PREVALENCE OF HIV INFECTION, SEXUALLY TRANSMITTED DISEASES, HEPATITIS, AND RISK BEHAVIORS AMONG INMATES ENTERING PRISON AT THE CALIFORNIA DEPARTMENT OF CORRECTIONS, 1999

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TABLE OF CONTENTS

I. EXECUTIVE SUMMARY 1

II. INTRODUCTION.....2

III. METHODS 3

IV. RESULTS.....6
- Demographics of Sample.....6
- Sample Tested.....6
- HIV Seroprevalence 6
- Current/Chronic (HBsAg) and Past (anti-HBc) Seroprevalences 7
- Anti-HCV Seroprevalence 7
- Markers for Coinfection with HIV and HBV 7
- Risk Factors 7
- Additional Risk Factors 8
- Chlamydia trachomatis and Neisseria gonorrhoeae Prevalence Rate 8

V. DISCUSSION.....10

FIGURES.....12
- A. Racial/Ethnic Distribution of Entering Inmates by Gender. 13
- B. Age Distribution of Entering Inmates by Gender.....14
- C. Data Collection and Serological Tests 15

TABLES.16
1. HIV Seroprevalence by Gender and Race/Ethnicity.....17
2. HIV Seroprevalence by Gender and Age Group. 18
3. Current/Chronic and Past HBV Seroprevalence by Gender and Race/Ethnicity...19
4. Current/Chronic and Past HBV Seroprevalence by Gender and Age Group. 20
5. Anti-HCV Seroprevalence by Gender and Race/Ethnicity. 21
6. Anti-HCV Seroprevalence by Gender and Age Group.....22
7. Markers for Coinfection with HIV and HBV among Anti-HCV-positive and Anti-HCV-negative Male and Female Inmates.....23
8. Risk Factors for HIV by Gender.....24
9. Risk Factors for Current/Chronic HBV Infection by Gender.....25
10. Risk Factors for Past HBV Infection by Gender 26
11. Risk Factors for HCV Infection by Gender 27

TABLES (Continued)

12. Risk Factors for HIV 28
13. Risk Factors for HBV Infection- Current and Past 30
14. Risk Factors for HCV 32
15. Risk Factors for for Chlamydia trachomatis and Neisseria gonorrhoeae 34
16. Prevalence and Odds Ratios for Chlamydia trachomatis and Neisseria gonorrhoeae Infection by Gender and Age 36
17. Prevalence and Odds Ratios for Chlamydia trachomatis and Neisseria gonorrhoeae Infection by Gender and Race/Ethnicity 37

APPENDIX 38
Data Abstraction Form 39

REFERENCES 40

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I. EXECUTIVE SUMMARY

Objectives. The objectives of this project were: 1) to estimate the seroprevalence of human immunodeficiency virus (HIV), hepatitis B virus (HBV), hepatitis C virus (HCV), and the prevalence of Chlamydia trachomatis (CT) and Neisseria gonorrhoeae (GC) among a representative sample of male and female inmates upon entry into six reception centers of the California Department of Corrections (CDC); and 2) to assess risk behaviors associated with HIV seropositivity in the study population.

Design. A cross-sectional unlinked (blinded) survey was conducted from January 25, 1999 through March 19, 1999. Of the 5,730 inmates receiving entrance physical examinations at the six reception centers during the study period, 5,595 (97.6%) had serum tested for the presence of antibodies to HIV, HBV core, HCV, and HBV surface antigen. Antibody testing was conducted after routine blood work was completed, and personal identifiers were removed from the serum samples. Serum was not tested for the remaining inmates because no blood was drawn, the quantity was not sufficient, or the specimen was not saved. In addition, urine samples of all female inmates and all male inmates aged 25 or younger (N=1,576) were submitted for analysis of CT and GC. Medical record review was done on all inmates to determine risk behaviors associated with sexually transmitted diseases (STDs)/HIV acquisition.

Result. Of the 5,595 inmates, 80 (1.4%) tested positive for HIV, 196 (3.5%) had current/chronic HBV infection, 1,586 (28.3%) had past HBV infection, and 1,849 (33.0%) had HCV infection. Of the 1,576 inmates examined for CT and GC infection, 111 (7.0%) were positive for CT infection and 4 (0.3%) were positive for GC infection. On entrance to the CDC, female inmates had higher prevalence of HIV, HBV, and GC than their male counterparts; male inmates had higher prevalence of HCV and CT. African-American men were more likely to be infected with HIV (OR=1.8; 95% confidence interval [CI], 1.0-3.3), and CT (OR=2.9 [1.1-7.9]) than White men. Men with HIV were more likely to have been injecting drug users (OR=1.8 [1.1-3.2]) than men without HIV. Men with past HBV infection were more likely to have been injecting drug users (OR=3.3 [2.8-3.8]) and to have had sex for money (OR=2.3 [1.3-4.0]) than men without past HBV infection. Women with past HBV infection were more likely to have been injecting drug users (OR=2.5 [1.6-3.8]) than women without past HBV infection.

Conclusion. The unlinked seroprevalence survey among inmates entering prison at the CDC provides public health officials with useful information about HIV, STDs, and hepatitis infection seroprevalences.

II. INTRODUCTION

An estimated 1.82 million people are incarcerated, on probation or on parole in the United States, a rate of 700 inmates per 100,000 residents.[1] There was a 6% increase in the number of incarcerated Americans between 1990 and 1998.[1] Considering the size of this population and the disproportionate presence of risk factors, some infectious diseases such as HIV/acquired immunodeficiency syndrome (AIDS), syphilis, CT, GC, and tuberculosis are more prevalent among the incarcerated than the general U.S. population.[2] A 1994 National Institute of Justice/Centers for Disease Control and Prevention survey showed that AIDS is almost six times more prevalent among inmates than in the total population.[3] A study of selected jails and state and federal prisons nationwide estimated HIV seroprevalence among inmates to be between 2.1% and 7.6% for men and between 2.5% and 14.7% for women,[4] higher than the prevalence reported in population-based samples. In California, HIV seroprevalence data from an unlinked cross-sectional survey of incoming inmates in prison in 1994 revealed a seropositivity of 2.5% among male inmates and 3.1% among female inmates.[5] Other studies found that the prevalence of GC among incarcerated men in jail and prison ranged from 1% to 5.2% and the prevalence of HBV infection ranged from 19% to 47%.[6-7] Incarcerated women were shown to have GC prevalence ranging from 1.8% to 14%, and CT from 4.6% to 27% in jail and prison.[8]

Risk factors for HIV/AIDS, STDs, and hepatitis are much higher in incarcerated populations than in the population at large. Inmates often have a pre-incarceration history of participation in high-risk behaviors, including injecting drug use (IDU), needle sharing, and unprotected sex.[9-11] These HIV/STD risk behaviors, although prohibited, may also occur in correctional facilities.[12] In particular, unprotected sex, both consensual and nonconsensual, can occur among prisoners.[13] Some studies have suggested that the prevalence of same-sex intercourse increases in prison; in one study 18% of male Tennessee prisoners reported same-sex intercourse while incarcerated, but only 7% reported engaging in same-sex intercourse while not incarcerated.[13]

One HIV prevention strategy is to prevent other STDs including syphilis, CT, and GC that have been shown to be important co-factors in enhancing HIV acquisition and transmission.[14-16] In addition, untreated STDs can lead to serious sequelae of negative health consequences for those infected. For example, CT may result in infertility, chronic pelvic pain and ectopic pregnancies in women and serious morbidity and even death in infants.[17] As such, it is very important to monitor the HIV and STD prevalence among incarcerated populations.

From January 25, 1999 through March 19, 1999, the Office of AIDS (OA), STD Control and Prevention Branch, and Viral and Rickettsial Disease Laboratory (VRDL) of the California Department of Health Services (DHS) collaborated with CDC to conduct a cross-sectional unlinked survey to estimate the extent of HIV infection and of markers for HBV, HCV, CT and GC infection among male and female inmates entering the CDC.

III. METHODS

The study protocol was reviewed and approved by the California Health and Welfare Agency Committee for the Protection of Human Subjects.

Coordination

Approximately six months prior to the start of data collection, OA organized and facilitated regular coordination meetings with personnel from OA, the STD Control and Prevention Branch, VRDL, and the CDC. Funding was obtained from the OA's epidemiologic studies budget.

Site Selection

The CDC has 13 reception centers (10 centers for male prisoners and 3 centers for female prisoners) where inmates are processed for entrance into the system. The site of entry into the California correctional system is determined by the county where the crime was committed and by the type of crime. This study included 4 reception centers where adult males are processed and 2 reception centers where adult females are processed.

The four male reception centers selected were:

1) R.J. Donovan Correctional Facility in San Diego (San Diego County)
2) North Kern State Prison in Delano (Kern County)
3) San Quentin State Prison in San Quentin (Marin County)
4) Wasco Reception Center in Wasco (Kern County)

The two female reception centers selected were:

1) California Institution for Women in Frontera (San Bernardino County)
2) Central California Women's Facility in Chowchilla (Madera County)

Selection of reception centers for this study was made by the CDC in collaboration with the OA and the STD Control and Prevention Branch. Facility selection was based on the following criteria: 1) representation of urban and rural areas, 2) high volume of inmates, 3) state-wide coverage, 4) routine blood specimen collection from all inmates for purposes other than this study, and 5) urine specimen collection from all female inmates and younger male inmates.

Sampling Plan

The sample size of this study was determined by using the 1994 prison population census and HIV prevalence estimates from the 1994 seroprevalence study among prisoners entering California prisons.[18] Based on a 2-tailed test for proportions, an alpha level of 0.05, statistical power of 0.80, and an attrition rate of 10% to detect a prevalence of 5%, the resulting gender-specific sample size for this study was 4,452 male inmates and 656 female inmates.

The proportion of the sample selected from each reception center was based on the proportion of inmates processed at the center on a weekly basis. For male inmates, we proposed to collect 1,164 blood specimens from North Kern State Prison, 636 blood specimens from R.J. Donovan Correctional Facility, 1,287 blood specimens from San Quentin State Prison, and 1,365 blood specimens from Wasco Reception Center. For female inmates, we proposed to collect 501 blood

specimens from the California Institution for Women and 155 blood specimens from the Central California Women's Facility.

Study Design

In order to estimate seroprevalence of HIV infection and markers for HBV, HCV, CT, and GC among incoming inmates, a cross-sectional unlinked survey design was employed. Blood and urine specimens collected for other purposes were tested in a manner that prevented linking test results to identifiable individuals. Sera were tested for the presence of antibody to HIV, hepatitis C, and seromarkers of HBV after all personal identifiers were removed. Urine specimens from all female inmates and males 25 years of age or younger were tested for the presence of CT and GC.

Three reception centers were visited by study investigators where intake procedures were observed and staff interviewed. During these visits, risk behavior information from medical charts was evaluated and the intake procedure assessed in order to anticipate potential problems in collecting data for all incoming inmates. During these visits, copies of all standardized intake entry forms used by these facilities were obtained. After the site visits were conducted and all intake forms were received, a standardized study protocol to be used by the CDC staff at all the participating facilities during the study period was developed.

Study Population

All incoming inmates to the CDC receive a physical examination shortly after arrival at a reception center. During the physical examination, a blood sample is obtained and tested for syphilis serology. In addition, a urine sample is obtained and tested for leukocyte esterase (surrogate marker for bacterial STDs). The population in this study consisted of all inmates who had blood drawn and urine samples collected in association with physical examinations upon entrance to the six reception centers from January 25, 1999 through March 19, 1999. We collected urine specimens from male inmates aged 25 or younger and all female inmates. Inmates who had been incarcerated in the same facility during the survey period were excluded.

Data Collection

For each subject, the CDC headquarters and institutional public health nurses and healthcare staff at the selected reception centers completed a standardized data collection form (**Appendix**) by abstracting data from the inmate's medical chart and the offender-based information system (OBIS). This form was completed for all eligible inmates (N=5,595) who had a blood test and urine test ordered, even if sera could not be obtained, to allow comparisons of inmates who were not tested with those who were tested for HIV, STD, and hepatitis. Essential data collected for each eligible participant included: sex, age group, race/ethnicity, previous incarceration information, and risk behavior information (available in some correctional facilities). Histories of sexual and injecting and non-injecting drug use behaviors were abstracted from the inmate's medical record. Additionally, CDC staff collected inmates' arrest history utilizing the OBIS.

