

# The Generalist Role of Specialty Physicians

## Is There a Hidden System of Primary Care?

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**Context.**—Despite increased emphasis on primary care in the United States, most care continues to be provided by specialists. The extent to which specialists incorporate elements of primary care in their approach to ambulatory patients is unknown.

**Objectives.**—To examine the extent to which selected medical and surgical subspecialties provide generalist care to Medicare patients, and to compare patterns of care between specialists and generalists.

**Design.**—A cross-sectional study of all ambulatory care recorded in Part B of the Washington State Medicare Claims Database in 1994 and 1995.

**Setting.**—Ambulatory practices in Washington State.

**Patients.**—Medicare beneficiaries 65 years or older who made office visits to the study physicians.

**Main Outcome Measures.**—The extent to which individual specialties accounted for the majority of visits made by patients to physicians (a measure of continuity), provided care outside the traditional domain of their specialty (a measure of comprehensiveness), and provided influenza immunization.

**Results.**—A total of 373 505 patients constituted the sample. Patients had an average of 7.48 outpatient visits per year; 9.6% saw only generalists, while 14.7% saw only specialists. The practices of general internists and family physicians differ systematically from the practices of most specialists. Approximately half (49.8%) of all ambulatory visits to general internists and family physicians are made by patients for whom they provide the majority of outpatient care, compared with 21.0% of medical specialist and 11.7% of surgical specialist visits. The rate of influenza immunization was 55.4% for patients who received the majority of their care from generalists, 47.7% from medical specialists, and 39.6% from surgical specialists. Pulmonologists, general surgeons, and gynecologists were more likely than other specialists to provide services outside their specialty.

**Conclusions.**—Most specialists do not assume the principal care responsibility for elderly patients, although a substantial proportion of patients see only specialists for their care. Selected specialties assume the generalist role more often, particularly when they provide the majority of outpatient care for an individual patient.

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THERE HAVE been persistent concerns that the predominance of specialty physicians in the United States reduces access for vulnerable populations and increases the total cost of medical care.<sup>1-5</sup>

In response, a wide variety of programs have been initiated to increase the production of generalists,<sup>6</sup> but not without controversy.<sup>7-9</sup> Many specialists argue that they can discharge the responsibilities usually associated with primary care physicians—in particular the provision of accessible, continuous, coordinated, and comprehensive care.<sup>10</sup> This model has been called the hidden system of primary care.<sup>11,12</sup>

The debate as to which approach is preferable has taken on new importance as a result of the emergence of managed

care systems.<sup>13</sup> Most structured systems use some variant of the gatekeeper model, restricting access to specialists by requiring that patients begin care with a designated generalist.<sup>14</sup> If specialists routinely provide a broad spectrum of care to their patients, the requirement that patients receive their basic medical care from generalists may be unnecessary or counterproductive.<sup>15-17</sup> This study addresses this issue by determining the extent to which medical and surgical specialists take on the generalist physician role in their care of elderly patients.

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### METHODS

This study is based on the medical care utilization patterns of Washington State residents aged 65 years and older who were Medicare beneficiaries throughout the calendar years 1994 and 1995 and did not belong to a capitated health care plan. The data come from the Health Care Financing Administration's National Claims History File, an administrative data set that captures diagnostic, therapeutic, and fiscal information about services rendered to Medicare Part B beneficiaries that were submitted to Medicare for payment.<sup>18,19</sup>

### Data

**Encounters and Diagnoses.**—The Medicare Part B file contains a series of line items, each representing a discrete billable service provided to a Medicare beneficiary. We define a physician encounter as all the line items provided on an outpatient basis to an individual patient on a given date by a single physician.

Each physician encounter includes at least 1 line item with a valid *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) code. In encounters with multiple line items, we selected an index diagnosis from the line item containing the

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“Evaluation and Management” code. In cases without such a code, we selected the index diagnosis from the line item with the highest charge.

**Identifying Physicians.**—We used 3 sources to assign physician specialty: American Board of Medical Specialties certifications, the primary self-designated specialty captured in the American Medical Association Masterfile, and the specialty recorded by Health Care Financing Administration. We used American Board of Medical Specialties certification to determine specialty whenever possible. Where a physician had certificates in multiple specialties or no certificates, we assigned the American Medical Association specialty. When the American Medical Association specialty was missing, we assigned the Health Care Financing Administration specialty.

