

ACQUIRED IMMUNE DEFICIENCY SYNDROME

A DEMOGRAPHIC PROFILE OF NEW YORK STATE INMATE MORTALITIES 1981-1985

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STATE OF NEW YORK Mario M. Cuomo, Governor MARCH 1986

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March 14, 1986

The Honorable Mario M. Cuomo Governor State of New York Capitol Albany, New York 12224

Dear Governor Cuomo:

It is with pleasure that I submit this report by the New York State Commission of Correction entitled, "Acquired Immune Deficiency Syndrome: A Demographic Profile of New York State Inmate Mortalities, 1981-1985."

This study represents a major endeavor by the Commission of Correction to significantly enhance the body of research information that currently exists regarding Acquired Immune Deficiency Syndrome. I believe it contributes to your initiative which has placed New York State at the forefront of efforts to understand this disease as it affects the criminal justice system.

The undertaking documented in this report demonstrates the deep commitment of the Commission to its important mandate to promote the improvement of the New York State correctional system. We will continue to work steadfastly toward that goal in the future.

I would like to acknowledge the support and cooperation provided by the New York State Department of Health in this research project. Special appreciation is due the staff of the Commission of Correction and its Office of Program and Policy Analysis and Bureau of Health Systems Evaluation.

Sincerely,

William D. The Makon

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ACQUIRED IMMUNE DEFICIENCY SYNDROME: A DEMOGRAPHIC PROFILE OF NEW YORK STATE INMATE MORTALITIES, 1981-1985

TABLE OF CONTENTS

PA	IGE
FOREWORD EXECUTIVE SUMMARY OVERVIEW OF NEW YORK STATE CORRECTIONAL SYSTEM AFFECTED BY AIDS INTRODUCTION AND PURPOSE	1 2 4 5
THE NEW YORK STATE CORRECTIONAL SYSTEM: SCOPE OF THE AIDS PROBLEM History of Commission of Correction Involvement AIDS Correctional Cases, Current Status	5 5 6
METHODOLOGY Data Sources and Variables Definition of Variables	6 6 7 8
Data Sample, Collection and Analysis	9
DEFINITION OF AIDS/ARC (AIDS RELATED COMPLEX)	9
ORGANIZATION OF REPORT	9
NEW YORK STATE AIDS INMATE DEMOGRAPHIC PROFILE Introduction	11 11
Mortalities by Jurisdiction	11
Risk Groups	12
Sex of Inmate	12
Inmate I.V. Drug Abuse History and Sexual Orientation	13
Residence of finnate	14
Place of Birth	16
Crime Conviction Category	16
Inmate Marital Status	17
Age of Inmate at Death	18
Time in Correctional System	19
Hospital at Time of Death	19
Period of Final Hospitalization	22
Opportunistic Infection at Time of Death	23
Summary Demographic Profile	23
DEMOGRAPHIC PROFILE COMPARISONS: NEW YORK STATE INMATES	
AND UNITED STATES POPULATION	24
Introduction	24
Race	24
Age	25
Opportunistic Infection	25
Patient Group	27
Summary	28
A DISEASE PROFILE OF AIDS IN NEW YORK STATE FACILITIES (DOCS) Introduction	29 29
Symptoms Profile	30

Disease Progression	31
Average Time in System	31
Average Time, Entry Into System to Symptoms Onset	32
Average Time, Onset to Confirmation	32
Average Time, Confirmation to Death	32
Average Time, Final Hospitalization 3	32
Transmission of AIDS 3	32
Opportunistic Infection Incidence Rate 3	33
Total State Facility Inmate Mortalities	33
Heterosexual and Homosexual I.V. Drug Abusers	34
Summary 3	35
CONCLUSION 3	35
REFERENCES	36
APPENDIX: Governor's AIDS Criminal Justice Policies	37
LIST OF TABLES:	
 New York State Commission of Correction AIDS Study Sample Mortality Cases, 11/13/81-10/31/85. By Jurisdiction 	9
2 Sex of Inmate	12
3. Comparative Percentages By Age: General Population and New York State Inmates	25
4 Comparisons By Patient Group: IV Drug Users and Homosexual/IV Drug Users	
General Population and New York State Inmates	27
5 Assigned DOCS Facility at Time of Death By Number and Percent of Deaths 2	29
6 AIDS Progression in New York State Prisons: Average Time Periods By Vear	
- Time In Systems Entry to Onset Onset to Confirmation Confirmation to	
Death Final Hospitalization	31
7 New York State Facility Mortality Cases By Onnortunistic Infection and	
Percent of Total Cases, 11/13/81 to 10/31/85	१२
8 New York State Facility Mortality Cases By Opportunistic Infection: Heterosexual	
and Homosexual I.V. Drug Abusers	34

LIST OF FIGURES:

1.	AIDS Mortalitis, New York Correctional System	11
2.	Inmate I.V. Drug Abuse History	13
3.	Inmate Sexual Orientation	13
4.	Inmate Residence Prior to Entrance Into Correctional System	14
5.	Race of Inmate	15
6.	Place of Inmate Birth	16
7.	Inmate Crime Conviction Category	17
8.	Inmate Marital Status	17
9.	Age of Inmate at Death	18
10.	Time in New York Correctional System	19
11.	Hospital at Time of Inmate Death	20
12.	Period of Final Hospitalization	22
13.	Opportunistic Infection at Time of Death	23
14.	Racial Distribution of AIDS Cases: CDC/NYS Inmates	24
15.	CDC/NYS Opportunistic Infection Rate: Pneumocystis Carinii Pneumonia	25
16.	CDC/NYS Opportunistic Infection Rate: Kaposi's Sarcoma	26
17.	CDC/NYS Opportunistic Infection Rate: All Other Opportunistic Infections	27
18.	DOCS Mortalities, 1981-1985	30

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 Commission's 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, heterosexual 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 21.7 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 35 days.

