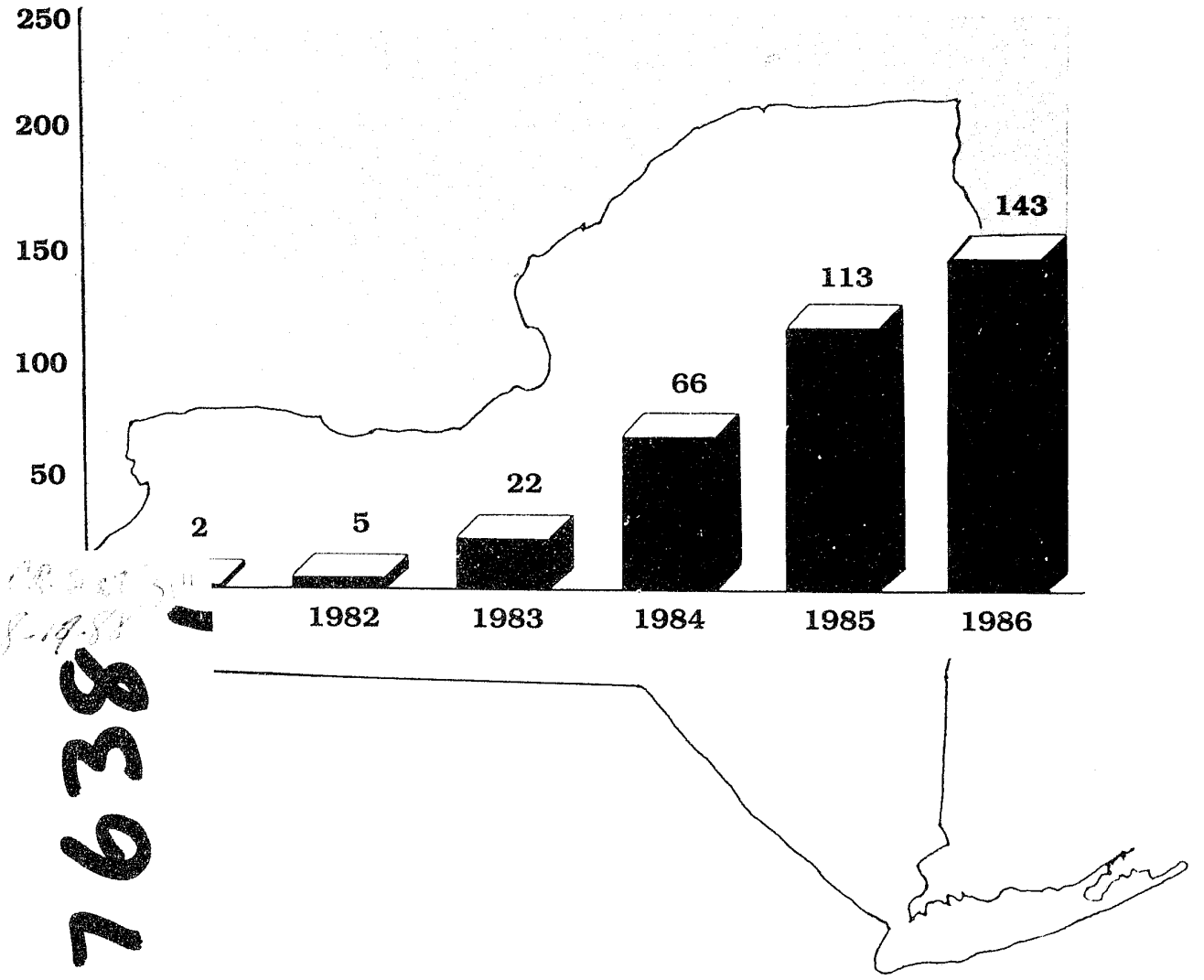

UPDATE

ACQUIRED IMMUNE DEFICIENCY SYNDROME

A DEMOGRAPHIC PROFILE OF NEW YORK STATE INMATE MORTALITIES 1981-1986

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ACQUIRED IMMUNE DEFICIENCY SYNDROME: A DEMOGRAPHIC PROFILE OF NEW YORK STATE INMATE MORTALITIES, 1981-1986 UPDATE

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FOREWORD

The State Commission of Correction is required by Correction Law Section 47 (1) (e) to "investigate and report. . .on the condition of systems for the delivery of medical care to inmates of correctional facilities ..." The Commission is assisted in the fulfillment of this mandate through its Bureau of Health Systems Evaluation with the advice and direction of the Correction Medical Review Board, comprised of distinguished experts in the field of correctional health care. They include Michael Baden, M.D., Phyllis Harrison-Ross, M.D., Abraham L. Halpern, M.D., and Andrew Lawler, Esq.

Section 45 (11) of the Correction Law provides authority for the Commission to "collect and disseminate statistical and other information and undertake research studies and analyses, through the personnel of the Commission or in cooperation with any public or private agency in respect to the administration, program effectiveness and coordination of correctional facilities."

EXECUTIVE SUMMARY

The typical AIDS inmate mortality in the New York State correctional system was an Hispanic or black, single, male, 34 years of age, with a history of intravenous drug abuse prior to incarceration. He was born in the New York City metropolitan area, having lived in this area prior to entering the system. He was typically incarcerated in a state correctional facility. He was likely to have been convicted of robbery, burglary or drug-related offenses, and been in the system an average of 19 months prior to death. He was typically hospitalized in a New York State university-affiliated hospital, in the Mid-Hudson Region. He was most likely to have contracted the opportunistic infection, Pneumocystis Carinii Pneumonia, and died after an average final hospital stay of 28 days.

DEMOGRAPHIC CHARACTERISTICS:

- AIDS in New York State's correctional system is predominantly a disease of males. Ninety-six percent of decedents were male; four percent were female.
- Ninety-five percent of inmates in the sample had a history of intravenous drug abuse.
- Only 11 percent of the sample admitted to a homosexual, bisexual or transsexual orientation.
- Forty-five percent of the cases were Hispanic; 43 percent black and 12 percent white. Compared to their ratio in the correctional population, Hispanics were disproportionately represented in death cases.
- Eighty-seven percent of inmates lived in the New York City metropolitan area prior to incarceration.
- Correlating with the high ratio of drug abuse history, decedents had primarily been convicted of "money seeking" crimes related to drug abuse - 32% robbery, 20% burglary, 20% drug-related offenses.
- Fifty-eight percent of the sample were unmarried.
- The average age of the males at death was 34. The youngest was 19; the oldest 64. Ninety-three percent were between the ages of 20 and 49 when they died.
- Fifty-seven percent of mortalities had been in the correctional system 1-18 months; 27 percent 19-36 months; 12 percent 37-54 months; and 3 percent 4.6-6 years. Two inmates had served 6.6 - 7 years at the time of death.
- The highest number of hospital deaths occurred in the Mid-Hudson region, due to the location of the Sing Sing special care unit and the high concentration of correctional facilities in this geographic area.
- One hundred ninety-nine or 64 percent of inmate deaths took place in the state's 10 university-affiliated medical centers. The remaining 36 percent died in community hospitals around the state. Thirteen inmate mortalities occurred in correctional facilities.
- The termination of the DOCS contract with Westchester County Medical Center increased the proportion of inmate deaths at community general hospitals in 1986. Twenty-four 1986 mortalities took place at ten community hospitals where there were no previous inmate cases.
- The final period of hospitalization ranged from one day to eight months. Forty-four percent of inmates were hospitalized 1 day - 2 weeks; 27 percent 15 days - 1 month; 16 percent 31 days - 2 months; 9 percent 61 days - five months, and 2 percent 151 days - 8 months.
- The 313 cases consumed 8,890 acute hospital patient days with an average length of stay of 28 days.
- The most prevalent opportunistic infection at time of death was Pneumocystis Carinii Pneumonia (PCP). Fifty-four percent of cases were PCP or PCP in combination with some other opportunistic infection.

AIDS DISEASE PROFILE IN NEW YORK STATE DEPARTMENT OF CORRECTIONAL SERVICES FACILITIES:

- The greatest proportion of inmate mortalities in the sample came from state correctional facilities (DOCS). The majority of deaths occurred at maximum security facilities.
- Over 50 percent of all DOCS deaths between 1984 and 1986 have been due to AIDS.
- While the mortality rate for other-than-AIDS cases has been fairly stable, the AIDS mortality rate per 10,000 DOCS inmates has grown steadily.
- There has been an annual decrease in inmate survival rates and a lower mean survival rate for inmate cases compared to a New York City general population sample. The issue of diminished survivability and increased strains in DOCS community-based and facility health care resources is raised.
- The issue of AIDS transmission within facilities was raised in terms of eight inmates who were in the system 4.4 to 5.4 years before the onset of symptoms. Additionally, there was one continuously incarcerated inmate who did not evidence symptoms until 7 years after entry.
- Opportunistic infection rates in state facilities evidenced an upward trend in the proportion of Pneumocystis Carinii Pneumonia since 1981. There was a concomitant increase in the number and variety of opportunistic infections and types after 1983.
- Evidence points to a low inmate risk for Kaposi's Sarcoma, based on the small percentage of admitted homosexuals in the inmate population. Kaposi's Sarcoma and toxoplasmosis were more prevalent only in inmates who admitted a homosexual and drug abuse lifestyle.

IV DRUG ABUSE, FEMALE OFFENDERS AND AIDS

- DOCS data indicate female drug offenders represented a higher proportion of drug offense commitments than their male counterparts for the years 1974-1984, a median difference of +9.6%.
- The percentage of female drug offenders committed to DOCS as second felony offenders increased from .2 percent of women under custody in 1978 to 9.4 percent in 1985.
- Given the 80 percent increase in female AIDS inmate mortalities in this Update over all previous years and the increasing percentage of female drug offenders in state facilities, the question of the percentage of high risk IV drug offenders in DOCS female population is raised.
- The profile of New York State women with AIDS includes a greater percentage who are black (49.5%) or Hispanic (31.6%) than white (18.3%). Regardless of race or ethnicity, the primary risk behavior for women is IV drug use.
- The typical New York State female AIDS inmate mortality is Hispanic or black, single, 31 years of age, with a history of intravenous drug abuse prior to incarceration. She was most likely to have lived in New York City prior to entering a state correctional facility, sentenced for homicide-related offenses, robbery, or offenses related to drugs. She served an average sentence of 15.8 months prior to death. She was typically hospitalized in the Mid-Hudson Region and most likely to have contracted PCP or toxoplasmosis and died after an average final hospital stay of 28 days.
- Female AIDS decedents had an average of two children each. Their median number of years of education was 10.
- For nine of the 14 cases, there was a median drug use history of 8 to 11 years. Two women with reported drug histories of 16-23 years were sentenced for homicide-related offenses.
- Fifty-seven percent of the cases showed evidence of tattoos at the time of autopsy. One woman indicated she was a sexual partner of a man who had AIDS.

OVERVIEW OF NEW YORK STATE CORRECTIONAL SYSTEM AFFECTED BY AIDS

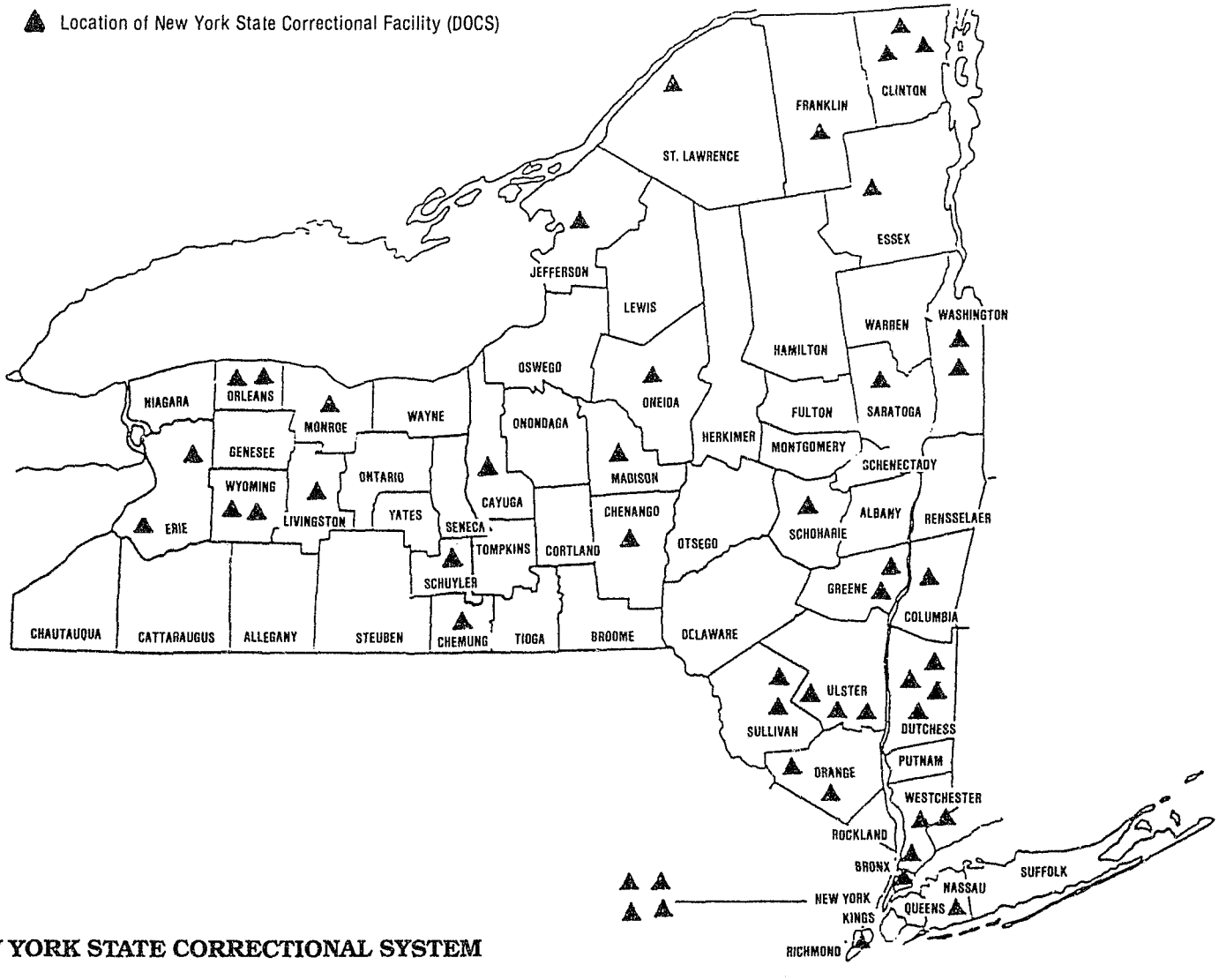
The State of New York correctional jurisdiction is made up of three major systems, the state correctional system, the county jail and penitentiary system and the New York City correctional system. Presently, they have a combined population of about 63,000 inmates.

