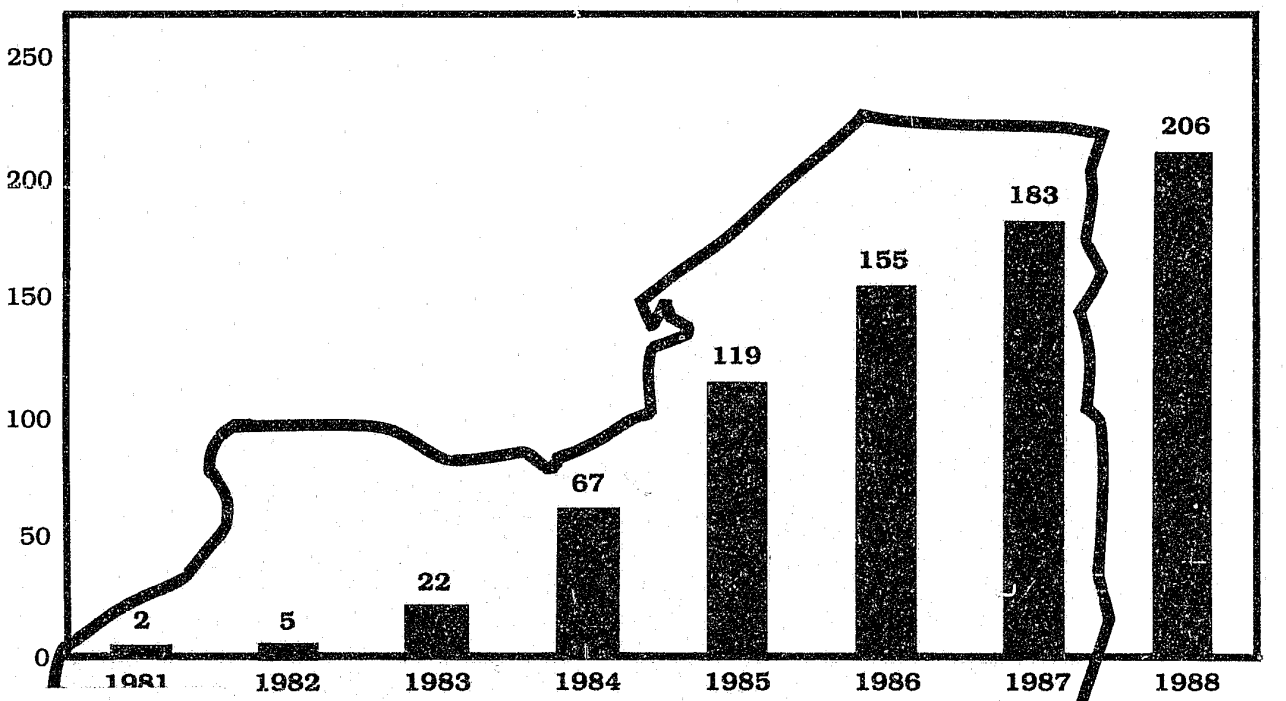
ACQUIRED IMMUNE DEFICIENCY SYNDROME

A Demographic Profile of New York State Inmate Mortalities 1981 - 1988

MAY 1990

FOURTH EDITION



NEW YORK STATE
SSION OF CORRECTION
› M. Cuomo, Governor

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FOURTH EDITION

ACQUIRED IMMUNE DEFICIENCY SYNDROME

A DEMOGRAPHIC PROFILE OF
NEW YORK STATE INMATE MORTALITIES
1981 - 1988

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and
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STATE OF NEW YORK
Mario M. Cuomo, Governor

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ACQUIRED IMMUNE DEFICIENCY SYNDROME: A DEMOGRAPHIC PROFILE OF NEW YORK STATE INMATE MORTALITIES, 1981-1988 FOURTH EDITION

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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.** and **David J. Barry, M.D.**

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 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 African-American, single, male, 32 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 20 months prior to death. He was typically unmarried but had fathered two children. He was most likely to have contracted the opportunistic infection, Pneumocystis carinii Pneumonia, and in 1988 survived an average 6.6 months after diagnosis with AIDS.

DEMOGRAPHIC CHARACTERISTICS:

- **1990 UPDATE**: The population-adjusted AIDS mortality rate in the NYS Department of Correctional Services declined 17% between 1988 and 1989, the first decline since the onset of the epidemic.

- AIDS in New York State's correctional system is predominantly a disease of males. Ninety-six percent of the 1981-1988 sample were male; four percent were female.

- Although there was a reduction in the percentage of those reporting IV drug abuse as a risk factor in 1988 (88.3%) from 1981-1987 (95%), IV drug abuse remains the predominant risk behavior among inmates who died from AIDS.

- Only 7.4 percent of the 1988 sample admitted to a homosexual, bisexual or transsexual orientation.

- Fifty-three percent of the new cases were Hispanic; 35 percent African-American and 12 percent white. Compared to their ratio in the correctional population, Hispanics were disproportionately represented in death cases. This representation grew by 22% between 1987 and 1988.

- Although 52% of the sample were unmarried, 55% of the 1988 state prison inmate sample reported having one or more children. Ninety percent of these were Hispanic or African-American.

- The average age of the males at death was 32. The predominant range was 19-64, with less than 1% older than 64. The age 30-34 group increased47% 1987-1988. Age groups 25-29 and 35-39

decreased by 32% and 14% respectively.

- Fifty-nine percent of mortalities had been in the correctional system 1-18 months; 22 percent 19-36 months; 12 percent 37-54 months; and 5 percent 4.6-6 years. Six inmates had served 6-7 years at the time of death. Two inmates in this year's sample had been in the system eight years or more prior to death.

