindex.htm

Editor: Grace L. Pace **Circulation Manager:** James Creeger

Technical Advisors: Robert Benjamin, MD, MPH, Alameda County
Michele M. Ginsberg, MD, San Diego County
Peter Kerndt, MD, MPH, Los Angeles County

Departmental Advisors: Vanessa Baird, Acting Chief, Office of AIDS
Richard Sun, MD, MPH, Chief, HIV/AIDS Epidemiology Branch
Steve Waterman, MD, Chief, Division of Communicable Disease Control

\\I:\DATA\ER&S\Gpace\Update\Jansunedit5

Department of Health Services
Office of AIDS
P.O. Box 942732
Sacramento, CA 94234-7320