The Role of Internal Medicine Subspecialists in Patient Care Management

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ABSTRACT

OBJECTIVES: To understand the clinical roles in which internal medicine (IM) subspecialists engage, especially those involving ongoing patient management.

STUDY DESIGN: Measures of physician clinical roles were based on survey responses collected from 8020 mid-career IM subspecialists who registered for the American Board of Internal Medicine maintenance of certification program (86% registration/response rate) between 2009 and 2013.

METHODS: Each subspecialist reported their percentage of clinical time in 5 clinical roles: primary, principal, longitudinal consultative, medical consultative, and procedural care. We characterized an IM subspecialist's clinical role focus as those roles that composed a majority of their clinical time.

RESULTS: Most IM subspecialists reported spending a majority of their time performing 1 (65%) or 2 (31%) clinical roles. Most (54%) reported a clinical role focused on ongoing patient care management roles, including principal care (eg, total responsibility for a specific condition, 23%), longitudinal consultative care (eg, shared care, 21%); or a mixed clinical role focus composed of both principal and longitudinal consultative care (8%). We also found that physicians focused on ongoing patient care management roles represent a significant percentage of physicians within most IM subspecialties (ranging from 19% to 88% across subspecialties).

CONCLUSIONS: A subspecialist's clinical role focus is an important practice characteristic, and many subspecialists perceive themselves as playing a significant role in care management. These findings suggest there are opportunities to incorporate subspecialists into newer payment and care delivery reforms; they also bring to light reasons that training and certification programs should consider the different clinical role foci subspecialists adopt.

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Understanding the clinical roles that internal medicine (IM) subspecialists play is critically important in terms of both how we train and certify subspecialists, as well as how they are integrated into new models of care.[1-4] In general, a subspecialist's clinical roles can be divided into those that include some degree of ongoing patient management responsibility versus providing consultative services on behalf of the managing physician.[1] The subspecialist's consultative roles are either cognitive (eg, providing diagnostic or management advice) or procedural (eg, evaluation for and/or performing a procedure on behalf of the managing physician) in nature.[1] The subspecialist's patient management clinical roles can include operating as their patient's primary care provider or principal care provider, or in a longitudinal consultative (eg, shared care) role. The primary care provider role includes assuming responsibility for accessibility, continuity, coordination, and comprehensive care for all patient concerns.[5] The principal care provider role includes assuming responsibility for the ongoing management of a patient's specific condition inside the domain of their specialty (eg, a rheumatologist managing care for a patient with lupus).[1,6-9] This is differentiated from a longitudinal consultative care role, wherein a subspecialist shares responsibility for managing a patient's condition with the patient's primary care provider (eg, a primary care physician and a cardiologist dividing and/or sharing cardiac care responsibilities for a patient with heart failure).[1]

Although the consultative roles for subspecialists are well recognized, there is evidence suggesting that subspecialists commonly deliver ongoing routine care.[10-13] However, the specific patient management clinical roles in which they engage while providing this care is not well understood, and many data collected on the subject are more than a decade old. Given the increasing emphasis placed on improving care quality by better integrating and coordinating care across the multitude of providers with whom each patient comes into contact, it is important that we better understand the role, or roles, in which the subspecialist is engaged when providing this care.[2,14,15]

TAKE-AWAY POINTS

Internal medicine subspecialists' predominant clinical role is an important practice characteristic, and most subspecialists play a significant role in ongoing patient management:

- Many subspecialists report a clinical role focused on either principal care or longitudinal consultative care.
- These data suggest there are opportunities to incorporate subspecialists into payment and care delivery reforms.
- Physician training and certification programs should consider the clinical roles in which subspecialists engage when designing their programs.