Laboratory Methods

All serologic testing was performed at the VRDL in Berkeley, California. Sera were tested for the detection of antibody to HIV by the Abbott HIVAB HIV-1 Enzyme Immunoassay (EIA) (Chicago, IL). Repeatedly reactive specimens were then confirmed by the Immunofluorescence Assay (IFA) test and resolved, in the event of any discrepancy, by the Western blot (Wb). Only those sera confirmed by the IFA or Wb were considered positive in the calculation of HIV seroprevalence.

The EIA for the qualitative detection of antibody to HCV (anti-HCV) in human or serum plasma was the Hepatitis C Virus Encoded Antigen (Recombinant c22-3, c200, NS5) Ortho HCV EIA 3.0. Sera that were reactive on the initial EIA were reported as having the antibody detected.

Sera were tested for both the presence of hepatitis B core antibodies (anti-HBc) by the Abbott Corzyme EIA and, if positive, for the presence of hepatitis B surface antigens (HBsAg), by the Abbott Auszyme Monoclonal EIA. The HBV status was interpreted as follows: negative (anti-HBc and HBsAg EIA negative), current or chronic infection (anti-HBc EIA reactive and HBsAg EIA reactive), or infection at undetermined time (anti-HBc EIA reactive and HBsAg EIA non-reactive).

Urine samples were tested according to manufacturer's instructions, using the Ligase Chain Reaction (LCR, Abbott Laboratories, Abbott Park, IL) for the detection of CT and GC. Urine samples were stored at 4 degrees Celsius and processed within 7 days of collection.

Statistical Analyses

Statistical analyses were conducted using SAS-PC version 6.10 (Statistical Analysis System for Personal Computers, Cary, NC) and Epi Info version 6.0 (Centers for Disease Control and Prevention, Atlanta, GA). Frequency distributions were compared using chi-square tests for independent samples. Ninety-five percent confidence intervals (CIs) for prevalences of HIV, HBV, HCV, CT, and GC were calculated assuming a binomial distribution for the numbers testing positive. When the number testing positive was less than five, Fisher's exact limits were calculated. Prevalences in subgroups were compared using ratios of rates as estimates of relative risk. Exact binomial 95% CIs were calculated for odds ratios using Epi Info version 6.0. Seroprevalences were computed excluding missing/unknown values.

IV. RESULTS

Demographics of Sample

Figure A shows the racial/ethnic distribution of entering inmates included in the study by gender

Figure B shows the age group distribution of entering inmates included in the study by gender. About 35% of males and 21% of females sampled were known to be under the age of 30.

Sample Tested

During the study period, 5,730 inmates received intake physical examinations at the six reception centers selected for this study. Of these, 5,595 (97.6%) had serum tested for the presence of antibodies to HIV, HCV, and seromarkers of HBV (HBsAg and anti-HBc). Serum was not tested for the remaining inmates because no blood was drawn, the quantity was not sufficient, or the specimen was not saved. Of the 5,595 serum specimens tested, 80 were positive for HIV (68 men and 12 women), 1,586 had past HBV infection (1,294 men and 292 women), 196 were currently or chronically infected with HBV (125 men and 71 women), and 1,849 had HCV infection (1,667 men and 182 women). (**Figure C**).

Of the 1,576 inmates examined for CT and GC infection, 111 (86 men and 25 women) were positive for CT infection and 4 (1 man and 3 women) were positive for GC infection.

HIV Seroprevalence

Table 1 presents HIV seroprevalence by gender and race/ethnicity. The overall HIV seroprevalence among men was 1.4% (95% confidence interval [CI], 1.1% to 1.8%). African American men were almost twice as likely to be HIV infected than White men (OR=1.8; 95% CI, 1.0 to 3.3). No other racial trends were apparent.

The seroprevalence of HIV among women was 1.7% (95% CI, 0.9% to 2.9%). The difference of HIV seroprevalence among African American and Latino women compared with White women, was not statistically significant.

Table 2 presents HIV seroprevalence by gender and age group. For both men and women, the HIV seroprevalences varied by age group. Among men, seroprevalences were highest for those between 35-39 years of age (2.6%; 95% CI, 1.6% to 3.9%) and lowest for those under 25 years of age (0.2%; 95% CI, 0.0% to 0.8%).

Among women, seroprevalences were highest for those 35-39 years of age (3.3%; 95 % CI, 1.2% to 7.0%) and lowest for those under 25 years of age (0%; 95% CI, 0.0% to 8.0%). No statistically significant trends were apparent, probably because of the small numbers.

Current/Chronic (HBsAg) and Past (anti-HBc) Seroprevalences

Table 3 presents current/chronic and past HBV seroprevalences by gender and race/ethnicity. The overall current/chronic HBV seroprevalence among men was 2.6% (95% CI, 2.1% to 3.0%). White men were found to have a higher current/chronic HBV seroprevalence than African American and Latino men. Although Asian/Pacific Islander men showed the highest current/chronic HBV seroprevalence of 11.1%, the sample was too small to be considered statistically significant.

The seroprevalence of HBV among women was 9.9% (95% CI, 7.8% to 12.3%). African American women were found to have a higher current/chronic HBV seroprevalence than White women.

The overall past HBV seroprevalence among men was 26.5% (95% CI, 25.3% to 27.8%). Among men, Whites were found to have significantly higher past HBV seroprevalence than African Americans and Latinos.

The overall past HBV seroprevalence among women was 40.6% (95% CI, 37.0% to 44.3%). The differences between race/ethnic groups were not statistically significant.

Table 4 presents current/chronic and past HBV seroprevalence by gender and age group.

Anti-HCV Seroprevalence

Table 5 presents anti-HCV seroprevalence by gender and race/ethnicity. The overall seroprevalence of HCV infection among male and female inmates entering prison in 1999 was 33.0% (95% CI, 31.8% to 34.3%). The differences among racial/ethnic groups for both men and women were not statistically significant.

Table 6 presents anti-HCV seroprevalence by gender and age group. The differences in anti-HCV seroprevalence among age groups for men and women were not statistically significant.

Markers for Co-infection with HIV and HBV among anti-HCV-positive and anti-HCV-negative male and female inmates

Table 7 includes the results of coinfection with other serological markers among anti-HCV-positive and anti-HCV-negative male and female inmates. Among anti-HCV-positive male inmates, 73.1% had no other serological markers, and 26.1% were anti-HBc positive as compared with 72.5% and 26.6%, respectively, among anti-HCV-negative male inmates. Among anti-HCV-positive female inmates, 61.1% had no other serological markers and 39.0% were anti-HBc positive as compared with 58.2% and 41.2%, respectively, among anti-HCV-negative female inmates.

Risk Factors

Table 8 presents the risk factors for HIV among male and female inmates. Male inmates with HIV were more likely to have been injecting drug users compared with male inmates without HIV (OR=1.8; 95% CI, 1.1 to 3.2).

For female inmates with HIV, there was either no difference in risk factors compared with female inmates without HIV, or there were too few cases for a meaningful analysis.

Table 9 presents the risk for current/chronic HBV infection (HBsAg-positive) among male and female inmates. For both male and female inmates with current/chronic HBV infection, there was either no difference in risk factors compared with inmates without current/chronic HBV infection, or there were too few cases for a meaningful analysis.

Table 10 presents the risk factors for past HBV infection among male and female inmates. Male inmates with past HBV infection were more likely to be injecting drug users (OR=3.3; 95% CI, 2.8 to 3.8) and more likely to have had sex for money (OR=2.3; 95% CI, 1.3 to 4.0) than male inmates without past HBV infection.

Female inmates with past HBV infection were more likely to be injecting drug users (OR=2.5; 95% CI, 1.6 to 3.8) as compared with female inmates without past HBV infection.

Table 11 presents the risk factors for HCV infection among male and female inmates. For both male and female inmates with HCV infection, there was either no difference in risk factors compared with inmates without HCV infection, or there were too few cases to for a meaningful analysis.

Additional Risk Factors

Table 12 presents additional risk factors for HIV infection. Risk factors for HIV infection include male-male sex (OR=17.0; 95% CI, 3.4 to 85.2), ever having sex with an HIV positive person (OR= 9.3; 95% CI, 1.1 to 79.5), and injection drug use in the past year (OR=2.9, 95% CI, 1.5 to 5.6).

Table 13 presents additional risk factors for past and current HBV infection. The top three risk factors for current HBV infection include having sex with injection drug use partner (OR=6.6; 95% CI, 2.9 to 15.1), ever having sex for money or drug (OR=5.3; 95% CI, 2.2 to 12.4), and ever injecting drugs (OR=4.3; 95% CI, 3.1 to 6.0).

The top three risk factors for past HBV infection include having sex with injection drug use partner (OR=3.6; 95% CI, 2.5 to 5.3), injection drug use in the past year (OR=3.2; 95% CI, 2.6 to 3.9) and ever using injecting drugs (OR=3.2; 95% CI, 2.7 to 3.6).

Table 14 presents additional risk factors for HCV infection. The top two risk factors for HCV infection include having sex with an injection drug use partner (OR=5.1; 95% CI 3.4 to 7.4) and ever using injecting drugs (OR= 4.9; 95% CI, 4.3 to 5.7).

Table 15 presents risk factors for CT and GC. The only statistically significant risk factor for CT infection is being arrested for theft (OR=1.7; 95% CI, 1.1 to 2.6).

CT and GC Prevalence

Table 16 presents the prevalence and odds ratio for CT and GC infection by gender and age

group. Among men, the prevalence of CT and GC was 10% and 0.1% respectively. Among women, 3.5% were CT positive and 0.4% were GC positive. There were no statistically significant differences by gender and age group.

Table 17 presents the prevalence and odds ratio for CT and GC infection by gender and race/ethnicity. African American men were more likely to test positive for CT than White men (OR=2.9; 95% CI, 1.1 to 7.9).

Among women, the differences in CT prevalence by race/ethnicity were not statistically significant.

V. DISCUSSION

In this study of inmates entering prison at the California Department of Corrections (CDC), we found that the overall prevalence of HIV infection was 1.4%, and the prevalence in female inmates was 1.7%, compared with 1.4% in male inmates. These prevalence estimates are greater than those among Californians whose only risk for HIV infection is heterosexual contact (estimated HIV prevalence of under 0.5% for each gender), but much less than among the State's IDU population (which has an estimated HIV prevalence of 4-5%).[19] A significant decline in HIV seroprevalence occurred between 1994 (2.5% in men and 3.1% in women)[5] and 1999. The percent declines for male and female inmates are 44% and 45%, respectively. Other studies have found a drop in HIV seroprevalence among inmates entering prisons.[20-22] National studies of incarcerated populations have shown that HIV prevalence and AIDS incidence are higher among female inmates than male inmates, which mirrors our data.[4,23] We are not sure of the causes for the drop in HIV seroprevalence in inmates entering prison at the CDC in 1999. Des Jarlais and colleagues reported a declining prevalence of HIV infection among injecting drug users in New York City.[24] Injecting drug use may be a common behavior among those individuals entering prisons. This risk behavior is also associated with transmission of other viruses such as hepatitis B and C. However, data on risk behaviors associated with HIV acquisition were not collected in the 1994 study of the California inmates.

In contrast to the low HIV seroprevalence, 26.5% of men and 40.6% of women showed past HBV infection (anti-HBc-positive), and 34.2% of men and 25.3% of women were HCV infected. These are indicators of potential risk for future HIV infection. On entrance to the CDC, female inmates had higher prevalence of HIV, HBV and GC than male inmates did. Male inmates had higher prevalence of HCV and CT infection. The high prevalence of past HBV and HCV infections suggest that inmates have a higher rate of infection with these other viral infections compared with the non-incarcerated population.[25]

HBsAg, a marker of active HBV infection, has been detected in a wide variety of body fluids but only serum, semen, and saliva have been demonstrated to be infectious.[26] HBsAg was present in 2.6% (125/4,876) serum samples from male inmates compared to 9.9 % (71/719) serum samples from female inmates.

The higher prevalence of hepatitis B markers among female inmates than male inmates observed in this incarcerated sample is the opposite of what is seen in California's general population, but this disparity is explainable when considering the age distribution of the sampled inmates. For every year between 1990 and 1998 (inclusive), the number of hepatitis B cases reported in California has been significantly more among males than females.[27] However, during this same time period, the majority of California's hepatitis B cases have been 30 years or older.[27] In particular, the percentage of annual hepatitis B cases that are at least 30 years old has risen every year since 1990 (when it was 51%); in 1994 it climbed to over 60%, and in 1997 and 1998, it was over 70% (this trend is likely due to the impact of the hepatitis B vaccine, which was licensed in 1981).[27] In looking at Figure B, we see that while 76.8% of the female inmates in the sample were at least 30 years old, only 59% of the male inmates were in this age group; this made hepatitis B more likely among the females in the sample.

