

A 1-month study in an urban-rural Tennessee county shows that non-hospitalized patients with diseases of the heart and blood vessels receive many nursing services which are specifically related to their diagnoses and significant to their welfare.

Nursing Services Outside the Hospital for Cardiovascular Disease Patients

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MORE PEOPLE in the United States are affected, directly and indirectly, by cardiovascular diseases than by any other type of illness. Each year more than half of all deaths in this country are caused by diseases of the heart and blood vessels.

Currently, no valid nationwide statistics on the prevalence of these diseases are available. It is logical to assume, however, that persons with cardiovascular disease comprise the largest single group of patients outside the hospital in need of nursing service. Many physicians, health administrators, and nurses have long been concerned with identifying specifically the elements of public health nursing care being provided to such patients.

A project to effect this identification was carried out during October 1956, when services by 71 nurses to 385 patients with cardiovascular disease outside of hospitals in Shelby County, Tenn., were studied. This area was selected when Memphis nursing groups, while planning an educational program, analyzed their own ac-

tivities and discovered that the nursing staff of the Memphis and Shelby County Health Department for several years had consistently reported about 1,000 visits a month to individuals with a diagnosis of cardiac disease. The small staff of the Visiting Nurse Association of Memphis also reported a high proportion of service to cardiovascular disease patients.

Interest in examining the nursing service comprising this sizable volume was evinced by the medical and nursing directors of the city-county health department, and by the director of the visiting nurse association. Subsequently, detailed plans for the survey were formulated in cooperation with the Heart Disease Control Program, Public Health Service.

The month of October, considered to be typical, was chosen for the collection of data, since this was normally a period in which the least interruption of the usual activities in both local agencies was expected. Data were collected by the nurses as part of their usual duties. No changes in their regular recording procedures were made except that a temporary form for use during the study month was substituted for the permanent record.

Through mutual agreement all the visits to patients with cardiovascular disease during the month were studied to determine the nursing services given to them.

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The Public Health Service had an additional long-range objective. Since the components of nursing service given to patients in relation to their cardiovascular disease had not been documented previously, the experience gathered in this study could be used in designing a schedule which other agencies might use in examining their own services to patients with cardiovascular disease.

The completed study shows only an analysis of the services that the nurse recorded during the study month. It shows neither what took place in prior visits nor the length of service already given the patients. No differential was made between new and old patients. Only those patients referred for nursing services were studied. Those who reached medical care originally through the efforts of the nurse were not revealed in the study. The study cannot be used as an index of the status of all patients in the community with cardiovascular disease.

The Patients

The clinic of the City of Memphis Hospitals was the source of medical care for 76.9 percent of the 385 patients. Only 8.8 percent were under private medical care. The remaining patients received medical care from other facilities of the city hospitals. The policies limiting the nursing program of the health department were responsible for the patients being chiefly beneficiaries of the city-supported medical facilities. Private physicians requesting nursing

services were either referred to the visiting nurse association or necessarily refused service other than for teaching purposes.

Approximately 75 percent of the patients lived within the city limits of Memphis, 12.7 percent were suburban residents, and 7.0 percent lived in rural areas, and the remainder resided in suburban-urban and suburban-rural fringe areas. Most of the patients, approximately 80 percent, lived with their immediate family or relatives; only 65, or 16.9 percent of those studied, lived alone.

Sixty-five patients (16.9 percent) were of school age. The health department's school health program in the city and county included responsibility for the followup of children with rheumatic fever, rheumatic heart disease, and congenital heart anomalies with both their parents and their teachers. The nurses' records indicated that conferences with the teacher were held to discuss the care of two children in relation to heart disease. However, since the study was made during the second month of the school year, such conferences may have occurred with greater frequency the preceding month. Also school records, which may have indicated other nurse-teacher conferences, were not included in this study.

