

Health And Poverty Among Elderly Persons: A Community-Oriented Primary Care Survey

James N. Kvale, M.D., W.R. Gillanders, M.D., Terry F. Buss, Ph.D.,
C. Richard Hofstetter, Ph.D., and David Gemmel

Abstract: Providing health care for independent-living elderly persons is important, yet family physicians often lack accurate information about needs and access to care. The Community-Oriented Primary Care (COPC) approach and health status models from health services research provide a framework for assessing need and access to care. Personal interviews were conducted with 990 noninstitutionalized elderly persons in Youngstown, Ohio. Results showed that poverty, gender, and race were not strongly related to health status as measured by numbers of symptoms, functional status, or subjective health status. In addition, elderly persons had fewer health care needs and greater access to care than expected. Simple models of health status, need, and access do not seem to apply. The study shows the usefulness of COPC in planning health services; however, more effort is needed to refine measures of health status, need, and access. (J Am Board Fam Pract 1990; 3:231-9.)

Providing health care for the independent-living elderly persons is a high priority for family physicians, but this goal is sometimes subverted by lack of accurate and practical information about the needs of elderly noninstitutionalized patients and the barriers to receiving adequate care.

Community-Oriented Primary Care (COPC) is a new model of health care combining primary care with community medicine^{1,2} that can be applied to elderly populations. Under COPC, primary care and family physicians survey and analyze community health problems in order to identify groups whose special needs warrant targeted or alternative services.^{3,4}

Because COPC is new, few community-wide databases to support COPC diagnosis and surveillance have been developed. Most studies have been limited to panels of patients⁵ or specific medical conditions (e.g., cancer, heart disease).⁶ The generic problems of elderly persons in community settings have not been studied.

Health status models developed in health services research might be useful to study the elderly

in COPC. These models are based on the following formulation⁷:

demographics and life circumstances → medical care → access and barriers to care → health status

We know that demographic characteristics (age, race, sex, marital status) and life circumstances (income, work experience, neighborhood, quality of life) are related to medical care needs. Poor elderly persons, especially women and minorities, for example, are likely to need more medical care.^{8,9} Lack of money, education, social networks, transportation, and health insurance reduces access to medical care and contributes to poor health.¹¹

From the health status model, decisionmakers can derive questions about health services to the elderly for an initial community survey—the COPC diagnosis phase.^{1,2} These include: What are the prevalent types of dysfunction among elderly persons in the community? Are they higher or lower than expected? What is the quality of primary medical care in the community? What groups have problems in access to care? What community medical care needs are met and unmet? What special groups—persons living alone, women, minorities—are at risk? What barriers to care exist?

Researchers at the Family Health Center at St. Elizabeth Hospital Medical Center used this approach to design a survey in Youngstown, Ohio. We conducted 990 interviews with noninstitu-

From St. Elizabeth Hospital Medical Center, Youngstown, OH; Northeastern Ohio Universities College of Medicine, Rootstown, OH; The University of Akron, Akron, OH; and San Diego State University, San Diego, CA. Address reprint requests to James N. Kvale, M.D., St. Elizabeth Hospital Medical Center, 1044 Belmont Avenue, Youngstown, OH 44501-1790.

Research was funded by St. Elizabeth Hospital Medical Center and Northeastern Ohio Universities College of Medicine.

tionalized elderly persons. The results are presented and discussed here in the context of the usefulness of health status models and community-oriented primary care.

Methods

The Survey

The COPC approach uses epidemiological methods for community diagnoses.³ Personal interviews with noninstitutionalized persons in the Youngstown, Ohio, metropolitan area living in households with at least one person 62 years of age or older were completed between September and December 1987. We excluded those in nursing homes, adult day care centers, skilled nursing sites, or other long-term care facilities but included persons living in retirement villages, high-rise buildings, or low-income housing complexes. Households were selected from a random sample of telephone directory listings. Appointments were made by telephone when possible. Each interview gathered 700 pieces of information and lasted an average of 1 hour. Twenty interviewers, all with extensive survey research experience, received 5 hours training in the administration of the questionnaire. Interviews were completed with 85 percent of the eligible households contacted.

Sample Validity

Because telephone directories were used in sampling, our study may undercount the poor, who are less likely to have telephones. Those with unlisted numbers also are not represented. To assess the validity of the sample, the demographic characteristics of respondents were compared with 1980 Ohio census data. There were close matches for age, race, sex, and federal poverty status (Table 1). The sample appears representative of elderly persons living independently in Youngstown.