### Generalist Care

We measured 2 of the core attributes of primary care as defined by the Institute of Medicine: continuity and comprehensiveness.<sup>20-24</sup> We operationalized these concepts as follows:

**Continuity: The Majority-of-Care Relationship.**—We used the existence of a majority-of-care relationship between patient and physician as a surrogate for continuity, an approach developed in earlier studies.<sup>11,22,25,26</sup> We defined a *majority-of-care relationship* as a single physician providing more than 50% of all ambulatory visits to 1 patient during the study period. If a patient split his or her visits equally between 2 physicians, the physician with the higher total charges was designated as the majority-of-care provider.

**Comprehensiveness.**—Comprehensiveness is the ability of the physician to address a broad range of patient problems, whether or not the conditions are within the traditional domain of the specialty in which the physician is trained.<sup>11,23,27</sup> Most medical and surgical subspecialties tend to concentrate their efforts on a narrow range of diagnostic categories related to their specialty.<sup>28</sup> One sign that a specialist is providing comprehensive care is the inclusion of diagnoses outside the traditional domain of that specialty.

For each specialty in this study, we constructed a specialty domain based on the diagnostic rubrics assigned to the ambulatory visits made by Medicare patients. Using diagnosis clusters (DCs)—a method of aggregating *International Classification of Diseases, Ninth Revision (ICD-9)* rubrics into related medical conditions—we constructed a set of DCs and *ICD-9* rubrics that fell within the medical realm generally addressed by a specific specialty.<sup>29</sup> These domains were constructed by the study team and re-

viewed and revised by the Carrier Advisory Committee—specialists who advise the Medicare intermediary within Washington State. For example, the most common DCs within dermatology were skin keratoses, dermatitis and eczema, and skin cancers; diagnoses within these clusters were “in domain.” By contrast, a dermatologist who provided care for hypertension would be considered to be providing “out-of-domain” care.

**Preventive Care: Influenza Immunization.**—Part of the primary care role is ensuring that patients receive such preventive interventions as annual influenza vaccinations, an injection that can be easily administered in the physician’s office and is reimbursed separately by Medicare.<sup>30,31</sup> We defined an *immunization* as any line item that included the appropriate diagnostic or billing code for an influenza vaccination (*Current Procedural Terminology* 90724 or the Health Care Financing Administration Common Procedure Coding System G0008, and *ICD-9* V048); duplicates were eliminated. For each specialty, we computed the immunization rate for their majority-of-care patients and determined whether the patient received the immunization from the majority-of-care specialty or some other identifiable physician.

### Statistical Considerations

Because of the large number of patients in this study, confidence intervals for the figures in the tables that follow are relatively narrow. As an example, the 95% confidence interval for the vaccination rate of patients of neurologists—the group with the fewest majority-of-care patients—is 35.5 to 41.7, with a point estimate of 38.6; confidence intervals for all other specialties are narrower. The differences among groups (generalists vs medical specialists vs surgical specialists) are highly significant in all tables ( $P < .001$ ).

## RESULTS

### Description of Washington State Medicare Patients and Physicians

During the study period, 373 505 Health Care Financing Administration beneficiaries from Washington State received all their medical care within Washington State, had at least 1 outpatient visit in both 1994 and 1995, and were alive at the end of the study period. In the aggregate, these patients made 5 590 687 ambulatory visits over the 2-year period, or an average of 7.48 outpatient visits per patient per year. A total of 9.6% of patients made visits only to generalists during the 2-year period, while 14.7% of patients made visits only to specialists.

General internists (GIMs) and family physicians (FPs) accounted for 40.4% of outpatient visits during the study period. The 13 largest medical and surgical specialties in the aggregate have roughly the same number of ambulatory visits as GIMs and FPs combined. The balance of ambulatory visits are to office- and hospital-based specialists, who in the aggregate account for 17.5% of all ambulatory visits (Table 1).

Generalists and specialists have very different diagnostic repertoires. The GIMs and FPs have very similar diagnostic profiles and provide care for a broad and diverse spectrum of conditions. Medical and surgical specialists devote the majority of their visits to conditions primarily within the organ systems or pathological conditions around which the specialty is organized (Figure).

