

TITLE PAGE

1  
BAKER

139832

HIV SEROPREVALENCE AND  
BEHAVIOR SURVEY OF  
INCARCERATED ADOLESCENTS

~~139832~~  
NCJRS

DEC 15 1992

ACQUISITION

AUTHORS

Charles J. Baker, M.D.  
Susan Huscroft, M.D.  
Robert Morris, M.D.  
Osvaldo Re, M.D.  
Julie Roseman, MPH  
Biruta Shultz, M.T.

All authors from the staff of the Los Angeles County, Department  
of Health Services, Juvenile Court Health Services.

Request for reprints to: Charles J. Baker, M.D.  
Medical Director  
Juvenile Court Health Services  
~~1540 Alcazar Street~~ 1925 DALY STREET  
Los Angeles, CA 90031

This study was supported, in part, by a grant from:

LOS ANGELES COUNTY DEPARTMENT OF HEALTH SERVICES AIDS PROGRAM  
OFFICE AND CALIFORNIA STATE BLOCK GRANT

139832

U.S. Department of Justice  
National Institute of Justice

This document has been reproduced exactly as received from the  
person or organization originating it. Points of view or opinions stated in  
this document are those of the authors and do not necessarily represent  
the official position or policies of the National Institute of Justice.

Permission to reproduce this copyrighted material has been  
granted by  
Charles J. Baker, MD

to the National Criminal Justice Reference Service (NCJRS).

Further reproduction outside of the NCJRS system requires permission  
of the copyright owner.

pr1/2

1989

ABSTRACT AND KEY WORDS

This study assesses the seroprevalence of HIV infection and provides a baseline of information concerning sexual behavior, medical history, drug abuse habits and state of knowledge of AIDS and risk factors among incarcerated adolescents, 16 to 18 years of age. Unlinked serologic testing for HIV antibody was performed in 1,878 juveniles. There were 3 positive results (incidence 1.6 per 1,000).

Interviews were conducted on an individual, confidential and random basis. A total of 417 youngsters detained within the Los Angeles County Juvenile Halls participated in this survey. Sex and ethnic distribution were representative of our entire detained population. More than 90% of the minors were heterosexually active with small percentages occasionally engaging in homosexuality and/or rectal sex. Casual sex was common, condom use was rare. One half of the minors admitted to drug abuse and 10% admitted I.V. drug use. Awareness of AIDS was high (90%) with 50% considering themselves at risk. A high percentage (about 75%) wished to be tested for HIV infection.

The low prevalence of HIV infection in this group of adolescents suggests that mass HIV screening is not presently justified. However, the high incidence of casual sex with multiple partners, low condom use and I.V. drug abuse appear to place these minors at an unusually a high risk for HIV infection. We recommend that

an emphasis be placed on voluntary/medically indicated HIV testing as well as education/counseling programs to prevent/modify the high risk behavior of incarcerated youth for AIDS.

KEY WORDS: HIV SEROPREVALENCE  
SEXUAL BEHAVIOUR  
INCARCERATED ADOLESCENTS  
DRUG ABUSE

Adolescents, 13 to 19 years of age, comprise only 0.4% of the  
(1)  
AIDS population . However, the high incidence (21%) of  
(1)  
AIDS in the 20 - 29 year old group suggests that many may have  
been infected as teenagers.

There is little information concerning HIV infection among  
adolescents and none on delinquent youths. Surveys conducted  
(2) (3)  
in 1985 (San Francisco) and 1986 (Massachusetts) reported  
that adolescents were poorly informed about AIDS in general and  
about AIDS transmission in particular.

Although comparisons are difficult because of geographical and  
other differences, the adolescents in the 1986 survey (3) showed  
a somewhat greater level of AIDS knowledge than those in the  
(2)  
1985 survey. Disturbing, however, was the finding that 54% in  
1986 were not worried about contracting AIDS as compared to 34%  
in 1985. Perhaps of greater concern is the 1986 result that only  
15% of teenagers changed their behavior because of a concern  
about contracting AIDS and only 20% reported using an effective  
method of prevention.

