HEALTH CHARACTERISTICS OF PATIENTS IN NURSING AND PERSONAL CARE HOMES

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Introduction

In 1961 the National Center for Health Statistics began planning a nationwide study of establishments which provide nursing or personal care to the aged and chronically ill, known as the "Resident Places Survey - 1 and 2." These surveys were the first of a series of ad hoc institutional population surveys to be conducted by the Center.

To make the study as meaningful as possible, a number of people in the Public Health Service who had experience in nursing home administration and statistics were asked to serve on a working group to make recommendations regarding solutions to several outstanding problems. These included the types of information needed, the scope of the survey, and a procedure for classifying the various types of establishments which are known as nursing homes, homes for the aged, etc. After several meetings of the group the following recommendations were made:

1. Because of the large volume and nature of the data needed, two surveys should be conducted. The first should be limited to the types of data that could be readily obtained by mail with reasonable reliability. This hopefully would include information about establishments such as their admission policies, size, etc., and certain personal and health characteristics of residents or patients. Information about health should be cast in very general terms similar to those used in a survey developed in 1953 by the Commission on Chronic Illness and the Public Health Service. 1/ The second survey should be conducted by personal visits to obtain information that could not be readily collected by mail. This would include more detailed information on the residents, including data on chronic conditions and impairments, and information on the characteristics of the employees.

2. The scope of the first survey should include not only nursing homes, homes for the aged, etc., but also mental, chronic disease and geriatric hospitals and long-term units of general hospitals caring for geriatric and chronic disease patients. With the exception of mental hospitals, these types of institutions and units serve predominatly the aged population. Mental hospitals should be included because of the presence of a sizable proportion of aged patients suspected to require primarily geriatric rather than psychiatric care.

3. Establishments should be classified on an a priori basis according to the type of service provided and the availability of nursing staff to provide care. This would impose a standard procedure of classification on the heterogeneous systems used by the State licensing and regulatory agencies.

All of these recommendations were adopted and both surveys have been conducted, the first in the spring of 1963 and the second in the spring of 1964. This paper, however, will be limited to a description of the design and methodology of the non-mental part of the first Resident Places Survey and some of its findings on the health and demographic characteristics of the residents in the nursing and personal care care homes.

Development of the Questionnaire and Procedures

The questionnaire was designed to be as self-explanatory as possible, consistent with the need to keep it simple. While general instructions were given, definitions and explanatory notes accompanied each question as necessary. The form was composed of three parts. Part I was concerned with certain establishment statistics such as admission policy, number of beds, residents, admissions, discharges, and charges for care of residents. Part II was used as a listing sheet to establish a sampling frame of residents and to record the date of admission, date of birth, race, and sex of each resident listed. For a systematic sample of the residents listed in Part II, health data were recorded in Part III. This sample was composed of residents whose names fell on predesignated lines of the questionnaire. Part III of the questionnaire contained 6 health related items, each subclassified into broad groups. For example, a person would be in one of the three Bed Status categories: "In bed hardly ever," "In bed part of the time," or "In bed all or most of the time." Other items pertained to walking, hearing, vision, continence, and mental status.

In developing the procedures and questionnaires, two pretests were conducted. The first involved the mailing of questionnaires to 38 homes in the Atlanta, Georgia, and Washington, D.C. metropolitan areas. The second pretest of 18 homes was conducted in Cincinnati, Ohio. Follow-up visits were made for each pretest to evaluate how well the respondents understood the questions, whether available records were consulted, and whether they were able to provide objective and consistent answers.

The pretest experience confirmed that much of the information about the establishments and residents was available either in records or could be reliably reported by the respondent. Prior to the pretests, there was skepticism as to whether health data could be reliably collected in a mail survey. It was almost certain that such information would not be consistently recorded in medical records. Thus, it would be necessary to rely heavily on some employee, such as a nurse or other responsible person, to know the facts through personal observation. In an attempt to evaluate the answers provided on the mail questionnaire regarding the patient's health, the original respondent was asked in the follow-up visit to answer these questions again for each sample resident without benefit of the answers provided a week or two previously. Upon comparing the two sets of information for more than 300 sample residents, it was found that consistent answers had been given for better than 95 percent of each of the health items. In several instances in which answers differed, a change in the patient's condition was stated to have taken place since completion of the mail questionnaire. It is, of course, not possible to determine by this type of check whether or not the information provided was valid. It is believed, however, for the type of data sought that there is a high correlation between reliability and validity; the respondent was usually in close contact with the residents and should have known whether they were confined to bed, their walking ability, etc.

