Nursing Service in Homes for the Aged

FRANZ GOLDMANN, M.D.

THE FUNCTIONS of homes for the aged have changed profoundly with the passage of time. In the old days provision of room, board, and some personal care was the major concern, and arrangements for medical and nursing services were incidental. In recent years, systematic provision of all personal health services required by the residents has come to play an increasingly important, often dominating, role. Acceptance of new responsibilities was a matter of necessity rather than choice for the homes. It was prompted by the marked increase in the number both of infirm elderly people seeking admission and of residents beyond 80 years who were physically or mentally declining during their long stay in the home.

This process of readjustment of functions is likely to continue and spread in the near future. As a result, more and more homes for the aged will become nursing homes in fact and be confronted with the complex problem of proper organization of personal health services. Good nursing service is of course essential to the humane, effective, and economical care of the people living in homes for the aged. What type of nursing personnel should be employed? How many employees are needed to serve a given number of residents? How many professional nurses, practical nurses, and nurse aides should be on the staff of a home of a certain size? These are practical questions begging to be answered.

"To speculate without facts is to attempt to enter a house of which one has not the key," as Julian Huxley once remarked. What is necessary for sound action is examination and evaluation of the policies and experiences of large numbers of homes. Such an inquiry has been made in connection with a series of studies on coordination of health services for patients with long-term illnesses. The project is sponsored by the Council of Jewish Federations and Welfare Funds, New York City, and supported by a grant from the Division of Hospital and Medical Facilities, Public Health Service.

This report presents findings on nursing personnel in 70 Jewish homes for the aged in 51 cities of the United States and Canada and, from another study, data on the amount of nursing service actually given to 530 residents of five homes. Observations on other types of service have been published elsewhere (*1*).

Nursing Personnel

Information on nursing personnel was collected from the 70 Jewish homes for the aged through detailed questionnaires. This material was supplemented by field studies of 11 of these homes.

Most of the 70 homes employ regular staffs composed of a great variety of persons with special skills, maintain special units for the ill and infirm, and have more or less definite arrangements with general hospitals for inpatient and outpatient care of those residents who cannot be treated in the home. Many possess diagnostic and therapeutic equipment of

Dr. Goldmann is associate professor of medical care, emeritus, Harvard School of Public Health, and director of health study, Council of Jewish Federations and Welfare Funds, New York City.

Marta Fraenkel, M.D., director of medical statistics service, New York City Department of Hospitals, and Lily P. Silbert, research assistant to the director of the council's health study, assisted in analyzing the data provided by the various institutions.

various types. Several homes have more or less definite arrangements with general hospitals for regular utilization of certain of their facilities, such as clinical and radiological laboratories, and for the services of members of their medical staffs at the homes.

In 1957, nursing personnel were regularly employed by all 70 homes, which contained a total of 11,148 beds. Professional nurses accounted for one-eighth of the total nursing personnel, practical nurses for one-third, and nurse aides and attendants for more than one-half (table 1).

The staffing pattern varied widely among homes of different sizes. Professional nurses were employed in 60 homes. They were lacking in the three homes with fewer than 25 beds but were available in 8 of the 13 homes in the 25- to 49-bed category, in all but 2 of the 36 homes with 50 to 199 beds, and in all the 18 larger institutions. The proportion of professional nurses in the 60 homes declined with increase in bed capacity; it ranged from a high of 21.7 percent in the small homes to lows of 8.7 and 7.8 percent in the largest homes.

Practical nurses, on the staffs of all 70 homes, constituted the great majority in the homes with fewer than 25 beds, but they were in the minority in the homes with 50 beds or more. Use of nurse aides and attendants was relatively uncommon in homes with fewer than 50 beds but increased in frequency in the larger homes.

In all homes with more than 100 beds more than one-half of the nursing personnel were nurse aides and attendants and less than one-third were practical nurses. Conversely, at the smallest homes practical nurses made up the majority and nurse aides the minority.

