Data from the
NATIONAL HEALTH SURVEY

Series 13
Number 48

Nursing Home Utilization in California, Illinois, Massachusetts, New York, and Texas:

1977 National Nursing Home Survey

Estimates are for the coterminous United States and for California, Illinois, Massachusetts, New York, and Texas. Data include type of ownership, certification status, bed size, occupancy rate, cost per resident day, discharge status (alive or dead), and demographic characteristics and health status of residents. Estimates are based on data collected in the 1977 National Nursing Home Survey.

DHHS Publication No. (PHS) 81-1799

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Office of Health Research, Statistics, and Technology
National Center for Health Statistics
Hyattsville, Md. October 1980

For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402

Library of Congress Cataloging in Publication Data

Foley, Daniel Joseph.
Nursing home utilization in California, Illinois, Massachusetts, New York, and Texas: 1977 national nursing home survey.

(Vital and health statistics: Series 13, Data from the National Health Survey, Data on health resources utilization; no. 48) (DHHS publication; no. (PHS) 81-1799)
Supt. of Docs. no.: HE 20.6209:13/48
1. Nursing homes—California—Statistics. 2. Nursing homes—Illinois—Statistics. 3. Nursing homes—Massachusetts—Statistics. 4. Nursing homes—New York (State)—Statistics. 5. Nursing homes—Texas—Statistics. 6. Nursing homes—United States—Statistics. I. Title. II. Series: United States. National Center for Health Statistics. Vital and health statistics: Series 13, Data from the National Health Survey, Data on health resources utilization; no. 48. III. Series: United States. Dept. of Health and Human Services. DHHS publication; no. (PHS) 81-1799. [DNLM: 1. Nursing homes—United States—Statistics. 2. Health facility planning—United States. W2 A N148vm no. 48]
RA407.3.A349 no. 48 [RA997] 362.1'1'0973s 80-14677
[362.1'6'09794]

NATIONAL CENTER FOR HEALTH STATISTICS

DOROTHY P. RICE, *Director*

ROBERT A. ISRAEL, *Deputy Director*
JACOB J. FELDMAN, Ph.D., *Associate Director for Analysis*
GAIL F. FISHER, Ph.D., *Associate Director for the Cooperative Health Statistics System*
ROBERT A. ISRAEL, *Acting Associate Director for Data Systems*
ALVAN O. ZARATE, Ph.D., *Acting Associate Director for International Statistics*
ROBERT C. HUBER, *Associate Director for Management*
MONROE G. SIRKEN, Ph.D., *Associate Director for Mathematical Statistics*
PETER L. HURLEY, *Associate Director for Operations*
JAMES M. ROBEY, Ph.D., *Associate Director for Program Development*
GEORGE A. SCHNACK, *Acting Associate Director for Research*
ALICE HAYWOOD, *Information Officer*

DIVISION OF HEALTH RESOURCES UTILIZATION STATISTICS

W. EDWARD BACON, Ph.D., *Acting Director*
JOAN F. VAN NOSTRAND, *Chief, Long-Term Care Statistics Branch*
JAMES E. DELOZIER, *Chief, Ambulatory Care Statistics Branch*
W. EDWARD BACON, Ph.D., *Acting Chief, Hospital Care Statistics Branch*
MANOOCHEHR K. NOZARY, *Chief, Technical Services Branch*
STEWART C. RICE, *Chief, Family Planning Statistics Branch*

Vital and Health Statistics-Series 13-No. 48

DHHS Publication No. (PHS) 81-1799
Library of Congress Catalog Card Number 80-14677

CONTENTS

Introduction 1

Facility Characteristics 2

Utilization 2

Resident Characteristics and Health Status 4

List of Detailed Tables 5

Appendixes 11
I. Technical Notes 12
II. Definition of Certain Terms Used in This Report 20

SYMBOLS

Data not available	- - -
Category not applicable	. . .
Quantity zero	-
Quantity more than 0 but less than 0.05	0.0
Figure does not meet standards of reliability or precision	*

NURSING HOME UTILIZATION IN CALIFORNIA, ILLINOIS, MASSACHUSETTS, NEW YORK, AND TEXAS

Daniel J. Foley, Division of Health Resources Utilization Statistics

INTRODUCTION

This report presents selected characteristics of nursing homes for the coterminous United States and for the five States on the National Master Facility Inventory with the largest proportion of nursing home residents—California, Illinois, Massachusetts, New York, and Texas. Data are from the 1977 National Nursing Home Survey, conducted by the National Center for Health Statistics from May through December 1977. This is the second in a continuing series of surveys, but it is the first from which statistically reliable State estimates have been obtained. The first survey in the series was conducted from August 1973 through April 1974.

The 1977 National Nursing Home Survey was a nationwide sample survey of nursing homes in which descriptive data about the facilities, their costs, and the characteristics of their residents, discharges, and staff were collected. In order to produce State estimates, the national sample was supplemented with the additional nursing homes needed to produce reliable State estimates. State supplement samples were drawn for Massachusetts, Illinois, New York, and Texas. This was not done for California since the sample for that State was already sufficient to produce State estimates. Nursing homes included in the survey were those classified by the 1973 National Master Facility Inventory (NMFI) as nursing care homes, personal care homes (with or without nursing), and domiciliary care homes, as well as all nursing homes that opened for business from the time the 1973 NMFI was conducted through December 1976. The NMFI is a census of all inpatient health facilities conducted every 2 or 3 years by mail by the National Center for Health Statistics.[1]

This report focuses on comparisons of State with national data and addresses only those States with substantial differences from the national norms rather than making comparisons for each of the five States. Data in this report center on facility characteristics and selected measures of utilization. Facility characteristics include bed size, ownership, certification, and staff. The measures of utilization selected for discussion are financing of resident days of care, primary source of payment, occupancy rate, discharge status (alive or dead), costs of providing care, and charges for care. Demographic data on nursing home residents and a profile of their health status and the services they received are also presented. Estimates of the number of facilities, beds, residents, full-time equivalent employees (further information about this and other terms can be found in appendix II of this report), and the average monthly charge are based on 1977 data; and estimates of the annual

[1] National Center for Health Statistics: Inpatient health facilities as reported from the 1973 MFI Survey, by A. Sirrocco. *Vital and Health Statistics.* Series 14-No. 16. DHEW Pub. No. (HRA) 76-1811. Health Resources Administration. Washington. U.S. Government Printing Office, May 1976.

occupancy rate, resident days, discharges, and cost per resident day of care are based on 1976 data. Information on sampling variability is presented in appendix I of this report. For a summary of the national data collected in the 1977 National Nursing Home Survey, see footnote 2.

FACILITY CHARACTERISTICS

From May through December 1977, there were about 6,700 nursing homes in the five States of California, Illinois, Massachusetts, New York, and Texas, representing about 35 percent of the 18,900 nursing homes nationwide. These five States also accounted for about one-third of the Nation's 1.3 million nursing home residents and about one-third of the Nation's 1.4 million nursing home beds (table 1).

California alone had 16 percent of the nursing homes nationally and 9 percent of the beds, while New York, with only 5 percent of the homes, had nearly as many beds (8 percent) as California, reflecting a dramatic difference in average bed size. In California nursing homes averaged 42 beds each, and those in New York averaged 123 beds. However, 20 percent of the homes in New York (200) had a bed size of 200 beds or more and provided care for about half the nursing home residents in the State.

The national distribution of nursing homes by type of ownership indicates that about three-fourths (77 percent) of the homes operated under proprietary auspices. By State, however, a significantly larger proportion of facilities in California (88 percent), Massachusetts (87 percent), and Texas (89 percent) were proprietary, while a significantly smaller proportion of those in New York (64 percent) were proprietary.

Certification refers to a facility's certification by the Medicare or Medicaid program or by both. A skilled nursing facility (SNF) provides the most intensive nursing care available outside a hospital. Skilled nursing facilities certified by Medicare provide posthospital care to eligible Medicare enrollees. Facilities certified by Medicaid as skilled nursing facilities provide intensive nursing care on a daily basis to individuals eligible for Medicaid benefits. An intermediate care facility (ICF) is certified by the Medicaid program only and provides health-related services on a regular basis to persons eligible for Medicaid who do not require hospital or skilled nursing facility care but do require institutional care above the level of room and board. A health related facility (HRF) in the State of New York is equivalent to an ICF facility.

Table 1 shows that in 1977 there were significantly higher proportions of facilities certified as SNF only in New York (49 percent) and California (37 percent) than in the United States as a whole (19 percent). Texas had over twice as many homes certified as ICF only than the national average—nearly three-fourths (72 percent) for Texas compared with only 32 percent nationwide. Massachusetts, with about half (50 percent) of its nursing homes certified as ICF only, also had a significantly larger proportion than the national average.

