Are Patients Who Use a Generalist Physician Healthier Than Those Who Seek Specialty Care Directly?

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Background: American health care consumers want the option of seeing specialists whenever they wish, but given this option, do they in fact use it without consideration of their health status? This paper reports on a cross-sectional analysis that compares the demographics and health status of fee-for-service Medicare enrollees who exhibited four different patterns of physician access. Methods: The Medicare Beneficiary Survey data from 1998 were used. Subjects ages 65 and older were categorized into one of four groups: those with no physician claim, those who saw a generalist only, those who saw a specialist only, and those who saw both. Age, income, education, health status, level of impairment, and disease burden for the four patient groups were compared using ANOVA. Urban/rural status, race, ethnicity, mortality rates, and gender for the four patient groups were compared using chi-square. A predictive model using multinomial logistic regression was created. Results: Twelve percent of subjects saw no physician in 1998, 11.6% saw a generalist only, 14.2% visited a specialist only, and 62.1% visited both types of physicians. Subjects who saw both physician types had significantly worse health status and more chronic diseases than the other groups. Subjects who saw generalists only or specialists only had intermediate levels of health status and disease burden that were not significantly different from each other. Subjects who saw a specialist only were the most affluent and highly educated group. Subjects who saw no physician had the best health status and the fewest chronic diseases of all subject groups. Urban residents were more likely to visit some type of physician than were rural residents and were more likely to see a specialist only. Regional differences were noted, with New England showing the highest rates of specialist only use. Discussion: As expected, the healthiest subjects were least likely to visit any health care provider. Subjects with the worst health status were likely to access both generalists and specialists for their care. Subjects who visited a specialist only had higher incomes, more education, and urban residence but no difference in health status when compared to subjects who visited a generalist only.

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This paper compares the demographics, disease burden, health status, and functional impairment of community-dwelling, fee-for-service, Medicare beneficiaries over age 65 who fell into one of four categories based on their history of physician visits during a 12-month period: no physician visits at all, a generalist physician visit only, a specialist physician visit only, or both a specialist and a generalist physician visit.

Methods

This investigation was a cross-sectional study conducted using the Medicare Beneficiary Survey (MCBS) data from 1998. The MCBS is a continuous survey of a stratified random sample of roughly 12,100 beneficiaries selected to be representative of the entire population of aged and disabled beneficiaries enrolled in Medicare in 1998.8,9

Sampling Design

The sampling design is a stratified area probability design with three stages of selection: (1) selection of 107 primary sampling units (PSUs), which are metropolitan statistical areas and clusters of non-metropolitan counties, (2) selection of zip code clusters within the sample PSUs, and (3) selection of Medicare beneficiaries within the sample zip code clusters. The sample was designed to yield complete annual health care cost and use data on approximately 12,000 beneficiaries.8

Survey Procedure

For the survey component, subjects are interviewed three times annually in the community or in the facility where they reside. The survey includes two components: (1) detailed interviews with participants three times yearly addressing their demographics, health status, and use of health care services and (2) insurance claims data from Medicare showing details of health care utilization and cost. Information from both components of the survey was then reconciled to calculate total health care utilization, cost and utilization for each category of use, and sources of payment for each individual who participates in the survey. From a total of 18,185 eligible beneficiaries, 13,024 responded, for an overall response rate for the survey of 71.6%.9

Subjects

The MCBS has been conducted continuously since 1991.8,9 The survey sample is drawn from Medicare enrollment files. Because Medicare covers more than 95% of persons ages 65 or older, the survey is a good representation of this population. The survey gathers information on demographics, cost and use of services covered by Medicare, and use of services that are not covered (eg, prescription drugs, nursing home care, dental care). Information on use and expenditures is gathered during the in-person interviews, and memory aids are used to ensure completeness and accuracy. Expense data on Medicare-reimbursed services and mortality data are taken directly from Medicare records. Events reported by respondents are linked to claims.8

From the 13,024 beneficiaries in the database, we selected those who were ages 65 or older, who were not in an HMO, and who were community dwelling. HMO subjects were excluded because their access to specialists may have been hindered by health plan rules, and their line-items claims data are not part of the MCBS, thus making it impossible to determine the specialties of the physicians they visited during the study year.