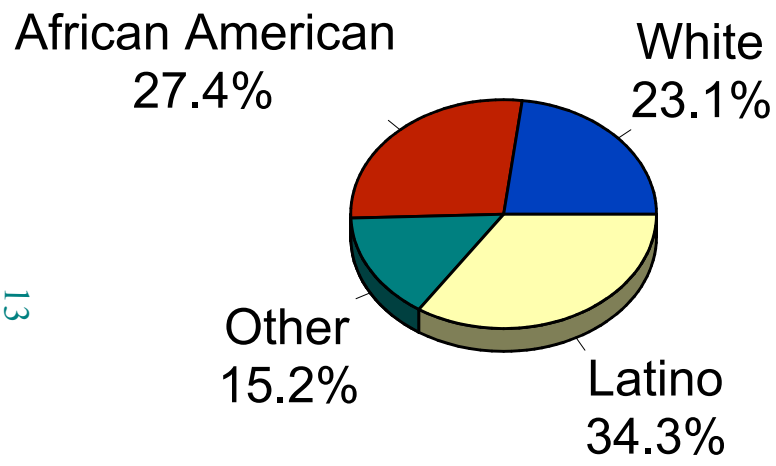
Hepatitis C virus, the primary etiologic agent of parenterally transmitted non-A, non-B hepatitis, is also a major cause of acute and chronic hepatitis and cirrhosis worldwide.[26] The highest prevalence rates of HCV infection are found among injection drug users and hemophilia patients (60%-90%).[26,28,29] The most efficient transmission of HCV is associated with direct percutaneous exposure to blood, such as through transfusion of blood or blood products, transplantation of organs from infectious donors, sharing of contaminated needles among injection drug users, and health care workers experiencing needle stick injuries.[26,28] A noticeable decline in HCV seroprevalence was observed when comparing the 1999 sample with that from 1994 (where HCV infection was seen in 39.4% of men and 52.7% of women). This decline mirrors national data, which show the estimated incidence of acute HCV infection to have declined sharply from 1989 through 1995 in the general population, and particularly in the nation's IDU population.[28,30] The absolute declines in HCV seroprevalence among men and women were 5.2% (a 13% decrease) and 28.2% (a 53% decrease), respectively. We are not sure of the causes for the larger drop in HCV infection among female inmates. We can only assume that the prevalence of injection drug use among female inmates entering prison in 1999 was much lower than in 1994.

This unlinked seroprevalence survey in California's correctional facilities provides public health officials with useful information about HIV, HBV, HCV, GC and CT infections. Increased rates of infectious diseases such as HIV/AIDS, other STDs, and hepatitis and risk-taking behaviors among incarcerated men and women have implications for disease prevention and control within the community into which the inmates are released.[31]

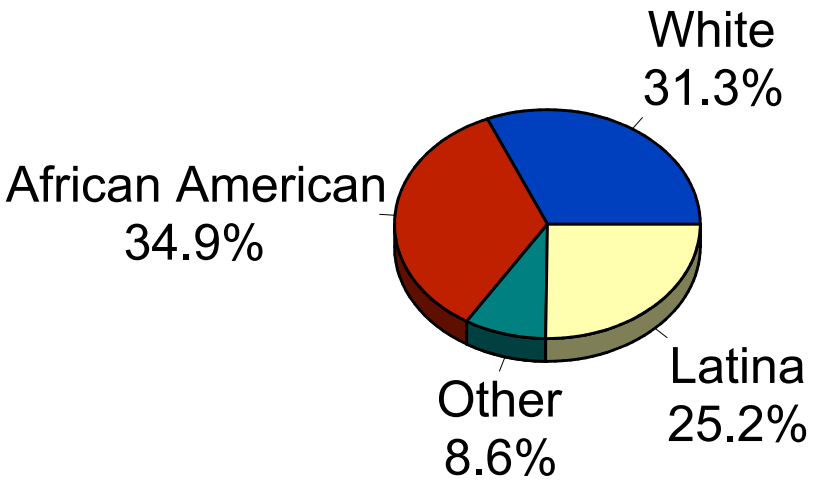
Public health and correctional institutions need to collaborate in developing and implementing interventions for incarcerated men and women. These interventions may include screening and treatment at county jails especially for curable conditions like CT and GC and vaccination for HBV. Correctional institutions would benefit from working closely with community-based organizations that can provide medical care, health education and other social services to California's incarcerated population. Developing and implementing targeted interventions in this population and partnerships between prison facilities, local and state public health departments, research institutions, and community-based organizations will improve the health of the incarcerated population and the communities into which these persons are being released.

FIGURES

Figure A: Racial/Ethnic Distribution of Entering Inmates by Gender

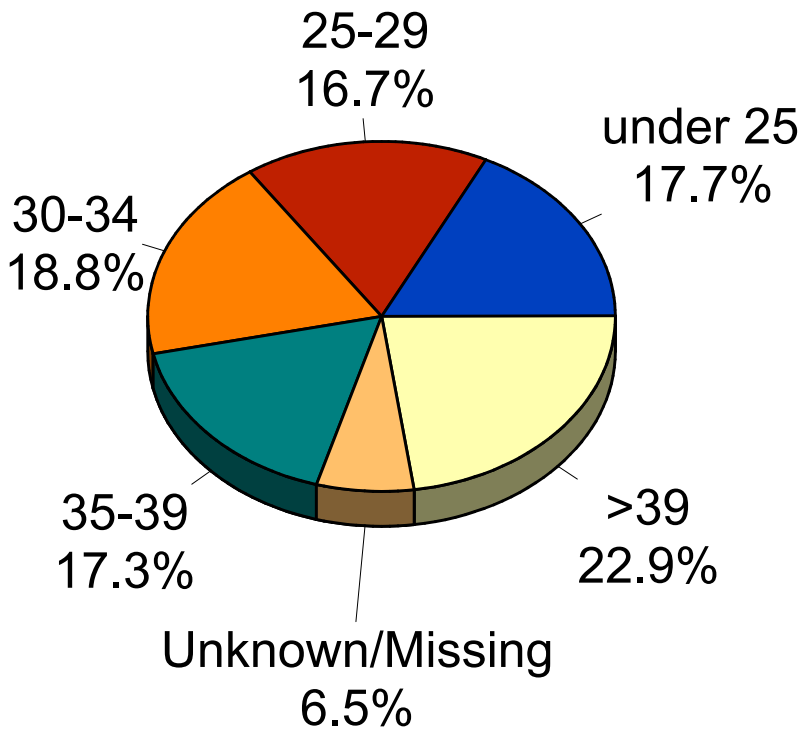


MEN
(n=4,876)

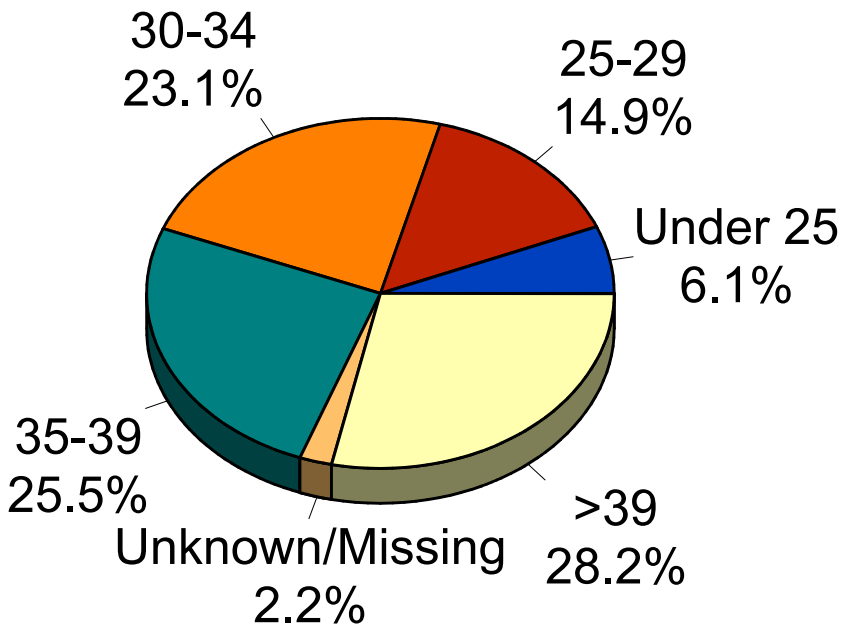


WOMEN
(n=719)

Figure B: Age Distribution of Entering Inmates by Gender

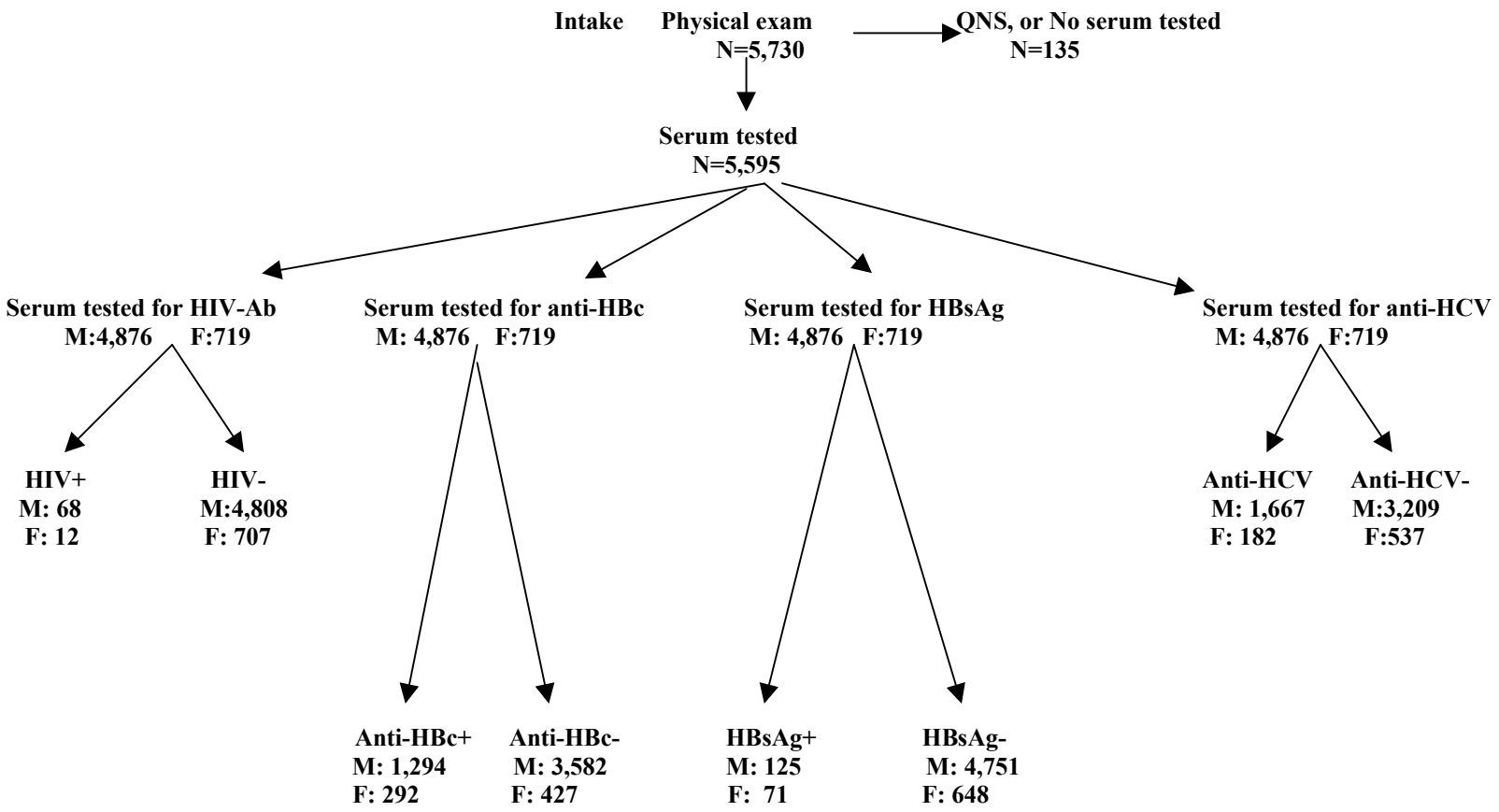


MEN
(n=4,876)