To provide direct health-related services to residents, the Nation's nursing homes employed the equivalent of 46 full-time staff members per 100 beds. Two-thirds of the health services staff were nurse's aides (table 2). In Illinois, Massachusetts, and Texas, where many nursing homes are certified as ICF only and very few as SNF only, the full-time equivalent staffing ratios were significantly lower than nationally. However, in each of the five States there was no significant difference between the proportions of staff employed as nurse's aides, licensed practical nurses, registered nurses, or administrative, therapeutic, and professional staff and the national proportions.

UTILIZATION

In this section, the utilization of nursing homes in the five States is compared with national estimates. The nursing home utilization measures discussed are resident days of care, source of payment, occupancy rate, discharge status, costs, and charges for care.

[2]National Center for Health Statistics: The National Nursing Home Survey: 1977 summary for the United States, by J. F. Van Nostrand et al. *Vital and Health Statistics.* Series 13-No. 43. DHEW Pub. No. (PHS) 79-1794. Public Health Service. Washington. U.S. Government Printing Office, July 1979.

Table 3 indicates that in 1976 about 60 percent of the Nation's resident days of care in nursing homes were financed either totally or partially by the Medicaid program. The proportions of Medicaid resident days of care in Illinois and Massachusetts were roughly the same as the national level, while New York (67 percent) and Texas (72 percent) had significantly higher proportions. Although the proportion of Medicaid resident days of care in California (51 percent) was significantly lower than nationally, it still constituted a majority of the State's total number of resident days of care. Thus Medicaid was the principal purchaser of long-term care services both at the national level and, as was evidenced in these five States, at the State level.

Data on the primary source of payment reported for residents in 1977 further highlight Medicaid's role in providing nursing home care. The primary source of payment refers to the source that paid the greatest amount of the resident's charge in the last completed calendar month prior to the survey. The records of about 48 percent of the Nation's nursing home residents reported Medicaid as their primary source of payment (table 4). California had significantly lower Medicaid participation than nationally, with about 42 percent of its resident records indicating Medicaid as the primary source of payment. Massachusetts, New York, and Texas had significantly higher proportions of Medicaid residents (57 percent, 61 percent, and 54 percent, respectively).

These State differences in Medicaid participation and utilization were influenced by the marked differences between States in benefit packages and outlay of Medicaid expenditures. Although Medicaid is jointly funded by the Federal and State governments, it is operated and administered by each State. Each State determines the benefits, rates of payment, and eligibility criteria for Medicaid services, subject to Federal guidelines.

Another measure of the utilization of nursing homes is the occupancy rate of the beds in the home. An occupancy rate based on days of care provided for a calendar year gives a more stable estimate of utilization than a rate based on number of beds occupied the night before the survey was administered. This rate was computed for this report by using the following formula:

$$\text{Occupancy rate} = \frac{\sum \text{Aggregate number of days of care provided to residents in 1976} \times 100}{\sum \text{Estimated number of beds in 1976} \times 366}$$

The number of beds in 1976 was estimated by adjusting the number of beds in 1977 for any change in beds during the preceding year of 1976.

Generally, 89 percent of the Nation's nursing home beds were occupied in 1976. At the State level, only Texas had a significantly lower occupancy rate (80 percent) than nationally. While the other States did vary from the national occupancy rate, no significant differences were found.

In 1976 an estimated 1,117,500 persons were discharged from the Nation's 18,900 nursing homes, and most (74 percent) were discharged alive. Live discharges were more likely to be discharged to another health facility than to a private or semiprivate residence (see table 5). Illinois, Massachusetts, and New York had about the same percent of live discharges as nationally, and California (82 percent) and Texas (83 percent) had significantly higher proportions. As in the Nation, within each of the five States more live discharges were transferred to other health facilities than to private or semiprivate residences.

Nationally, the average cost to a nursing home to provide a single resident day of care in 1976 was $23.84, of which 60 percent was spent on labor (table 3). The costs per resident day in California ($21.56), Illinois ($21.11), Massachusetts ($24.23), and Texas ($19.33) were not significantly different from the national figure, but New York's cost per resident day of care ($40.12) was about 68 percent higher than the national average. In all five States, labor accounted for most of this cost.

Another measure related to the financial condition of nursing homes is the monthly charge. The monthly charge is the total amount charged to a resident by the facility in the last completed calendar month prior to the 1977

NNHS. It includes all basic charges and all charges for private duty nursing, drugs, and special medical supplies. The average monthly charge to residents in nursing homes nationally was $689 (table 4). The average monthly charges for California, Illinois, Massachusetts, and Texas were not significantly different from the national average; however, the monthly charge in New York ($1,124) was about 63 percent higher.

RESIDENT CHARACTERISTICS AND HEALTH STATUS

Table 6 shows that in 1977 the elderly population (defined as 65 years of age and over) represented about 11 percent of the total U.S. population and roughly 11 percent of the population in each of the five States. About 5 percent of the Nation's elderly cohort resided in nursing homes, with about six nursing home beds available per 100 population 65 years of age and over. Table 6 also presents State estimates that indicate that as the availability of nursing home beds increased, the proportion of elderly residing in nursing homes also increased. Thus New York and California, with about 5 and 6 beds available per 100 elderly, respectively, had about 5 percent of their elderly in nursing homes, while Massachusetts, with about 9 beds per 100 elderly, had about 7 percent of its elderly people residing in nursing homes.

The "typical" nursing home resident in each of the five States as well as nationally was white, female, widowed, and about 80 years old. The median length of stay for a nursing home resident varied from 1.2 years for California to 1.7 years for Massachusetts; the national median length of stay was 1.6 years (table 7).

As is shown in table 4, the largest proportion of nursing home residents nationwide (40 percent) were admitted from private or semiprivate residences, followed by those admitted from general or short-stay hospitals (32 percent), other nursing homes (13 percent), mental hospitals (6 percent), and other types of arrangements or unknown (9 percent). In California, Massachusetts, and New York, the largest proportions of residents were admitted from general or short-stay hospitals (42, 45, and 41 percent, respectively) rather than from private or semiprivate residences.

Illinois and Massachusetts had significantly higher proportions of residents admitted from mental hospitals (9 and 12 percent, respectively) than nationally (6 percent). This finding suggests greater than average utilization of nursing home services for the care of the mentally impaired in these two States. Data on resident health status further support this finding (table 7). In Illinois and Massachusetts about one-fourth of the residents were diagnosed in the category of "mental disorders and senility without psychosis." This proportion was significantly higher than those for California (18 percent), New York (17 percent), Texas (13 percent), and the Nation (20 percent). Illinois and Massachusetts also had significantly higher proportions of residents suffering from mental illness or mental retardation as a chronic condition (28 percent in Illinois and 25 percent in Massachusetts) than the proportions in California (15 percent), New York (13 percent), Texas (12 percent), and the Nation (18 percent).

The nursing home residents were a functionally dependent population (table 8). About 86 percent of the Nation's nursing home residents required assistance in bathing; 69 percent required assistance in dressing; 53 percent required assistance in using the toilet room; 33 percent required assistance in eating; 66 percent were chairfast, bedfast, or walked only with assistance; and 45 percent had difficulty with bowel and/or bladder control. About 23 percent of the Nation's nursing home residents were dependent in all six of these activities. In California, Illinois, New York, and Texas these proportions were roughly similar to those found nationally. Massachusetts alone showed marked differences from the national proportions; these differences were in specific activities as well as in the proportion dependent in all six activities. Except for incontinence, Massachusetts residents were less dependent in bathing, dressing, using the toilet room, eating, and mobility. Only 16 percent of Massachusetts residents were dependent in all activities as compared with 23 percent nationally. No attempt to explain this difference will be made until further analysis is conducted.

