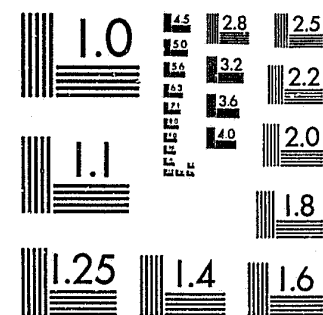


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FEDERAL AND STATE PRISON INMATE DEATHS

1972 - 1978

Summary

The Offices of Research and Program Development have collaborated in updating selected data from Sawyer Sylvester's work, Prison Homicide. Comparisons of inmate crude death rates (CDR) of the Federal Prison System (FPS) vs. selected state systems, as well as observed (actual) vs. expected inmate deaths in the FPS from 1972-1978 were made. It was found that:

- * From 1972 through 1975 Federal CDRs were lower than the overall CDRs for state systems; in 1976 and 1977, the Federal CDRs were higher.
- * For each year from 1972-1978 the actual Federal Prison CDR was less than the CDR of a U.S. population with the same age, sex and race characteristics.
- * From 1972-1978 the average number of deaths in FPS was 72 per year.
- * In FPS the average number of observed natural and accidental deaths was less than the number expected. The opposite was true of suicides and homicides. The difference between observed and expected accidental deaths was statistically significant.
- * There were no statistically significant correlations between FPS population density and death rates for each cause of death.

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ACQUISITIONS

FEDERAL AND STATE PRISON INMATE DEATHS
1972 - 1978

The Offices of Research and Program Development have collaborated in updating selected data from Sawyer Sylvester's work, Prison Homicide.

Sylvester compared Federal and state prison crude death rates (CDRs) for the years, 1962 to 1970. He also compared observed and expected deaths by cause (natural, accident, suicide and homicide) in the Federal system, basing expected deaths upon U.S. population death rates for the same age, sex and race categories as in the Federal Prison System.

Data Analysis

Sylvester's work indicated that Federal prison CDRs were generally lower than those in state institutions. For the years, 1972¹ to 1975 that remained the case, but in 1976 and 1977 the Federal CDR exceeded the states', 3.02 to 2.56 and 2.77 to 2.25, respectively. (See Table 1.)

State data for 1978 are not yet available. However in 1978 the Federal CDR was the lowest since 1970.

A 1972-1977 comparison of Federal and selected state prison populations indicates that in general the Federal CDRs exceeded those in New York, Michigan, Florida and Texas. On the other hand, Federal CDRs were generally lower than those in California and the District of Columbia.

An interesting analysis is the comparison of Federal Prison CDRs with those expected in a U.S. population of comparable age, sex and race characteristics. During each year in the period of comparison, 1972-1978, the Federal prison observed CDR was less than the expected CDR. Federal prison inmates were less likely to die than their free world counterparts.

Another method used by Sylvester was to compare the number of observed deaths by cause of death to those expected² in a U. S. population of the same age, sex and race characteristics as Federal Prison System inmates.

From 1972 to 1978 the average number of observed deaths was 71.6 per year. (See Table 2.) Almost two-thirds of the deaths were from natural causes, two out of ten were homicides and one out of ten were suicides. Less than one out of twenty were accidental. In terms of specific types of deaths, the number of deaths from natural causes per year (47) was somewhat lower than those expected (60). This finding was also true for accidental deaths, except the difference was more dramatic (3 observed vs. 22 expected). Observed suicides (7) and homicides (15) per year

were greater than expected (5 and 12 respectively). Only the difference between expected and observed accidental deaths was statistically significant. The lower than expected accidental deaths can be explained by inmates' low exposures to motor vehicle accidents and drownings which account for much of accidental deaths in the general U.S. population.

A commonly held belief is that prison deaths, particularly violent ones, such as homicide or suicide are due to overcrowding. To explore this theory density indices (ratios of overall prison population levels to overall physical capacity) were correlated with death rates in Federal prisons from 1972 to 1978.

The results were somewhat unexpected. There was a very low correlation between suicide rates and density ($r=.10$) while accidental death and homicide rates had slightly higher density correlations (each $r=.22$). Natural and total death rates had the highest correlations with density ($r=.61$ and $.67$, respectively).

To further explore the relationship between population density and death rates, homicide and suicide rates of each Federal institution were correlated with density indices for the years, 1976 and 1977. There was no relationship between specific institutional densities and institutional homicide rates ($r=.00$) or institutional suicide rates ($r=.17$).

None of the correlations were higher than what would be expected by chance alone. Therefore these data do not support the purported relationship between prison overcrowding and death rates.

Harriet Lebowitz, Office of Research and
Tom Pospichal, Office of Program Development

June 6, 1979

FOOTNOTES

1. 1971 data were not readily available for the state prison systems. State data on inmate deaths were taken from National Prisoner Statistics publications. Federal data were taken from the FPS Medical and Services Division, since National Prisoner Statistics figures reflect under reported data.

