



# Bureau of Justice Statistics Special Report

# Population Density in State Prisons

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The 694 State prisons in operation on June 30, 1984, provided an average of 57 square feet of living space per inmate in general and special housing and confined inmates to their housing units for an average of 11 hours per day. Other findings from the 1984 Prison Census include:

- Nationally, 34% of inmates were housed in single-cell units; 24% were double-celled; and the remaining 42% were housed in units with three or more inmates.
- Housing units with two inmates had the highest density, with an average of 34 square feet per inmate. Inmates in single cells had an average of 68 square feet, or twice as much room per inmate.
- About 1 in 5 inmates resided for 10 hours or more per day in a general housing unit that provided less than 60 square feet of floor space. Nearly 1 in 5 prisons had at least 40% of their inmates residing in these conditions. Almost three-fourths of State prisons, housing 59% of all inmates, had 10% or less of their inmates residing in such conditions.
- Population densities were highest in prisons in Southern and Western States, in larger institutions, in maximum security facilities, in male-only prisons, and in the oldest prisons.
- Between 1979 and 1984, the opening of 138 new State prisons and the reno-

This Special Report examines one of the most serious problems facing our corrections system today--the sufficiency of housing resources. Based on the 1984 Prison Census, which collected detailed information on over 180,000 housing units at 694 State prisons, it examines the amount, nature, and use of housing space in our Nation's State prisons. Other important aspects of correctional resources addressed by the prison census, such as detailed information on staffing, educational and work programs, and support services, await further research. Special thanks are due to the nearly 700 wardens who expended substantial time and effort to complete the highly detailed prison census. Now available through the Criminal Justice Archive at the University of Michigan, the 1984 Prison Census provides our most comprehensive source of information on prison resources in the United States. Steven R. Schlesinger Director

vation or expansion of existing prisons added nearly 5.4 million square feet of housing space, an increase of 29%. Inmate population, however, increased 45% over the same period. As a result, the average square feet per inmate dropped 11%.

- The number of correctional officers grew faster than the inmate population between 1979 and 1984, resulting in a decrease in the number of inmates per officer from 4.6 to 4.1.
- The total percentage of inmates housed in less than 60 square feet changed little since 1978, but a higher proportion were living in multiple occupancy housing in 1984.
- There was little evidence that population density levels were directly associated with elevated death rates, inmate-on-inmate rates of assault, or

work programs, and support services, await further research.

Special thanks are due to the nearly 700 wardens who expended substantial time and effort to complete the highly detailed prison census. Now available through the Criminal Justice Archive at the University of Michigan, the 1984 Prison Census provides our most comprehensive source of information on prison resources in the United States.

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the frequency of institutional disturbances. Rather, such events tended to occur more frequently in maximum security facilities, regardless of their population densities.

### Introduction

Between 1930 and 1984 the State prison population more than tripled, from 115,314 to 415,796.<sup>1</sup> About two-thirds of this increase, however, occurred between 1975 and 1984. This recent growth has placed substantial demands on correctional resources such as housing, staff, support facilities, and programs. This report examines the first of these, focusing particularly on the amount of housing space available per inmate, the use of multiple occupancy, and the amount of time inmates are confined to housing units.

<sup>1</sup> See *Prisoners in 1984*, BJS Bulletin, NCJ-97118, April 1985.

## The 1984 Prison Census

A complete census of all State-operated confinement facilities was initiated in 1984 to determine how much space was available to house the Nation's prisoners and how it was being used. Data collection was sponsored by the Bureau of Justice Statistics and was conducted by the Bureau of the Census. The facility census gathered information from all State-operated correctional facilities and the District of Columbia's prison system.

To be included in this study, a facility needed to be staffed by State employees, used primarily for State prisoners, and in operation on June 30, 1984. There were a total of 694 such facilities. Excluded were privately operated facilities, military or Federal facilities, facilities operated and administered by local governments, and community-based facilities.<sup>2</sup> (Community-based facilities are those where 50% or more of the residents depart regularly and unaccompanied for work, study, school, or other activity. In 1984 there were 209 State-operated community-based facilities with 13,354 inmates.)

Each of these 694 prisons described all of its housing units, defined as sleeping quarters—any area where inmates spend the night—in use on June 30, 1984. This excludes, for example, classrooms, recreational or work areas, or other areas of prisons not used for sleeping quarters. For each of the more than 180,000 units in use, they reported the rated capacity of the unit, its exact floor space, the average number of hours per day inmates were confined to the unit, and the number of inmates housed on that date. They also provided information on the unit's security designation and use (general housing, protective custody, administrative segregation, disciplinary action, sick or injured, work release, or other).