Of the 385 patients, 70.6 percent were past age 45 years, and 43.6 percent were past 65. Only 8.3 percent were under 5 years of age, and 15.8 percent were between 5 and 15. Approximately one-fourth of the total patients were under 15 years of age (table 1).

Table 1. Race, sex, and age of cardiovascular disease patients

Age (years)	Total		White				Negro			
	Number	Percent	Male		Female		Male		Female	
			Number	Percent	Number	Percent	Number	Percent	Number	Percent
All ages.....	¹ 385	100.0	30	100.0	39	100.0	168	100.0	147	100.0
Less than 5.....	32	8.3	1	3.3	1	2.6	12	7.1	17	11.6
5-14.....	61	15.8	6	20.0	8	20.5	24	14.3	23	15.7
15-44.....	20	5.2	0	0	0	0	8	4.8	12	8.1
45-64.....	104	27.0	6	20.0	3	7.7	45	26.8	50	34.0
65-74.....	101	26.2	6	20.0	14	35.9	52	30.9	29	19.7
75 and over.....	67	17.4	11	36.7	13	33.3	27	16.1	16	10.9

¹ Includes 1 white patient, sex not indicated.

Table 2. Diagnosis of cardiovascular disease patients

Type of cardiovascular disease	All patients		Patients with congestive failure				Patients without congestive failure			
	Number	Percent	No other complications		Other complications ¹		No other complications		Other complications ¹	
			Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total.....	385	100.0	143	100.0	62	100.0	125	100.0	55	100.0
Arteriosclerotic.....	95	24.7	56	39.2	19	30.6	17	13.6	3	5.5
Arteriosclerotic and hypertensive.....	43	11.2	19	13.3	12	19.4	6	4.8	6	10.9
Arteriosclerotic and other heart disease.....	10	2.6	4	2.8	5	8.1	1	.8	0	0
Hypertensive.....	76	19.7	34	23.8	15	24.2	21	16.8	² 6	10.9
Rheumatic heart disease.....	41	10.6	7	4.9	³ 2	3.2	24	19.2	8	14.5
Congenital heart disease.....	45	11.7	2	1.4	1	1.6	38	30.4	4	7.3
Other heart disease.....	15	3.9	10	7.0	3	4.8	2	1.6	0	0
Undiagnosed heart disease.....	36	9.4	11	7.7	5	8.0	16	12.8	4	7.3
Cardiovascular disease other than heart.....	⁴ 24	6.2	0	0	0	0	0	0	24	43.6

¹ Includes patients with cardiovascular disease other than heart and with medical conditions associated with cardiovascular disease; also includes 16 patients with stroke.

² Also rheumatic heart disease.

³ Also congenital heart disease.

⁴ Includes 10 with acute rheumatic fever.

Table 2 shows that 38.5 percent of the patients were diagnosed as having arteriosclerotic heart disease: 24.7 percent were diagnosed as being only arteriosclerotic, 11.2 percent as arteriosclerotic and hypertensive, and 2.6 percent as having arteriosclerosis and other heart diseases. One-fifth were diagnosed as having only hypertensive heart disease; one-tenth had rheumatic heart disease; and more than one-tenth had congenital heart anomalies. Ten patients were under treatment for acute rheumatic fever. The specific heart disease had not been determined for about one-tenth.

The heart disease in 205, or 53.2 percent, was complicated by congestive heart failure. Less than one-third (117) of all the patients had other complications such as diabetes and cerebrovascular disease.

Who Made Visits

A total of 71 nurses participated in the study. Of this number 55 were professional nurses employed by the health department for general public health service. In addition, 2 professional nurses and 1 licensed practical nurse

were assigned solely to give home service to patients attending the clinic of the City of Memphis Hospitals who required parenteral diuretics. Five clinic nurses of the health department participated in the study. The visiting nurse association's staff of eight professional nurses contributed their records for analysis.

The public health nursing staff of the health department was distributed over the entire city and county. The three specialized field nurses served chiefly in the metropolitan area and the visiting nurse association's service did not extend beyond the city of Memphis.