LIST OF DETAILED TABLES

1. Percent distribution of nursing homes, beds, and residents by selected facility characteristics: United States, California, Illinois, Massachusetts, New York, and Texas, 1977 6

2. Selected staffing characteristics for nursing homes: United States, California, Illinois, Massachusetts, New York, and Texas, 1977 7

3. Selected nursing home utilization characteristics: United States, California, Illinois, Massachusetts, New York, and Texas, 1976 7

4. Percent distribution of nursing home residents according to selected demographics, living arrangements prior to admission, primary source of payment, and average monthly charges: United States, California, Illinois, Massachusetts, New York, and Texas, 1977 8

5. Percent distribution of nursing home discharges by discharge status and percent distribution of live discharges by living arrangement after discharge: United States, California, Illinois, Massachusetts, New York, and Texas, 1976 9

6. Selected population characteristics: United States, California, Illinois, Massachusetts, New York, and Texas, 1977 9

7. Median length of stay and selected services received by nursing home residents: United States, California, Illinois, Massachusetts, New York, and Texas, 1977 9

8. Percent of nursing home residents by selected health status characteristics: United States, California, Illinois, Massachusetts, New York, and Texas, 1977 10

Table 1. Percent distribution of nursing homes, beds, and residents by selected facility characteristics: United States, California, Illinois, Massachusetts, New York, and Texas, 1977

Facility characteristic	United States	California	Illinois	Massachusetts	New York	Texas
	Number of nursing homes					
All nursing homes	18,900	3,000	900	900	900	1,000
	Percent distribution					
Ownership						
Proprietary	76.7	88.0	76.5	87.0	63.8	89.2
Voluntary nonprofit and government	23.3	*12.0	23.5	13.0	36.2	10.8
Certification						
Skilled nursing facility only	19.2	36.9	10.7	*7.9	49.1	*8.2
Skilled nursing and intermediate care facility	24.2	16.9	33.1	23.4	23.1	12.8
Intermediate care facility only	31.6	*7.8	32.0	49.5	*4.8	72.4
Not certified	25.0	38.4	24.1	19.1	23.0	*6.5
Bed size						
Less than 50 beds	42.3	67.6	28.2	54.8	37.6	10.9
50-99 beds	30.8	21.5	32.6	21.5	19.3	40.8
100-199 beds	22.3	*9.5	27.9	22.1	23.3	44.0
200 beds or more	4.6	*1.5	11.2	*1.6	19.9	*4.3
	Number of beds					
All beds	1,402,400	127,300	92,400	61,200	110,600	100,300
	Percent distribution					
Ownership						
Proprietary	69.3	83.7	77.3	86.9	53.5	84.4
Voluntary nonprofit and government	30.8	16.3	22.7	13.1	46.5	15.6
Certification						
Skilled nursing facility only	21.0	54.6	14.1	6.6	41.1	8.4
Skilled nursing and intermediate care facility	39.2	27.7	43.7	36.3	40.4	18.7
Intermediate care facility only	27.9	*1.3	30.9	48.2	7.8	68.4
Not certified	11.9	16.4	11.2	9.0	10.7	4.6
Bed size						
Less than 50 beds	13.0	20.7	8.9	21.3	6.9	4.6
50-99 beds	29.8	40.1	25.5	22.0	12.0	29.2
100-199 beds	39.0	29.6	35.4	50.6	26.9	55.2
200 beds or more	18.2	9.7	30.2	6.1	54.2	10.9
	Number of residents					
All residents	1,303,100	115,400	83,100	58,000	102,800	88,700
	Percent distribution					
Ownership						
Proprietary	68.2	84.5	74.5	86.1	51.6	82.5
Voluntary nonprofit and government	31.8	15.5	25.5	13.9	48.4	17.5
Certification						
Skilled nursing facility only	20.7	54.6	10.4	6.6	42.4	7.1
Skilled nursing and intermediate care facility	40.5	28.2	46.5	36.2	42.1	24.7
Intermediate care facility only	28.3	*1.3	36.2	49.8	7.7	63.8
Not certified	10.6	15.8	6.9	7.3	7.8	4.5
Bed size						
Less than 50 beds	12.9	20.2	6.3	21.9	6.7	4.8
50-99 beds	30.5	40.0	26.8	24.6	12.7	28.3
100-199 beds	38.8	30.1	34.8	50.0	27.2	55.6
200 beds or more	17.9	9.7	32.1	3.5	53.3	11.3

Table 2. Selected staffing characteristics for nursing homes: United States, California, Illinois, Massachusetts, New York, and Texas, 1977

Type of employee	United States	California	Illinois	Massachusetts	New York	Texas
Full-time equivalent employees[1]	Number per 100 beds					
All health-related employees[2]	46.2	46.9	40.4	43.5	48.8	35.0
Administrative, therapeutic, and professional	5.0	6.1	4.9	4.8	6.6	3.3
Registered nurse	4.8	4.8	4.6	6.2	6.6	1.6
Licensed practical nurse	6.1	5.6	4.8	4.9	7.4	6.9
Nurse's aide	30.3	30.5	26.2	27.6	28.2	23.2
	Percent of total					
Nursing homes with a registered nurse on duty around the clock	22.2	13.5	23.3	16.7	49.5	*5.1

[1]35 hours of part-time employees' work is considered equivalent to 1 full-time employee. Part-time employees were converted to full-time equivalent employees by dividing the number of hours worked per week by 35.
[2]Includes only employees providing direct health-related services to residents.

Table 3. Selected nursing home utilization characteristics: United States, California, Illinois, Massachusetts, New York, and Texas, 1976

Type of certification	United States	California	Illinois	Massachusetts	New York	Texas
Program certification	Number of resident days of care					
All days of care	452,878,700	42,017,300	28,131,500	20,479,900	36,758,000	29,345,700
	Percent					
Medicare	2.9	5.3	*2.6	*0.9	5.2	*1.6
Medicaid-skilled	25.5	44.2	19.0	16.5	46.0	7.3
Medicaid-intermediate	34.4	6.9	39.2	46.3	21.2	64.9
All other	37.2	43.6	39.2	36.2	27.7	26.2
Facility certification	Occupancy rate per 100 beds					
All nursing homes	89.0	90.1	84.7	91.9	90.3	80.1
Skilled nursing facilities only	92.0	87.9	86.8	*95.9	98.0	*74.6
Skilled nursing and intermediate care facilities	88.6	89.0	86.4	92.2	82.2	88.5
Intermediate care facilities	87.3	*85.9	85.8	92.5	*88.8	78.4
Not certified	89.1	99.8	72.6	84.9	92.9	*81.6
	Total cost in dollars per resident day					
All nursing homes	23.84	21.56	21.11	24.23	40.12	19.33
Skilled nursing facilities only	29.71	24.89	22.09	*34.03	46.95	22.36
Skilled nursing and intermediate care facilities	26.53	23.97	23.58	27.88	41.97	23.11
Intermediate care facilities	18.37	*10.13	17.62	21.04	*25.14	16.95
Not certified	16.98	8.94	19.54	18.90	16.63	*32.02
	Percent of total cost					
Percent of cost per resident day spent on labor	59.7	56.2	57.7	56.4	62.0	57.9

Table 4. Percent distribution of nursing home residents according to selected demographics, living arrangements prior to admission, primary source of payment, and average monthly charges: United States, California, Illinois, Massachusetts, New York, and Texas, 1977

Resident characteristic	United States	California	Illinois	Massachusetts	New York	Texas
	Number of residents					
All residents	1,303,100	115,400	83,100	58,000	102,800	88,700
DEMOGRAPHIC CHARACTERISTIC	Percent distribution					
Sex						
Male	28.8	30.2	30.3	23.1	24.2	32.7
Female	71.2	69.8	69.7	76.9	75.8	67.3
Race or ethnicity						
White (not Hispanic)[1]	92.2	89.5	88.5	98.9	93.4	83.8
All others[2]	7.8	10.5	11.5	*1.1	6.6	16.2
Marital status						
Married	11.9	12.8	10.7	8.0	9.3	11.5
Widowed[1]	62.2	66.4	56.2	55.7	63.6	69.2
Divorced or separated	6.7	8.8	6.9	4.8	5.1	9.4
Never married	19.1	12.1	26.2	31.5	21.9	9.9
Living arrangement prior to admission						
Private or semiprivate residence	40.3	33.1	32.0	26.6	29.6	48.5
Another health facility	54.2	62.1	64.1	71.8	63.8	41.1
Another nursing home	12.5	14.7	17.2	11.1	12.5	10.8
General or short-stay hospital	32.3	41.6	32.5	45.0	40.7	25.3
Mental hospital	5.9	3.2	9.4	12.3	6.2	*2.5
Other health facility or unknown	3.5	*2.6	5.0	3.4	4.4	*2.5
Unknown or other arrangement	5.5	4.8	3.9	*1.6	6.6	10.5
Primary source of payment						
Own income or family support	38.4	43.7	41.8	35.3	27.9	32.8
Medicare	2.0	3.5	*1.6	*0.7	*3.0	*1.0
Medicaid-skilled	20.0	38.4	10.8	12.6	43.2	3.5
Medicaid-intermediate	27.8	3.6	32.8	44.0	18.0	50.9
All other sources[3]	11.7	10.9	13.0	7.5	7.9	11 8
Age						
Under 65 years	13.6	14.1	17.2	16.2	9.7	10.3
65-74 years	16.2	15.2	17.5	18.8	12.7	19.5
75-84 years	35.7	34.7	31.7	29.6	42.1	39.8
85 years and over	34.5	36.0	33.6	35.4	35.5	30.4
	Age in years					
Median age in years	81	81	80	79	81	80
Primary source of payment	Average monthly charge in dollars					
All sources	689	683	576	662	1,124	566
Own income or family support	690	685	655	661	1,060	577
Medicare	1,167	856	717	1,208	1,369	1,356
Medicaid-skilled	873	733	633	824	1,391	633
Medicaid-intermediate	610	518	488	648	833	553
All other sources[3]	477	497	485	430	463	505

[1]Includes a small number of unknowns.
[2]Includes black, Hispanic, American Indian or Alaskan Native, Asian or Pacific Islander.
[3]Includes other government assistance or welfare, religious organizations, foundations, volunteer agencies, Veterans Administration contract, initial payment-life care funds, and other sources or no charge.