### Continuity of Care:

#### The Majority-of-Care Relationship

Specialties differed greatly in the extent to which they established majority-of-care relationships with patients. The GIMs and FPs spend roughly half of their outpatient practices with patients with whom they have a majority-of-care relationship: 49.8% of all their visits occur with the 32.8% of patients with whom they have a majority-of-care relationship. By contrast, medical specialists have roughly one quarter as many (7.8%) and surgical specialists have about one sixth as many (5.2%) majority-of-care patients (Table 2).

Although specialists are much less likely to have such relationships, there are some notable exceptions. Oncology stands out in this respect, probably because oncologists become the dominant caregiver for patients being treated for cancer. Although only 18.9% of the patients of oncologists have a majority-of-care relationship with their physician, these patients account for almost half of all the outpatient visits to oncologists in the 2-year study period. Pulmonologists and rheumatologists also devote an appreciable part of their practices to majority-of-care patients, 30.8% and 30.2%, respectively.

The pattern portrayed in Table 2 persists even for several important subsets of patients. Restricting the analysis only to patients without a major disease episode—those with no hospitalizations during the 2-year period—does not affect the results. In similar fashion, focusing only on patients with 5 or more visits per year—about 60% of the patient population—also does not change this measure of continuity of care. Patients who have more visits are slightly less likely to have a specific physician who

Table 1.—Outpatient Visits by Washington State Medicare Beneficiaries to Selected Physician Specialties, 1994-1995

Specialty	No. of Physicians	% of Physicians	Total Ambulatory Visits	% of Ambulatory Visits	Ambulatory Visits per Physician	Medicare Patients per Physician
<b>Generalists</b>						
Family practice	1682	18.4	1 129 106	20.2	671.3	105.5
Internal medicine	921	10.1	1 131 673	20.2	1228.7	191.6
<b>All Generalists</b>	<b>2603</b>	<b>28.5</b>	<b>2 260 779</b>	<b>40.4</b>	<b>868.5</b>	<b>136.0</b>
<b>Medical specialties</b>						
Cardiology	232	2.5	300 203	5.4	1294.0	286.6
Dermatology	147	1.6	199 965	3.6	1360.3	527.7
Gastroenterology	146	1.6	119 829	2.1	820.7	296.6
Neurology	139	1.5	75 059	1.3	540.0	201.6
Oncology	125	1.4	124 079	2.2	992.6	131.7
Pulmonology	100	1.1	110 065	2.0	1100.7	222.0
Rheumatology	57	0.6	79 979	1.4	1403.1	268.1
<b>All Medical Specialists</b>	<b>946</b>	<b>10.4</b>	<b>1 009 179</b>	<b>18.1</b>	<b>1066.8</b>	<b>284.7</b>
<b>Surgical specialties</b>						
General surgery	351	3.8	121 722	2.2	346.8	137.1
Gynecology	495	5.4	72 289	1.3	146.0	59.6
Ophthalmology	287	3.1	612 711	11.0	2134.9	689.0
Orthopedic surgery	416	4.6	214 248	3.8	515.0	177.0
Otolaryngology	180	2.0	121 801	2.2	676.7	305.7
Urology	158	1.7	200 266	3.6	1267.5	369.2
<b>All Surgical Specialists</b>	<b>1887</b>	<b>20.7</b>	<b>1 343 037</b>	<b>24.0</b>	<b>711.7</b>	<b>245.0</b>
Other specialties*	3682	40.4	977 692	17.5	265.5	110.8
<b>Total</b>	<b>9118</b>	<b>100.0</b>	<b>5 590 687</b>	<b>100.0</b>	<b>613.1</b>	<b>163.8</b>

\*"Other" includes the following specialties with 10 000 or more patient encounters during the study period: allergy and immunology, anesthesia, colon and rectal surgery, emergency medicine, endocrinology, general preventive medicine, hand surgery, infectious disease, nephrology, neurosurgery, psychiatry, physiatry, plastic surgery, radiology, and vascular surgery; physicians whose specialties could not be determined accounted for 4.3% of all visits and are included in the "other" category.

provides the majority of visits, but the effect is slight. The specialty-specific patterns are remarkably stable.