Another question of concern in developing procedures for the survey was the upper size limit for inclusion of a home in the mail survey. For what size home would the amount of work required in listing the residents discourage respondents from participating in the survey? A number of very large nursing homes were visited in the pretest to discuss this question. As a result, it was decided that only homes with less than 300 beds would be in the mail survey; personal visits would be made to the larger homes to select a sample of residents and to help complete the questionnaire. The wisdom of this choice can be evaluated on the basis of the response and lack of complaints in the national survey. The response rate was the highest among the largest establishments surveyed by mail (i.e., 100-299 beds) and it took less follow-up effort to obtain a response than for the smaller homes.

The Sampling Frame

The sampling frame for the survey was the Master Facility Inventory (MFI). 2/ The MFI was developed by the National Center for Health Statistics by merging a number of listings of all types of hospitals and resident institutions in the United States. The most current lists of nursing and personal care homes used were those collected from State licensure agencies in 1961 by the Division of Hospital and Medical Facilities of the Public Health Service. To collect information needed for classifying establishments by type of service, size, and ownership, questionnaires were mailed to all places listed in the MFI. The coverage of the MFI was improved by the addition of places reported in the survey in answer to the question: "Does the owner of this establishment own or operate any other related or similar establishments which are not included in this report?" On the basis of preliminary research to evaluate coverage of the MFI, the sampling frame for RPS-1 is estimated to be about 85-90 percent complete in terms of places and 90-95 percent in terms of beds.

In addition to nursing and personal care homes, the scope of RPS-1 included mental hospitals, long-stay geriatric and chronic disease hospitals, and long-stay units of general hospitals which provided care to the aged and chronically ill. Excluded were homes with less than 3 beds, homes which did not routinely provide some level of nursing or personal care, i.e., provided room and board only, and homes providing care to children only.

The group of establishments in the sampling frame providing nursing or personal care were further classified into four subclasses which were defined as follows:

1. Nursing care home. An establishment which provided nursing care to more than half of its residents during the week prior to the MFI survey and which employed either a registered nurse or a licensed practical nurse 15 hours or more per week.

2. Personal-care-with-nursing home. An establishment which provided some nursing care but less than that provided by a nursing care home.

3. Personal care home. An establishment which did not provide nursing care, but routinely provided personal care.

4. Domiciliary care home. An establishment which routinely provided only minimal personal care.

Sample Design

The sampling for the Resident Places Survey-1 was based on a stratified multistage probability design. The establishments in the sampling frame were sorted into 16 primary strata consisting of four size groups subclassified into four type-of-service groups. Further stratification within each primary stratum was accomplished by sorting on geographic area and type of ownership. The first-stage sample was a systematic selection of establishments within each stratum. The sampling fractions varied by size strata from 1 in 15 for establishments with less than 30 beds to unity for establishments

with 300 or more beds. The second-stage sample was a systematic selection of the residents or patients who were on the register of the sample establishments on the day that the questionnaire was completed. The second-stage sampling fraction was of such size to obtain a self-weighting sample of 1 in 15 residents.

Survey Procedure

The survey was completed by personal visit in the 134 places which maintained 300 or more beds.* One hundred percent response was obtained from these larger places. Questionnaires were sent by first class mail to 3042 sample places maintaining less than 300 beds. Three waves of follow-up were used to obtain the final mail survey response rate of 93 percent. Forty-two percent of the establishments replied to the initial mail inquiry. Two mail follow-ups, the first by regular mail three weeks after the initial mailing, and the second by certified mail 6 weeks after the initial mailing, raised the response rate to 66 percent and 84 percent respectively. The final follow-up was a combination of telephone reminders and personal visits, undertaken two weeks after the last mail follow-up. For establishments with 100 or more beds, appointments were made to complete the survey by personal visit. For places with less than 100 beds, a plea was made to the respondent by telephone to return the questionnaire. If the respondent indicated that he had some problem in completing the form, an offer was made to visit the place to aid in completing the questionnaire.