To get a better understanding of the frequency with which IM subspecialists engage in these different clinical roles, we examined recent clinical activity reports by mid-career internists who subspecialized after their general internal medicine training. We also explored whether subspecialists vary the clinical roles in which they engage or adopt a singular focused role, and examined the degree to which physicians within a subspecialty adopt similar clinical roles. Notably, IM subspecialists represent about 15% of all physicians (and about 25% of nongeneralists) board certified over the past decade by the American Board of Medical Specialties.[16,17]

METHODS

Data Source

We used data drawn from a survey completed during the enrollment process, and then updated every 18 months or more, for the 10-year Maintenance of Certification (MOC) program of the American Board of Internal Medicine (ABIM). This survey was initially developed by ABIM staff members to inform MOC policies and programs. This development team consisted of physician and nonphysician staff members, and the questions were tested with non-ABIM physicians to ensure clarity and consistency in their interpretation. We used data from subspecialists initially certified between 2000 and 2003, 86% of whom subsequently registered for MOC and completed the survey between 2010 and 2013 (14% nonresponse rate). After additional exclusions (detailed in **Figure 1**), our final sample included 8020 clinically active IM subspecialists (90% of professional time in patient care) (see **eAppendix Table A** [eAppendices available at **www.ajmc.com**]). Although the data used were collected by the ABIM, the design and conduct of the study; management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication, were all conducted by the authors independently of the ABIM. Physicians who enroll in an ABIM certification program enter into a business associates agreement that permits the ABIM use of their de-identified data at an aggregate level for research purposes.[18] All data were de-identified prior to analysis.

Patient Management Clinical Roles

The survey included a question about time spent in different clinical roles (eAppendix [section 1]). Specifically, we examined the percentage of clinical time that respondents reported engaging in the following roles: 1) primary care, 2) principal care, 3) longitudinal consultative care, 4) medical consultative care, and 5) interventional or diagnostic procedural care. Clinical time delivering hospital or intensive care unit care was excluded.

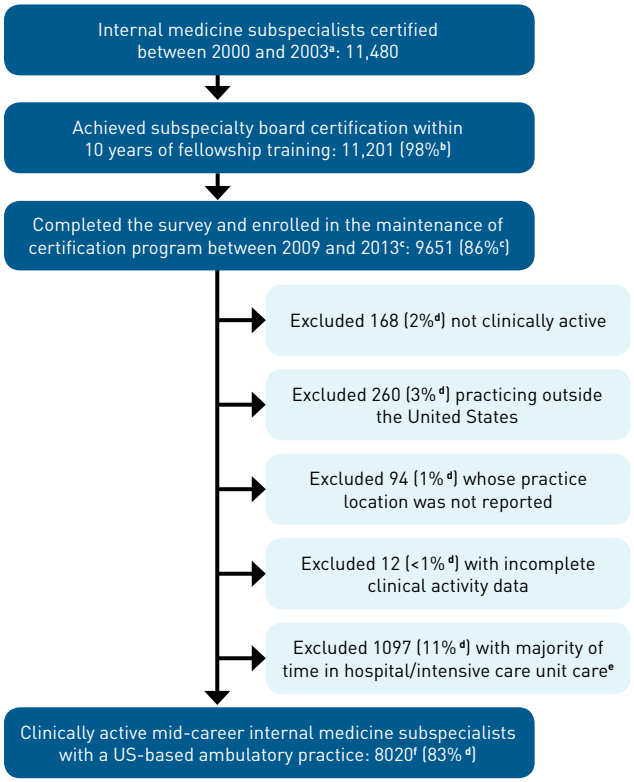
Among these 5 roles, we classified 3 (primary, principal or longitudinal consultative care) as patient management roles because each involves the physician being continually responsible for some aspect of their patient's care over time. This is distinct from medical consultative or procedural care roles, in which the physician is providing care (eg, evaluations and/or procedures) on behalf of the referring physician, who remains responsible for ongoing patient management.[1]

The primary distinction between the 3 patient management roles is the scope of care for which the subspecialist is responsible. For example, the primary care provider role is one in which a physician assumes responsibility for all patient needs and generally serves as the medical home and first contact for new problems. In contrast, principal care is what occurs when a patient has 1 dominant medical condition that is chronic and is cared for almost exclusively by the subspecialist. This patient would also likely have a primary care physician who would see them for preventive care and acute problems unrelated to the major (ie, principal) condition. For example, a patient with severe lupus might receive principal care from a rheumatologist regarding medication and monitoring of their condition. Longitudinal medical consultative care is distinct from principal care because the patient may continue to see the subspecialist for select components of their care, but the primary care physician (or other healthcare provider) shares in the responsibility for caring for the patient's primary condition. For example, a patient with diabetes may see their primary care physicians for some of their diabetes care (eg, routine glycated hemoglobin monitoring) and visit their endocrinologist only for certain aspects of care, (eg, medication adjustments).