Subjects were categorized into one of four groups: those who did not have a physician claim at all in the past year, those who saw a generalist physician only, those who saw a specialist but did not see any of the physicians noted above, and those who saw both a generalist physician and a specialist. These four subject groups—no physician, generalist physician only, other specialists only, and both groups of physicians—were used for the comparative analyses.

Definition

Generalist physicians included general practitioners, family physicians, general internists, nurse practitioners, preventive medicine, and geriatricians as defined by the CMS provider specialty codes used on the Health Care Financing Administration 1500 claims submission form.

Specialty physicians included general surgery, allergy/immunology, otolaryngology, anesthesia, cardiology, dermatology, gastroenterology, neurology, neurosurgery, obstetrics-gynecology, ophthalmology, orthopedic surgery, plastic and reconstructive surgery, physical medicine and rehabilitation, psychiatry, colorectal surgery, pulmonary disease, thoracic surgery, urology, pediatric medicine, nephrology, hand surgery, infectious disease, endocrinology, podiatry, multispecialty clinic, pain management, vascular surgery, cardiac surgery, addictive medicine, critical care medicine, hematology/oncology, maxillofacial surgery, neuropsychiatry, medical oncology, surgical oncology, radiation oncology, gynecological oncology, and clinical psychology. Subjects categorized as visiting generalists only may have seen multiple generalist physicians, and subjects categorized as visiting specialists only may have visited multiple specialists from the list above.

Subjects were identified as living in rural or urban areas from a specific variable in the MCBS dataset, and their region of residence was classified as New England, Middle Atlantic, South Atlantic, East North Central, West North Central, East South Central, West South Central, Mountain, and Pacific.
The physical functioning and health status of the subjects were classified using a methodology from previous studies of health care delivery to older persons. The functional status/level of impairment of subjects was categorized based on the five activities of physical function developed by Nagi, the six instrumental activities of daily living (IADLs), and the six activities of daily living (ADLs). The activities described by Nagi are stooping, crouching, or kneeling; lifting or carrying objects up to 10 pounds; lifting arms above shoulder height; grasping small objects; and the ability to walk two to three blocks. Respondents who reported no difficulty at all were categorized as being able to perform the activity; those reporting any level of difficulty at all or not being able to perform the activity were coded as having a limitation in functioning. The IADLs included doing light housework, doing heavy housework, shopping, managing money, preparing meals, and using the telephone. The six ADLs included eating, dressing, bathing, transferring from a bed or chair, using the toilet, and walking.

Functional status/level of impairment was categorized as previously described by Lubitz: no limitation, limitation with only Nagi functions but without limitation of IADLs or ADLs, limitation with IADLs but without limitation of ADLs, and limitation of ADLs.

Data Analysis

The subjects’ self-reported health status and mortality rates were also analyzed. Responses for self-reported health status were reported on a 5-point scale: excellent=1, very good=2, good=3, fair=4, and poor=5.

The disease burden was computed from the survey portion of the MCBS. Subjects were asked if they had any of a list of diseases. For each disease that was present, the subjects were given one point. The subjects had a total possible disease burden score of 15 if all the diseases from the following list were present: high blood pressure, previous myocardial infarction, angina/ischemic heart disease, stroke, cancer, diabetes, arthritis, osteoporosis, broken hip, psychiatric illness, Alzheimer’s disease, Parkinson’s disease, chronic obstructive pulmonary disease (COPD)/emphysema, paralysis, or amputation. Disease burden for subjects of each physician category was computed. No adjustments were made for the severity of any individual disease.

The subjects’ level of education was categorized in the following categories: 1=no schooling; 2=1st–8th grade; 3=9th–12th grade, no diploma; 4=high school graduate; 5=vocational technical business graduate; 6=some college, no degree; 7=associate degree; 8=bachelor degree; 9=graduate degree.

Subject age, income, educational level, health status, functional status/level of impairment, and disease burden were compared among the four physician designations using ANOVA and post-hoc testing. The subjects’ gender, race, ethnicity, mortality rates, and urban/rural status were compared among the four physician designations using chi-square testing.