As mentioned previously, the larger homes in the mail survey, those with 100-299 beds, responded more readily than those with under 100 beds, even though the task of completing the questionnaire was more time consuming for these larger places. At the end of the mail follow-up, 90 percent of the establishments with 100 beds or more had responded as opposed 82 percent of those with less than 100 beds.

About two-thirds of the schedules returned by mail were acceptable without need for further query. The remaining third did not pass the editing criteria, and a fail edit query was mailed to obtain the missing information. A response was obtained from 82 percent of those queried.

The need for fail edit follow-up is one indicator of the quality of the response. Used as such, it shows that in this survey the adequacy of response was highest for those places responding to the initial mailing. Seventy-three percent of these questionnaires were acceptable without further query. By comparison, only 62 percent of the questionnaires returned after mail follow-up passed the editing criteria. For questionnaires returned as a result of the final telephone and personal visit follow-up, the pass-edit rate increased to 69 percent, which undoubtedly was influenced by the personal visits. The completeness rate was very low, however, considering the fact that the interviewers were instructed to check the questionnaires for completeness before leaving the home. It is interesting to note that the larger homes, in addition to having a higher overall response rate, also seem to be better respondents in terms of the quality of response. For the homes with less than 30 beds, 41 percent of the returned questionnaires required fail edit queries, as opposed to around 30 percent for the homes with 30-299 beds.

Personal and Health Characteristics of Residents

In 1963, an estimated 505,000 persons were receiving some type of care as residents or patients in 16,370 nursing and personal care homes in the United States. Slightly more than half of the persons resided in nursing care homes; about a third were in personal-care-with-nursing homes, and a tenth were in homes which provided personal care but not nursing. The latter category includes establishments defined previously in this paper as "Domiciliary Care Homes" and "Personal Care Homes."

Most of the persons were in care homes because of advanced age and the various problems associated with aging. Nearly a third of the residents were 85 years of age or more. Their average age was 78 years. Although more than a third of the homes reported a policy of accepting adults of any age, only 2 percent were under 45, and 12 percent were under 65. There was little variation in the age pattern by type of home; the residents in nursing care homes were the oldest by a slight margin, and in personal care homes, the youngest, with average ages of 78 years and 76 years respectively.

The elderly female greatly outnumbers the elderly male in nursing and personal care homes. This is due entirely to the larger frequency of females at ages 65 and over where the ratio was almost two to one (Table A). Men were in a slight majority at ages under 65. The predominance of women reflects in part the sex differences in older ages of the U.S. population. However, when comparing the number of females per 100 males at specific ages with those of the U.S. civilian population it is obvious that a

* RPS-1 was a cooperative effort by the NCHS and the U.S. Bureau of the Census. The field operations as well as certain parts of data processing were carried out by Census personnel.

higher proportion of aged women than of aged men were in care homes.

Nonwhites composed a relatively small proportion of the residents. Only 4 percent was nonwhite, a rate of less than 2 per 1,000 nonwhite persons 20 years of age and over in the U.S. population. This compares with a rate of around five for whites. Half of the nonwhite residents were in the South region, but the highest rate was observed for the Northeast at 2.4 per 1,000 population.

The health of residents was studied in terms of their walking status, bed status, mental awareness, continence, hearing, and vision. For each of these health related categories, except hearing, residents were classified into one of three groups depending upon the extent to which they were disabled. Hearing status included only two classes: "No serious problems with hearing" and "serious problems or deaf."

On the basis of information reported in the survey by proxy respondents such as nurses and other personnel of the homes, it is estimated that 17 percent of the residents were confined to bed all or most of the time, and another fourth were in bed part of the time over and above that required for ordinary rest or sleep (Table B). Also, a fourth of the residents never walked or were completely dependent on others to get about. In all, only 58 percent of the residents could walk unassisted or with a cane or crutch.