Table 5. Percent distribution of nursing home discharges by discharge status and percent distribution of live discharges by living arrangement after discharge: United States, California, Illinois, Massachusetts, New York, and Texas, 1976

Discharge characteristic	United States	California	Illinois	Massachusetts	New York	Texas
Discharge status	Number of all discharges					
All discharges[1]	1,117,500	175,600	69,300	37,100	81,700	80,300
	Percent distribution					
Discharged alive	73.9	81.7	76.2	77.5	75.0	82.7
Discharged dead	25.9	18.3	23.3	22.4	24.0	17.1
Living arrangement after discharge	Number of live discharges					
All live discharges	825,500	143,500	52,800	28,800	61,300	66,400
	Percent distribution					
Private or semiprivate residence	37.2	44.4	31.4	23.7	19.1	30.2
Another health facility	58.7	46.1	67.9	75.6	79.0	66.4
Another nursing home	13.2	10.9	12.2	*7.9	18.0	9.7
General or short-stay hospital	41.1	28.7	50.1	65.9	52.4	55.5
Mental hospital	1.5	*1.1	*1.0	*1.4	*4.6	*0.4
Other health facility or unknown	2.9	*5.4	*4.6	*0.5	*4.0	*0.8
Unknown or other arrangement	4.2	9.5	*0.7	*0.6	*1.9	*3.4

[1]Includes unknowns.

Table 6. Selected population characteristics: United States, California, Illinois, Massachusetts, New York, and Texas, 1977

Population characteristic	United States	California	Illinois	Massachusetts	New York	Texas
Total population[1]	216,332,000	21,896,000	11,245,000	5,782,000	17,924,000	12,830,000
Total population 65 years and over[1]	23,494,000	2,185,000	1,194,000	687,000	2,082,000	1,228,000
Percent of total population 65 years and over in nursing homes	4.8	4.5	5.8	7.1	4.5	6.5

[1]U.S. Bureau of the Census: Estimates of the population of States, by age, July 1, 1971 to 1977. *Current Population Reports.* Series P-25, No. 734. Washington. U.S. Government Printing Office, 1978.

Table 7. Median length of stay and selected services received by nursing home residents: United States, California, Illinois, Massachusetts, New York, and Texas, 1977

Services received	United States	California	Illinois	Massachusetts	New York	Texas
Median length of stay since admission in days	597	462	566	623	552	505
Median time since last physician visit in days	18	14	20	20	14	21
Percent of residents receiving intensive nursing care during the last 7 days	43.8	42.0	39.6	37.7	46.0	43.9
Percent of residents receiving therapy during the last month	35.0	40.4	44.8	50.7	55.4	17.0

Table 8. Percent of nursing home residents by selected health status characteristics: United States, California, Illinois, Massachusetts, New York, and Texas, 1977

Resident characteristic	United States	California	Illinois	Massachusetts	New York	Texas
	Number of residents					
All residents	1,303,100	115,400	83,100	58,000	102,800	88,700
Primary diagnosis at last examination	Percent distribution					
Mental disorders and senility without psychosis	20.4	17.9	25.3	27.2	16.9	13.3
Diseases of the circulatory system	39.7	41.7	43.0	33.4	41.1	45.7
Other diagnosis	33.0	34.7	24.4	32.1	36.4	32.2
Diagnosis unknown[1]	6.9	5.7	7.4	7.3	5.6	8.8
Chronic conditions or impairments[2]	Percent					
Mental disorders and senility without psychosis:						
Senility	32.0	32.5	33.7	28.0	22.5	33.8
Mental Retardation	6.1	4.1	10.6	3.9	4.4	3.3
Mental illness	11.4	10.5	17.0	21.5	8.9	8.2
Chronic brain syndrome	24.9	27.0	22.4	14.3	27.1	32.1
Insomnia	9.6	13.9	10.5	9.8	9.8	7.1
Diseases of the circulatory system:						
Arteriosclerosis	47.6	49.1	47.4	46.6	51.9	54.5
Hypertension	20.9	18.4	18.7	13.9	24.3	26.2
Stroke	16.4	19.7	12.1	13.0	14.2	18.7
Heart trouble	34.5	34.2	31.4	27.7	43.1	36.5
Other chronic conditions or impairments:						
Arthritis and rheumatism	24.6	23.8	22.9	19.1	24.2	26.2
Constipation	24.0	20.7	21.1	18.5	18.9	20.6
Diabetes	14.5	12.6	15.0	23.1	18.8	12.8
Edema	17.9	12.0	15.7	10.5	15.8	13.9
Cancer	4.9	5.2	3.9	4.7	5.5	4.8
Chronic respiratory disease	6.6	6.7	6.0	6.5	8.4	7.8
Anemia	5.4	3.5	3.4	5.3	8.1	6.7
Cataracts	6.1	4.7	4.0	4.9	9.1	4.9
Hip or other bone fracture	11.3	10.2	10.4	8.4	11.6	11.1
Blindness or deafness	11.1	10.3	12.0	10.2	11.2	15.0
Kidney trouble	10.1	8.2	9.2	11.8	7.7	11.8
Dependency in activities of dailing living:						
Requires assistance in bathing	86.3	84.1	82.9	78.9	88.0	88.2
Requires assistance in dressing	69.4	68.2	65.7	55.3	71.9	72.8
Requires assistance in using toilet room	52.5	44.8	46.4	29.5	48.8	51.1
Requires assistance in eating	32.6	32.1	35.5	22.9	37.9	38.7
Walks only with assistance or is chairfast or bedfast	66.1	66.4	62.2	51.3	66.5	69.1
Difficulty with bowel and/or bladder control	45.3	47.8	46.1	39.8	48.0	45.6
Dependent in all 6 activities	23.3	21.0	24.3	15.7	25.2	26.9

[1]Includes residents who received no physician visits while in facility.
[2]Figures may not add to total because resident may have had more than 1 reported condition or impairment.

APPENDIXES

CONTENTS

I. Technical Notes 12

II. Definition of Certain Terms Used in This Report 20

LIST OF APPENDIX FIGURES

I. Relative standard errors for estimated number of facilities 13

II. Relative standard errors for estimated number of residents 14

III. Relative standard errors for estimated number of discharges 15

IV. Relative standard errors for estimated number of beds 16

V. Relative standard errors for estimated number of resident days 17

VI. Relative standard errors for estimated costs 18

VII. Relative standard errors for estimated number of staff 19

APPENDIX I

TECHNICAL NOTES

The sample design for the 1977 National Nursing Home Survey, conducted by the National Center for Health Statistics, was a stratified two-stage probability sample. The first stage was a selection of facilities; and the second stage was a selection of residents, discharges, and staff from the sample facilities. Data on facility characteristics were collected by interviewing the administrator, while cost data were obtained from the facility's accountant via a mailback questionnaire. Data for a sample of residents on the facility's roster at the time of the survey were collected by interviewing the nurse most familiar with the care provided to the resident. When necessary, the nurse referred to the resident's medical record. Data for a sample of discharges in 1976 were also collected by interviewing the nurse most familiar with the medical record of the discharged resident. Data on a sample of employees were collected by leaving a questionnaire for the sampled person to complete and return by mail.