Defining majority of care as 50% or more of all visits to a single physician may unfairly exclude patients with a nearly even distribution of visits among several physicians. We therefore reanalyzed the data, designating the physician who provided more visits than any other physician as the plurality-of-care physician; in the case of a tie, the physician with the higher total charges was considered to be the plurality physician. Generalists are the plurality-of-care physician for 53.0% of the patients and the rank order across specialties does not change, but several specialties stand out. Of the patients seen by oncologists, 35.9% have a plurality-of-care relationship with their oncologists, and these patients account for 71.6% of all ambulatory visits to oncologists over a 2-year period. Pulmonologists and rheumatologists also have the majority of their ambulatory visits with patients for whom they are the plurality-of-care physicians.

### Comprehensiveness of Care: Specialists Providing Out-of-Domain Care

The vast majority of ambulatory patient visits to specialists are for conditions that lie within that specialist's traditional domain of expertise. The medical specialty with the most comprehensive practice using this particular measure

was pulmonology, with 36.0% of diagnoses out of domain. Other medical specialties had relatively few ambulatory visits for diagnoses that were not part of their traditional repertoire. The surgical specialists show a similar pattern. General surgeons—with 24.5% of visits for out-of-domain diagnoses—and gynecologists—with 27.8%—appear to have a much broader diagnostic scope than other surgical specialists (Table 3).

If out-of-domain care is an accurate marker of the generalist role, physicians would be expected to provide more out-of-domain care to those patients with whom they have a majority-of-care relationship. Table 4 tests this supposition.

In general, specialists provide more out-of-domain care for patients with whom they have a majority-of-care relationship. The differences are substantial for several of the internal medicine subspecialties, such as gastroenterology and neurology. And, the differences are dramatic for general surgery and gynecology.

Pulmonologists, oncologists, and gynecologists each have a substantial proportion of patients—26.7%, 20.9%, and 19.6%, respectively—for whom most of the services they provide are outside their specialty domain. This reinforces the impression that generalist care is something they provide to at least a segment of their patient populations.

Preventive care interventions—as measured by the rate at which physicians provide influenza vaccinations to their