More than half (55.6 percent) of the patients depended upon the 55 public health nurses as their one source of service. Visits were made as a part of the nurses' routine daily activities. An additional 3.3 percent of the patients visited by these nurses were also served by the 3 specialized nurses on the health department staff. A few patients went to neighborhood clinics conducted by the health department.

A total of 1,125 visits were made to cardiovascular disease patients during October 1956. The 63 health department staff nurses reported

1,009 visits, or 89.7 percent of the total, and the 8 of the visiting nurse association, 116, or 10.3 percent.

During 1956, the health department staff reported 10,779 visits to cardiovascular disease patients, 7 percent of the total visits for all purposes during that year. Of the total visits to patients with cardiovascular disease, 9.4 percent were made during the month of the study.

In 1956 the visiting nurse association made 1,234 visits to patients with cardiovascular disease, with about one-tenth of them in the month of the study. Visits to such patients amounted to 18.5 percent of the total made to all patients by the staff that year.

What the Nurse Did

Since the chief objective of this study was to determine the scope of services given the cardiovascular patient through a nursing visit, each visit was carefully analyzed.

Through pretest procedures and a review of current medical practice 46 specific possible nursing service items were identified and incorporated in the study code. Provisions for services given but not identified in the preliminary stage of the study also were made.

These specific items were grouped under the following seven broad classifications.

Observations significant to the patient's cardiovascular disease diagnosis

1. The patient's practice in following medical orders concerning medication, diet, and rest-activity regimen.
2. The presence or absence of signs and symptoms expected in congestive heart failure or of other cardiovascular diseases or of other illness.
3. The patient's temperature.
4. Any history relating to the occurrence of rheumatic fever or the presence of pregnancy.
5. Any emotional reactions of the patient or other observations which might have significance in his disease.

Health counseling in applying medical advice or prescription

1. Helping the patient maintain normal nutrition and at the same time follow a low-sodium or low-calorie diet.

2. Working with him to achieve the kind and amount of rest and the activity prescribed.

3. Encouraging him in carrying out normal activities of daily living.

4. Listening to the patient tell his fears of sudden death or other concerns related to his disease and giving him support in maintaining emotional health.

5. Explaining penicillin and sulfonamide regimens prescribed as prophylaxis for rheumatic fever susceptibles, or prior to dental extractions and other surgical traumas for the prevention of subacute bacterial endocarditis in those with rheumatic fever or congenital heart anomalies.

6. Emphasizing the need for a separate bed for persons susceptible to rheumatic fever.

7. Stressing the importance of maintaining a high level of immunizations for those with rheumatic heart disease or congenital heart anomalies.

8. Calling attention to ways of preventing upper respiratory infections.

9. Interpreting a physician's orders.

10. Encouraging the patient to continue under medical supervision.

Drugs administered or instruction given about the medication prescribed

The drugs specifically related to the treatment of cardiovascular diseases and to the prevention or treatment of their complications were identified. They were drugs which physicians commonly prescribed for patients who were referred to the public health nurses for home supervision. They included diuretics, digitalis, insulin, prophylactic penicillin, and sulfonamide drugs. Services were administering the drug or teaching the patient how to take it.

Observations of reactions to treatment

1. Watching the rhythm, quality, and rate of pulse.
2. Taking the apical pulse.
3. Measuring the blood pressure.
4. Weighing or arranging for the weighing of the patient.
5. Noting nausea or gastric disturbance, dizziness, disturbed vision, hemorrhage, condition of skin, or any other observable reaction.

Referral for medical care

Facilities to which patients were referred were specifically identified in this category as treatment and diagnostic clinics, hospitals, emergency services, private physicians, dental services, and health department clinics.

General nursing care

1. Giving or demonstrating the bed bath.
2. Giving the patient or reviewing with him and the person who takes care of him the massage and exercise prescribed.
3. Positioning the patient to prevent contractures and thrombosis or for more comfortable breathing.
4. Giving an enema.
5. Caring for a retention catheter.
6. Teaching other specific nursing procedures.
7. Arranging for care such as home supervision of the patient or arranging transportation to medical facilities or to neighborhood clinic for medication.

