Stage two would take place at the relocation facilities and consist of a more indepth psychiatric evaluation. The staff at this stage would be recruited through contracts with private individuals, organizations, and State mental health programs.

Any person considered to have evidence of significant emotional stress, mental illness, or mental retardation at the time of the stage two assessment would be referred for a more extensive study including any necessary testing. This stage three evaluation could be repeated subsequently. Professional services would also be provided by contracts with private individuals, organizations, and State mental health programs.

Conclusion

The Mariel boatlift of 1980 brought to the United States nearly 125,000 Cubans, A small minority of them needed special attention, usually of a psychiatric nature. The cost of the psychiatric evaluations and subsequent treatment in the inpatient units at Fort Chaffee and in Washington, DC, approximated $14.8 million, excluding the costs related to the services provided by the cadre of PHS medical officers and staff.

Despite the great amount spent on a relatively small group of Cubans it is important to remember that the great majority of the Cuban Entrants have adjusted to life here. This theme was exemplified in an editorial in the Washington Post on January 8, 1982.

> Between April and October 1980, more than 125,000 Cubans arrived in south Florida via the Mariel boat lift . . . .
>
> The surprising and impressive fact is that all but two percent have been settled and are quietly earning a living and becoming Americans. This unheralded achievement is due in large measure to the efforts of the Immigration and Naturalization Service and the Departments of State, Justice and Health and Human Services. Credit also is due to the many voluntary agencies that worked to find sponsors for the Cubans and that provide continuing support. Unfortunately, the remaining two percent of the Cubans—those who have not been resettled—are the ones we read about. . . .
>
> Fidel Castro undoubtedly thought he would embarrass and discredit our government by unloading his undesirables on the beach at Key West. He must be disappointed. Americans have accorded the migrants both charity and justice.

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Analysis of County-Level Data Concerning the Use of Medicare Home Health Benefits

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Synopsis

A multiple regression analysis was undertaken of variables identified in the literature as underlying the relationship between community characteristics and the availability and use of home health services. The literature on social science and health care administration was reviewed to identify the variables that theoretically underlie different rates of home health care use among communities. County statistics then were used to quantify many of those variables that, when considered in combination, should explain much of the use of home health services.

Three categories of variables—general community characteristics, health sector characteristics, and service availability—contribute roughly equal amounts to the total explained variance of 25 percent. Viewed from the opposite perspective, 75 percent of the use of Medicare home health benefits remains unexplained despite the purported strong association between the variables employed in this analysis and the use of home health services. These findings abase the long-held belief that substitution of inpatient services for home care is commonplace, and they suggest the potential effectiveness of community-level strategies to promote the use of home health services, particularly efforts to increase their availability.

THE RECEIPT OF MEDICAL SERVICES is a function of both patients' need for care and their ability and desire to obtain it. If the need for a health service is similar from place to place, the rates of its use also should be reasonably alike across space, ability and desire being equal. In the case of Medicare home health benefits, however, rates of use of those benefits vary among census regions and divisions, States, and metropolitan and nonmetropolitan areas (*1*). Therefore, in this article I begin by presenting the theoretical perspective that guided the search for variables that purportedly underlie the relationship between community characteristics and the use of home health services. Then, I use available county statistics to quantify many of the variables. Finally, I discuss the results of the multiple regression analysis.

Considered in combination, those variables should explain much of the use of home health benefits. Although I included in this analysis many of the variables believed associated with the use of home health services, 75 percent of the variance is unexplained. Since the variables employed in this analysis were the same or were related to most of those in existing formulas employed in needs estimation, this result indicates that substantial work remains in developing valid and reliable measures of the need for home health services. The subsidiary finding that the availability of home health services makes the greatest explanatory contribution supports conventional wisdom and a growing body of empirical evidence that the U.S. health care system is supply-driven. That finding, in effect, validates the development and expansion of home health agencies as an effective approach to promoting the use of home care within communities.

The Community Level of Analysis

The level of analysis determines the type of conclusions that can be drawn. Since community is the fundamental unit of organization of personal health services, my interest in the response of the health care delivery system to factors that affect the availability and use of services has prompted review of the literature for variables that may account for differences among communities in the rates and types of Medicare home health benefits that are used by their populations (*2*).