WOMEN
(n=719)

Figure C: Data Collection and Serological Tests



QNS=Quantity Not Sufficient
Source: DHS, OA, 2000

TABLES

Table 1
HIV Seroprevalence Among Inmates Entering Prison at the California Department of Corrections, 1999
By Gender and Race/Ethnicity

Gender and Race/Ethnicity	N (% of Column total)	% HIV Positive (% of Column Total)*	%HIV Positive within each row (95% CI)**	Odds Ratio (95% CI)
MEN				
White	1,128 (23.1)	15 (22.0)	1.3 (0.7-2.2)	1.0 (Ref.)
African American	1,335 (27.4)	31 (45.6)	2.3 (1.6-3.3)	1.8 (1.0-3.3)
Latino	1,672 (34.3)	11 (16.2)	0.6 (0.3-1.2)	0.5 (0.2-1.1)
Asian/Pacific Islander	72 (1.5)	1 (1.5)	1.4 (0.0-7.5)	1.0 (0.1-7.7)
American Indian/Alaskan Native	41 (0.8)	0 (0.0)	0.0 (0.0-8.6)	a
Unknown/Missing	628 (12.9)	10 (14.7)	1.6 (0.8-2.9)	1.2 (0.5-2.6)
Sub-Total **MEN**	**4,876 (100)**	**68 (100)**	**1.4 (1.1-1.8)**	
WOMEN				
White	225 (31.3)	1 (8.3)	0.4 (0.0-2.5)	1.0 (Ref.)
African American	251 (34.9)	7 (58.3)	2.8 (1.1-5.7)	6.4 (0.8-52.8)
Latino	181 (25.2)	2 (16.7)	1.1 (0.1-3.9)	2.5 (0.2-27.8)
Asian/Pacific Islander	5 (0.7)	0 (0.0)	0.0 (0.0-52.0)	a
American Indian/Alaskan Native	10 (1.4)	0 (0.0)	0.0 (0.0-31.0)	a
Unknown/Missing	47 (6.5)	2 (16.7)	4.3 (0.5-14.5)	10.2 (0.9-115.4)
Sub-Total **WOMEN**	**719 (100)**	**12 (100)**	**1.7 (0.9-2.9)**	
TOTAL	**5,595**	**80**	**1.4 (1.1-1.8)**	

* Number HIV reactive and percent of column total.
** % HIV positive and 95% Confidence Interval within each stratum (row)
a Odds ratios not computed because of too few events for meaningful analysis.
Note: Percents are rounded independently and may not sum to 100%

Table 2
HIV Seroprevalence Among Inmates Entering Prison at the California Department of Corrections, 1999
By Gender and Age Group

Gender and Race/Ethnicity	N (% of Column total)	% HIV Positive (% of Column Total)*	%HIV Positive within each row (95% CI)**	Odds Ratio (95% CI)
MEN				
Under 25	865 (17.7)	2 (2.9)	0.2 (0.0-0.8)	1.0 (Ref.)
25-29	815 (16.7)	7 (10.3)	0.9 (0.3-1.8)	3.7 (0.8-18.0)
30-34	919 (18.9)	17 (25.0)	1.8 (1.1-2.9)	8.2 (1.9-35.4)
35-39	842 (17.3)	22 (32.4)	2.6 (1.6-3.9)	11.6 (2.7-49.4)
> 39	1,117 (22.9)	14 (20.6)	1.3 (0.7-2.1)	5.5 (1.3-24.3)
Unknown/Missing	318 (6.5)	6 (8.8)	1.9 (0.7-4.1)	8.3 (1.7-41.4)
Sub-Total **MEN**	**4,876 (100)**	**68 (100)**	**1.4 (1.1-1.8)**	
WOMEN				
Under 25	44 (6.1)	0 (0.0)	0.0 (0.0-8.0)	a
25-29	107 (14.9)	2 (16.7)	1.9 (0.2-6.6)	1.0 (Ref.)
30-34	166 (23.1)	1 (8.3)	0.6 (0.0-3.3)	0.3 (0.0-3.6)
35-39	183 (25.5)	6 (50.0)	3.3 (1.2-7.0)	1.8 (0.4-9.0)
> 39	203 (28.2)	2 (16.7)	1.0 (0.1-3.5)	0.5 (0.1-3.8)
Unknown/Missing	16 (2.2)	1 (8.3)	6.3 (0.2-30.2)	3.5 (0.3-41.0)
Sub-Total **WOMEN**	**719 (100)**	**12 (100)**	**1.7 (0.9-2.9)**	
TOTAL	**5,595**	**80**	**1.4 (1.1-1.8)**	

* Number HIV reactive and percent of column total.
** % HIV positive and 95% Confidence Interval within each stratum (row)
a Odds Ratio not computed because of too few events for meaningful analysis.
Note: Percents are rounded independently and may not sum to 100%

Table 3
Current/Chronic and Past HBV Seroprevalence Among Inmates Entering Prison at the California Department of Corrections, 1999
By Gender and Race/Ethnicity

Gender and Race/Ethnicity	N (% column total)	Current/Chronic HBV Infection			Past HBV Infection		
		HBsAg Reactive (% column total)*	%HBsAg Reactive within each row (95% CI)**	Odds Ratio (95% CI)	Anti-HBc Reactive (% column total)*	%Anti-HBc Reactive within each row (95% CI)**	Odds Ratio (95% CI)
MEN							
White	1,128 (23.1)	45 (36.0)	4.0 (2.9-5.3)	1.0 (Ref.)	369 (28.5)	32.7 (30.0-35.5)	1.0 (Ref.)
African American	1,335 (27.4)	32 (25.6)	2.4 (1.6-3.3)	0.6 (0.4-0.9)	324 (25.0)	24.3 (22.0-26.7)	0.7 (0.6-0.8)
Latino	1,672 (34.3)	28 (22.4)	1.7 (1.1-2.4)	0.4 (0.3-0.7)	388 (13.0)	23.2 (21.2-25.3)	0.6 (0.5-0.7)
Asian/Pacific Islander	72 (1.5)	8 (6.4)	11.1 (4.9-20.7)	3.0 (1.4-6.7)	24 (1.9)	33.3 (22.7-45.4)	1.0 (0.6-1.7)
American Indian/Alaskan Native	41 (0.8)	1 (0.8)	2.4 (0.1-12.9)	0.6 (0.1-4.5)	15 (1.2)	36.6 (22.1-53.1)	1.2 (0.6-2.3)
Unknown/Missing	628 (12.9)	11 (8.8)	1.8 (0.9-3.1)		174 (13.5)	27.7 (24.2-31.4)	0.8 (0.6-1.0)
Sub-Total **MEN**	**4,876 (100)**	**125 (100)**	**2.6 (2.1-3.0)**		**1,294 (100)**	**26.5 (25.3-27.8)**	
WOMEN							
White	225 (31.3)	19 (26.8)	8.4 (5.2-12.9)	1.0 (Ref.)	88 (30.1)	39.1 (32.7-45.8)	1.0 (Ref.)
African American	251 (34.9)	30 (42.3)	12.0 (8.2-16.6)	1.5 (0.8-2.7)	95 (32.5)	37.8 (31.8-44.2)	0.9 (0.7-1.4)
Latino	181 (25.2)	13 (18.3)	7.2 (3.9-12.0)	0.8 (0.4-1.7)	82 (28.1)	45.3 (37.9-52.9)	1.3 (0.9-1.9)
Asian/Pacific Islander	5 (0.7)	0 (0.0)	0.0 (0-52.0)	a	0 (0.0)	0.0 (0-52.0)	a
American Indian/Alaskan Native	10 (1.4)	1 (1.4)	10.0 (0.3-44.5)	1.2 (0.1-10.0)	1 (0.3)	10.0 (0.3-44.5)	0.2 (0.0-1.4)
Unknown/Missing	47 (6.5)	8 (11.3)	17.0 (7.6-30.8)	2.2 (0.9-5.4)	22 (7.5)	46.8 (32.1-61.9)	1.4 (0.7-2.6)
Sub-Total **WOMEN**	**719 (100)**	**71 (100)**	**9.9 (7.8-12.3)**		**292 (100)**	**40.6 (37.0-44.3)**	
Total	**5,595**	**196**	**3.5 (3.0-4.0)**		**1,586**	**28.3 (27.1-29.5)**	

* Number reactive for HBV surface antigens (HbsAg) or HBV core antibodies (Anti-HBc) and percent within column
** % HBsAg or anti-HBc reactive and 95% Confidence Interval within stratum (row).
a Odds ratio not computed because of too few events for meaningful analysis.
Note: Percents are rounded independently and may not sum to 100%.

Table 4
Current/Chronic and Past HBV Seroprevalence Among Inmates Entering Prison at the California Department of Corrections, 1999
By Gender and Age Group

Gender and Race/Ethnicity	N (% column total)	Current/Chronic HBV Infection			Past HBV Infection		
		HBsAg Reactive (% column total)*	%HBsAg Reactive within each row (95% CI)**	Odds Ratio (95% CI)	Anti-HBc Reactive (% column total)*	%Anti-HBc Reactive within each row (95% CI)**	Odds Ratio (95% CI)
MEN							
Under 25	865 (17.7)	5 (4.0)	0.6 (0.2-1.3)	1.0 (Ref.)	54 (4.2)	6.2 (4.7-8.1)	1.0 (Ref.)
25-29	815 (16.7)	11 (8.8)	1.3 (0.7-2.4)	2.4 (0.8-6.8)	100 (7.7)	12.3 (10.1-14.7)	2.1 (1.5-3.0)
30-34	919 (18.9)	21 (16.8)	2.3 (1.4-3.5)	4.0 (1.5-10.7)	217 (16.8)	23.6 (20.9-26.5)	4.6 (3.4-6.4)
35-39	842 (17.3)	27 (21.6)	3.2 (2.1-4.6)	5.7 (2.2-14.9)	286 (22.1)	34.0 (30.8-37.3)	7.7 (5.7-10.5)
> 39	1,117 (22.9)	55 (44.0)	4.9 (3.7-6.3)	8.9 (3.6-22.4)	553 (42.7)	49.5 (46.5-52.5)	14.7 (10.9-19.8)
Unknown/Missing	318 (6.5)	6 (4.8)	1.9 (0.7-4.1)	3.3 (1.0-10.9)	84 (6.5)	26.4 (21.7-31.6)	5.4 (3.7-7.8)
Sub-Total **MEN**	**4,876 (100)**	**125 (100)**	**2.6 (2.1-3.0)**		**1,294 (100)**	**26.5 (25.3-27.8)**	
WOMEN							
Under 25	44 (6.1)	2 (2.8)	4.5 (0.6-15.5)	1.0 (Ref.)	5 (1.7)	11.4 (3.8-24.6)	1.0 (Ref.)
25-29	107 (14.9)	8 (11.3)	7.5 (5.3-14.2)	1.7 (0.3-8.3)	22 (7.5)	20.6 (13.4-29.5)	2.0 (0.7-5.5)
30-34	166 (23.1)	12 (16.9)	7.2 (3.8-12.3)	1.6 (0.4-7.6)	66 (22.6)	39.8 (32.3-47.6)	5.1 (2.0-13.3)
35-39	183 (25.5)	16 (22.5)	8.7 (5.1-13.8)	2.0 (0.4-9.1)	83 (28.4)	45.4 (38.0-52.9)	6.5 (2.5-16.6)
>39	203 (28.2)	31 (43.7)	15.3 (10.6-21.0)	3.3 (0.9-16.4)	110 (37.7)	54.2 (47.1-61.2)	9.2 (3.6-23.6)
Unknown/Missing	16 (2.2)	2 (2.8)	12.5 (0.4-23.3)	3.0 (0.4-23.3)	6 (2.1)	37.5 (15.2-64.6)	4.7 (1.2-17.7)
Sub-Total **WOMEN**	**719 (100)**	**71 (100)**	**9.9 (7.8-12.3)**		**292 (100)**	**40.6 (37.0-44.3)**	
Total	**5,595**	**196**	**3.5 (3.0-4.0)**		**1,586**	**28.3 (27.1-29.5)**	

* Number HBV reactive for surface antigens (HbsAg) or HBV core antibodies (Anti-HBc) and percent within column
** % HBsAg or anti-HBc reactive and 95% Confidence Interval within stratum (row).
Note: Percents are rounded independently and may not sum to 100%.