We considered Youngstown to be similar to other distressed, Midwestern urban areas. To test this assumption, key demographics (per capita income, percent in poverty, percent 65 years of age or older, and percent minority) from the 1980 census were compared with other metropolitan centers in Ohio (Toledo, Akron, Warren, Cincinnati, Dayton, and Lorain). Youngstown was not atypical, indicating that our study results might be generalizable to other distressed areas.

Table 1. Demographic Characteristics of Elderly Persons in Youngstown, Ohio.

	Youngstown Study Percent	n	1980 Census (Ohio)* Percent	n
Age (years)				
62-64	19.7	193	19.3	4,027
65-69	30.7	303	28.5	5,938
70-74	22.4	221	20.1	4,186
75-79	14.0	138	15.2	3,159
80-84	7.5	74	9.5	1,983
85 +	5.7	56	7.3	1,536
Race				
White	78.6	778	79.6	18,534
Gender				
Men	41.6	412	41.1	9,570
Poverty status				
Above	83.0	748	86.2	20,078

*Source: Ohio Data Users Center, Columbus, Ohio.

Major Variables

Health Status

Health status measures included (Table 2):

1. "Perceived health status," which quantified the personal view of the respondent's physical well-being.¹⁰
2. "Functional status," which measured how well persons performed tasks associated with activities of daily living (ADL).¹¹ Several states, including Illinois, Oklahoma, and Indiana, have developed a Determination of Need (DON) scale, which combines ADL and unmet needs and is used to allocate Medicaid home health services and nursing home subsidies.¹² Respondents scoring at least 28 qualified for services; those scoring from 9 through 27 were categorized "at risk"; those scoring 8 or less were categorized as showing no significant impairment or need.
3. "Symptom or problem" checklists, which were not exhaustive but captured respondents' major complaints.

The following variables were used to try to explain health status (Table 3):

Social Stress and Neighborhood

"Social stress and neighborhood"¹³ were measured in three ways: overall quality of life, perceived distress in the neighborhood, and perceived criminal activity in the neighborhood.

Informal Supports

An index of "social support" was measured by number of children living within one-half hour travel time, brothers and sisters living within one-half hour travel time, relatives or friends in the area, and regular callers.

Formal Supports

"Human service agency utilization" was measured by use of nonhospital services (Visiting Nurses, Dial-a-Ride, Volunteer Service to Seniors).

Barriers and Access

"Barriers and access" was measured by the regularity and frequency of physician visits, overnight hospitalizations, dental checkups, ability to visit physicians, ability to meet out-of-pocket

health care expenses, participation in nutrition programs, ability to get meals delivered at home, and adequacy of transportation.

Demographics

In addition to standard demographic characteristics (age, race, sex, poverty status, etc.), number of poor women and minorities living alone were measured.^{8,9}

Findings

Federal Poverty Rates

COPC assumes that community needs change constantly and therefore must be reevaluated regularly. Nationally, poverty rates among elderly persons are falling, presumably leading to improved health status. Some elderly persons, however, are left behind.⁹ In Youngstown, for instance, poor elderly persons fare much worse than the national average (Table 4); 18 percent are poor; and among those living alone, women, and minorities, poverty rates were above the national average. Under simplified health status models, Youngstown's elderly persons would appear to have unmet health needs, poor access to medical care, and poor health as a consequence.

Health Status

Based on our respondents' subjective perceptions, Youngstown's elderly persons seem to suffer poor health (Table 2). Forty-three percent rated their health as "fair" or "poor" — substantially higher than the national average of one-third.¹⁰

But the DON scale showed a different interpretation. Less than 2 percent would qualify for services by scoring 28 or higher, and only 1 in 10 scored at risk of service need (9 to 27). DON scores suggest that only a handful of Youngstown's noninstitutionalized elderly persons were severely impaired or had major unmet needs related to impairments.

DON measures both functional status and unmet needs. Forty-nine percent had no impairments, which was well below the national figure of 60 percent.¹⁰ One-third had one or two impairments, and 71 percent had no unmet needs associated with impairments. Twenty-two percent had only one or two impairments or unmet needs. Only 7 percent had three or more impairments and unmet needs.

Table 2. Health Status Measures.