A multinomial logistic regression was performed using the physician visit classification (no physician, generalist only, specialist only, and both) as the dependent variable and using the previously listed demographic, mortality, and health status measures as independent variables. To simplify the computations, age group categories and income strata variables were used in the regression equation instead of the actual ages and incomes of subjects.

Results

From the 13,024 subjects in the database, 7,928 subjects were identified who met the inclusion criteria outlined in the methods. Of these community-dwelling subjects, 969 (12.2%) saw no physician in the previous year, 916 (11.6%) saw a generalist only, 1,122 (14.2%) saw another specialist only, and 4,921 (62.1%) saw both types of physicians during the year.

Demographics

The mean age of the 7,928 subjects was 76.5 ± 7.4 years (Table 1). There were significant differences in the ages of the subjects among the various subject groups (F=69, P<.01), with the subjects who saw both types of physicians being the oldest (mean age 77.2 ± 7.3 years). The subjects who saw either a generalist only (mean age 75.7 ± 7.5) or a specialist only (mean age 76 ± 7.3) were the next oldest, but not significantly different in age from each other. The group of subjects who saw no physician in the last year were significantly younger than subjects in the other groups (mean age 73.7 ± 7.5).

The mean income of all 7,928 subjects was $26,043 ± $36,378 and was significantly different among subject groups (F=10.3, P<.001). Subjects who saw a specialist only had significantly higher income than all other groups (mean $29,195 ± $33,290). Subjects who saw a generalist only had significantly lower income (mean $20,813 ± $18,668) than subjects in all other categories. Subjects who saw no physician (mean $24,305 ± $37,053) and those who saw both types of physicians (mean $26,639 ± $39,196) had intermediate levels of income and were not significantly different from one another.

Subjects reported their average level of education as graduation from high school with some post-high school vocational education. There were significant differences in the level of education among the various subject groups (F=21, P<.01). All subject groups reported educational levels that were significantly different from all other subject groups. Subjects who saw generalists only had significantly lower levels of education than all other groups (average education was high...
school attendance without graduation). Subjects who saw no physician had the second-lowest educational level, reporting high school graduation on average, but no post-high school education. Subjects who saw specialists only had the highest level of education, reporting some post-high school education on average.

The gender distribution for the 7,928 community-dwelling subjects was 42% (3,316) male and 58% (4,612) female. There was a significant association between gender and subject group (chi-square=31, df=3, \( P < .01 \)). Men were significantly more likely than expected to see either no physician (actual=14.1%, expected=12.2%) or a specialist only (actual=15.1%, expected=14.2%), while women were significantly more likely than expected to have seen a “generalist only” (actual=12.5%, expected=11.6%).

The urban versus rural distribution for these 7,928 community-dwelling subjects was 67% urban and 33% rural. There was a significant association between urban/rural residence and subject group (chi-square=36, df=3, \( P < .01 \)). Urban residents were less likely to see no physician (11.7% versus 13.1% for rural residents). Urban subjects were less likely to visit a generalist only (10.2% versus 14.2% for rural residents), more likely to visit a specialist only (14.9% versus 12.7%), and more likely to visit both types of physician (63.2% versus 59.9%).

The region of residence also was significantly associated with subject group (chi-square=254, df=27, \( P < .01 \)). The specific effects will be discussed in the section on multinomial logistic regression.

**Physical Functioning, Self-reported Health Status, and Mortality**

Of the 7,928 community-dwelling subjects, 18.6% (1,472) reported no limitations, 30.4% (2,413) reported limitations of Nagi functions only, 21.4% (1,697) reported limitations of IADLs but not of ADLs, and 29.6% reported limitations of ADLs (Table 2). Difficulty stooping, crouching, or kneeling was reported by 74% of respondents and was the most commonly reported difficulty with Nagi functions. Difficulty walking two to three blocks was reported by 48% of respondents and was the second-most commonly reported difficulty with Nagi functions. Difficulty with ambulation was reported by 25% of respondents and was the most commonly reported difficulty with IADL functions. Difficulty with heavy housework was reported by 41% of respondents and was the most commonly reported difficulty with IADL functions. Difficulty with ambulation was reported by 25% of respondents and was the most commonly reported difficulty with IADL functions. Difficulty with heavy housework was reported by 41% of respondents and was the most commonly reported difficulty with IADL functions. Difficulty with heavy housework was reported by 41% of respondents and was the most commonly reported difficulty with IADL functions.