Rushing, for example, employs community explicitly as the level of analysis in his medical manpower model. The availability of health resources within a community, he maintains, can be understood within the context of the social and economic factors that affect the availability of community resources in general. His analysis of the distribution of physicians among communities therefore treats problems of medical care organization within the broader context of the community; he views physicians' choices of practice sites as a phenomenon related to a community's overall economic and population growth, which leads, in turn, to the overall growth of its service occupation sector. In essence, the dynamic between urbanization and community resources is one in which large populations attract industry, which strengthens the economic base, which, in turn, strengthens the service sector (*3*).

Rushing's paradigm, adapted for purposes of this study, provides a framework for analysis of differences observed among communities in the population's rates of use of Medicare home health benefits. Specifically, the use of Medicare home health benefits is postulated to be the combined result of two categories of a community's characteristics: (*a*) its general social and economic characteristics and (*b*) characteristics of its health services sector. My analysis of available county and Medicare data therefore focuses on the relationship between the counties' general and health sector characteristics and (*a*) the availability and (*b*) the use of Medicare home health services.

The following propositions derive from this model:

1. The general characteristics of communities substantially explain the availability of home health services.
2. The availability of home health services substantially explains the use of home health services within communities.
3. Characteristics of the communities' health sector substantially explain the use of home health services.

Variables and Operational Measures

Two national data bases provided information on the general and health sector characteristics of counties and the availability and use of Medicare home health services in 1975. The Area Resource File—maintained by the Health Resources and Services Administration—contains socioeconomic, health manpower, facility, and related information gathered from varied sources and aggregated to the county level. The Home Health Master Record—created by the Health Care Financing Administration—includes information aggregated to the home health agency level on the amount and kind of Medicare home health services received by Medicare beneficiaries and the charge for those services.

Merger of these data bases permits calculation of operational measures of many variables that are theoretically linked to the use of Medicare home health benefits. Primarily because the data are not available, several variables which purportedly influence the use of home health services cannot be expressed quantitatively—for example, awareness of the availability of services and the means of acquiring them.

'The subsidiary finding that the availability of home health services makes the greatest explanatory contribution supports conventional wisdom and a growing body of empirical evidence that the U.S. health care system is supply-driven.'

Use of services. For purposes of this analysis, "use" refers to the receipt by Medicare beneficiaries of home health visits underwritten by Medicare and provided by home health agencies certified to participate in the Medicare program. Qualified home health agencies are reimbursed for providing services that include skilled nursing care, physical therapy, occupational therapy, medical social services, and home health aide services. Defined operationally as the number of home health visits received per 1,000 Medicare beneficiaries, this use rate summarizes the volume of services used per beneficiary. The numerator is the number of visits provided in 1975 by all home health agencies in a county certified for Medicare participation; that is, the total number of all types of home visits reimbursed by Medicare that were provided to beneficiaries enrolled for Medicare hospital insurance or supplementary medical insurance or both. The denominator is the number of county residents enrolled for Medicare benefits in 1975.

Community. Community is defined in health services research variously as county, standard metropolitan statistical area (SMSA), State, census division, and so forth (*3*). Since the data available for this analysis can be related to the county level, county becomes the operational definition of community for this study and its basic unit of analysis.

County provides a reasonable, if imperfect, operational definition of community. Its conceptual and methodological shortcomings both involve the community economic, social, and cultural activities that take place outside of county bounds. For example, the data are transformed into ratios for purposes of statistical analysis; the methodological issue raised by the crossing of county boundaries by practitioners to provide and by patients to receive services is the relationship of the aggregate population or service data in the numerator to those in the denominator.

An idiosyncratic feature of the Home Health Master Record described subsequently results in deletion from the data base of counties in many of the nation's SMSAs, where much intercounty and interstate commuting takes place. The correlary gain is that the remaining counties indeed are the central locus of the activities of daily life, activity that captures the essence of the meaning of community.