Measure	Percent	n
Subjective health rating*		
Excellent (4)	12.0	119
Good (3)	44.7	443
Fair (2)	31.5	312
Poor (1)	11.5	114
Range = 1–4 Mean = 2.4 S.D. = 0.85		
DON scale†§		
Need (28+)	1.6	16
At risk (9–27)	9.7	96
No-need (0–8)	88.7	878
Range = 0–61 Mean = 3.45 S.D. = 6.55		
Symptom index‡§		
0	18.7	185
1–3	46.1	456
4–6	24.5	243
7+	10.7	106
Range = 0–16 Mean = 2.96 S.D. = 2.68		

*Respondents were asked: "How would you rate your overall health at the present time?"

†Respondents were asked: " . . . I'd like to ask you about any special needs you might have" Tasks included ADL and IADL (instrumental activities of daily living), such as: telephoning, into-out of bed, outside home, shopping, managing money, preparing meals, eating, housework, laundry, dressing, grooming, bathing, bowel-bladder, routine health, special health, and being alone.

‡Respondents were asked: "Are you presently experiencing or have you recently had any of the following problems?" Symptoms-problems included: difficulty walking, loss of hearing, impaired vision, shortness of breath, swelling of ankles and feet, cannot get parts of my body to move or do as I want, severe pain, weight loss, chest pain, abdominal pain, recent broken bones, broken hip, see or hear things others don't, controlling stool, blood in urine, and fits and seizures.

§The DON scale and symptom index were transformed into natural logarithms to correct for skewness.

Table 3. Dependent Variables Used in the Study.

Variable	Number of Items	Typical Item or Question	Percent	Value
Quality of life	5	Overall quality of life, family life, housing, neighborhood, friendships	1.8	(Poor) 0
			3.4	1
			4.8	2
			11.3	3
			25.1	4
Neighborhood distress	10	Noise, traffic, vermin, litter, vacant property	53.6	(Good) 5
			54.5	(Low) 0
			17.0	1
			10.0	2
			18.6	(High) 3
Neighborhood crime	10	Overall crime, drunkenness, vandalism, violence	74.2	(Low) 0
			11.5	1
			8.5	2
Social network	5	Friends, relatives someone calls, some visits	1.3	None
			6.6	1
			13.9	2
			22.7	3
			32.2	4
Use of human services	15	Individual agencies used	23.2	5
			45.8	None
			38.6	1
			10.1	2
			4.6	3
Barriers to access:	1	Do you have a physician you see regularly?	2.1	++
			90.8	Yes
			11.7	None
			39.3	1-3
			24.5	4-6
Times see physician yearly	1	On average, how many times a year do you see your physician?	15.8	7-12
			8.8	13+
Months since hospitalized	1	How long has it been since you were last hospitalized overnight?	8.7	None
			31.1	1-12
			19.1	13-35
			40.3	36+
			49.0	Yes
Seek dental care regularly	1	How many months has it been since you saw a dentist or had a dental examination?	11.0	Yes
			9.0	Yes
Inability to pay physician	1	Has your inability to pay ever prevented you from seeking care from a physician?	7.0	Yes
			9.0	Yes
Inability to pay out of pocket	1	Has your inability to pay the out-of-pocket expenses, such as a Medicare deductible or pharmacy charges, kept you from seeking medical care?	3.0	Yes
			7.0	Yes
Unable to participate in nutrition program	1	Would you like to participate in a nutrition program but could not?	12.0	Yes
			7.0	Yes
Unable to get home-delivered meals	1	Have you ever needed a home-delivered meal but couldn't get one?	12.0	Yes
			12.0	Yes
Inadequate transportation	1	Do you need more adequate transportation?		

The most frequently compromised activities associated with daily living in the DON scale were: special health impairment (28.0 percent), unable to work outside home (16.3 percent), bladder problems (15.9 percent), routine health (15.0 percent), shopping (12.0 percent), housework (11.8 percent), getting into and out of bed (10.2 percent), and being alone (8.9 percent). About 1 percent were totally impaired on any given ADL on average, although 4.6 percent could not work outside the home, and 3.5 percent had difficulty shopping.

Elderly persons in Youngstown report no more or less symptomatic health problems than those in other areas. The mean of the symptom-problem index was 3.0, with one-third (35.2 percent) reporting four or more. The most frequently occurring symptoms or problems were: difficulty walking (33.9 percent), loss of hearing (29.5 percent), impaired vision (29.3 percent), shortness of breath (28.7 percent), swelling of lower limbs (25.4 percent), trouble with body part movement (25.2 percent), and severe pain (22.3 percent).