- Although reduced by 17% in 1988 from previous years, the most prevalent opportunistic infection at time of death remains Pneumocystis carinii Pneumonia (PCP). Forty-three percent of the cases were PCP or PCP in combination with some other opportunistic infection. The decrease was accounted for by malignant lymphomas which tripled as a proportion of deaths in 1988, and Tuberculosis, which grew proportionally by 140% in 1988.

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 60 percent of all DOCS deaths between 1986 and 1988 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 grew steadily through 1988. Preliminary data showing a reduced rate in 1989 is accounted for in part by a 51% increase in the AIDS mortality rate in the New York City Department of Correction, and in part by improved access to chemotherapy for DOCS inmates.

- There was an increase in inmate survival rates in 1988, but inmate survival remains low, exceptionally low for women. 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 6 to 8 years or more before the onset of symptoms.

- Opportunistic infection rates in state facilities evidenced a downward trend in the proportion of Pneumocystis carinii Pneumonia in 1988 compared to 1981-1987. There was a concomitant increase in the incidence of malignant lymphoma and tuberculosis in 1988.

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 85,000 inmates.

The state correctional system is the second largest correctional system in the country (US Department of Justice, 1988), with 54,088 inmates as of May 19, 1990. It contains 61 institutions with populations ranging from 57 to 2,813.

The New York City correctional system census on May 19, 1990 was 19,812 with 17 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 11,563 inmates on May 19, 1990. The county system is similar to the New York City system in that the maximum sentenced stay is one year.

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 charcteristics 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 policy makers 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. A Second Edition for cases through October 31, 1986 was published in September, 1987. A Third Edition which added 179 cases was released in October 1988. As AIDS continues to critically impact New York State's correctional and health care delivery system, this 1990 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, 1990 there have been 1,095 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 edition adds 206 cases for the period ending December 31, 1988, there were 226 AIDS deaths in 1989. This 12 percent increase is similar to the 14 percent increase in New York State correctional system AIDS mortalities between 1987 and 1988, from 181 to 206.

The National Institute of Justice, Update: AIDS in Correctional Facilities (National Institute of Justice, June, 1989) finds the number of inmate AIDS cases in correctional facilities to have increased at a slower rate than that in the United States general population. The NIJ report, based on a survey of 70 state, local and federal correctional systems found 3,136 confirmed AIDS correctional cases as of October 1, 1988, a 60 percent increase over 1987. In comparison, there was a 76 percent increase for the United States as a whole for the period October 1, 1987 to October 1, 1988.

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 reports that New York State has 23 percent of all AIDS cases within the country. In addition, the CDC also report that New York City has an AIDS rate approximately 3 times higher than the AIDS rate in Los Angeles, and 19% higher than Miami. 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 Report also shows a 21 percent decrease in the percentage of total cases represented by Middle Atlantic State correctional systems between 1985 and 1988. Nonetheless, AIDS deaths represented 62 percent of all New York correctional mortalities in 1988**.

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

*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.

**Reported AIDS mortalities to the Commission constituted 60% of 1989 correctional facility deaths.

METHODOLOGY

Data Sources and Variables

A major portion of the Commission's 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
- 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 (ouside 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.

Number of Children - The number of children for Department of Correctional Services inmates who died between Januay 1, 1988 and December 31, 1988 is utilized. This data was obtained prospectively from inmate classification records beginning January 1, 1988.

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. For this 1990 Update, a registered nurse under the supervision of the Project Director extracted the medical data. Table 1 shows the jurisdictional origin of the sample total 761 cases:

Table 1:

New York State Commission of Correction AIDS Study Sample Mortality Cases, 11/13/81-12/31/88, by Jurisdiction

	No. of Cases (%)	No. of Cases	1987 Update Total (%)	No. of Cases	1988 Update Total (%)	No. of Cases (%)	1990 Update Total (%)
	11/13/81-10/31/85	11/1/85-10/31/86 (including case updates)*		11/1/86-10/31/87		11/1/87-12/31/88 (including case updates)*	
Jurisdiction							
NYS Department of Correctional Services (DOCS) Facilities	169(85)	124	293(84)	146	439(84)	189	628(83)
New York City Correctional Facilities	26(13)	20	46(13)	27	73(14)	39	112(15)
NYS County Jails	3(2)	5	8(2)	6	14(1)	5	19(2)
TOTAL	198(100)	149	347(100)	179	526(100)	233	759(100)

*That is, cases added due to designation as "AIDS" rather than "natural".
Missing cases = 2

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.

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 December 31, 1988.

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, marital status, number of children, age,

and time in correctional system. Additionally, important factors such as intravenous drug abuse history, sexual orientation, 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.

HIV SEROPREVALENCE AMONG NEW YORK STATE DOCS ENTRANTS

In November 1987, the New York State Department of Health, Division of Epidemiology began a research project to assess the rate of human immunodeficiency virus (HIV) infection within, among others, the New York State inmate subpopulation. Table 2 shows the HIV infection rate among new entrants to the DOCS by place of residence when arrested.

Table 2
HIV Seroprevalence
New York State Prison Entrants
Place of Residence When Arrested

	Number Tested	Number Positive	Percent Positive
RESIDENCE			
New York City	341	69	20.2
NYC (vicinity)	75	12	1.6
Upstate - Urban	12	1	8.3
Upstate - Rural	17	0	0
Mid-Hudson	19	0	0
Missing/Out-of-State (no region specified)	30	4	13.3
Total	494	86	17.4

Source: NYS Department of Health
Office of Public Health
Division of Epidemiology, July 1988

Chapter 1: NEW YORK STATE AIDS INMATE DEMOGRAPHIC PROFILE

Introduction

This chapter updates the statistical profile of 13 major characteristics of the 761 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.