General community characteristics. The availability of home health services is analyzed subsequently in terms of two general community characteristics: (*a*) urbanization and (*b*) geographic region.

Urbanization. In this analysis, use of the term "urbanization" to refer to population concentrations reflects a theme typical of the literature on community development: technological advances and progressive concentration of the population into metropolitan areas work in combination to create a number and mix of occupations and skills different from those of nonmetropolitan areas. In theory, the availability of services within a community reflects the effect of urbanization in concentrating human resources; large populations attract industry, which strengthens their communities' economic base, which, in turn, enlarges the service sector.

Three conceptually related but statistically independent variables were used to index urbanization—population size, population density, and per capita income—and metropolitan location was defined in terms of whether or not a county was located within an SMSA.

Region. Several authors associate the availability of services within a community with its geographic region. They maintain that much of what happens within a community is causally related to extracommunity influences, including neighboring localities and States. Sharkansky, for example, relates public policy to noneconomic regional characteristics (*4*).

For purposes of this analysis, region is defined operationally in terms of the nine census divisions designated by the Bureau of the Census. Census divisions consist of groups of contiguous States physically and historically similar to one another. The population, economic, and social characteristics of the States within each division are fairly homogenous, while each division differs from the others in these respects.

Population composition. The past two decades have witnessed a flood of research on the use of health services. These studies have created widespread agreement within the research community regarding the operational measures of the underlying variables. In keeping with those conventions, measures of population composition were used variously to indicate the availability of medical manpower within a community, the relative need for health services among beneficiary populations, and the

availability of home health services. The number of medical personnel active in a job category (that is, active non-Federal physicians, registered nurses, and licensed practical nurses) is used to indicate the availability of medical manpower. Since age, sex, race, and disability are each associated with differential rates of health service use, ratios to total Medicare beneficiaries of beneficiaries who are aged 75 or more years, female, white, and disabled were each used in this analysis as indicators of the relative need for health services by counties' Medicare populations.

'. . . the insignificant association between physician supply and the use of medicare home health benefits . . . suggests that the number of physicians in a community has little, if any, effect on the referral of patients to home health care.'

Service availability. Since nursing is the primary home health benefit provided under Medicare, the conventional measure of home health service capacity—number of full-time equivalent (FTE) nurses—was used to approximate the volume of home health services within a county. In this analysis, that measure was defined operationally as the combined registered nurses and licensed practical nurses employed by certified home health agencies within a county. This ratio closely approximates the volume of home health services available within an area. The average of the six basic Medicare home health services offered by certified agencies in the county is also used as an indirect measure of the scope of service availability.

Health sector variables. The term "health sector variable" refers to characteristics of health care delivery within a community.

Type of agency. The Health Care Financing Administration qualifies several types of organizations to provide home health services to Medicare beneficiaries, including Visiting Nurse Associations (VNAs), State health departments, hospital-based agencies, and profit-making organizations. These agencies adopt different staffing and financing strategies that translate into their provision of different types and quantities of home services. The indicator of agency control used in this analysis is the ratio of nursing FTEs by type of agency to the total number of home health agency nursing FTEs within a county.

Alternate health resources. It is physicians, the allocators of medical resources, whom many observers view as decisive in the use of home health services. Physicians are pictured in the literature as more likely to agree to home care when inpatient hospital and nursing home services are in short supply. Availability of beds in these facilities, on the other hand, allegedly encourages some physicians to admit patients and to prolong institutional care unnecessarily, thereby diminishing the demand for services in alternate settings. In short, inpatient care is believed to be a partial substitute for home health care.

In this analysis, availability of inpatient hospital and nursing home services is expressed as the number of beds available per 1,000 population, and the use of inpatient services is indicated by hospital and nursing home occupancy rates. Short-term general hospitals serve the entire population, not just the elderly, but nursing homes primarily serve the elderly. The denominator of the hospital use rates, therefore, is the entire population of the county, and the denominator of the nursing home rates is the number of Medicare beneficiaries residing within the county.