All three measures of health status were positively, *but only moderately*, correlated with each other (symptom-problems with DON, $r = 0.56$; subjective health with DON, $r = 0.41$; and symptom-problems with subjective health, $r = 0.45$).

Access to Health Care

A major goal of COPC is to promote health by improving access to care. Some elderly persons in Youngstown used no health and human services. Nine percent reported not seeing a physician regularly. Twelve percent had not seen a physician in more than 1 year, less than the national average of 18 percent.¹⁰ Twenty percent had not been hospitalized in the past 5 or more years; 32 percent had not been hospitalized in the past 2 years. Dental services were used less: one-half had not seen a dentist regularly, and 56 percent had not seen a dentist in the past year.

Human services targeted at the poor elderly population were more frequently used in Youngstown than nationally. Forty-six percent of our elderly sample used no services (compared with 79 percent nationally), while 39 percent visited one agency during a 2-year period (compared with 22 percent nationally).¹⁴ In addition, informal helping networks of family and

Table 4. Poverty Rates among the Various Elderly Groups in Youngstown Compared with the Nation (Percentages).

Target Group	Nation-wide*	Youngstown
All elderly persons	10	18
Elderly couples	4	8
All elderly persons living alone	19	28
Elderly women living alone	20	31
Elderly men living alone	15	18
Nonwhite elderly persons living alone	43	51
White elderly persons living alone	16	19

*ICF Inc. and Commonwealth Fund.^{8,9}

friends¹⁵ were well-developed. Only 1.3 percent had no one on whom to rely for help.

Barriers to Finding Care

COPC assumes that barriers exist, at least for some health care, and some elderly persons in Youngstown perceived the following barriers in obtaining medical care: 11 percent believed they were unable to pay to see a physician, and 9 percent said they were unable to pay out-of-pocket expenses. Inability to afford medical care was not exclusively the problem of the poor. In fact, those living just above the poverty level but without full medical insurance benefits appeared to be worse off than the poor. However, perceived inability to pay and out-of-pocket expenses did not limit access to physicians or hospitalization.

Those using more human services were more likely to report that money was a problem in obtaining care—perhaps, human services substituted for medical care. For example, if physicians could not improve functioning in arthritic patients, patients might have had to rely on home-maker services.

Only 3 percent could not obtain home-delivered meals when they needed them. Seven percent were unable to participate in nutrition programs—lack of transportation prevented their reaching congregate meal sites.

Surprisingly, even though the elderly are perceived to be immobile, only 12 percent reported inadequate transportation.¹⁶ In fact, 95 percent owned an automobile.

Social Distress

The quality of neighborhood influences health and treatment strategies under COPC. Overall,

elderly persons in Youngstown were moderately satisfied with quality of life in their neighborhoods and believed it was improving. Four-fifths (78.7 percent) indicated that their quality of life—based on overall quality, housing, neighborhood, and friendships—was better now than 10 years ago. One-fourth (25.8 percent) thought that crime was a problem in the neighborhood, while nearly one-half (45.5 percent) experienced some social distress and lack of services. About 17 percent reported that the ethnic neighborhoods—largely made up of extended families, social clubs, and church groups—which once provided social support, had declined.

Because measures of social distress were moderately correlated, there appears to be a small proportion of elderly persons living in distressed neighborhoods who have multiple health and social problems and who could be targeted under COPC.

Correlates with Health

Persons in need or at risk can be identified by correlating health status with other explanatory variables (Table 5). Nearly all variables—demo-

graphics, access, barriers, and social distress—were moderately correlated with measures of health status. Generally, the poor, those unable to afford medical care, minorities, women, the aged, persons living alone, and persons living in poor quality neighborhoods, with inadequate support networks and using human services, were more likely to have health problems. Not surprisingly, elderly persons who had recently seen a physician were more likely to report symptoms and problems.

The low correlations between poverty and health status mean that only 10 or 15 percent of the sample fit the simplified COPC hypothesis that poor elderly suffer poor health.

Multivariate Analysis

Because bivariate relations yielded results that are not entirely consistent with expectations under health services models, they leave too much unexplained to be useful for clinicians. A variety of multivariate analyses (including multiple regression and analysis of variance) were used to try to clarify relations. The most revealing was an analysis of variance, using multiple classifica-

Table 5. Correlates of Health Status (Pearson's Products-Moment Correlations).