A fifth of the residents were totally incontinent; that is they normally could not control either their bowels or bladder. An additional 8 percent were incontinent in one respect or another but not in both.

More than half of the residents were disoriented; about a fifth were confused all or most of the time, and a third were confused part of the time.

Only a small proportion of residents were indicated to be blind, but a considerable number had serious problems with seeing, 3 percent and 16 percent respectively. A similar proportion of the residents had a serious problem with hearing or were deaf.

Relatively more women than men were restricted in some way, especially in terms of their ambulation. Almost half of the women were confined to bed at least part of the time and a like proportion had a problem with walking. This compares with a ratio of less than 4 out of 10 men with bed confinement or walking problems. It is also apparent from Table B that a larger proportion of women than men had severe restrictions in terms of all health-related categories studied except hearing and vision.

One might expect these sex differences to be largely due to age differentials between sexes. This is not true, however. As shown in Table B, the proportion of women with severe restrictions in terms of bed, walking,

Table A. Resident population of nursing and personal care homes and the U.S. civilian population 20 years +, the number of females per 100 males in each population, by age and sex: United States, 1963

Age	Resident Population			U.S. Civilian Population*(in 000's)		
	Males	Females	Females per 100 males	Males	Females	Females per 100 males
Total	173,063	332,179	192	53,374	59,365	111
20-64	32,021	27,657	86	45,597	49,575	109
65-74	35,147	54,472	155	5,150	6,185	120
75-84	65,233	142,010	218	2,242	2,988	133
85+	40,662	108,040	266	385	617	160

*Source: Current Population Reports, Population Estimates, Series P-25, No. 276, July 1, 1963.

Table B: Percent distribution of residents in nursing and personal care homes by extent of disability in certain health-related categories according to sex and age: United States, April-June, 1963

Sex and Age	Total		Bed Status			Walking Status			Continence Status			Mental Status			Hearing Status		Vision Status		
	Number	Percent	In bed hardly ever	In bed part of time	In bed all or most of time	Walks unassisted	Walks with some help	Never walks	Continent	Partly continent	Totally incontinent	Always aware of surroundings	Confused part of time	Confused all or most of time	No serious problem	Serious problem or deaf	No serious problem	Serious problem	Blind
		Percent Distribution																	
Both Sexes																			
All ages	505242	100	57	26	17	58	18	24	73	8	19	50	32	18	84	16	81	16	3
Under 65	59678	100	70	17	14	66	14	20	82	5	13	62	27	11	94	6	90	8	3
65-74	89619	100	61	24	15	61	17	22	77	7	16	55	31	14	91	9	87	11	3
75-84	207243	100	58	26	16	60	18	23	73	8	19	50	32	18	86	14	82	15	3
85 +	148702	100	49	30	21	50	21	28	68	9	23	43	36	21	74	26	72	24	5
Males																			
All ages	173063	100	61	24	14	65	16	19	75	8	16	54	31	15	84	16	83	14	3
Under 65	32021	100	75	14	11	73	13	14	85	5	10	66	24	10	95	6	91	7	2
65-74	35147	100	65	23	13	67	16	17	78	8	14	57	30	13	90	10	87	10	3
75-84	65233	100	58	27	15	64	17	20	72	9	19	51	33	17	84	16	82	15	3
85 +	40662	100	52	30	18	60	19	21	70	10	20	46	35	19	71	29	73	22	5
Females																			
All ages	332179	100	55	27	19	54	19	27	72	8	20	48	33	19	84	16	80	17	3
Under 65	27657	100	63	20	17	58	16	26	77	6	17	57	31	13	94	6	88	9	3
65-74	54472	100	58	25	17	57	18	25	76	7	17	54	31	15	91	9	86	12	2
75-84	142010	100	58	26	17	58	18	24	73	7	19	49	32	19	87	13	82	15	3
85 +	108040	100	48	30	22	47	22	21	67	9	24	42	36	22	75	27	71	24	5

continence, and mental status was almost without exception higher in each age group than for men of corresponding ages, and the magnitudes of the age-sex differences were similar to the difference when sex alone is considered. For vision status, the pattern by age was similar for both men and women. Hearing impairments, however, were more prevalent among men in the upper age groups than among women.