The facilities provided additional information about the institution as a whole, including staffing, programming, and expenditures, and on the security classification, age, size, and other characteristics of the physical plant.

### Basic patterns in population density

On June 30, 1984, the 694 State prisons in operation maintained 381,955 prisoners in 180,468 housing units with a total floor space in excess of 23 million square feet (table 1). The South

Table 1. State prisons, housing units, total housing space, and prisoners, by region, June 30, 1984

	Number of prisons	Number of occupied housing units	Total occupied housing space	Number of prisoners
U.S. total	694	180,468	23,700,765 sq. ft.	381,955
Northeast	104	44,756	4,111,814	66,302
Midwest	139	45,198	5,799,248	77,665
South	330	60,515	9,990,151	167,313
West	121	29,999	3,799,552	70,675

Table 2. Distribution of housing space and inmates in State prisons, by type of housing and region, June 30, 1984

	Occupied housing space			Number of inmates		
	General	Special	Other	General	Special	Other
U.S. total	20,039,908 sq. ft.	1,866,359 sq. ft.	1,794,498 sq. ft.	335,282	32,671	14,002
Northeast	3,600,764	298,671	212,379	58,674	5,001	2,627
Midwest	4,733,721	409,252	656,275	68,496	7,210	1,959
South	8,460,320	795,428	734,403	148,032	13,865	5,416
West	3,245,103	363,008	191,441	60,080	6,595	4,000

Table 3. Population density characteristics of State prisons, June 30, 1984

	Percent of all inmates	Average square feet per inmate	Percent of inmates in multiple occupancy	Average number of hours per day confined to unit
All prisons	100.0%	57.3 sq. ft.	66.5%	11.3 hours
Number of persons per unit				
One inmate	33.5	68.2	0	12.3
Two	23.5	34.4	100.0	11.0
3-5	3.4	45.8	100.0	11.3
6-49	15.6	63.9	100.0	10.7
50 or more	23.9	61.8	100.0	10.5
Housing unit use				
General housing	87.8	57.3	70.1	10.4
Special purpose	9.5	57.1	30.0	19.9
Other	3.7	128.2	65.4	15.0
Security designation				
Maximum security	33.4	52.8	48.9	13.1
Medium	44.7	57.1	71.9	10.8
Minimum	21.9	64.3	81.8	9.5
Age of facility				
Over 100 years	11.8	49.2	42.8	13.5
50-99	22.7	58.9	58.7	11.5
25-49	17.6	53.0	77.7	10.7
15-24	13.3	53.8	75.3	11.2
5-14	19.5	60.6	72.6	10.8
5 or less	15.1	64.9	68.0	10.6
Size of facility				
1-499 inmates	22.3	66.6	73.9	10.3
500-1000	26.9	58.1	68.4	11.1
More than 1000	50.8	52.7	62.6	11.8
Facility houses				
All males	91.3	57.0	66.0	11.4
All females	3.4	64.7	68.3	9.9
Both	5.3	57.0	59.4	10.4

Note: Data refer to inmates in general and special housing except under "Housing unit use" where "Other" is shown for comparison.

Percentages may not total to 100 because of rounding.

accounted for the largest proportion of the Nation's prisoners (44%) and the largest proportion of the total available space used for inmate housing (42%). The lower number of units in the South and West, relative to the number of inmates being housed, indicates a greater use of multiple housing in those regions.

About 85% of all housing space in

correctional facilities was used for general inmate housing, and about 88% of the population resided in such units (table 2). About 8% of the occupied prison housing space was used for special purposes such as protective custody, administrative custody, or disciplinary action. Because special housing creates unique staffing and program demands, its use has an impact on the allocation of prison resources of

<sup>2</sup>For information on local jails see *The 1983 Jail Census*, BJS Bulletin, NCJ-95536, November 1984.