Table 5
Anti-HCV Seroprevalence Among Inmates Entering Prison at the California Department of Corrections, 1999
By Gender and Race/Ethnicity

Gender and Race/Ethnicity	N (% of Column total)	Anti-HCV Positive (% of Column Total)*	%Anti-HCV Positive within each row (95% CI)**	Odds Ratio (95% CI)
MEN				
White	1,128 (23.1)	410 (24.6)	36.3 (33.5-39.2)	1.0 (Ref.)
African American	1,335 (27.4)	451 (27.1)	33.8 (31.2-36.4)	0.9 (0.8-1.1)
Latino	1,672 (34.3)	602 (36.1)	36.0 (33.7-38.4)	1.0 (0.8-1.2)
Asian/Pacific Islander	72 (1.5)	28 (1.7)	38.9 (27.6-51.1)	1.1 (0.7-1.8)
American Indian/Alaskan Native	41 (0.8)	15 (0.9)	36.6 (22.1-53.1)	1.0 (0.5-2.0)
Unknown/Missing	628 (12.9)	161 (9.7)	25.6 (22.3-29.2)	0.6 (0.5-0.8)
Sub-Total **MEN**	**4,876 (100)**	**1,667 (100)**	**34.2 (32.9-35.5)**	
WOMEN				
White	225 (31.3)	59 (32.4)	26.2 (20.6-32.5)	1.0 (Ref.)
African American	251 (34.9)	73 (40.1)	29.1 (23.5-35.1)	1.2 (0.8-1.7)
Latino	181 (25.2)	43 (23.6)	23.8 (17.8-30.6)	0.9 (0.6-1.4)
Asian/Pacific Islander	5 (0.7)	1 (0.6)	20.0 (0.5-71.6)	0.7 (0.1-6.4)
American Indian/Alaskan Native	10 (1.4)	1 (0.6)	10.0 (0.3-44.5)	0.3 (0.0-2.5)
Unknown/Missing	47 (6.5)	5 (2.8)	10.6 (3.5-23.1)	0.3 (0.1-0.9)
Sub-Total **WOMEN**	**719 (100)**	**182 (100)**	**25.3 (22.2-28.7)**	
TOTAL	**5,595**	**1,849**	**33.0 (31.8-34.3)**	

* Number anti-HCV reactive and percent of column total.
** % anti-HCV positive and 95% Confidence Interval within each stratum (row)
Note: Percents are rounded independently and may not sum to 100%

Table 6
Anti-HCV Seroprevalence Among Inmates Entering Prison at the California Department of Corrections, 1999
By Gender and Age Group

Gender and Race/Ethnicity	N (% of Column total)	Anti-HCV Positive (% of Column Total)*	%Anti-HCV Positive within each row (95% CI)**	Odds Ratio (95% CI)
MEN				
Under 25	865 (17.7)	300 (18.0)	34.7 (31.5-38.0)	1.0 (Ref.)
25-29	815 (16.7)	274 (16.4)	33.6 (30.4-37.0)	0.9 (0.8-1.2)
30-34	919 (18.9)	329 (19.7)	35.8 (32.7-39.0)	1.1 (0.9-1.3)
35-39	842 (17.3)	313 (18.8)	37.2 (33.9-40.5)	1.1 (0.9-1.4)
> 39	1,117 (22.9)	409 (24.5)	36.6 (33.8-39.5)	1.1 (0.9-1.3)
Unknown/Missing	318 (6.5)	42 (2.5)	13.2 (9.7-17.4)	0.3 (0.2-0.4)
Sub-Total **MEN**	**4,876 (100)**	**1,667 (100)**	**34.2 (32.9-35.5)**	
WOMEN				
Under 25	44 (6.1)	10 (5.5)	22.7 (11.5-37.8)	1.0 (Ref.)
25-29	107 (14.9)	34 (18.7)	31.8 (23.1-41.5)	1.6 (0.7-3.6)
30-34	166 (23.1)	39 (21.4)	23.5 (17.3-30.7)	1.0 (0.5-2.3)
35-39	183 (25.5)	48 (26.4)	26.2 (20.0-33.2)	1.2 (0.6-2.6)
> 39	203 (28.2)	50 (27.5)	24.6 (18.9-31.2)	1.1 (0.5-2.4)
Unknown/Missing	16 (2.2)	6 (0.6)	37.5 (15.2-64.6)	2.0 (0.6-7.0)
Sub-Total **WOMEN**	**719 (100)**	**182 (100)**	**25.3 (22.2-28.7)**	
TOTAL	**5,595**	**1,849**	**33.0 (31.8-34.3)**	

* Number anti-HCV reactive and percent of column total.
** % anti-HCV positive and 95% Confidence Interval within each stratum (row)
Note: Percents are rounded independently and may not sum to 100%

Table 7
Markers for Co-infection with HIV and HBV Among Anti-HCV Positive and Anti-HCV Negative Male and Female Inmates Entering Prison at the California Department of Corrections, 1999

Serological Marker	MEN		WOMEN	
	Anti-HCV (+) (n=1667) n(%)	Anti-HCV (-) (n=2925) n(%)	Anti-HCV (+) (n=182) n(%)	Anti-HCV (-) (n=529) n(%)
No HIV or HBV Infection	1,219 (73.1)	2,121 (72.5)	110 (61.1)	308 (58.2)
HIV (+)	24 (1.4)	40 (1.4)	1 (0.5)	11 (2.1)
Anti-HBc (+)	435 (26.1)	778 (26.6)	71 (39.0)	218 (41.2)
HBsAg (+)	40 (2.4)	79 (2.7)	15 (8.2)	54 (10.2)
Anti-HBc(+) and HIV (+)	12 (0.7)	15 (0.5)	0 (0.0)	8 (1.5)
HBsAg (+) and HIV (+)	2 (0.12)	1 (0.03)	0 (0.0)	5 (0.9)
Anti-HBc (+) and HBsAg (+) And HIV (+)	2 (0.12)	1 (0.03)	0 (0.0)	5 (0.9)

Table 8
Risk Factors for HIV infection Among Inmates Entering Prison at the California Department of Corrections, 1999*
By Gender

	MALE (N=4675)			FEMALE (N=712)		
Risk Factors	**HIV Positive (% of column total) †‡**	**HIV Negative (% of column total)**	**Odds Ratio (95% CI)**	**HIV Positive (% of column total) †‡**	**HIV Negative (% of column total)**	**Odds Ratio (95% CI)**
Inject Drugs Ever						
Yes	23 (35.9)	1120 (24.29)	1.8 (1.1-3.2)	4 (33.3)	409 (58.43)	0.4 (0.1-1.4)
No	29 (45.3)	2574 (55.82)		4 (33.3)	140 (20.0)	
Had Sex wth HIV Positive Individual Ever						
Yes	1 (1.6)	5 (.11)	19.3 (2.0-181.9)	0 (0.0)	4 (.57)	a
No	9 (14.1)	867 (18.80)		3 (25.0)	140 (20.0)	
Had Sex for Money Ever						
Yes	2 (3.1)	48 (1.04)	4.0 (0.8-19.1)	1 (8.3)	37 (5.29)	1.7 (0.2-19.3)
No	9 (14.1)	868 (18.82)		2 (16.7)	120 (17.14)	

* Excludes subjects whose medical records were not reviewed.
† Percents are rounded independently and may not sum to 100%.
a Odds ratio not computed because of too few events for meaningful analysis.
‡ Missing/Unknown data not shown.

Table 9
Risk Factors for Current/Chronic HBV infection Among Inmates Entering Prison at the California Department of Corrections, 1999* By Gender

	MALE (N=1216)			FEMALE (N=76)		
Risk Factors	**HBV Positive (% of column total) †‡**	**HBV Negative (% of column total)**	**Odds Ratio (95% CI)**	**HBV Positive (% of column total) †‡**	**HBV Negative (% column total)**	**Odds Ratio (95% CI)**
Inject Drugs Ever						
Yes	61 (50.4)	437 (39.91)	1.3 (0.9-1.9)	39 (55.7)	144 (67.61)	0.5 (0.2-1.1)
No	49 (40.5)	448 (40.91)		12 (17.1)	23 (10.80)	
Had Sex wth HIV Positive Individual Ever						
Yes	0 (0.0)	3 (.27)	a	1 (1.4)	1 (.47)	3.5 (0.2-60.2)
No	15 (12.4)	207 (18.90)		12 (17.1)	42 (19.72)	
Had Sex for Money Ever						
Yes	1 (0.8)	20 (1.83)	0.7 (0.1-5.3)	7 (10.0)	10 (4.69)	2.9 (0.9-9.8)
No	15 (12.4)	198 (18.08)		8 (11.4)	33 (15.49)	

* Excludes subjects whose medical records were not reviewed.
† Percents are rounded independently and may not sum to 100%.
a Odds ratio not computed because of too few events for meaningful analysis.
‡ Missing/Unknown Data not shown.

Table 10
Risk Factors for Past HBV Infection Among Inmates Entering Prison at the California Department of Corrections, 1999*
By Gender

	MALE (N=4675)			FEMALE (N=712)		
Risk Factors	**Past HBV Positive (% of column total) †‡**	**Past HBV Negative (% of column total)**	**Odds Ratio (95% CI)**	**Past HBV Positive (% of column total) †‡**	**Past HBV Negative (% of column total)**	**Odds Ratio (95% CI)**
Inject Drugs Ever						
Yes	505 (41.1)	638 (18.52)	3.3 (2.8-3.8)	188 (64.4)	225 (53.19)	2.5 (1.6-3.8)
No	503 (40.9)	2100 (60.96)		36 (12.3)	108 (25.53)	
Had Sex wth HIV Positive Individual Ever						
Yes	3 (0.2)	3 (.09)	2.9 (0.6-14.6)	2 (0.7)	2 (.47)	1.6 (0.2-11.7)
No	226 (18.4)	650 (18.87)		55 (18.8)	88 (20.80)	
Had Sex for Money Ever						
Yes	21 (1.7)	29 (.84)	2.3 (1.3-4.0)	18 (6.2)	20 (4.73)	1.8 (0.8-3.7)
No	217 (17.6)	660 (19.16)		41 (14.0)	81 (19.15)	

* Excludes subjects whose medical records were not reviewed.
† Percents are rounded independently and may not sum to 100%.
‡ Missing/Unknown data not shown.

Table 11
Risk Factors for HCV Infection Among Inmates Entering Prison at the California Department of Corrections, 1999*
By Gender

	MALE (N=4592)			FEMALE (N=711)		
Risk Factors	**HCV Positive (% of column total) †‡**	**HCV Negative (% of column total)**	**Odds Ratio (95% CI)**	**HCV Positive (% of column total) †‡**	**HCV Negative (% of column total)**	**Odds Ratio (95% CI)**
Inject Drugs Ever						
Yes	395 (23.7)	730 (24.96)	1.0 (0.8-1.1)	102 (56.0)	310 (58.60)	0.8 (0.6-1.3)
No	917 (55.0)	1648 (56.34)		41 (22.5)	103 (19.47)	
Had Sex wth HIV Positive Individual Ever						
Yes	1 (0.1)	5 (.17)	0.4 (0.0-3.0)	0 (0.0)	4 (.76)	a
No	322 (19.3)	554 (18.94)		33 (15.9)	110 (20.79)	
Had Sex for Money Ever						
Yes	14 (0.8)	35 (1.20)	0.7 (0.4-1.3)	6 (3.3)	32 (6.05)	0.5 (0.2-1.4)
No	324 (19.4)	553 (18.91)		29 (15.9)	93 (17.58)	

* Excludes subjects whose medical records were not reviewed.
† Percents are rounded independently and may not sum to 100%.
a Odds ratios are not computed because of too few event for meaningful analysis.
‡ Missing/Unknown data not shown.