DEMOGRAPHIC CHARACTERISTICS

- AIDS in New York State's correctional system is predominantly a disease of males. Ninety-seven percent of decedents were male; three percent were female.
- Ninety-two percent of inmates in the sample had a history of intravenous drug abuse.
- Only 13 percent of the sample admitted to a homosexual, bisexual or transsexual orientation.
- Forty-six percent of the cases were Hispanic; 39 percent black and 15 percent white. Compared to their ratio in the correctional population, Hispanics were disproportionately represented in death cases.
- Eighty-nine 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 30.1% robbery, 20.1% burglary, 19.1% drug-related offenses.
- Sixty-three percent of the sample were unmarried.
- The average age of the sample at death was 34. The youngest was 19; the oldest 59. Seventy-six percent were between the ages of 25 and 39 when they died.
- Fifty-six percent of mortalities had been in the correctional system 1-18 months; 28 percent 19-36 months; 12 percent 37-54 months; and four percent 4.6-6 years. One inmate had been in the system seven years at the time of his 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 twenty-three or 72 percent of inmate deaths took place in the state's 10 university-affiliated medical centers. The remaining one-third died in community hospitals around the state. Six inmate mortalities occurred in correctional facilities.
- The final period of hospitalization ranged from one week to eight months. Fifty-three percent of inmates were hospitalized 1-3 weeks, 28 percent 1-2 months, 12 percent 3-5 months and 5 percent 6-8 months.
- The 171 cases consumed 6,004 acute hospital patient days with an average length of stay of 35 days.
- The most prevalent opportunistic infection at time of death was Pneumocystis Carinii Pneumonia (PCP). Fifty-nine percent of cases were PCP or PCP in combination with some other opportunistic infection.

INMATE DEMOGRAPHIC PROFILE COMPARED TO UNITED STATES POPULATION

- Compared to the United States population, the inmate profile has a higher proportion of Hispanics and blacks. This is related to high percentages of New York City Hispanic and black I.V. drug abusers in New York's correctional system.
- The inmate profile exhibits a slightly higher proportion of AIDS deaths in the 20-39 age range, compared to national AIDS cases.

-2-

- The proportion of deaths due to Pneumocystis Carinii Pneumonia is similar in both populations. In contrast, the number of Kaposi's Sarcoma inmate deaths is much lower than its incidence in the civilian population. This is related to the more prevalent incidence of this opportunistic infection among homosexual males, who are the highest risk group in the general population.
- There are greater numbers of intravenous drug abusers in the inmate sample. Similarly, a greater ratio of inmate homosexual males with AIDS admitted to I.V. drug abuse than homosexual/I.V. drug abusers in the United States population at large.

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 in 1984 and 1985 have been due to AIDS.
- There was a progressive annual increase in the length of time from entry into the system to symptoms onset. In contrast, there was little variation in the time period between symptoms onset to confirmation and confirmation to death.
- The issue of AIDS transmission within facilities was raised in terms of five inmates who were in the system 4.6 to 6 years before the onset of symptoms. Additionally, there was one continuously incarcerated inmate who did not evidence symptoms until seven 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.

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 55,500 inmates.

The state correctional system is the third largest correctional system in the country (Criminal Justice Institute, 1984), with 35,845 inmates as of February 20, 1986. It contains 49 institutions with populations ranging from 52 to 2,698 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 February 20, 1986 was 12,106 with 13 sentenced and detention institutions and four 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 7,533 inmates on February 20, 1986. The county system is similar to the New York City system in that the maximum sentenced stay is one year.



INTRODUCTION AND PURPOSE

On October 24, 1985, Governor Mario M. Cuomo announced a comprehensive strategy and public information campaign to address the problem of AIDS, Acquired Immune Deficiency Syndrome, in New York State. Recognizing the critical impact of AIDS on New York's criminal justice system, Governor Cuomo made specific policy recommendations to five New York State criminal justice agencies — the Department of Correctional Services (DOCS), the Division of Parole, the Division for Youth, the Division of Probation and Correctional Alternatives, and the State Commission of Correction (Commission). (See Appendix).

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 Commission functions, Governor 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. Based on this initiative, the study has 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.

THE NEW YORK STATE CORRECTIONAL SYSTEM: SCOPE OF THE AIDS PROBLEM

History of Commission of Correction Involvement

In November of 1981, the Commission's Bureau of Health Systems Evaluation, in the regular course of its investigations of inmate mortalities, received a report from Auburn Correctional Facility of a fatality due to a rare pneumonia caused by the parasitic organism, *pneumocystis carinii*. While it was exploring the history of this first case, a second was reported to the Commission, this time from Green Haven Correctional Facility. In an effort to determine whether this phenomenon was peculiar to the correctional system, the Commission contacted the CDC Medical Epidemiologist of the New York State Department of Health.

Similar cases had indeed appeared in the United States. The resulting collaboration between the Commission and the Centers for Disease Control confirmed the *possibility* of AIDS in New York's correctional system prior to 1981. However, a five-year CDC/Commission retrospective study of Commission mortality investigation files back to 1976 failed to document any apparent cases of AIDS in New York State correctional facilities prior to 1981.

The Commission's consistently applied policy of investigation of all inmate mortalities thus afforded CDC investigators information unavailable elsewhere in the nation in 1981, and thereby provided benefits to the public which were totally unforeseen when the Medical Review Board's enabling legislation was enacted.

Since 1981, the Commission has expanded its role to include an ongoing AIDS surveillance program in

state, county, and New York City correctional facilities; provision of applied technical assistance in the management of AIDS; and policy development for correctional administrators, the Executive and the Legislature. Specific initiatives have included the dissemination of information to the Federal Prison Medical Center and the states of Washington, Maine, Georgia, Minnesota and Oklahoma. Bureau of Health Systems Evaluation staff have worked closely with the New York State AIDS Institute in reviewing and recommending policies and procedures to the Department of Correctional Services Division of Health Services. The Commission has also been a major resource for other New York State agencies.

AIDS Correctional Cases, Current Status

As of December 31, 1985, there have been 203 reported AIDS inmate deaths in New York State facilities, county jails, and New York City correctional facilities since the first confirmed mortality in 1981. The soon-to-be published National Institute of Justice study, *AIDS in Correctional Facilities: Issues and Options* (National Institute of Justice, January, 1986), estimates a national cumulative total of 765 AIDS correctional cases. These are self-reported data from 50 states, the Federal Bureau of Prisons and 32 city and county jail systems as of December 31, 1985. If the 45 currently diagnosed inmates in the state system and the 40 diagnosed individuals who were paroled or released as of December, 1985, are added to the 203 mortality cases, there have been 288 cumulative cases in New York's correctional system (excluding New York City confirmed cases which are not reported to the Commission). This number represents 38 percent of all national correctional cases to date. However, the figure is misleading because 80 percent of other state and federal systems and 69 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 75 percent of AIDS cases in state systems and 72 percent of cases in city or county systems (National Institute of Justice, 1986).

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 35 percent of all AIDS cases within the country. In addition, the CDC also report that New York City has an AIDS rate approximately four times higher than the AIDS rate in Los Angeles (Centers for Disease Control, October 28, 1985). 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 City/Northern New Jersey intravenous drug subculture as contributing to the higher concentrations of this risk group in inmate populations compared to the population at large (National Institute of Justice, 1986).