For quantitative measurement, the number of nursing personnel was related to the number of beds. This method was chosen because pertinent data were easily available, and the figures for beds could be presumed to differ little from those for days of care because of high average occupancy of the homes.

The total nursing personnel employed by the 70 homes in 1957 averaged 19.7 per 100 beds, a ratio of one nurse to five beds. This figure, however, conceals exceedingly wide variations. Five homes employed more than 30 nurses and aides per 100 beds, while eight homes had fewer than 10 per 100 beds (table 2). Both high and low rates were observed in each of the categories, but as a group the smaller homes compared unfavorably with the larger ones. Of the 33 homes with fewer than 100 beds, only 9 met or exceeded the average of one nurse to five beds, whereas 17 of the 37 homes with more than 100 beds did so.

The number of professional nurses employed by 60 homes averaged 2.4 per 100 beds. The rate was lowest (1.6) in the two homes in the 400- to 599-bed category, where professional nurses constituted 7.8 percent of the total nurs-

Table 1. Nursing personnel in Jewish homes for the aged, by specified size of homes, 1957

Bed capacity [1]	Total number homes	Total number beds	Nursing personnel							
			All types		Professional nurses		Practical nurses		Aides and attendants	
			Number	Percent	Number	Percent	Number	Percent	Number	Percent
All homes	70	11, 148	2, 196	100. 0	261	11. 9	731	33. 3	1, 204	54. 8
Under 25	3	65	13	0. 6	0	0	9	69. 2	4	30. 8
25–49	13	517	83	3. 8	18	21. 7	43	51. 8	22	26. 5
50–99	17	1, 160	192	8. 7	31	16. 1	80	41. 7	81	42. 2
100–199	19	2, 793	515	23. 5	66	12. 8	158	30. 7	291	56. 5
200–399	14	3, 741	650	29. 6	83	12. 8	202	31. 1	365	56. 1
400–599	2	938	192	8. 7	15	7. 8	57	29. 7	120	62. 5
900 and over	2	1, 934	551	25. 1	48	8. 7	182	33. 0	321	58. 3

[1] No homes with 600 to 899 beds.

ing personnel. It was highest (3.5) in the 13 homes with 25 to 49 beds, where professional nurses made up 21.9 percent of the nursing staffs. A ratio of at least one professional nurse to 50 beds was achieved by 16 of the 33 homes with fewer than 100 beds and by 20 of the 37 larger homes (table 2).

Theoretically, the size of the nursing staff can be expected to depend largely on the extent of provisions for care of ill and infirm persons in special units such as infirmaries or hospital divisions. At the 70 homes studied, 4,555 beds, or 40.9 percent of the total, were specifically designated for service to chronically ill or substantially disabled residents. Most of these beds were in larger homes: nine-tenths in homes with 100 beds or more and almost seven-tenths in homes with 200 beds or more. Furthermore, the proportion of beds in special units of large homes greatly exceeded that in small homes (table 3).

Number of nursing personnel and proportion of beds in special units were found to be correlated, as expected. Nineteen of the thirty-five homes maintaining 30 percent or more of their total beds in units for ill persons had nursing personnel averaging 20 or more per 100 beds; 16 of these homes employed 3 or more professional nurses per 100 beds. In contrast, only 7 of the 35 homes with less than 30 percent of their beds in special units had such rates (table 4).

Table 3. Percentage of beds in units for ill persons, Jewish homes for the aged, by specified size of homes, 1957

Bed capacity	Total number beds	Beds in special units	
		Number	Percent
Under 50	582	70	12.0
50–99	1,160	330	28.4
100–199	2,793	1,007	36.1
200–399	3,741	1,492	39.0
400 or more	2,872	1,656	57.7

If nurse power rather than proportion of beds in special units is taken as the measure, an equally revealing picture emerges. Four of the five homes employing 30 or more nurses and aides per 100 beds assigned 20 percent or more of their total bed capacity to special units, 50 percent or more in two large institutions, 30 to 39.9 percent in a medium-sized home, and 20 to 29.9 percent in a small home. The eight homes with fewer than 10 nurses and aides per 100 beds included three without regularly assigned beds for the sick.