Figure 1

Mortalities by Jurisdiction

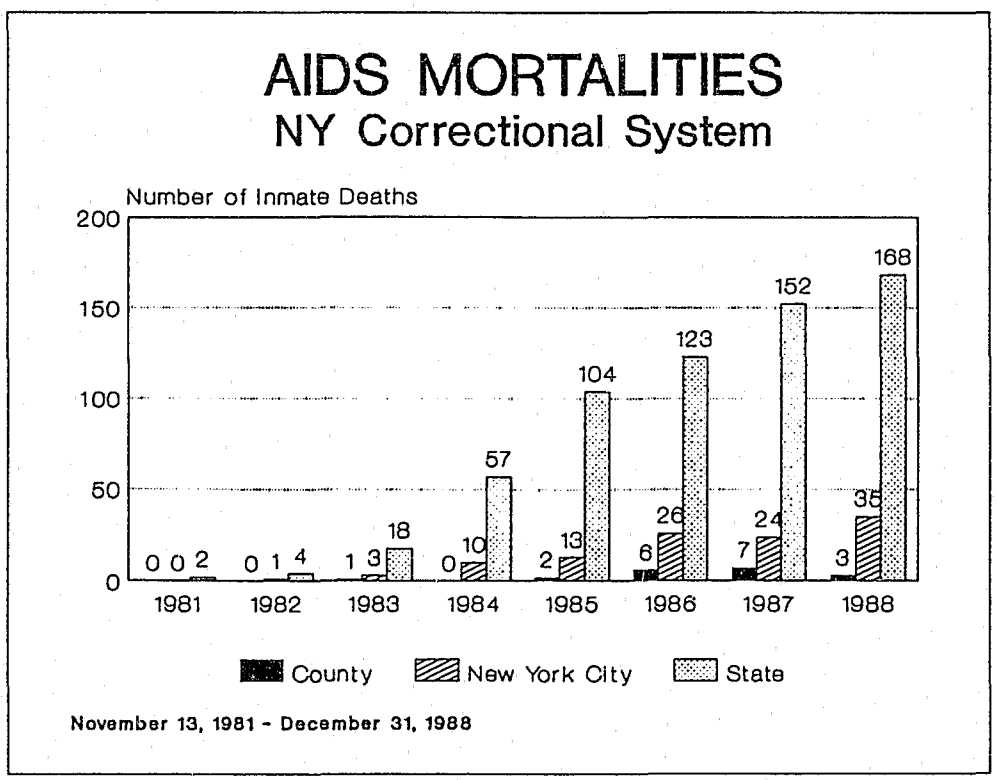


Figure 1 illustrates the distribution of AIDS inmate deaths by correctional jurisdiction for the 761 cases in the sample. The lowest number of inmate AIDS mortalities occurred in the state's county jail system. There were a total of 19 deaths. Based on an average annual jail population of 7,952 between 1981 and 1988, the AIDS mortality rate for New York's jail system is 240 per 100,000 population for this time period. **

Similarly, the 112 deaths in the New York City Correctional system as of December 31, 1988, represent a mortality rate of 961 deaths per 100,000 population. This is based on an average annual city system population of 11,650 between 1981 and 1988.

The greatest percentage of inmate deaths from AIDS is found in the state's correctional system (DOCS). With an average inmate population of 33,378 between 1981 and 1988, there were 1,881 mortalities per 100,000 population (New York State Commission of Correction, January 1989). 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 3 shows that only 28 women have died from AIDS in the entire system during the study period. There were eight deaths among women inmates in 1988; 29% of all AIDS deaths among women since 1981.

Table 3:
Sex of Inmate

	Number of Cases	*Percent of Cases*
Sex		
Male	727	96%
Female	28	4%
TOTAL	*755*	*100%*

Missing Cases = 6

Because AIDS incidence rates are higher in correctional systems than in the population at large (National Institute of Justice, June 1989), an ongoing concern for New York corrections officials is the

**AIDS Mortality Rate =

$$\frac{\text{Total number AIDS deaths in jurisdiction X 100,000}}{\text{Average Population of Jurisdiction}}$$

proportion of high risk categories in the correctional population - numbers of inmates with histories of intravenous drug abuse and homosexual/bisexual orientation.