As a result of the critical impact of AIDS cases on New York State's correctional and health care delivery systems, the New York State Commission of Correction responded to the Governor's directive with a comprehensive study of AIDS mortality cases investigated by the Commission since 1981.

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 record 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 were recognized as a rich source of data for the identification of a demographic epidemiological profile of AIDS inmate mortalities to date. A comprehensive review of these documents yielded 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 like age, sex, race, date of death, and cause of death can be verified across several documents. A number of 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. The autopsy description of the pathologist was 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 was selected where data were available. Residence in counties contiguous to New York City were also specified. All other cases were classified as "New York City (no borough specified)," "New York State (outside New York City)" or "Other States." Residence outside the United States was 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 (track marks) were used to verify a history of intravenous drug abuse.

- 7 -

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 was 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 was obtained from the sick call record reflecting inmate's statement of the duration of symptoms.

Specific Symptoms Profile — There was a wide range of symptoms presented by inmates at time of sick call. A number of symptoms were found to relate to a specific opportunistic infection. However, a number of symptoms are common to many opportunistic infections. A symptoms profile was 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 were categorized. In some cases, the autopsy listed AIDS but was not specific as to the opportunistic infection. Therefore, *final* hospitalization medical records were used to designate the opportunistic infection, or infections.

External Verification of Variables

Commission research staff sought to obtain additional verification of the data set through the cooperation of the New York State Department of Health, Bureau of Communicable Disease Control. This unit has primary responsibility for the collection of demographic and epidemiological data on AIDS cases in New York State. The Department, however, was unable to comply with the Commission's request to access identifiable cases (with names) for the purpose of this study. While both New York State Public Health Law and Correction Law mandate the reportability of AIDS to each respective agency, Section 206 (1) (j) of the Public Health Law precludes any agency or party from accessing this information from the Department of Health. Specifically, the statute provides that information received by the Department be kept confidential and utilized for the purpose of studies and research related to the reduction of morbidity and mortality rates and improvement of medical care. Further, "such information shall not be admissible . . . before any . . . tribunal, board, agency or person."

The Department of Health was willing to supply the Commission with data on unnamed inmate cases for the period 1981-1985. Based on the Commission's list of 19 variables, the Director of the Bureau of Communicable Disease Control provided a computerized printout of confirmed (live) and mortality inmate cases with eight comparable variables — date of death, age at diagnosis, race, condition, date of primary diagnosis, disease (opportunistic infection), hospital at diagnosis, and risk group.

Commission research staff reviewed these variables for comparability of definition and determined six could be used for verification — date of death, age at diagnosis, race, condition, disease and risk group. By matching variables in this manner, 69 percent of Commission cases were verified. The remaining 31 percent could not be located on the Department of Health listing. The Department's data were, nonetheless, particularly important for the verification of Commission "sexual preference" data. On entry to New York State correctional systems, it is not routine procedure to inquire as to sexual preference. Moreover, such inquiries would most likely result in responses of denial. Therefore, the Commission's data were most frequently from hospital admission history documents. The Department data not only confirmed the validity of this information but provided sexual preference data for the large number of Commission cases where this went unreported. Similarly, while Commission data on intravenous drug abuse history had substantial

-- 8 ---

document validation, the Department of Health risk groups on I.V. drug use provided additional confirmation of this important characteristic.

Data Sample, Collection and Analysis

Following the approval of a detailed project plan and timeline, the Project Research Assistant was given training by the Associate Director on extraction and verification of variables from the numerous document sources contained in each mortality file. The Associate Director, a registered nurse, also compiled the more complex medical data. Because of the large number of cases that were still "open", i.e., in need of an autopsy report on December 31, 1985, a cut-off date of October 31, 1985 was selected for the sample of cases to be analyzed. Table 1 shows the jurisdictional origin of the sample totaling 177 cases:

Table 1: New York State Commission of Correction AIDS Study	Sample Mortality Cases,
11/13/81-10/31/85, by Jurisdiction	

Jurisdiction		No. of Cases	Percent of Cases
New York State Department of Correctional Servi	ces (DOCS) Facilities	156	88%
New York City Correctional Facilities		18	10%
New York State County Jails		3	2%
TOTAL		177	100%

Following data compilation and verification, the data were coded and analyzed utilizing SPSS/PC microcomputer software (Statistical Package for the Social Sciences). Data analysis and interpretation were 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) 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 pages 30-31 of this report) and two abnormal laboratory findings suggestive of otherwise unexplained immune deficiency consistent with CDC-defined AIDS.

ORGANIZATION OF REPORT

The remainder of this report describes and summarizes the predominant characteristics of AIDS mortalities in New York State's correctional system from November, 1981, through October 31, 1985.

Chapter 1 presents a profile of the most common demographic characteristics of these cases. The profile includes a breakdown by sex, residence, race, place of birth, crime conviction category, marital status, age, and time in correctional system. Additionally, important factors such as intravenous drug abuse history,

--- 9 ----

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 compares several demographic features of New York State AIDS inmate mortalities to the United States population at large. Race, age, opportunistic infection, and risk groups (homosexuals and I.V. drug abusers) are compared across the two groups.

Chapter 3 outlines a comprehensive disease profile of AIDS in the New York State 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 also reviews the incidence rates of opportunistic infections in the entire sample and, in particular, high-risk heterosexual and homosexual intravenous drug abusers.

Chapter 1: NEW YORK STATE AIDS INMATE DEMOGRAPHIC PROFILE

Introduction

This chapter provides a descriptive statistical profile of 13 major demographic characteristics of the 177 AIDS mortalities in the Commission sample. While the profile includes New York State, country 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.

The purpose of this chapter is to provide a comprehensive summary profile of New York State correctional AIDS mortalities for use by policymakers in assessing trends, planning for the future, and developing policies and procedures, for management of AIDS and its associated problems.

Mortalities By Jurisdiction





Figure 1 illustrates the distribution of AIDS inmate deaths by correctional jurisdiction for the 177 cases in the sample. The lowest number of inmate AIDS mortalities occurred in the state's county jail system. There

were a total of three deaths, one in 1983 and two in 1985. Based on an average annual jail population of 6,138 between 1981 and 1984, the AIDS mortality rate for New York's jail system is 48.8 per 100,000 population for this time period.¹

Similarly, the 18 deaths in the New York City Correctional system as of October 31, 1985, represent a mortality rate of 194 deaths per 100,000 population. This is based on an average annual city system population of 9,292 between 1981 and 1984.