Table 4. Number of State prisons, number of inmates, average square feet per inmate, and percent in multiple housing, by use of unit and State, June 30, 1984

	Number of prisons	General housing			Special housing			Other housing		
		Number of inmates	Average square feet per inmate	Percent of inmates in multiple occupancy	Number of inmates	Average square feet per inmate	Percent of inmates in multiple occupancy	Number of inmates	Average square feet per inmate	Percent of inmates in multiple occupancy
U.S. total	694	335,282	57.3	70.1	32,671	57.1	30.0	13,930	93.3	65.8
Alabama	12	7,068	59.6	83.8	464	57.7	.9	139	77.5	77.0
Alaska	12	1,428	71.4	76.7	119	66.0	52.1	43	49.6	72.1
Arizona	12	6,337	77.0	76.4	654	61.5	89.3	63	230.1	19.0
Arkansas	7	3,263	76.2	76.6	304	70.0	91.8	98	126.5	69.4
California	36	32,607	48.0	89.2	3,479	47.8	19.9	3,064	44.8	78.1
Colorado	9	2,047	76.1	27.9	522	96.1	33.9	17	128.5	94.1
Connecticut	13	4,337	49.8	44.1	278	55.8	53.2	440	59.0	37.0
Delaware	6	1,754	87.9	43.3	5	60.0	0	78	72.3	75.6
District of Columbia	5	1,951	90.1	83.4	414	57.3	12.6	232	89.3	100.0
Florida	40	21,180	54.4	85.0	2,202	64.3	32.6	414	64.9	96.9
Georgia	23	11,250	82.5	79.2	943	62.5	21.2	470	680.4	47.7
Hawaii	7	1,127	37.8	93.4	161	35.6	82.0	421	20.4	99.8
Idaho	3	962	45.7	91.5	83	52.4	50.6	46	45.2	100.0
Illinois	25	13,951	57.3	62.8	1,449	56.6	17.5	367	71.9	33.8
Indiana*	11	8,138	52.4	70.5	421	51.4	24.9	82	90.3	62.2
Iowa	10	2,250	63.0	47.6	353	49.7	4.8	83	99.5	61.4
Kansas	7	3,255	38.9	73.4	447	52.2	9.4	37	69.5	78.4
Kentucky	10	4,392	71.8	64.3	136	61.3	7.4	8	371.4	37.5
Louisiana	11	9,207	71.7	89.0	869	80.6	61.7	333	77.7	83.2
Maine	4	935	49.6	60.0	65	54.0	0	11	56.0	0
Maryland	14	10,621	49.7	55.8	1,433	41.3	50.1	299	135.3	69.2
Massachusetts	13	3,914	60.4	50.2	425	50.5	29.2	186	65.5	36.0
Michigan	29	11,798	66.8	34.0	881	56.9	0	471	90.0	56.9
Minnesota	7	1,875	65.9	3.3	149	74.3	1.3	224	83.7	4.0
Mississippi	6	3,887	49.9	99.0	442	50.2	41.2	229	49.3	100.0
Missouri	11	6,812	47.9	70.2	898	54.4	18.2	153	52.6	94.8
Montana	3	790	55.9	58.1	41	64.4	0	5	740.0	0
Nebraska	5	1,460	61.8	55.4	75	59.9	29.3	78	103.7	89.7
Nevada	8	2,426	54.3	71.4	479	54.9	37.6	164	34.5	90.6
New Hampshire	1	276	42.2	12.7	81	41.9	13.6	156	88.1	21.8
New Jersey	11	9,040	64.0	48.2	704	73.1	0	299	83.1	72.9
New Mexico	4	1,247	77.5	37.8	275	66.1	0	22	66.4	0
New York	41	28,056	66.8	36.1	2,268	59.4	7.0	942	93.0	21.5
North Carolina	79	13,518	54.7	84.5	1,139	61.8	17.9	1,230	80.4	68.6
North Dakota	2	427	69.2	29.3	4	52.0	0	5	72.0	0
Ohio	13	13,756	53.2	85.2	2,237	57.2	51.3	314	103.3	69.1
Oklahoma	14	5,591	65.2	71.3	325	91.5	1.2	687	52.9	77.6
Oregon	7	3,195	46.4	72.5	21.3	47.8	2.8	13	203.8	92.3
Pennsylvania	9	10,785	51.2	55.0	994	55.6	25.9	503	81.2	69.0
Rhode Island	6	919	63.4	66.7	150	69.6	77.3	32	111.1	65.6
South Carolina	19	6,690	44.8	88.3	539	63.7	39.7	304	56.4	73.0
South Dakota	2	721	49.8	53.1	72	48.3	38.9	3	60.0	0
Tennessee	13	6,443	56.2	91.4	973	54.0	57.9	231	154.9	91.8
Texas	27	31,274	39.8	90.5	2,933	41.2	48.2	554	87.6	34.7
Utah	2	1,178	67.8	50.9	235	50.0	0	44	118.0	77.3
Vermont	6	412	59.3	64.8	36	68.0	44.4	58	50.5	98.3
Virginia	41	8,650	66.7	62.1	614	70.1	5.9	63	115.8	60.3
Washington	15	6,090	47.2	80.3	298	55.8	28.9	95	60.0	49.5
West Virginia	3	1,293	71.0	56.7	130	94.5	70.8	47	287.6	100.0
Wisconsin	17	4,053	69.7	26.0	224	82.2	4.5	70	98.5	52.9
Wyoming	3	646	89.7	22.9	36	79.0	0	3	79.0	0