The mean impairment score for the entire sample was 2.6 ± 1.1 (no impairment=1, impairment of one Nagi function=2, impairment of one IADL=3, and impairment of one ADL=4). A significant difference existed in the mean level of function among the various subject groups (F=59, \( P < .01 \)) (Table 2).

### Table 1

Demographics of Medicare Beneficiaries Over Age 65, by Type of Physician Visited (n=7,928)

<table>
<thead>
<tr>
<th></th>
<th>No Physician Visit (n=969)</th>
<th>Generalist Physician Visit Only (n=916)</th>
<th>Specialist Physician Visit Only (n=1,122)</th>
<th>Both Types of Physician Visited (n=4,921)</th>
<th>Statistical Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age(^1)</td>
<td>73.7 ± 7</td>
<td>75.7 ± 7</td>
<td>76 ± 7</td>
<td>77 ± 7</td>
<td>F=68.6, ( P &lt; .01 )</td>
</tr>
<tr>
<td>Income(^2)</td>
<td>$24,305 ± 37,053</td>
<td>$20,813 ± 18,668</td>
<td>$29,195 ± 33,290</td>
<td>$26,639 ± 39,196</td>
<td>F=10, ( P &lt; .01 )</td>
</tr>
<tr>
<td>Level of education(^3)</td>
<td>4.30 ± 2.2</td>
<td>3.95 ± 1.9</td>
<td>4.68 ± 2.3</td>
<td>4.46 ± 2.1</td>
<td>F=22, ( P &lt; .01 )</td>
</tr>
<tr>
<td>% urban(^4)/% rural in category</td>
<td>11.7%/13.1%</td>
<td>10.2%/14.2%</td>
<td>14.9%/12.7%</td>
<td>63.2%/59.9%</td>
<td>X(^2)=36, ( P &lt; .01 )</td>
</tr>
<tr>
<td>% female(^5)</td>
<td>52%</td>
<td>63%(^a)</td>
<td>55%</td>
<td>59%(^a)</td>
<td>X(^2)=31, ( P &lt; .01 )</td>
</tr>
<tr>
<td>% African American(^6)</td>
<td>14.2%</td>
<td>10.1%</td>
<td>9.8%</td>
<td>7.0%</td>
<td>X(^2)=56, ( P &lt; .01 )</td>
</tr>
<tr>
<td>% Hispanic ancestry(^6)</td>
<td>9.8%</td>
<td>7.7%</td>
<td>5.8%</td>
<td>5.1%</td>
<td>X(^2)=35, ( P &lt; .01 )</td>
</tr>
</tbody>
</table>

1. Significant differences exist between: no physician< generalist, specialist < both
2. Significant differences exist between: generalist< no physician, both < specialist
3. Significant differences exist between: generalist< no physician < both < specialist (1=no schooling; 2=1st–8th grade; 3=9th–12th grade, no diploma; 4=high school graduate, 5=vocational technical business graduate; 6=some college, no degree; 7=associate degree; 8=bachelor degree; 9=graduate degree)
4. % female significantly higher than expected for generalist and for both.
5. % African American higher than expected for no physician and specialist only. Lower than expected for generalist only and both physician types.
6. % of Hispanic ancestry higher than expected for no physician and generalist only, lower than expected for both physician types.
Post-hoc testing revealed that subjects with no physician reported significantly lower levels of impairment than all other groups (mean impairment score=2.3±1.1). Subjects who saw both types of physicians reported significantly higher impairment than all other groups (mean impairment score=2.7±1.1). Subjects who saw either a generalist only (mean impairment score 2.5±1.1) or a specialist only (mean impairment score 2.5±1.1) showed intermediate levels of impairment and were not significantly different from each other.

