Remunerative homework was found feasible for chronically ill, homebound patients during 2½ years of experience with a group generally considered too incapacitated for vocational activities.

Jobs for the Homebound

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JOBS FOR THE HOMEBOUND is a 5-year demonstration project in vocational rehabilitation operated by the home care department of Montefiore Hospital in New York City. The project is a direct outgrowth of the department's 11 years of experience in providing comprehensive medical care at home to chronically ill, medically indigent patients.

The home care department provides treatment for 85 to 95 patients in the Bronx and upper Manhattan. The patients' illnesses are of such severity that they are unable to attend outpatient clinics and can be maintained at home only with close medical supervision. Care is provided by a medical-social team composed of physicians, social workers, nurses, recreation and art therapists, and physical therapists.

Basic to the philosophy of the home care department is the belief that an indispensable component in medical treatment of the patient is helping him cope with the overwhelming emotional, social, and economic needs which arise with long-term illness. One of the most prevalent of these is the patient's need for meaningful activities appropriate to his physical condition. Without such activity the patient becomes apathetic and withdrawn, and he may suffer both medically and psychologically.

From the inception of home care, services included a program of diversional activities, and this provided satisfactory occupation for the majority of patients. However, some patients seemed unable to derive satisfaction from leisure-time activities, and from them came a small but very steady stream of requests for "real work." Unfortunately, the community had no facilities for the vocational rehabilitation of homebound patients who were as sick as those found in home care. A survey of rehabilitation facilities for homebound patients in other parts of the country showed that the type of patient seen in home care was consistently excluded from vocational rehabilitation services.

It was decided that the home care patients' persistent requests for work could not be ignored and that investigation of the possibility of their engaging in economically productive activity was warranted. The jobs for the homebound project was initiated on March 1, 1956. The investigation was supported, in part, by a demonstration special project grant from the Office of Vocational Rehabilitation, Department of Health, Education, and Welfare. The New York Chapter of the Arthritis and Rheumatism

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Objectives

The objectives of jobs for the homebound are:

- To demonstrate the possibilities in vocational rehabilitation for homebound, handicapped individuals with low productive capacities, exploring the potential of such persons for vocational rehabilitation and studying the individual and social effects of vocational rehabilitation on such persons.
- To develop methods for and to determine the cost of providing vocational rehabilitation services to this type of patient.
- Through the information thus obtained, to encourage and facilitate the provision of vocational rehabilitation services to homebound persons presently not considered eligible for these services.

Methods and Organization

Jobs for the homebound functions as an integral part of the home care department, adding vocational rehabilitation to the treatment program of patients for whom this service is indicated. The project began in response to persistent requests from some patients, estimated originally at 30 percent of the total number receiving home care. The idea of working does not occur to many home care patients; generally they are seriously ill persons whose medical conditions are irreversible. Each home care patient who expresses a desire to work and for whom the staff believes work would be beneficial is admitted to the project.

Following admission, the patients are carefully evaluated. Medical evaluations are based on a patient's medical history, results of current physical examination, diagnosis, and an analysis of physical capacities. The psychological and social evaluations include the results of the thematic apperception test and sentence completion test covering attitudes toward illness, a guided interview of work history with emphasis on the meaning of work to the patient, a social data questionnaire, a housing evaluation, and an analysis of patient-family relationships. The scores and observations on intelligence, interest, skill, and aptitude tests and the education, work experience, and interests revealed in the vocational counseling record are considered in the vocational evaluation of the patient. The project staff then attempts to develop appropriate work plans for the patient.

Patients who in the course of the evaluations, or later, proved to lack ability or incentive to work are carried as inactive participants on the project. This procedure is followed so that the characteristics of the inactive participants can be compared with those of patients who accepted work, and the proportion of the potential candidates for work who subsequently proved unsuitable for work can be ascertained.

Detailed records of work activities are maintained. The patients' reactions to work are continuously observed by home care and project staff members. Medical, psychological, and social effects of work on the patient are formally evaluated yearly.