Empirical Methods

We examined IM subspecialists' engagement in clinical roles in 2 ways. First, we examined the average percentage of time physicians were engaged in the 5 different clinical roles. However, we observed a large degree of heterogeneity in mean time spent in different roles between physicians within a subspecialty because most physicians (96%) reported spending a majority of their clinical time in only 1 or 2 clinical roles.

FIGURE 1. Cohort Selection



[a]Excludes physicians certified in geriatric medicine, as these physicians are often classified as primary care providers.

[b]Percentage out of 11,480 physicians.

[c]Percentage out of 11,201 physicians.

[d]Percentage out of 9651 physicians.

[e]Subspecialists reporting a majority of time in hospital or intensive care unit care include those certified in critical care medicine with or without pulmonology disease (n = 597), infectious diseases (n = 176), nephrology (n = 136), as well as other subspecialty certifications (n = 188). Additional detail on these physicians' demographics and clinical role activity is provided in eAppendix Table I.

[f]The 8020 includes both procedural and nonprocedural subspecialists.

To characterize this variation in clinical role foci across physicians, we also examined how frequently subspecialists reported spending a majority of their clinical time in 1 or 2 of the different clinical roles (which we refer to as their clinical role focus). In particular, when subspecialists reported a majority of their time was spent in 1 clinical role, we classified them as having a singular clinical role focus (eg, reporting 70% of time in principal care becomes having a principal care focus). For subspecialists for whom a single role did not compose a majority of their time, we classified them as having a mixed clinical role focus if the sum of their 2 largest clinical roles composed a majority of their time (eg, 40% procedural and 30% medical consultative care becomes procedural plus medical consultative care focused). We also grouped subspecialties as procedural or nonprocedural (eAppendix [section 2]).[19,20] All analyses were conducted using SAS version 9.3 (SAS Institute, Cary, North Carolina).

RESULTS

Average Percentage of Time in Different Clinical Roles

Overall, IM subspecialists reported 64% (standard deviation [SD] = 31) of their clinical time on average to be in clinical roles that involve patient management, mostly in principal care (mean = 29%) or longitudinal consultative care (mean = 30%; see **eAppendix Tables B** and **C** for median and mean clinical time by subspecialty). Physicians with nonprocedural subspecialties reported more time in patient management roles (mean = 79%; SD = 27%) than physicians with procedural subspecialties (mean = 51%; SD = 29%). That said, the time in clinical roles varied considerably among individual physicians within a subspecialty as indicated by the coefficient of variation often exceeding 100% (eAppendix Table C). This suggests that viewing measures of central tendency for these subspecialty groups, such as the mean or median time in the different clinical roles, may mask the typical clinical activity of many of these physicians.

Number of Subspecialists Grouped by Clinical Role Focus

Applying our measure that groups physicians by their clinical role focus, we observed a divergence of the clinical role focus among physicians within most subspecialties. This is somewhat analogous to the clinical role focus difference between general internists who practice as primary care physicians versus hospitalists. Overall, we found that 65% of subspecialists reported a majority of their time in a single clinical role and 31% in a mixed clinical role composed of 2 roles. A subspecialist's clinical role focus composed 76% (SD = 14.6) of their clinical time on average (**eAppendix Table D**).

