USE OF MEDICAL RESOURCES BY SPANCOS

II. SOCIAL FACTORS AND MEDICAL CARE EXPERIENCE

ARTHUR H. RICHARDSON

HOWARD E. FREEMAN

JAMES F. CUMMINS

AND

HAROLD W. SCHNAPER

Until now, most of the aged in the United States have been highly vulnerable to the economic exigencies of the medical care system.[1] Given the less-than-utopian conditions found in the provision of medical services, the use of health resources by the aged certainly is not simply a function of their needs. Social correlates of differential use of resources also may be explained by economic barriers to care rather than by variations in risk potential of population groups with different social profiles.[2]

In comparison with the general population of the aged, the survivors of the Spanish-American War, the Boxer Rebellion and the Philippine Insurrection—"Spancos" is the common collective name these veterans use in referring to themselves—have unique advantages in securing medical care. Without cost and without having to meet requirements of financial eligibility, Spancos may receive virtually complete medical care services from the Veterans Administration—a privilege they have enjoyed since the early 1950's. Moreover, for several decades they have all received pensions, tend to have occupied higher occupational status than the general population of the same age, and consequently command incomes averaging 1,000 dollars a year higher than 80- and 90-year-old males in the United States.

Admittedly, they are a special group. Although medical and literacy screening may not have been very discriminating in the last of the "grand and glorious" wars, the Spancos are the survivors of a population once defined as "fit" for military service. In terms of the advantages in claims upon medical services and general level of economic well-being, however, they are in many ways the prototype of the future aged in this country. In other words, since the early 1950's the Spancos have enjoyed the advantages that increased social security benefits, liberalized industrial and union pensions and minimal economic barriers to health services will confer in the immediate future upon all older persons in the population.

Knowledge of the Spancos' health behavior may remedy in part the current lack of information about the relatively advantaged among the aged, particularly the very aged. An intensive study was undertaken using records and interviews of the Spancos' health care during 1963. In a previous paper the Spancos, in comparison with other groups in the population, were shown to have unusually high rates of use of health resources, particularly in frequency and duration of hospitalization. About two-thirds of the veterans receive their medical care, both ambulatory and in-hospital, from the Veterans Administration, and its facilities in general are drawn upon most extensively by those veterans who need, or at least take advantage in greatest measure of, health resources.[3]

This paper will report the relationship between the social characteristics of veterans and their use of health facilities. Three questions are examined: is the generalization that extensive use of medical resources associated with the choice of Veterans Administration services also true for subgroups with varied social characteristics? Among Spancos who make the same use of resources, do certain social characteristics distinguish those who call upon the services of the Veterans Administration? Finally, are social characteristics associated with various rates of use when source of care is taken into account? The first question extends the analysis reported in an earlier paper and the other two bear on issues previously studied by

others.[4] With respect to the second question, Freidson's study of H.I.P. subscribers showed that not all those eligible for gratis care in their communities take advantage of it.[5] His study suggests that social attributes of patients, particularly social class status, may be associated with the source from which they receive medical care. The Spanco study, in which several variables have been controlled statistically, provides an opportunity to pursue this line of inquiry into the social correlates of behavior relevant to health.

Perhaps the most significant question is, when source of care is taken into account, can an association be found between social characteristics of the individuals and the extent of their use of medical resources? Certainly, whether extended use of services is associated with choosing to take advantage of free care, and whether social characteristics are related to the use of free services are two important questions. But, at least implicitly, researchers in social medicine cherish the notion that correlations between social variables and the use of resources are somewhat reducible to differences in individual health status and individual health needs.[6] The data of this study permit the scrutiny of that assumption minimally distorted by economic limitations. Relationships that hold among *both* users and non-users of the facilities offered by the Veterans Administration can be attributed with some confidence to differences in need of medical care among groups with given social attributes.

To provide a detailed analysis of all the material on hand is impossible; the interview and record data obtained about the study group were extensive.[7] This discussion will be limited to the interview data, and will present tabular material about a few key variables and provide summary information about a larger number of others.

THE STUDY GROUP

The study group was a sample of the 18,564 Spancos alive and residing in the United States on February 1, 1964. A modified probability design was used to reduce the cost of field work in rural areas; the rural cases subsequently were weighted for purposes of

analysis.[8] The sampling and interviewing were undertaken by the National Opinion Research Center at the University of Chicago. The original sample consisted of 1,847 veterans, but by the time the interviewing began, in April of 1964, more than 150 had died. Interviews were sought with 1,678 and completed with 92 per cent of the veterans or, in approximately 12 per cent of the cases, those who were too infirm, with an informant.