The co-directors of jobs for the homebound are the home care executive, who is a physician, and the home care supervisor of recreation and art therapy. The professional staff is composed of a vocational rehabilitation specialist and a design specialist. A clinical psychologist, a sociologist, an internist, and a statistician are consultants to the project. The nonprofessional staff consists of a secretary and an assistant workshop foreman who handles stock, pickup, and delivery.

An advisory committee of community leaders in business, industry, and philanthropy who are members of the Montefiore Hospital Board of Directors provides overall guidance for the project and specific assistance in matters pertaining to business and industry.

Characteristics of Patients

Of the 194 patients admitted to home care during a 2½-year period from March 1956 to September 1958, 73 were considered for the project, 34, or 17.5 percent, were admitted, and 39, or 20.1 percent, of those suggested were not admitted (table 1).

Patients were discharged from the project when discharged from home care. Of the 34 patients admitted, 10 were hospitalized during participation and were readmitted to the proj-

Table 1. Reasons by frequency for not admitting 39 home care patients to the project, October 1956–September 1958

Reasons [1]	Number of patients	Percent
Staff opinion	39	65.0
Physical basis	21	35.0
Insufficient physical capacity	7	
New home care patient; staff wanted to observe performance in recreational activity before exposing to work	7	
Patient extremely disabled and not capable of performing work currently or potentially available; admission held until promising work found or devised	3	
Patient needed physical therapy or training in activities of daily living or both before work activity	2	
Patient physically able to work outside the home	2	
Psychological basis	18	30.0
Patient insufficiently motivated	4	
Patient would resent the simple type of work which he was capable of performing	4	
Patient currently too absorbed in medical or personal problems to concentrate on work	3	
Independent activities and interests appeared to satisfy patient's occupational needs	3	
Staff opinion—Continued		
Psychological basis—Continued		
Insufficient mental capacity for work due to brain damage	2	
Patient would be unduly upset should he have difficulty in performing work assigned	1	
Recreational therapy appeared to fill patient's occupational needs	1	
Patient refusal	13	21.7
Felt himself to be too ill or disabled	3	
Not interested in type of work available	1	
Did not want to be tied to a work schedule	1	
Did not want to return a portion of earnings to department of welfare	1	
Would consider only return to former employment	1	
Did not feel he needed money	1	
No reason given	5	
Other	8	13.3
No worker to carry patient due to temporary staff vacancy	4	
Patient to be discharged from home care in near future	3	
Patient died after referral and before admission	1	
Total	[1] 60	100

[1] Average number of reasons for not admitting patients: 1.5.

ect when readmitted to home care, and 12 were permanently discharged. Seven died, four improved sufficiently to attend outpatient clinics, and one was discharged because he could afford to pay for private medical care.

Of those admitted, 19, or 55.9 percent, were women and 15, or 44.1 percent, were men. (Fifty-seven percent of the patients admitted to home care during the 2½-year period were women.) The median age of the patients was 51.5 years. More than half, 19, were married, 8 were widowed, 1 was divorced, and 6 were single.

Heart disease was by far the most prevalent diagnostic category among patients. Fifteen, or 44.1 percent, of the patients had heart disorders; nine of these had rheumatic heart disease. The others according to diagnostic categories included pulmonary diseases, four; arthritis, four; diseases of the circulatory system, three; and metabolic diseases, three. The remaining categories with one patient in each were allergies, diseases of the muscular skeletal system, diseases of the central nervous system, cancer, and neurosis.

Three-fourths of the patients had from one to six complicating conditions in addition to the primary diagnosis. Although a few patients were able to leave their homes for short periods daily, the majority were totally homebound. Eighteen were ambulatory in their homes, 10 ambulated with difficulty, 4 were wheelchair-bound, and 2 were bed-bound; 27 had relatively good use of their hands and, 7 had moderately or severely limited use.

