A Public Health Home Nursing Program for Outpatients with Heart Diseases

EFFIE HANCHETT, R.N., M.A., and PAUL R. TORRENS, M.D., M.P.H.

DURING the past 10 to 15 years, home care programs have been developed in hospitals and health departments across the country. The primary objective of most programs has been to provide medical and nursing care to patients in their own homes after hospitalization. Indeed, this type of program has become so common that the term "home care" today virtually implies that there has been preceding hospitalization.

In the past 2 or 3 years, several home care programs have been started which are aimed at patients who are ambulatory and who may never have been hospitalized. The primary objective of these home care programs is to keep patients out of the hospital as long as possible by providing anticipatory medical and nursing services at home.

In January 1964 an anticipatory home care program was begun at St. Luke's Hospital Center in New York City for a group of elderly patients with chronic congestive heart failure who received their medical care in the outpatient clinics of the hospital. The aim of this program was to determine if the hospital admission rate of these patients could be reduced by adding public health nursing followup at home to the regular routine of outpatient department care.

The results of this program provide information about the medical care of congestive heart failure, organization of community health services, and role of public health nurses in programs of this kind.

Miss Hanchett is with the community health studies unit, St. Luke's Hospital Center, New York City. Dr. Torrens is chief of the unit. *This paper is based on a presentation at the annual meeting of the American Public Health Association in San Francisco on November 2, 1966.*

Method

A total of 239 patients with congestive heart failure attending outpatient clinics at St. Luke's Hospital Center were selected for the program and randomly assigned to study and control groups. Most patients were elderly white women (table 1). A large number of them lived alone in the neighborhood adjacent to the hospital, and most had been receiving medical care at St. Luke's Hospital for a number of years.

The cause of heart failure in more than 50 percent of the patients was arteriosclerotic cardiovascular disease. When they entered the program, 80 percent of the patients could have been placed in functional class 2 and 20 percent in functional class 3 of the American Heart Association Functional Classification (patients who require some limitation of physical activity but are not restricted to bed).

Both groups of patients continued to receive medical supervision from the outpatient clinics. The study group patients also began to receive public health nursing followup from two public health nurses working full time in the hospital-based program.

Shortly after placement in the study group, each patient received a home visit from one of the nurses. During this home visit the nurse noted the patient's living arrangements and attempted to evaluate the patient's understanding

of his illness and his adherence to the treatment plan prescribed by his physician. The nurse also explained the purpose of the followup program at this time and encouraged patients to contact her directly if any questions or problems arose during the course of the program.

After the initial home visit, the nurses established a flexible plan for home and clinic visits for each patient, depending on his daily life circumstances. A nurse was present in the clinic at the time of a patient's visit to his physician to aid in the transfer of information between patient and physician. This was particularly important when any change in medication or treatment plan was being considered. Whenever indicated, the nurse and physician planned together for closer patient observation and for action to be taken if the patient's condition deteriorated further.

During the interval between clinic visits the nurses visited the patients at home, either on their own initiative, or according to specific instructions of the physician, or at the request of the patient. Between visits the nurses remained in close communication with the patients by telephone, with either patient or nurse free to initiate a call.

This program continued for 2½ years, with some patients receiving followup care for the entire period. In establishing this program we hoped that public health nursing followup would prevent deterioration in the patient's condition by anticipating the causes of deterioration. In cases in which this could not be done, we hoped that early intervention by the nurse would limit the degree of deterioration, thereby making recovery easier.

Table 1. Characteristics of patients in congestive heart failure followup program, New York City, January 1964–September 1966

Patients	Study group		Control group	
	Number	Percent	Number	Percent
Total patients	126	100	113	100
Age (years):				
Under 40	4	3	4	4
40–49	11	9	9	8
50–59	18	14	23	20
60–69	40	32	27	24
70–79	35	28	36	32
80 and over	18	14	14	12
Sex:				
Male	52	41	56	50
Female	74	59	57	50
Ethnic group:				
White	71	56	57	50
Negro	40	32	35	31
Puerto Rican	15	12	21	19
Type of heart disease:				
Arteriosclerotic	75	60	74	66
Hypertensive	17	13	16	14
Rheumatic	15	12	14	12
Luetic and other	19	15	9	8
Functional classification (American Heart Association):				
Class 2	99	79	93	82
Class 3	27	21	20	18