\* Seventy-two units in Indiana, housing 72 inmates, could not be classified and are excluded.

all sorts, including physical space.<sup>3</sup> About 9% of all inmates were in such special housing, thereby segregated from the general housing population. Finally, some housing (listed as "other" in table 2) is routinely used for other purposes such as infirmaries or, in a few cases, special programs. Because of the unusual nature of this housing, it has been excluded from the computations of average square footage per inmate presented below.

<sup>3</sup>See McGee, R., G. Warner and N. Harlow, *The Special Management Inmate*, National Institute of Justice, March 1985.

Nationally, about a third of all inmates were in single-person cells with an average of 68 square feet of living space each (table 3). Nearly 1 in 4 inmates were residing in two-person cells averaging about 34 square feet per person. Many of these may have been housed in cells originally intended for single occupancy.

Overall, inmates in either general or special purpose housing had an average of about 57 square feet of living space. About 70% of the inmates in general housing and about 30% of those

in special housing were in multiple units.

Those living under a minimum security level of custody had more room per inmate (64 square feet) than in other security designations, but were more likely to be in multiple housing (81%). Inmates under maximum security had the least amount of room (53 square feet) but were also least likely to be in multiple housing (49%). Older and larger facilities were most densely populated but used less multiple occupancy housing.

There were also substantial differences among the States. In five States—Hawaii, Idaho, Mississippi, Tennessee, and Texas—90% or more of the inmates in general housing shared their confinement quarters with other inmates (table 4). Average square footage per inmate ranged from 37.8 to 51.2. By contrast, in six States—Colorado, Minnesota, New Hampshire, North Dakota, Wisconsin, and Wyoming—30% or less of the general housing inmates were residing in multiple occupancy units. Among these States, average square footage ranged from 42.2 to 89.7.

Twelve States reported that at least 50% of the inmates in special housing were being held in multiple occupancy quarters. This may reflect problems in the allocation of available space in those States, since segregated quarters by definition are normally single-occupant housing.

Nationwide, inmates housed in less than 40 square feet made up 28% of the regularly housed population (table 5). Less than a fifth of all inmates in regular housing had 80 square feet or more per person.

The actual square footage of floor space per inmate varied considerably by region. In the South and West about half the inmates lived in units providing less than 50 square feet of floor space; nearly a third had less than 40 square feet of floor space. The Northeast had the lowest percentage of inmates in less than 40 square feet.

As noted above, cells housing two inmates provided the least amount of space per person, with 3 out of 4 inmates in double cells receiving less than 40 square feet of floor space. By comparison, only 2% of those housed in single cells had less than 40 square feet of floor space.

#### Trends in population density, 1979-84

Since 1979, the opening of 138 new State prisons and the renovation or ex-

**Table 5. Cumulative distribution of inmates in State prisons, June 30, 1984**

	Total number of inmates*	Percent of inmates in housing units with:			
		Less than 40 sq. ft.	Less than 50 sq. ft.	Less than 60 sq. ft.	Less than 80 sq. ft.
U.S. total	367,953	27.8%	44.5%	62.0%	83.8%
Northeast	63,675	16.8%	30.4%	51.3%	78.9%
Midwest	75,706	25.4%	41.2%	58.7%	87.3%
South	161,897	31.6%	49.6%	65.1%	83.9%
West	66,675	32.2%	50.8%	68.4%	84.0%
Unit size					
One inmate	123,215	2.0%	18.1%	44.4%	79.2%
Two	86,564	76.0%	92.4%	94.9%	98.3%
3-5	12,530	51.2%	65.6%	76.5%	87.8%
6-49	57,580	18.5%	37.4%	59.6%	76.5%
50+	88,064	19.5%	37.1%	53.5%	80.1%
Unit use					
General housing	335,282	28.8%	45.0%	61.8%	83.6%
Special	32,671	17.9%	42.2%	64.4%	86.0%
Other	14,002	27.0%	42.1%	52.0%	71.4%