Figure 2

Inmate I.V. Drug Abuse History

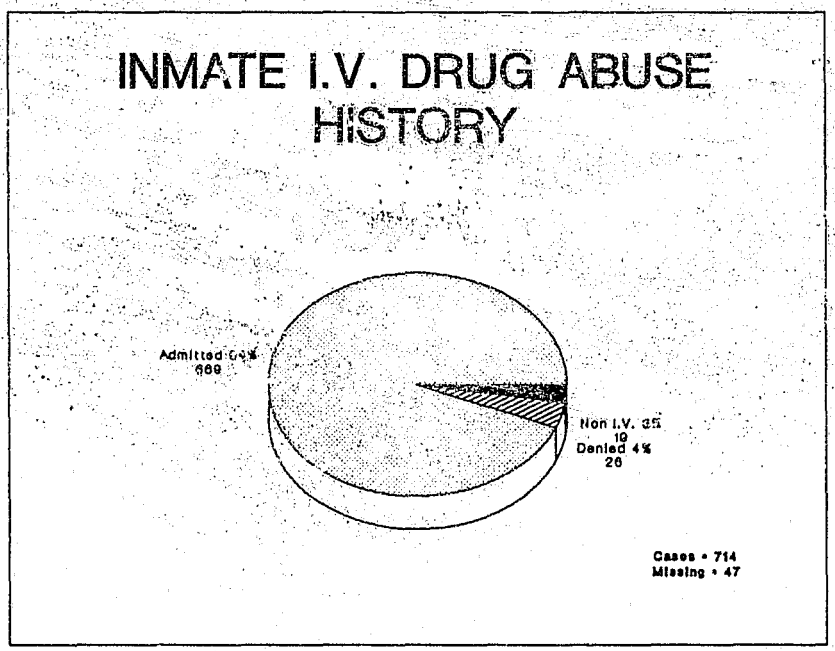
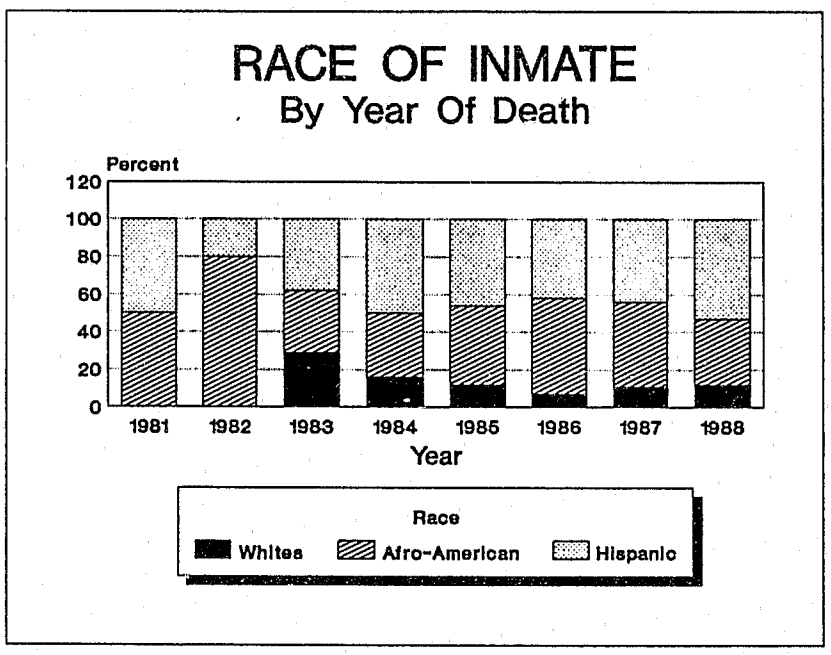


Figure 2 clearly illustrates the relationship between AIDS inmate mortalities and a history of intravenous drug abuse. Based on inmate self reports and other case documents examined, 94 percent of inmates who died from AIDS admitted to this lifestyle. This extremely high proportion of correctional intravenous drug users contrasts to the 19% reported in the general population. (Centers for Disease Control, Septebmer, 1988), and the more than one-third New York State AIDS cases through March, 1990 (NYS DOH, March, 1990). Eighty-nine percent of the female correctional decedents had I.V. drug abuse histories.

Figure 3

Race of Inmate



Clearly, African-Americans and Hispanics represent the largest percentage of AIDS mortalities as shown in Figure 3. Whites account for only 12 percent of the deaths due to AIDS. With the 1988 updated cases, the proportion of African-American AIDS inmate mortalities in the profile decreased by 27% compared to the 1981-1987 average, while the ratio of white deaths increased eight percent. The percentage of Hispanics among AIDS inmate mortalities, however, increased by 29% in 1988 compared with the 1981-1987 average and has shown a general upward trend since 1984.

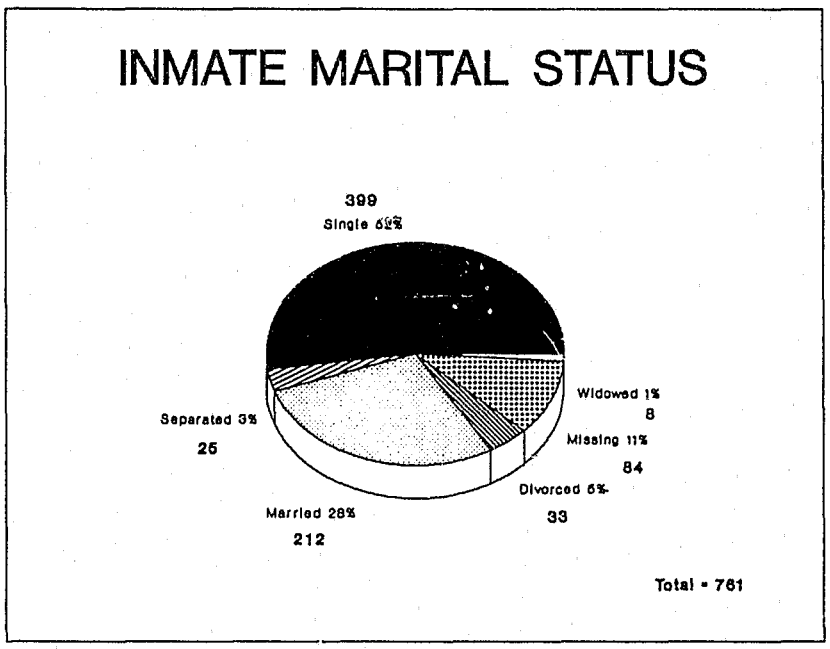
According to an December 5, 1988 demographic profile of inmates in DOCS facilities (New York Department of Correctional Services), 19 percent of inmates are white, 30 percent are Hispanic and 50 percent are African-American. Assuming this distribution has remained fairly constant over the period 1981 through 1988, then whites, and to a lesser degree African-Americans, are under-represented among AIDS mortalities. Hispanics, on the other hand, are over-represented.