Most subspecialists (54%) reported a singular or mixed clinical focus composed of only ongoing patient care management roles (ranging from 88% of medical oncologists to 19% of physicians with tertiary cardiovascular disease certification). Mostly, this consisted of principal (23%) or longitudinal consultative care (21%) focused roles with few reporting a primary care clinical role focus (2%) (**Figure 2**). Another 18% reported a mixed clinical role focus in which only 1 of the 2 clinical roles included ongoing patient care management and the other was either procedural care or medical consultative care. In contrast, 23% of subspecialists reported a singular or mixed clinical role focus composed of only roles that do not involve patient care management (ie, procedural and/or medical consultative care).

We observed a large variation in clinical role focused practices both across and within subspecialties (**Tables 1** and **2**; **eAppendix Table E**). For example, 68% of subspecialists certified in tertiary cardiovascular disease (ie, certification in cardiovascular disease plus interventional cardiology or clinical cardiac electrophysiology) reported a clinical role focus that included procedural care. However, even among this procedural subspecialty, 19% of these physicians reported a majority of their time was spent in principal and/or

longitudinal consultative care. For cardiologists without a tertiary certification, only 15% reported a clinical role focus that included procedural care but 53% reported a clinical role focus composed of principal care and/or longitudinal consultative care roles.

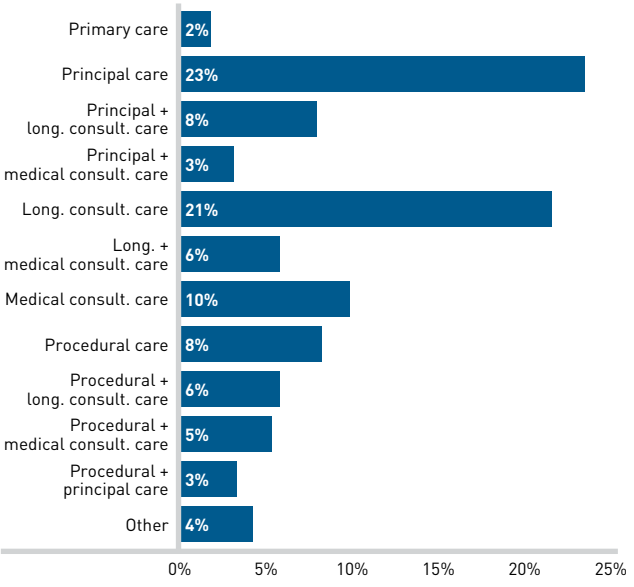
Demographic and Practice Characteristics

The vast majority of subspecialists included in the sample were male (75%) but were more evenly split between US (56%) and international medical graduates (44%) (Table 3). Most physicians had been in practice about 9 years (mean = 9.2; SD = 0.9) past fellowship, and they worked in private practices or practices owned by hospitals or health maintenance organizations (HMOs) (70%) that were small (2-10 physicians, 43%) or medium in size (11-50 physicians, 23%). The sample was geographically diverse, though most subspecialists practiced in in large central, fringe, or medium metropolitan settings (86%) (see eAppendix Tables F-H for clinical role data by demographic and practice characteristics).

DISCUSSION

Our key finding is that most IM subspecialists reported a clinical role focus composed of ongoing patient management roles (eg, primary care, principal care, or longitudinal consultation). In addition, we observed that many physicians within each subspecialty reported that they were involved in ongoing patient care management. Even among traditionally procedural subspecialties, such as gastroenterology or tertiary cardiovascular disease, a sizable

FIGURE 2. Distribution of Clinical Role Foci for Internal Medicine Subspecialists (n = 8020)[a]



Consult indicates consultative; long., longitudinal.

[a]Single clinical role foci are defined as the singular most common role, and mixed clinical role foci are defined as the 2 most common individual roles, that compose a majority of a subspecialist's clinical time.