Even though the differential age distribution does not account for observed sex differences in disability, it is a significant factor affecting health of both men and women. For each health category there is increasing disability with increasing age. The disability patterns are marked by 3 broad age groups. For example, consider the distribution of residents by bed status and age. About 3 out of 10 of those under 65 had some degree of bed restriction. The proportion increases to about 4 out of 10 for age groups 65-74 and 75-84, and to 5 out of 10 for residents 85 and over. This same general pattern holds for walking, continence and mental disability.

The picture is somewhat different if only extreme disability is related to age. Considering bed and walking status, the proportions are quite similar for each age group through age 84. At ages 85 and over a significantly larger proportion of residents were bed ridden or could not walk. For continence and mental status, there appears to be a more gradual increase in the proportion of residents with total incontinence or with severe mental confusion as the age of residents increases.

When one health characteristic is related to another, such as bed status to walking, continence, and mental awareness,it is seen that increased restriction in one category is associated with increased restriction in the others, as illustrated in Table C. As one would expect, for residents who were in bed all or most of the time, relatively few of them were able to walk; more than four-fifths never walked and a tenth were able to walk only if helped. Nearly three-fifths of these bed ridden patients were totally incontinent and a third were confused all or most of the time. In contrast, only a fourth of the residents with partial bed restriction never walked, a fourth were totally incontinent, and a fifth were confused all or most of the time. Correspondingly, residents in bed hardly ever were much less restricted in these other health-related items than those with bed restriction. It should be noted however, that residents ordinarily out of bed were not free of infirmities. For some 289,000 such people, about 4 out of 10 were confused at least part of the time, a sixth required help with walking and a tenth were incontinent.

A question of concern relates to the level of care being provided to these people. No definitive answers can be given since the emphasis of the Resident Places Survey was on the characteristics of people rather than on their care. However, a crude indicator of the level of care is the primary type of service provided in the homes. As shown in Table D, the proportion of residents with extreme disabilities were related to the service category of the home; the proportion was the highest for nursing care homes and the lowest for personal care homes. Recall that places were classified as "nursing care homes" if they employed a registered nurse or a licensed practical nurse 15 hours or more per week and provided nursing care to the majority of their residents. Survey results also indicated that more than 90 percent of the nursing care homes had a nurse or nurse's aide on duty 24 hours a day and that 55 percent of them employed a full-time registered professional nurse to supervise nursing care. The remainder of the nursing care homes, with few exceptions, employed licensed practical nurses and part-time registered nurses to supervise nursing care. Personal-care-with-nursing homes, although not a requirement of the classification criteria, frequently employed professional and practical nurses. About two-thirds of these homes had a registered nurse or a licensed practical nurse in charge of nursing care, and about 8 out of 10 homes provided round-the-clock nursing service.

The survey also indicated that a few of the establishments classified as "personal care homes" employed nursing personnel and had a nurse or nurse's aide on duty 24 hours per day. Thus it is possible that the small proportion of disabled and infirm residents in personal care homes were receiving some level of nursing care.

Summary and Conclusions

A sample survey of establishments providing nursing and personal care to the aged and chronically ill was conducted during the spring of 1963, by the National Center for Health Statistics in cooperation with the U.S. Bureau of the Census. Results indicated a total resident population of about 505,000 persons.

Data collected in the survey provide a general picture of the health and personal characteristics of residents. Although a few were relatively young, the vast majority were quite aged as indicated by an overall average age of 78 years. Women outnumbered men by a ratio of 2 to 1. Almost all of the residents were white.