Menendez, et al reported in 1990 that the cumulative age-adjusted AIDS mortality proportion among Hispanics in New York City 1981-1987 was the highest among all ethnic groups, 17% of all deaths, compared to 8.9% for African-Americans and 4.2% for whites. The disproportionate

mortality among Hispanics in the Commission sample appears to represent a carry-over from mortality in the New York City civilian population from which the majority of the Commission inmate sample is derived.

Figure 4

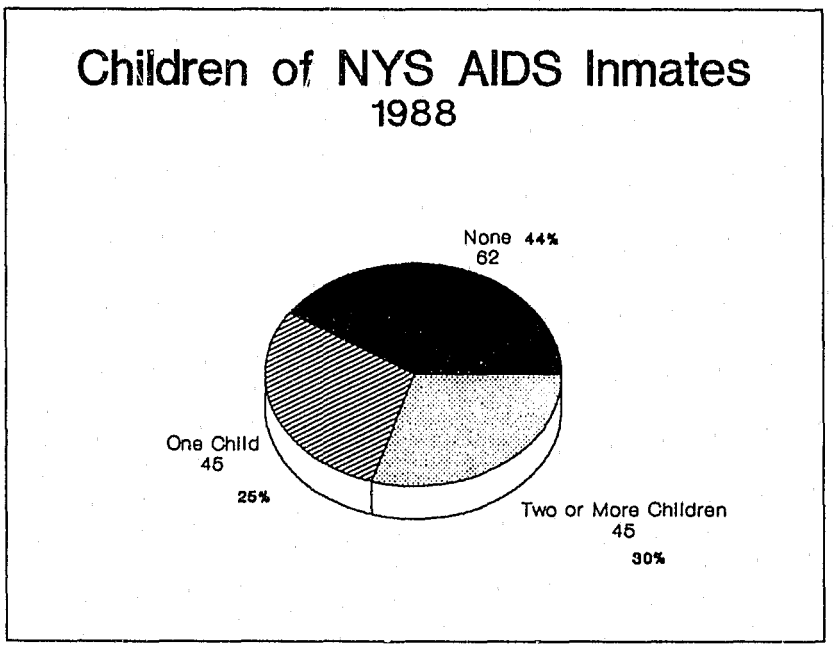
Inmate Marital Status



The marital status distribution of inmates who died from AIDS since 1981 has remained relatively constant. Fifty-two percent were not married. While this status correlates with a drug abuse profile, the 36% who reported their status as married, separated, divorced or widowed has implications for the families these deceased inmates have left behind.

Figure 5

Children of NYS AIDS Inmates
1988



The 1988 NYS Department of Correctional Services sample was examined for the number of inmates who reported having children. Marital data notwithstanding, an alarming 55% of DOCS inmates who died in 1988 from AIDS reported having one or more children, with 30% reporting two or more children.

Figure 6

Age of Inmate at Death

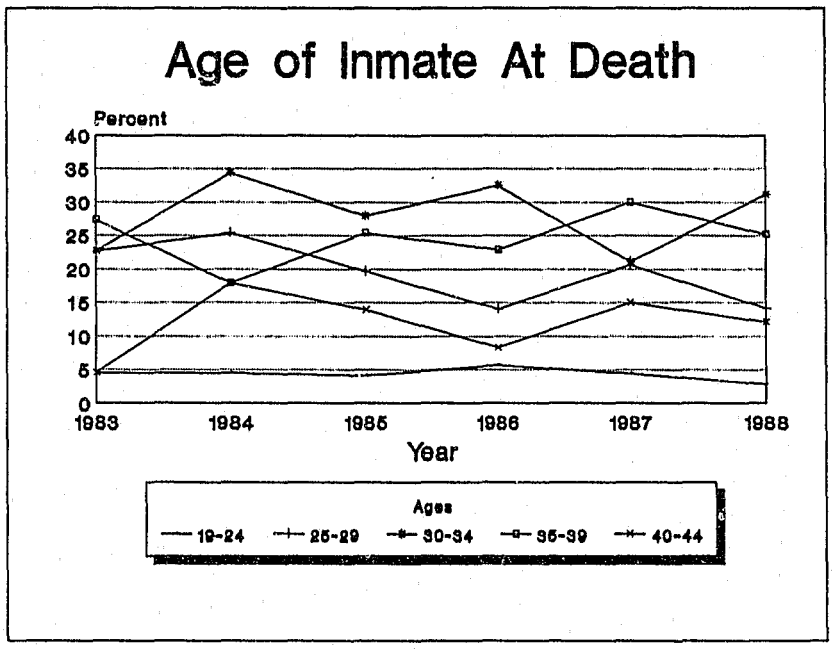
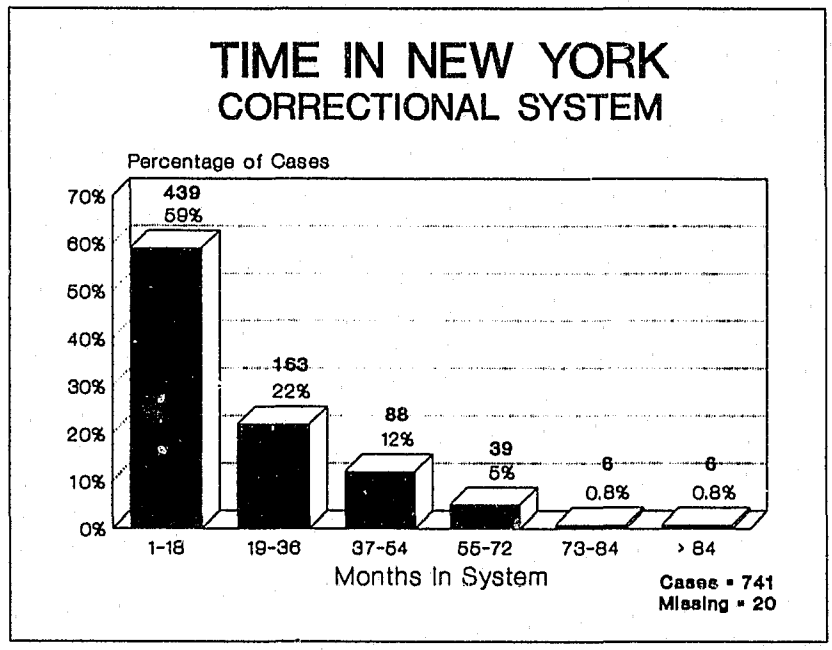