Table 12
Risk Factors for HIV Among Inmates Entering Prison at the California Department of Corrections, 1999

Characteristic		Number (%) with characteristic		Number (%) HIV Seropositive		Odds Ratio (95% CI)
Male- Male Sex Partners(Ever)	No	1134	(24.2)	11	(1.0)	1
	Yes	14	(0.3)	2	(14.3)	17.02 (3.40-85.16)
	Unk	3539	(75.5)	50	(1.4)	1.46 (0.76-2.82)
Male-Male Sex Partners Male (Yr)	No	438	(9.34)	2	(0.5)	1
	Yes	2	(0.04)	0		a
	Unk	4247	(90.6)	61	(1.4)	3.18 (0.77-13.04)
Male- Female Sex Partners(Ever)	No	22	(0.5)	2	(9.1)	1
	Yes	2031	(43.3)	28	(1.4)	0.14 (0.03-0.63)
	Unk	2634	(56.2)	33	(1.3)	0.13 (0.03-0.57)
Male-Female Sex Partners Male (Yr)	No	69	(1.5)	0		1
	Yes	1068	(22.8)	15	(1.4)	a
	Unk	3550	(75.7)	48	(1.4)	a
Female- Female Sex Partners(Ever)	No	146	(20.3)	2	(1.4)	1
	Yes	107	(14.9)	1	(0.9)	0.68 (0.06-7.59)
	Unk	466	(64.8)	9	(1.9)	1.42 (0.30-6.64)
Female-Female Sex Partners Male (Yr)	No	127	(17.7)	2	(1.6)	1
	Yes	35	(4.9)	1	(2.9)	1.84 (0.16-20.88)
	Unk	557	(77.5)	9	(1.6)	1.03 (0.22-4.81)
Female- Male Sex Partners(Ever)	No	19	(2.6)	1	(5.3)	1
	Yes	599	(83.3)	7	(1.2)	0.21 (0.02-1.82)
	Unk	101	(14.1)	4	(4.0)	0.74 (0.08-7.03)
Female-Male Sex Partners Male (Yr)	No	33	(4.6)	1	(3.0)	1
	Yes	257	(35.7)	5	(2.0)	0.63 (0.07-5.61)
	Unk	429	(59.7)	6	(1.4)	0.45 (0.05-3.89)
Sex w/ HIV (Ever)	No	1019	(18.9)	12	(1.2)	1
	Yes	10	(0.2)	1	(10.0)	9.32 (1.09-79.48)
	Unk	4377	(81.0)	62	(1.4)	1.21 (0.65-2.25)
Sex w/ HIV (Yr)	No	558	(10.3)	4	(0.7)	1
	Yes	3	(0.1)	0		a
	Unk	4845	(89.6)	71	(1.5)	2.06 (0.75-5.66)
G/R Sex for DM (Ever)	No	999	(18.5)	11	(1.1)	1
	Yes	87	(1.6)	2	(2.3)	2.11 (0.46-9.69)
	Unk	4320	(79.9)	62	(1.4)	1.31 (0.69-2.49)
G/R sex for DM (Yr)	No	553	(10.2)	3	(0.5)	1
	Yes	38	(0.7)	1	(2.6)	4.95 (0.50-48.81)
	Unk	4815	(89.1)	71	(1.5)	2.74 (0.86-8.74)
Sex w/ IDU (Ever)	No	924	(17.1)	11	(1.2)	1
	Yes	136	(2.5)	2	(1.5)	1.24 (0.27-5.65)
	Unk	4346	(80.4)	62	(1.4)	1.20 (0.63-2.29)
Sex w/ IDU (Yr)	No	523	(9.7)	4	(0.8)	1
	Yes	68	(1.3)	1	(1.5)	1.94 (0.21-17.58)
	Unk	4815	(89.1)	70	(1.5)	1.91 (0.70-5.27)
IDU (Ever)	No	2751	(50.9)	32	(1.2)	1
	Yes	1567	(29.0)	27	(1.7)	1.49 (0.89-2.50)
	Unk	1088	(20.1)	16	(1.5)	1.27 (0.69-2.32)
IDU (Yr)	No	1984	(36.7)	18	(0.9)	1
	Yes	733	(13.6)	19	(2.6)	2.90 (1.52-5.57)
	Unk	2689	(49.7)	38	(1.4)	1.57 (0.89-2.75)
Heroin	Yes	656	(47.3)	6	(0.9)	0.37 (0.14-0.93)
Cocaine	Yes	615	(44.4)	13	(1.7)	1.06 (0.47-2.38)
Other	Yes	457	(33.0)	12	(2.6)	2.06 (0.92-4.62)
Non-IDU (Ever)	No	1915	(35.4)	27	(1.4)	1
	Yes	1769	(32.7)	28	(1.6)	1.12 (0.66-1.91)
	Unk	1722	(31.9)	20	(1.2)	0.82 (0.46-1.47)

Table 12 (Continued)

Characteristic		Number (%) with characteristic		Number (%) HIV Seropositive		Odds Ratio (95% CI)
Non-IDU (Yr)	No	1249	(23.1)	17	(1.4)	1
	Yes	969	(17.9)	20	(2.1)	1.53 (0.80-2.93)
	Unk	3188	(59.0)	38	(1.2)	0.87 (0.49-1.55)
Heroin	Yes	259	(16.3)	3	(1.2)	0.77 (0.23-2.60)
Crack	Yes	483	(30.5)	6	(1.2)	0.80 (0.31-2.05)
Other	Yes	1053	(66.1)	17	(1.6)	1.46 (0.57-3.72)
Sex w/ Bi Male/Ever (Females Only)	No	160	(22.3)	4	(2.5)	1
	Yes	21	(2.9)	0		a
	Unk	538	(74.8)	8	(1.5)	0.59 (0.17-1.98)
Sex w/ Bi Male (Yr) (Females Only)	No	105	(14.6)	2	(2.9)	1
	Yes	4	(0.6)	0		a
	Unk	610	(84.8)	9	(1.5)	0.51 (0.14-1.91)
Previous Incarcerations -	None	41	(0.9)	0		a
	1	3184	(67.9)	38	(1.2)	0.65 (0.16-2.74)
	2-4	1355	(28.9)	25	(1.9)	1.02 (0.24-4.34)
	5+	110	(2.4)	2	(1.8)	1
Arrested for	Drugs	2101	(45.2)	36	(1.7)	1.51 (0.92-2.48)
	Assault	548	(11.8)	3	(0.6)	0.36 (0.11-1.14)
	DUI	184	(4.0)	1	(0.5)	0.38 (0.05-2.72)
	Gun	265	(5.7)	2	(0.8)	0.52 (0.13-2.14)
	Murder	119	(2.6)	0		a
	Sex Crimes	207	(4.5)	5	(2.4)	1.81 (0.72-4.55)
	Theft	2036	(43.8)	29	(1.4)	1.03 (0.63-1.69)
	White Collar	150	(3.2)	4	(2.7)	1.99 (0.71-5.55)
	Other Crime	498	(10.7)	5	(1.0)	0.69 (0.28-1.73)

[a] Represents an odds ratio that could not be calculated due to zero in one or more of the cells.

Note: IDU= Injecting Drug Use. G/R sex for DM= Give and receive sex for drugs or money.

Table 13
Risk Factors for Past and Current HBV Infection Among Inmates entering Prison at the California Department of Corrections, 1999

Characteristic		Number (%) with characteristic		Number (%) HBV Current Infection		Odds Ratio (95% CI)	Number (%) HBV Past Infection		Odds Ratio (95% CI)
Male- Male Sex Partners(Ever)	No	1134	(24.2)	25	(2.2)	1	266	(23.5)	1
	Yes	14	(0.3)	1	(7.1)	4.78 (0.57-40.36)	6	(42.9)	2.70 (0.90-8.10)
	Unk	3539	(75.5)	95	(2.7)	1.22 (0.78-1.90)	822	(23.2)	0.99 (0.84-1.16)
Male-Male Sex Partners Male (Yr)	No	438	(9.34)	8	(1.8)	1	105	(24.0)	1
	Yes	2	(0.04)	0		a	1	(50.0)	3.08 (0.19-49.61)
	Unk	4247	(90.6)	113	(2.7)	1.46 (0.70-3.01)	988	(23.3)	0.97 (0.77-1.22)
Male- Female Sex Partners(Ever)	No	22	(0.5)	1	(4.6)	1	6	(27.3)	1
	Yes	2031	(43.3)	64	(3.2)	0.66 (0.09-5.08)	505	(24.9)	0.87 (0.34-2.25)
	Unk	2634	(56.2)	56	(2.1)	0.42 (0.05-3.25)	583	(22.1)	0.73 (0.28-1.90)
Male-Female Sex Partners Male (Yr)	No	69	(1.5)	2	(2.9)	1	15	(21.7)	1
	Yes	1068	(22.8)	35	(3.3)	1.18 (0.28-5.04)	257	(24.1)	1.16 (0.64-2.09)
	Unk	3550	(75.7)	84	(2.4)	0.83 (0.20-3.46)	822	(75.1)	1.08 (0.61-1.93)
Female- Female Sex Partners(Ever)	No	146	(20.3)	15	(10.3)	1	36	(24.7)	1
	Yes	107	(14.9)	7	(6.5)	0.61 (0.24-1.57)	28	(26.2)	1.02 (0.57-1.82)
	Unk	466	(64.8)	49	(10.5)	1.18 (0.63-2.20)	150	(32.2)	1.50 (0.97-2.31)
Female- Female Sex Partners Male (Yr)	No	127	(17.7)	13	(10.2)	1	32	(25.2)	1
	Yes	35	(4.9)	4	(11.4)	1.25 (0.37-4.23)	11	(31.4)	1.39 (0.60-3.23)
	Unk	557	(77.5)	54	(9.7)	1.03 (0.54-1.98)	171	(30.7)	1.33 (0.85-2.08)
Female- Male Sex Partners(Ever)	No	19	(2.6)	2	(10.5)	1	6	(31.6)	1
	Yes	599	(83.3)	58	(9.7)	0.87 (0.19-4.04)	171	(28.6)	0.86 (0.31-2.36)
	Unk	101	(14.1)	11	(10.9)	1.19 (0.23-6.12)	37	(36.6)	1.33 (0.45-3.92)
Female-Male Sex Partners Male (Yr)	No	33	(4.6)	5	(15.2)	1	8	(24.2)	1
	Yes	257	(35.7)	29	(11.3)	0.74 (0.26-2.14)	70	(27.2)	1.12 (0.47-2.67)
	Unk	429	(59.7)	37	(8.6)	0.59 (0.21-1.67)	136	(31.7)	1.35 (0.58-3.16)
Sex w/ HIV (Ever)	No	1019	(18.9)	27	(2.7)	1	249	(24.4)	1
	Yes	10	(0.2)	1	(10.0)	5.47 (0.62-48.41)	4	(40.0)	2.37 (0.63-8.90)
	Unk	4377	(81.0)	164	(3.8)	1.43 (0.94-2.16)	1055	(24.1)	1.00 (0.85-1.17)
Sex w/ HIV (Yr)	No	558	(10.3)	21	(3.8)	1	143	(25.6)	1
	Yes	3	(0.1)	0		a	2	(66.7)	5.47 (0.49-60.77)
	Unk	4845	(89.6)	171	(3.5)	0.91 (0.57-1.45)	1163	(24.0)	0.91 (0.74-1.12)
G/R Sex for DM (Ever)	No	999	(18.5)	23	(2.3)	1	231	(23.1)	1
	Yes	87	(1.6)	8	(9.2)	5.26 (2.24-12.37)	29	(33.3)	1.90 (1.17-3.08)
	Unk	4320	(79.9)	161	(3.7)	1.68 (1.08-2.62)	1048	(24.3)	1.09 (0.92-1.28)
G/R sex for DM (Yr)	No	553	(10.2)	19	(3.4)	1	133	(24.1)	1
	Yes	38	(0.7)	4	(2.1)	4.19 (1.30-13.47)	14	(36.8)	2.09 (1.03-4.26)
	Unk	4815	(89.1)	169	(3.5)	1.02 (0.63-1.66)	1161	(24.1)	1.00 (0.81-1.23)
Sex w/ IDU (Ever)	No	924	(17.1)	17	(1.8)	1	194	(21.0)	1
	Yes	136	(2.5)	10	(7.4)	6.62 (2.91-15.07)	62	(45.6)	3.60 (2.45-5.29)
	Unk	4346	(80.4)	165	(3.8)	2.21 (1.33-3.67)	1052	(24.2)	1.24 (1.04-1.47)
Sex w/ IDU (Yr)	No	523	(9.7)	16	(3.1)	1	120	(22.9)	1
	Yes	68	(1.3)	5	(7.4)	3.53 (1.22-10.22)	28	(41.2)	2.64 (1.53-4.52)
	Unk	4815	(89.1)	171	(3.6)	1.18 (0.70-2.00)	1160	(24.1)	1.07 (0.86-1.33)
IDU (Ever)	No	2751	(50.9)	61	(2.2)	1	470	(17.1)	1
	Yes	1567	(29.0)	103	(6.6)	4.29 (3.10-5.95)	582	(37.1)	3.15 (2.72-3.64)
	Unk	1088	(20.1)	28	(2.6)	1.27 (0.80-2.00)	256	(23.5)	1.50 (1.27-1.79)
IDU (Yr)	No	1984	(36.7)	47	(2.4)	1	350	(17.6)	1
	Yes	733	(13.6)	49	(6.7)	4.14 (2.74-6.28)	282	(38.5)	3.20 (2.64-3.88)
	Unk	2689	(49.7)	96	(3.6)	1.70 (1.19-2.42)	676	(25.1)	1.61 (1.39-1.86)
Heroin	Yes	656	(47.3)	58	(8.8)	2.64 (1.17-4.05)	320	(48.8)	3.00 (2.38-3.78)
Cocaine	Yes	615	(44.4)	44	(7.2)	0.93 (0.61-1.42)	209	(34.0)	0.79 (0.63-0.98)
Other	Yes	457	(33.0)	23	(5.0)	0.50 (0.30-0.81)	138	(30.2)	0.59 (0.46-0.76)
Non-IDU (Ever)	No	1915	(35.4)	49	(2.6)	1	392	(20.5)	1
	Yes	1769	(32.7)	90	(5.1)	2.30 (1.61-3.29)	500	(28.3)	1.60 (1.37-1.86)
	Unk	1722	(31.9)	53	(3.1)	1.27 (0.86-1.89)	416	(24.2)	1.24 (1.07-1.46)