Claims denial. Varying interpretations and enforcement of Medicare policies—for example, admission criteria and claim documentation—has sometimes resulted in one intermediary denying a claim while, under the same circumstances, another intermediary approves it. On a national level, past reimbursement policies have affected both the number of home health agencies that participate in the Medicare program and the percentage of home health reimbursements as a percentage of total charges. To determine if intermediaries' processing of Medicare home health claims is related to the provision of home health services, denials are represented in this analysis by the aggregate county ratio of net reimbursement to total home health charges.

The County Data Base

The county data base employed in this analysis has been developed through a process of elimination in which (*a*) agencies providing Medicare home health services in 1975 are identified, (*b*) agencies serving several, indistinguishable counties and those lacking identifying State or county codes are eliminated, and (*c*) data on the remaining agencies are aggregated to the county level. Tabulations of these agency data found elsewhere (2) lead to the conclusion that (*a*) the various types of home health agencies are represented in the data base in numbers sufficient to perform reliable statistical

Table 1. Bivariate correlation coefficients of factors contributing to

Variables	1	2	3	4	5	6	7	8	9	10	11	12
1. Visits per beneficiary	1.000											
2. County within SMSA	.009	1.000										
3. Per capita income of county	.069	.477	1.000									
4. Population density of county	.048	.294	.316	1.000								
5. County population	-.008	.504	.528	.541	1.000							
6. Non-Federal physicians per population	.034	.312	.603	.292	.509	1.000						
7. Active registered nurses per population	.086	.165	.580	.147	.285	.684	1.000					
8. Active licensed pratical nurses per population	-.027	.017	.060	-.001	.028	.375	.334	1.000				
9. Northeast Region	.159	.129	.234	.076	.213	.243	.441	.114	1.000			
10. North Central Region	.039	-.040	.267	.090	-.049	-.041	.201	-.079	-.254	1.000		
11. Southern Region	-.151	-.062	-.531	-.141	-.135	-.247	-.544	.024	-.328	-.672	1.000	
12. Western Region	.026	.034	.237	.014	.085	.242	.137	-.037	-.106	-.217	-.281	1.000
13. Ratio of beneficiaries 75 years and older to total beneficiaries	.024	-.054	.319	.009	-.028	.076	.434	.005	.127	.732	-.766	-.018
14. Ratio of female beneficiaries to total beneficiaries	.129	.102	.249	.123	.094	.061	.260	.034	.428	.261	-.309	-.375
15. Ratio of white beneficiaries to total beneficiaries	.023	.077	.455	.048	.081	.194	.421	.017	.184	.523	-.698	.154
16. Ratio of disabled beneficiaries to total beneficiaries	-.032	.026	-.398	-.028	-.039	-.128	-.352	.115	-.089	-.522	.570	-.031
17. Ratio of FTE home health nurses to total beneficiaries	.243	.009	-.018	-.001	-.077	-.040	-.042	-.055	.038	-.186	.183	-.054
18. Ratio of government nurse FTEs to total home health nurses[1]	-.191	-.274	-.370	-.186	-.367	-.369	-.313	-.098	-.225	-.035	.243	-.124
19. Ratio of VNA nurse FTEs to total home health nurses	.105	.300	.370	.213	.359	.323	.306	.040	.309	.064	-.268	.025
20. Ratio of hospital nurse FTEs to total home health nurses	.078	-.021	.082	.006	.035	.112	.091	.084	.016	.027	-.101	.120
21. Ratio of government and voluntary agency FTEs to total home health nurses	-.017	.136	.126	.066	.178	.103	.061	-.010	-.037	.038	-.006	-.013
22. Ratio of other nurse FTEs to total home health nurses	.197	.036	.007	-.001	.046	.077	.030	.068	-.012	-.105	.042	.119
23. Average Medicare home health services[2]	.151	.368	.381	.244	.414	.403	.313	.108	.188	-.025	-.186	.167
24. Percent of hospital beds occupied	-.041	.171	.277	.155	.258	.426	.375	.351	.236	-.071	-.079	-.003
25. Hospital beds per population	.013	-.095	.129	.000	.018	.390	.540	.497	.017	.130	-.106	-.052
26. Occupied hospital beds per population	.023	-.017	.180	.053	.099	.462	.533	.520	.099	.099	-.109	-.086
27. Percent of nursing home beds occupied	-.048	.123	.294	.053	.122	.206	.246	.188	.079	.193	-.258	.045
28. Nursing home beds per beneficiary	-.075	.062	.193	.014	.037	.129	.204	.159	-.076	.334	-.305	.064
29. Ratio of reimbursements to charges	.041	.057	.134	.090	.129	.114	.124	-.013	.076	.090	-.141	.013

[1] A government nurse is one employed by an agency administered by a State, county, or other local unit of government.