Mean self-reported health status of the 7,928 community-dwelling respondents was scored as 2.76±1.1 (1=excellent health, 5=poor health). Of the respondents, 14.5% (1,149) reported excellent health, 27.6% (2,182) reported very good health, 32.7% (2,585) reported good health, 17.9% (1,417) reported fair health, and 7.4% (582) reported poor health. A significant difference existed in the mean self-reported health status of the various subject groups (F=46, P<.01) (Table 2). The subjects who saw both types of physicians reported significantly lower health status than all the other groups (mean 2.87±1.1), although 6% of this subject group reported no chronic conditions. The subjects who saw no physician reported significantly fewer chronic conditions than the subjects of all other groups (mean 1.7±1.5), although 75% of these subjects reported having at least one chronic condition. Subjects who saw generalists only (mean=2.1±1.5) or specialists only (mean=2.1±1.5) reported intermediate numbers of chronic conditions and were not significantly different from each other.

### Chronic Disease Burden

As shown in Table 2, the 7,928 community-dwelling subjects reported 2.4±1.6 chronic diseases (out of 15 possible). Ninety-five percent of subjects reported five or fewer chronic conditions. The most common chronic diseases reported were osteoarthritis (59%), high blood pressure (57%), heart disease (23%), cancer other than skin cancer (18%), and diabetes (16%). There were significant differences in the mean number of diseases reported by the various subject groups (F=131, P<.01) (Table 2).

Table 2 shows that the subjects who saw both types of physicians reported significantly more chronic conditions than all other groups (mean 2.67±1.7), although 6% of this subject group reported no chronic conditions. The subjects who saw no physician reported significantly fewer chronic conditions than the subjects of all other groups (mean 1.7±1.5), although 75% of these subjects reported having at least one chronic condition. Subjects who saw generalists only (mean=2.1±1.5) or specialists only (mean=2.1±1.5) reported intermediate numbers of chronic conditions and were not significantly different from each other.

### Multinomial Logistic Regression

The “specialist only” subgroup was used as the base case. The independent variables’ effect on the other three subject groups was compared to this base

<table>
<thead>
<tr>
<th>Health status¹</th>
<th>No Physician Visit (n=969)</th>
<th>Generalist Only Visited (n=916)</th>
<th>Specialist Only Visited (n=1,122)</th>
<th>Both Types of Physician Visited (n=4,921)</th>
<th>Statistical Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic disease burden² (maximum=15)</td>
<td>2.49±1.1</td>
<td>2.63±1.1</td>
<td>2.61±1.1</td>
<td>2.87±1.1</td>
<td>F=46, P&lt;.01</td>
</tr>
<tr>
<td>Level of impairment³</td>
<td>3.9%</td>
<td>2.4%</td>
<td>3.3%</td>
<td>4.5%</td>
<td>X²=10.6, P&lt;.05</td>
</tr>
</tbody>
</table>

1. Significant differences between: no physician < generalist, specialist < both. Numeric coding: 1=excellent, 2=very good, 3=good, 4=fair, 5=poor
2. Significant differences between: no physician < generalist, specialist < both. A total of 15 possible diseases included high blood pressure, previous myocardial infarction, angina/ischemic heart disease, stroke, cancer, diabetes, arthritis, osteoporosis, broken hip, psychiatric illness, Alzheimer’s disease, Parkinson’s disease, chronic obstructive pulmonary disease/emphysema, paralysis, amputation.

ADL—activities of daily living
IADL—instrumental activities of daily living

The mean mortality rate for the 7,928 community-dwelling respondents was 4.0%. A significant difference existed in the mortality rates of the various subject groups (X²=10.6, P<.05) (Table 2). A more-detailed post hoc analysis is contained in the section on multinomial logistic regression.
The independent variables were age (in 5-year increments from 65–85+), gender, African American race, Hispanic ancestry, income, marital status, highest level of educational attainment, level of impairment, self-reported health status, number of chronic diseases, mortality, geographic region of residence, and urban versus rural residence.

The model predicted 16% of the variability ($r^2=.156$) between subject groups. All demographic variables and health status variables were significantly associated with subject group. Within the nine geographic regions, only two regions, New England and South Atlantic, were significantly associated ($P<.05$) with subject group (Table 3).