These data support a major need to further study patterns of high  
risk behavior as well as the actual incidence of HIV infection in  
the adolescent population.

Incarcerated adolescents are substantially involved in high risk behavior for sexually transmitted diseases and intravenous drug abuse thus potentially for HIV infection.

We performed a survey of this population with the following objectives: To establish a baseline concerning sexual behavior, medical history, drug abuse and knowledge about AIDS and its risk factors; To assess the incidence of HIV infection in the same population. It should be noted that this assessment involved adolescents as they were being admitted to our facilities.

Approximately 25,000 minors, aged 9-18 years, are admitted thru this system annually with an average daily population of 1,850 minors. Males comprise 88%. At the time of admission, our experience has been that approximately 10% of girls are pregnant; 10% have gonorrhea, 33% chlamydia and 28% trichomoniasis. Three percent of the males have gonorrhea and 13% asymptomatic chlamydia. The incidence of syphilis for boys and girls is 0.5%.

## II) METHODS AND MATERIALS

Seroprevalence Study: Blood samples were drawn anonymously and consecutively from all 16-18 years old adolescents admitted from February thru August 1987. The samples were collected at the time that blood was drawn for routine syphilis screening. Samples were then sent to the laboratory with no demographic or identifying information to minimize possible linking of results

with an individual. A total of 1,878 samples were sent to the Los Angeles County Harbor/UCLA Medical Center Laboratory for assay by the ELISA method (Abbott Laboratory). Serum samples that were reactive on two separate ELISA's were confirmed by Western Blot (MRL/Hilcrest, Cypress, California) using the antigen produced at their facility. The study was conducted at two locations served by Juvenile Court Health Services in Los Angeles County: Central Juvenile Hall in Los Angeles and San Fernando Valley Juvenile Hall in the suburb of San Fernando.

Behavioral Survey: Newly incarcerated 16-18 year old minors were randomly selected for interview. Each session was conducted in a private setting and was confidential. All answers were recorded on a questionnaire including demographic patterns, sexual behavior, drug abuse, medical history and knowledge/attitude concerning AIDS. Interviews were conducted by Health Educators who, for the purpose of validation, had previously conducted a pilot study with a similar questionnaire.

Each interview lasted approximately 30 minutes and each minor received appropriate counseling based on his/her circumstances and needs. A total of 417 juveniles participated in the survey.

II) RESULTS

Seroprevalence Study: Three of the 1,878 tests performed were positive for HIV antibodies by both the ELISA and Western Blot methods, thus a prevalence of 1.6 per 1,000 for the time period during which this population was studied.

Behavior Survey: A total of 417 youngsters were interviewed of which 84% (n=352) were male and 16% (n=65) female.

Their ethnic distribution was (percentage):

	<u>MALES</u>	<u>FEMALES</u>
White	31	45
Black	39	33
Hispanic	25	16
Asian/Pacific	4	5
Other	1	1

The population sample for this survey was generally representative of these juvenile halls overall population regarding sex and ethnic distribution. Black males and white females are the largest proportions in their respective categories.

Sexual Behavior: Of the males 96% and 90% of females reported engaging in intercourse and/or various types of sexual behavior prior to incarceration. Heterosexual contact was reported by all those who admitted sexual activity (Table 1).

The number and age range of the minor's sexual partners are shown in Table 2. A majority of subjects reported 1 to 5 partners prior to incarceration. Males tended to have sexual contact with partners of 19 years of age or less while female's partners were approximately equal in the less than 19 years of age and 20 to 28 years of age categories.

Of both males and females 33% reported condom use of which 64% of these males and 50% of females used a condom in approximately 50% of their sexual encounters. Very few (9% of males and 18% of females) said that they always used a condom. Of the study population 67% had attended sex education classes.