[2] The number of voluntary agencies in a county times 6 basic Medicare home health services divided by 6.

NOTE: FTE = full time equivalent; VNA = visiting nurse association.

analysis and (*b*) there is no evidence of systematic bias in the data base at the agency level.

The resulting data base contains 962 counties, approximately a third of the counties in the United States. The representativeness of these data has been evaluated by comparing the number and distribution of counties in the available sample with all U.S. counties, according to the operational measures employed in this analysis. The redundancy and variability of the operational measures also have been addressed during the process. This comparison reveals that the distribution of counties in the available sample resembles closely the percentage distribution of counties in the United States by census region and geographic division. A third each of the national population, its metropolitan residents, and its Medicare beneficiaries live in counties included in the data base. Like counties nationwide, counties in the available sample differ markedly in their social and economic characteristics. A wide range of population sizes is represented, ranging from 2,500 to 1.5 million persons. Metropolitan counties from each geographic division also are included, although exclusion of multicounty agencies from the merged data base results in elimination of almost half of the nation's SMSAs as well.

Overall, the available data are well suited to the needs of this analysis. Perhaps their most serious shortcoming is that they permit no direct measurement of the level of community awareness of the availability of home health services and their acceptance within the community. For these and other intractable variables, the best that can be done is to account for the effect of the variables considered on use of services and, from that analysis, to identify the range of variance within which the complementary variable operates.

Nonetheless, careful inspection and analysis of the data elements reveal that, for each of the agencies and counties on which information is available, the data are reliable, complete, and current. The number of observations is sufficient for sound statistical analysis. Conclusions therefore can be drawn for a wide range of communities regarding the influence of general community variables relative to health sector variables and the relationship of those variables to the availability and use of home health services.

On one hand, representation in the data base of nonmetropolitan counties permits analysis of the effects of urbanization on service availability and utilization. On the other hand, it narrows the range of counties to which the results of the analysis can be generalized. The available data are representative of counties served by home health agencies with full or partial county service areas. They are less representative of single-county agencies in the New England and Pacific geographic divisions than those that have greater proportional representation, par-

the use of Medicare home health services at the county level in 962 counties

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1.000																		
.357	1.000																	
.714	.252	1.000																
−.645	−.254	−.514	1.000															
−.106	.014	−.138	.069	1.000														
−.063	−.067	−.162	.074	.131	1.000													
.101	.182	.201	−.133	−.126	−.697	1.000												
.023	−.052	.021	−.009	−.095	−.478	−.068	1.000											
.001	−.028	.068	−.010	.035	−.278	−.029	−.029	1.000										
−.074	−.091	−.065	.095	.017	−.314	−.041	−.034	−.023	1.000									
.044	.072	.139	−.026	.036	−.293	.233	.139	.041	.069	1.000								
−.038	.128	.034	.034	−.094	−.174	.157	.051	.035	.042	.189	1.000							
.176	.023	.101	−.106	−.072	−.096	.042	.074	.027	.040	.039	.434	1.000						
.138	.082	.090	−.071	−.063	−.123	.083	.065	.027	.040	.104	.576	.942	1.000					
.231	.077	.241	−.200	−.101	−.074	.069	.016	.022	.014	.052	.249	.149	.158	1.000				
.382	.041	.310	−.250	−.157	−.025	.031	.019	.010	−.032	.010	−.256	.159	.067	.443	1.000	1.000		
.004	.058	−.079	−.064	−.089	−.069	.085	.030	.047	−.076	.088	.138	.031	.073	−.014	−.029	−.031	.142	1.000

ticularly those in the Southern and North Central divisions.