When compared to the base case (specialist only), subjects who saw no physician in 1998 showed differences in demographics and in health status (Table 4). Specifically, subjects who visited no physician were younger, had lower incomes, tended to be male, tended to be unmarried, reported fewer chronic diseases, and trended toward having better self-reported health status ($P=.059$). Subject mortality rates and level of impairment were no different compared to the base case. Subjects in this group were less likely to live in a metropolitan area and less likely to live in New England or the South Atlantic states than were subjects in the base case. Subjects in the no physician group also trended toward being African American ($P=.089$) when compared to the base case.

Subjects who visited a generalist only differed in a number of demographic parameters from subjects in the base case (specialist only). The subjects who saw a generalist only were younger, had lower incomes, and had less education. They were less likely to live in a metropolitan area and less likely to live in New England than in the South Atlantic states than were subjects in the base case. Subjects in the no physician group also trended toward being African American ($P=.09$) when compared to the base case.

The health status measures were not significantly different between subjects who visited a generalist only and those in the base case. Self-reported health status, level of impairment, mortality, and chronic disease burden showed no difference (Table 6).

Subjects who visited both types of physicians (generalists and specialists) also differed in a number of demographic and health status parameters from subjects in the base case (Table 6). Subjects who visited both types of physicians were older, reported more chronic diseases, reported worse health status, and trended toward increased mortality rates ($P=.052$). These subjects were less likely to live in New England than the base case, were less likely to be African American, and were less likely to be of Hispanic ancestry. Other variables, including level of impairment, level of education, and income, were not significantly different.

### Table 3

<table>
<thead>
<tr>
<th>Effect Variable</th>
<th>Chi Square</th>
<th>df, P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic disease burden</td>
<td>205</td>
<td>df=3, $P&lt;.01$</td>
</tr>
<tr>
<td>Self-reported health status</td>
<td>36</td>
<td>df=3, $P&lt;.01$</td>
</tr>
<tr>
<td>Level of impairment</td>
<td>10.5</td>
<td>df=3, $P&lt;.05$</td>
</tr>
<tr>
<td>Mortality rate</td>
<td>8.1</td>
<td>df=3, $P&lt;.05$</td>
</tr>
</tbody>
</table>

### Discussion

At the “macro” level, the act of visiting a physician appears to be related to a subject’s health status. Specifically, those subjects who saw no physician in 1998 were the youngest and healthiest, with the fewest diseases, and most likely to live in a rural area. At the other end of the spectrum, subjects who visited both types of physicians constituted 62% of the Medicare population and were sicker, older, had more chronic conditions, and had higher mortality rates than other subject groups.

### Table 4

<table>
<thead>
<tr>
<th>Effect Variable</th>
<th>Parameter Estimate (B)</th>
<th>Wald Statistic</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-.305</td>
<td>62.6</td>
<td>$&lt;.01$</td>
</tr>
<tr>
<td>Chronic disease burden</td>
<td>-.246</td>
<td>44.0</td>
<td>$&lt;.01$</td>
</tr>
<tr>
<td>New England residence</td>
<td>-.185</td>
<td>18.2</td>
<td>$&lt;.01$</td>
</tr>
<tr>
<td>Income</td>
<td>-.078</td>
<td>14.2</td>
<td>$&lt;.01$</td>
</tr>
<tr>
<td>Married</td>
<td>-.330</td>
<td>9.0</td>
<td>$&lt;.01$</td>
</tr>
<tr>
<td>South Atlantic residence</td>
<td>-.985</td>
<td>6.3</td>
<td>$&lt;.05$</td>
</tr>
<tr>
<td>Urban resident</td>
<td>-.258</td>
<td>5.8</td>
<td>$&lt;.05$</td>
</tr>
<tr>
<td>Male</td>
<td>.222</td>
<td>4.9</td>
<td>$&lt;.05$</td>
</tr>
<tr>
<td>Health status (1=excellent, 5=poor)</td>
<td>-.95</td>
<td>3.6</td>
<td>.059</td>
</tr>
<tr>
<td>African American</td>
<td>.262</td>
<td>2.9</td>
<td>.09</td>
</tr>
<tr>
<td>Hispanic ancestry</td>
<td>.170</td>
<td>.643</td>
<td>NS</td>
</tr>
<tr>
<td>Mortality</td>
<td>-1.573</td>
<td>1.8</td>
<td>NS</td>
</tr>
<tr>
<td>Level of impairment</td>
<td>-.008</td>
<td>.025</td>
<td>NS</td>
</tr>
</tbody>
</table>