Table 13 (continued)

Characteristic		Number (%) with characteristic		Number (%) HBV Current Infection		Odds Ratio (95% CI)	Number (%) HBV Past Infection		Odds Ratio (95% CI)
Non-IDU (Yr)	No	1249	(23.1)	37	(3.0)	1	275	(22.0)	1
	Yes	969	(17.9)	42	(4.3)	1.64 (1.04-2.58)	276	(28.5)	1.45 (1.19-1.76)
	Unk	3188	(59.0)	113	(3.5)	1.24 (0.85-1.81)	757	(23.8)	1.11 (0.95-1.30)
Heroin	Yes	259	(16.3)	17	(6.6)	2.21 (1.25-3.92)	116	(44.8)	2.67 (2.01-3.54)
Crack	Yes	483	(30.5)	29	(6.0)	1.41 (0.87-2.29)	125	(25.9)	0.88 (0.69-1.12)
Other	Yes	1053	(66.1)	41	(3.9)	0.55 (0.34-0.88)	273	(25.9)	0.72 (0.57-0.91)
Sex w/ Bi Male/Ever (Females Only)	No	160	(22.3)	11	(6.9)	1	44	(27.5)	1
	Yes	21	(2.9)	1	(4.8)	0.63 (0.08-5.24)	5	(23.8)	0.79 (0.27-2.35)
	Unk	538	(74.8)	59	(11.0)	1.81 (0.92-3.58)	165	(30.7)	1.27 (0.85-1.89)
Sex w/ Bi Male /Yr (Females Only)	No	105	(14.6)	9	(8.6)	1	27	(25.7)	1
	Yes	4	(0.6)	0		a	1	(25.0)	0.84 (0.08-8.43)
	Unk	610	(84.8)	62	(10.2)	1.32 (0.62-2.77)	186	(30.5)	1.32 (0.81-2.13)
Previous Incarcerations	None	41	(0.9)	0		a	2	(4.9)	0.04 (0.00-0.17)
	1	3184	(67.9)	96	(3.0)	0.22 (0.10-0.49)	702	(22.1)	0.22 (0.15-0.34)
	2-4	1355	(28.9)	60	(4.4)	0.37 (0.16-0.81)	387	(28.6)	0.33 (0.22-0.49)
	5+	110	(2.4)	8	(7.3)	1	58	(52.7)	1
Arrested for	Drugs	2101	(45.2)	85	(4.1)	1.38 (1.01-1.89)	557	(26.5)	1.22 (1.06-1.39)
	Assault	548	(11.8)	8	(1.5)	0.34 (0.17-0.70)	102	(18.6)	0.65 (0.52-0.82)
	DUI	184	(4.0)	3	(1.6)	0.44 (0.14-1.38)	44	(23.9)	0.93 (0.66-1.32)
	Gun	265	(5.7)	4	(1.5)	0.37 (0.14-1.02)	53	(20.0)	0.73 (0.53-0.99)
	Murder	119	(2.6)	2	(1.7)	0.39 (0.10-1.61)	15	(12.6)	0.42 (0.24-0.73)
	Sex Crimes	207	(4.5)	4	(1.9)	0.46 (0.17-1.26)	32	(15.5)	0.53 (0.36-0.78)
	Theft	2036	(43.8)	82	(4.0)	1.35 (0.98-1.84)	534	(26.2)	1.18 (1.03-1.35)
	White Collar	150	(3.2)	2	(1.3)	0.36 (0.09-1.48)	39	(26.0)	1.04 (0.72-1.51)
	Other Crime	498	(10.7)	6	(1.2)	0.27 (0.12-0.62)	86	(17.3)	0.58 (0.46-0.74)

[a] Represents an odds ratio that could not be calculated due to zero in one or more of the cells.

Note: IDU=Injecting Drug Use. G/R sex for DM=Give and receive sex for drugs or money.

Table 14
Risk Factors for HCV Infection Among Inmates Entering Prison at the California Department of Corrections, 1999

Characteristic		Number (%) with characteristic		Number (%) HCV Infection		Odds Ratio (95% CI)
Male- Male Sex Partners (Ever)	No	1134	(24.2)	365	(32.2)	1
	Yes	14	(0.3)	6	(42.9)	1.58 (0.54-1.21)
	Unk	3539	(75.5)	1178	(33.3)	1.05 (0.91-1.21)
Male-Male Sex Partners Male (Yr)	No	438	(9.34)	156	(35.6)	1
	Yes	2	(0.04)	1	(50.0)	1.81 (0.11-29.10)
	Unk	4247	(90.6)	1392	(32.8)	0.88 (0.72-1.08)
Male- Female Sex Partners (Ever)	No	22	(0.5)	10	(45.5)	1
	Yes	2031	(43.3)	721	(35.5)	0.66 (0.28-1.54)
	Unk	2634	(56.2)	818	(31.1)	0.54 (0.23-1.26)
Male-Female Sex Partners Male (Yr)	No	69	(1.5)	27	(39.1)	1
	Yes	1068	(22.8)	390	(36.5)	0.90 (0.54-1.48)
	Unk	3550	(75.7)	1132	(31.9)	0.73 (0.45-1.19)
Female- Female Sex Partners (Ever)	No	146	(20.3)	54	(37.0)	1
	Yes	107	(14.9)	42	(39.3)	1.10 (0.66-1.84)
	Unk	466	(64.8)	219	(47.0)	1.51 (1.03-2.21)
Female-Female Sex Partners Male (Yr)	No	127	(17.7)	57	(44.9)	1
	Yes	35	(4.9)	16	(45.7)	1.03 (0.49-2.19)
	Unk	557	(77.5)	242	(43.5)	0.94 (0.64-1.39)
Female- Male Sex Partners (Ever)	No	19	(2.6)	7	(36.8)	1
	Yes	599	(83.3)	264	(44.1)	1.35 (0.52-3.48)
	Unk	101	(14.1)	44	(43.6)	1.32 (0.48-3.64)
Female-Male Sex Partners Male (Yr)	No	33	(4.6)	13	(39.4)	1
	Yes	257	(35.7)	124	(48.3)	1.43 (0.68-3.01)
	Unk	429	(59.7)	178	(41.5)	1.09 (0.53-2.25)
Sex w/ HIV (Ever)	No	1019	(18.9)	336	(33.0)	1
	Yes	10	(0.2)	5	(50.0)	2.03 (0.58-7.07)
	Unk	4377	(81.0)	1523	(34.8)	1.09 (0.94-1.25)
Sex w/ HIV (Yr)	No	558	(10.3)	212	(38.0)	1
	Yes	3	(0.1)	2	(66.7)	3.26 (0.29-36.22)
	Unk	4845	(89.6)	1650	(34.1)	0.84 (0.70-1.01)
G/R Sex for DM (Ever)	No	999	(18.5)	320	(32.0)	1
	Yes	87	(1.6)	37	(42.5)	1.57 (1.01-2.45)
	Unk	4320	(79.9)	1507	(34.9)	1.13 (0.98-1.32)
G/R sex for DM (Yr)	No	553	(10.2)	208	(37.6)	1
	Yes	38	(0.7)	15	(39.5)	1.08 (0.55-2.12)
	Unk	4815	(89.1)	1641	(34.1)	0.86 (0.72-1.03)
Sex w/ IDU (Ever)	No	924	(17.1)	258	(27.9)	1
	Yes	136	(2.5)	90	(66.2)	5.05 (3.44-7.41)
	Unk	4346	(80.4)	1516	(34.9)	1.38 (1.18-1.62)
Sex w/ IDU (Yr)	No	523	(9.7)	183	(35.0)	1
	Yes	68	(1.3)	41	(60.3)	2.82 (1.68-4.74)
	Unk	4815	(89.1)	1640	(34.1)	0.96 (0.79-1.16)
IDU (Ever)	No	2751	(50.9)	601	(21.9)	1
	Yes	1567	(29.0)	908	(58.0)	4.94 (4.32-5.66)
	Unk	1088	(20.1)	355	(32.6)	1.73 (1.48-2.02)
IDU (Yr)	No	1984	(36.7)	477	(24.0)	1
	Yes	733	(13.6)	442	(60.3)	4.80 (4.00-5.74)
	Unk	2689	(49.7)	945	(35.1)	1.71 (1.50-1.95)
Heroin	Yes	656	(47.3)	504	(76.8)	5.29 (4.18-6.69)
Cocaine	Yes	615	(44.4)	303	(49.3)	0.57 (0.46-0.71)
Other	Yes	457	(33.0)	219	(47.9)	0.58 (0.46-0.73)
Non-IDU (Ever)	No	1915	(35.4)	541	(28.3)	1
	Yes	1769	(32.7)	743	(42.0)	1.84 (1.60-2.11)
	Unk	1722	(31.9)	580	(33.7)	1.29 (1.12-1.48)
Non-IDU (Yr)	No	1249	(23.1)	410	(32.8)	1
	Yes	969	(17.9)	394	(40.7)	1.40 (1.18-1.67)
	Unk	3188	(59.0)	1060	(33.3)	1.02 (0.89-1.17)
Heroin	Yes	259	(16.3)	180	(69.5)	4.06 (3.05-5.41)
Crack	Yes	483	(30.5)	191	(39.5)	0.89 (0.72-1.11)
Other	Yes	1053	(66.1)	392	(37.2)	0.60 (0.49-0.75)

Table 14 (continued)

Characteristic		Number (%) with characteristic		Number (%) HCV Infection		Odds Ratio (95% CI)
Sex w/ Bi Male/Ever (Females only)	No	160	(22.3)	59	(36.9)	1
	Yes	21	(2.9)	8	(38.1)	1.46 (1.02-2.10)
	Unk	538	(74.8)	248	(46.1)	1.05 (0.41-2.69)
Sex w/ Bi Male/Yr (Females only)	No	105	(14.6)	43	(41.0)	1
	Yes	4	(0.6)	2	(50.0)	1.44 (0.20-10.63)
	Unk	610	(84.8)	270	(44.3)	1.15 (0.75-1.74)
Previous Incarcerations	None	41	(0.9)	1	(2.4)	0.01 (0.00-0.11)
	1	3184	(67.9)	965	(30.3)	0.25 (0.17-0.37)
	2-4	1355	(28.9)	591	(36.3)	0.44 (0.30-0.66)
	5+	110	(2.4)	70	(63.6)	1
Arrested for	Drugs	2101	(45.2)	764	(36.4)	1.12 (0.99-1.26)
	Assault	548	(11.8)	163	(29.7)	0.76 (0.63-0.93)
	DUI	184	(4.0)	58	(31.5)	0.85 (0.62-1.17)
	Gun	265	(5.7)	65	(24.5)	0.59 (0.44-0.78)
	Murder	119	(2.6)	20	(16.8)	0.37 (0.23-0.60)
	Sex Crimes	207	(4.5)	47	(22.7)	0.53 (0.38-0.74)
	Theft	2036	(43.8)	801	(39.3)	1.41 (1.25-1.59)
	White Collar	150	(3.2)	47	(31.3)	0.84 (0.59-1.20)
	Other Crime	498	(10.7)	132	(26.5)	0.64 (0.52-0.79)

Note: IDU=Injecting Drug Use. G/R sex for DM=Give and receive sex for drugs or money.