The state correctional system is the third largest correctional system in the country (Criminal Justice Institute, 1986), with 39,211 inmates as of April 20, 1987. It contains 50 institutions with populations ranging from 60 to 2,763 inmates.

The major residence of inmates prior to entering the state correctional system is the New York City metropolitan area.

The New York City correctional system census on April 20, 1987 was 14,734 with 12 sentenced and detention institutions and five hospital prison wards. Generally, an inmate convicted of a crime and sentenced to more than one year is transferred to state custody.

There are 56 counties operating jails, four of which also operate separate penitentiaries. This system contained 9,054 inmates on April 20, 1987. The county system is similar to the New York City system in that the maximum sentenced stay is one year.



NEW YORK STATE CORRECTIONAL SYSTEM

INTRODUCTION AND PURPOSE

The New York State Commission of Correction, as part of its oversight of state and local facilities, collects records of all inmate deaths, including AIDS mortalities, through its Medical Review Board and Bureau of Health Systems Evaluation. Drawing on these mandated functions, Governor Mario M. Cuomo directed the Commission to conduct a demographic study of all AIDS inmate deaths in New York State's criminal justice system - state prison facilities, county jails and penitentiaries, and New York City correctional facilities in October of 1985. Following a five-month study, the Commission published *Acquired Immune Deficiency Syndrome: A Demographic Study of New York State Mortalities, 1981-1985,* in March of 1986. The research had three broad purposes:

- The identification of a large number of demographic characteristics of inmates who have died of AIDS in New York's correctional system. Such a comprehensive demographic profile seeks to provide important data to correctional policymakers as to risk groups, opportunistic infection trends, resource needs, etc.
- The identification of the most comprehensive profile of an AIDS mortality cohort in the nation. The national Centers for Disease Control (CDC) surveillance data base is limited to six published demographic variables and is unable to identify all correctional cases. The current study, drawing on a detailed data base, provides CDC with critical aggregate data on inmate deaths from a state correctional system with high concentrations of individuals at risk of developing AIDS.
- The development of an accurate and authoritative data base for further research initiatives in New York State and nationally. The study emphasizes the use of primary data sources as a model for generating proactive policy decisions.

Since the report's publication, the Commission has continued to update the data base as part of its comprehensive AIDS surveillance program. As AIDS continues to critically impact New York State's correctional and health care delivery system, this report update provides important information as to: 1) changes in demographic characteristics of inmates who are dying of AIDS in the state's correctional system; 2) trends in the disease profile among inmates — year-to-year variations in the time periods of the stages of the disease; and, 3) emerging policy and research issues suggested by these data.

AIDS Correctional Cases, Current Status

As of June 1, 1987, there have been 438 reported* AIDS inmate deaths in New York State facilities, county jails, and New York City correctional facilities since the first confirmed mortality in 1981. While this Update adds 137 cases for the period November 1, 1985, through October 31, 1986, there were 143 AIDS inmate deaths for all of 1986, compared to 114 for 1985. This 25 percent increase is in contrast to the 73 percent increase in New York State correctional facility AIDS mortalities between 1984 and 1985, from 66 to 114.

The National Institute of Justice *Update: AIDS in Correctional Facilities* (National Institute of Justice, January, 1987) finds the number of inmate AIDS cases in correctional facilities to have increased, but at a rate slower than in the United States general population. The NIJ *Update,* based on a survey of 50 state correctional systems, the Federal Bureau of Prisons, and 31 large city and county jails, found 1,232 confirmed AIDS correctional cases as of October 1, 1986. This compares to 766 inmate cases as of December 31, 1985, a 61 percent increase. In contrast, there was a 79 percent increase for the United States as a whole for the period November 4, 1985 to October 6, 1986.

If the 89 confirmed inmate AIDS cases in the New York State system and the 96 diagnosed individuals who were paroled or released as of October 14, 1986, are added to the 326 mortality cases, there have been 511 cumulative cases in New York's correctional system (excluding New York City confirmed cases which are not reported to the Commission). This number represents 41 percent of all national correctional cases as of October, 1986. However, the figure is misleading because 68 percent of other state and federal systems and 54 percent of city and county systems report less than four cases. New York State, on the other hand, along with Pennsylvania and New Jersey, represents 71 percent of AIDS cases in state systems and 68 percent of

*As required by law, all inmate mortalities must be reported to the Commission within 6 hours. In some instances, jurisdictions report the cause of death as "AIDS related." These cases are listed as AIDS mortalities unless documents and internal investigation prove them otherwise.

cases in city or county systems (National Institute of Justice, January, 1987).

There are a number of possible reasons why there is such a high incidence of AIDS among inmates in New York State. First, the Centers for Disease Control report that New York State has 34 percent of all AIDS cases within the country. In addition, the Centers also report that New York City has an AIDS rate approximately 3 times higher than the AIDS rate in Los Angeles. Since the majority of inmates in New York State correctional facilities reportedly come from the New York metropolitan area, it should not be surprising that New York correctional facilities report a high incidence of AIDS. However, as noted above, the rates of increase of New York's AIDS inmate mortalities have been declining annually. The NIJ *Update* also shows a 4 percent decrease in the percentage of *total* cases represented by Middle Atlantic State correctional systems between 1985 and 1986. Nonetheless, AIDS deaths represent 76 percent of all New York correctional mortalities in 1986.*

Given the critical policy and health care delivery issues posed by AIDS in correctional settings, the New York State Commission of Correction has continued the demographic and epidemiological surveillance study of AIDS inmate mortality cases.

METHODOLOGY

Data Sources and Variables

A major portion of the Bureau of Health Systems Evaluation investigation process involves obtaining a wide range of facility medical and correctional documents, as well as records of outside health care providers. Such documents are necessary to determine the circumstances surrounding the death of an inmate, and to evaluate aspects of correctional health care. These primary source documents include:

1. Correctional facility medical records
   a. admission history and physical examination on entry to system
   b. laboratory data completed on admission
   c. sick call records
   d. physician and nursing progress notes
   e. physician order sheets
   f. laboratory reports during period of incarceration
2. Correctional facility staff reports
3. Disciplinary, conviction, and parole hearing records
4. Medical records from previous correctional jurisdiction
5. Transfer medical summary sent on entry to system
6. Ambulance transport records
7. Community hospital records
8. Vital sign sheets
9. Specialists' consultation reports
10. X-Ray diagnostic reports
11. Autopsy report (autopsy and toxicology required by law in NYS on all persons who die in custody)

The documents are recognized as a rich source of data for the identification of a demographic epidemiological profile of AIDS inmate mortalities. A comprehensive review of these documents yields a set of 19 variables which can be located consistently across cases:

- Age
- Sex
- Race
- Marital status
- Date of death
- Place of birth
- Residence prior to entering the system
- Date of entry into correctional system
- Crime of conviction

*As of June 1, 1987, reported AIDS mortalities to the Commission constitute 61% of this year's correctional facility deaths.

- Intravenous drug abuse history
- Previous incarceration
- Date of onset of symptoms
- Specific symptom profile
- Date AIDS confirmed
- Sexual preference
- Assigned correctional facility at time of death
- Hospital at time of death
- Period of final hospitalization
- Cause of death (as per autopsy)

Definition of Variables

A large number of variables such as age, sex, race, date of death, and cause of death can be verified across several documents. Several variables, however, require clarification to ensure the reliability and validity of the data base:

Race - In cases of Hispanic origin, records are not always consistent, i.e., individuals are variously described as black or white or Hispanic. As forensic pathologists are trained to recognize subtle physical racial indicators, the autopsy description of the pathologist is selected as a more reliable indicator of race.

Residence Prior to Entering the System - As the majority of the reported decedents are from the New York City metropolitan area, the specific *borough* of residence is selected where data are available. Residence in counties contiguous to New York City are also specified. All other cases are classified as "New York City (no borough specified)," "New York State (outside New York City)," or "Other States." Residence outside the United States is defined as "Other Countries" and includes only four - Cuba, Colombia, the Dominican Republic and Jamaica.

Intravenous (I.V.) Drug Abuse History - Rather than relying solely on medical histories of inmates taken on entry to the system, hospital admission history, physical examination findings and autopsy results are used to verify a history of intravenous drug abuse (i.e., track marks).

Date of Onset of Symptoms - The quality of documentation and the varying expertise of health providers result in inconsistent reporting of the onset of symptoms. The quality of such assessments is found to improve in more recent medical records, with AIDS Related Complex (ARC) and other symptoms being recognized. Another difficulty in pinpointing the exact time of symptoms onset is inmate delays in reporting symptoms. For consistency in this study, the date of symptoms onset is obtained from the sick call record reflecting inmate's statement of the duration of symptoms.

Specific Symptoms Profile - There is a wide range of symptoms presented by inmates at time of sick call. A number of symptoms are found to relate to a specific opportunistic infection. However, a number of symptoms are common to many opportunistic infections or non-AIDS diseases. A symptoms profile has been developed by ranking reported symptoms from the most common to least frequent.

Date AIDS Confirmed - The date selected reflects the date on which the diagnostic procedure was completed (bronchoscopy, biopsy, etc.). In some cases, the inmate was seriously ill and unable to tolerate invasive diagnostic procedure. Therefore, the confirmation of the opportunistic infection for some cases was not documented until the time of autopsy.

Period of Final Hospitalization - The time period of *final* hospitalization is utilized. While a number of cases had multiple hospitalization periods, data are often missing on earlier hospital stays. In many cases, however, the final hospitalization may be the first hospitalization.

Autopsy Report of Death - In order to compare the inmate profile to CDC figures for the population at large, specific opportunistic infections for which inmates received treatment are categorized. In some cases, the autopsy lists AIDS but is not specific as to the opportunistic infection. Therefore, *final* hospitalization medical records are used to designate the opportunistic infection, or infections.

Data Sample, Collection and Analysis

Over the course of the project, intern research assistants have been trained on the extraction and verification of variables from the numerous document sources contained in each mortality file. The Associate Director, a registered nurse, also compiles the more complex medical data. Table 1 shows the jurisdictional origin of the sample totaling 326 cases:

Table 1: *New York State Commission of Correction AIDS Study Sample Mortality Cases, 11/13/81-10/31/86, by Jurisdiction*

Jurisdiction	No. of Cases 11/13/81-10/31/85	Percent of Cases	No. of Cases 11/1/85-10/31/86	Case* Updates	Total	Percent of Cases
NYS Department of Correctional Services (DOCS) Facilities	156	88%	120	5	281	86%
New York City Correctional Facilities	18	10%	14	7	39	12%
NYS County Jails	3	2%	3	—	6	2%
TOTAL	**177**	**100%**	**137**	**12**	**326**	**100%**

*That is, cases added due to designation as "AIDS" rather than "natural."

Following data compilation and verification, the data are coded and analyzed utilizing SPSS/PC+ microcomputer software (Statistical Package for the Social Sciences). Data analysis and interpretation are supported by the Bureau of Health Systems Evaluation extensive library of primary and secondary source materials on AIDS.

Definition of AIDS/ARC (AIDS RELATED COMPLEX)

The following definitions of AIDS and ARC are provided as background for the concepts utilized in the report. CDC, in 1982, defined a case of AIDS as a disease, at least moderately predictive of a defect in cell-mediated immunity, occurring in a person with no known cause of diminished resistance to that disease (Centers for Disease Control, September 24, 1982: 508). The Centers have since refined the definition to include the presence of human T-cell lymphotropic virus-Type III/lymphadenopathy-associated virus (HTLV-III/LAV or HIV) and opportunistic infections like Pneumocystis Carinii Pneumonia, Kaposi's Sarcoma, and other unusual infections.

AIDS Related Complex, while not formally defined by CDC and not reportable to CDC, has the following generally accepted National Institute of Health definition:

Two or more symptoms (see page 25 of this report) and two abnormal laboratory findings suggestive of otherwise unexplained immune deficiency consistent with CDC-defined AIDS. In addition, a classification system for Human T-lymphadenopathy-Associated Virus Infections is applied in defining levels of care and public health policy.

This classification system utilizes four groups as follows:

Group I - Acute Infection
Group II - Asymptomatic Infection
Group III - Persistent generalized lymphadenopathy
Group IV - Other HLTV-III/LAV disease

The opportunistic infections described in this report are classified as part of Group IV.

ORGANIZATION OF REPORT

This report update describes and summarizes the predominant characteristics of AIDS mortalities in New York State's correctional system from November, 1981, through October 31, 1986.