Since the statistics presented in this report are based on a sample, they will differ somewhat from figures that would have been obtained if a complete census had been taken using the same schedules, instructions, and procedures. The standard error is primarily a measure of the variability that occurs by chance because only a sample, rather than the entire universe, is surveyed. The standard error also reflects part of the measurement error, but it does not measure any systematic biases in the data. The chances are about 95 out of 100 that an estimate from the sample differs from the value that would be obtained from a complete census by less than twice the standard error.

Rather than presenting specific errors for a particular statistic, the approximate relative standard errors of estimates have been provided. The relative standard error of an estimate is the standard error of the estimate divided by the estimate itself and is expressed as a percent of the total estimate. In this report an asterisk is shown next to an estimate with more than a 30-percent relative standard error.

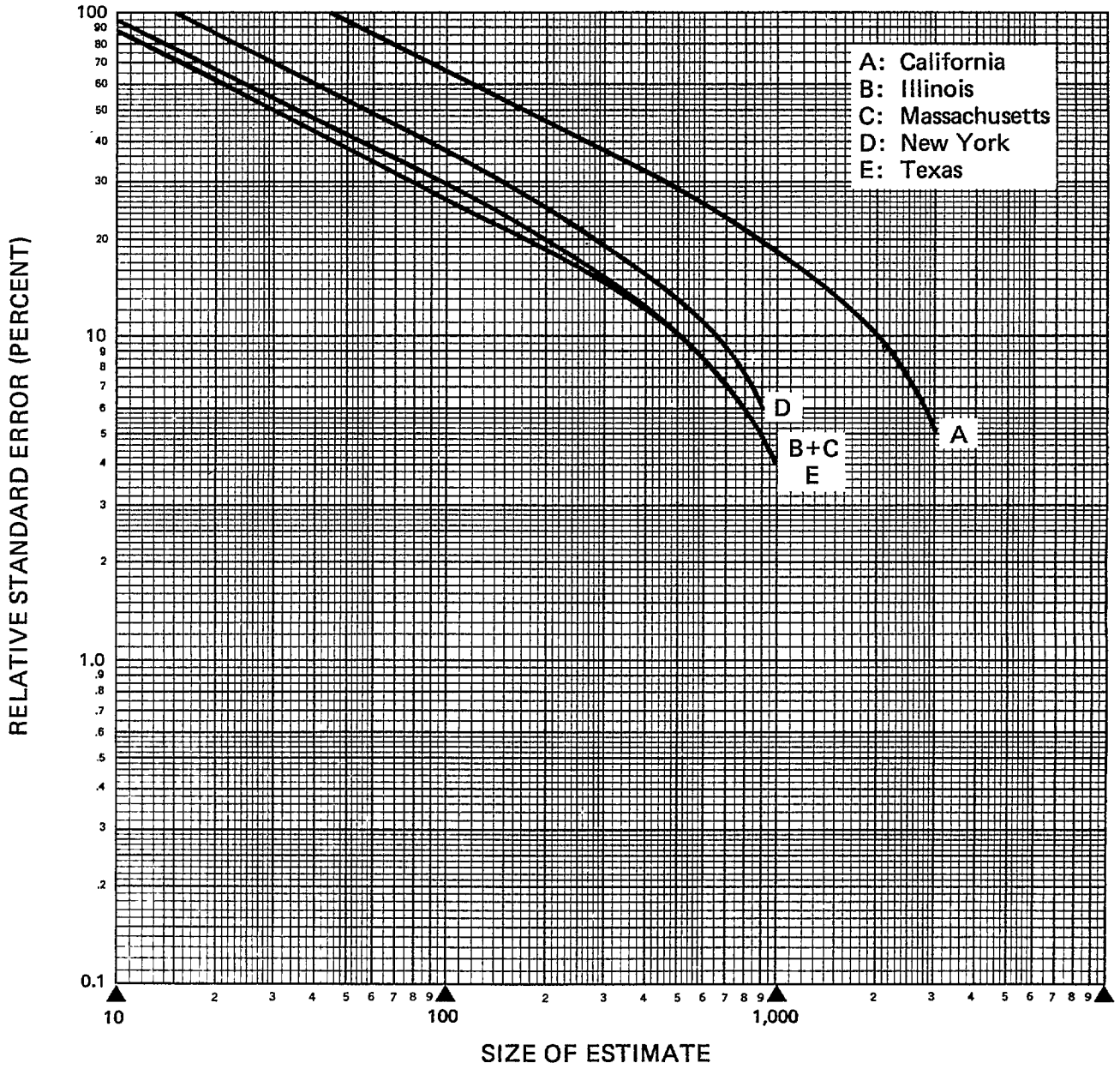
Estimates of relative standard errors for the national estimates are presented in appendix I of Series 13-No. 43 in the *Vital and Health Statistics* series.[3] Estimates of relative standard errors for the estimated number of facilities in each of the five States are presented in figure I. Relative standard errors for each State's estimated number of residents are presented in figure II, discharges in figure III, beds in figure IV, resident days in figure V, total cost in figure VI, and total staff in figure VII.

Because of the relationship between the relative standard error and the estimate, the standard error of an estimate can be found by multiplying the estimate by its relative standard error. For example, curve A of figure IV shows the relative standard error for beds in California. Table 1 shows that the total number of beds in all California facilities with less than 50 beds is 20.7 percent of the total 127,300 California facilities, or 26,350. The relative standard error corresponding to this estimate on curve A of figure IV is approximately 17.0 percent. The standard error is 26,350 (0.17) = 4,480.

The approximate standard error of a ratio such as that for full-time equivalent (FTE) employees per 100 beds can be calculated as in the following example: Suppose the standard error ($\sigma_{r'}$) for the ratio of total FTE employees per 100 beds is desired for New York nursing homes. In table 2 the total FTE employees per 100 beds for nursing homes in New York is shown as 48.8, which is equal to a total of 54,000 FTE employees divided by 110,600 beds

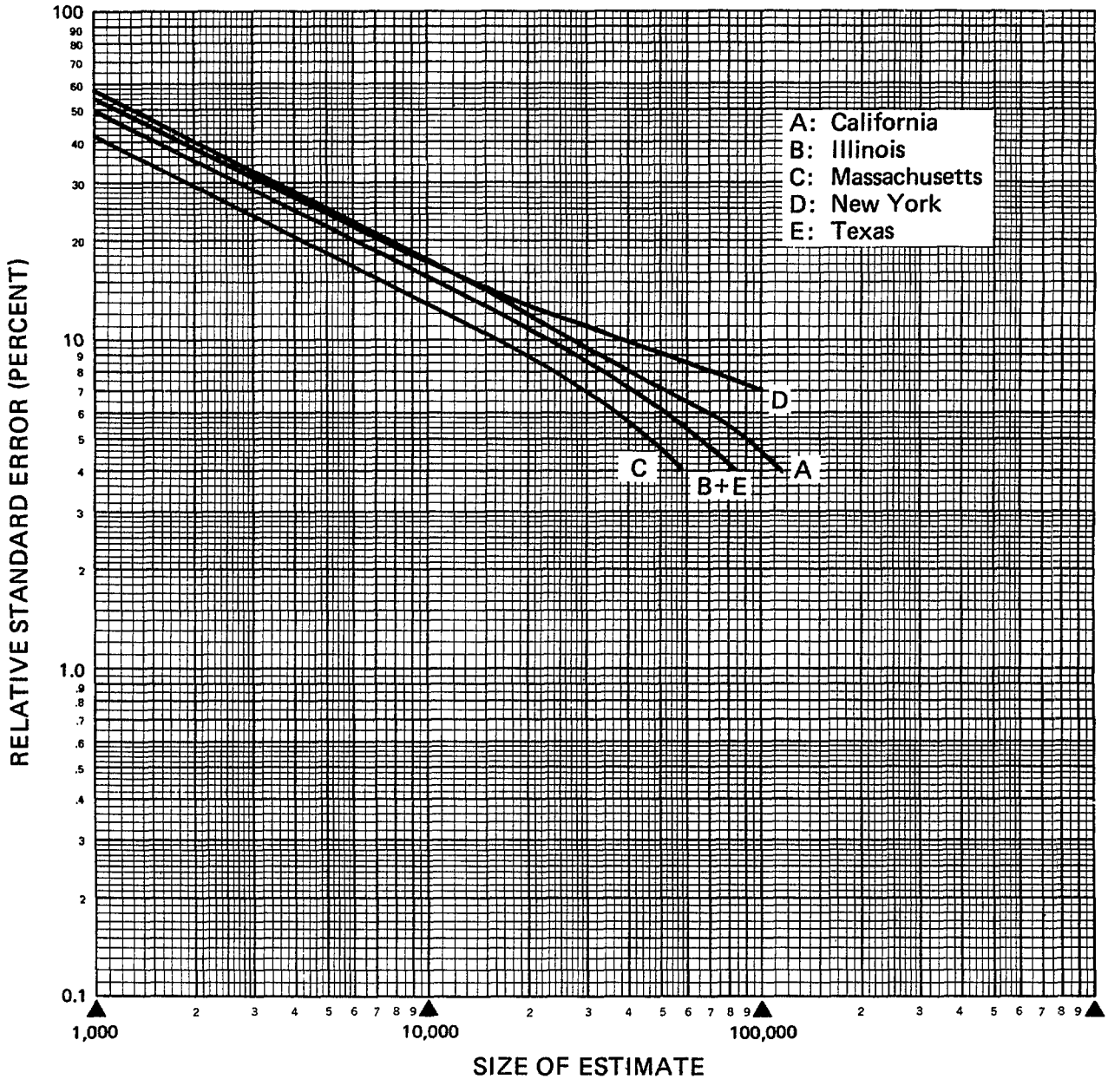
[3] See footnote 2.