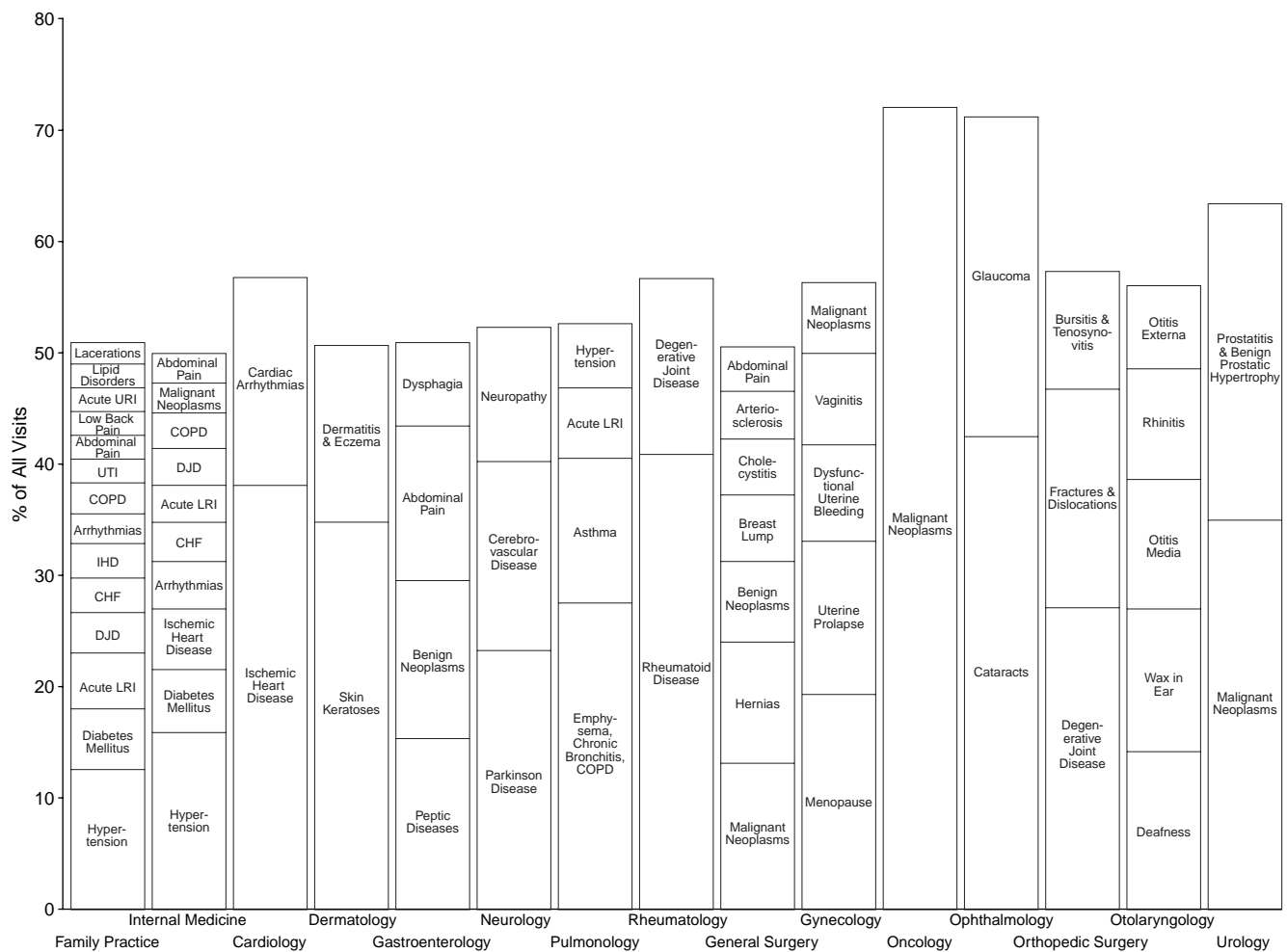
majority-of-care patients—tend to validate the other ways of examining the generalist role. As seen in Table 5, patients whose majority-of-care physicians are GIMs or FPs have significantly higher immunization rates than patients who have specialists as their dominant source of care: 55.4% of the majority-of-care patients of generalists receive an annual influenza immunization vs 47.7% of the patients of medical specialists and 39.6% of the patients of surgical specialists.

Of equal interest is the source of the immunizations: generalists administer most of the immunizations that their patients receive in their offices, while patients of most specialists get immunizations either from GIMs and FPs who see them less frequently than do the specialists, or from undefined sources that probably represent public health facilities, hospital outpatient clinics, and similar settings. It is noteworthy that the 2 specialty groups that tend to administer influenza vaccinations in their own offices—pulmonologists and rheumatologists—are also the 2 specialties whose patients have the highest immunization rates.

### COMMENT

#### Who Are the Generalists?

There are systematic differences between the 2 traditional adult generalist disciplines—general internal medicine and family practice—and many of the



Diagnosis clusters accounting for the majority of ambulatory visits by Medicare patients to physicians in selected specialties. The list is truncated after diagnoses representing 50% of all outpatient visits for each discipline depicted. URI indicates upper respiratory tract infection; UTI, urinary tract infection; COPD, chronic obstructive pulmonary disease; IHD, ischemic heart disease; CHF, congestive heart failure; DJD, degenerative joint disease; and LRI, lower respiratory tract infection.

medical and surgical subspecialties examined in this study. The GIMs and FPs provide care for a broad range of diagnoses and devote a large proportion of their efforts to patients with whom they have a continuous relationship.<sup>32</sup> By contrast, many of the medical and surgical specialties appear to function primarily as specialists. They form majority-of-care relationships with a much smaller proportion of their patients, render care for a focused group of diagnoses, and rarely stray outside the traditional domain of their specialty.

There are some notable exceptions to these generalizations.<sup>33</sup> Pulmonary specialists and rheumatologists have a relatively large proportion of majority-of-care patients and provide a substantial amount of out-of-domain care. Oncologists have more majority-of-care relationships than any of the other specialists, but most of their visits are for diagnoses related to cancer. Overall, there is probably a continuum in which some

medical specialists also have a component of their practice devoted to general internal medicine. That component is large in pulmonary medicine, small in dermatology.