NS—not significant
The 25% of individuals who visited either a generalist only or a specialist only were more similar than different in their health status. None of the four measures of health status analyzed in this study (self-reported health status, number of chronic diseases, mortality, and level of impairment) showed a difference between the subjects who visited a generalist only and those who visited a specialist only. These subject groups did, however, show differences in demographic characteristics. Subjects who visited specialists only had the highest levels of education and income. They were also more likely to be residents of urban areas and more likely to live in New England.

**Implications for Primary Medical Home**

Those who advocate a primary medical home for all patients will likely find implementation of this goal to be more of a challenge in some geographic regions and among some population groups. Younger, healthier, male subjects are less likely to avail themselves of any physician. Subjects who live in New England and those who live in metropolitan areas are more likely to visit a specialty physician than a generalist physician. Nevertheless, a goal of all seniors having a primary medical home that they visit at least once yearly is likely to be valuable since 75% of the subjects who visited no physician reported at least one chronic medical condition.

One of the more worrisome findings of our study for advocates of a primary medical home is that subjects with higher levels of education and income were more likely to visit specialists only. Enticing this more-educated, affluent group into the office of a generalist physician may require better articulation of the value a generalist physician brings to this patient’s health and health care needs.

**Limitations**

There are a number of limitations to this study. Even though we assessed health status by four different measures, estimating health status and severity of illness is at best an inexact science. Also, the analysis is cross-sectional and assessed only 1 year of health care activity. It is possible that subjects were seen by other types of doctors in the years prior to or after 1998. This possibility of “ragged beginnings and ragged endings” in the data where subjects visit a doctor in December 1997 and January 1999, but not in 1998, is inherent in all cross-sectional analyses. However, a strong argument can be made that subjects over age 65 who do not visit a doctor for a year will not receive some recommended health care services. Numerous preventive services are recommended for this group, and 75% had at least one chronic medical condition (hypertension and osteoarthritis being the most common) where regular monitoring visits are beneficial.
We did not attempt to determine if there was a predominant generalist physician who might have been considered the subject’s primary care doctor in the subjects who saw both types of physicians, as was done in some previous studies. We also did not subdivide the specialty category into medical and surgical subspecialties. Such a subdivision might have demonstrated different patterns of care delivery, as had been shown in previous studies. Finally, the model presented explains only 16% of the observed variability. There may be other, unidentified factors that have stronger correlation to the type of physician visited than those presented in this analysis.

Conclusions

In summary, subjects who saw no physician during the year tended to be the youngest and healthiest subjects, although 75% reported at least one chronic condition. Subjects with intermediate levels of illness are slightly more likely to visit a specialist only rather than a generalist only. The health status, impairment levels, chronic disease burden, and mortality rates of the generalist only and the specialist only subject groups were not significantly different. The subjects who saw a specialist only for their care were the most affluent and most highly educated subject group in the study. Subjects who saw both types of physicians were the oldest group and had the most health problems of any subject group, although 6% reported having no chronic conditions.

This model suggests that as Americans experience increasing levels of disease burden, they are more likely to see a physician, and as their disease burden increases further, they have an increased likelihood of accessing multiple physicians. The act of visiting a specialist or a generalist as their only source of care is, however, more associated with income, level of education, and location of residence than it is with health status. Some unexplained vagaries in the subjects’ process of accessing physicians were demonstrated, with 75% of the subjects who visited no physician having at least one chronic condition, while 6% of subjects who visited multiple types of physicians denied having any of 15 chronic health conditions. Before every American will be willing to have a personal primary care medical home, their care-seeking behaviors and the underlying preferences associated with these actions will need to be better understood.

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