Figure I. Relative standard errors for estimated number of facilities



times 100. The relative standard error of 54,000 total FTE employees is (from figure VII, curve D) approximately 3.2 percent, and the relative standard error of 110,600 beds (from figure IV, curve D) is approximately 4.5 percent. The square root of the sum of the squares of these two relative standard errors minus their covariance provides an approximation of the relative standard error of the ratio. In other words, if V_x' is the relative standard error of the number of total FTE employees, V_y' is the relative standard error of the number of beds, r is the sample correlation coefficient between total FTE employees and beds (conservatively estimated to be 0.5), and V_r' is the relative standard error of the ratio $R' = X'/Y'$:

Figure II. Relative standard errors for estimated number of residents



$$V_{r'}^2 = V_{x'}^2 + V_{y'}^2 - 2rV_{x'}V_{y'}$$

$$= (.032)^2 + (.045)^2 - 1.00\ (.032 \times .045)$$

$$= .0010 + .0020 - .0014 = .0016$$

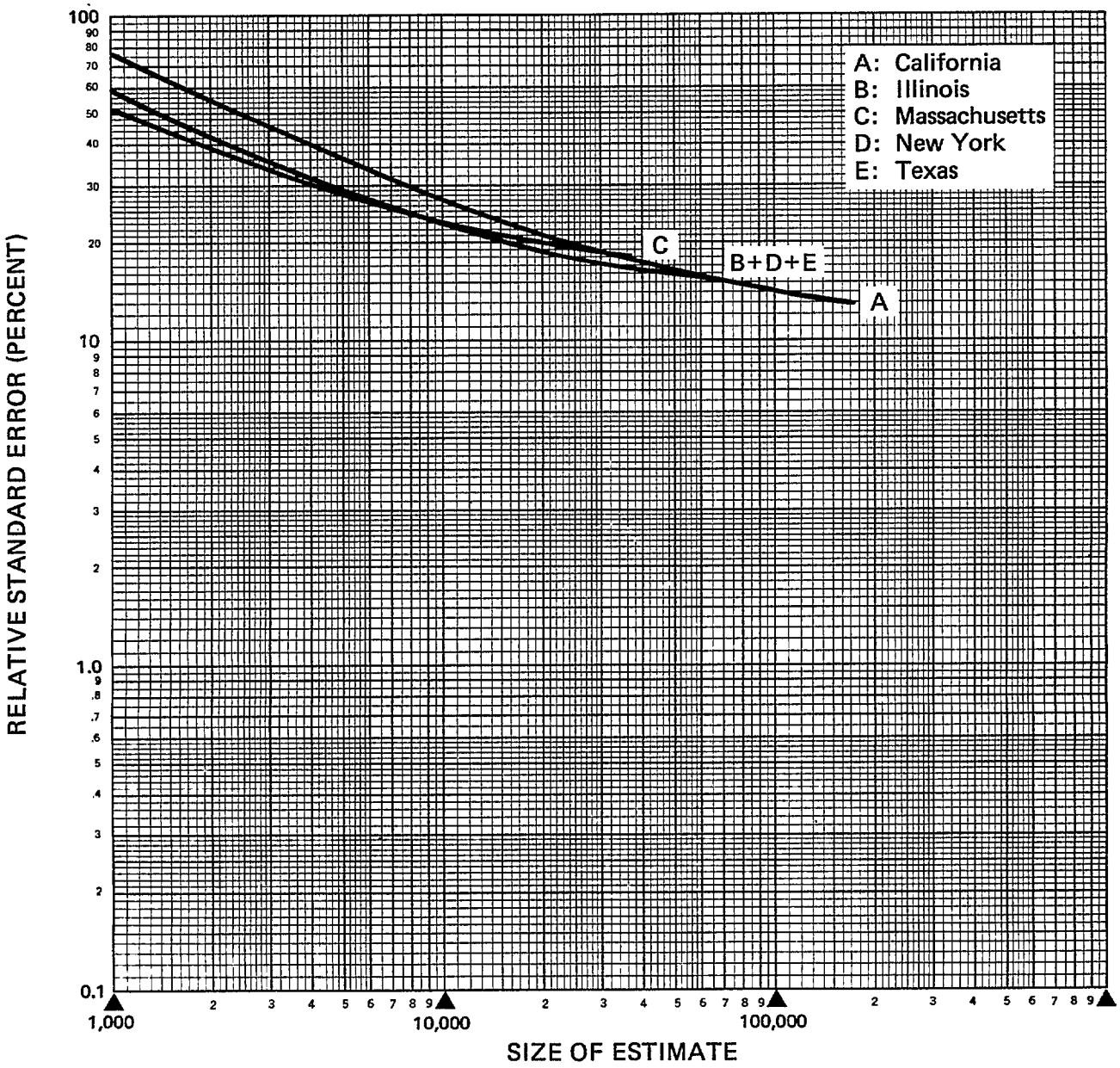
$$V_{r'} = .0150 = .04$$

The approximate standard error of the ratio of total FTE employees per 100 beds may now be obtained by multiplying the relative standard error by the ratio as is done below:

$$\sigma_{r'} = R' \times V_{r'} = 48.8 \times .04 = 1.95$$

The sample correlation coefficient (r) for calculating the standard error estimates of the ratios presented in this report is assumed to be

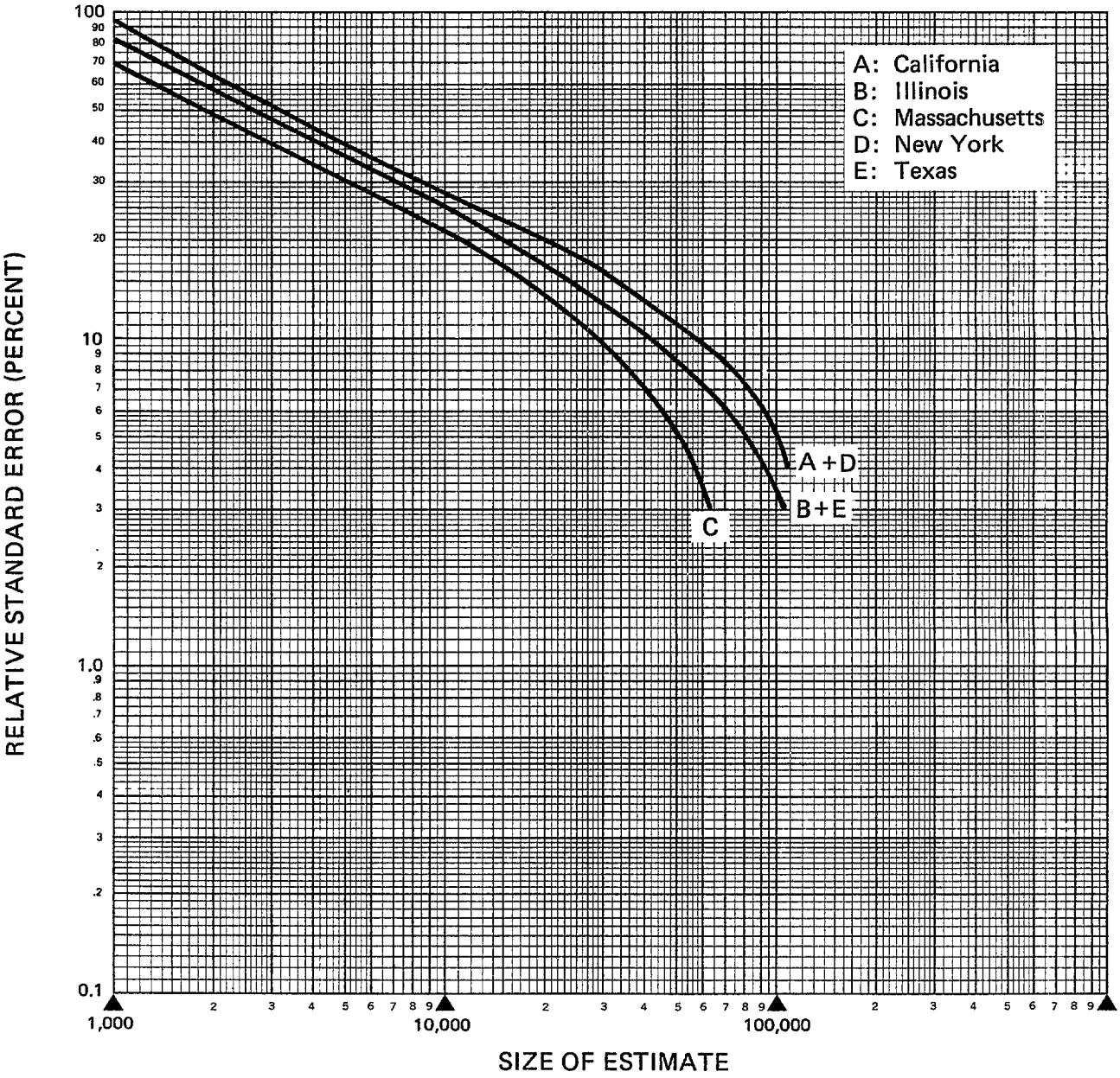
Figure III. Relative standard errors for estimated number of discharges