Surgical specialists—with the exception of general surgery and gynecology—rarely assume the generalist role. Although general surgeons and gynecologists do not have a greater proportion of majority-of-care patients than their counterparts, they provide large amounts of out-of-domain care to patients with whom they have such a tie and are much more likely to administer influenza immunizations in their offices. One would speculate that they are taking on the generalist role in their care of these patients.

#### Limitations

Generalism and primary care are difficult to define and to measure, yet they remain useful constructs in our analysis of the health care system.<sup>21,34</sup> The

strength of this study is its ability to examine the health care provided to an entire population; its weakness is the reliance on a secondary data set designed as an administrative and reimbursement tool. Our measures of generalism are, by necessity, based on quantitative proxies for generalist care rather than direct observation of the patient-physician relationship itself. Specific threats to the validity of our inferences are described below:

**Using Majority of Care as a Measure of Continuity.**—The selection of majority of care as a measure of continuity is arbitrary. Other investigators have used similar measures,<sup>11,26,27</sup> but there is no a priori reason to draw the line between continuity and a lack of continuity at 50% of all visits.<sup>35</sup> However, the findings in this study do not change if we restrict the analysis only to patients who are treated frequently (5 or more times per year) or to patients who have not had a hospitalization during the study period and whose

Table 2.—Majority-of-Care Relationships Between Washington State Medicare Patients and Selected Physician Specialties, 1994-1995

Specialty	Patients			Outpatient Visits		
	Majority-of-Care Patients	Total Patients	% Majority-of-Care Patients	Majority-of-Care Visits	Total Visits	% Majority-of-Care Visits
<b>Generalists</b>						
Family practice	61 545	177 476	34.7	591 507	1 129 106	52.4
General internal medicine	54 589	176 460	30.9	533 438	1 131 673	47.1
<b>All Generalists</b>	<b>116 134</b>	<b>353 936</b>	<b>32.8</b>	<b>1 124 945</b>	<b>2 260 779</b>	<b>49.8</b>
<b>Medical specialties</b>						
Cardiology	7060	66 501	10.6	62 785	300 203	20.9
Dermatology	3029	77 569	3.9	16 898	199 965	8.5
Gastroenterology	1553	43 304	3.6	11 285	119 829	9.4
Neurology	976	28 016	3.5	7177	75 059	9.6
Oncology	3114	16 466	18.9	55 905	124 079	45.1
Pulmonology	3434	22 203	15.5	33 870	110 065	30.8
Rheumatology	1755	15 280	11.5	24 138	79 979	30.2
<b>All Medical Specialists</b>	<b>20 921</b>	<b>269 339</b>	<b>7.8</b>	<b>212 058</b>	<b>1 009 179</b>	<b>21.0</b>
<b>Surgical specialties</b>						
General surgery	1705	48 105	3.5	14 928	121 722	12.3
Gynecology	1532	29 511	5.2	10 876	72 289	15.1
Ophthalmology	13 429	197 730	6.8	80 733	612 711	13.2
Orthopedics	2466	73 638	3.4	14 309	214 248	6.7
Otolaryngology	1222	55 032	2.2	7164	121 801	5.9
Urology	3729	58 329	6.4	29 268	200 266	14.6
<b>All Surgical Specialists</b>	<b>24 083</b>	<b>462 345</b>	<b>5.2</b>	<b>157 278</b>	<b>1 343 037</b>	<b>11.7</b>

Table 3.—Proportion of Diagnoses In and Out of Selected Specialty Domains of Washington State Medicare Beneficiaries, 1994-1995

Specialty	% In Domain	% Out of Domain	Total Visits
<b>Medical specialties</b>			
Cardiology	95.5	4.5	300 203
Dermatology	98.0	2.0	199 965
Gastroenterology	87.2	12.8	119 829
Neurology	84.3	15.7	75 059
Oncology	84.6	15.4	124 079
Pulmonology	64.0	36.0	110 065
Rheumatology	80.8	19.2	79 979
<b>All Medical Specialties</b>	<b>88.2</b>	<b>11.8</b>	<b>1 009 179</b>
<b>Surgical specialties</b>			
General surgery	75.5	24.5	121 722
Gynecology	72.2	27.8	72 289
Ophthalmology	97.7	2.3	612 711
Orthopedics	94.5	5.5	214 248
Otolaryngology	93.0	7.0	121 801
Urology	97.6	2.4	200 266
<b>All Surgical Specialties</b>	<b>93.4</b>	<b>6.6</b>	<b>1 343 037</b>

care is probably not distorted by the occurrence of a major disease episode. Changing the threshold for determining continuity from the majority to the plurality of visits does not change the relationship across specialties, but underlines the fact that oncologists, pulmonologists, and rheumatologists devote most of their ambulatory care to patients whom they see more frequently than any other physician.