Referral to other special services

Specifically identified were speech therapy services, recreation visitor, home teachers, the American Heart Association's Heart of the Home classes, and social agencies.

Services Provided

The 385 patients received 7,571 services during 1,125 visits (table 3). This represents an average per patient of 19.7 services of all types

and of 2.9 visits. The average of all types of services per visit was 6.7.

Of the seven classifications, those services grouped as "observations significant to the cardiovascular disease diagnosis" ranked highest with 355, or 92.2 percent, of the patients receiving service. Services of this type averaged 6.5 per patient and 2.3 per visit. But the average number of visits ranked third with 2.8 visits per patient.

The second largest number of patients, 349, or 90.6 percent, were given services under the classification of "health counseling." The average number of visits in this group, however, ranked fourth with 2.5 visits per patient, and the average number of services per visit, 1.9, ranked third. Services per patient averaged 4.6.

A total of 249 patients (64.7 percent) were administered a drug or instructed about self-administered drugs. They received the highest average of services, 8.0 per patient, and averaged 2.2 services per visit. Slightly more than one-half (51.2) of the patients were given a subcutaneous or intramuscular injection of a diuretic by the nurse.

"Observations of reactions to treatment" were reported for approximately the same number of patients, 247, or 64.2 percent. The reactions identified for the study were of specific significance to treatment which might be prescribed for the cardiovascular diseases. Not all possible reactions were included. An average of 1.4 observations per visit were reported.

About one-fourth, 93, of the patients were re-

Table 3. Nursing services provided cardiovascular disease patients

Classification of services	Number			Average number		
	Patients	Services	Visits	Services per patient	Visits per patient	Services per visit
All types.....	385	7, 571	1, 125	19.7	2.9	6.7
Observations significant to the cardiovascular disease diagnosis.....	355	2, 322	994	6.5	2.8	2.3
Health counseling.....	349	1, 619	865	4.6	2.5	1.9
Drugs administered or instructions given.....	249	1, 984	885	8.0	3.6	2.2
Observations of reactions to treatment.....	247	1, 216	845	4.9	3.4	1.4
Referral for medical care.....	93	115	112	1.2	1.2	1.0
General nursing care.....	72	294	165	4.1	2.3	1.8
Referral to other special service.....	16	21	21	1.3	1.3	1.0

ferred for medical care. Of these, 3 patients were referred for emergency medical service, 4 to dental care, and 6 to private physicians. Most of the referrals, 77, were to the city hospitals' outpatient clinic; 3 were to other clinics.

Seventy-two patients (18.7 percent) were given 294 services classed as "general nursing care" during a total of 165 visits. This amounted to an average of 2.3 visits per patient and 1.8 services per visit. Each of the 72 patients received an average of 4.1 general care services.

Sixteen patients (4.1 percent) were referred to community service agencies, but these referrals required 21 visits. One patient was referred to the home teacher service of the board of education.

The fact that a single nursing visit normally was composed of multiple services to one person and that subsequent visits to the same patient might differ in content made interpreting the data difficult. Since scope of service and not quantity alone was to be measured, the specific service item with low frequency might prove to be more significant to cardiovascular disease control than some for which more activity was reported. For example, in this study two patients when visited were found to be pregnant. Since pregnancy represents a stress factor in the woman with heart disease, this observation made early and brought to the attention of the physician could mean prolonged life for the mother. Each item, therefore, maintained its identity in the final tabulations.

All but two services anticipated at the beginning of this study were identified in the patients' records. The observation of the presence or absence of hemorrhage as a reaction to treatment and the administration of penicillin prophylaxis to persons susceptible to rheumatic fever were not reported.