	DON	Symptoms-Problems	Perceived Health
Demographics			
Poverty	-0.26†	-0.21†	-0.19†
Race	0.31†	0.24†	0.22†
Gender	0.14	0.15†	0.03
Age	0.14†	0.22†	0.08
Living alone	-0.15†	-0.11*	-0.01
Working	-0.15†	-0.15†	-0.11†
Access			
See physician regularly	-0.05	-0.03	-0.08
Months last seen physician	-0.13*	-0.14†	-0.15†
Times per year see physician	-0.21†	-0.14†	-0.01
Social network	-0.03	-0.07	-0.10*
Human service agency	0.29†	0.23†	0.10*
Barriers			
Inability to pay	-0.22†	-0.28†	-0.17†
Out of pocket	-0.25†	-0.28†	-0.19†
Lack transportation	-0.14†	-0.08†	-0.07
Social Distress			
Quality of life	-0.34†	-0.34†	-0.18†
Neighborhood (distress)	-0.28†	0.29†	0.12†
Neighborhood (crime)	-0.21†	0.22†	0.16†
Ethnicity	0.01	0.00	0.06

* $P = 0.05$.

† $P = 0.01$.

tion analysis, looking at sex, living arrangement, race, and poverty. We created 16 groups by combining gender (men, women), living alone (yes, no), race (white, minority), and poverty (above, below) to examine their effect on the DON and symptom-problem index.

Results in Table 6 show that those groups most in need on the DON scale included persons who were not targeted—that is, of the top five groups in need, men, nonpoor, whites, and those living with someone appear. In fact, poor black women who were living alone rank fourth in need.

Similar relations were discovered on the symptoms-problems index, with the exception that women dominate the top five groups.

Discussion

Apparently, family medicine and the medical care system generally have served all but a handful of the elderly living independently in Youngstown, regardless of their circumstance. Poverty, gender, living alone, and race were not strongly related to health status separately or when grouped together. Therefore, we cannot assume because persons were elderly, were poor and elderly, or were poor, elderly, and living alone that they were symptomatic, dysfunctional, or perceived themselves to be in poor health. In fact, in all groups studied, the majority believed they were in good or excellent health, had few functional limitations and unmet needs, and had relatively few severe problems.

From the COPC model perspective, our data provided only very general insights that could be used for patient management and provision of medical care. The measures were not well-calibrated enough to perform their intended function. Functional status, symptoms-problems complexes, and subjective health assessment, along with clinical examinations and patient history, are the diagnosis and surveillance tools of COPC and of health services research generally. The presumption that each measure contributes different kinds of information, which when taken collectively presents a more or less complete picture of overall health status, should be viewed with some skepticism.

For example, consider the work of Ware, et al.¹⁸ Their data presented clinical paradoxes because measures of health status were not perfectly correlated with the intended explanatory

Table 6. Groups Most in Need.

Targeted Group	Deviation from Grand Mean*
DON score	
Men, living alone, black, poor	7.59
Women, living alone, black, nonpoor	5.17
Women, not alone, white, poor	4.83
Women, living alone, black, poor	3.39
Women, not alone, black, poor	3.15
Grand mean = 3.41	
$F = 5.614 (15,872), P = 0.000,$	
Eta = 0.300	
Symptoms-Problems Index	
Women, not alone, black, nonpoor	2.29
Women, living alone, black, poor	2.26
Women, living alone, black, nonpoor	2.19
Women, living alone, white, poor	1.34
Women, not alone, white, poor	1.18
Grand mean = 2.95	
$F = 7.339 (15,872), P = 0.000,$	
Eta = 0.335	

*Analysis is a multiple classification analysis (MCA) analysis of variance. Only the top five targeted groups are reported. Results for other groups are available from the authors on request.

variables: one-third of the elderly perceived themselves in poor health but were without symptoms and functioned well; others (10 percent) perceived themselves to be in good health while reporting numerous symptoms-problems and impairments.¹⁷

Such paradoxes have not been fully explained.¹⁸ Elderly persons can misrepresent or misperceive health status for any of the following reasons: (1) psychopathological states, such as depression, not measured by indices of physical health; (2) hypochondriasis; (3) fear that admitting to ill health could lead to loss of independence or financial security; (4) distrust of the medical community; (5) social isolation or loneliness; (6) personality factors; or (7) cognitive impairment.

Despite obvious limitations, results from a community survey can be useful. Family physicians under COPC are sometimes blamed for failing to refer patients to human service agencies that could supplement medical care. The rarity of unmet needs and of severe dysfunction in our study suggests that physicians were not failing to refer people adequately. More likely, people in need of services found them without referral.