zero except in the case of full-time equivalent employees per 100 beds, occupancy rate, and cost per resident day ratio estimates, where the correlation coefficient used was 0.5.

The z test with a 0.05 level of significance was used to test all comparisons mentioned in this report. Since not all observed differences were tested, lack of comment in the text does not mean that the difference was not statistically significant.

Figure IV. Relative standard errors for estimated number of beds



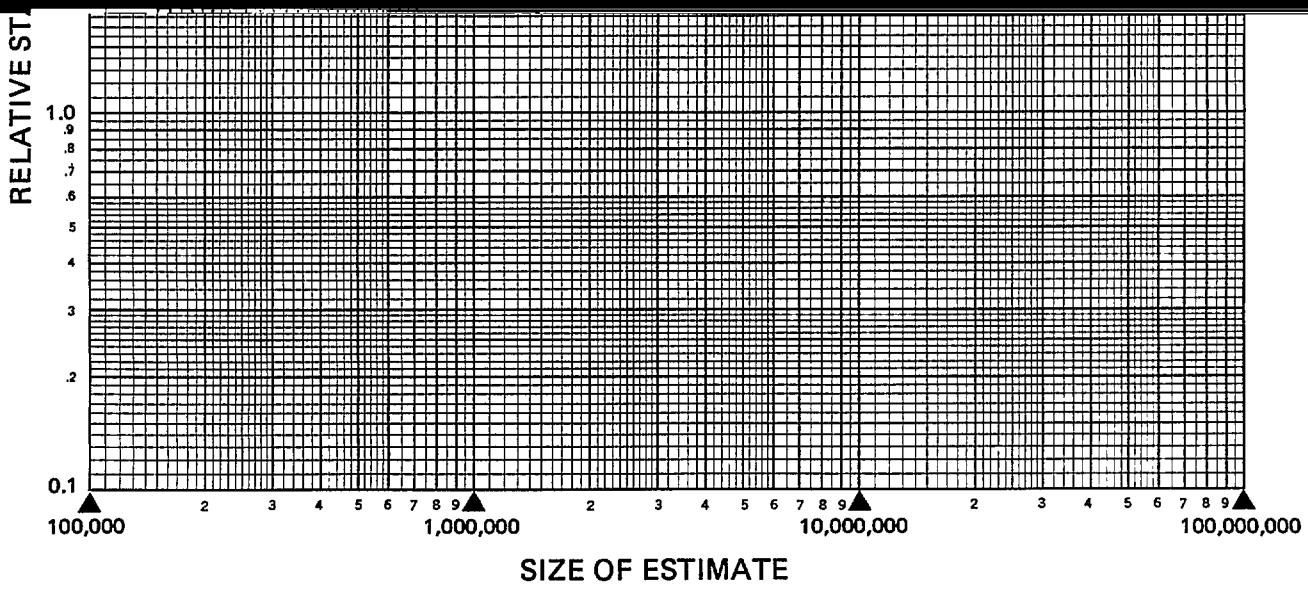

RELATIVE ST
1.0
.9
.8
.7
.6
.5
.4
.3
.2
0.1
2 3 4 5 6 7 8 9
2 3 4 5 6 7 8 9
2 3 4 5 6 7 8 9
100,000
1,000,000
10,000,000
100,000,000
SIZE OF ESTIMATE