The median number of nursing personnel per

Table 2. Nursing personnel rates in Jewish homes for the aged, by specified size of homes, 1957

Number nursing personnel per 100 beds	Total number homes	Number homes with specified bed capacity				
		Under 50	50–99	100–199	200–399	400 and over
All homes	70	16	17	19	14	4
All nursing personnel						
Under 10	8	1	2	3	2	0
10.0–14.9	17	5	3	5	4	0
15.0–19.9	19	5	8	2	3	1
20.0–24.9	13	2	2	5	3	1
25.0–29.9	8	2	2	2	1	1
30 and over	5	1	0	2	1	1
Professional nurses						
None	10	8	1	1	0	0
Under 1	7	1	0	3	3	0
1.0–1.9	17	0	7	4	3	3
2.0–2.9	13	3	2	4	4	0
3.0–3.9	12	0	5	4	2	1
4.0–4.9	9	3	1	3	2	0
5 and over	2	1	1	0	0	0

100 beds for each of the categories of homes is shown in the chart. For all nursing personnel, the medians for homes with 400 or more beds and those with 100 to 199 beds, which together provide one-half of the total beds, meet or exceed the ratio of one to five beds. The medians for professional nurses in the categories 50–99, 100–199, and 200–399 beds amply match the ratio of one nurse to 50 beds. Practical nurses and nurse aides play a dominant role in all homes but especially in the smallest and largest.

Nursing Service

Intensive case studies conducted at five Jewish homes for the aged in Chicago, Miami, Philadelphia, St. Louis, and Toronto yielded detailed information on all personal health services received by 530 residents at certain periods of 1958. The study teams consisted of physicians, nurses, social workers, and administrators on the staffs of the homes. The following summarizes the findings on nursing service, based on detailed reports of the directors or supervisors of nursing, all experienced professional nurses.

To see the situation in proper perspective, two general observations must be kept in mind.

Table 5. Nursing service received by patients in units for ill persons in four Jewish homes for the aged, 1958

Daily hours of nursing service	Persons receiving specified hours of nursing service	
	Number	Percent
All homes	206	100.0
Less than 1	71	34.5
1 to 2	57	27.7
2 to 3	14	6.8
3 to 4	42	20.3
4 or more	22	10.7

First, almost all residents were in ill health, suffering from multiple chronic ailments, and many were substantially disabled. Mental impairment with symptoms of temporary or continuous confusion was the most common affliction, and marked emotional disorders were widespread. Second, 45 percent of all the persons in the study group were in a unit for ill persons, such as an infirmary or a hospital division, and of these patients seven-tenths were mentally confused and one-fifth incontinent (*2,3*).

At the time of the study, 9 in every 10

Table 4. Nursing personnel rates in relation to percentage of beds in units for ill persons, Jewish homes for the aged, 1957