USE OF HEALTH RESOURCES

During 1963, slightly less than one-half of the Spancos had contact with the medical world; over one-quarter of them were hospitalized in the 12 months. For purposes of this study the veterans were classified into five groups. Although at one extreme are the Spancos who received no medical care in the year under study and at the other are those who had extensive hospital care, the classification may better be viewed as a typology than as a continuum. Patients whose care was solely ambulatory were classified into those who made one or two visits to physicians or outpatient departments and those who called three times or more. Those with hospital experience were likewise divided into those hospitalized for more than 30 days and those for 30 days or fewer. Patients who had gone to the hospital typically made three or more ambulatory visits as well, but the ordinal character of the classification is not perfect since some patients in the hospitalized-30-days-or-fewer category utilized resources less extensively than did those who made three or more ambulatory visits.

Table 1 shows the relationship between source and extent of care. The study group was dichotomized into Veterans Administration users and non-users, although in fact some ten per cent of the Spancos drew upon both community and Veterans Administration facilities. Because the number is relatively small, however, they are grouped with those whose care was exclusively provided by the Veterans Administration. As can be seen from Table 1, Spancos who receive their care from the Veterans Administration are more likely to be in the three-or-more visit class than in those making lesser use

of ambulatory services. Similarly, when the class which made a prolonged hospital stay is compared with the under-30-day group of patients, almost three-quarters of the veterans who were "patients" and used Veterans Administration resources had hospital experience in comparison with somewhat less than 50 per cent of those who used community resources.

SOCIAL ATTRIBUTES AND UTILIZATION

As part of the study, data were collected on demographic variables and on variables reflecting ecological and social psychological characteristics. If not for space limitations, the discussion of each variable should be accompanied by at least two tables, as shall be presented subsequently for age.[9] For purposes of economy, however, with the other variables, only those tables necessary for clarity of the discussion will be included.

Age

The data presented in Table 2 are relevant to the first two questions. The generalization that the patients with more extensive needs use Veterans Administration services is true when either the two ambulatory groups are compared to each other or the two groups with hospital experience are so compared. When the percentages are examined horizontally, one finds no major differences in the proportion using Veterans Administration services

TABLE I. SOURCE AND EXTENT OF CARE

Extent of Care	*All Veterans*	*Source of Care*	
		V.A. Users	*Non-V.A. Users*
No hospital or ambulatory care	57.0%	—	—
1 or 2 ambulatory visits	6.7%	6.7%	28.1%
3 or more ambulatory visits	9.5%	21.0%	23.1%
30 or fewer days of hospitalization*	15.8%	36.7%	37.7%
More than 30 days of hospitalization	11.0%	35.6%	11.1%
N	1913	480	342**

* Includes patients with both ambulatory and hospital care.
** Differences between V.A. and non-V.A. users significant at $P < .01$, chi-square test.

for ambulatory care; older veterans tend to elect Veterans Administration hospital services for extended hospital care, but the opposite is true in the case of short-term hospitalizations; age is not consistently associated with selecting Veterans Administration facilities.

Table 3 shows the relationship between age and extent of use for both Veterans Administration and non-Veterans Administration patients. No consistent variations establish age as a correlate of use of resources.

Socioeconomic Status

Information is available in the study on a number of socioeconomic variables including the often-used measures of occupation, income and education. As shown in Table 4, the proportion who use the Veterans Administration is higher among the patients who made frequent ambulatory visits as compared with those who made few visits, and among those who experienced extended hospitalization as compared with short-term, regardless of income. Moreover, although the findings are less sharp for patients who received only ambulatory care, those with lowest incomes generally are most likely to resort to Veterans Administration services. The same general finding obtains with the other measures of socioeconomic status. Apparently the Veterans Administration is the characteristic source of care for Spancos of low socioeconomic status.