The greatest percentage of inmate deaths from AIDS is found in the state's correctional system (DOCS). With an average inmate population of 30,275 between 1980 and 1985, there were 515 mortalities per 100,000 population (New York State Department of Correctional Services, 1980-1985). The longer periods of incarceration in state facilities account for the higher mortality rate compared to city and county systems.²

In comparison to mortalities by correctional jurisdiction, the state AIDS mortality rate for the same time period was 17.6 per 100,000 of population. This reflects the higher mortality rate of AIDS within New York State's correctional system.

Risk Groups

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 five women have died from AIDS in the entire system during the study period. Of these, one died in county custody; four in the state system.

Table 2: Sex of Inmate

					NUMBER OF	PERCENT OF
SEX					CASES	CASES
MALE					172 Cases	97%
FEMALE					5 Cases	3%
TOTAL					177 Cases	100%

Given the similarity of this profile to the general population, a critical concern for New York corrections officials is the proportion of high risk categories in the correctional population — the numbers of inmates with histories of intravenous drug abuse and homosexual/bisexual orientation.

AIDS Mortality Rate = Total number AIDS deaths in jurisdiction X 100,000

Average Population of Jurisdiction.

²If AIDS mortalities through December 31, 1985, are taken into account, the rate is 204 per 100,000 for New York City and 568 per 100,000 for DOCS facilities.



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, 92 percent of inmates who died from AIDS admitted to this lifestyle. This is in contrast to the 17 percent reported among AIDS sufferers in the general population. (Centers for Disease Control, October 28, 1985). All five female correctional decedents had I.V. drug abuse histories.

FIGURE 3



SEXUAL BACKGROUND

- 13 -

Cases = 177

Figure 3 in comparison, shows that only 13 percent admitted an other-than-heterosexual orientation. While these proportions should be interpreted with caution given the 38 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.

Chapter 3 analyzes 156 Department of Correctional Services cases for the relationship between I.V. drug history, sexual orientation and other critical profile variables related to these lifestyles.

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 NEW YORK METROPOLITAN AREA

WESTCHESTER BRONX SUFFOLK NASSAU **NEW YORK** QUEENS KINGS RICHMOND

LOCATION	, N	UMBER OF CASES	PERCENT OF CASES
BRONX		39	22%
NEW YORK (MANHATTAN)		36	20%
QUEENS		18	10%
KINGS (BROOKLYN)		48	27%
RICHMOND (STATEN ISLAND)		3	2%
NEW YORK CITY (UNSPECIFIED BOROUGH)		9	5%
NASSAU		3	2%
WESTCHESTER		1	1%
NEW YORK STATE (OUTSIDE NYC)		9	5%
OTHER STATES		2	1%
UNKNOWN		9	5%
TOTAL		177 Cases	100%

- 14 ---

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. Fully, 86 percent of inmates lived in the New York City metropolitan area prior to incarceration. Ninety-four 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, 1986: 22), is there a high ratio of these two groups among AIDS inmate mortalities?

RACE

FIGURE 5

RACE OF INMATE

46.0% HISPANIC N = 79



15.0% WHITE N = 26

39.0%	BLAC	K		Unkn	own -	4
N = 68						177

 $P_{0000} = 179$

Clearly, blacks and Hispanics represent the largest percentage of AIDS fatalities as shown in Figure 5. Whites accounted for only 15 percent of the deaths due to AIDS. According to an October, 1985, demographic profile of inmates in DOCS facilities (Department of Correctional Services, October 31, 1985), 22 percent of inmates are white, 27 percent are Hispanic and 51 percent are black. Assuming this distribution has remained fairly constant over the period 1981 through 1985, 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 177 cases shows very little difference between the groups as to rates of I.V. drug abuse; 92 percent of whites and Hispanics compared to 93 percent of blacks were admitted I.V. drug abusers. In addition, comparable numbers of whites, blacks and Hispanics were in the system three or more years (Whites - 19%; blacks and Hispanics 20%). These findings suggest a higher AIDS incidence rate among Hispanics entering the system compared to whites and blacks.

PLACE OF BIRTH FIGURE 6



Forty-one percent of the cases analyzed listed inmate place of birth in the greater New York metropolitan area (Figure 6). Another 37 percent listed Puerto Rico or a Caribbean country as their birthplace. It is noteworthy that 87 percent of the sample born in New York City and 89 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

Given the high ratio of I.V. drug abusers, particularly heroin addicts, in the sample, it is not surprising that their criminal conviction profile is one associated with "money-seeking" crimes. Supporting national studies on the relationship between I.V. drug abuse and crime (National Commission on Marijuana and Drug Abuse, 1973), Figure 7 shows inmates in this study were primarily convicted of robbery (30.1%), burglary (20.9%) and drug related offenses (19.1%).

-16-



Inmate Marital Status

FIGURE 8





The majority of inmates who died from AIDS were not married (Figure 8). Sixty-three 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. Over 70 percent of children in New York State (65 cases) who have AIDS have one or both parents in high risk groups, the great majority of which are I.V. drug abusers (New York State Department of Health, October, 1985: p. 3).

Age of Inmate at Death

FIGURE 9



The average age at death of AIDS inmates in the sample is 34. Figure 9 displays the age range at death. The youngest decedent was 19; the oldest 59. Seventy-six percent of the mortalities were between the ages of 25 and 39. This is also the most common age group afflicted with AIDS in the United States civilian population.

177

Time in Correctional System

TIME IN NEW YORK **FIGURE 10 CORRECTIONAL SYSTEM** 98 56.0% PERCENTAGE OF CASES 44.8% 33.6% 50 22.4% 21 11.2% 0.0% 1-18 19-36 37-54 55-72 73-84

Cases = 177

MONTHS IN SYSTEM

Fifty-six percent of inmates had been in the state correctional system 1-18 months at the time of their death (Figure 10). Another 28 percent had completed 19-36 months. Twelve percent served 37-54 months or up to four and one half years. Four percent or seven cases had been in the system 4.6-6 years (55-72 months), and one individual had served 7 years (84 months).

While the period of incubation ranges from 6 months to 7 years, the average incubation period is 29 months (2.4 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 (See Chapter 3, Table 5 for DOCS facilities by AIDS deaths), 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.

*NOTE: Personal Communication, Mr. Thomas Leonard, Public Health Advisor, AIDS Program, CDC, March 18, 1986.