\*Refers to inmates in general and special housing except under "Unit use" where "Other" is shown for comparison.

pansion of existing prisons added nearly 5.4 million square feet of housing space (table 6). The total increase in space, 29%, was exceeded, however, by a 45% growth in the number of inmates. For all housing types (including infirmaries and other residential space), prisons in 1979 provided an average of 69.5 square feet of floor space per inmate. In 1984, average space per inmate in State prisons was 7.6 square feet less (61.9 square feet).

Per-inmate reductions in space since 1979 were greatest in Southern States, from 74.9 to 59.7 square feet. In 1984, however, Western States averaged the lowest per capita space (53.8 square feet). Only in the Midwest did capacity expansion exceed the increase in prisoner population.

A similar 1978 survey of prisons found that 65% of the Nation's inmates were housed in less than 60 square feet.<sup>4</sup> The June 30, 1984, prison census indicates that 62% of inmates at that time were similarly housed (table 7). The proportion of prisoners in multiple occupancy units, however, increased from 59% to 67%, and the proportion in

<sup>4</sup>See *American Prisons and Jails, Vol. III: Conditions and Costs of Confinement*, National Institute of Justice, October 1980.

multiple occupancy units with less than 60 square feet per inmate rose from 43% to 47%.

#### Combining average space and confinement time

A fuller picture of population density in State prisons emerges when the space available per inmate is combined with the amount of time each day an inmate is confined to his living unit. Standards established by the American Correctional Association call for 60 square feet per single cell provided that inmates spend no more than 10 hours per day there and at least 80 square feet when more than 10 hours are spent there.<sup>5</sup> Advisory guidelines issued by the U.S. Department of Justice in 1980 proposed a standard of at least 60 square feet for no more than 10 hours per day or at least 80 square feet for more than 10 hours.<sup>6</sup>

Other factors contributing to the totality of conditions within facilities must be considered to evaluate fully issues of prison population density, but

<sup>5</sup>Manual of Standards for Adult Correctional Institutions, American Correctional Association, August 1977.

<sup>6</sup>Federal Standards for Corrections, Department of Justice, 1980.

**Table 6. Comparison of housing space and number of inmates in State prisons, June 30, 1979, and June 30, 1984**

	Number of prisons		Total square feet of occupied housing space		Number of inmates		Average sq. ft. per inmate		Percent change, 1979-84, in:	
	1979	1984	1979	1984	1979	1984	1979	1984	Square feet of occupied housing space	Number of inmates
U. S. total	568	694	18,329,376	23,700,765	263,553	381,955	69.5	61.9	29.0	44.9
Northeast	85	104	2,680,296	4,111,814	40,700	66,302	65.9	61.1	51.1	62.9
Midwest	101	139	3,865,478	5,799,248	59,399	77,665	65.1	74.7	50.0	30.8
South*	292	330	9,118,294	9,990,151	121,708	167,313	74.9	59.7	9.6	37.5
West	90	121	2,665,308	3,799,552	41,746	70,695	63.8	53.8	42.6	69.3

Note: All data refer to general, special, and other housing.  
\* The South showed an increase of more than 2 million square feet in new facilities built since 1979. However, there was a reduction of space at facilities existing in 1979 due to closings of facilities, conversions of prisons to other uses, and conversion of some prison housing space to other prison purposes.

with respect to the amount of housing space available and the number of hours inmates are confined to their housing units, the standards of 60 square feet and 10 hours per day have appeared repeatedly.

About a third of all inmates in State prisons were confined to quarters for 10 hours or more per day (table 8). About a fifth of all inmates resided in less than 60 square feet of space for 10 hours or more. Those residing in these conditions in multiple occupancy units constituted 17.2% of all inmates; those residing in these conditions in single occupancy units were less than 5% of all inmates.

At the other extreme were inmates with an average of more than 60 square feet of living space to which they were confined for less than 10 hours per day. These constituted 27.1% of all inmates.

#### Characteristics of high density prisons

The combination of space per inmate and the amount of time confined there can also be examined for an entire facility. While some proportion of the inmates in any facility may be living in high density conditions, the image of a crowded prison is one in which that proportion is high enough to have a significant influence on the institution as a whole.