The patient's physician did not recommend

Table 2. Patient performance of industrial homework contracts,[1] October 1956–September 1958

Product and operations	Skills required	Median number hours worked per patient per day	Total earnings per week per patient		Subsidy per week per patient	
			Range	Median	Number patients subsidized [2]	Percent total earnings subsidized (median)
Bag seals: hand assembling of three components, bulk packaging.	Moderate finger and manual dexterity.	2	$4. 60–12. 60	$6. 95	6 (6)	33
Plastic key chain puzzle: hand assembling of six components, unit packaging.	Moderate degree of finger and manual dexterity.	1½	$2. 80–4	$3. 40	2 (4)	28
Christmas tags: counting assorted tags, inserting in cellophane bags, heat sealing, packing bags in display cartons.	Moderate gross dexterity	2	$2. 60–9. 30	$5. 60	4 (7)	50
Metal souvenir party favor: gluing decoration on metal can opener, unit wrapping, and packaging.	Moderate degree of finger and manual dexterity.	1¾	$10	$10	0 (1)	0
Hospital linens: machine sewing, seaming, hemming, counting, folding.	Moderate degree of finger and manual dexterity; experience with sewing machine.	1½	$2–9. 60	$4. 90	5 (6)	34
Handkerchiefs: hand folding, assorting, pinning, carding in units.	Moderate degree of finger dexterity, unimpaired vision.	2	$4. 40–11	$7. 20	3 (6)	18
Display card: stringing plastic cord through 8 holes on card, bulk packaging.	Slight degree of finger and manual dexterity.	3	$0. 52–19	$8. 44	11(16)	30
Milan straw leaf decoration: straw laced around pattern, hand sewn, and shaped into millinery leaf.	Moderate to good degree of finger and manual dexterity; visual acuity.	1½	$1. 20–15. 60	$6. 25	4 (7)	62
Butter knife set: wrapping gift box, tying with bow.	Moderate degree of finger and manual dexterity.	2½	$8	$8	0 (1)	0

[1] For one contract, preparing a visual display, three patients worked on a sample only.
[2] Figures in parentheses indicate the number of patients engaged in each contract.

rigid restrictions on activity for the majority of patients with heart disease or for those in the other diagnostic categories. The patient was allowed to set his own limitations on the number of hours he could work and the movements he could make. This flexible approach was possible because the physician visited the patient frequently and was aware of the patient's work and of any impact it had on his medical condition. Also, the vocational worker, in close contact with the physician, could demonstrate any work being considered for a patient and ascertain the physician's approval or disapproval.

The psychologist found that the patients' emotional attitudes were strongly influenced by their illnesses, and their attitudes toward illness were quite solidly fixed since they had been ill for months or years before admission to the project. The most prevalent emotional response to illness was depression. The most frequent bases for depression were absence of hope for cure, the feeling of being a drain on the family, and inability to continue activities,

Table 2. Patient performance of industrial homework contracts,[1] October 1956–September 1958—Continued

Product and operations	Skills required	Median number hours worked per patient per day	Total earnings per week per patient		Subsidy per week per patient	
			Range	Median	Number patients subsidized [2]	Percent total earnings subsidized (median)
Handkerchiefs: hand folding, counting, and unit boxing.	Normal finger and manual dexterity.	1½	$3–5. 60	$4. 30	2 (6)	45
Christmas cards: counting, and unit packaging.	Moderate gross dexterity.	3	$2–4. 63	$2. 30	3 (4)	36
Envelopes: addressing by hand from printed alphabetical file card.	Literacy; clear handwriting; moderate degree of finger dexterity.	3½	$0. 40–22	$8	4 (7)	12
Plastic hankings: folding, tying with rubber band, bulk packing.	Normal finger and manual dexterity.	2	$2. 75	$2. 75	0 (3)	0
Dressing packages: counting dressing components, unit wrapping, bulk packaging.	Normal finger and manual dexterity.	3	$1. 60–8. 80	$4. 50	8 (8)	40
Linked key chain and charm: assembling three component parts, bulk packaging.	Normal finger and manual dexterity.	2	$4. 20–8. 53	$6. 50	0 (8)	0
Plastic garment bags: hand folding, counting, bonding, unit wrapping, and packaging.	Moderate finger and manual dexterity.	4	$4–22	$12. 25	4 (5)	33
Closet accessory dress clips: counting, packaging in cellophane bags.	Slight to moderate gross dexterity.	1	$3–5. 20	$4. 40	1 (1)	65
Metal rings and tie clips: piercing and monograming according to specifications.	High degree of finger and manual dexterity; jewelry experience.	1½	$6	$6	0 (1)	0
Cardboard washer disks: punch die-cut disks from cardboard insert tack, bulk packaging.	Normal to fine finger and manual dexterity.	3	$8. 76–32. 88	$14	2 (5)	42

such as work and homemaking, which were lifelong criteria of value and acceptability.