REGION AND HOSPITAL	NUMBER OF DEATHS	PERCENT OF CASES
REGION 1: NEW YORK CITY		
RICHMOND MEMORIAL HOSPITAL	1	1%
*BELLEVUE HOSPITAL CENTER	10	2% 6%
CITY HOSPITAL CENTER AT ELMHURST *KINGS COUNTY HOSPITAL CENTER	4 10	2% 6%
*VETERANS ADMINISTRATION HOSPITAL, MANHATTAN	1	1%
TOTAL REGION 1	29 Deaths	18%
REGION 2: LONG ISLAND		
*NASSAU COUNTY MEDICAL CENTER *UNIVERSITY HOSPITAL, STONY BROOK	2 3	1% 2%
TOTAL REGION 2	5 Deaths	3%
REGION 3: MID-HUDSON		
COMMUNITY GENERAL HOSPITAL OF SULLIVAN COUNTY, HARRIS HORTON MEMORIAL HOSPITAL	5 10	3% 6%
ST. AGNES HOSPITAL	$(\mathbf{n},\mathbf{n}) \in 1^{n}$	1%
PHELPS MEMORIAL HOSPITAL	1	1%
*WESTCHESTER COUNTY MEDICAL CENTER	71	42%
TOTAL REGION 3	88 Deaths	53%

REGION 4: NORTHEAST		
*ALBANY MEDICAL CENTER HOSPITAL	2	1%
GLENS FALLS HOSPITAL	6	3%
CHAMPLAIN VALLEY PHYSICIANS HOSPITAL	8	5%
GENERAL HOSPITAL OF SARANAC LAKE	4	2%
TOTAL REGION 4	20 Deaths	11%
REGION 5: CENTRAL		
*STATE UNIVERSITY OF THE MEDICAL CENTER. SYRACUSE	11	6%
HEPBURN HOSPITAL, A. BARTON	1	1%
TOTAL REGION 5	12 Deaths	7%
REGION 6: SOUTHERN		
ARNOT-OGDEN MEMORIAL HOSPITAL	2	1%
TOTAL REGION 6	2 Deaths	1%
REGION 7: ROCHESTER		
*STRONG MEMORIAL HOSPITAL OF THE UNIVERSITY OF ROCHESTER	Í Í	1%
TOTAL REGION 7	1 Death	1%
REGION 8. BUFFALO		
*ERIE COUNTY MEDICAL CENTER	14	8%
TOTAL REGION 8	14 Deaths	8%
TOTAL HOSPITAL DEATHS, ALL REGIONS	171	97%
DIED IN FACILITY	6	3%
TOTAL CASES	177	100%

*University-affiliated Hospital

Figure 11 gives the location of 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 six inmate deaths within correctional facilities.

One hundred twenty-three or 72 percent of hospital deaths occurred in the state's ten university-affiliated medical centers. The remaining one-third died at community hospitals around the state. These medium to small community general hospitals are secondary care facilities and differ markedly from the medical centers in the quality and sophistication of equipment, procedures, staff, and intensive care capabilities.

The major impact of AIDS inmate deaths on statewide hospital service availability for inmates has led to several plans to provide comprehensive services. The New York State Department of Correctional Services and the New York City Health and Hospitals Corporation have planned a 22-bed secure care unit with intensive care capability for inmates with AIDS at New York City Metropolitan Hospital Center. Negotiations are also underway to utilize St. Clare's Hospital in New York City for acute and skilled nursing levels of care.

Period of Final Hospitalization

FIGURE 12



Figure 12 presents the final period of hospitalization for the sample. This ranged from one week to eight months. Fifty-three percent of inmates were in the hospital one to three weeks; 28 percent, one-two months; 12 percent, three-five months; and 5 percent, six-eight months. Overall, these 171 cases consumed 6,004 acute hospital patient days during their terminal hospitalization with an average length of stay of 35 days. 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.

-22-

Opportunistic Infection at Time of Death



OPPORTUNISTIC INFECTION AT TIME OF DEATH



INFECTION CODE

1. Pneumocystis Carinii Pneumonia

- 2. All Others
- 3. Pneumocystis Carinii Pneumonia+
- 4. Toxoplasmosis

- 5. Cryptococcus
- 6. Mycobacterium Avium
- 7. Malignant Brain Lymphoma
- 8. Cytomegalovirus

- Cases = 177
- 9. Cytomegalovirus+
- 10. Kaposi's Sarcoma
- 11. Kaposi's Sarcoma+
- 12. Cryptococcus+

Figure 13 portrays the relative proportions of the twelve opportunistic infections reported at time of death. Fifty-six percent were due to Pneumocystis Carinii Pneumonia alone or PCP in combination with other opportunistic infections (PCP+), the most common of the opportunistic infections which strike AIDS victims. Eighty-two percent of the cases reflect common opportunistic infections associated with AIDS. The remaining 18 percent reflect less common infections, which is similar to the incidence in the United States population.

Summary Demographic Profile

Based on the analysis of demographic statistics, the typical AIDS inmate mortality in the New York State correctional system was an Hispanic or black, single, heterosexual 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 21.7 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 35 days.

Chapter 2: DEMOGRAPHIC PROFILE COMPARISONS: NEW YORK STATE INMATES AND UNITED STATES POPULATION

Introduction

The Centers for Disease Control (CDC) produces a weekly Surveillance Report on AIDS cases from data provided by physicians and health departments across the United States. The purpose of this chapter is to compare the New York State inmate demographic profile to the CDC's national profile as of October, 1985 (Centers for Disease Control, October 28, 1985). Because the CDC publish data in broad reporting categories, it was necessary to aggregate the inmate data into CDC groupings. Comparisons are therefore limited to race, age, opportunistic infection (Disease Group), and patient group (Homosexual/I.V. Drug Abuser).

Race

FIGURE 14





RACE

The racial distribution of AIDS cases in the general population differs dramatically from that among New York State inmates. Figure 14, for example, shows that 47 percent of inmate cases were Hispanic compared to only 14 percent of AIDS cases nationally. In contrast, whites comprised 60 percent of CDC

-24-

cases, while only 15 percent of inmate deaths were white. Similarly, a larger proportion of blacks were represented among New York correctional cases, 38 percent, in comparison to 25 percent of national cases. These differences are attributable to the high proportion of New York City Hispanic and black intravenous drug abusers in the state correctional system.

Age

Table 3 indicates that there were slightly higher rates of inmates with AIDS in the 20-39 age group than in the population at large.

Table 3: Comparative Percentages By Age: General Population and New York State Inmates

		CDC* No. of Cases	%	/	NYS INMATE No. of Cases	? S	%
AGE	20-29	3,020	21%		44		25%
	30-39	6,770	48%		94		54%
	40-49	2,992	21%		32		18%
	OVER 49	1,339	10%		6		3%
	TOTAL	14,121	100%		176		100%
				(e	one case, age 1	9)	

*SOURCE: CDC AIDS WEEKLY SURVEILLANCE REPORT, October 28, 1985,

Note: The 14,121 CDC cases include "live" cases while the 176 cases are mortalities only.