The relationships of extent of use to education and income among patients treated during the year is shown in Table 5. Both variables are shown because, depending upon what measure is used, the differences vary. With respect to the socioeconomic variables, no systematic relationship may be found between extent of use and socioeconomic status among patients who receive care from the Veterans Administration. Patients who receive care from community sources also exhibit few systematic differences by socioeconomic category. The one possible difference is that, among non-Veterans Administration users, those of lowest socioeconomic status on both measures cluster in the group which had only a minimum of ambulatory care during the year. Undoubtedly, if

TABLE 2. AGE AND PROPORTION USING VETERANS ADMINISTRATION SERVICES

Extent of Care		*Age* 83 or Younger	84–87	88 and Older	Total
1 or 2 ambulatory visits		21.9%	27.5%	22.2%	25.0%
	N	32	69	27	128
3 or more ambulatory visits		50.0%	62.0%	50.0%	56.1%
	N	48	92	40	180
30 or fewer days of hospitalization*		65.6%	54.7%	57.3%	57.8%
	N	64	150	89	303
More than 30 days of hospitalization*		75.8%	82.8%	87.0%	81.8%
	N	62	93	54	209

* Includes patients with both ambulatory and hospital care.

TABLE 3. AGE AND EXTENT OF CARE

Extent of Care	*Source of Care* V.A. Years of Age 83 or Younger	84–87	88 and Older	Non-V.A. Years of Age 83 or Younger	84–87	88 and Older
1 or 2 ambulatory visits	5.8%	8.1%	4.8%	29.1%	29.6%	24.4%
3 or more ambulatory visits	20.0%	24.2%	16.1%	27.9%	20.7%	23.3%
30 or fewer days of hospitalization*	35.0%	34.9%	41.1%	25.6%	40.2%	44.2%
More than 30 days of hospitalization*	39.2%	32.8%	38.0%	17.4%	9.5%	8.1%
N	120	235	124	86	169	86
	p is not significant			p is not significant		

* Includes patients with both ambulatory and hospital care.

TABLE 4. INCOME AND PROPORTION USING VETERANS ADMINISTRATION SERVICES

Extent of Care		*Per Cent V.A. Users and Total Annual Income* Less than $2,000	$2,000–2,999	$3,000 or More	Total
1 or 2 ambulatory visits		26.1%	16.2%	31.1%	25.0%
	N	46	37	45	128
3 or more ambulatory visits		60.4%	71.4%	40.3%	55.7%
	N	48	56	72	176
30 or fewer days of hospitalization*		66.3%	53.3%	59.5%	59.7%
	N	89	90	111	290
More than 30 days of hospitalization*		91.8%	77.6%	76.2%	81.5%
	N	61	76	63	200

* Includes patients with both ambulatory and hospital care.

these persons were to seek more extensive medical care—if the relationship between source of care and socioeconomic variables is true for them as well—they would have been predominantly users of Veterans Administration facilities. When this group is removed from the analysis and only persons who received more extended medical care during the year are taken into account, no consistent relationships are noted between extent of care and socioeconomic factors.

Family Variables

The relationships of extent and source of care to marital status of the veterans and to other characteristics of their households were analyzed. Within any of the categories the generalization may be made that the proportion of those using the Veterans Administration becomes higher with increased extent of services. The only other finding of significance is an obvious one, namely, that patients who live in institutional settings, such as nursing homes or chronic disease hospitals, are more likely to have higher rates of hospitalization as well as greater contact with physicians on an ambulatory basis than are veterans who live in normal community settings. However, characteristics of family settings and marital status do not systematically predict source of care with this exception and, most important, fail to differentiate patients who receive different amounts of care during the year.

Community and Residential Characteristics

Information was obtained about both the length of residence of the veteran and characteristics of his community, such as size of population and geographical region. In all cases subgroups within any of the variables relating to residential mobility or to the community are more likely to use Veterans Administration services if they have extended hospital care or frequent ambulatory contacts. Size of the community is unrelated to source of care in any systematic manner and likewise length of residence is uncorrelated with source of care. Further, these community variables are unrelated in any consistent manner to extent of services re-

TABLE 5. EDUCATION, INCOME AND EXTENT OF USE FOR VETERANS ADMINISTRATION AND NON-VETERANS ADMINISTRATION PATIENTS

Years of Education

Extent of Care	*Veterans Administration* 0–8	9–12	13+	*Total*	*Non-Veterans Administration* 0–8	9–12	13+	*Total*
1 or 2 ambulatory visits	6.7%	4.9%	11.1%	6.9%	31.8%	17.5%	25.0%	28.2%
3 or more ambulatory visits	21.3%	19.8%	27.8%	21.8%	21.1%	17.5%	35.0%	22.9%
30 or fewer days of hospitalization*	39.7%	38.3%	24.1%	37.6%	34.5%	54.5%	33.3%	37.7%
More than 30 days of hospitalization*	32.3%	37.0%	37.0%	33.7%	12.6%	10.5%	6.7%	11.2%
N	328	81	54	463	223	57	60	340