TABLE 1. By Nonprocedural Subspecialty, Number of Internal Medicine Subspecialists Reporting a Majority Clinical Role Focus

	Nonprocedural Subspecialties, N (%)[a]						
	Total	Medical Oncology +/– Hematology[b]	Hematology	Rheumatology	Nephrology	Endocrinology, Diabetes, and Metabolism	Infectious Diseases
Primary care[c]	124 (3)	21 (2)	2 (8)	9 (2)	28 (3)	12 (2)	52 (10)
Principal care[c]	1332 (36)	654 (54)	11 (44)	162 (38)	248 (25)	169 (30)	88 (17)
Principal + long. consult. care[d]	342 (9)	82 (7)	3 (12)	29 (7)	160 (16)	49 (9)	19 (4)
Principal + medical consult. care[d]	133 (4)	29 (2)	3 (12)	7 (2)	46 (5)	14 (2)	34 (7)
Longitudinal consult. care[c]	1032 (28)	314 (26)	5 (20)	182 (42)	222 (23)	224 (39)	85 (16)
Medical + long. consult. care[d]	199 (5)	26 (2)	–	12 (3)	92 (9)	27 (5)	42 (8)
Medical consultative care[c]	383 (10)	66 (5)	1 (4)	23 (5)	69 (7)	54 (10)	170 (33)
Procedural care[c]	22 (1)	2 (<1)	–	–	16 (2)	4 (1)	–
Procedural + long. consult. care[d]	14 (<1)	1 (<1)	–	–	11 (1)	2 (<1)	–
Procedural + medical consult. care[d]	4 (<1)	2 (<1)	–	–	1 (<1)	1 (<1)	–
Procedural + principal care[d]	4 (<1)	–	–	1 (<1)	3 (<1)	–	–
Other[e]	137 (4)	16 (1)	–	4 (1)	77 (8)	12 (2)	28 (5)
Total	3726	1213	25	429	973	568	518

"+/–" indicates with or without; consult., consultative; long., longitudinal.

[a]Numbers indicate count of physicians with column percentages in parentheses.

[b]Includes physicians with a medical oncology and hematology dual certification or oncology certification alone.

[c]Single clinical role focus defined as the singular most common role that composes a majority of a subspecialist's clinical time.

[d]Mixed clinical role focus defined as the 2 most common individual roles that together compose a majority of a subspecialist's clinical time.

[e]Other, or not clinical role–focused.

TABLE 2. By Procedural Subspecialty and Multiple Certifications Involving Separate Training Fellowships, Number of Internal Medicine Subspecialists Reporting a Majority Clinical Role Focus

	Procedural Subspecialties, N (%)[a]					
	Total	Cardiovascular Disease	Critical Care Medicine +/– Pulmonary Disease	Pulmonary Disease	Gastroenterology	Tertiary Cardiovascular Disease[b]
Primary care[c]	24 (1)	4 (<1)	8 (1)	3 (3)	3 (<1)	6 (1)
Principal care[c]	497 (12)	221 (20)	96 (14)	11 (10)	83 (8)	86 (7)
Principal + long. consult. care[d]	283 (7)	109 (10)	112 (16)	13 (12)	11 (1)	38 (3)
Principal + medical consult. care[d]	120 (3)	53 (5)	36 (5)	2 (2)	10 (1)	19 (2)
Longitudinal consult. care[c]	647 (15)	264 (23)	169 (25)	26 (25)	90 (8)	98 (8)
Long. + medical consult. care[d]	262 (6)	105 (9)	92 (14)	14 (13)	21 (2)	30 (3)
Medical consultative care[c]	390 (9)	144 (13)	55 (8)	12 (11)	121 (11)	58 (5)
Procedural care[c]	633 (15)	35 (3)	12 (2)	1 (1)	248 (23)	337 (28)
Procedural + long. consult. care[d]	447 (11)	51 (5)	26 (4)	4 (4)	163 (15)	203 (17)
Procedural + medical consult. care[d]	411 (10)	37 (3)	18 (3)	1 (1)	202 (19)	153 (13)
Procedural + principal care[d]	266 (6)	42 (4)	12 (2)	3 (3)	93 (9)	116 (10)
Other[e]	202 (5)	65 (6)	44 (6)	15 (14)	26 (2)	52 (4)
Total	4182	1130	680	105	1071	1196

"+/–" indicates with or without; consult., consultative; long., longitudinal.
[a]Numbers indicate count of physicians with column percentages in parentheses.
[b]Includes physicians certified in cardiovascular disease plus clinical cardiac electrophysiology and/or interventional cardiology.
[c]Single clinical role focus defined as the singular most common role that composes a majority of a subspecialist's clinical time.
[d]Mixed clinical role focus defined as the 2 most common individual roles that together compose a majority of a subspecialist's clinical time.
[e]Other, or not clinical role–focused.

proportion of physicians reported a clinical role focus composed of ongoing patient care management roles.