Recent epidemiological studies report higher antibody prevalence estimates in I.V. drug users in New York and New Jersey compared to homosexuals tested in large U.S. studies. (Curran, *et al.*, 1985: 1353). This fact may account for the slightly higher proportion of AIDS deaths among inmates between the ages of 20 and 39 compared to AIDS cases in the national population. As AIDS strikes a relatively youthful population, the proportions drop off after age 49. This latter age group accounts for only 3 percent of the population at state facilities.

Opportunistic Infection

FIGURE 15



-25-

Cases = 177

Figure 15 compares the proportion of deaths related to Pneumocystis Carinii Pneumonia nationwide to the New York State correctional system. Similar to the general population, PCP is the most common of the opportunistic infections at death. The proportions are comparable, considering that CDC cases include adolescents and PCP+ cases were eliminated from the inmate count.





In contrast, the number of Kaposi's Sarcoma (KS) deaths among inmates in the sample is decidedly lower than in the general population. The rate is 38 percent of CDC cases; one percent of correctional deaths (Figure 16). In the United States, the incidence rate of KS among homosexuals with AIDS is over 34 percent, and only 6 percent in all other groups (Curran, *et al.*, 1985: 1356). Given the small number of admitted homosexuals in state correctional settings, the smaller incidence rate of KS in this population is explainable.



Finally, Figure 17 reflects that the incidence of all "other" opportunistic infections is comparable in the two populations (56 and 54 percent). This indicates that inmates develop similar opportunistic infections to the United States population at large.

Patient Group

	CDC No. of Cases	%	NYS INMATES No. of Cases	%
Total Cases	14,189		171 (6 unknown)	
Intravenous Drug Users	2,438	17%	158	92%
Total Homosexual Cases	10,388		24	
Homosexual and I.V. Drug User	1,192	12%	17	71%

 Table 4: Comparisons By Patient Group: I.V. Drug Users and Homosexual/I.V. Drug Users,

 General Population and New York State Inmates

Table 4 again illustrates the impact of the concentration of the high risk drug abuse population in the New York State correctional system. As noted in Chapter 1, 92 percent of the sample reported a history of I.V. drug abuse. This contrasts with 17 percent of CDC cases.

CDC data indicate that 12 percent of homosexual males with AIDS also admit to I.V. drug abuse. This proportion is 71 percent, or 17 of 24 inmates who admitted a homosexual or bisexual orientation. This latter group of cases is examined more closely in Chapter 3.

Summary

The New York State AIDS inmate demographic profile differs from the United States AIDS population profile in several respects.

First, the inmate profile has a higher proportion of minorities, Hispanics and blacks. This is related to the high percentage of New York City Hispanic and black I.V. drug abusers in New York's correctional system.

Second, there is a slightly higher proportion of AIDS deaths among inmates between the ages of 20-39 compared to national AIDS cases.

Third, the ratio of Pneumocystis Carinii Pneumonia deaths among inmates is comparable to the Centers for Disease Control national figures. In contrast, the number of Kaposi's Sarcoma inmate deaths are much lower than KS in the civilian population. The small percentage of homosexuals in state correctional settings explains this statistic.

Fourth, there are greater numbers of intravenous drug abusers represented in the inmate sample. Similarly, a greater proportion of inmate homosexual males with AIDS admitted to I.V. drug abuse then homosexual/I.V. drug abusers in the United States population at large. A Bureau of Health Systems Evaluation review of all mortality cases in Department of Correctional Services facilities from 1981 through the end of December, 1985, shows a continual increase in the proportion of deaths due to AIDS.



Figure 18 demonstrates that the most dramatic increase was between 1982 and 1983, with a 36 percent advance. The rate of increase has slowed from 1983 — with the proportion of AIDS deaths growing by 16 and 4 percent respectively in 1984 and 1985.³ However, the fact remains that over 50 percent of the mortalities in DOCS facilities the last two years have been due to AIDS.

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; and 3) 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 156 state facility mortality cases of the sample are the data base for this analysis.

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) Weight Loss
- 3) Cough
- 4) Shortness of Breath
- 5) Weakness (Fatigue)
- 6) Chronic Rash
- 7) Flu-like Symptoms

³As of March 1, 1986, there have been 21 1986 AIDS deaths in New York State DOCS facilities.

Chapter 3: A DISEASE PROFILE OF AIDS IN NEW YORK STATE FACILITIES (DOCS)

Introduction

The demographic profile of AIDS inmates outlined in this report is largely shaped by cases coming from state correctional facilities. Table 5 confirms that AIDS deaths have been widespread throughout this system, with the greatest number 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, 1984). In all, the inmates were distributed among 60 percent of DOCS facilities.

Table 5: Assigned DOCS Facility at Time of Death By Number and Percent of Deaths

- 29 -

Type of Facility Maximum

Medium

	No. of	% of
Name of Facility	Deaths	Deaths
Attica	9	6.7%
Auburn	8	5.1
Bedford	2	1.2
Clinton	13	8.3
Downstate	10	6.4
Eastern	4	2.6
Elmira	2	1.2
Great Meadow	3	1.9
Green Haven	11	7.1
Sing Sing	40	25.6
Total Maximum	102	66.1
Adirondack	4	2.5
Albion	1	1.0
Arthurkill	5	3.2
Bayview	1	1.0
Collins	3	1.9
Fishkill	2	1.2
Groveland	2	1.2
Hudson	1	1.0
Long Island		
(closed 3/26/85)	3	1.9
Mid-Orange	7	4.5
Mid-State	1	1.0
Mt. McGregor	3	1.9
Ogdensburg	2	1.2
Orleans	· · · · 1	1.0
Otisville	5	3.2
Queensboro	4	2.5
Faconic	1	1.0
Wallkill	1	1.0
Watertown	1	1.0
Woodbourne	5	3.2
Total Medium	53	36.4
Camp Beacon	1	1.0
Total Minimum	1	1.0
A USER LYANDARUALE		1.0
Total Deaths		a a'
All DOCS Facilities	156	103.0%

Minimum

- 8) Chills
- 9) Lymphadenopathy
- 10) Chest Pains
- 11) Night Sweats
- 12) Loss of Appetite
- 13) Candidiasis
- 14) Headache
- 15) G.I. problems (diarrhea, nausea, vomiting, abdominal pain)

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 groups.

Disease Progression

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 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 had 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 6 gives the *average aggregate* time in days and months for each disease state 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.