$X^2 = 6.6$ df = 6 P is not significant

Income

Extent of Care	*Veterans Administration* *Less than $2000*	*$2000–2999*	*$3000 or More*	*Total*	*Non-Veterans Administration* *Less than $2000*	*$2000–2999*	*$3000 or More*	*Total*
1 or 2 ambulatory visits	7.7%	3.9%	8.9%	6.9%	38.6%	29.2%	23.1%	29.3%
3 or more ambulatory visits	18.6%	26.1%	18.5%	21.0%	21.6%	15.1%	32.1%	23.8%
30 or fewer days of hospitalization*	37.8%	31.4%	42.0%	37.1%	34.1%	39.7%	33.6%	35.6%
More than 30 days of hospitalization	35.9%	38.6%	30.6%	35.0%	5.7%	16.0%	11.2%	11.3%
N	156	153	157	466	88	106	134	328

$X^2 = 9.8$ df = 6 P is not significant

* Includes patients with both ambulatory and hospital care.

TABLE 6. SELF-REPORTED ACCESS TO VETERANS ADMINISTRATION FACILITIES AND PROPORTION USING VETERANS ADMINISTRATION SERVICES

Extent of Care		*Per Cent V.A. Users and Transportation to V.A. Installation* *Public Transportation or Within Walking Distance*	*Neither Public Transportation nor Within Walking Distance*	*Total*
1 or 2 ambulatory visits		34.5%	19.8%	23.3%
	N	29	91	120
3 or more ambulatory visits		55.6%	54.7%	55.0%
	N	54	117	171
30 or fewer days of hospitalization*		64.0%	53.6%	57.2%
	N	100	183	283
More than 30 days of hospitalization*		88.2%	70.5%	76.1%
	N	51	112	163

* Includes patients with both ambulatory and hospital care.

ceived for the Veterans Administration and non-Veterans Administration groups of patients.

Regional differences occur in use of Veterans Administration services and the use of these services is associated to some extent with the local or regional concentration of facilities. When one moves to areas with sparse Veterans Administration services, hospitalization is likely to increase and ambulatory services decrease, suggesting that for this very aged population the hospitalization of a patient may be preferred to the risks and difficulties of long travel.

In all cases, within regions, the first generalization holds: Veterans Administration services are more likely to be used when more extensive care is received. An attempt was made to relate the use of medical care to the local availability of general hospital beds, but the result of this analysis is unrewarding.

Access to Veterans Administration Facilities

An attempt was made to obtain from both the veterans and a group of referees ratings of the convenience of traveling to Veterans Administration facilities for each of the veterans. All the measures reveal the same findings: the sharpest difference occurs when veterans are classified as to whether they live on a public transportation line or within walking distance to the facilities in contrast to being otherwise located. Within both groups (see Table 6), one finds that extensive care involved the Veterans Administration facilities and, with the exception of those making three or more ambulatory visits, the Spancos closest in terms of transportation or ease of access are the most extensive users. Physical distance from the facilities, however, is unrelated to extent of use in any systematic manner for either Veterans Administration or non-Veterans Administration patients.

INTERPRETATION

With respect to the three questions that guided this analysis, fairly firm generalizations may be forwarded. In the first place, given the variables taken into account, the health care system

of the Veterans Administration apparently becomes the typical source of care for persons who are extensive users of facilities, be they ambulatory or hospital patients. Parenthetically, of course, this need not be a function of self-selection on the part of veterans, but may be occasioned by referrals of individuals associated with the health and welfare treatment network who are aware of the opportunity for Veterans Administration care and are reluctant to commit the resources of voluntary and local community hospitals or outpatient services when care may be received at federal expense.

The interview data and the general impressions from the study indicate a strong and positive identification by Spancos with the provision of services by the Veterans Administration. Apparently a system of care that is to some extent untraditional receives heavy usage, given high demand—and need—for health care. In this respect—though perhaps a somewhat editorial comment—the concern of health planners with the development of medical-care programs that resemble the model of traditional solo practice in the United States, on the basis that this is most palatable to the potential users, may be ungrounded. Apparently, at least when long-term extensive care is involved, the Veterans Administration program captures most of the patients, even though the system in many respects is a great departure from the doctor's office and the local community hospital.