Data Analysis

Correlation techniques are used in this analysis (*a*) to validate the operational measures, (*b*) to gain insight into the relationship among the variables of interest, and (*c*) to determine the effect of different categories of variables on and relative to one another.

Bivariate analysis. Inspection of the bivariate correlation coefficients presented in table 1 reveals that the association between many of the operational measures is statistically significant, but few variables are intercorrelated highly. The large size of the available sample results in the statistical significance of even small correlation coefficients; coefficients of .05, .06, and .08 are significant at the .10, .05, and .01 levels, respectively. Saying that a relationship is statistically significant, however, says nothing about its explanatory power (that is, the square of the correlation coefficient). In this analysis, for example, a correlation of .06, while statistically significant, would account for only 0.36 percent of the total variation. It is for this reason that the propositions that guide this analysis are stated in terms of the contribution of the variables rather than their statistical significance.

The statistical relationship of several variables is consistent with the reports in the literature of earlier research findings, inspiring confidence in the quality and validity of the data on which this analysis relies. For example, metropolitan location, per capita income, and population density—three measures of urbanization—each account for approximately 25 percent of the variance in county population. Both per capita income and population size are related to medical manpower, metropolitan location, and population density. Also, consistent with the usual finding that the use of inpatient hospital services is associated with the supply of physicians, the physician-to-population ratio is correlated with hospital occupancy ($r = .420$).

The relationship between the ratio of full-time equivalent home health nurses per beneficiary and visits per beneficiary ($r = .243$) provides evidence that the demand of home health services is related to its supply, but the insignificant association between physician supply and the use of Medicare home health benefits ($r = .034$) suggests that the number of physicians in a community has little if any effect on the referral of patients to home health care. Differences among communities in the health status of their beneficiary populations—as indicated by their composition with respect to age, sex, race, and disability—together account for 3 percent of the total variance explained.

Inspection of the bivariate correlation coefficients revealed that all of the variables were reasonably independent of each of the others, which, for purposes of this analysis, means that no variable accounted for more than 25 percent of the variance in any of the others. Each of these variables, therefore, could be used meaningfully in

Table 2. Results of adding categories of variables to the regression equation

Variable category and source of variation	Multiple R	Cumulative R^2	Change in R^2
General community variables .	.309	.095	.095
Geographic division	.240	.058	.058
Urbanization	.249	.062	.004
Composition of beneficiary population	.309	.095	.033
Service availability	.409	.167	.072
Health sector variables	.496	.246	.079
Type of agency	.475	.226	.059
Inpatient service utilization ..	.485	.235	.009
Claims denial	.488	.238	.003
Scope of service	.496	.246	.008

a least-squares regression equation, and the number of variables used in that equation cannot be reduced. Accordingly, the same measures were used again in forced regression to determine their combined effect on the use of services.

Multivariate analysis. Multivariate regression analysis permits testing the analytic model by entering each variable or group of variables in logical sequence to determine the reduction in variance after each entry. Table 2 summarizes the contribution of each category of variables to reducing the unexplained variance.

The results support the concept that different rates of use of Medicare home health benefits reflect underlying economic and social characteristics of communities and the manner in which community health services are organized. The correlation coefficients support each of the propositions that have guided this analysis—that is, general community characteristics of urbanization and of the geographic region make a substantial contribution to explaining the availability of home health services; the availability of services is related to their use; and characteristics of communities' health sector also in part explain use. Variables in these three categories—general community characteristics, service availability, and health sector characteristics—contribute roughly equal amounts to the explained variance, together totaling approximately 25 percent; their explanatory contributions are 10, 7, and 8 percent, respectively, all of which are significant below the .001 level.

Inspection of the cumulative and incremental explanatory power of the variables in each category revealed that geographic division and urbanization contributed a total of 6.2 percent to the total explained variance; in light of the strength of the correlation between geographic division and measures of urbanization, presented in table 1, the amount explained by these individual variables may be misrepresented in table 2.