Figure 6 displays the age range at death by year. The youngest decedent was 19; the oldest 65. Ninety-five percent of the male mortalities were between the ages of 20 and 49. The predominant range was age 19-64 with less than 1% older than 64. The average age of the males at death was 32. The 1988 sample suggests a slight decrease in average age at death concentrated in the age 30-39 range. Deaths in that range increased 47% between 1987 and 1988. Age groups 25-29 and 35-39 decreased by 32% and 14% respectively with a corresponding shift into the age 30-34 group.

Figure 7

Time in Correctional System



Fifty-nine percent of inmates had been in the state correctional system 1-18 months at the time of their death (Figure 7). Another 22 percent had completed 19-36 months. Twelve percent served 37-54 months or up to four and one-half years. Five percent or 39 cases had been in the system 4.6-6 years (55-72 months), and six individuals had served 6-7 years. This year's edition includes two individuals who were in the system eight years or more prior to death.

While CDC indicates a developmental period for AIDS ranging from 6 months to 7 years (84 months) or longer, the average developmental period is three years. The very small proportion of inmates who were incarcerated for more than five years and who had no access to infected persons outside the correctional system suggests that the degree of transmission of HIV within the correctional system remains low.

Figure 8

Opportunistic Infection at Time of Death

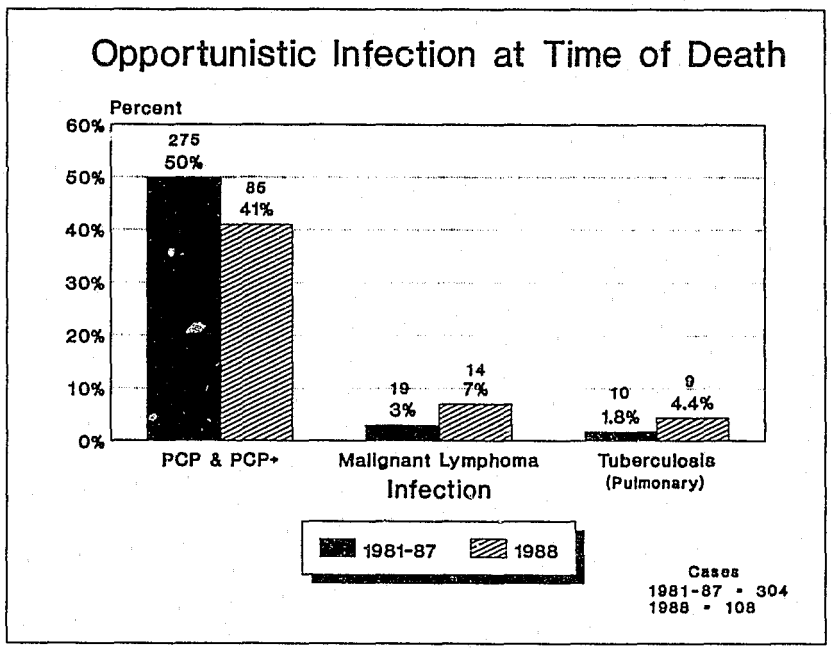


Figure 8 portrays the relative proportions of three opportunistic infections reported at time of death in 1987-1988. Although reduced by 17% in 1988 from previous years, Pneumocystis Carinii Pneumonia remains the most common opportunistic infection among AIDS inmates. Forty-one percent of the deaths in 1988 were due to Pneumocystis carinii Pneumonia alone or PCP in combination with other opportunistic infections (PCP+). Much of the 1988 reduction in PCP was accounted for by malignant lymphomas, which increased from 3% of all deaths in 1981-1987 to 7% of 1988 deaths, and pulmonary Tuberculosis which increased from 1.8% of 1981-1987 deaths to 4.4% in 1988.

Summary Demographic Profile

Based on the update of demographic statistics, there has been no dramatic change in the New York State AIDS inmate mortality profile. The typical AIDS inmate mortality in the New York State correctional system was an Hispanic or African-American, single male, 32 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 20 months prior to death. He was typically unmarried but had fathered two children. He was most likely to have contracted the opportunistic infection, Pneumocystis carinii Pneumonia, and in 1988, survived an average 6.6 months after diagnosis with AIDS.

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 4 confirms that AIDS deaths have been widespread throughout this system.