At least two sets of variables, however, apparently differentiate those that elect free services from those that typically choose community facilities, which usually involve fees. Convenience of traveling for medical care should naturally enter into the planning of new facilities. Are small facilities scattered geographically more desirable than large, central-city hospitals and outpatient clinics—disregarding, for the moment, the effect of size on efficiency of operation and duplication of resources? In the case of ambulatory services particularly, the question arises whether small units might not provide a closer-knit network and ones more often utilized, particularly by the very old.

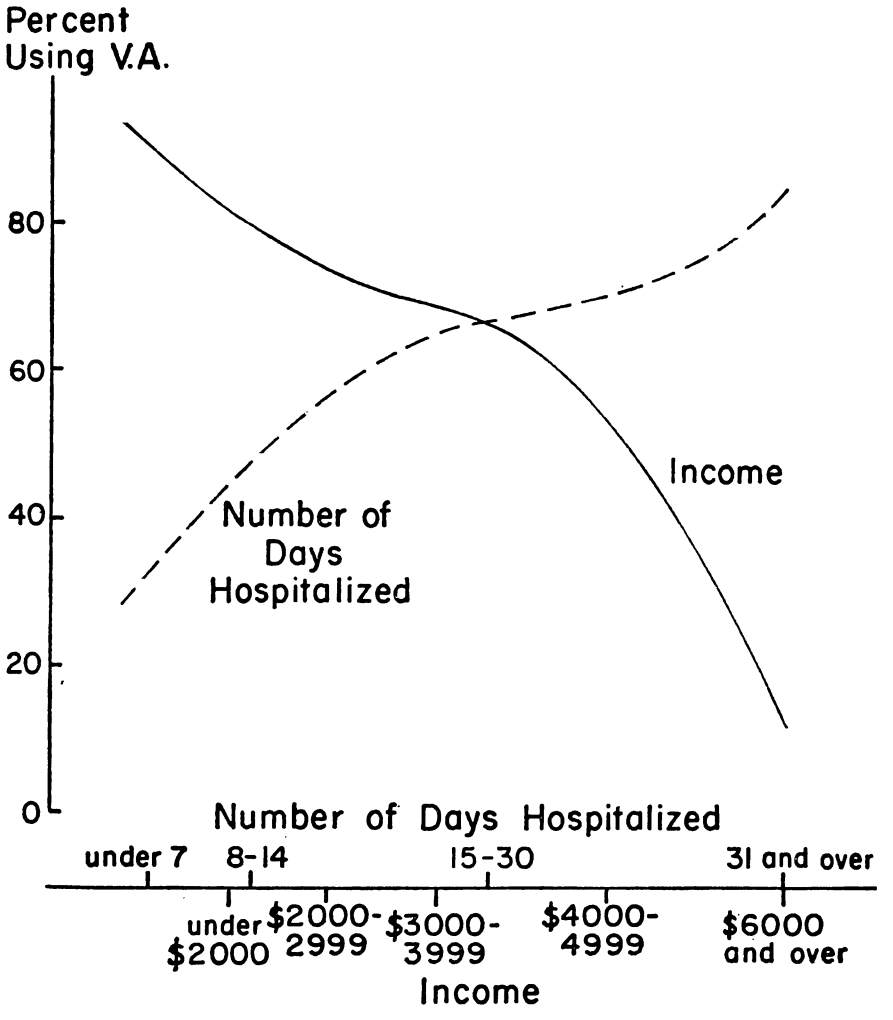
The correlations between socioeconomic status and source of

care, again, are not surprising. Several factors must be taken into account, such as the greater likelihood that persons with higher incomes will have third-party insurance, the greater likelihood that they are going to be concerned with the possible inconveniences of using a large organization such as is the Veterans Administration, and that they may be reluctant to use what is free. When income and number of days hospitalized are plotted against the proportion using Veterans Administration hospitals (see Figure 1), the findings point to the likelihood that patients using Veterans Administration facilities increase at a much more linear or "regular" rate than does the likelihood that calling upon non-Veterans Administration facilities increases with income. To put the inference most simply: extensive need reduces reluctance to take advantage of available free services up to the point of truly "surplus" income—a circumstance unlikely to befall many of the aged, for in this study the curve begins to slope at a figure almost three times the national average income for males of their age.