In aggregate, these data are consistent with prior research that found subspecialists to be significantly involved in delivering ongoing routine care.[10-12] For example, Valderas and colleagues[12] noted that about half of visits to medical specialists were for routine follow-up with established patients without referral. Our analyses suggest that the majority of this care appears to be provided by subspecialists operating in either a principal care or longitudinal consultative role, and that it is uncommon for subspecialists to adopt a primary care clinical role.

That we observed many IM subspecialists playing a significant role in managing their patients' conditions raises important questions about how subspecialists fit into our evolving healthcare system. One concern might be that having a patient's ongoing patient care responsibilities divided among physicians can have a negative impact on quality and efficiency if care is not carefully coordinated.[21,22] For example, consider a patient with diabetes who receives her "diabetes" care from her endocrinologist acting as her principal care physician, but also receives care from a general internist acting as her primary care physician. If the endocrinologist and general internist lack formal agreements about sharing responsibilities for care, then the patient is likely to experience gaps in care, such as follow-up care after hospitalization, or uncoordinated or delayed care because of confusion over the appropriate contact for an acute event. That said, when care is well coordinated, evidence suggests that co-management involving both a generalist and specialist can lead to better outcomes for patients with chronic conditions than having care managed by either type of physician alone.[23,24]

Our findings also highlight the opportunity for incorporating subspecialists who report being responsible for their patients' ongoing care into new alternative payment and delivery models. In particular, incorporating these physicians into the accountable care organization (ACO) framework will be important to ensuring that their incentives are aligned with those of their patients' primary care physicians. For example, if an endocrinologist is providing longitudinal care for a patient with diabetes as part of the care team, but is excluded from any potential shared savings associated with good outcomes achieved by their patient, then they are likely to be less motivated to reduce waste and may even resent any financial benefits afforded other members of the care team.[25] This is especially pertinent given the recent passage of the Medicare Access and Children's Health Insurance Program Reauthorization Act.[26] This legislation, in addition to repealing the sustainable growth rate formula, accelerates CMS' efforts to transform physician payments from a system that rewards volume to one that rewards value. Providers who have substantial involvement in alternative payment or care models, such as patient-centered medical homes, ACOs, and bundled payment arrangements,

TABLE 3. Subspecialist Demographic and Practice Characteristics

Demographic or Practice Characteristic	
Total, n (%)	**8020[a] (100)**
Years after initial certification: mean, SD	9.2 (0.9)
Medical school and nativity, n (%)	
US medical school; US-born	3419 (43)
US medical school; international-born	1087 (14)
International medical school; US-born	154 (2)
International medical school; international-born	3360 (42)
Sex, n (%)	
Male	6010 (75)
Female	2010 (25)
Practice type, n (%)	
Private practice	4422 (55)
HMO-/hospital-owned practice	1193 (15)
Academic/teaching	2053 (26)
Other	352 (4)
Practice size, n (%)	
Solo	838 (10)
2-10	3430 (43)
11-50	1862 (23)
≥51	1539 (19)
Unknown/don't know	351 (4)
2013 NCHS Urban-Rural Classification Scheme for Counties code, n (%)	
Large central metro	3482 (43)
Large fringe metro	1737 (22)
Medium metro	1708 (21)
Small metro	736 (9)
Micropolitan	324 (4)
Noncore	33 (<1)
HHS region, n (%)	
Region 1: Boston	564 (7)
Region 2: New York	940 (13)
Region 3: Philadelphia	872 (11)
Region 4: Atlanta	1568 (20)
Region 5: Chicago	1300 (16)
Region 6: Dallas	866 (11)
Region 7: Kansas City	292 (4)
Region 8: Denver	222 (3)
Region 9: San Francisco	1073 (13)
Region 10: Seattle	323 (4)

HMO indicates health maintenance organization; NCHS, National Center for Health Statistics; SD, standard deviation.
[a]The full sample = 8020.

will receive more generous Medicare fee increases than those who fail to meet criteria for substantial involvement. In response to concerns that alternative payment model options may be limited for some specialists, the law instructs CMS to develop alternative payment models that provide opportunities for specialists.