Table 2. Number of hospital admissions for patients in congestive heart failure followup program, New York City, January 1964–September 1966

Hospital admissions	Study group		Control group	
	Number	Percent	Number	Percent
All diagnoses	81	100	74	100
Noncardiac diagnoses	42	51. 9	37	50. 0
Cardiac diagnoses	39	48. 1	37	50. 0
Congestive heart failure	18	22. 2	23	31. 1
Other cardiac diagnoses	21	25. 9	14	18. 9

Results

Rate of hospital admission. At the end of 2½ years the results of the public health nursing followup program were analyzed to determine whether there had been any reduction in the rate of hospital admission for the 126 study group patients as compared to that of the 113 control group patients (table 2).

Although the study group had approximately the same number of admissions to the hospital for cardiac diagnoses as the control group patients, the study group patients spent less than half the time in the hospital for congestive heart failure than did control group patients (table 3). The mean length of stay in the

hospital for congestive heart failure among study group patients was 18.2 days; the corresponding stay for control group patients was 23.0 days, almost a whole week longer.

Apparently, the public health nursing followup program successfully reduced the rate of admission to the hospital for cardiac disease—particularly for congestive heart failure. The marked reduction in average length of stay in the hospital for congestive heart failure among study group patients also suggests that they were brought in earlier, before their conditions had deteriorated too badly.

However, study group patients spent considerably more time in the hospital for noncardiac problems than did patients in the control group. This was probably the result of the intensive observation of the study group patients. Some noncardiac disease was discovered which would otherwise have been missed. More important, the coordinating activities of the nurses probably served to expedite medical care for some chronic conditions which might have already been noted, but for which no action had yet been taken.

If programs of this nature are to be established in the future, criteria better than reduction in hospital admission rates must be developed to evaluate their effectiveness. In many circumstances, nursing followup programs can realistically be considered successful only if the rate of hospital admission is increased, since this would mean that previously untreated disease was receiving attention.

Nursing needs of patients. The purpose of this investigation of the group of patients receiving nursing care was to identify the relationship between those nursing needs inherent in an ambulatory, geriatric, medical clinic population and the relative amounts of nursing time and effort used to meet these needs. In developing this investigation, we assumed that public health nurses have the skills necessary to assess patient nursing needs and assign priorities. We also assumed that the amount of nursing service given to patients was in direct proportion to their needs as perceived by the nursing staff.

The nursing needs for the study group patients were identified by the nursing staff through analysis of the nursing records. Since this was a research program, the nursing records had been maintained in detail, making it easier to determine major nursing needs. The major nursing need was considered to be that aspect of the patient's situation which most caused his discomfort or endangered his health.

Table 4 shows the distribution of major nursing needs among the study group population as well as average amount of nursing services delivered to each patient group. Services are divided into direct nursing services (those involving a patient-nurse contact, either at home,

Table 3. Length of hospitalization for patients in congestive heart failure followup program, New York City, January 1964–September 1966

Cause of hospitalization	Hospital days				Mean hospital days per admission	
	Study group		Control group			
	Number	Per 100 months of followup[1]	Number	Per 100 months of followup[1]	Study group	Control group
All diagnoses	[2] 1,727	107.2	1,529	88.2	[2] 21.6	20.7
Noncardiac diagnoses	[2] 912	56.6	567	37.9	[2] 22.2	17.8
Cardiac diagnoses	815	50.6	872	50.3	20.9	23.6
Congestive heart failure	327	20.3	568	32.8	18.2	23.0
Other cardiac diagnoses	488	30.3	304	17.5	23.2	21.7

[1] Study patients received 1,611 months of followup; control patients, 1,733 months of followup. These figures were divided by 100 to make comparison possible.
[2] Excludes 1 patient hospitalized 187 days for hip fracture.

in the clinic, or over the telephone), and indirect nursing services (those involving the nurse and someone other than the patient).