The sociologist's data showed that the majority of project participants were from the lower or working classes. Their educational backgrounds were limited, the average number of years of schooling being 8.9. Most had done semiskilled or unskilled work prior to illness, a few were former white collar workers, and none had followed professions. Their median annual earnings prior to illness were $2,375.

More than one-third of the patients were born outside the United States, 11 of these in Eastern Europe. Fourteen were Jewish, 6 Italian, 3 Negro, and the others were scattered throughout a number of ethnic and religious groups.

The composition of the group mirrored the ethnic and religious characteristics of the community served by Montefiore Hospital. In this area are predominantly Jewish neighborhoods, predominantly Italian neighborhoods, a few scattered pockets of Irish, and one large traditionally Jewish area increasingly populated

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by Negroes and Puerto Ricans. In comparison with the United States population, there was a disproportionately high number of foreign born among the participants.

Work Activities

The most important and dramatic outcome of the project to date is the finding that there is available work which can be performed by patients generally considered to be too incapacitated to work. In a 1-year period 17 such patients put in 3,306 man-hours of productive work and earned from $1.20 to $32.88 per week.

There were two types of work for patients in the project: performance of simple industrial processes on jobs subcontracted from local industries; and individualized work activities for patients who were unsuited to industrial homework because of physical disability or because they had special talents and interests. Industrial homework was handled by the vocational rehabilitation specialist and individualized work plans by the design specialist.

Twenty-two patients engaged in work activity extensively, and 11 rejected work on all or the majority of occasions when it was offered. One patient had not yet been offered work because of recentness of admission.

All 22 patients who engaged in work activity worked on at least one industrial homework job. Work plans were also developed for 16 of them by the design specialist. Frequently the work plans originally developed for individual patients subsequently proved applicable to project patients generally.

Industrial Homework

Twenty industrial homework contracts were obtained in the 2½ years. Most of the work consisted of simple, nonskilled operations. Typical jobs included packaging of Christmas tags, assembly of key chains, and sorting and packaging of garment bags and hospital dressings (table 2).

More industrial homework was found than had been expected since a very small and limited "work force" could be offered to prospective employers. While it was not always possible to maintain a steady flow of suitable work for all patients, there was always enough work for at least half the patients.

A patient with rheumatoid arthritis works in bed. She staples a display card, homework obtained through an industrial contract.

Industrial homework contracts were more readily obtainable from sheltered workshops in the community and from Montefiore Hospital than from industry. All except 4 of the 20 contracts obtained came indirectly from industry through a sheltered workshop or from Montefiore Hospital.

The majority of the contracts were of relatively short duration and involved small amounts of money. The median length of the contracts was 5.5 weeks; the median income per contract was $23.10. More than half the contracts carried time and production quotas.

No equipment or materials other than those supplied by the manufacturer were necessary for the majority of the contracts. It was found impracticable to obtain or devise special equipment to compensate for a patient's disability; the expenditure of time and money which would

have been necessary were not justified for the short, low-paying contracts.

The ability and skill required of the workers were modest. Only two contracts required work with a high degree of finger dexterity and nearly half required only moderate finger and manual dexterity. Not all jobs were appropriate for all patients. The median number of patients for whom a contract was suitable was 5.5.

The production records of 17 patients who performed industrial homework for all or part of a 1-year period were analyzed. They worked a median of 10.25 hours per week or approximately 2 hours per day, and the number of hours was markedly influenced by the type of work performed. For example, one contract, inserting lacing through a display card, was so nontaxing that patients who customarily worked 2 to 3 hours a day worked at it for 6 to 8 hours.