The service most frequently reported was observation of signs and symptoms of congestive heart failure. Slightly more than three-fourths (77.7 percent) of the 1,125 visits recorded during the study included notations regarding these signs and symptoms. In the absence of these symptoms, the nurse may have omitted them from the record.

More than half the patients were under treatment for congestive heart failure. The 10 serv-

ices most frequently given, according to the nurses' records, were related to the treatment of this complication. Diuretics were given intramuscularly or subcutaneously to 197, or 51.1 percent, of the patients. There was indication that teaching about oral and injected diuretics had taken place on visits to 213 patients for whom the medication had been prescribed. The weight of the patient was noted on 106 visits (13.5 percent) at which diuretics were administered in the home.

Oral diuretics were used by 182 patients. On 25 visits nurses noted that patients had experienced gastrointestinal disturbances, a reaction that may have been related to the digitalis or the oral diuretic the patient was taking.

The prescribed digitalis was the basis for three of the services occurring most frequently. These were teaching the patient about the medication, which occurred on 451 visits; observing the practice in taking the drug, reported 585 times; and counting the pulse. The pulse rhythm was noted on 150 visits, or 19.3 percent of the 775 times the pulse was counted.

Other observations such as the dryness of the skin, cramping of the legs, and weakness were also noted in the patient's reaction to his treatment.

Questions and Further Studies

Certain questions about the continuity of care for other patients with cardiovascular disease can be raised as a result of this study. If the 385 patients used the types and amounts of nursing service reported in the 1 calendar month, what happened to the larger number of persons in the community who also had cardiovascular disease?

The prevalence of cardiovascular disease in any given community is difficult to ascertain, since specific diagnostic techniques for all cardiovascular diseases applicable to mass population groups are yet to be developed. Mortality data in cardiovascular diseases are not adequate in determining prevalence but do indicate to some degree the extent of the problem among a population group. In 1956 there were 2,492 deaths from cardiovascular diseases in Memphis and Shelby County; nursing services outside of the hospital were given to only 639 patients in this disease category.

What needs for nursing service for those with cardiovascular disease were not filled by the two established community agencies? Scientific developments and medical practice are major factors influencing the kinds and amount of nursing required by patients. The change in the philosophy in the rehabilitation of the cardiovascular disease patient has cut the length of hospitalization. Now he is sent home with a prescribed regimen of medication, diet, rest, and activity. He is encouraged toward activity within his therapeutic and functional classification. He is taught to watch for his own level of tolerance and when to report to his physician.

He is responsible for taking his own medication. Oral diuretics are being perfected and used more generally for maintenance of dry weight. The patient or a member of his family must manage the selection and preparation of a special diet. The success of his treatment depends on the patient's and his family's understanding of the prescribed therapy and their ability to obtain the necessities for carrying it out.

Consequently, the need for nursing services shifts from the hospital to the home. In the hospital the dietary and social service departments join the nursing and medical services to meet the needs of patients. What facilities exist to meet these needs after the patient leaves the hospital?

This study represents a sampling of nursing services given in a community as recorded during 1 calendar month. Comparable studies in other communities with different characteristics and plans of public health nursing administra-

tion are needed in order to identify more completely the nursing services outside the hospital received by patients with cardiovascular disease.

Other studies are needed to determine the specific needs of cardiovascular disease patients outside the hospital; to identify current facilities in the community to meet these needs; and to determine the kinds and amounts of additional services required to meet the special needs of cardiovascular disease patients.

Conclusion

This study in Memphis and Shelby County has shown that nurses employed by tax-supported and private agencies perform services specifically related to the particular diagnosis of cardiovascular disease patients. It has shown also that when frequent visits for the purpose of giving medication are not required, the public health nurse in her usual activities performs services significant to the welfare of the patient with cardiovascular disease. It has demonstrated that agency policy controls the kinds and amounts of services the nurses give patients in this disease category.

The study has further demonstrated that the public health nurse recognizes the emotional and social problems which the cardiovascular disease patient faces when he is outside the hospital.