**Using Out-of-Domain Care as a Measure of Comprehensiveness.**—Determining whether a given visit to a specialist is within or outside that specialist's domain of care is problematic. We used a normative process in which—aided by a panel of specialists—we as-

signed every diagnosis within a specialty to within or outside the domain of that specialty. There was little disagreement among the panel and the advisory committee about the core diagnoses defining each specialty. Disagreement was common at the margin, but the prevalence of the disputed diagnoses was so low that including or excluding those in question had no meaningful impact on the results. We were conservative in assigning diagnoses to a specialty domain; when there was substantial disagreement, the diagnosis was considered out of domain.

Using this concept is not entirely satisfactory, but no externally validated criterion standard exists. We examined documents published by the respective

specialty boards and residency review committees, but neither source provided adequate specificity.<sup>36</sup>

**Coding Bias.**—A possible source of error may be that specialists select a diagnosis within their domain for payment to ensure Medicare reimbursement. We examined secondary and tertiary diagnoses, but they rarely changed our determination as to whether a specific visit was within domain. However, if specialists systematically do not code for services that they provide that fall outside their customary domains, we will underestimate the comprehensiveness of their practices.

**Reliance on Outpatient Care.**—We restricted our examination to outpatient care because it represents the majority of interactions between patients and their physicians. We do not think our exclusion of inpatient care introduces systematic error. Instead, we feel that physicians are more likely to restrict themselves to their specialty area when providing hospital care.

**Generalizability of These Results.**—First, this study is restricted to Washington State Medicare beneficiaries 65 years or older who are not members of capitated managed care programs. Younger patients may have a different relationship with their physicians than the elderly. However, since older patients are sicker and see their physicians more frequently, it seems they would be more likely to establish strong relationships with individual physicians.<sup>37</sup>

Second, this study excludes patients within capitated managed care systems,

who constituted 15% of the Medicare elderly in Washington State in 1994. The results reported here cannot be extrapolated to health maintenance organizations. However, virtually all health maintenance organizations restrict access to specialists, and most in Washington State confer the gatekeeper role on an internist or family physician, making it unlikely that the results would be different in those settings.

Third, it is not clear that these results can be generalized to other parts of the country. Washington State is a middle-sized state with both rural and urban ar-

eas and a fairly typical mix and supply of physicians. However, there can be profound variations even within small regions, and specialists in areas where they are in greater surplus may be more predisposed to provide generalist care to their patients.

### Is There a Hidden System of Primary Care?

In their exploration of the contribution of specialists to the delivery of medical care, Aiken and colleagues<sup>11</sup> concluded that specialists are the "principal source of care to a substantial portion of

their patients" and provide care for "a range of ailments not confined to the physician's area of specialization." They concluded that there is a "hidden system" of general medical care in which specialty physicians "spend considerable amounts of their time serving as providers of continuing care, irrespective of their patients' medical needs."

The picture that emerges from our study agrees in some ways with earlier work but suggests a different interpretation.<sup>25</sup> Specialists play an enormous role in providing ambulatory care to elderly patients; 14.7% of the patients saw only specialists during the entire 2-year period, and most ambulatory visits are with specialists. Whether or not these specialists were consciously adopting a principal-care role, they were the dominant physicians for a large number of patients. Aiken et al concluded that specialists "serve as primary physicians for almost one in every five Americans." Given that almost 1 of every 6 patients in this study saw only specialists during a 2-year period, there is no question that specialists are the principal physicians in the lives of a large number of patients.

However, the data also suggest that principal care means something quite different for most specialists than it does for most generalists. Specialists tend to focus on the interrelated diagnoses that define their specialty. Although they may be the principal—and in some cases only—physician for a subset of their patients, they probably only rarely provide substantial amounts of care beyond the boundaries of their specialty.