For 33 patients (33.7 percent), adhering to the treatment plan prescribed by physicians was the major problem. Of the 126 patients selected for the study group, 96 actually received the followup care. The remainder had either died, or moved from the area, or transferred to another source of care before the program began. Almost all of those 96 patients followed failed to adhere to some aspect of the treatment plan, but for the 33 patients this failure comprised the major nursing need. These 33 patients received the greatest number of nursing services per category of need (table 4); the services were usually teaching and motivational activities aimed at improving patient adherence to treatment plans. The reasons that patients did not adhere to their treatment plans varied from patient to patient. In general, the most important barriers to adherence were lack of real knowledge concerning the illness and its treatment, mental confusion secondary to advanced age, and lack of motivation secondary to chronic, low-grade despair and depression.

For a group of 13 patients, major nursing needs were directly related to the medical care of congestive heart failure. In general, patients in this group were sicker than the others in the study group and their conditions changed more rapidly. For these patients, nursing activities included close observation of signs and symptoms to detect early evidence of cardiac decompensation. Nurses spent much time informing the clinic physician of the patient's condition and helping the patient follow the physician's recommendations. These patients received more nursing services per patient than did any others.

For another group of 13 patients, the major nursing needs were directly related to emotional problems. Diagnosed psychiatric disorders, alcoholism, and severe anxiety are frequent among patients in any metropolitan hospital clinic, and this group was no exception. With these patients, nurses primarily supplied emotional support by listening to their concerns and attempting to lessen the stresses of life with which the patients were faced. For this group of patients, a relatively large amount of home visiting was done.

The major nursing needs for a group of eight patients dealt with social problems present within the patient's environment. All patients in the study group had some social difficulties, such as income, housing, or family problems. But for the eight patients, social problems were of such magnitude that they could not concentrate effectively on their illnesses. The nurses had to assist these patients with their social problems before attempting to improve the patient's physical status. Nurses assisted both in obtaining referrals to social workers and social agencies and in motivating the patients to follow through with the referrals.

For a group of 13 patients, the major nursing need was for help with health problems

Table 4. Major problems comprising nursing needs of patients in congestive heart failure followup program and average number of nursing services delivered per month, New York City, January 1964–September 1966

Major problems comprising nursing need	Number of patients	Direct nursing services		Indirect nursing services	
		Average per patient	Average to total group	Average per patient	Average to total group
Adherence to treatment plan	33	3. 7	122. 1	1. 2	39. 6
Management of active cardiac disease	13	6. 0	78. 0	2. 2	28. 6
Emotional problems	13	4. 4	57. 2	1. 6	20. 8
Social problems	8	3. 4	27. 2	1. 3	10. 4
Management of noncardiac disease	13	3. 7	48. 1	1. 2	15. 6
Minor intermittent problems (supportive maintenance)	14	2. 5	35. 0	. 6	8. 4
Other [1]	2	3. 7	7. 4	1. 2	2. 4

[1] One could not be contacted; for the other, the major need was nursing service to another family member.

other than their cardiac diseases. Since there was a wide diversity of diagnoses within this group, there was also a wide diversity of specific nursing needs. For these patients, nurses spent their time communicating with the numerous physicians treating the various diseases. Since frequently several physicians participated in the medical care of a single patient, the nurse played a central, coordinating role.

Finally, for a group of 14 patients, no major acute nursing need was identified; these patients seemed to be coping with their illnesses fairly well and did not need much outside assistance. However, these patients occasionally used the program services to obtain medications or clinic appointments. For these patients the nurses served primarily as a point of easy contact with the hospital and its physicians; the actual services nurses provided were usually limited to a specific request and were fairly brief in duration. However, the knowledge of the availability of the nurses served to reassure and relieve many patients in this group of a significant amount of stress.

Discussion

The experiences of 2½ years of a public health nursing followup program operating from a hospital outpatient clinic point to the value of such a program in reducing morbidity from chronic congestive heart failure. Since the number of patients with chronic congestive heart failure increases daily, since the difficulty in finding hospital beds for them continues, and since the cost of medical care in hospitals continues to rise, it seems only natural that more anticipatory programs will be developed in urban hospital clinics.