Chapter 1 presents a profile of the most common demographic characteristics of these cases as well as any changes in these characteristics resulting from the addition of new cases. The profile includes a breakdown by sex, residence, place of birth, crime conviction category, marital status, age, and time in correctional system. Additionally, important factors such as intravenous drug abuse history, sexual orientation, period of final hospitalization, hospital at time of death, and opportunistic infection at time of death are featured in the profile.

Chapter 2 outlines a comprehensive disease profile of AIDS in the New York prison system. A symptoms profile and average time periods of the stages of the disease are presented as part of this disease profile. Critical stages are: 1) the time from system entry to onset of symptoms; 2) the time from onset to confirmation; and, 3) the time from confirmation to death. The chapter compares the survival rates of AIDS inmates to a general population sample. There is also a review of the incidence rates of opportunistic infections in the entire sample and, in particular, high-risk heterosexual and homosexual intravenous drug abusers.

Chapter 3 reviews current research and trends on New York State and national female IV drug abuse and crime rates. The drug histories, crime profiles and other demographic characteristics of the 14 AIDS female inmate mortalities in the study are compared to current statistics on female drug abuse commitments and inmate populations. Similarities between the profiles of these groups and increases in the proportion of female drug abusers in the state's correctional system and among AIDS mortalities are discussed. The impact of such trends on female AIDS inmate mortality rates is examined.

Chapter 1: NEW YORK STATE AIDS INMATE DEMOGRAPHIC PROFILE

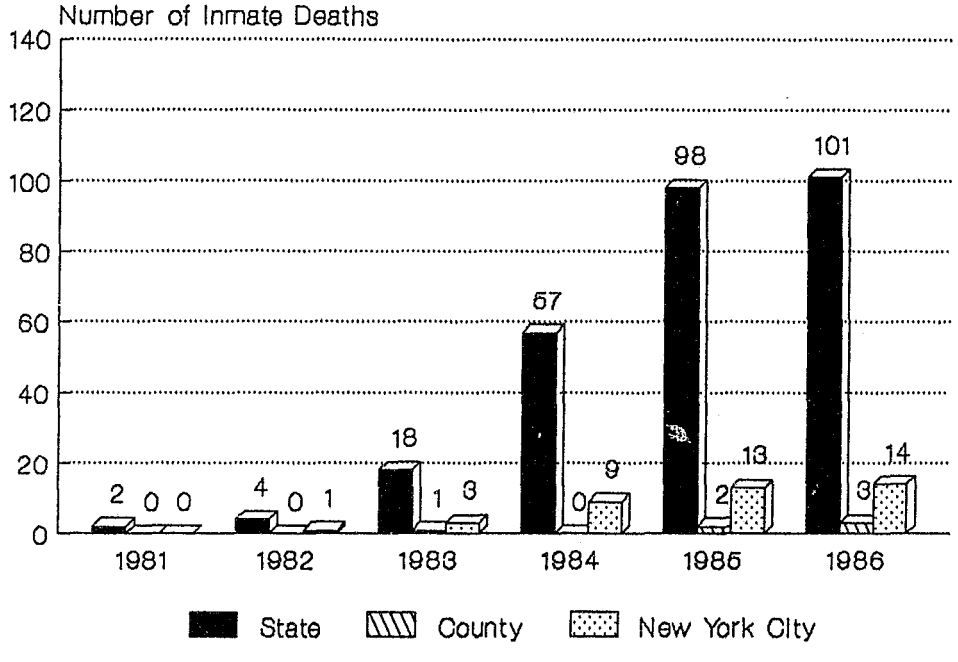
Introduction

This chapter updates the statistical profile of 13 major demographic characteristics of the 326 AIDS mortalities in the Commission sample. While the profile includes New York State, county jail, and New York City facilities for the study period, the largest percentage of cases are from the state prison (DOCS) system. The demographic profile is, therefore, primarily shaped by the distribution of mortality characteristics in this subgroup.

Mortalities by Jurisdiction

Figure 1

AIDS MORTALITIES
NY Correctional Systems*



*November 13, 1981 - October 31, 1986

Figure 1 illustrates the distribution of AIDS inmate deaths by correctional jurisdiction for the 326 cases in the sample. The lowest number of inmate AIDS mortalities occurred in the state's county jail system. There were a total of six deaths: one in 1983, two in 1985, and 3 in 1986. Based on an average annual jail population of 7,103 between 1981 and 1985, the AIDS mortality rate for New York's jail system is 85 per 100,000 population for this time period.**

Similarly, the 40 deaths in the New York City Correctional system as of October 31, 1986, represent a mortality rate of 402 deaths per 100,000 population. This is based on an average annual city system population of 9,953 between 1981 and 1985.

The greatest percentage of inmate deaths from AIDS is found in the state's correctional system (DOCS). With an average inmate population of 29,840 between 1981 and 1985, there were 938 mortalities per

**AIDS Mortality Rate =
Total number AIDS deaths in jurisdiction X 100,000
Average Population of Jurisdiction

100,000 population (New York State Department of Correctional Services, October, 1981-1985). The longer periods of incarceration in state facilities account for the higher mortality rate compared to city and county systems.

Risk Behaviors

Sex of Inmate

Similar to the general population, AIDS in New York's correctional system is predominantly a disease of males. Table 2 shows that only 14 women have died from AIDS in the entire system during the study period. Of these, one died in county custody; two in New York City Department of Correction facilities and 11 in the state system. However, there was an 80 percent increase in the number of women inmates dying of AIDS in 1985-86 cases over all previous years (1981-85: 5 female deaths; 1985-86; 9 female deaths). While it is too early to determine if this increase constitutes a trend, the relationship between New York's high rates of female IV drug abuse, crime and AIDS is discussed in Chapter 3.

Table 2:
Sex of Inmate

Sex	Number of Cases	Percent of Cases
Male	312	96%
Female	14	4%
TOTAL	**326**	**100%**

Because AIDS incidence rates are higher in correctional systems than in the population at large (National Institute of Justice, January, 1987), an ongoing concern for New York corrections officials is the proportion of high risk categories in the correctional population - numbers of inmates with histories of intravenous drug abuse and homosexual/bisexual orientation.

Inmate I.V. Drug Abuse History and Sexual Orientation

Figure 2

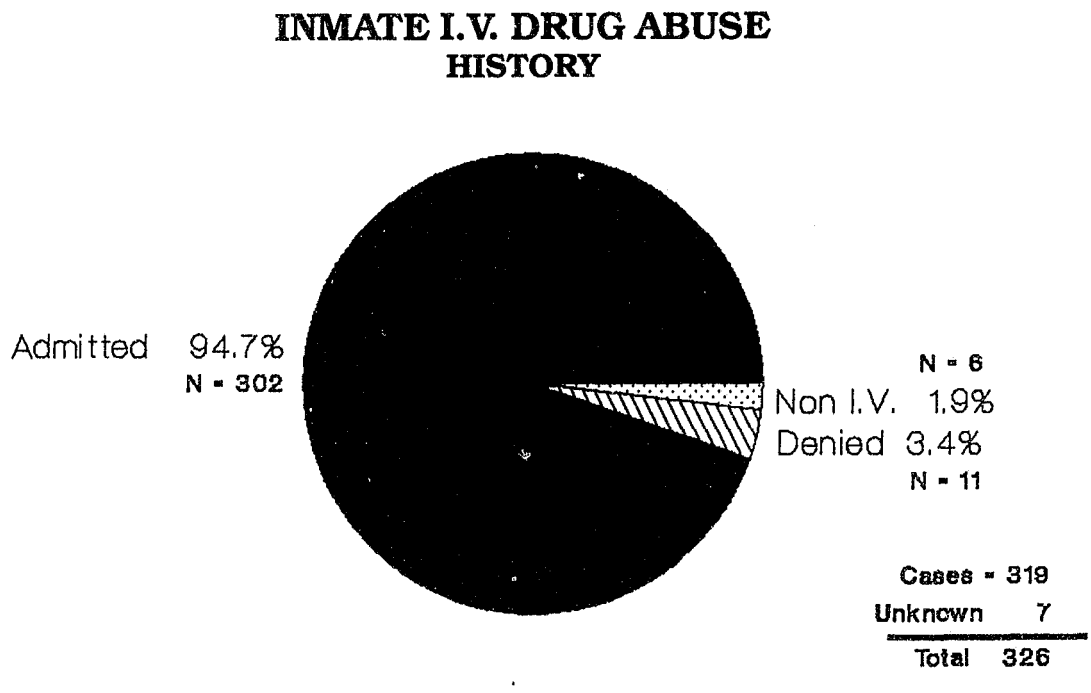


Figure 2 clearly illustrates the relationship between AIDS inmate mortalities and a history of intravenous drug abuse. Based on inmate self reports and other case documents examined, 95 percent of inmates who died from AIDS admitted to this lifestyle. With the 149 cases added to the data base, the numbers of inmates admitting IV drug abuse increased by 2.3 percent. This extremely high proportion of correctional intravenous drug users contrasts to the 17% reported in the general population. (Centers for Disease Control, October 20, 1986), and the more than one-third of New York City AIDS cases through September, 1986 (Des Jarlais, et. al., May, 1987). All 14 female correctional decedents had I.V. drug abuse histories.

Inmate Sexual Orientation

Figure 3

INMATE SEXUAL ORIENTATION

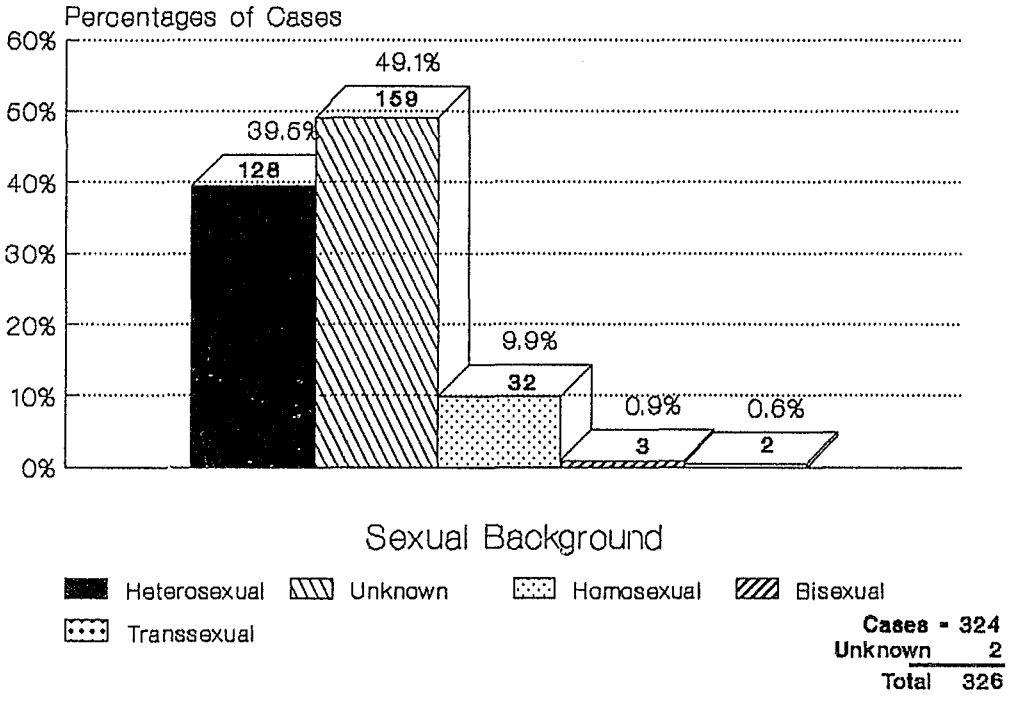


Figure 3 in comparison, shows that only 11 percent admitted an other-than-heterosexual orientation. While these proportions should be interpreted with caution given the 49 percent of "unknowns",* the evidence confirms that I.V. drug abusers are the primary risk group in New York correctional facilities. This, however, does not discount the role of sexual activity in the transmission of AIDS among inmates.

The relationship between I.V. drug history, sexual orientation and other critical profile variables related to these lifestyles are discussed in Chapter 2 of this Update.

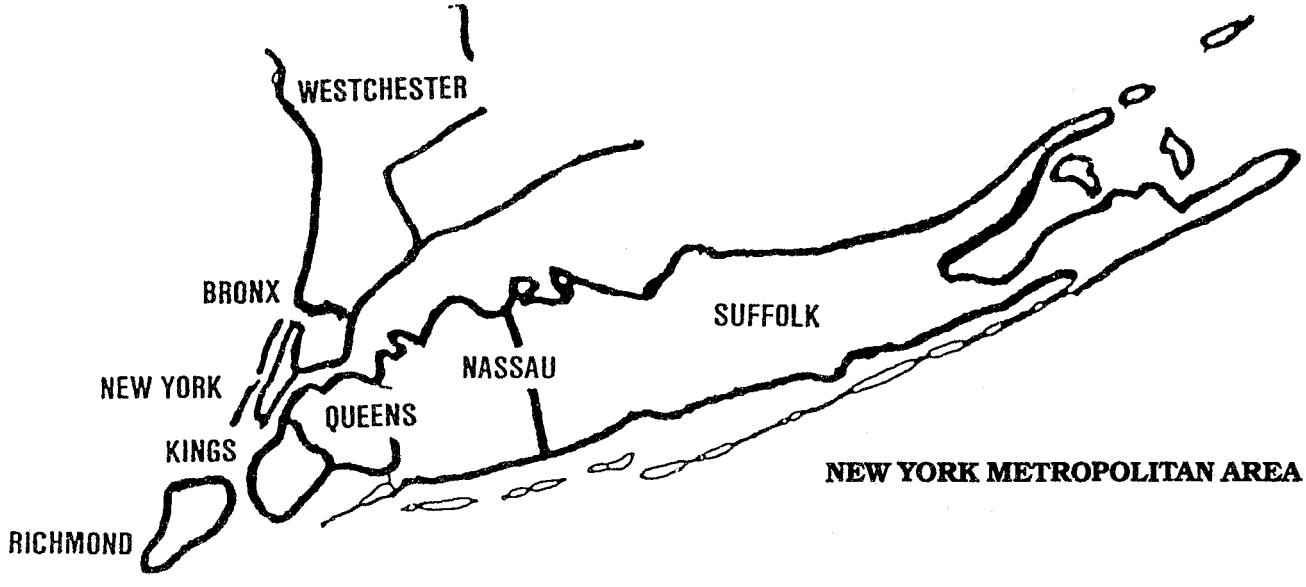
*The Commission's research of the first 177 AIDS inmate cases included an attempt to verify sexual orientation with data on these cases from the New York State Department of Health, Bureau of Communicable Disease Control. As Section 206(1)(j) of the Public Health Law precludes accessing the cases *with names*, the verification was limited to attempting to match cases using key variables such as date of death, race, etc. As the caseload has increased, the usefulness of such a procedure diminishes. The verification, therefore, has not been repeated for this year's update.