About 4 out of 5 prisons had less than 40% of their inmates housed in less than 60 square feet for 10 hours or more per day (table 9). The majority of prisons (56%) had no inmates living in these conditions. The highest density prisons, those in which 40% or more of the inmates resided in less than 60 square feet for 10 hours or more per day, comprised 18% of the Nation's prisons. About a quarter of the inmate population was incarcerated in one of these highest density prisons.

#### Percent of inmates confined to:

Lowest density prisons	34.0%
Low density prisons	25.1
Medium density prisons	16.6
Highest density prisons	24.4

Regions varied in the number of highest density prisons and the percentage of the inmate population housed in them. The South, with the largest number of inmates and prisons, also reported the largest number and percentage of highest density prisons (23.6%). In the Northeast, nearly 2 out of 3 prisons were found to have the lowest levels of population density, a slightly higher

**Table 7. Comparison of population density in State prisons, March 31, 1978, and June 30, 1984**

	Number of inmates		Percent in multiple occupancy		Percent in less than 60 sq. ft.		Percent in less than 60 square feet and in multiple occupancy	
	1978	1984	1978	1984	1978	1984	1978	1984
U.S. total	228,552	381,955	58.8%	66.5%	65.0%	62.0%	43.4%	47.1%
Northeast	30,389	66,302	15.3	41.8	53.6	51.3	12.1	24.2
Midwest	56,708	77,665	46.5	56.4	52.5	58.7	31.0	39.2
South	107,184	167,313	82.8	77.4	76.8	65.1	66.8	55.9
West	34,271	70,675	42.7	75.0	59.0	66.4	18.5	56.4

Source for 1978 figures: Mullen, J., and B. Smith, *American Prisons and Jails*, Vol. III: Conditions and Costs of Confinement, National Institute of Justice, 1980.

**Table 8. Distribution of inmates of State prisons by size of general housing unit, occupancy, and hours confined per day, June 30, 1984**

	Percent of inmates in housing units with		Total
	Less than 60 square feet	60 or more square feet	
Single occupancy	12.3%	17.7%	30.0%
Hours confined per day:			
Less than 10 hours	7.6	12.3	19.9
10 or more hours	4.7	5.4	10.1
Multiple occupancy	49.4	20.6	70.0
Hours confined per day:			
Less than 10 hours	32.2	14.8	47.0
10 or more hours	17.2	5.8	23.0
Total	61.7%	38.3%	100%

Note: Based on the 100,353 inmates in single occupancy general housing and the 234,929 inmates in multiple occupancy general housing. Special housing is excluded since, by definition, inmates in such housing generally are kept in their housing units and are not eligible to participate in regular prison programs.

**Table 9. Distribution of State prisons by population density, June 30, 1984**

	Number of prisons	Percent of prisons by population density category*			
		Lowest	Low	Moderate	Highest
U. S. total	694	55.8%	17.3%	8.9%	18.0%
Northeast	104	64.4%	18.3%	8.7%	8.7%
Midwest	139	62.6	12.2	7.9	17.3
South	330	47.6	20.9	7.9	23.6
West	121	62.8	12.4	13.2	11.6
Average daily population					
Less than 500 inmates	451	68.3%	11.8%	4.9%	15.1%
500-1000	139	38.1	26.6	16.5	18.7
More than 1000	104	25.0	28.8	16.3	29.8
Facility security level					
Maximum security	144	27.1%	21.5%	14.6%	36.8%
Medium	293	44.7	24.2	12.6	18.4
Minimum	255	84.7	7.1	1.6	6.7
Other level	2	50.0	0	0	50.0
Facility houses					
All males	613	55.5%	17.5%	7.8%	19.2%
All females	47	68.1	14.9	10.6	6.4
Both sexes	34	44.1	17.6	26.5	11.8
Age of facility					
Over 100 years	37	18.9%	24.3%	18.9%	37.8%
50-99	111	46.8	21.6	15.3	16.2
25-49	150	48.0	21.3	9.3	21.3
15-24	95	55.8	18.9	7.4	17.9
5-14	162	61.7	14.2	7.4	16.7
5 years or less	138	74.6	10.1	3.6	11.6
Not known	1	0	0	0	100.0

Note: Some rows do not sum to 100% because of rounding.  
\*Categories refer to the percentage of inmates in regular housing in each prison in less than 60 square feet for more than 10 hours per day: Lowest = no inmates residing in these conditions; Low = 1-10% of inmates; Moderate = 11-40%; and Highest = 40+%.

proportion than prisons in the Midwest and the West.