2. Expected number of deaths was calculated by a process similar to that used by Dr. Sylvester. U. S. population death rates by cause of death, age, race, and sex were retrieved from Vital Statistics of the United States, 1973, Vol. II, Mortality, Part A. These rates were multiplied by the number of people in the appropriate age, sex and race categories for federal prisoners and the resulting products were summed to result in an expected number of deaths. This procedure was followed for each year involved. It was assumed that the U.S. population death rates for 1973 were representative of death rates for 1972-1978; therefore the 1973 rates were used as a basis for calculating the expected number of deaths in the federal prison population for all those years.

TABLE 1
Crude Death Rates in Selected U. S. Prison Systems
(per 1,000 population)

	1972	1973	1974	1975	1976	1977	1978
States	3.37	3.31	3.10	3.40	2.56	2.25	NA*
Federal Observed (Expected)	3.19 (3.90)	2.83 (4.72)	2.83 (3.94)	3.31 (3.85)	3.02 (3.80)	2.77 (3.94)	2.71 (4.12)
Total U.S. Prisoners	3.33	3.22	3.03	3.32	2.59	2.29	NA*
Selected States							
New York	2.88	2.44	2.06	2.43	1.72	1.51	"
Michigan	2.33	1.59	1.45	2.26	2.40	1.52	"
Florida	2.60	2.41	2.59	2.56	2.36	1.86	"
N. Carolina	5.11	4.49	NA	2.50	1.95	0.99	"
D. C.	NA	4.14	2.74	7.77	6.52	5.31	"
Texas	1.64	2.79	2.94	3.07	1.41	1.71	"
California	5.75	4.19	3.69	3.57	2.88	3.27	"

* Data not available in National Prisoner Statistics series.

TABLE 2
Numbers and Relative Frequencies of Observed and Expected
Deaths in Federal Prisons by Cause of Death and Year (1972-1978)

Year	Cause of Death	Observed Number	Relative Frequency of Observed Number	Expected Number	Relative Frequency of Expected Number	Rate of Observed to Expected
1972	Natural	52	76%	50.5	61%	1.03
	Accident	4	6%	19.1	23%	.21
	Suicide	7	10%	4.3	5%	1.63
	Homicide	5	7%	9.2	11%	.54
	Total	68 ^a	99%	83.1	100%	.82
1973 ^b	Natural	44	70%	73	70%	.60
	Accident	1	2%	18	17%	.06
	Suicide	8	13%	4	4%	2.00
	Homicide	10	16%	10	10%	1.00
	Total	63	101%	105	101%	.60
1974	Natural	42	66%	52.7	59%	.80
	Accident	1	2%	20.7	23%	.05
	Suicide	3	5%	4.6	5%	.65
	Homicide	18	28%	11.1	12%	1.62
	Total	64	101%	89.1	99%	.72
1975	Natural	53	69%	51.5	58%	1.03
	Accident	4	5%	21.4	24%	.19
	Suicide	8	10%	4.7	5%	1.70
	Homicide	12	16%	11.9	13%	1.01
	Total	77	100%	89.5	100%	.86
1976	Natural	39	51%	55.2	57%	.71
	Accident	3	4%	23.3	24%	.13
	Suicide	15	19%	5.1	5%	2.94
	Homicide	20	26%	13.1	14%	1.53
	Total	77	100%	96.7	100%	.80
1977	Natural	46	58%	65.2	58%	.71
	Accident	7	9%	26.1	23%	.27
	Suicide	8	10%	5.7	5%	1.40
	Homicide	18	23%	15.4	14%	1.17
	Total	79	100%	112.4	100%	.70
1978	Natural	50	68%	68.4	60%	.73
	Accident	1	1%	25.1	22%	.04
	Suicide	3	4%	5.5	5%	.54
	Homicide	19	26%	15.1	13%	1.26
	Total	73 ^a	99%	114.1	100%	.64
Aver.	Natural	46.6	65%	59.5	60%	.78
1972	Accident ^c	3.0	4%	22.0	22%	.14
thru	Suicide	7.4	10%	4.8	5%	1.54
1978	Homicide	14.6	20%	12.3	12%	1.19
	Total ^d	71.6	99%	98.6	99%	.73

^a In 1972 there was one additional death of an undetermined cause; in 1978 there were two additional deaths of undetermined causes.

^b Figures for 1973 are those of Sawyer Sylvester, et al., Prison Homicide.

^c The difference between observed and expected accidental deaths was statistically significant ($p < .001$) chi-square = 16.40.

^d The difference between observed and expected for total deaths was statistically significant ($p < .001$) chi-square = 21.04.

END