Residence of Inmate

The high percentage of AIDS cases in New York's correctional system compared to other states and the large numbers of AIDS mortalities with an I.V. drug abuse history should correlate with inmate residence in the New York City metropolitan area prior to entry into the system.

Figure 4

INMATE RESIDENCE PRIOR TO ENTRANCE INTO CORRECTIONAL SYSTEM



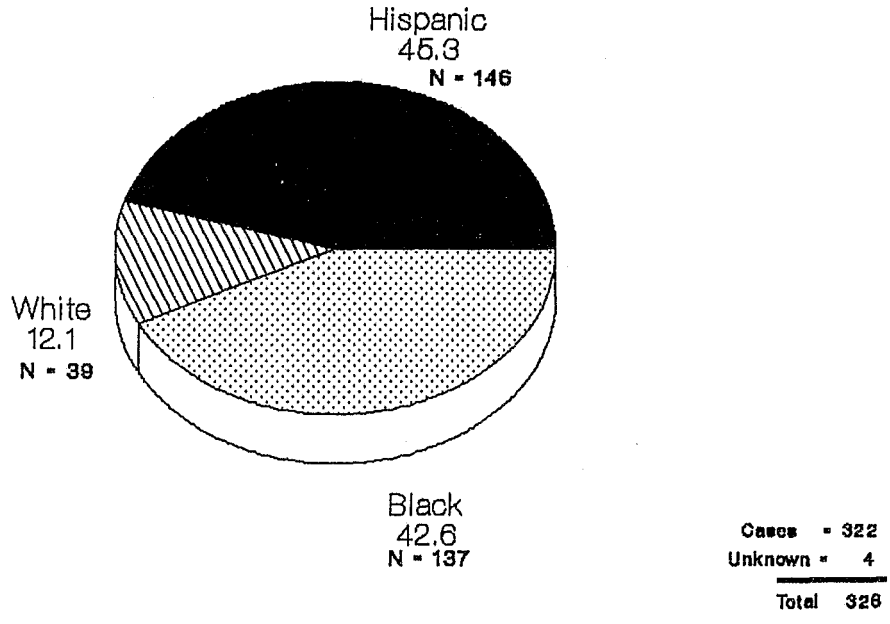
LOCATION	NUMBER OF CASES	PERCENT OF CASES
BRONX	68	21%
NEW YORK (MANHATTAN)	62	19%
QUEENS	42	13%
KINGS (BROOKLYN)	78	24%
RICHMOND (STATEN ISLAND)	5	2%
NEW YORK CITY (UNSPECIFIED BOROUGH)	25	8%
NASSAU COUNTY	4	1%
WESTCHESTER COUNTY	3	less than 1%
NEW YORK STATE (OUTSIDE NYC)	13	4%
OTHER STATES	4	1%
UNKNOWN	22	7%
TOTAL	**326**	**100%**

Indeed, Figure 4 supports the theory that the high incidence of AIDS in New York City's high risk drug subculture accounts for the distinctive demographic profile of AIDS in New York State's correctional system. While the addition of this year's cases resulted in some small variations in specific location origins, the majority, 87 percent, still reside in the New York City metropolitan area prior to incarceration. Eighty-five percent of these were admitted intravenous drug abusers. Given the disproportional number of blacks and Hispanics among New York City I.V. drug users, (National Institute of Justice, January, 1986: 22), is there a high ratio of these two groups among AIDS inmate mortalities?

Race

Figure 5

RACE OF INMATE



Clearly, blacks and Hispanics represent the largest percentage of AIDS fatalities as shown in Figure 5. Whites account for only 12 percent of the deaths due to AIDS. With the updated cases, the proportion of black AIDS inmate mortalities in the profile increased by 4 percent while the ratio of white deaths decreased 3 percent. The percentage of Hispanics among AIDS inmate fatalities declined by one percent.

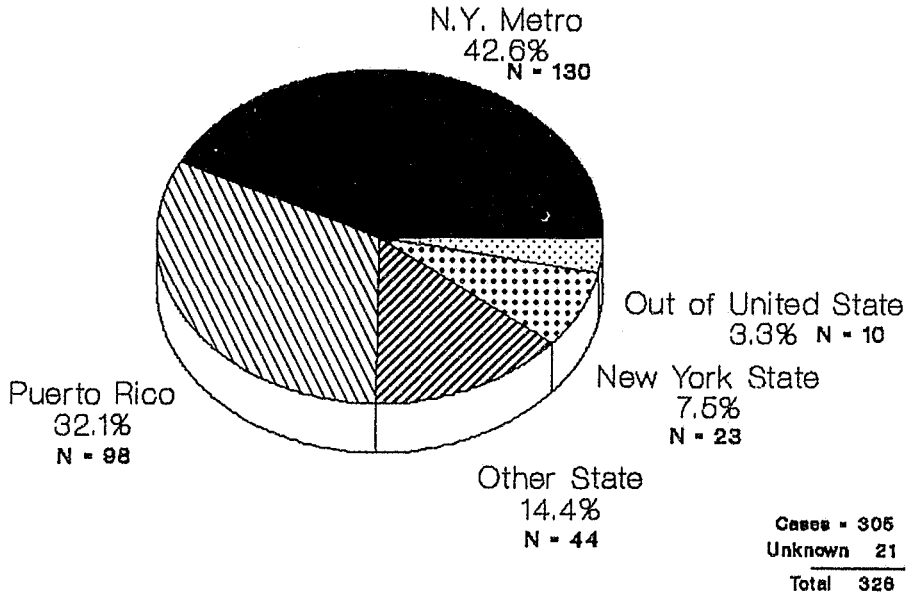
According to a November 3, 1986, demographic profile of inmates in DOCS facilities (New York State Department of Correctional Services, November 3, 1986), 21 percent of inmates are white, 28 percent are Hispanic and 50 percent are black. Assuming this distribution has remained fairly constant over the period 1981 through 1986, then whites, and to a lesser degree blacks, are under-represented among AIDS mortalities. Hispanics, on the other hand, are over-represented.

An examination of the 326 cases shows very little difference between the groups as to rates of I.V. drug abuse; 95 percent of whites compared to 94 percent of Hispanics and 96 percent of blacks were admitted I.V. drug abusers. However, compared to whites, blacks and Hispanics were in the system longer. Sixteen percent of blacks and 18 percent of Hispanics in the sample were in the system three years or longer, compared to only 10 percent of whites.

Place of Birth

Figure 6

PLACE OF INMATE BIRTH

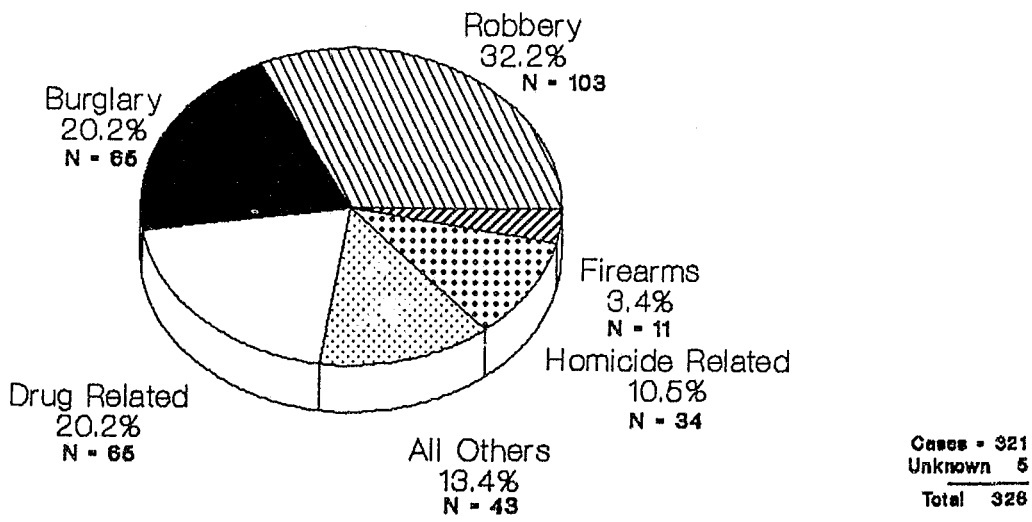


Forty-three percent of the cases analyzed listed inmate place of birth in the greater New York metropolitan area (Figure 6). Another 35 percent listed Puerto Rico or a Caribbean country as their birthplace. This update finds a slight decrease in the percentage of cases born in New York City and an accompanying increase in "New York State" birth origin. It is noteworthy that 97 percent of the sample born in New York City and 93 percent from outside the United States entered the state's correctional system from this metropolitan area. This presents a profile of individuals who largely confined their drug and crime-related activities to New York City.

Crime Conviction Category

Figure 7

INMATE CRIME CONVICTION CATEGORY



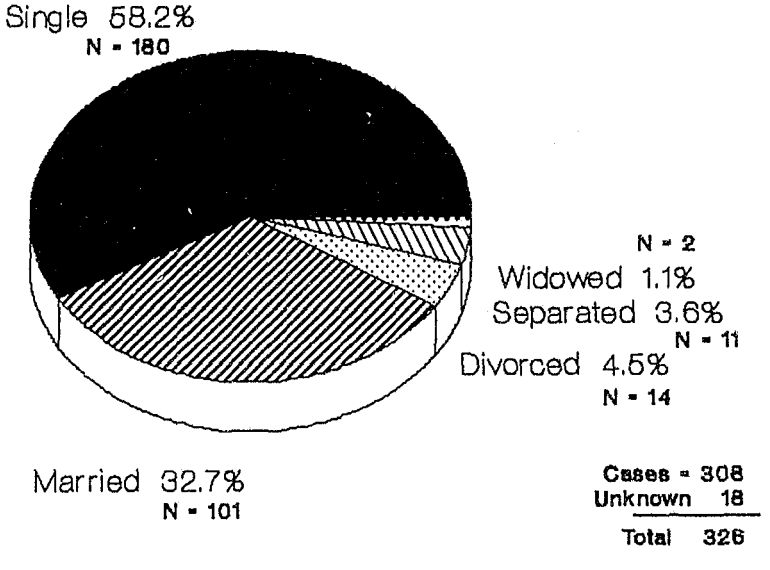
Recent National Institute of Justice research has underscored the relationship between drug abuse and crime. Heroin abusers have been found to commit high rates of robbery and burglary and to be as likely as non-abusers to commit crimes like homicide, sexual assault, robbery and firearms offenses (National Institute of Justice, March/April, 1987, pp.2-3).

Given the high ratio of I.V. drug abusers, particularly heroin addicts in this sample, it is not surprising that their criminal conviction profile reflects these national studies. Figure 7 shows inmates in this study were primarily convicted of robbery (32%), burglary (20%), and drug related offenses (20%). Compared to the original profile, the percentage of robbery convictions rose 2 percent, while homicide and firearms convictions decreased by 2 and 1 percent, respectively.

Inmate Marital Status

Figure 8

INMATE MARITAL STATUS



The majority of inmates who died from AIDS were not married (Figure 8). Fifty-eight percent were single, compared to 33 percent who were married. A small number were separated, divorced or widowed.

While the high proportion of individuals who are single correlates with a drug abuse profile, the one-third of mortalities who were married underscores the importance of inmate health education while incarcerated. Eighty-two percent of children in New York State (124 cases) who have AIDS have one or both parents who are I.V. drug abusers (New York State Department of Health, July, 1986: p.3).