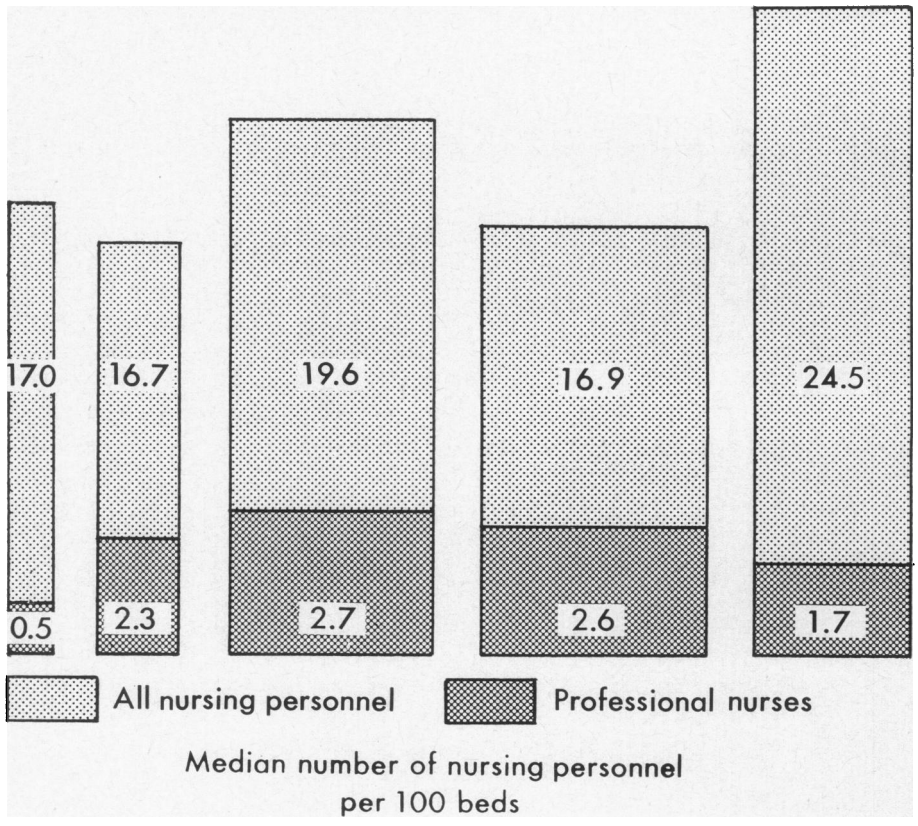
Number of nursing personnel per 100 beds	Total number homes	Number homes with specified percentage of beds in units for ill persons					
		None	Under 20	20.0–29.9	30.0–39.9	40.0–49.9	50 and over
All homes	70	11	7	17	10	10	15
All nursing personnel							
Under 10	8	3	2	1	1	1	0
10.0–14.9	17	4	2	8	1	0	2
15.0–19.9	19	3	2	3	4	4	3
20.0–24.9	13	0	0	3	2	3	5
25.0–29.9	8	1	0	1	1	2	3
30 and over	5	0	1	1	1	0	2
Professional nurses							
None	10	5	1	3	1	0	0
Under 1	7	1	1	2	1	0	2
1.0–1.9	17	1	2	5	2	2	5
2.0–2.9	13	0	2	5	1	3	2
3.0–3.9	12	1	0	1	2	4	4
4.0–4.9	9	2	1	1	2	1	2
5 and over	2	1	0	0	1	0	0

persons in the residential units of the homes were receiving nursing service, the great majority less than 1 hour a day, every eighth person from 1 to 2 hours, and a few a larger amount. Three homes provided such service for every resident, one for more than 8 in 10, and one for more than 5 in 10. The proportional distribution of hours of nursing differed from home to home. At one extreme, one home reported less than 1 hour of nursing for each resident receiving such care, who constituted about one-half of the persons in the residential unit. At the other extreme, two homes, which gave nursing service to every person in the residential unit, reported less than 1 hour for three-fourths of the residents and more for the remainder.

In examining the situation in the infirmaries or similar units for ill persons, the home in Toronto had to be excluded because of its unusual organization. In the other special divisions the average amount of nursing service ranged from less than 1 hour a day for every third patient to 4 hours or more for every ninth. More than one out of four patients was receiving 1 to 2 hours of such service, and almost the same proportion, between 2 and 4 hours. Those requiring 2 hours or more of nursing service a day constituted close to four-tenths of all infirmary patients studied, and those requiring 3 hours or more made up almost one-third (table 5). There were substantial variations among the homes with regard to the proportional distribution of nursing time. One home

Median number of nursing personnel per 100 beds in homes of specified size, Jewish homes for the aged, 1957

Bed complement	under 50	50-99	100-199	200-399	400 and over
Total beds	582	1,160	2,793	3,741	2,872



furnished less than 1 hour of nursing service to every other person in the infirmary and 4 hours or more to only a few patients. At the other extreme, one home reported less than 1 hour of nursing for very few persons but 4 hours or more for four-tenths of the patients in the infirmary.