Table 4: 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	31	4.9
	Auburn	26	4.1
	Bedford	14	2.2
	Clinton	34	5.4
	Coxsackie	2	0.3
	Downstate	32	5.1
	Eastern	13	2.1
	Elmira	15	2.4
	Great Meadow	22	3.5
	Green Haven	38	6.1
	Shawangunk	6	1.0
	Sing Sing	98	15.6
	Sullivan	6	1.0
	Wende	7	1.0
	Total Maximum	**344**	**54.7**
Medium	Adirondack	15	2.4
	Albion	2	0.3
	Altona	12	1.9
	Arthurkill	19	3.0
	Bayview	2	0.3
	Collins	8	1.3
	Fishkill	30	4.8
	Franklin	11	1.8
	Greene	12	1.9
	Groveland	13	2.1
	Hudson	3	0.5
	Long Island (closed 3/26/85)	3	0.5
	Mid-Orange	11	1.8

	Mid-State	16	2.6
	Mt. McGregor	11	1.8
	Ogdensburg	15	2.4
	Oneida	1	0.1
	Orleans	11	1.8
	Otisville	18	2.9
	Queensboro	13	2.1
	Taconic	9	1.4
	Wallkill	8	1.3
	Washington	8	1.3
	Watertown	10	1.6
	Woodbourne	11	1.8
	Wyoming	6	1.0
	Total Medium	**278**	**44.7**
Minimum	Camp Beacon	2	0.3
	Camp Gabriel	1	0.1
	Camp Georgetown	1	0.1
	Edgecombe	1	0.1
	Total Minimum	**5**	**0.6**
	Total Deaths All DOCS Facilities	**627**	**100%**
	Missing cases = 1		

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 45% 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, June 1988). In all, the deaths were distributed among 71 percent of DOCS facilities. Since the October 1988 report, three additional facilities have reported AIDS mortalities.

A Commission review of all mortality cases in Department of Correctional Services facilities from 1981 through the end of December 1987 shows that since 1983, more than 60 percent of deaths in DOCS facilities have been due to AIDS.

Figure 9

DOCS Mortalities per 10,000
1981-1989

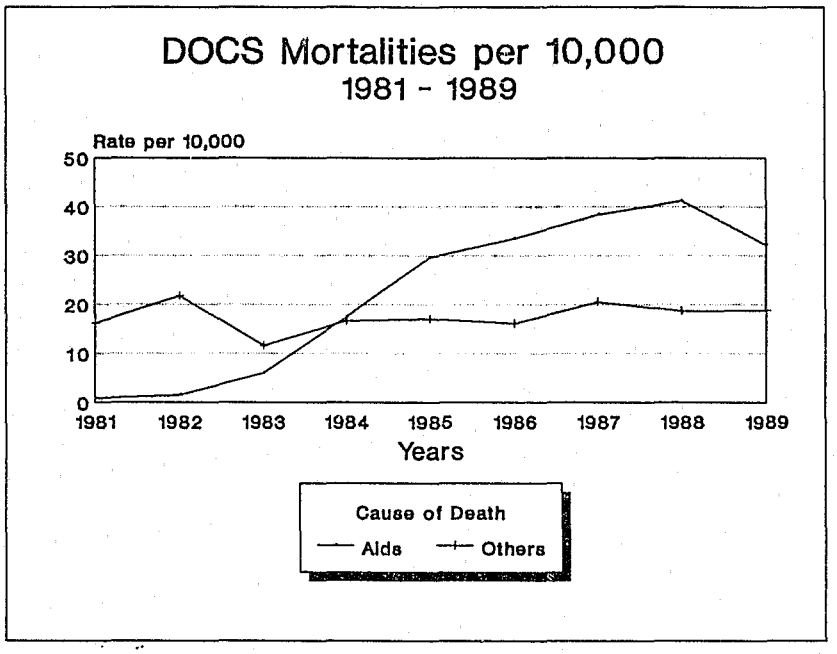


Figure 9 charts the 1981-1989 AIDS mortality rate in DOCS facilities, compared to the rate for all other categories of death (per 10,000 of inmate population). The mortality rate for other-than-AIDS cases has been fairly stable. The graph clearly illustrates the upward trend for AIDS mortalities, **but for the first time shows a decrease between 1988 and 1989 from 39.9/10,000 to 33.1/10,000, a decrease of 17%.**

It may be that widespread use of drugs effective against HIV and opportunistic infections which began in earnest in 1988 has contributed to the mortality rate decline. This is corroborated by a decrease in the incidence of PCP and improved survival of DOCS inmates with AIDS in 1988. However, the New York City Department of Correction AIDS mortality rate increased 51% between 1988 and 1989 despite nominal survival data. Some of these inmate deaths may partially account for the reduction in the DOCS rate.

In order to learn more about the natural history and progression in New York's state prison system, this chapter presents findings on:

1) the progression of the disease - average time periods from entry into the system to onset of symptoms, to confirmation and death; and 2) a comparison of AIDS inmate survival rates to a New York City AIDS study cohort. The 628 state facility mortality cases of the 1981-1988 sample are the data base for this analysis.

Disease Progression: Research and Quality of Care Issues

The length and variation of the developmental 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 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 5 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.

Table 5: 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 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)
1987	23.7 mos. (711 days)	15.7 mos. (471 days)	4.2 mos. (127 days)	4.3 mos. (128 days)	0.9 mos. (28 days)
1988	24.6 mos. (738 days)	16.6 mos. (497 days)	5.4 mos. (163 days)	6.6 mos. (197 days)	0.8 mos. (25 days)

Average Time in System

A comparison of 1982-1987 inmate mortalities shows little variation in the average incarceration period for each year's cohort - from 18.3 months in 1982 to 24.6 months in 1988.