Age of Inmate at Death

Figure 9

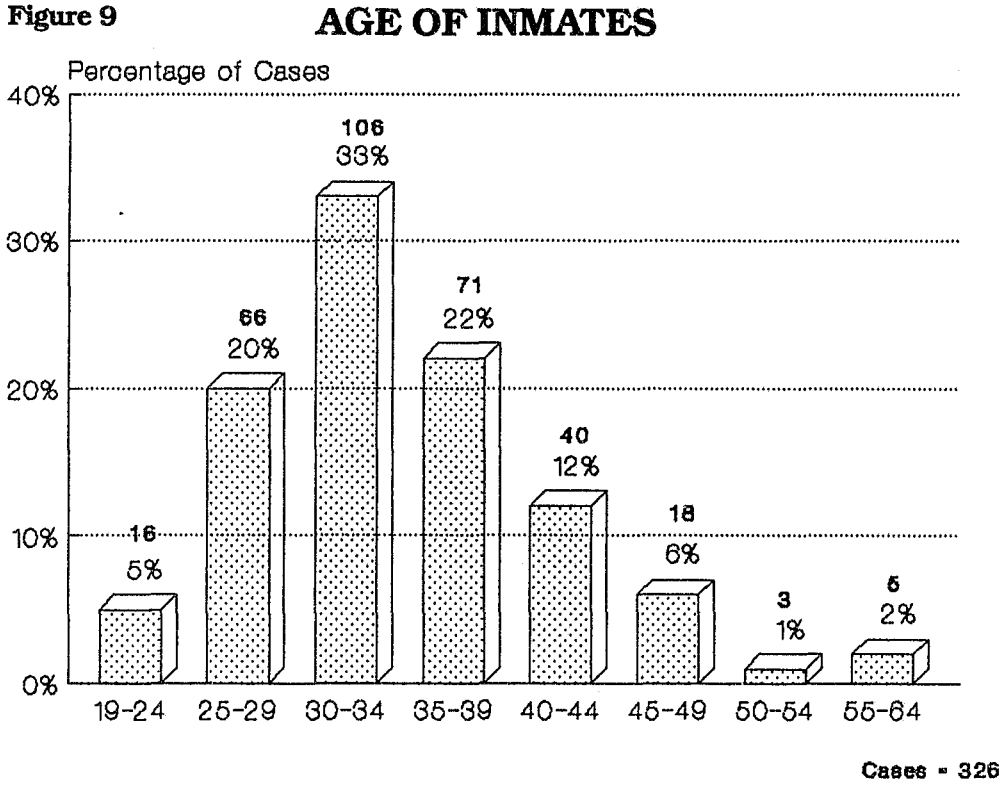
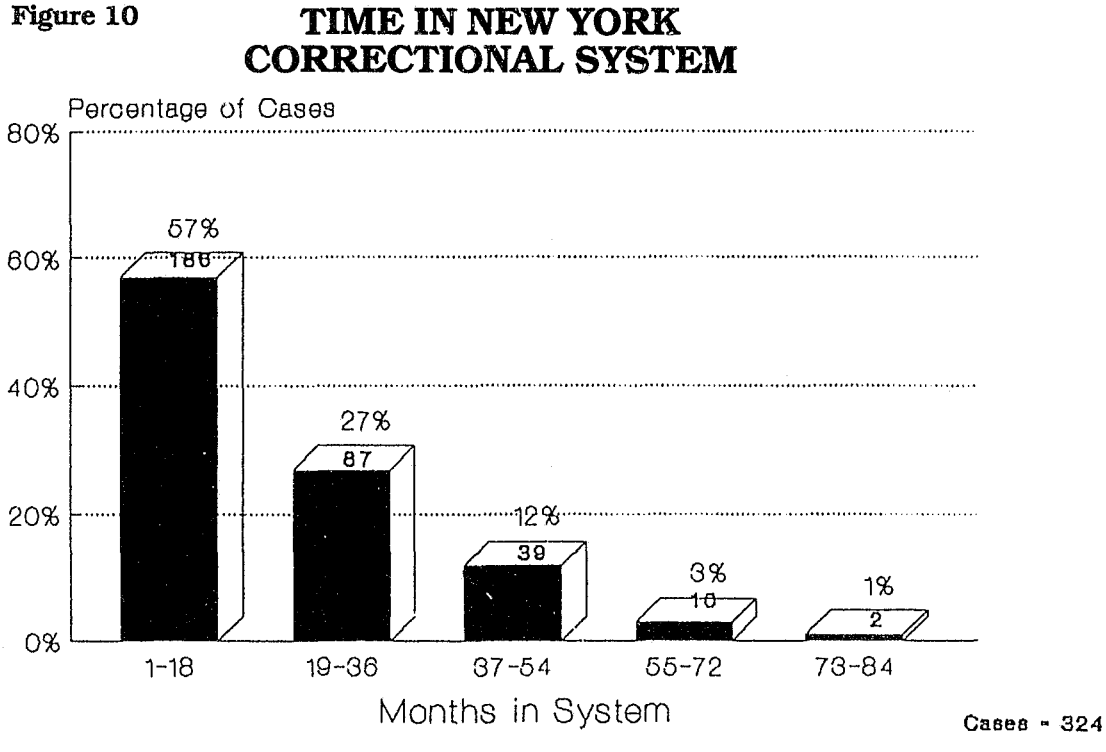


Figure 9 displays the age range at death. The youngest decedent was 19; the oldest 64. Ninety-three percent of the male mortalities were between the ages of 20 and 49. This compares with 90 percent of men afflicted with AIDS in the United States civilian population in this age range (MMWR, December 12, 1986: p.759). The average age at death of male inmates with AIDS in the sample is 34, slightly younger than the national average 36.8, for males afflicted with the disease.

Time in Correctional System

Figure 10



Fifty-seven percent of inmates had been in the state correctional system 1-18 months at the time of their death (Figure 10). Another 27 percent had completed 19-36 months. Twelve percent served 37-54 months or up to four and one-half years. Three percent or 10 cases had been in the system 4.6 - 6 years (55-72 months), and two individuals had served 6.6 - 7 years. This distribution by time in system is almost identical to that of the March 1986 report. One additional case was identified of an individual who had been incarcerated 79 months prior to death.

While CDC indicates an incubation period for AIDS ranging from 6 months to 7 years (84 months) or longer, the average incubation period is three years.* Since inmates who were continuously incarcerated for more than 5 years had no access to high risk groups outside the correctional system and were far beyond the average incubation period, the possibility of transmission within facilities may be a cause of concern.

Hospital at Time of Death

In 1981, the New York State correctional system utilized only the State University of the Upstate Medical Center, Syracuse, and Westchester County Medical Center (WCMC) for evaluation and acute inpatient hospitalization of inmates with AIDS. As the incidence of the disease increased across state facilities, it became necessary to utilize local community hospitals for patient care. By 1984, a special care unit (12 beds) was established by DOCS at Sing Sing Correctional Facility because of its proximity to Westchester County Medical Center and New York City. This also made family visits more convenient since most of the AIDS victims were from this area.

Since 1981, DOCS has had to provide inpatient medical-surgical services and outpatient diagnostic services by accessing 33 medical centers and community general hospitals throughout the state, only three of which contain secure prison wards. The most recently established secure unit is at St. Clare's Hospital in New York City, where eight beds are available for DOCS inmates. Currrent plans call for an increase in secure beds at St. Clare's to a total of 25.

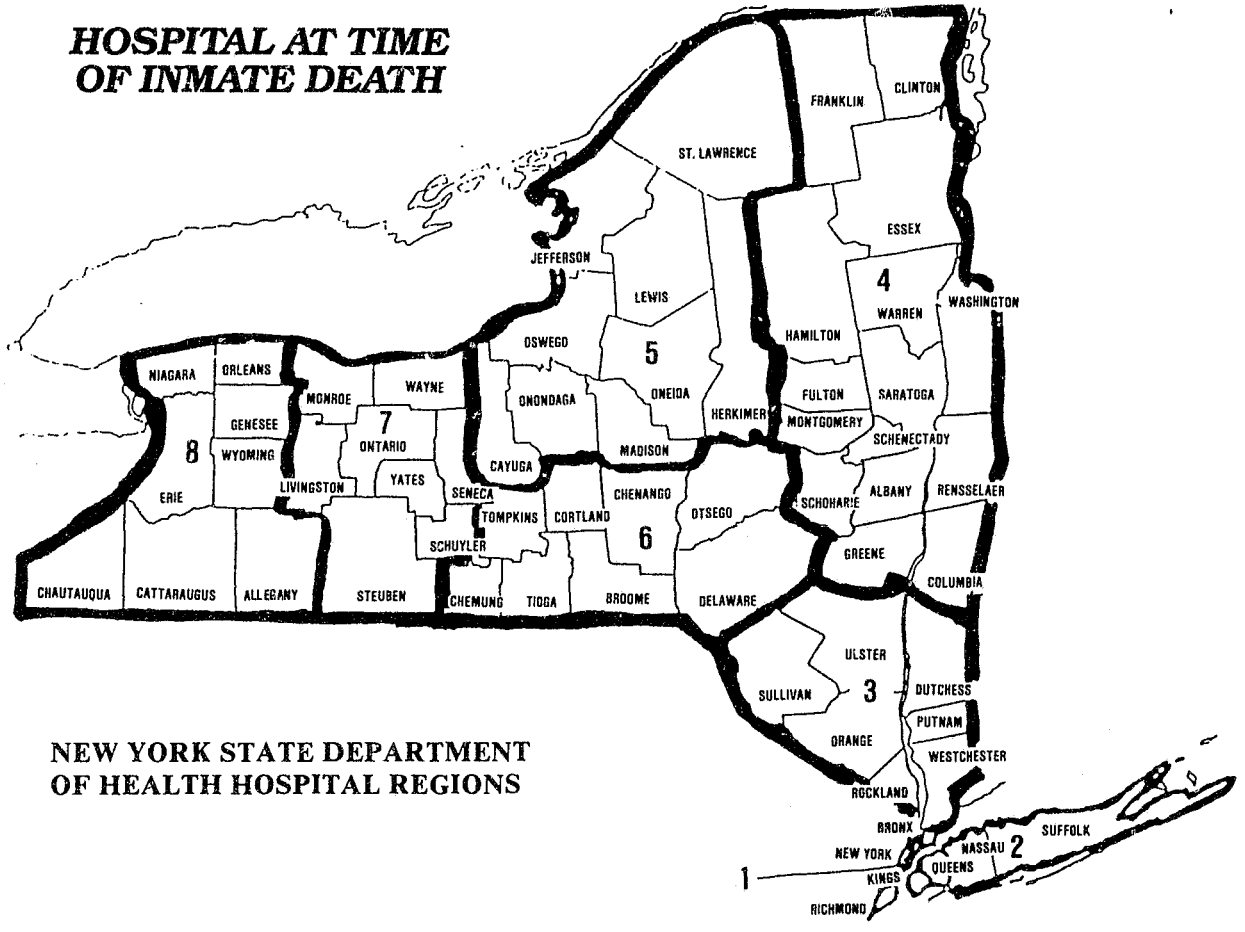
Figure 11 shows the distribution of inmate deaths across the New York State Department of Health's eight hospital regions. The statistical breakdown of inmate deaths shows that the highest number of deaths occurred in Mid-Hudson Region 3. This is due to the location of Sing Sing in the region, as well as the high concentration of correctional facilities in the general geographic area. There were thirteen inmate deaths within correctional facilities, seven more than in the original report. Six of these occurred in 1986, compared to four in 1985 and three in 1984.

One hundred ninety-nine or 64 percent of hospital deaths were reported in the state's ten university-affiliated medical centers. The remaining 36 percent died at community hospitals around the state. However, due to the termination of the contract with Westchester County Medical Center, in September, 1986, DOCS shifted critically ill AIDS inmates to other hospitals statewide. (DOCS inmates are still accepted on an emergency basis at WCMC). In 1985, inmate AIDS deaths at WCMC accounted for 49 percent of medical center inmate mortalities. The rate dropped to 40 percent in 1986. The effect is shown in the increase in community hospital AIDS inmate mortalities over this time period. Seventy-one percent of 1985 AIDS inmate deaths occurred at medical centers; 29 percent at community hospitals. In contrast, community general hospitals were the site for 51 percent of 1986 inmate deaths, compared to 49 percent at medical center locations. Twenty-four 1986 mortalities took place at ten community hospitals where there were no previous inmate cases. Nine of these deaths were at St. Clare's Hospital.

The lack of secure hospital beds, decreasing hospital bed availability with accompanying increased demands on facility infirmaries, and lowered access to infectious disease outpatient services raise serious concerns for the quality and cost of inmate health care. These issues are examined in Chapter 2.

*NOTE: Personal Communication, Mr. Thomas Leonard, Public Health Advisor, AIDS Program, CDC, May 19, 1987.