Large prisons, those with an average daily population of more than 1,000 prisoners, made up 15% of the Nation's prison facilities but housed more than half its inmates. These institutions were more likely to be facilities with the highest population density. Among large prisons, 3 out of 10 were in the highest density categories compared to about 1 in 7 of the smaller prisons (less than 500 inmates). Further, large prisons tended to be significantly older, with an average age of 52 years, compared to 25 years for smaller prisons. This kind of housing was most common in the Northeast and Midwest, where over half of the inmates were housed in facilities more than 60 years old.

Population density also varied by the custody level of the facility, the sex of inmates housed, and the age of the facility. Nearly 37% of the maximum security prisons in the Nation were classified as having the highest population density compared to about 6% of minimum security institutions. The percentage of male-only prisons with the highest density housing was also much greater than the percentage of female-only prisons. Three out of four prisons built between 1980 and 1984 reported the lowest density conditions. By contrast, the oldest prisons (built more than a century ago) were most likely to be institutions with the highest density.

#### Effects of population density

A number of previous studies have examined the relationship between increased population density or occupancy in prison and observed changes in the physical or emotional conditions of inmates. While some studies conclude that the effects are generally negative, others conclude that such effects do not vary consistently with increased population densities.

Data from the 1984 Census for the annual period prior to June 30, 1984 indicate that the greatest number of inmate deaths, assaults, and institutional disturbances generally occurred in medium and maximum security facilities; the least number occurred in minimum security facilities (table 10).

<sup>7</sup> For recent discussions of this topic based on available empirical evidence see, D. Ellis, "Crowding and Prison Violence, Integration of Research and Theory," in *Criminal Justice and Behavior*, Vol. II, Sept. 1984 and G. Gaes, "The Effects of Overcrowding in Prison," in M. Tonry and N. Morris (eds.), *Criminal Justice, An Annual Review*, Vol. 8, University of Chicago Press, Chicago, 1985.

**Table 10. Number of deaths, inmate assaults, and disturbances in State prisons, by population density and security classification, 1984**

	Number of incidents in state prisons by population density category				
	All	Lowest	Low	Moderate	Highest
<b>Illness deaths</b>					
Minimum security	35	26	4	4	1
Medium	190	69	61	33	27
Maximum	236	39	97	24	76
<b>Suicide deaths</b>					
Minimum security	3	1	1	1	0
Medium	49	15	10	12	12
Maximum	55	6	17	8	24
<b>Homicide deaths</b>					
Minimum security	2	2	0	0	0
Medium	41	10	9	11	11
Maximum	46	3	14	12	17
<b>Inmate assaults</b>					
Minimum security	1,057	902	96	30	29
Medium	4,138	1,997	750	564	827
Maximum	3,576	855	907	583	1,231
<b>Disturbances</b>					
Minimum security	25	24	1	0	0
Medium	276	153	36	64	23
Maximum	346	25	94	108	119

Note: See table 9 for definition of density categories. Counts refer to the 12-month period from July 1, 1983, to June 30, 1984.

**Table 11. Rates of deaths, inmates assaults, and disturbances in State prisons, by population density and security classification, 1984**

	Number of incidents per 1,000 inmates in state prisons by population density category				
	All	Lowest	Low	Moderate	High
<b>Illness deaths</b>					
Minimum security	.71	.68	.72	1.20	.50
Medium	1.01	1.09	1.28	.88	.67
Maximum	1.73	1.47	2.35	1.08	1.63
<b>Suicide deaths</b>					
Minimum security	.06	.03	.18	.30	0
Medium	.26	.24	.21	.32	.30
Maximum	.40	.23	.41	.36	.51
<b>Homicide deaths</b>					
Minimum security	.04	.05	0	0	0
Medium	.22	.16	.19	.29	.27
Maximum	.34	.11	.34	.54	.36
<b>Inmate assaults</b>					
Minimum security	21.56	23.62	17.22	9.01	14.47
Medium	21.96	31.64	15.80	15.10	20.42
Maximum	26.16	32.15	22.00	26.23	26.38
<b>Disturbances</b>					
Minimum security	.51	.63	.18	0	0
Medium	1.47	2.42	.76	1.71	.57
Maximum	2.46	.94	2.04	4.86	2.55

Note: See table 9 for definitions of density categories. Data are based on average daily populations for the 12-month period from July 1, 1983, to June 30, 1984.