These findings also have implications for subspecialty credentialing, continuing education, and training. Credentialing organizations, such as the ABIM, should consider the different clinical roles that subspecialists play when designing their programs. For example, the observed heterogeneity of clinical role foci among physicians within a subspecialty supports recent changes to ABIM's underlying certification policy.[27] This change removed the requirement that some subspecialists must maintain their underlying certification and instead allow maintenance of certification decisions to be decided by the individual physician based on their practice. For instance, physicians with a tertiary cardiovascular disease certification will no longer have to maintain their general cardiovascular disease certification. Many of these physicians reported a majority of their clinical time is focused on performing procedures (that may not require a general cardiovascular disease certification). However, there is a sizable group that does spend most of their time providing ongoing care management; for them, maintaining their certification in general cardiovascular disease might be beneficial. For some subspecialty fellowship programs, these data suggest educational curricula should consider offering training in providing effective ongoing, collaborative, patient care management. For instance, programs could utilize IM subspecialty milestones or adapt referral guidelines to design curricular activities tailored to the needs of the practice setting and clinical role focus the fellow might assume after completing training.[28-30]

Limitations

Our methods for measuring the percentage of time in primary care activities have limitations. Data on clinical activity are self-reported and therefore subject to recall bias. However, the results observed here in aggregate are somewhat consistent with data reported previously.[12,13] For example, Edwards et al[13] reported that 10% of patient visits to medical specialists in 2010 were reported to be primary care visits (vs the 5% of mean patient care time we observed). Furthermore, the role(s) to which a physician attributes most of their clinical time (ie, their clinical role focus) likely reflects the type of care a physician engages in most and is less subject to misclassification. Considering this, additional research is needed to quantify how divergent clinical practice is among physicians reporting different clinical role foci. This is especially true for the principal and longitudinal consultative care clinical roles, in which the discriminating characteristic is the degree to which the subspecialist adopts responsibility for ongoing management or shares it with another provider, such as the patient's primary care physician.

These data also reflect repeated cross-sections of different IM subspecialists 10 years into their practice who enrolled in MOC, and

so they may not generalize to younger or older subspecialists or to physicians who do not participate in MOC. Yet, subspecialists at mid-career are an important group, as they have more established practices than less experienced physicians and are likely to have a longer tenure in the profession than older physicians; also, most of these physicians do participate in MOC (86%). Furthermore, our results do not generalize to non-IM subspecialists. However, IM subspecialists are an important group given that they compose about a quarter of all nongeneralist physicians (ie, excluding general internists, family medicine physicians, or pediatricians).[16,17] Lastly, these data generally represent physicians who mostly provide patient care as part of small to medium community practices in medium to large metropolitan areas.

CONCLUSIONS

We observed that many subspecialists perceive themselves as spending a significant amount of clinical time in care management, either providing principal care or operating in a longitudinal consultative care role. In addition, the clinical role focus of a subspecialist's practice, defined as the role(s) in which they engage most frequently, appears to vary among physicians within a subspecialty. These findings suggest that there are opportunities to incorporate subspecialists into newer payment and care delivery reforms, which may help avoid potential negative consequences, such as uncoordinated or fragmented care, of having subspecialists involved in patient care management. In addition, internal medicine subspecialty training and certification programs should work to ensure that physicians have the communication and coordination skills necessary to provide high-quality care as key members of a broader patient care management team, one that potentially includes their patient's primary care provider as well as other specialists.