In accordance with regulations of the U.S. Department of Labor, patients were paid at piece rates comparable to those paid nonhandicapped workers performing similar jobs. Patients who failed to earn an average of 40 cents an hour while working at piece rate were subsidized up to this amount, the subminimum rate approved for the project by the Department of Labor. The median earnings per patient were $4.64 per week, and the median subsidy per patient was $1.02 per week or 8 cents per hour. Approximately half of the patients consistently required fairly high subsidy; the other half, only small amounts of subsidy and only on occasional jobs.

Although all the patients were seriously ill, the range of capacity for economic productivity among them was considerable. At the top level was Mrs. A. T., 52, with rheumatic heart disease. During a typical 1-month period, she worked at several different industrial jobs for a total of 53 hours, earned $27, and required no subsidy. On the lowest level was Mr. S. R., 41, with multiple sclerosis. In 1 month he worked a total of 20 hours, earned $8, of which $5.60 was subsidy.

The work performed for a sheltered workshop demonstrated the advantages in the sharing of contracts by workshops and homebound programs. The increase in the size of the "labor force" and the diversified skills made available when workshop and homebound clients joined forces enabled the combined group to fulfill larger and more complex contracts than either could do alone.

The contracts with Montefiore Hospital for machine sewing of surgical supplies and packaging of cotton and gauze dressings demonstrated a work plan widely applicable for the disabled. This type of work is required by hospitals throughout the country and should, therefore, be available to sheltered workshops and homebound programs nationwide.

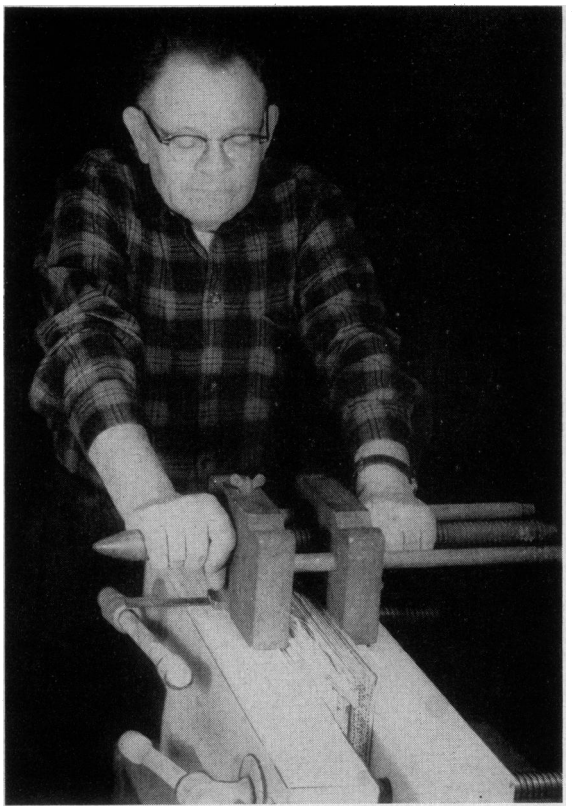
Individual Work Plans

Special work plans were developed by the design specialist for patients who found industrial processes difficult because of impairment of manual dexterity and for those who had special talents and skills and preferred more challenging activity than industrial homework.

In developing work plans for severely disabled patients, the design specialist geared her efforts to the problems presented by two women with rheumatoid arthritis. The movement of fingers, wrists, and arms was so drastically limited for these women that they represented the minimum manual ability in the group. It was assumed that any work plan that proved physically possible for them would be widely applicable among others who found industrial processes difficult.

The first work plan developed for the arthritis patients was based on the vocational background of the women concerned. Both had been sewing machine operators prior to illness and were anxious to resume this type of work. They were found able to handle straight machine sewing, their knowledge of the process being so firmly ingrained that they were able to adapt the process to their manual limitations.

The design specialist found that Montefiore Hospital manufactured for its own use glove covers, syringe covers, binders, and other surgical supplies which required simple machine sewing. The patients were tested on manufacture of these items and proved able to produce them satisfactorily. The project then contracted with the hospital to supply a portion of its requirements for surgical supplies. The job was transferred to the industrial homework



A patient with bronchial asthma binds medical journals. Formerly a skilled carpenter, he works at bookbinding approximately 4 hours a day.

category when it proved appropriate for five women in addition to the arthritis patients.