Figure 11



REGION AND HOSPITAL	NUMBER OF DEATHS	PERCENT OF CASES
REGION 1: NEW YORK CITY		
ST. CLARE'S	9	3%
RICHMOND MEMORIAL HOSPITAL	3	1%
BAYLEY SETON HOSPITAL	8	3%
*BELLEVUE HOSPITAL CENTER	23	7%
CITY HOSPITAL CENTER AT ELMHURST	5	2%
*KINGS COUNTY HOSPITAL CENTER	17	5%
*VETERANS ADMINISTRATION HOSPITAL, MANHATTAN	1	less than 1%
COLUMBIA PRESBYTERIAN	1	less than 1%
TOTAL REGION	**67 Deaths**	**22%**
REGION 2: LONG ISLAND		
*NASSAU COUNTY MEDICAL CENTER	4	1%
*UNIVERSITY HOSPITAL, STONY BROOK	3	1%
TOTAL REGION 2	**7 Deaths**	**2%**

REGION AND HOSPITAL	NUMBER OF DEATHS	PERCENT OF CASES
REGION 3: MID-HUDSON		
COMMUNITY GENERAL HOSPITAL OF SULLIVAN COUNTY, HARRIS	12	4%
HORTON MEMORIAL HOSPITAL	13	4%
VASSAR BROS.	1	less than 1%
WHITE PLAINS	1	less than 1%
ST. AGNES HOSPITAL	4	1%
PHELPS MEMORIAL HOSPITAL	6	2%
*WESTCHESTER COUNTY MEDICAL CENTER	100	32%
NORTHERN WESTCHESTER	1	less than 1%
ST. LUKE'S	3	1%
TOTAL REGION 3	**141 Deaths**	**45%**
REGION 4: NORTHEAST		
GREENE COUNTY MEMORIAL	2	1%
*ALBANY MEDICAL CENTER HOSPITAL	6	2%
GLENS FALLS HOSPITAL	11	4%
CHAMPLAIN VALLEY PHYSICIANS HOSPITAL	8	3%
GENERAL HOSPITAL OF SARANAC LAKE	12	4%
COLUMBIA MEMORIAL	1	less than 1%
TOTAL REGION 4	**40 Deaths**	**14%**
REGION 5: CENTRAL		
*STATE UNIVERSITY OF THE MEDICAL CENTER, SYRACUSE	17	5%
HEPBURN HOSPITAL, A. BARTON	2	1%
FAXTON	4	1%
MERCY-WATERTOWN	1	less than 1%
TOTAL REGION 5	**24 Deaths**	**7%**
REGION 6: SOUTHERN		
ARNOT-OGDEN MEMORIAL HOSPITAL	3	1%
BASSETT (COOPERSTOWN)	2	1%
TOTAL REGION 6	**5 Deaths**	**2%**
REGION 7: ROCHESTER		
*STRONG MEMORIAL HOSPITAL OF THE UNIVERSITY OF ROCHESTER	2	1%
TOTAL REGION 7	**2 Deaths**	**1%**
REGION 8: BUFFALO		
*ERIE COUNTY MEDICAL CENTER	27	8%
TOTAL REGION 8	**27 Deaths**	**8%**
TOTAL HOSPITAL DEATHS, ALL REGIONS	313	96%
DIED IN FACILITY	13	4%
TOTAL CASES	326	100%

*University-affiliated Hospital

Period of Final Hospitalization

Figure 12

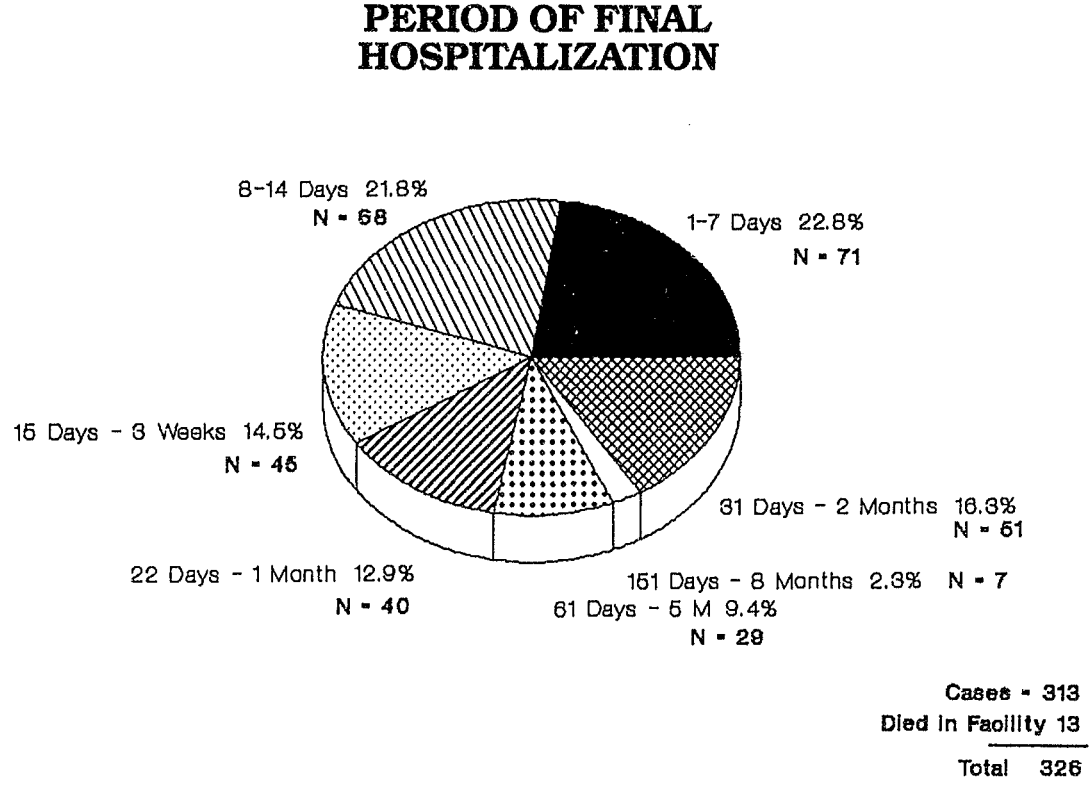
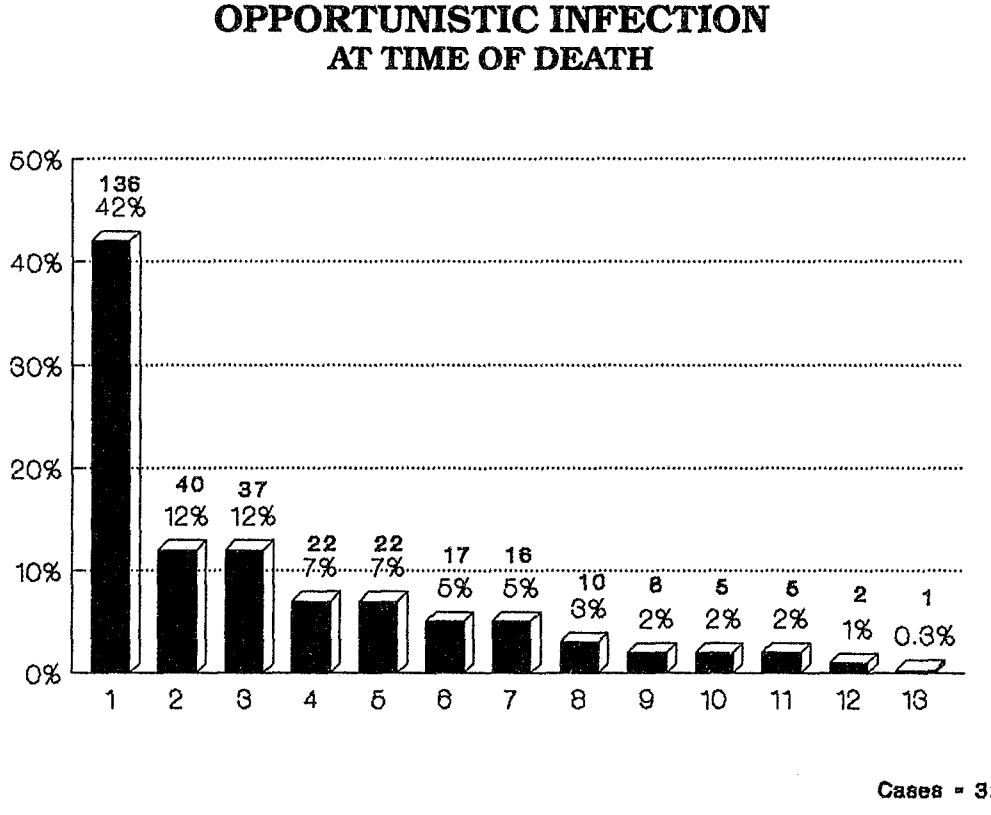


Figure 12 presents the final period of hospitalization for the sample. This ranged from one day to eight months. Forty-four percent of inmates were in the hospital one day to two weeks. This compares to 11 percent of cases whose final hospitalization stay was 61 days to 8 months. Overall, these 313 cases consumed 8,890 acute hospital patient days during their terminal hospitalization with an average length of stay of 28 days. Given the trends identified above, these figures raise critical questions as to the cost of delivery of health care within New York State Corrections. What portion of DOCS available hospital days is consumed by AIDS cases? The utilization of community hospital or medical center hospital beds coupled with the need for security supervision has a major impact on the number of beds available for elective inmate admissions.

Opportunistic Infection at Time of Death

Figure 13



1. Pneumocystis Carinii Pneumonia
2. All Others
3. Pneumocystis Carinii Pneumonia+
4. Toxoplasmosis
5. Mycobacterium Avium
6. Cryptococcus
7. Candidiasis
8. Malignant Brain Lymphoma
9. Cytomegalovirus
10. Kaposi's Sarcoma
11. Kaposi's Sarcoma+
12. Cytomegalovirus+
13. Cryptococcus+

Figure 13 portrays the relative proportions of the thirteen opportunistic infections reported at time of death. Similar to the original report, PCP is the most common opportunistic infection among AIDS inmates. Fifty-four percent of the deaths were due to Pneumocystis Carinii Pneumonia alone or PCP in combination with other opportunistic infections (PCP+).

Summary Demographic Profile

Based on the update of demographic statistics, there has been no dramatic change in the NYS AIDS inmate mortality profile. The typical AIDS inmate mortality in the New York State correctional system was an Hispanic or black, single male, 34 years of age, with a history of intravenous drug abuse prior to incarceration. He was born in the New York City metropolitan area, having lived in this area prior to entering the system. He was typically incarcerated in a state correctional facility. He was likely to have been convicted of robbery, burglary or drug-related offenses, and been in the system an average of 19 months prior to death. He was typically hospitalized in a New York State university-affiliated hospital, in the Mid-Hudson Region. He was most likely to have contracted the opportunistic infection, Pneumocystis Carinii Pneumonia, and died after an average final hospital stay of 28 days.

Chapter 2: A DISEASE PROFILE OF AIDS IN NEW YORK STATE FACILITIES (DOCS)

Introduction

The demographic profile of AIDS inmates outlined in this update is largely shaped by cases coming from state correctional facilities. Table 3 confirms that AIDS deaths have been widespread throughout this system.

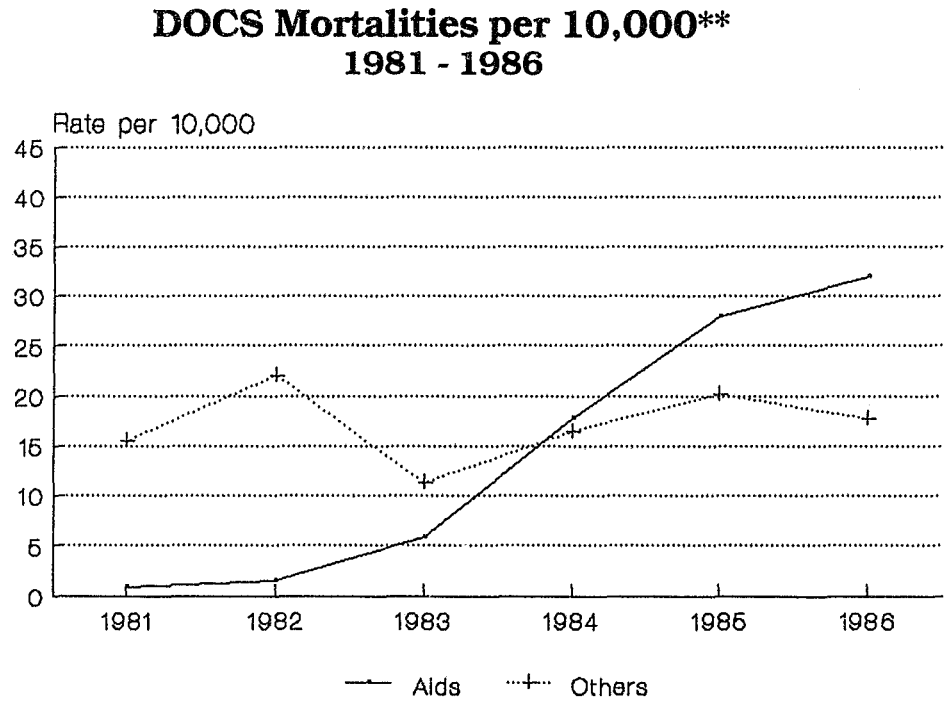
Table 3: *Assigned DOCS Facility at Time of Death By Number and Percent of Deaths*

Type of Facility	Name of Facility	No of Deaths	% of Deaths
Maximum	Attica	19	6.8
	Auburn	13	4.6
	Bedford	8	2.8
	Clinton	17	6.0
	Downstate	15	5.3
	Eastern	7	2.5
	Elmira	3	1.1
	Great Meadow	6	2.1
	Green Haven	15	5.3
	Sing Sing	65	23.1
	Sullivan	1	.4
	Wende	1	.4
	Total Maximum	**170**	**60.4**
Medium	Adirondack	10	3.6
	Albion	3	1.1
	Altona	1	.4
	Arthurkill	8	2.8
	Bayview	1	.4
	Collins	4	1.4
	Fishkill	9	3.2
	Greene	2	.7
	Groveland	3	1.1
	Hudson	2	.7
	Long Island (closed 3/26/85)	3	1.1
	Mid-Orange	6	2.1
	Mid-State	3	1.1
	Mt. McGregor	3	1.1
	Ogdensburg	4	1.4
	Orleans	3	1.1
	Otisville	9	3.2
	Queensboro	10	3.6
	Taconic	3	1.1
	Wallkill	5	1.8
	Washington	5	1.8
	Watertown	3	1.1
	Woodbourne	6	2.1
	Wyoming	2	1.7
	Total Medium	**108**	**39.7**
Minimum	Camp Beacon	1	.4
	Camp Gabriel	1	.4
	Edgecombe	1	.4
	Total Minimum	**3**	**1.2**
	Total Deaths All DOCS Facilities	**281**	**101%**

The greatest number of deaths were reported at maximum security facilities. This illustrates a preference for management of AIDS patients (prior to final hospitalization) in maximum security settings which have the highest concentrations of health care resources – i.e., infirmary capacity, nursing staff, physician coverage, etc. However, more than one-third of the inmates were housed (and managed) in facilities distributed around the state, many of which are less richly endowed with health care resources and which are often remote from large medical centers. (New York State Commission of Correction, April, 1984). In all, the deaths were distributed among 78 percent of DOCS facilities. Since the March, 1986, report, seven additional facilities have reported AIDS mortalities.