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?

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 15.7 in 1987 and to 16.6 months in 1988. This pattern in 1986-88 suggests improvement in the ability of DOCS clinicians to detect early, often ambiguous symptoms as being related to immunodeficiency.

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 4.3 in 1987, even as rates of confirmation of the disease appeared to be improving. **The downward trend reversed for the first time in 1988 (6.6 months). This increase in survival rate may reflect the expansion of therapeutic intervention which began on a large scale within DOCS in 1988.**

Average Time, Final Hospitalization

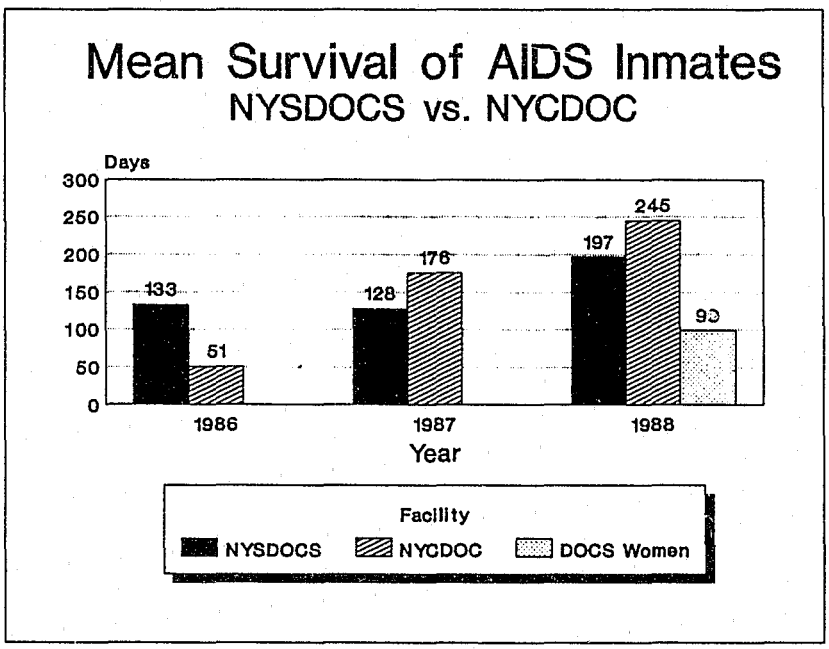
Since 1983, the average period of final hospitalization has been close to a month and gradually decreasing to an average of 21 days in 1986. This downward trend may be related to the hospitalization of AIDS inmates in general. It increased slightly in 1987 and again decreased in 1988. The high acute care bed utilization rates suggested by these figures argues strongly for development of intermediate care levels for inmate-patients.

Survival Rates and Quality of Care

Figure 10 presents mean survival rates from the New York State Department of Correctional Services inmate cases in this study, with 1987-1988 rates for New York City Department of Correction inmates.

Figure 10

Mean Survival, New York City DOC AIDS Patients and New York State AIDS Inmates (in days) 1986-1988



Without controlling for any other variables, it appears that DOCS inmate survival has begun to improve. Women's survival in DOCS lags far behind men but the total number of cases is still small, and a larger pool of cases may moderate the figures for women. Overall, improvement of survival in DOCS has lagged behind positive change in the New York City Department of Correction.

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. Widespread availability of vigorous therapy beginning in 1988 may account for this improvement.

A June 1988 Commission report on management of AIDS in the Department of Correctional Services asserted that conditions of medical management varied among the nearly 40 DOCS facilities with inmate AIDS patients and that their access to tertiary care medical centers was nearly uniformly limited. Additionally, staffing resources had not increased to meet this need. Commission mortality reviews conducted in 1989 and early 1990 indicate that this state of affairs still prevails, and may contribute to inmate survival rates below that of the New York

City Department of Correction which has consolidated and upgraded its treatment services.

Transmission of AIDS

As referenced above, there are a small number of inmates (eight) who died of AIDS during the study period who had been continuously incarcerated for 6-8 years.

Without any additional evidence, it is difficult to assert that these cases seroconverted during incarceration. CDC studies of AIDS suggests that T-cell derangements sufficient to cause severely compromised immunity may take as long as 84 months, or 7 years to develop. These cases do 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 long-term inmates who had volunteered to be tested (National Institute of Justice, 1988). Based on such studies and evidence of other sexually transmitted diseases within correctional systems, the National Institute of Justice report on AIDS states that "...there are no conclusive data on the extent of transmission of infection within correctional facilities."

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 60 percent of all DOCS deaths the last four years have been due to AIDS. The AIDS mortality rate among DOCS inmates has grown steadily during the period 1981-1988 but decreased by 17% between 1988 and 1989 the first such decline since the epidemic's onset.

A disease profile of the sample mortalities found an increase in the average time between confirmation and death for 1988. This coincides with the advent of large scale chemotherapy for this population. This reverses an annual decrease in inmate survival rates. The survival rate for DOCS inmates remained low compared to a New York City Department of Correction cohort. This continued low survival may be related to continuing strains in DOCS community-based and facility health care resources. Finally, the issue of AIDS transmission within facilities is raised in relationship to inmate cases found to be continuously incarcerated 6-8 years.

CONCLUSION

Acquired Immune Deficiency Syndrome: A Demographic Profile of New York State Inmate Mortalities 1981-1988, Fourth Edition 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 six 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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