A number of items related to sexual behavior are displayed in Table 3. Both females (14%) and males (5%) admitted trading sex for favors. Almost half of the males and one third of females reported some alcohol consumption during sexual play. Percentages of casual sex were high, more for males than for females, while sexual contacts with prostitutes and gay/bisexual men were low. None reported sex with a person known to have AIDS or to be a carrier.



Medical History: Of the minors (3%) reported having had a blood transfusion in the past. Among males (1%) and females (3%) reported hepatitis in the past. Seven percent of the females were pregnant at the time of incarceration. Of the males (20%) and females (36%) gave a history of having been treated for a sexually transmitted diseases.

Drug History: Forty-one percent of males and 61% of females admitted to drug use. The percentages of intravenous drug abuse were 10 and 11% respectively. Of this last group, 48% of males and 55% of females reported needle sharing.

Among those who reported drug abuse this question was probed deeper with the following results:

9.9% (n=26) admitted heroin use, 35.1% (n=92) cocaine, 10.7% (n=28) amphetamines, 9.1% (n=24) barbituates, 2.6% (n=7) nitrites, 28.6% (n=75) hallucinogens and 63.7% (n=167) marijuana.

Table 4 shows the type of drug by method of administration. There were many instances of multiple drug use by individual minors. Heroin was the drug most likely to be injected, cocaine most likely to be inhaled and marijuana most likely to be smoked.

AIDS Related Issues: The majority of our minors had heard of AIDS. Although a high percentage stated that they knew how AIDS was transmitted, our impression was that this knowledge was frequently wrong and/or incomplete. Approximately one half felt they could catch AIDS. The percentage who expressed a desire to be tested was, however, substantially greater, suggesting perhaps a greater anxiety over this issue than they generally admitted. (Table 5).

#### IV) DISCUSSION

As of October 1988, there were 305 reported cases of AIDS in the United States in 13-19 year olds or only 0.4% of the total AIDS cases. (1) Los Angeles County has reported 11 cases in this age group which represents 0.19% of the County's AIDS cases. (4)

The majority of AIDS cases in the 13-19 year olds have to date clustered in New York, California, Texas, Florida and New Jersey. Hemophiliacs account for 28% of adolescent AIDS. Of the AIDS cases reported among adolescents 78% are male. (5) Although AIDS has been contracted primarily through blood products in the 13-16 age group, the majority of 17-19 year old AIDS patients have been homosexual, bisexual or I.V. drug users.

While the statistics for AIDS cases are known, the number of individuals infected with the virus can only be estimated. Currently, the estimate is between 1 and 1.5 million persons (6) in the U.S.A.

While we know of no other HIV prevalence studies specifically reporting the incidence of HIV infection in adolescents, 16 to 18 years of age, some studies have included this age range as part of their overall study population. The Job Corps is currently screening all applicants ages 16 to 21 years and report an overall prevalence of 3.3 per 1,000 or 0.33%.<sup>(7)</sup> The Department of Defense reports that HIV antibody prevalence for military recruits in the U.S.A. is 1.5 per 1,000 or 0.15%. The age range of the military recruits is from 18 to 24 years.<sup>(7)</sup>

The California Youth Authority<sup>(8)</sup> maintains the correctional institutions in the State of California for youth ranging in age from 16-23 years. They conducted a behavioral prevalence survey of 1,200 of these youth during 1987.

Of these 700 agreed to be tested for HIV antibody. Of the 700, 400 (57%) were in a high risk group for contracting HIV infection. Four of these youngsters ages 18, 20, 22, 23 years had a positive HIV antibody (by ELISA and Western Blot). All 4 were from Los Angeles County with a history of high risk behavior.