A Bureau of Health Systems Evaluation review of all mortality cases in Department of Correctional Services facilities from 1981 through the end of December, 1986 shows that since 1983, more than 50 percent of deaths in DOCS facilities have been due to AIDS.*

Figure 14



**Rate = (# Deaths (AIDS or All Others)/Docs Population) x 10,000

Figure 14 charts the 1981-1986 AIDS mortality rate in DOCS facilities, compared to the rate for all other categories of death (per 10,000 of inmate population). While the mortality rate for other-than-AIDS cases has been fairly stable, the graph clearly shows the upward trend for AIDS mortalities.

In order to learn more about the natural history and progression of the disease in New York's state prison system, this chapter presents findings on: 1) the most common AIDS symptoms presented by inmates; 2) the progression of the disease - average time periods from entry into the system to onset of symptoms, to confirmation and death; 3) a comparison of AIDS inmate survival rates to a NYC AIDS study cohort; and, 4) the incidence rate of the most common opportunistic infections for all mortality cases and the high risk I.V. drug abuse and homosexual population. The 281 state facility mortality cases of the sample are the data base for this analysis.

*As of June 1, 1987, there have been 67 reported 1987 AIDS deaths in New York State DOCS facilities.

Symptoms Profile

In an effort to provide a guide to correctional health care staff as to the most common first symptoms of the disease, inmate sick call onset of symptoms presentations were reviewed. While the expertise of health care professionals was one variable in the comprehensiveness of such assessments, an overall list of 15 symptom observations was gleaned from sick call records. These 15 symptoms were then ranked, from the most common to least common, across all cases. The following "symptoms profile" was presented by inmates who died from AIDS in state facilities.

1) Fever
2) Cough
3) Shortness of Breath
4) Weight Loss
5) Weakness (Fatigue)
6) G.I. problems (diarrhea, nausea, vomiting, abdominal pain, loss of appetite)
7) Chills
8) Night Sweats
9) Chest Pains
10) Lymphadenopathy
11) Headache
12) Flu-like Symptoms
13) Candidiasis
14) Chronic Rash
15) Altered Mental States

In addition to use as a physical assessment tool, this symptoms profile could be utilized as an ongoing measure for monitoring AIDS in the correctional system. That is, the profile might be compared to one similarly developed for ARC inmate case histories. Similarly, an ongoing assessment of these symptoms from Commission mortality cases could signal changes in the disease profile of the inmate population — i.e., in the prevalence of certain opportunistic infections or shifts in risk behaviors. For example, clinical researchers reported for the first time in 1986 large numbers of cases in which altered mental status was the first presenting symptom of AIDS. Similarly, altered mental status appears in the Commission's study population for the first time in 1986. Although the frequency appears low, it is expected to increase as more informed clinicians begin to suspect AIDS when evaluating sudden changes in mental status.

Disease Progression: Research and Quality of Care Issues

The length and variation of the incubation period of AIDS presents particular challenges to correctional administrators and health staff in terms of developing comprehensive treatment policies and procedures. While there is considerable variation between individuals, an examination of particular groups, or "cohorts" may be useful in identifying trends across such groups over time.

With this is goal in mind, state facility inmate mortality cases were grouped *by year* and data extracted and computed for the following "disease stages": 1) number of days from entry into the system to onset of symptoms; 2) number of days from onset to confirmation of symptoms; and, 3) number of days from confirmation to death.

To assure accuracy, the data were extracted by the Project Associate who has the medical expertise to interpret the various medical and facility forms and select the appropriate dates. Time periods were then computed *in exact calendar days* for each case. Table 4 gives the *average aggregate* time in days and months for each disease stage *by year.* A comparison of each year's mortality "cohort" over time for each stage yields a number of observations and questions for further research.

Average Time in System

A comparison of 1982-1986 inmate mortalities shows little variation in the average incarceration period for each year's cohort — from 18.3 months in 1982 to 20 months in 1986.

While each cohort's average time in the system is a function of sentencing variation, the trend toward longer sentences in the state will have an impact on the number of AIDS cases. Are greater numbers of IV drug abusers entering New York State's correctional system for longer periods of time? If so, what are the ramifications of such a trend for the future incidence rate of AIDS in New York State Department of Correctional Services facilities?

TABLE 4: *AIDS PROGRESSION IN NEW YORK STATE PRISONS: AVERAGE TIME PERIODS BY YEAR - TIME IN SYSTEM, ENTRY TO ONSET, ONSET TO CONFIRMATION, CONFIRMATION TO DEATH, FINAL HOSPITALIZATION*

	Average Time in System	Average Time Entry into System to Symptoms Onset	Average Time Onset to Confirmation	Average Time Confirmation to Death	Average Time Final Hospitalization
1982	18.3 mos. (549 days)	11.3 mos. (340 days)	0.8 mos. (25 days)	4.2 mos. (126 days)	0.6 mos. (17 days)
1983	18.8 mos. (563 days)	11.3 mos. (339 days)	3.5 mos. (104 days)	5.3 mos. (159 days)	1.5 mos. (47 days)
1984	21.5 mos. (647 days)	14.3 mos. (430 days)	4.6 mos. (137 days)	6.3 mos. (189 days)	1.3 mos. (39 days)
1985	26 mos. (781 days)	23.0 mos. (690 days)	3.0 mos. (82 days)	5.2 mos. (155 days)	1.2 mos. (35 days)
1986	20 mos. (596 days)	16.5 mos. (496 days)	2.3 mos. (68 days)	4.5 mos. (135 days)	0.7 mos. (21 days)

Average Time, Entry Into System to Onset

Similarly, there is variation in the length of time from entry into DOCS facilities to the onset of symptoms of AIDS - from 11.3 months in 1982 to 23 months in 1985, dropping to 16.5 in 1986. This pattern in 1986 raises a number of questions for additional research. Is the variation due to the particular configuration of opportunistic infections in each year's cases? Is the trend related to the number of drug abusers in each year's cases? All inmates seeking sick call must first be screened by nursing staff. As population pressure increases sick call demand, are inmates with the often ambiguous symptoms referable to immune deficiency screened out at triage? As more DOCS facilities encounter AIDS for the first time, are providers misinterpreting symptoms, perhaps seen for the first time? Is the lack of uniform early detection and diagnostic protocol for all facilities a factor?

Theoretically, if education about AIDS is improving among correctional health care professionals and inmates, then earlier recognition of symptoms might shorten this time span because of earlier documentation of symptoms. Such improvements could account for the 1986 decrease in the average time of entry to onset.

Average Time, Onset to Confirmation

The year-to-year variation in the average time period between symptoms onset and disease confirmation ranges from 25 days in 1982 to 137 days in 1984. Since 1983, when the number of cases increased dramatically, the average time from onset to confirmation has been 3.3 months. The trend suggests that there is improvement in the confirmation process, with the time span from onset to confirmation shortening the last two years. This may be related to increased knowledge by health care professionals related to symptoms recognition, need for referral to infectious disease clinics, hospitalization, and confirmatory tests.

Average Time, Confirmation to Death

Since 1984, the average time period from confirmation of AIDS to death has been declining - from 6.3 months in 1984 to 4.5 in 1986,* even as rates of confirmation of the disease appear to be improving. These declining survival rates may reflect the presence of demographic factors in the inmate population associated with diminished survival.

A comparison of New York State inmate survival rates to a New York City study cohort is provided in the next section of the report.

*This is not due to extremes in the distribution of n's - The coefficent of variation is 1.1 in 1984, 1.3 in 1985 and 1.1 in 1986.

Average Time, Final Hospitalization

Since 1983, the average period of final hospitalization has been close to a month and gradually decreasing to an average of 21 days in 1986. This downward trend may be related to the hospitalization of AIDS inmates in general. The decreasing availability of hospital beds and other resources documented in Chapter 1 results in delayed hospitalization of inmate patients overall. Increased resistance by secondary care community hospitals for elective inmate admissions vs. emergency admissions and the necessity of managing inmate patients in facility-based infirmaries offering only primary levels of care raise critical questions concerning the relationship of these conditions to the trend of decreasing survival rates.

Survival Rates and Quality of Care

Table 5 presents mean and median survival rates from a New York City civilian AIDS study cohort* and the New York State Department of Correctional Services inmate cases in this study.

TABLE 5: Mean and Median Survival, New York City AIDS Patients and New York State AIDS Inmates (in days)

Group	Number (No.)	Mean	Median
NYC Total	5833	367	347
DOCS Total	202	128	78
NYC Men	5281	374	357
NYC Women	552	298	263
DOCS Men	197	155	79
DOCS Women	5	120	125
NYC White	2753	411	406
NYC Black	1769	325	282
NYC Hispanic	1281	320	306
DOCS White	33	171	78
DOCS Black	74	163	47
DOCS Hispanic	94	144	73
NYC IV Drug	1660	318	282
Homosexuality & IV Drug	335	348	305
DOCS IV Drug	190	159	81
Homosexuality & IV Drug	14	91	81
NYC PCP	2541	317	318
PCP+	719	338	301
DOCS PCP	85	102	25
PCP+	25	179	152
NYC Age 30-34	1436	398	387
35-39	1377	363	357
40+	1944	342	300
DOCS Age 30-34	71	137	125
35-39	43	196	110
40+	45	129	43

*Personal communication with Dr. Rand Stoneburner, Director of AIDS Research, NYC Department of Health. The cohort represents over 5,800 cases (through December, 1985) drawn for a study of the probability of AIDS survival and the effects of variables like gender, race/ethnicity, age, risk group, and type of illness on survival.

Without controlling for any other variables, it is obvious that DOCS inmates have shorter survival rates than this general population sample. However, the New York City cohort differs markedly from the inmate group in: 1) ethnicity (a larger percentage of whites and smaller ratios of blacks and Hispanics); 2) risk groups (greater numbers of homosexuals and fewer IV drug abusers); and 3) age group (a higher ratio of individuals 40 years of age or older). These differences reflect the differences in New York's AIDS inmate profile compared to the United States AIDS general population profile outlined in the Commission's 1986 report. Moreover, the New York City research finds certain specific demographic factors - black race or Hispanic ethnicity, female gender, and IV drug use/homosexuality risk behaviors - to each have an independent effect in diminishing survival. As the New York State AIDS inmate population is primarily comprised of individuals who are black/Hispanic IV drug users, the lower rates may be causally related to these risk factors. Nonetheless, even given the differences in the demographic profiles, one would not expect to find inmate survival rates to be less than half that of the general population sample and declining annually. Are these findings in any way related to the identified deficits in inmate health care resources and patient management practices found in this study?

Current research indicates that early detection and aggressive therapy in a medical center setting followed by close monitoring by medical center-based infectious disease departments extends, both the duration and quality of life for AIDS victims. What remains lacking is convincing evidence that each confirmed inmate patient receives vigorous monitoring and aggressive therapy in an appropriate setting.

A July, 1986, Commission survey found 247 identified AIDS and ARC patients distributed among 43 state correctional facilities. Of these, a total of 80 were being managed in either facility infirmaries or in population. A total of 132 ARC patients were similarly managed, for a total of 212 ARC/AIDS patients. The conditions of medical management vary among the 43 facilities, but their access to tertiary care medical centers is nearly uniformly limited. Additionally, staffing resources have not increased to meet this need. This, when viewed in conjunction with the increase in deaths at facilities vs. hospitals (3 in 1984; 4 in 1985; and 6 in 1986) and the year-to-year increases in AIDS confirmations only at autopsy (1983-3; 1984-4; 1985-12; 1986-24), suggests that the increased strain on limited DOCS health care resources, both facility and community-based, is having a negative impact on DOCS' ability to achieve nominal results in its management of AIDS.

Transmission of AIDS

As referenced above, there are a small number of inmates who died of AIDS during the study period who had been continuously incarcerated for 5-7 years. Of the 12 identified, eight had not participated in the Family Reunion Program (trailer visits, as verified by the Office of Ministerial Services, Department of Correctional Services, on March 18, 1986). Additionally, the period of continuous incarceration within DOCS facilities for all 12 cases was verified with DOCS Bureau of Classification and Movement on March 17, 1986 and February 17, 1987.

Nine of the mortalities occurred in 1985; three in 1986. Two inmates had been in the system since 1981; seven since 1980. Two entered in 1979; the eighth prisoner had entered the system February 9, 1978. Of the twelve, eight were in the system 4.4 to 5.4 years before the onset of symptoms. Data on symptoms onset were missing in two cases. One inmate was incarcerated 2.8 years before symptoms onset. The inmate with the longest incarceration period evidenced symptoms on January 1, 1985, seven years after entry.

Without any additional evidence, it is difficult to assert that the "almost five-year cases" seroconverted during incarceration. CDC studies of AIDS report incubation periods as long as 84 months, or 7 years. The seven-year case, therefore, does appear suspicious, but, again, no definite conclusions can be drawn as to how the virus might have been transmitted. A recent longitudinal study of inmates in Maryland found a 1.5% seropositivity rate among inmates who had volunteered to be tested (National Institute of Justice, 1987). Based on such studies and evidence of other sexually transmitted diseases within correctional systems, the National Institute of Justice report on AIDS states that "Firmer conclusions on HIV transmission in correctional facilities await systematic followup studies." (National Institute of Justice, 1987: 11).