Discussion

The policy followed by the homes for the aged in building up their nursing staffs reflects recognition of three facts: (*a*) almost every resident needs some nursing care at some time; (*b*) numerous residents require continued nursing service in substantial amount over long periods of time; and (*c*) much of the service can be given by practical nurses and nurse aides under the direction and supervision of professional nurses. As the findings from the two studies show, the size of special units for the sick and the type of patients in these units strongly influence the quantity of nursing personnel in the homes.

The average ratio of one nurse or nurse aide to every five beds in the 70 homes is encouraging. If nothing else, it proves at least the possibility of attracting nursing personnel to places shunned in the past. Taken in conjunction with findings on other types of health personnel active in the homes, the development of nursing staffs can be regarded as part of a movement toward a constructive approach in place of passive acceptance of the ailments of old age.

Impressive as the picture of the average situation in all 70 homes is, it is marred by the differences between individual homes. Of course, some disparity must be expected and is justified. But the variations in the supply of nurse power are too wide to be ignored. For instance, the number of nursing personnel per 100 beds ranged from 7.7 to 30.4 in the 17 homes assigning between 20 to 30 percent of their beds for the care of the sick and infirm and from 13.4 to 31.6 in the 15 homes using one-half or more of all beds for this purpose. Such differences can be explained but hardly excused.

Constant supervision of the numerous mentally confused residents and systematic care of the many incontinent are responsibilities taxing the strength and temper of the personnel. Yet, these are only some of the countless duties to be carried out for those patients in the special units who need regular attention for many months, if not several years. Moreover, administration of medications, such as tranquilizers, care of the skin to prevent bedsores, and help in eating, bathing, and general personal care are functions to be performed for the majority of the elderly people in the residential units as well as for all those in the units for ill persons. Above all, the "therapy of friendship" for the numerous elderly people with marked emotional disorders requires patience, prudence, and perseverance—and the time for it.

Employment of professional nurses as well as other personnel with different degrees of skill is the rule in 60 of the 70 homes. The general tendency is to employ relatively few professional nurses and to rely heavily on practical nurses and nurse aides and attendants. Unquestionably, division of responsibility according to functions is a widely accepted principle. In most instances, the professional nurses direct, supervise, and coordinate the nursing activities and limit direct service to therapeutic procedures requiring high skill or involving great responsibility. In some instances they give regular bedside care as well. According to my observations in a number of homes, this policy has worked satisfactorily, although it has not led to the disappearance of the harassed professional nurse. Yet, fundamental problems warrant mention.

Satisfactory delineation of the functions to be performed by professional nurses, practical nurses, and nurse aides is not easy. Division of responsibility is of little avail unless accompanied by unification of effort. To meet the nursing needs of individuals fully, proper service must be available when and as long as required. Of paramount importance is individualizing service according to the resident's physical ability, mental capacity, temperament, and, in particular, the degree of ability to follow the daily routine of the average healthy person. This implies not only agreement on the functions to be performed by the various types of nursing personnel but also development of methods of direction and supervision that will stimulate

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recognition and foster acceptance of interdependence without stifling independence.

It is simple to state that nursing care should be provided at the least cost compatible with quantitative and qualitative adequacy. Unfortunately, there are no standards derived from practices of proved value that can be used to appraise the adequacy of the nursing personnel in individual homes. What is a satisfactory ratio of total nursing personnel to beds? Proportionately how many professional nurses are required for attainment both of humane and effective care of the residents and of efficient operation of the home? These are still wide open questions. In the search for solutions some help may be gained from the patterns found by this study in homes of various sizes, as shown in the chart. The homes with the largest nursing staffs employ one nurse for about four beds and those with the next largest staffs have one nurse for every five beds. This policy is all the more significant as it is followed by homes containing 50.8 percent of all beds in the 70 homes. The observation that one professional nurse for approximately 50 beds is available in all but the smallest homes may also be meaningful.