Recently, Quinn et al,<sup>(9)</sup> reported an HIV seroprevalence of 2.2% in 15 to 19 year old adolescents attending inner-city clinics for sexually transmitted disease in Baltimore. Our results show a lower (1.6 per 1,000) incidence of HIV seropositivity. These

data suggest that at this time, routine universal testing for HIV infection is not justified within Juvenile Court Health Services in Los Angeles.

The majority of our youngsters reported having sex with 1 to 5 partners. A trend emerged suggesting that males tended to engage in sexual activity with peers of the same or younger age while females tended to have sex with older partners. The percentage of our youth using condoms was low. Our results are consistent with those of Strunin and Hingson<sup>(3)</sup> and Quinn et al.<sup>(9)</sup> In answering this set of questions, however, our minors were generally vague, but our overall impression was that condom use was, at best, occasional.

Substantial percentage of our study group reported sexual activity with known I.V. drug users. This was more common among males than females. While the overall percentage reported by Quinn et al.<sup>(9)</sup> is similar, they found a slightly higher percentage among females.

Approximately one half of our minors admitted to drug abuse with a significant number reporting I.V drug use. Of these, one half reported needle sharing. Our 11% rate of I.V. drug use among females was about twice that reported by Quinn et al.<sup>(9)</sup> in a population seeking medical care for a sexually transmitted disease

(5.1%). The high percentage of female I.V. drug users is important in that Quinnan et al <sup>(10)</sup> found approximately 50% of all their women with AIDS were I.V drug users.

"Being worried" about AIDS varies widely among adolescents based' on the environment within which the adolescent lives. These percentages have been reported as high as 73% in the San Francisco area <sup>(2)</sup> and as low as 27% in Ohio. <sup>(11)</sup> Our data show approximately one half of the minors surveyed considered themselves at high risk for HIV infection and almost 75% expressed a desire to be tested.

Our youth typically engaged in sexual activity at an early age, but homosexual and bisexual behavior was rare. Thier sexual activity appeared to involve a substantial number of partners. Condom use was low and occasional. In general precautions taken against sexually transmitted diseases were inadequate. A substantial number of our minors, more females, traded sex for favors. An important number of minors admitted to I.V. drug use and to sexual contact with known I.V. drug users.

Our survey suggests some intellectual concern about contracting AIDS and yet, paradoxically, a rather cavalier attitude towards the disease and its consequences.

Based on our observations, we feel strongly that there is a need, at least in our population, to further intensify education programs dealing with sexually transmitted diseases and AIDS in particular.

(12)

Francis D.P. and Chin J. have proposed a strategy for the prevention of AIDS in the U.S.A. We believe, as they do, that education, counseling and motivation inducements are essential in minimizing risk. In our population we believe that special emphasis should be placed on preventing sexual behavior of a high risk nature and on eliminating I.V. drug use. Counseling and testing with informed consent should, we believe, be offered to those minors who give a history of high risk behavior and/or those for whom a diagnostic indication exists. We wish to emphasize specific AIDS prevention programs for detained juveniles since we believe that a continuation of their high risk behavior will undoubtedly lead to the spread of AIDS among their peers and ultimately on to the general population.

ACKNOWLEDGEMENTS

The authors wish to express their appreciation for the assistance provided in the course of the study and during preparation of the manuscript to the following individuals: Kenneth Iwakoshi, PhD AIDS Epidemiology Program, L.A. County Dept. of Health; Delores Alleyne, M.D.; David E. Dassey, M.D. Department of Health Services; Charles Lewis, M.D., UCLA; Barry Nidorf, Chief Probation Officer; Probation, Nursing, Education and Secretarial Staff.