Opportunistic Infection Incidence Rates

An additional feature of the disease profile of AIDS in New York State's prison system is the type and incidence of opportunistic infections. The demographic profile of all AIDS cases in the state found Pneumocystis Carinii Pneumonia to be the predominant type of opportunistic infection reported at time of death. In terms of state facility mortalities, what has been the year-to-year incidence rate of PCP and other opportunistic infections identified in this study? Are there differences in these rates between heterosexual drug abusers and homosexual drug abusers in the sample?

Total State Facility Inmate Mortalities

Table 6 gives a breakdown of the numbers of state facility mortality cases by opportunistic infection from November, 1981, to October 31, 1986.

Table 6: ***New York State Facility Mortality Cases By Opportunistic Infection and Percent of Total Cases, 11/13/81 to 10/31/86.***

Year		1981	1982	1983	1984	1985	1986
% of Total							
38%							
(119)	PCP	less than 1%	1%	3%	6%	16%	12%
		(1)	(3)	(10)	(18)	(50)	(37)
10%							
(34)	PCP+	less than 1%	—	1%	2%	3%	4%
		(1)	—	(4)	(6)	(9)	(14)
7%							
(21)	Myco-	—	—	—	1%	2%	4%
	bacterium	—	—	—	(4)	(5)	(12)
5%							
(15)	Toxo-	—	—	less than 1%	1%	3%	1%
	plasmosis	—	—	(1)	(3)	(9)	(2)
2%							
(4)	Kaposi's	—	—	—	1%	less than 1%	less than 1%
	Sarcoma	—	—	—	(2)	(1)	(1)
2%							
(5)	Kaposi's	—	—	—	less than 1%	1%	1%
	Sarcoma+	—	—	—	(1)	(2)	(2)
2%							
(7)	Cytomegalo-	—	—	—	1%	1%	less than 1%
	virus	—	—	—	(2)	(4)	(1)
1%							
(3)	Cytomegalo-	—	—	—	1%	less than 1%	—
	virus+	—	—	—	(2)	(1)	—
5%							
(13)	Crypto-	—	less than 1%	less than 1%	1%	1%	2%
	coccus	—	(1)	(1)	(2)	(4)	(5)
3%							
(8)	Malignant	—	—	—	1%	1%	1%
	Brain	—	—	—	(3)	(2)	(3)
	Lymphoma						
(1)	TB	—	—	—	less than 1%	—	—
		—	—	—	(1)	—	—
15%							
(50)	Other	—	—	1%	4%	3%	7%
		—	—	(2)	(13)	(11)	(24)

323 cases (3 Missing)

PCP and PCP+ show a progressive annual increase in the incidence of *total* cases. Significantly, the PCP rate increased by four percent between 1983 and 1984 and 11 percent between 1984 and 1985. Moreover, the number and variety of types of opportunistic infections increased after 1983. While the numbers are small, the progressive increases for mycobacterium and a combination of more than one opportunistic infection might also indicate a trend.

Although Kaposi's Sarcoma ranks second in the national population, (of which 66 percent are homosexuals or bisexuals), it ranks sixth in the inmate sample where only 10 percent of the group admitted a homosexual orientation. Ninety-five percent of the correctional sample were intravenous drug abusers, contrasting with 17 percent in the national population. Such factors would clearly seem to suggest that the incarcerated drug abusers in New York State are at a low risk for Kaposi's Sarcoma. This raises the question of the relationship between lifestyle and opportunistic infection incidence.

While such epidemiological studies are beyond the scope of the present analysis, the data on infections incidence trends could point the way to more sophisticated research on the natural history and progression of the disease in New York's inmate population.

Heterosexual and Homosexual I.V. Drug Abusers

Finally, the incidence rates for the more common opportunistic infections are compared for heterosexual and homosexual I.V. drug use mortality cases.

Table 7: *New York State Facility Mortality Cases by Opportunistic Infections: Heterosexual and Homosexual I.V. Drug Abusers*

Sexual Orientation	**Heterosexual I.V.**	**Homosexual I.V.**
Opportunistic Infection Type		
PCP and PCP+	83% (68)	64% (9)
Toxoplasmosis	6% (5)	14% (2)
Kaposi's Sarcoma & Kaposi's Sarcoma+	1% (1)	7% (1)
Mycobacterium	10% (8)	14% (2)
	n = 82	n = 14

Note: Remaining cases = "other"

An examination of Table 7 shows that a higher incidence rate of PCP or PCP+ was found for heterosexuals with a history of I.V. drug abuse compared to homosexual intravenous drug abusers. Toxoplasmosis, conversely, had a higher incidence rate (14%) among homosexual I.V. drug abusers in the sample. Similarly, and in support of general population studies, Kaposi's Sarcoma (or Kaposi's Sarcoma+) was more prevalent in the homosexual I.V. subgroup (7%). Mycobacterium infections were slightly more prevalent in the homosexual I.V. subgroup (14% compared to 10%).

Summary

The demographic profile of AIDS inmates is largely shaped by state correctional facility (DOCS) cases. While AIDS mortalities have been widespread in this system, the majority of deaths have been at maximum security facilities. Over 50 percent of all DOCS deaths the last three years have been due to AIDS. While the mortality rate for other-than-AIDS cases has been fairly stable, the AIDS mortality rate per 10,000 DOCS inmates has grown steadily.

A disease profile of the sample mortalities found a progressive downward trend in the average time between confirmation and death. There is an annual decrease in inmate survival rates and a lower mean survival rate for inmate cases compared to a New York City cohort. This diminished survivability may be related to increased strains in DOCS community-based and facility health care resources. The issue of AIDS

transmission within facilities is raised in relationship to inmate cases found to be continuously incarcerated 5-7 years.

Finally, an examination of opportunistic infection incidence rates in state facilities confirmed an upward trend in the proportion of Pneumocystis Carinii Pneumonia cases. There was a concomitant increase in the number and variety of opportunistic infections and types after 1983. In contrast, New York State inmate AIDS victims, largely drug abusers, were at low risk for Kaposi's Sarcoma. This latter infection and toxoplasmosis were more prevalent only in inmates who admitted a homosexual and drug abuse lifestyle.

CHAPTER 3:
IV DRUG ABUSE, FEMALE OFFENDERS, AND AIDS

Introduction

In recent years, research has focused attention on increases in female rates of crime and drug abuse. Several studies have specifically examined the relationship between drug use and female criminality. What emerges is a profile of female offenders that are entering the criminal justice system - a profile that includes increasing numbers of women who are most likely to be at risk for contracting AIDS.

This chapter: 1) reviews current literature on the relationship between female IV drug abuse and crime; 2) presents a statistical profile of female drug offenders in New York State Department of Correctional Services facilities; and, 3) compares the demographic profile of New York State women with AIDS to that of the 14 female inmate mortality cases. A number of research and policy questions are raised concerning the increasing numbers of high risk females in New York State correctional facilities.

Research on Female IV Drug Offenders

The New York State Division of Substance Abuse Services documents a growing trend in the numbers of women in the state engaging in substance abuse. In 1980, 22 percent of heroin admissions to treatment were female; by 1985, the percentage was 29 percent. (New York State Division of Substance Abuse Services, December, 1986). Nationally, researchers have begun to document the relationship between female IV drug use and specific patterns and rates of criminal behavior. The most commonly reported offenses committed by female heroin abusers include shoplifting, the sale of drugs, and prostitution (Sanchez and Johnson, July, 1986).

A 1986 study of 175 women incarcerated at New York City's Rikers Island Correctional Institution for Women provides a profile of women entering the criminal justice system related to their need to support a drug habit (Sanchez and Johnson, July, 1986). The profile of the drug-abusing female inmate is non-white, poor, separated or divorced, a high school dropout, the mother of two or more children, with a previous criminal record. Supporting other national studies, the findings show a significant association between heroin use and the severity and frequency of criminal acts. Given these trends, the proportion of women who are IV drug users entering correctional systems should be expected to increase.

New York State DOCS Female Drug Offenders

While the New York State Department of Correctional Services currently does not have data on the ratio of male or female intravenous drug users in state facilities, DOCS trend data on new female commitments and women under custody clearly document increased imprisonment rates for women related to drug offenses (New York State Department of Correctional Services, June, 1986).

First, there are substantial differences in the proportion of women compared to men committed for drug offenses. Female drug offenders represented a higher proportion of drug offense commitments than their male counterparts for the years 1974-1984 (median difference of +9.6%). Second, there has been a dramatic increase in the proportion of women committed as a second felony offender for a drug offense. This group represented .2 percent of the under-custody female population in 1975. By 1985, 9.4 percent of the female population had been sentenced under this category (New York State Department of Correctional Services, September, 1986). The number of women in state facilities increased by 147 percent during this time period.

Given the pattern of increasing numbers of women under DOCS custody who are drug offenders, what proportion of these has an intravenous drug abuse history? With the 80 percent increase in female AIDS mortalities in this year's cases over all previous years, what percentage of DOCS female incarcerants match the characteristics of women most at risk for developing AIDS?

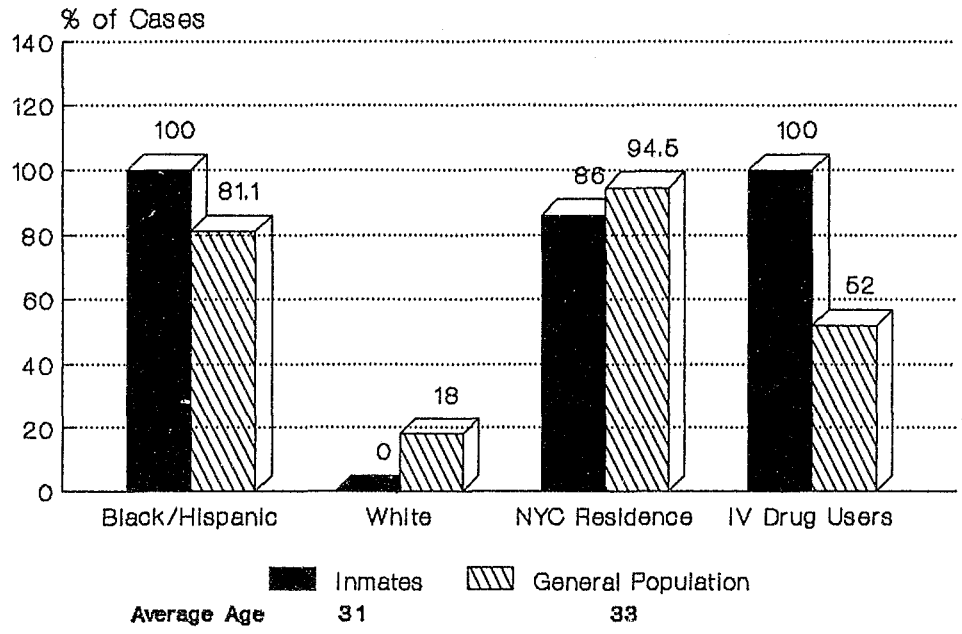
New York State Female AIDS Profile

According to New York State Department of Health statistics (up to June of 1986), women comprised 9.8 percent of the state's adult AIDS cases (New York State Department of Health, June, 1986). Among women with AIDS, a greater percentage are black (49.5%) or Hispanic (31.6%) than white (18.3%). The primary risk behavior is IV drug use, regardless of race or ethnicity - 59 percent white, 61 percent black, and 63 percent Hispanic. Figure 15 provides a comparison between the demographic characteristics of women in New York's general population with that of the 14 female decedents in this study. The female inmate mortalities clearly reflect the demographic characteristics of women at high risk for AIDS.

Female AIDS Inmate Mortality Profile

Figure 15

Demographic Characteristics of NYS Female AIDS Cases, General Population and Inmate Mortalities



The typical female inmate AIDS mortality is Hispanic or black, single, 31 years of age, with a history of intravenous drug abuse prior to incarceration. She was most likely to have lived in New York City prior to entering a state correctional facility, sentenced for homicide-related offenses, robbery, or offenses related to drugs. She serves an average sentence of 15.8 months prior to death. She was typically hospitalized in the Mid-Hudson Region and most likely to have contracted PCP or toxoplasmosis* and died after an average final hospital stay of 28 days.

Confirming the profiles of women in prison nationally, the median number of years of education was 10. Eight of the 14 women had an average of two children each. For nine of the cases, there was a median drug use history of 8 to 11 years. Although the numbers are small, two women with the longest reported drug histories, 16-23 years, were sentenced for the most serious crimes, homicide-related offenses. Only three reported previous arrest for prostitution.

While the primary mode for contracting AIDS among these women appears to be through intravenous drug use, eight or 57 percent of the cases showed evidence of tattoos at the time of autopsy. One woman indicated she was a sexual partner of a man who had AIDS.

SUMMARY

Similarities between profiles of national and state female drug offenders in correctional systems and the profile of women at risk for developing AIDS raise serious concerns, particularly given the dramatic increase in the number of female AIDS mortalities in this year's Update. Given the unabated advance of the AIDS virus among IV drug users and the risk to their sexual partners and offspring, the New York State Commission of Correction will continue to monitor the trend in female inmate mortalities.

*Five cases-PCP; Three cases-Toxoplasmosis. Toxoplasmosis was found in 6 percent of male cases and eight percent of female cases.

CONCLUSION

Acquired Immune Deficiency Syndrome: A Demographic Profile of New York State Inmate Mortalities, 1981-1986, Update represents an ongoing initiative to assess the nature and scope of the incidence of AIDS in New York State's correctional settings.

The report provides a comprehensive picture of the natural history of the disease in a subpopulation which has been the subject of intensive study by the Commission over the past five years. The data provided and the questions posed form the foundation for future research initiatives in New York State and the nation. The study's interpretive analyses of the data are offered to correctional and health care policymakers to assist them in strategic planning for the successful management of AIDS and the myriad problems associated with its critical impact on New York State.

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