The tables on nursing personnel intentionally relate data on personnel to beds in the homes. Is this the most dependable method of measurement? In studying this question it was found that in 1957 two homes, containing a tiny proportion of all beds, were occupied in excess of their official bed complements and that 24 homes, containing one-fourth of all beds, for a variety of reasons had less than 90 percent occupancy, the average being 76 percent. In view of this observation all data on nursing personnel were also related to the total number of days of care actually provided during the year (table 6). On the basis of this calculation more homes could be classified as relatively well supplied with nursing personnel, and more homes move up into the top bracket. If confirmed by other studies, this finding would mean that the method of using beds as the unit of measurement is good for general purposes, but the method of using days of care is preferable for determination of the relative position of categories of homes.

It would be valuable to compare the provisions for nursing personnel at the 70 Jewish homes for the aged with those in Protestant, Catholic, and nonsectarian homes for old folks. For the time being, this is impossible owing to lack of large-scale studies of these homes. All that can be done at present is to examine the situation at other types of homes serving mainly elderly persons with chronic illness or serious impairment of physical or mental function.

In connection with the inquiries into the problem of coordinating health services for patients with prolonged illness, detailed data on nursing personnel were obtained in 1957 from six Jewish institutions classified as homes for the chronically ill and disabled and from eight Jewish facilities classified as chronic disease hospitals. Comparison of nurse power in these facilities with that in homes for the aged reveals similarities as well as differences (table 6).

Table 6. Comparative rates of nursing personnel in three types of institutions for long-term care, 1957

Type of institution	Total number institutions	Average rates of nursing personnel					
		All types		Professional		Practical and aides	
		Rate per 100 beds	Rate per 100 days of care	Rate per 100 beds	Rate per 100 days of care	Rate per 100 beds	Rate per 100 days of care
Homes for the aged	70	19.7	21.4	[1] 2.4	[1] 2.6	17.4	18.9
Homes for chronically ill	6	40.0	42.2	4.5	4.7	35.5	37.5
Chronic disease hospitals	8	44.2	53.0	10.1	12.1	34.1	40.9

[1] Refers to 60 homes employing professional nurses.

In the six homes for the chronically ill and disabled, professional nurses accounted for 11.2 percent, practical nurses for 30.9 percent, and nurse aides and attendants for 57.9 percent. Thus the proportional distribution of the various types of nursing personnel was about the same as in the homes for the aged. However, there were significant differences in the amount of nurse power. The rates for both total nursing personnel and for professional nurses in homes for the chronically ill and disabled were twice those in homes for the aged.

To interpret this finding several facts must be kept in mind. The age composition of the populations of the two types of institutions is quite similar. Almost all the residents remain in the homes to the end of their days. Practically all the people in homes for the chronically ill and disabled require much, and often continuous, nursing service because of the severity of their impairments, but more than one-half of those staying in the homes for the aged are able to live in residential units and, except for a few, need only some nursing service from time to time. Thus the findings on nurse power in the two types of institutions seem to correspond remarkably well.

Quite different is the situation in the eight chronic disease hospitals. There professional nurses made up 22.8 percent of the staff, practical nurses accounted for 15.3 percent, and nurse aides and attendants for 61.9 percent. Thus the proportion of professional nurses was double that in the two other types of facilities, and the proportion of nurse aides and attendants was somewhat higher. The rate for total nursing personnel in the chronic disease hospitals was slightly above that in the homes for the chronically ill and disabled and more than twice that in the homes for the aged.