The third question raised was the value of social characteristics as predictors of extensiveness of care, when minimal contaminations of such relationships occur in the form of economic restriction. This analysis suggests very strongly that social factors, independent of such barriers, are of *minimal* importance—at least with the very aged. Of some 20 variables examined, none are effective predictors of extensive service within *both* the Veterans Administration and non-Veterans Administration groups. Being aware of past studies demonstrating the relationship between use of medical resources and social attributes, the authors hold most strongly that either the attributes lose their potency as predictors among the very old because biological and constitutional variables are so powerful, or that the relationships identified in other studies are almost solely a function of economic hindrances to care and not truly related to extent of need or other reflectors of utilization potential.

Admittedly this study has focused on an unusual group; one with higher incomes as well as access to free medical care. To the extent that their health utilization behavior can be generalized

FIGURE I. INTERACTION BETWEEN INCOME AND DAYS OF HOSPITALIZATION ON USE OF VETERANS ADMINISTRATION RESOURCES



to all of the very aged, it suggests that with the advent of an extensive system of medical care independent of ability to pay, current figures on utilization may underestimate need. Given the opportunity within states electing both Titles 18 and 19 of the recent Social Security amendments, and a climate of opinion that no longer discourages use, either by requirements of eligibility or

the reluctance of medical facilities and practitioners to adjust fees in accordance with welfare regulations, high rates of utilization across the board, without reference to social factors, may be expected. Although these findings may be discouraging to the behavioral scientist interested in showing the influence of his domain of variables in the health field, they raise critical questions of policy in the planning of resources for health care.

REFERENCES

[1] Anderson, Odin W. and Feldman, Jacob J., FAMILY MEDICAL COSTS AND VOLUNTARY HEALTH INSURANCE: A NATIONWIDE SURVEY, New York, McGraw-Hill Book Company, 1956; Schottland, Charles I., THE SOCIAL SECURITY PROGRAM IN THE UNITED STATES, New York, Appleton-Century-Crofts, 1963, especially Chapter 3; Steiner, P. O. and Dorfman, R., THE ECONOMIC STATUS OF THE AGED, Berkeley, University of California Press, 1957.

[2] Anderson, Odin W., The Utilization of Health Services, *in* Freeman, Howard E., Levine, Sol and Reeder, Leo G., HANDBOOK OF MEDICAL SOCIOLOGY, Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1963, pp. 349–367; Anderson, Odin W. and Sheatsley, Paul B., COMPREHENSIVE MEDICAL INSURANCE—A STUDY OF COSTS, USE AND ATTITUDES UNDER TWO PLANS, New York, Health Information Foundation, 1959; Gurin, Gerald, Veroff, Joseph and Feld, Sheila, AMERICANS VIEW THEIR MENTAL HEALTH, New York, Basic Books, Inc., Publishers, 1960; Koos, Earl L., THE HEALTH OF REGIONVILLE, New York, Columbia University Press, 1954.

[3] Freeman, Howard E., *et al.*, Use of Medical Resources by Spancos: I. Extent and Source of Medical Care in a Very Old Population, *The American Journal of Public Health,* 56, 1530–1539, September, 1966.

[4] *Ibid.*

[5] Freidson, Eliot, PATIENTS' VIEWS OF MEDICAL PRACTICE, New York, The Russell Sage Foundation, 1962.

[6] Anderson, Odin W., The Utilization of Health Services, *in* Freeman, Levine and Reeder, *op. cit.*

[7] *See* Freeman, *et al., op. cit.,* for other data about the Spancos.

[8] Statistical values have been calculated on the weighted sample, but the significance levels do not change substantially when computed on unweighted data.

[9] These tables do not include patients who did not receive medical care during the year of the study. Some comparisons of users and non-users of medical care are included in Freeman, *et al., op. cit.*

ACKNOWLEDGMENTS

The findings reported in this paper are from a study supported by the Veterans Administration in cooperation with the Health Economics Branch, Bureau of State Services, United States Public Health Service. Harold W. Schnaper of the Veterans Administration and Royal Crystal of the United States Public Health Service serve respectively as liaison between Brandeis University and the sponsoring groups. Other members of the project research staff include Joseph Zelan of Brandeis University and Norman A. Scotch of the Johns Hopkins University.