The largest segment of nursing time in the program was spent to improve patient compliance with a treatment regimen. Patient education and motivation absorbed most of the nurses' time and energies. This distribution of nursing effort was a direct response to evident needs of the patients. It would seem that future programs of this kind dealing with chronic cardiac patients should be prepared for a demand for such nursing services and should take special steps to improve staff efficiency in the areas of patient education and motivation.

In our project, patients whose major nursing needs arose from the problems of managing their congestive heart failure required the greatest concentration of nursing services per patient and the second largest portion of nursing staff time. However, we feel that an even greater amount of nursing time and skill would have been required by these patients had it not been for the program's hospital base. The fact that the program was based in the hospital made physician contact relatively easy and increased the value of physician contact when made. It also made the other hospital services involved in care of the patient more easily available and readily assimilated into a cooperative treatment plan for him. This does not mean that the nurses must be employees of the hospital itself, but rather that the hospital base for programs of this kind is extremely important. There is no reason why nurses from a community nursing agency could not be used in such programs.

In this project, we did not attempt to use nonprofessional workers, since the stated objective dealt with the effect of public health nursing followup. However, it seems obvious that many services provided by the nursing staff could have been carried out by nonprofessional assistants working under proper supervision. After the period of initial nursing evaluation and assessment and the development of nursing goals, many routine services related to maintaining effective contact between patient, nurse, and hospital could probably be handled by an assistant. The development of a role for the assistant in anticipatory programs for patients with chronic diseases of all kinds is an intriguing and important challenge for public health nursing.

We also found that many of the hospital administrators and medical staff had never come in direct contact with a public health nurse before this program and had little idea of her potential in caring for patients. Since the followup program had a hospital base within the outpatient department, the nurses were able to meet daily with other members of the hospital staff and carry out a program of practical education with regard to public health nursing and the problems of implementing medical care outside the hospital.

Probably even more important, the presence of the public health nurses in the hospital served

as a daily reminder to all hospital personnel of the community aspects of medical care. Simply by seeing the public health nurses leave the hospital to contact patients at home, hospital staff members were reminded that their patients did have homes and that the hospital's services had to be adjusted to be meaningful for patients within those homes. This is an important function for projects of this kind. Hospitals all over the country are undergoing changes, and hospital administrators are trying to discover what changes they should make in the organizational structure. A public health nursing program of this kind within the hospital serves an important educational role in helping to develop the community aspects of hospital services for the future.

Summary

A 2½-year study was conducted at St. Luke's Hospital Center in New York City to determine if the rate of admission to the hospital for congestive heart failure could be reduced by adding anticipatory public health nursing followup to the outpatient clinic routine.

The addition of this nursing followup was accompanied by a reduction in the rate of admission to the hospital for congestive heart failure for the 126 study group patients as compared to the rate of admission of the 113 control group patients.

The primary nursing need for the patients receiving public health nursing followup was for educational and motivational activities aimed at improving patient adherence to treatment regimens; the next most common nursing need was for simple supportive measures of reassurance and occasional referral for assistance with social problems. The majority of the nurses' time and energies were spent in teaching and motivational activities rather than in the provision of bedside nursing care as in a more traditional program for patients after hospitalization.

The anticipatory home care program based in a community hospital has great potential, both for improving the health status of patients with chronic illness and for bringing the hospital closer to its community.

National Library of Medicine Searches

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17–66. Sarcoidosis and tuberculosis. Mid-1963–mid-1966. 176 citations.

18–66. Sarcoidosis and infectious diseases, excluding tuberculosis. Mid-1963–mid-1966. 95 citations.

19–66. Sarcoidosis and immunology. Mid-1963–mid-1966. 135 citations.

1–67. Lung transplantation. Mid-1963–1966. 104 citations.

2–67. Effect of tetracyclines on teeth. Mid-1963–1966. 63 citations.

3–67. Computers in design of hospital or medical facilities. Mid-1963–1966. 10 citations.

4–67. Mechanism of action of general anesthetics. Mid-1963–1966. 165 citations.

5–67. Burkitt's lymphoma. Mid-1963–1966. 99 citations.

6–67. Medicine in Vietnam. Mid-1963–1966. 136 citations.