Service availability made the greatest contribution of any single variable to explain the use of Medicare home health services (7.2 percent). This finding suggests that the availability of services itself is a significant determinant of the use of home health care. What is striking about the relationship between need and use is that it apparently contributed less to the total explained variance in home health care (3.3 percent) than it did to other types and modes of health services (5).

In combination, operational measures descriptive of the counties' health sector contributed 7.9 percent to the explanation of the use of home health services. Type of agency alone made a 6 percent contribution. The four measures of bed availability in institutions together reduced the unexplained variance in use by less than 1 percent, further indication that the use of home health care is reasonably independent of rates of hospital and nursing home occupancy. The small explanatory power of the ratio of reimbursements to charges indicates that the rate of use of home health services was not influenced significantly by Medicare's fiscal agents, but the 0.8 percent reduction in unexplained variance by scope of services suggests that use was related to the extent to which comprehensive services were available from individual agencies.

Discussion

Since the available sample represents a subset of the counties served by Medicare home health agencies in 1975 and the combined explanatory power of the variables is small, the preceding analysis should be considered suggestive rather than definitive. Whether a sample more representative of all U.S. counties, additional variables, different operational measures, later data, or other methodological refinements would further reduce the unexplained variance is a matter for future research.

Notwithstanding these limitations, the available data support the proposition that differences observed from place to place in rates of use of Medicare home health benefits reflect underlying community characteristics related to the availability and organization of those services. Consistent with the findings of community-level research in other disciplines, the general community characteristics of region and urbanization make a substantial explanatory contribution that would have been overlooked if the analytic focus were on health sector variables exclusively. The results of this analysis further indicate that home care is associated more strongly with the availability of services than with medical necessity; the explanatory power of the mix of agencies that serve a community provides additional, indirect support for this conclusion.

The small explanatory power of the remaining health sector variables employed in this analysis challenges the common belief that inpatient services are widely substituted for home care and the validity of various need estimation formulas. In other words, restricting the supply of hospital and nursing home beds and keeping occupancy rates high may have little effect on the use of home health services, and substantial work to develop valid and reliable measures of the need for home health services apparently is needed.

The practical contribution of community-level utilization research is the insight that it provides into likely responses of the health care delivery system to factors that affect the supply and use of health resources. On one hand, the relatively strong explanatory power of geographic division suggests the effect of cultural factors that underlie different patterns of health care delivery among regions; if not immutable, the influence of those factors probably could be reduced only after lengthy and costly efforts at community education. On the other hand, the finding that medical necessity accounts for only an eighth of the explained variance indicates a large discretionary element in the use of Medicare home health benefits, and it suggests that many determinants of use are susceptible to community intervention, particularly the availability of services. Further, the lack of association between the employment of home health nurses and varying degrees of urbanization suggests that the unequal availability of home health services to Medicare beneficiaries, for the most part, is not related to the availability of nurses for employment. In short, it appears likely that the use of home health services could be promoted by community initiatives aimed at development of service capacity, coordination of services, agency regulation, and so forth.

This analysis provides evidence of the potential of general community characteristics in explicating the use of health services. Useful insight is gained by considering problems of medical care organization within the broader context of community research by social scientists. That 75 percent of the variance in the use of Medicare home health benefits is unexplained underscores just how much remains to be learned regarding various modes of health care delivery. Aspects of home care that remain to be explored fully by community-level research include need, availability, accessibility, quality, acceptability, continuity, and costs. Understanding how these aspects work in combination to determine the use of services holds forth the promise of successful strategies to intervene in the production and consumption of home health services.

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Severe Attacks by Dogs: Characteristics of the Dogs, the Victims, and the Attack Settings

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Synopsis

Sixteen incidents involving dog bites fitting the description "severe" were identified among 5,711 dog bite incidents reported to health departments in five South Carolina counties (population 750,912 in 1980) between July 1, 1979, and June 30, 1982. A "severe" attack was defined as one in which the dog "repeatedly bit or vigorously shook its victim, and the victim or the person intervening had extreme difficulty terminating the attack."

Information from health department records was clarified by interviews with animal control officers, health