	A verage Time in System	A verage Time Entry into System to Symptoms Onset	A verage Time Onset to Confirmation	A verage Time Confirmation to Death	A verage Time Final Hospitalization
1982	19.2 mths.	10.2 mths.	1.0 mth.	5.9 mths.	0.5 mth.
	(575 days)	(307 days)	(30 days)	(177 days)	(14 days)
1983	18.8 mths.	11.3 mths.	3.5 mths.	5.3 mths.	1.5 mths.
	(563 days)	(339 days)	(104 days)	(159 days)	(47 days)
1984	21.5 mths.	14.3 mths.	4.6 mths.	6.3 mths.	1.3 mths.
	(647 days)	(430 days)	(137 days)	(189 days)	(39 days)
1985	23.3 mths.	26.7 mths.	3.3 mths.	5.5 mths.	0.9 mths.
	(700 days)	(803 days)	(99 days)	(164 days)	(26 days)

 Table 6: 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

NOTE: There were too many missing data to include 1981 cases.

Average Time in System

A comparison of 1982-1985 inmate mortalities indicates the 1985 cohort had been incarcerated from 2-5 months longer than the previous years' cases. If this represents a trend related to increasingly long sentences in the state, then high risk groups like drug abusers would be expected to remain in the system for longer periods of time. Are greater numbers of I.V. drug abusers entering New York State's correctional system for greater 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 a progressive increase in the length of time from entry into DOCS facilities to the onset of symptoms of AIDS — from 10.2 months in 1982 to 26.7 months in 1985. This increasing trend raises a number of questions for additional research. Is the increase due to the particular configuration of opportunistic infections in each year's cohort? Is the trend related to the numbers 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 a uniform early detection and diagnostic protocol for all facilities a factor?

Theoretically, if education about AIDS is improving among correctional health care professionals, then exrlier recognition of symptoms might shorten this time span because of earlier documentation of symptoms. On the other hand, continued reluctance on the part of inmates to acknowledge symptoms could also delay the recording of symptoms onset.

While the yearly average time spans from entry to onset are well within the incubation period for the disease, the actual entry-to-onset times range from 5 days to 7 years.⁴ These latter cases, while only a few in number, raise questions as to the potential transmission of AIDS within New York's correctional system. They are examined in the next section of this chapter.

Average Time, Onset to Confirmation

There has been little year-to-year variation in the average time period between symptoms onset and disease confirmation. Since 1983, when the number of cases increased dramatically, the average time from onset to confirmation has been 3-4 months. It may be that DOCS access to the sophisticated services needed to confirm AIDS is limited. Thirty-four percent of the DOCS inmates were housed in facilities without easy access to outpatient immunology and infectious disease services which are typically based in medical centers and teaching hospitals. In many facilities which have recently experienced their first encounter with AIDS patients, diagnostic workups may not initially include symptoms of AIDS. Many clinicians still do not recognize AIDS symptomology.

Average Time, Confirmation to Death

The average time period from confirmation of AIDS to death was 5.3 to 6.3 months. This suggests that comparative data from the national AIDS population would be useful for further study. Does the average AIDS patient in the United States survive only 5-6 months after confirmation? Is there a survival differential between those aggressively treated in medical centers and AIDS centers and those treated in more modest surroundings?

Average Time, Final Hospitalization

Since 1983, the period of final hospitalization has been close to a month, and gradually decreasing. This may suggest increased resistance by community hospitals for planned inmate admissions vs. emergency admissions. It may also reflect a policy of retaining the inmate/patient at the facility for a longer period prior to final admission.

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 eight identified, none had 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 was

⁴In 1984 and 1985 there were 3 and 4 cases respectively where onset was diagnosed prior to system entry.

verified with DOCS Bureau of Classification and Movement on March 17, 1986. Records indicated that five of the eight decedents had been previously incarcerated in the state system.

All eight mortalities occurred in 1985. Six of the inmates had been in the system since 1980. One had been in prison since October 3, 1979; the eighth prisoner had entered the system February 9, 1978. Of the eight, five were in the system 4.5 to 6 years before the onset of symptoms. Data on symptom onset were missing in two cases. 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 exposure and subsequent infection occurred among the "almost five-year cases" during incarceration. As noted earlier, CDC studies of AIDS reports 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 only two continuously incarcerated, long-term inmates who tested seropositive (National Institute of Justice, 1986). Based on such studies and evidence of other sexually transmitted diseases within correctional systems, the National Institute of Justice report on AIDS concludes that "even in the best-managed correctional institutions there may be at least some transmission of the AIDS virus occurring among inmates." (National Institute of Justice, 1986: 26).

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 7 gives a breakdown of the numbers of state facility mortality cases by opportunistic infection from November, 1981, to October 31, 1985.

	Year		1981	1982	1983	1984	1985
% of T	'otal						
46% (70)	РСР		1% (1)	1% (2)	7% (10)	12% (18)	25% (39)
10% (16)	PCP+	an an taon 19 An taon 1990 An taon 1990 - An	1% (1)		3% (4)	4% (6)	3% (5)
5% (8)	Mycobacterium				۰ ۱۹۹۹ - ۲۹۹۹ ۱۹۹۹ - ۲۹۹۹ - ۲۹۹۹ ۱۹۹۹ - ۲۹۹۹ - ۲۹۹۹	3% (4)	5% (4)
7% (11)	Toxoplasmosis				1%	2%	5%
1% (2)	Kaposi's Sarcoma				(I) _	(3) 1% (2)	(7)
1% (2)	Kaposi's Sarcoma+				· · · · · · · · · · · · · · · · · · ·	1% (1)	1% (1)

Table 7: New York State Facility Mortality Cases By Opportunistic Infection and Percent of Total Cases, 11/13/81 to 10/31/85

____33 ___

3%					
(4)	Cytomeglovirus	$ \begin{array}{c} & & & \\ & & & \\ & & & \\ & & $	- 1% - (2)	1% (2)	
3% (4)	Cytomeglovirus+		- 1% - (2)	1% (2)	
5% (7)	Cryptococcus		1% 1% (1) (2)	3% (4)	
3% (4)	Malignant Brain Lymphoma		- 2% - (3)	1% (1)	
1% (1)	TB		- 1% - (1)	-	
16% (24)	Other		1% 8% (2) (12)	7% (10)	

100% 153 Cases (3 Missing)

PCP and PCP+ show a progressive annual increase in the incidene of *total* cases. Significantly, the PCP rate increased by five percent between 1983 and 1984 and 13 percent between 1984 and 1985. Moreoever, the number and variety of types of opportunistic infections increased after 1983. While the numbers are small, the progressive increases for toxoplasmosis and cryptococcus might also indicate a trend.

Although Kaposi's Sarcoma ranks second in the national population, (of which 78 percent are homosexuals or bisexuals), it ranks sixth in the inmate sample where only 13 percent of the group admitted a homosexual orientation. PCP opportunistic infection rates were nearly identical in both populations. Ninety-two 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 KS. 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.