These frequencies can also be expressed as rates of occurrence for every 1,000 inmates residing in prisons of various security levels and of differing population densities (table 11). For each type of negative event a consistent pattern can be seen. Maximum security facilities had higher rates of occurrence than medium security institutions, and medium security institutions had higher rates of occurrence than minimum security institutions.

When density levels are compared with equivalent security grades, no clear pattern emerges. The highest

density maximum security facilities, for example, evidenced the highest rate of suicide but had a rate of homicide lower than that reported in moderate density prisons and about the same as that in low density prisons. Moreover, for prisons of each security level inmate-on-inmate assaults were most prevalent in the lowest density prisons. Similarly, institutional disturbances in minimum and medium security facilities were most prevalent in prisons with the lowest population densities. In general, no consistent pattern emerges from these data indicating that the incidence or

prevalence of these negative events increases with greater population densities.

The kinds of inmates housed in facilities of different security grades, then, may be a more important factor than population density for understanding variation in the rates at which inmate deaths, assaults, and disturbances occur. In addition, it remains to be determined whether rates for certain events, such as illness, deaths, or suicides, are more likely to occur in prison than they occur outside prison for comparable race, age, and sex groups.

Finally, there is some evidence that correctional systems may respond to pressures of population growth by increasing the level of supervision over inmates. The 527 prisons that were included in both the 1979 and 1984 Censuses experienced a 34% increase in their inmate populations and a 29% expansion in their housing space, but a 43% increase in their number of correctional officers. These prisons reported more suicides in 1984 than in 1979 but fewer homicides. Total staff increases nationally in State prisons between 1979 and 1984 were identical to the increase in the number of inmates (45%); however, since most of the personnel increase over the period was among correctional officers, the number of inmates per officer actually dropped from 4.6 to 4.1.<sup>8</sup> Thus, though inmates in State prisons may have had less space available per person in 1984 than in 1979, the improvement in staffing may have helped to control the prevalence of some negative events.

### Methodology

This report is based on information supplied by each of the State prisons in operation on June 30, 1984. Each prison reported the size, occupancy, and use of each type of housing unit. For example, a facility might report having 30 cells, each 65 square feet, housing 24 inmates. In this case, six of the cells are assumed to be empty and each inmate therefore has 65 square feet. If the facility reported that 36 inmates were housed in the units, the occupancy of the cells was distributed on the assumption of minimum density. Thus 22 of the cells were assumed to have one inmate each with 65 square feet and 8 of the cells were assumed to have two inmates ("doubled bunked")

<sup>8</sup>In 1979 there were a total of 93,570 full-time staff working in correctional institutions, of which 57,799 were classified as correctional officers. On June 30, 1984, State prison employees numbered 135,471, of which 92,153 were correctional officers.

with each inmate having 32.5 square feet.

Data for the District of Columbia differ from prisoner counts published in Prisoners in 1984, which reported 4,834 inmates at yearend, because this report only deals with the 2,597 inmates under the District of Columbia's jurisdiction and housed in one of its prison facilities at midyear 1984.<sup>9</sup> This report, therefore, does not reflect changes in the way the District of Columbia is housing both jail and prison inmates since June 30, 1984.

Death rates and assault rates were computed using reports of incidents from July 1, 1983, to June 30, 1984. Disturbances included incidents described by prison officials as riots, food fasts, or strikes (by inmates). No prison reported more than five suicides or more than six homicides in the 12-month period. The rates reported are based upon the average daily population during the same time period. Although the actual population at risk will be higher because of movement in and out of an institution, the average daily population, as reported by the prison, was the best available estimate.

<sup>9</sup>BJS Bulletin, NCJ-97118, April 1985.

Bureau of Justice Statistics Special Reports are prepared principally by BJS staff under the direction of Joseph M. Bessette, deputy director for data analysis. The report was written by Christopher A. Innes with the guidance and assistance of Lawrence A. Greenfeld, corrections unit chief. It was edited by Frank D. Balog. Marianne Zawitz provided assistance in data presentation. Marilyn Marbrook, publications unit chief, administered report production, assisted by Millie J. Baldea and Jeanne Harris. Data collection and processing were conducted by Richard Meyer, Regina Yates, and Pauline Fain of the U.S. Bureau of the Census.

December 1986, NCJ-103204

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