Figure VI. Relative standard errors for estimated costs

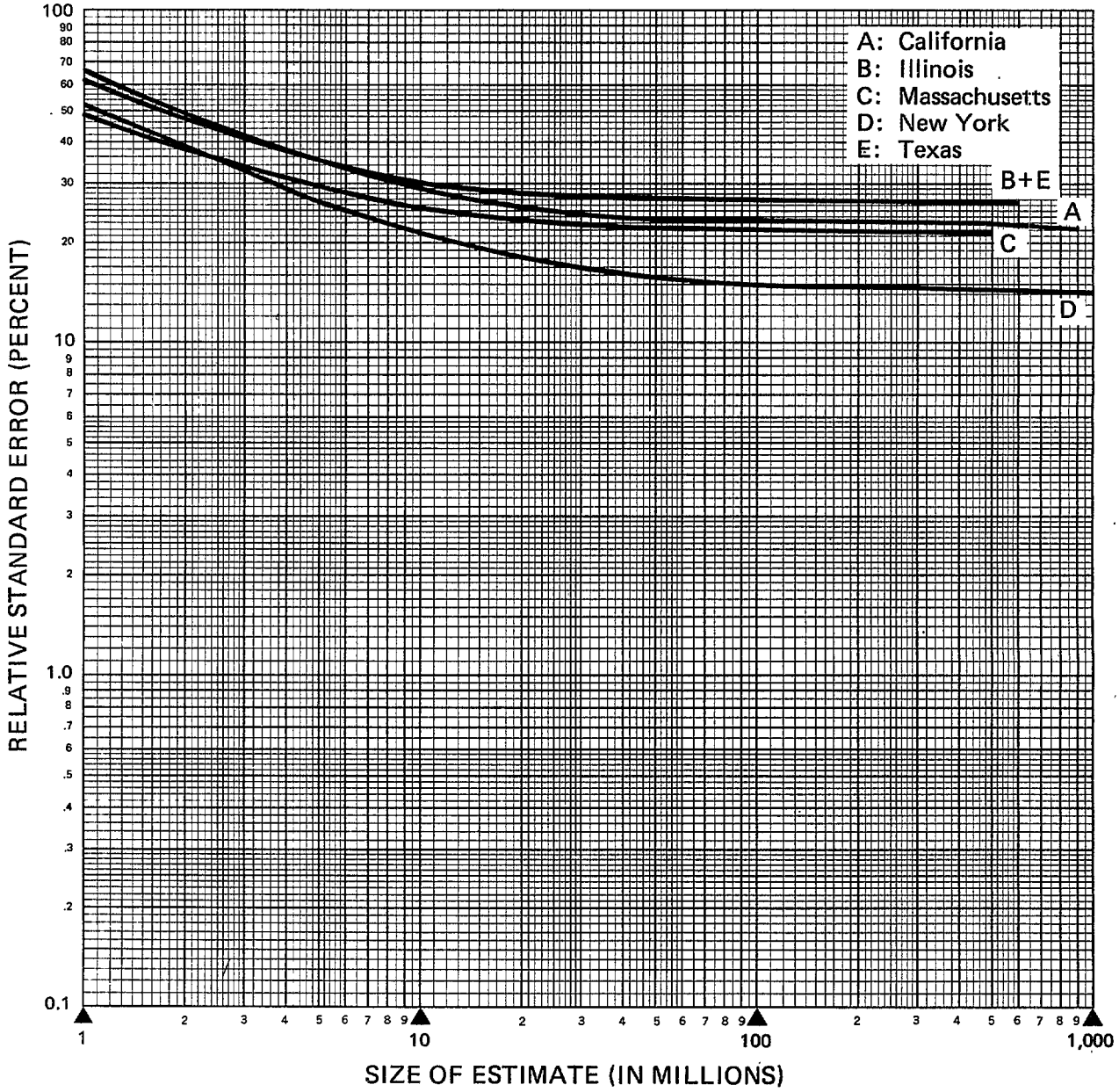
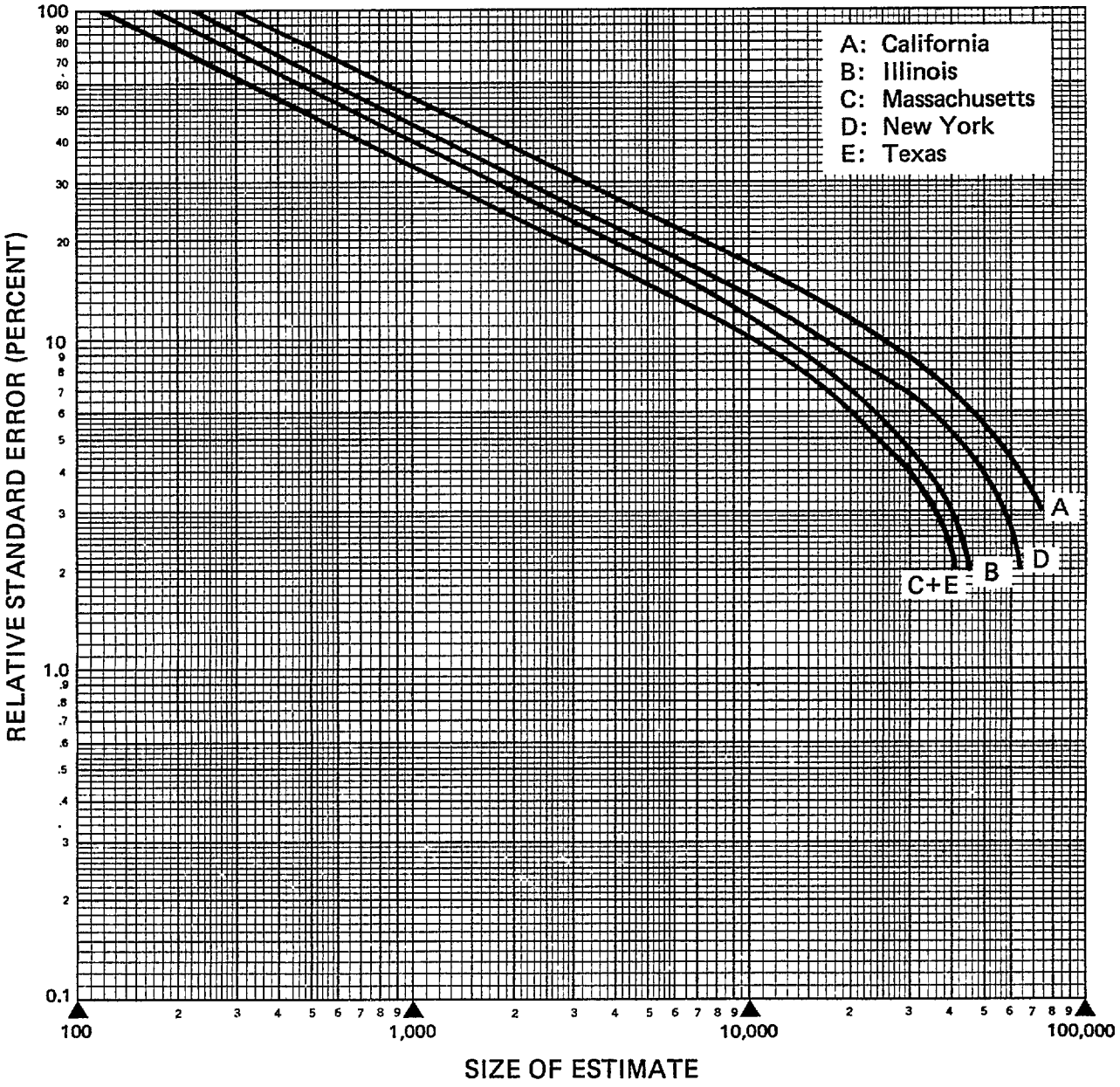


Figure VII. Relative standard errors for estimated number of staff



APPENDIX II

DEFINITION OF CERTAIN TERMS USED IN THIS REPORT

Ownership.—Type of ownership refers to the type of organization that controls and operates the nursing home.

Proprietary facility.—A proprietary facility is operated under private commercial ownership.

Nonprofit facility.—A nonprofit facility is operated under voluntary on nonprofit auspices, including both church-related facilities and those not church-related.

Government facility.—A government facility is operated under Federal, State, or local government auspices.

Discharge.—A discharge is a person who was formally discharged from a nursing home during 1976. Both live and dead discharges are included. Theoretically, the same person can be counted more than once if he was discharged more than once from a nursing home during 1976.

Discharge status.—The discharge status is whether the person was discharged from the nursing home alive or dead.

Full-time equivalent (FTE).—Thirty-five hours of part-time employees' work per week is considered equivalent to that of one full-time employee.

——— ooo ———

☆U.S. GOVERNMENT PRINTING OFFICE:1980 341-161/25 1-3

VITAL AND HEALTH STATISTICS Series

Series 1. Programs and Collection Procedures.—Reports which describe the general programs of the National Center for Health Statistics and its offices and divisions and data collection methods used and include definitions and other material necessary for understanding the data.

Series 2. Data Evaluation and Methods Research.—Studies of new statistical methodology including experimental tests of new survey methods, studies of vital statistics collection methods, new analytical techniques, objective evaluations of reliability of collected data, and contributions to statistical theory.

Series 3. Analytical Studies.—Reports presenting analytical or interpretive studies based on vital and health statistics, carrying the analysis further than the expository types of reports in the other series.

Series 4. Documents and Committee Reports.—Final reports of major committees concerned with vital and health statistics and documents such as recommended model vital registration laws and revised birth and death certificates.

Series 10. Data From the Health Interview Survey.—Statistics on illness, accidental injuries, disability, use of hospital, medical, dental, and other services, and other health-related topics, all based on data collected in a continuing national household interview survey.

Series 11. Data From the Health Examination Survey and the Health and Nutrition Examination Survey.—Data from direct examination, testing, and measurement of national samples of the civilian noninstitutionalized population provide the basis for two types of reports: (1) estimates of the medically defined prevalence of specific diseases in the United States and the distributions of the population with respect to physical, physiological, and psychological characteristics and (2) analysis of relationships among the various measurements without reference to an explicit finite universe of persons.

Series 12. Data From the Institutionalized Population Surveys.—Discontinued effective 1975. Future reports from these surveys will be in Series 13.

Series 13. Data on Health Resources Utilization.—Statistics on the utilization of health manpower and facilities providing long-term care, ambulatory care, hospital care, and family planning services.

Series 14. Data on Health Resources: Manpower and Facilities.—Statistics on the numbers, geographic distribution, and characteristics of health resources including physicians, dentists, nurses, other health occupations, hospitals, nursing homes, and outpatient facilities.

Series 20. Data on Mortality.—Various statistics on mortality other than as included in regular annual or monthly reports. Special analyses by cause of death, age, and other demographic variables; geographic and time series analyses; and statistics on characteristics of deaths not available from the vital records based on sample surveys of those records.

Series 21. Data on Natality, Marriage, and Divorce.—Various statistics on natality, marriage, and divorce other than as included in regular annual or monthly reports. Special analyses by demographic variables; geographic and time series analyses; studies of fertility; and statistics on characteristics of births not available from the vital records based on sample surveys of those records.

Series 22. Data From the National Mortality and Natality Surveys.—Discontinued effective 1975. Future reports from these sample surveys based on vital records will be included in Series 20 and 21, respectively.

Series 23. Data From the National Survey of Family Growth.—Statistics on fertility, family formation and dissolution, family planning, and related maternal and infant health topics derived from a biennial survey of a nationwide probability sample of ever-married women 15-44 years of age.

For a list of titles of reports published in these series, write to:

Scientific and Technical Information Branch
National Center for Health Statistics
Public Health Service
Hyattsville, Md. 20782

DHHS Publication No. (PHS) 97-1473
Series 13 No. 48

NCHS

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Office of Health Research, Statistics, and Technology
National Center for Health Statistics
3700 East-West Highway
Hyattsville, Maryland 20782

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

For publications of the *Vital and Health Statistics* Series call 301 436 NCHS

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF H.H.S.
HHS 396

FIRST CLASS MAIL

U.S.MAIL