Sexual Orientation	Heterosexual I.V.	Homosexual I.V.
Opportunistic Infection Type		
PCP and PCP+	62% (49)	44% (7)
Toxoplasmosis	5% (4)	13% (2)

 Table 8: New York State Facility Mortality Cases by Opportunistic Infections:

 Heterosexual and Homosexual I.V. Drug Abusers

- 34 ---

Kaposi's Sarcoma &	1%	6%
Kaposi's Sarcoma+	(1)	(1)
Mycobacterium	6%	6%
	(5)	(1)
	n = 79	n = 16

Note: Remaining cases = "other"

An examination of Table 8 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 (13%) 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 (6%). Mycobacterium infections were found in equal ratios among both groups.

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 two years have been due to AIDS.

A disease profile of the sample mortalities found a progressive annual increase in the length of time from entry into the system to symptoms onset. In contrast, there was little variation in the time periods between onset to confirmation and confirmation to death.

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.

CONCLUSION

Acquired Immune Deficiency Syndrome: A Demographic Profile of New York State Inmate Mortalities, 1981-1985 represents an important first step in a broad-based assessment of 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 four 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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Acquired Immune Deficiency Syndrome

Criminal Justice Policies





New York State Mario M. Cuomo, Governor

APPENDIX

Criminal Justice Policies

THE POPULATION AND THE PROBLEM

New York State's criminal justice system contains a large share of those at highest risk of contracting AIDS. Since 1981, when AIDS was first detected within the criminal justice system, 155 State inmates have died from AIDS, along with 21 New York City inmates, 3 county inmates and 2 probationers. Currently, 48 State inmates have AIDS and 45 more have AIDS Related Complex (ARC). At least 30 parolees have AIDS or ARC, as well as 4 probationers and perhaps one juvenile.

The numbers of active AIDS cases and deaths from the disease have increased each year since 1981. However, the rates of increase have declined annually as well. Intravenous drug use, rather than sexual transmission, appears to be the way AIDS enters the criminal justice population. An estimated one-quarter to one-third of the inmate population have used intravenous drugs. Approximately 70% of this population come from New York City, where sharing needles has been linked to the spread of AIDS.

According to the Department of Correctional Services, there is no evidence that AIDS spreads among the inmate population. Intravenous injection is rare and anal intercourse is also relatively infrequent. The prisons have a family reunion program where relatives visit inmates in the privacy of trailers. While sexual contact is permitted, most visits involve only parents or children, not spouses.

Probationers and parolees with a history of intravenous drug use are assigned to treatment programs, as space permits. Continued drug use, when identified, leads to in-patient treatment or incarceration. Probationers and parolees can engage in sexual activity without special restriction.

Juveniles live in facilities where officials observe them almost constantly. There is no known intravenous drug use or anal intercourse in DFY youth facilities.

THE PRESENT APPROACH

<u>Department of Correctional Services (DOCS)</u>. DOCS gives incoming inmates a series of tests that identify many intravenous drug users and may detect symptoms of AIDS. DOCS does not administer the HTLV-III antibody test to incoming inmates. Most diagnoses begin when inmates with AIDS report to sick call with the symptoms. DOCS' doctors give a preliminary diagnosis based upon Centers for Disease Control criteria. The antibody test is used at this stage.

Once DOCS identifies AIDS victims, they almost always require infirmary care. Sing Sing's Special Needs Unit contains most AIDS patients, although other institutional infirmaries have a few. When acute care is needed, DOCS sends AIDS patients to Westchester County Medical Center and occasionally other hospitals throughout the State.

When AIDS victims have "trailer visits", DOCS counsels them to notify their families of their condition unless they already know, as they usually do.

DOCS educates all incoming inmates, as well as staff, about AIDS.

<u>The Division of Parole</u> (Parole). DOCS has recently established procedures to provide Parole Board members with medical summaries of AIDS victims. The procedures are not yet in place statewide.

Parole arranges individual programs for parolees to re-enter the community. It increasingly has difficulty arranging housing and medical care for AIDS patients. Gaps in medical insurance coverage immediately upon release leave such parolees in need of interim financial help.

Parole educates its parole officers on how to avoid AIDS personally and how to counsel parolees with the disease.

<u>Division for Youth (DFY)</u>. DFY gives all incoming juveniles medical tests similar to DOCS'. It has no capability to treat AIDS patients or others seriously ill in its own infirmaries. Accordingly, it must rely on outside hospitals.

<u>Division of Probation and Correctional Alternatives (Probation)</u>: Probation is a regulatory agency without direct supervisory responsibility. It currently gathers information from county probation offices on AIDS cases. The county probation offices do not give all defendants medical tests. Defendants with serious diseases usually tell probation officers in hopes of lightening their sentences. Probation is formalizing reporting of AIDS.

<u>Commission of Correction (Commission)</u>: As part of its oversight of State and local corrections, the Commission collects detailed records of all inmate deaths including AIDS mortalities through its Medical Review Board.

POLICY RECOMMENDATIONS

1. The Department of Correctional Services should not test all incoming inmates with the AIDS virus antibody tests.

2. The Department of Correctional Services should segregate AIDS victims from the general population only to provide them medical care.

3. The Department of Correctional Services should expand the Special Needs Unit at Sing Sing and ensure it meets general standards. For acute care, the 22-bed Metropolitan Hospital facility should be opened on an expedited basis. In addition, the ten beds at Westchester County Medical Center should be retained or a substitute found forthwith.

4. The Department of Correctional Services should counsel inmates with diagnosed cases of ALDS to inform their families.

5. The Department of Correctional Services should implement in all institutions the new procedure for providing the Division of Parole with full medical summaries for all AIDS victims.

6. The Division of Parole should not consider the medical status of inmates in considering eligibility for parole.

7. The Division of Parole should continue to counsel all AIDS victims to notify their families.

8. The Division of Parole should work with human services agencies immediately to insure the availability of special services for AIDS victims on parole, including housing, medical care and emergency financial assistance.

9. The Division for Youth should immediately prepare for treating AIDS victims in outside hospitals.

10. The Division of Probation and Correctional Alternatives should complete its ongoing task of gathering information on what probationers, if any, have AIDS and how county probation offices are responding to them.

11. The Division of Probation and Correctional Alternatives should work with human services agencies immediately to insure the availability of special services for AIDS victims on probation, along the lines of the Division of Parole's program.

12. The Commission of Correction should conduct a demographic study of all deaths of inmates with AIDS, but only in conjunction with the Department of Health, the Department of Correctional Services and the New York City Department of Corrections.