In contrast to the homes for the aged and the homes for the chronically ill, the chronic disease hospitals studied are designed for active treatment of patients with seriously disabling long-term illness. They discharge a substantial number of patients after a few months of intensive treatment and, accordingly, use their beds for an average of more than one patient during a year. Because of their particular functions, the chronic disease hospitals need a relatively large nursing staff and must place greater emphasis on use of professional nurses. As a study of 527 patients in four chronic disease hospitals in four cities revealed, one-half of the patients actually received from 2 to 4 hours of nursing service a day during their first week in the hospital and one-fifth required 4 hours or more.

Like the homes for the aged studied, proprietary nursing homes serve a group of people characterized by an average age of 80 years and high prevalence of mental confusion and incontinence. Yet their provisions for skilled nursing personnel compare unfavorably with those of the homes for the aged, if the test is applied to the two types in their entirety rather than to individual homes. One out of three proprietary homes in 13 States studied during 1953–54 by the Public Health Service and the Commission on Chronic Illness had neither a professional nor a licensed practical nurse on the staff. Professional nurses were available in only two out of five homes and practical nurses were the persons with highest skill in one out of four homes (*4*). The great majority of these homes, however, had fewer than 25 beds in contrast to only 3 of the 70 Jewish homes for the aged.

A study made in the State of Washington in 1956 gives insight into the staffing pattern of 300 licensed nursing homes and homes for the aged, with a total of 9,122 beds. Professional nurses accounted for one-fifth, practical nurses for close to one-fifth, and nurse aides for more than three-fifths of the total nursing personnel. Compared with the 70 Jewish homes for the aged and the 6 Jewish homes for the chronically ill, the facilities in Washington had larger proportions of both professional nurses and nurse aides and a much smaller proportion of practical nurses (*5*).

Summary

The organization of nursing service was studied in 1957 at 70 Jewish homes for the aged, and the amount of nursing service actually given was determined in 1958 for 530 residents of five Jewish homes for the aged.

Professional nurses made up one-eighth of the total nursing personnel in the 70 homes, practical nurses one-third, and nurse aides and

attendants more than one-half. Professional nurses were employed by 60 of the 70 homes. The proportions of both professional nurses and practical nurses declined and that of nurse aides and attendants grew larger with increase in the size of the homes.

The ratio of all nursing personnel to beds in the 70 homes averaged 1:5 and that of professional nurses to beds in the 60 homes averaged 1:40. Both ratios varied markedly among homes of different size. They were relatively high in the majority of homes with more than 100 beds and in the minority of all smaller homes. Best supplied were the homes with 400 beds or more and the homes in the 100- to 199-bed category, which together contained one-half of all available beds. Homes with 100 to 399 beds, which provided almost three-fifths of all beds, led in employment of professional nurses.

The size of the total nursing staff was closely related to the proportion of beds in units for the care of ill and infirm residents.

At the five homes where case studies were made, 9 out of every 10 persons in the residential units were actually receiving nursing service, mostly less than 1 hour a day. In the units for ill persons more than one out of every four persons was receiving 1 to 2 hours of nursing service and an equally large proportion from 2 to 4 hours. Almost 4 out of every 10 infirmary patients studied required 2 hours or more of nursing service a day.

The policies and experiences of the homes with the largest nursing staffs may be useful in developing standards for both total nursing personnel and professional nurses in those homes for the aged which perform the functions of highly developed nursing homes.

REFERENCES

(1) Goldmann, F.: Personal health services in homes for the aged. Am. J. Pub. Health 50: 1274–1287, September 1960.

(2) Goldmann, F.: Residents of homes for the aged. Geriatrics 15: 329–337, May 1960.

(3) Goldmann, F.: Medical care of the mentally impaired in homes for the aged. Am. J. Pub. Health. (In press.)

(4) Solon, J., et al.: Nursing homes, their patients and their care. PHS Pub. No. 503. (Pub. Health Monogr. No. 46). Washington, D.C., U.S. Government Printing Office, 1957, 58 pp.

(5) Tucker, E. L., and Snyder, M. A.: Personnel time in nursing homes of Washington State. Pub. Health Rep. 73: 85–95, January 1958.

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