Table 15
Risk Factors for CT and GC Infections Among Inmates entering Prison at the California Department of Corrections, 1999

Characteristic		Number (%) with characteristic		Number (%) CT Positive		Odds Ratio (95% CI)	Number (%) GC Positive		Odds Ratio (95% CI)[1]
Male- Male Sex Partners (Ever)	No	194	(22.7)	18	(9.3)	1	0		
	Yes	1	(0.1)	0		a	0		
	Unk	661	(77.2)	68	(10.3)	1.11 (0.64-1.91)	1	(0.2)	
Male-Male Sex Partners Male (Yr)	No	72	(8.4)	8	(11.1)	1	0		
	Yes	0		0		a	0		
	Unk	784	(91.6)	78	(10.0)	0.87 (0.40-1.89)	1	(0.1)	
Male- Female Sex Partners (Ever)	No	2	(0.2)	0		1	0		
	Yes	280	(32.7)	25	(8.9)	a	0		
	Unk	574	(67.1)	61	(10.6)	a	1	(0.2)	
Male-Female Sex Partners Male (Yr)	No	13	(1.5)	1	(7.7)	1	0		
	Yes	143	(16.7)	14	(9.8)	1.19 (0.14-9.95)	0		
	Unk	700	(81.8)	71	(10.1)	1.24 (0.16-9.77)	1	(0.1)	
Female- Female Sex Partners (Ever)	No	146	(20.3)	6	(4.1)	1	0		
	Yes	107	(14.9)	3	(2.8)	0.68 (0.17-2.78)	1	(0.9)	
	Unk	467	(64.9)	16	(3.4)	0.83 (0.32-2.16)	2	(0.4)	
Female-Female Sex Partners Male (Yr)	No	127	(17.6)	7	(5.5)	1	0		
	Yes	35	(4.9)	0		a	1	(2.9)	
	Unk	558	(77.5)	18	(3.2)	0.57 (0.23-1.39)	2	(0.4)	
Female- Male Sex Partners (Ever)	No	20	(2.8)	0		1	0		
	Yes	590	(81.9)	23	(3.9)	a	3	(0.5)	
	Unk	110	(15.3)	2	(1.8)	a	0		
Female-Male Sex Partners Male (Yr)	No	33	(4.6)	0		1	0		
	Yes	256	(35.6)	10	(3.9)	a	2	(0.8)	
	Unk	431	(59.9)	15	(3.5)	a	1	(0.2)	
Sex w/ HIV (Ever)	No	298	(18.9)	22	(7.4)	1	0		
	Yes	4	(0.3)	0		a	0		
	Unk	1274	(80.8)	89	(7.0)	0.94 (0.58-1.52)	4	(0.3)	
Sex w/ HIV (Yr)	No	194	(12.3)	14	(7.2)	1	0		
	Yes	1	(0.1)	0		a	0		
	Unk	1381	(87.6)	97	(7.0)	0.96 (0.54-1.72)	4	(0.3)	
G/R Sex for DM (Ever)	No	284	(18.0)	23	(8.1)	1	0		
	Yes	44	(2.8)	1	(2.3)	0.27 (0.04-2.04)	0		
	Unk	1248	(79.2)	87	(7.0)	0.84 (0.52-1.36)	4	(0.3)	
G/R sex for DM (Yr)	No	193	(12.3)	14	(7.3)	1	0		
	Yes	20	(1.3)	1	(5.0)	0.71 (0.09-5.69)	0		
	Unk	1363	(86.5)	96	(7.0)	0.96 (0.54-1.73)	4	(0.3)	
Sex w/ IDU (Ever)	No	253	(16.1)	21	(8.3)	1	0		
	Yes	60	(3.8)	2	(3.3)	0.38 (0.09-1.69)	0		
	Unk	1263	(80.1)	88	(7.0)	0.82 (0.50-1.35)	4	(0.3)	
Sex w/ IDU (Yr)	No	177	(11.2)	14	(7.9)	1	0		
	Yes	27	(1.7)	0		a	0		
	Unk	1372	(87.1)	97	(7.1)	0.88 (0.49-1.58)	4	(0.3)	
IDU (Ever)	No	696	(44.2)	66	(9.5)	1	2	(0.3)	
	Yes	528	(33.5)	23	(4.4)	0.43 (0.27-0.71)	1	(0.2)	
	Unk	352	(22.3)	22	(6.3)	0.63 (0.38-1.05)	1	(0.3)	
IDU (Yr)	No	455	(28.9)	46	(10.1)	1	0		
	Yes	188	(11.9)	6	(3.2)	0.29 (0.12-0.70)	0		
	Unk	933	(59.2)	59	(6.3)	0.60 (0.40-0.90)	4	(0.4)	
Heroin	Yes	225	(45.5)	6	(2.7)	0.59 (0.22-1.60)	0		
Cocaine	Yes	285	(57.6)	10	(3.5)	0.92 (0.36-2.38)	1	(0.4)	
Other	Yes	124	(25.1)	5	(4.0)	1.15 (0.40-3.29)	0		
Non-IDU (Ever)	No	472	(30.0)	33	(7.0)	1	0		
	Yes	528	(33.5)	37	(7.0)	1.00 (0.62-1.63)	2	(0.4)	
	Unk	576	(36.6)	41	(7.1)	1.02 (0.63-1.64)	2	(0.4)	
Non-IDU (Yr)	No	257	(16.3)	17	(6.6)	1	0		
	Yes	251	(15.9)	21	(8.4)	1.29 (0.66-2.51)	0		
	Unk	1068	(67.8)	73	(6.8)	1.03 (0.60-1.78)	4	(0.4)	
Heroin	Yes	88	(18.7)	4	(4.6)	0.54 (0.19-1.57)	0		
Crack	Yes	220	(46.7)	11	(5.0)	0.50 (0.24-1.05)	0		
Other	Yes	248	(52.3)	25	(10.1)	2.20 (1.06-4.58)	2	(0.8)	

Table 15 (Continued)

Characteristic		Number (%) with characteristic		Number (%) CT Positive		Odds Ratio (95% CI)	Number (%) GC Positive		Odds Ratio (95% CI)[1]
Sex w/ Bi Male/Ever (Females Only)	No	161	(22.4)	6	(3.7)	1	0		
	Yes	21	(2.9)	2	(9.5)	2.70 (0.51-14.35)	0		
	Unk	538	(74.7)	17	(3.2)	0.84 (0.32-2.16)	3	(0.6)	
Sex w/ Bi Male /Yr (Females Only)	No	105	(14.6)	5	(4.8)	1	0		
	Yes	4	(0.6)	0		[a]	0		
	Unk	611	(84.9)	20	(3.3)	0.67 (0.25-1.83)	3	(0.5)	
Previous Incarcerations	None	23	(1.7)	2	(8.7)	a	0		
	1	1019	(76.8)	71	(7.0)	a	3	(0.3)	
	2-4	282	(21.2)	18	(6.4)	a	0		
	5+	5	(0.4)	0		1	0		
Arrested for	Drugs	590	(45.2)	36	(6.1)	0.81 (0.52-1.26)	1	(0.2)	
	Assault	149	(11.4)	11	(7.4)	1.10 (0.57-2.12)	0		
	DUI	21	(1.6)	0		a	0		
	Gun	76	(5.8)	5	(6.6)	0.96 (0.38-2.44)	0		
	Murder	51	(3.9)	2	(3.9)	0.55 (0.13-2.29)	0		
	Sex Crimes	27	(2.1)	0		a	0		
	Theft	624	(47.8)	53	(8.5)	1.67 (1.08-2.58)	2	(0.3)	
	White Collar	43	(3.3)	1	(2.3)	0.32 (0.04-2.33)	0		
	Other Crime	121	(9.3)	11	(9.1)	1.42 (0.73-2.74)	0		

[1] Due to the high frequency of zero in cells, no odds ratio were calculated for GC.

[a] Represents an odds ratio that could not be calculated due to zero in one or more of the cells.

Note: IDU=Injecting Drug Use. G/R sex for DM=Give and receive sex for drugs or money.

Table 16
Prevalence and Odds Ratios for Chlamydia trachomatis and Neisseria gonorrhoeae Infections among Inmates Entering Prison at the California Department of Corrections, 1999 - By Gender and Age Group *

Characteristic	Number (%) with characteristic		Number (%) Chlamydia trachomatis positive		Odds Ratio (95% CI)	Number(%) Neisseria gonorrhoea positive	Odds Ratio (95% CI)**
Males	820	(53.5)	82	(10.0)	3.11 (1.97-4.91)	1 (0.1)	0.28 (0.03-2.70)
Females***	712	(46.5)	25	(3.5)	1	3 (0.4)	1
Males							
Under 20 Years Old	133	(16.2)	9	(6.8)	1	0	
20-24	607	(74.0)	66	(10.9)	1.69 (0.82-3.48)	1 (0.2)	
25-29	80	(9.8)	7	(8.8)	1.32 (0.47-3.70)	0	
30-34	-------		-------		-------	-------	-------
35-39	-------		-------		-------	-------	-------
40+	-------		-------		-------	-------	-------
Females							
Under 20 Years Old	4	(0.6)	1	(25.0)	1	0	
20-24	38	(5.3)	2	(5.3)	0.17 (0.01-2.49)	0	
25-29	108	(15.2)	8	(7.4)	0.24 (0.02-2.58)	2 (1.9)	
30-34	170	(23.9)	5	(2.9)	0.09 (0.01-1.03)	1 (0.6)	
35-39	187	(26.3)	6	(3.2)	0.10 (0.01-1.10)	0	
40+	205	(28.8)	3	(1.5)	0.04 (0.00-0.56)	0	

*This table does not include the number of unknown/missing.
**Odds Ratios could not be calculated due to the low prevalence of the disease in this population, coupled with the small sample size.
***Gender specific age break down may not sum to total due to missing value.

Table 17
Prevalence and Odds Ratios for Chlamydia trachomatis and Neisseria gonorrhoeae Infections Among Inmates Entering Prison at the California Department of Corrections, 1999 - By Gender and Race/Ethnicity

Characteristic	Number (%) with characteristic		Number (%) Chlamydia trachomatis positive		Odds Ratio (95% CI)	Number (%) Neisseria gonorrhoea positive	Odds Ratio (95% CI)*
Males	856	(54.3)	86	(10.1)	3.11 (1.97-4.91)	1 (0.1)	0.28 (0.03-2.70)
Females**	720	(45.7)	25	(3.5)	1	3 (0.4)	1
Males							
White	105	(12.3)	5	(4.8)	1	0	
Asian/Pacific Isl.	26	(3.0)	1	(3.9)	0.80 (0.09-7.16)	0	
African-American	167	(19.5)	21	(12.6)	2.88 (1.05-7.88)	0	
Hispanic	466	(54.4)	44	(9.4)	2.10 (0.81-5.42)	0	
Native American	5	(0.6)	0		[a]	0	
Unknown	87	(10.2)	15	(17.2)	4.17 (1.45-11.98)	1 (1.2)	
Females							
White	231	(32.1)	7	(3.0)	1	0	
Asian/Pacific Isl.	5	(0.7)	0		a	0	
African-American	251	(34.9)	11	(4.4)	1.46 (0.56-3.85)	2 (0.8)	
Hispanic	181	(25.1)	4	(2.2)	0.73 (0.21-2.52)	1 (0.6)	
Native American	13	(1.8)	1	(7.7)	2.67 (0.30-23.46)	0	
Unknown	39	(5.4)	2	(5.1)	1.73 (0.35-8.65)	0	

*Odds Ratios could not be calculated for Neisseria gonorrhoea due to the low prevalence of the disease in this population, coupled with the small sample size.
**Gender specific age break down may not sum to total due to missing values.
[a] Represents an odds ratio that could not be calculated due to zero in one or more of the cells.

APPENDIX

Survey Form Unavailable

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