Rather than concentrating on human service referrals and follow up, clinicians can use relationships within existing support networks of family and friends. Because only a handful of elderly persons are totally isolated, physicians can assess the nature and extent of informal support and caregiving and, where appropriate, include these in patient management strategies.¹⁹

Recent sociological studies have renewed interest in how neighborhoods and quality of life affect health.¹³ It is often assumed that poor persons are concentrated in poor neighborhoods — neighborhoods so pathological that the health and well-being of their residents are affected. Our analysis shows that a good neighborhood and quality of life are strong, but not always entirely consistent, predictors of health. Therefore, COPC strategies should include measures to improve neighborhood and quality of life.

Eliminating barriers to care, a major goal of COPC, may not increase use of health care. Many barriers of poor elderly persons have been removed, yet some still do not seek care — in part because they do not need services, but also because they may not want the services offered. Furthermore, perceived barriers are not limited to the poor. The more affluent also report problems with out-of-pocket expenses, transportation, and dental care.

Conclusion

Our COPC survey illustrates that useful health care planning data and clinical perspective can be obtained from special populations, such as the independent elderly population. Indeed, our hospital administration and primary care facility are now using the information to revise outreach services and to instruct family practice residents and geriatric fellows. However, it is notable that most of the measures, especially demographic characteristics, are not robust predictors of health status and health care needs. Advanced multivariate analysis provides greater correlative power, but significant interpretive problems remain. We have refined our measurement tools based on this initial experience so that the follow-up longitudinal surveys can achieve both a clearer definition of "health" and more reliable predictors of "health status."

We thank Claire Bourguet, Peter Leahy, Robert Kennedy, Stephen Zyzanski, Roger Vaughan, and two anonymous referees for their critical reviews and Debbie Campana for her secretarial support.

References

1. Kark SL. The practice of community-oriented primary care. New York: Appleton-Century-Crofts, 1981.
2. Institute of Medicine. Community-oriented primary care. Washington, D.C.: National Academy Press, 1984.
3. Mullan F. Sounding board. Community-oriented primary care: an agenda for the '80s. *N Engl J Med* 1982; 307:1076-8.
4. Madison DL. The case for community-oriented primary care. *JAMA* 1983; 249:1279-82.
5. Berg AO. Practice-based research in family medicine. Kansas City, MO: The American Academy of Family Physicians, 1986.
6. Frame PS. Is community-oriented primary care a viable concept in actual practice? An affirmative view. *J Fam Pract* 1989; 28:203-6.
7. Patrick DL, Stein J, Porta M, Porter CQ, Ricketts TC. Poverty, health services, and health status in rural America. *Millbank Q* 1988; 66:105-36.
8. Commonwealth Fund. Medicare's poor. New York: The Commonwealth Fund Commission on Elderly People Living Alone, 1987.
9. *Ibid*. Old, alone and poor. New York: The Commonwealth Fund Commission on Elderly People Living Alone, 1987.
10. National Center for Health Statistics. Health statistics on older persons, United States, 1986. Hyattsville, MD: NCHS, DHHS, 1987. Publication no. 87-1409 (June).
11. Besdine RW. Functional assessment as a model for clinical evaluation of geriatric patients. *Public Health Rep* 1988; 103:530-6.
12. Illinois Department of Aging. Determination of need form, IL-402-0195. Springfield, IL: Department of Aging, 1983.
13. Hopkins K. Welfare dependency. Report to U.S. Dept. of Health and Human Services, Income Security Policy Research Division. Washington, D.C.: Department of Health and Human Services, 1987.
14. National Center for Health Statistics. Aging in the eighties: age 65 years and over — use of community services. Hyattsville, MD: NCHS, Number 124, Sept. 30, 1986.
15. Wan TH. Functionally disabled elderly. Health status, social support, and use of health services. *Res Aging* 1987; 9:61-78.

16. Petchers MK, Milligan SE. Access to health care in a black urban elderly population. *Gerontologist* 1988; 28:213-7.
17. Ware JE. Conceptualization and measurement of health status for adults in the health insurance study. Vol VI. Santa Monica, CA: Rand Corporation.
18. *Ibid.* The assessment of health status. In: Aiken LH, Mechanic D, eds. *Applications of social science to clinical medicine and health policy*. New Brunswick, NJ: Rutgers University Press, 1986.
19. Frank SH. The unit of care revisited. *J Fam Pract* 1985; 21:145-8.