TABLE 1

SEXUAL BEHAVIOR: TYPE OF SEXUAL ACTIVITY

	<u>MALES</u>	PERCENT	<u>FEMALES</u>
Heterosexual Activity	100		100
Homosexual Activity	1		2
Rectal Sex (Active)	8		N/A
Rectal Sex (Passive)	0		4



TABLE 2

SEXUAL BEHAVIOR: NUMBER AND AGE RANGE OF PARTNERS

<u>NUMBER OF PARTNERS</u>	PERCENT	
	<u>MALES</u>	<u>FEMALES</u>
1 - 5	65	88
6 - 20	20	10
More than 21	15	2

<u>AGE RANGE OF PARTNERS</u>	PERCENT	
	<u>MALES</u>	<u>FEMALES</u>
Less than 19 years	65	47
20 - 28 years	30	42
More than 29 years	5	11

TABLE 3SEXUAL BEHAVIOR: MISCELLANEOUS ITEMS

	PERCENT	
	<u>MALES</u>	<u>FEMALES</u>
Traded sex for money, rent, food, etc.	5	14
Alcohol consumption during sexual play	48	34
Sexual activity with I.V. drug user (at least once)	16	10
Sexual contact with prostitutes (at least once)	10	2
Sex with a person just met	44	26
Sex with gay/bi-sexual men	1	3
Sex with AIDS or HIV infected person	<u>0</u>	<u>0</u>

TABLE 4DRUG ABUSE: TYPE OF DRUG BY ADMINISTRATION

Drug	Method of Administration				
	Intravenous	Skin Popping	Orally	Inhaled	Smoked
	n	n	n	n	n
Heroin	20	1	-	4	1
Cocaine	7	1	-	47	33
Amphetamines	2	1	21	4	-
Barbiturates	-	1	21	2	-
Nitrites	-	-	2	7	-
Hallucinogens	2	-	22	12	37
Marijuana	-	-	-	1	166
Total	31	4	66	77	237

TABLE 5

	PERCENT	
	<u>MALES</u>	<u>FEMALES</u>
Have heard of AIDS	93	96
Aware of how AIDS is transmitted	74	74
Thought of themselves at high risk for AIDS	49	57
Expressed a desire to be tested	62	75
Took precautions against AIDS and STD's	54	45
Know a person with AIDS	3	5

REFERENCES

- 1) United States AIDS Program, Center for Infectious Diseases, Center for Disease Control, AIDS Weekly Surveillance Report, October 17, 1988, pages 1 and 5.
- 2) Di Clemente R.J.; Zorn J. and Temoshok L. A Survey of Knowledge, Attitudes and Beliefs About AIDS in San Francisco, Am. J. of Public Health, 1986, 76, 1443-1445.
- 3) Strunin L. and Hingson R. AIDS and Adolescents, Knowledge, Beliefs, Attitudes and Behavior., Pediatrics, 1987, 79, 825-828.
- 4) Los Angeles County Acquired Immunodeficiency Syndrome (AIDS), Monthly Surveillance Update, October 31, 1988, Attachment I, page 1.
- 5) Centers for Disease Control, Personal Communications
- 6) MMWR UPDATE, Acquired Immunodeficiency Syndrome, United States, 1987, Vol. 36, pages 522-526.
- 7) MMWR, Human Immunodeficiency Virus Infection in the United States, 1987, Vol. 36, pages 801-816.
- 8) California Youth Authority, Personal Communication, Dan Palmer, M.D., Medical Director, California Youth Authority, Department of Corrections, Sacramento, California.
- 9) Quinn, T.C. Glasser, D; Cannon R.D. et al. Human Immunodeficiency Virus Infection Among Patients Attending Clinics for Sexually Transmitted Diseases. NEJM, 1988, 318, 197-202.
- 10) Quinnan M.E. and Hardy A. Epidemiology of AIDS in Women In the U.S.A., JAMA, 1987, 257, 2039-2042
- 11) Price J.H.; Desmond S. and Kukulka G. High School Students, Preceptions and Misperceptions of AIDS. J. Sch. Health, 1985, 55, 107-109.
- 12) Francis D.P. and Chin J., The Prevention of AIDS In The U.S.A. JAMA, 1987, 257, 1357-1366.