Table C: Percent distribution of residents in nursing and personal care homes by extent of disability in selected health-related categories according to sex and bed disatbility status: United States, April-June 1963

Sex and Bed Status	Total		Walking Status			Continence Status			Mental Status		
	Number	Percent	Walks Unassisted	Walks with some help	Never Walks	Continent	Partly Continent	Totally Incontinent	Always aware of Surroundings	Confused part of time	Confused all or most of time
			Percent Distribution								
Total	505,242	100	58	18	24	73	8	19	50	32	18
Both Sexes											
In bed hardly ever	288,675	100	83	13	4	90	5	5	63	26	11
In bed part of time	130,381	100	37	35	28	63	13	24	37	42	21
In bed all or most of time	86,186	100	6	11	83	32	11	57	26	39	35
Females											
In bed hardly ever	182,603	100	81	14	5	90	4	6	62	27	11
In bed part of time	88,252	100	33	36	31	63	12	25	36	42	22
In bed all or most of time	61,324	100	5	10	85	32	10	58	25	38	37
Males											
In bed hardly ever	106,072	100	87	10	3	90	5	5	66	24	10
In bed part of time	42,129	100	44	34	22	63	14	23	39	42	19
In bed all or most of time	24,862	100	8	14	78	35	11	54	27	41	32

Table D: Percent distribution of residents in nursing and personal care homes by extent of disability in selected health-related categories according to primary type of service provided in the homes: United States, April-June, 1963

Primary type of service	Total		Bed Status			Walking Status			Continence Status			Mental Status			Hearing Status		Vision Status		
	Number	Percent	In bed hardly ever	In bed part of time	In bed all or most of time	Walks unassisted	Walks with some help	Never Walks	Continent	Partly continent	Totally incontinent	Always aware of surroundings	Confused part of time	Confused all or most of time	No serious problem	Serious problem or deaf	No serious problem	Serious problem	Blind
		Percent Distribution																	
All types of service	505242	100	57	26	17	58	18	24	73	8	19	50	32	18	84	16	81	16	3
Nursing care	286373	100	47	31	22	47	22	31	66	9	25	43	36	21	84	16	79	17	4
Personal care with nursing	170678	100	67	21	12	70	14	16	81	6	13	58	28	14	85	15	84	13	3
Personal care	48191	100	80	14	6	82	10	8	88	5	7	67	25	9	84	16	82	15	3

More than half of the residents had some level of disability or infirmity. About 4 out of 10 were confined to bed at least part of the time, and a large proportion of those who were usually out of bed except for rest or sleep had impairments. Measured in terms of frequency, the largest health problem was not physical, but mental; half of the residents were unaware of their surroundings either part or all of the time compared with two-fifths who were unable to walk, three-tenths who were incontinent, and a fifth who had problems with seeing or hearing.

Thus it is clear that many residents of nursing and personal care homes are often in ill health, as indicated by data collected in RPS-1. For many purposes, however, more specific information is needed on the conditions associated with ill health, the availability and provision of medical and nursing services, and on other factors which relate to health. The second Resident Places Survey should go far in filling this need. A number of reports will be published periodically over the next year or two about such topics as the prevalence of chronic conditions and impairments, types of services provided, the use of special aids such as walkers and wheelchairs, charges for care of residents and source of payment, and the availability of staff to provide care. Meanwhile, several reports are being published on the results of RPS-1 which include, in addition to statistics on the health of residents, characteristics of the institutions themselves, and the utilization of facilities. 3/, 4/, 5/, 6/.

In time, the Center plans to study the health of all segments of the institutional population. The data collected will augment that being obtained through household interviews, health examinations, hospital records, etc., about the noninstitutional population to provide a comprehensive description of the health of the nation's people and of related matters. 7/ The ad hoc institutional population surveys will be repeated or new ones conducted on the basis of current needs and national interest.

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Appendix Table: Approximate standard errors of estimated percentages shown in Tables B - D.

Base of the percent (number of residents)	Estimated Percent				
	2 or 98	5 or 95	10 or 90	25 or 75	50
	Standard Error (expressed in percentage points)				
25,000	0.6	0.9	1.2	1.7	2.0
50,000	0.4	0.6	0.9	1.2	1.4
100,000	0.3	0.4	0.6	0.9	1.0
250,000	0.2	0.3	0.4	0.6	0.7
500,000	0.1	0.2	0.3	0.4	0.5