The second work plan initiated for severely disabled patients was the development of salable articles so designed that their production required only movements which these patients were able to make. Again the arthritis patients were the guinea pigs.

The first step in devising a product was to have the arthritis patients experiment with the process to make sure that they could carry out each of the required movements. A sample of the product was then made and submitted to the buyers of representative department stores and gift shops in New York City. Products were modified or discarded on the basis of the buyers' opinions. Products with which the design specialist experimented included block-printed and silk-screened napkins, place mats, greeting cards, hand-stenciled glasses and bottles, and ceramic tile ashtrays.

By September 1958 six patients were producing for sale machine-sewn tablecloths and ceramic ashtrays. These articles were being marketed through Free Will, a distribution agency sponsored by the New York State Division of Vocational Rehabilitation. Numerous other products were still in the experimental stage.

The design specialist developed four specialized work plans for patients who preferred more challenging work than the industrial jobs available on the project. One such patient was Mr. C. K., a former carpenter, with severe pulmonary emphysema. He had been enormously proud of his ability to design and construct fine furniture and was bored with and somewhat contemptuous of the nonskilled industrial homework. The design specialist helped this patient develop an original method of bookbinding at home. A sizable amount of work was obtained for him in the binding of professional journals for physicians in the hospital.

Another patient, a young man who had had diabetes for most of his life, was trained in jewelry making. For three women who were highly skilled in needlework a contract for sewing of a millinery decoration was obtained. Three women who did exceptionally fine knitting were helped to market their work through a specialty shop.

Impact of Work on Patients

By September 1958, 13 patients had completed a year or more of participation in the jobs for the homebound project. Eight accepted work on the majority of occasions when it was offered, and five consistently refused work.

The data on the impact of work on the eight patients who accepted work should be interpreted most cautiously. The material was obtained from both formal evaluation procedures and the informal observations which physicians, social workers, and others made in the course of routine contacts with the patients.

The strongest impact of work appeared to be psychological. Some degree of improvement was observed in all eight patients who worked for a year or more. The most frequently reported psychological effects were reduction of depression and increased feelings of adequacy.

Improvement was seen in the attitude of each of the eight patients toward his illness rather than in measurable clinical improvement. Changes included less preoccupation with limitations and relinquishment of unrealistic plans for the future. In only one instance did work appear to bear some relationship to a symptomatic change in the patient.

Work was reported to have had an impact on patient-family relationships of five patients who worked for a year or more; no impact in this area was reported from the other three. Though for all five, some improvement in family-patient relationships was reported, in two, family relationships were also disrupted in some respect when the patient worked. For example, one patient's mother resented her son's earning money because it threatened her need to keep him dependent upon her.

Responses to work activities appeared to be conditioned by the relationship to home care of six patients; no such influence was noted for the other two. These six were observed to enjoy the attention of the staff and to seek their approval. In at least one instance a significant element in the patient's motivation for work seemed to be the desire to comply with what the patient believed to be the staff's wishes.

Twenty-two, or 11.3 percent of the patients admitted to home care, accepted work on all or the majority of occasions when it was offered. The fact that 11 percent of a group of severely incapacitated patients proved capable of economically productive activity is significant as an indication of the untapped human resources available among severely disabled homebound persons in the country as a whole.

Certain differences were observed in the characteristics of the patients participating in the project and the home care group as a whole. Project participants were younger; their median age was 51.5 years; for home care, it was 60.1 years. There was an indication that project participants were slightly less ill than home care patients generally; the average number of admissions to the hospital for project patients was 1.1, for home care patients, 1.6.

The 11 patients rejecting work differed from the project group as a whole in several respects. In this group there were more women (72 percent) than in the project group as a whole (55.9 percent), and the median age was older (54.5 years) than the 51.5 median age of the total project group. Also, the median number of years of education was lower (7.3) than for all patients (8.9). There appeared to be no significant differences in the diagnostic categories of the patients who did not accept work and the total project group.