The study can give nursing educators some guidelines for preparing student nurses better to serve cardiovascular disease patients at home. In addition, it can serve as a basis for developing a continuing inservice plan for staff education in cardiovascular disease control.

Signs

and

Symptoms

of trends in public health

Tranquille Sanatorium, a tuberculosis treatment center in Victoria, B. C., is to become a school for mental defectives because the mortality rate for tuberculosis is the lowest in history.

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Poliomyelitis in California During the Pre-vaccine Period, 1910-1954, 72 pp., offers an epidemiological analysis of records of the California State Department of Public Health.

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An Anti-Coronary Club was organized in 1957 by the New York City Health Department to study the relationship between low-fat diets and low-cholesterol levels with low prevalence of heart disease. Coronary occlusions occurring among its 450 members, some of whom have heart disease, will be compared with those in the general population. A cardiologist and nutritionists from the city health department check weight and diet regularly.

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The human eye needs twice and sometimes three times as much light as it usually gets in today's living and working conditions, reported University of Michigan's Dr. H. Richard Blackwell after studying lighting for 8 years.

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It is dangerous to smoke while driving, says the Vision Observation Institute of Philadelphia, Pa. Heavy smoking can produce 10 percent saturation of hemoglobin with carbon monoxide instead of oxygen, and 3 percent can “measurably impair” sharpness of vision and depth perception.

The number of unmarried mothers 15-17 years old increased by 40 percent in the 1946-56 decade, states Katherine B. Oettinger, chief of the Children's Bureau. U. S. Commissioner of Education Lawrence G. Derthick agrees with her that the country's school system should offer more assistance to these unmarried mothers.

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The National Tuberculosis Association's annual report estimates 69,000 new cases of tuberculosis and 14,000 deaths in 1957 in Americans. There are 150,000 known cases of tuberculosis and perhaps 100,000 others.

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Dr. Mark Keller and Vera Efron report in the *Quarterly Journal of Studies on Alcohol* that 5 in every 100 Americans past 20 years of age were considered alcoholics in 1956. The total number of alcoholics was 6,269,000. Men outnumbered women 6 to 1.

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The New Jersey State Department of Health has published an 11-page report on 4,077 agricultural migrants. The report covers venereal disease, serologic tests, epidemiological followup, tuberculosis control, and maternal and child health services.

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In 1936, fat in some form constituted 38 percent of the calories in the average diet; in 1948 it was 42 percent, and today it is 44 percent, according to the Food and Nutrition Board of the National Academy of Sciences.

The Colorado State Department of Health produced a sound and color film in 1958 entitled “Colorado Cares.” The film describes formation of a county migrant council and the steps taken to improve conditions for migrants and their families.

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George C. Rich, Office of Radiological Defense, Battle Creek, Mich., reports that the Federal Government has distributed 130,000 devices for detecting and measuring fallout to civil defense organizations. Kits for training monitors are being distributed to 6,000 high school students. An additional 81,000 will be distributed next year.

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Fire Commissioner Edward F. Cavanagh, Jr., blames television for the 90 percent increase in kitchen fires in New York City. Most of the fires occur between 5 and 7 p.m. Sixty-five percent of all fires result from cigarettes. Electrical defects run second.

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Recommended Methods for the Microbiological Examination of Foods, edited by Dr. Harry F. Goresline, has been published by the American Public Health Association. The book is a guide for public health laboratory personnel in examination of foods and food products.

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All New Jersey residents 25 years old or older who were not receiving eye treatment were entitled to a free examination during the week of September 22, 1958. Sponsored by the New Jersey Medical Society, the plan enabled residents to obtain examinations at designated hospitals in each county. Cooperating in the program were the New Jersey Academy of Ophthalmology and Otolaryngology, State Commission for the Blind, State Department of Health, and the New Jersey Hospital Association.

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New York State Activities in the Field of Aging, 1955-1958, 44 pp., summarizes the State's record of progress in the past 4 years.