Table 4.—Percent of Out-of-Domain Visits Made by Majority-of-Care and Minority-of-Care Patients to Selected Specialties, Washington State, 1994-1995

	% of Out-of-Domain Visits	
	Majority-of-Care Relationship With Physician	Minority-of-Care Relationship With Physician
<b>Medical specialties</b>		
Cardiology	6.8	3.9
Dermatology	2.0	2.0
Gastroenterology	37.2	10.2
Neurology	31.4	14.0
Oncology	13.1	17.3
Pulmonology	40.8	33.8
Rheumatology	22.9	17.6
All medical specialists	17.8	10.2
<b>Surgical specialties</b>		
General surgery	60.6	19.5
Gynecology	56.8	22.6
Ophthalmology	4.5	2.0
Orthopedics	20.5	4.5
Otolaryngology	6.8	7.0
Urology	2.1	2.5
All surgical specialists	14.6	5.6

Table 5.—Influenza Vaccination Rates for Washington State Medicare Beneficiaries by Specialty of Majority-of-Care Physician

Specialty	No. of Patients	No. (%) Vaccinated	Vaccine Administered by, %			
			Majority-of-Care Specialists	Nonmajority-of-Care Specialists	Nonmajority-of-Care Generalists	Other or Missing
<b>Generalists</b>						
Family practice	61 545	32 848 (53.4)	73.4	1.3	1.3	23.9
Internal medicine	54 589	31 475 (57.7)	73.8	1.6	4.5	20.1
<b>All Generalists</b>	<b>116 134</b>	<b>64 323 (55.4)</b>	<b>73.6</b>	<b>1.5</b>	<b>2.9</b>	<b>22.1</b>
<b>Medical specialties</b>						
Cardiology	7060	3193 (45.2)	26.4	5.8	28.6	39.2
Dermatology	3029	1136 (37.5)	0.9	7.8	43.5	47.8
Gastroenterology	1553	710 (45.7)	36.9	4.2	23.9	34.9
Neurology	976	377 (38.6)	26.3	7.2	25.5	41.1
Oncology	3114	1475 (47.4)	44.5	5.8	24.5	25.1
Pulmonology	3434	2107 (61.4)	71.8	1.5	8.5	18.2
Rheumatology	1755	971 (55.3)	51.8	5.0	21.4	21.7
<b>All Medical Specialists</b>	<b>20 921</b>	<b>9969 (47.7)</b>	<b>39.0</b>	<b>5.0</b>	<b>24.3</b>	<b>31.7</b>
<b>Surgical specialties</b>						
General surgery	1705	670 (39.3)	36.3	3.0	18.5	42.2
Gynecology	1532	642 (41.9)	25.4	5.6	21.8	47.2
Ophthalmology	13 429	5327 (39.7)	1.8	7.0	45.0	46.2
Orthopedics	2466	858 (34.8)	16.8	6.4	34.5	42.3
Otolaryngology	1222	447 (36.6)	0.9	8.3	45.2	45.6
Urology	3729	1583 (42.5)	2.1	8.9	42.3	46.7
<b>All Surgical Specialists</b>	<b>24 083</b>	<b>9527 (39.6)</b>	<b>7.2</b>	<b>6.9</b>	<b>40.2</b>	<b>45.7</b>

The advent of the age of managed care—and the growing surplus of specialists—has led many specialties to assert their ability to act as primary care physicians.<sup>38</sup> Although this may be true, this study suggests that this phenomenon is specialty-specific. Specialties such as pulmonary medicine, rheumatology, and gynecology already have a substantial number of patients for whom they provide primary care services, such as immunizations. To the extent that these specialties wish to modify training and practice, they might well take on

generalist roles in managed care settings.<sup>39</sup> On the other hand, specialties such as dermatology or urology would have to fundamentally change the nature of their practices.

All this ignores the question as to whether it would be good for patients—or payers—to encourage this migration of specialists to generalism. The crucial issue is whether it makes a difference—both in cost and outcomes—if a patient has a generalist physician, and if that physician is a general internist or family physician or a specialist.<sup>40,41</sup> But these

data show that, even in the relatively unstructured world of indemnity insurance, most specialists do not assume the generalist role.

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