Two reasons were most frequently cited by patients for not working; they did not like the type of work offered, finding it dull, uninteresting, or beneath them, and they felt too ill to work. On the other hand, the staff opinion concerning the majority of these patients was that their refusal to work was on an emotional basis. For example, some patients were too preoccupied with illness to concentrate on work; others had not accepted the limitations of their illnesses sufficiently to be satisfied with the sedentary work of which they were capable.

Costs and Applicability

Experimentation with more than 25 different work plans indicated possibilities for numerous types of work programs of varying costs for the kind of patient found in home care. Program costs will depend on the number of rehabilitation services such as vocational counseling and testing offered and the degree to which the program attempted to fit each patient into an individually suitable job.

Examples of homework programs of varying costs which can be incorporated in medical home care programs and can serve 20 patients follow.

• Minimal cost program confined to one steady contract such as the jobs for the homebound contract with Montefiore Hospital for the packaging of hospital dressings.

Staff (a half-time program supervisor-instructor who would supervise the program and instruct patients in work processes, a full-time pickup and delivery man, a half-time secretary)	$8,100
Travel to patients' homes	280
Office supplies	95
Occupational licenses	25
Overhead (15 percent of direct costs)	1,500
Total	$10,000

• Medium cost program providing diversified industrial contracts sought from local firms.

Staff (a full-time vocational rehabilitation specialist who would supervise the program, solicit industrial contracts, and instruct patients in work processes; a full-time pickup and delivery man; a half-time secretary)	$11,390
Travel to patients' homes	360
Travel for solicitation of work	300
Office supplies	150
Occupational licenses	25
Work equipment	525
Overhead (15 percent of direct costs)	2,250
Total	$15,000

• Relatively expensive program incorporating all service features of jobs for the homebound project including product development and diversified industrial homework contracts.

Staff (a full-time vocational rehabilitation specialist who would supervise the program and be responsible for all industrial homework and for vocational testing and counseling, a design specialist hired as a consultant, a full-time pickup and delivery man, a half-time secretary)	$13,804
Office supplies	175
Travel to patients' homes	396
Travel for solicitation of work and marketing of products	300
Occupational licenses	25
Work equipment for patients	600
Overhead (15 percent of direct costs)	2,700
Total	$18,000

Summary

Jobs for the homebound is a 5-year project concerned with investigating the vocational potential of homebound, chronically ill patients who are generally considered to be too incapacitated for vocational rehabilitation services. The project has been in operation for 2½ years as an integral part of the home care department.

It was found that there was available work which could be performed by seriously ill, homebound patients. In 1 year the project patients put in 3,306 man-hours of productive work and earned from $1.20 to $32.88 per week. The patients who worked constituted 11 percent of the patients admitted to home care. This figure is highly significant when it is considered that among the chronically ill, homebound persons throughout the Nation a similar portion also has a potential for productivity.

All patients who worked for a year or longer were reported to have experienced some degree of psychological improvement, primarily reduction of depression. All patients also experienced some degree of improvement in their attitudes toward illness, although it was frequently difficult to tell whether the improvement observed was due to work alone or to the combination of home care services and work.

Experimentation with many different types of work plans indicated that homework programs for the kind of patient found on home care could be operated at reasonable costs, ranging from $10,000 to $18,000 per year for 20 home care patients.

Arnold Appointed Assistant Surgeon General

Dr. Richard C. Arnold, chief of the heart disease control program of the Public Health Service for the past 3 years, has been appointed Assistant Surgeon General for Personnel and Training. He succeeds Dr. Otis L. Anderson, who retired on June 30, 1959, after 30 years' service in the commissioned corps.

A career officer of the Service's commissioned corps, Dr. Arnold previously served 6 years as chief of the Technical Services Branch of the National Heart Institute, after having directed syphilis research at the Venereal Disease Research Laboratory in Staten Island, N.Y., for 13 years. His initial posts with the Service, on completion of his professional studies at the University of Louisville in 1930, were in hospitals in New Orleans and San Francisco in venereal disease work. Dr. Arnold's grade is equivalent to that of brigadier general.