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eAppendix

Section 1: Clinical role activity survey question

The question below was used to determine the clinical activity of subspecialists included in the analysis. Time in "medical consultative care" and "consultative care with little patient contact" were summed under the category medical consultative care. Time reported in hospital care was excluded and time in the other categories was rescaled to sum to 100%.

Over the past year, of the type of direct, consultative, or supervisory (including teaching in clinical settings) patient care you provide, approximately what percent is devoted to each of the following?

___ *Primary care (first contact care for a wide range of health problems)*
___ *Principal care (care for patients with specific conditions with or without ongoing co-management with primary care physicians)*
___ *Longitudinal medical consultative care that involves direct contact with patients*
___ *Medical consultative care that involves direct contact with patients but <u>not</u> necessarily ongoing longitudinal care*
___ *Hospital/ICU patient care*
___ *Interventional or diagnostic procedural care that involves direct contact with patients*
___ *Consultative care with little or no contact with patients, mainly providing information for other physicians*
___ *Other (specify)* _____

Section 2: Procedural versus nonprocedural classification

Procedural subspecialties include: cardiovascular disease; tertiary cardiovascular disease (cardiovascular disease plus clinical cardiac electrophysiology and/or interventional cardiology); pulmonary disease and/or critical care medicine; and gastroenterology. Nonprocedural subspecialties include: medical oncology and/or hematology; rheumatology; endocrinology, diabetes, and metabolism; nephrology; and infectious diseases.

Table A. Mean percentage of professional time spent delivering patient care versus research, administration, or teaching in nonclinical settings

Subspecialty	N	% of professional time spent in patient care, Mean (SD)
Total	8,020	90.4 (18.5)
Medical oncology +/- Hematology[a]	1,213	86.4 (21.1)
Hematology	25	69.3 (29.0)
Rheumatology	429	89.5 (22.2)
Nephrology	973	91.5 (17.0)
Endocrinology, diabetes, and metabolism	568	87.7 (22.3)
Infectious diseases	518	78.6 (29.6)
Cardiovascular disease	1,130	93.6 (14.5)
Critical care medicine +/- pulmonary disease	680	91.2 (17.3)
Pulmonary disease	105	93.4 (17.4)
Gastroenterology	1,071	94.8 (12.5)
Tertiary cardiovascular disease[b]	1,196	93.6 (10.1)
Other multiple certifications[c]	112	86.9 (19.0)

[a]Includes physicians with a medical oncology and hematology dual certification or oncology certification alone
[b]Includes physicians certified in cardiovascular disease plus clinical cardiac electrophysiology and/or interventional cardiology
[c]Multiple certifications involving separate training fellowships (e.g., cardiovascular disease and nephrology)

Table B. Median percentage of clinical time reported for each clinical role by subspecialty

	Clinical Roles, Median (IQR)						Total, N
	Primary Care	Principal Care	Longitudinal Consultative Care	Consultative Care	Procedural Care	Other Care	
Total	**0.0 (0.0 - 5.0)**	**20.0 (0.0 - 50.0)**	**22.2 (0.0 - 47.4)**	**11.8 (0.0 - 27.8)**	**3.2 (0.0 - 25.0)**	**0.0 (0.0 - 0.0)**	**8,020**
Nonprocedural Subspecialties	**0.0 (0.0 – 5.6)**	**31.6 (0.0 – 70.0)**	**25.0 (0.0 – 58.8)**	**10.0 (0.0-25.0)**	**0.0 (0.0-0.0)**	**0.0 (0.0 - 0.0)**	**3,726**
Medical oncology +/- Hematology[a]	0.0 (0.0 - 0.0)	60.0 (10.2 - 83.3)	20.0 (0.0 - 55.3)	6.3 (0.0 - 15.8)	0.0 (0.0 - 0.0)	0.0 (0.0 - 0.0)	1,213
Hematology	0.0 (0.0 - 0.0)	50.0 (13.3 - 72.9)	10.5 (0.0 - 40.0)	12.5 (0.0 - 20.0)	0.0 (0.0 - 0.0)	0.0 (0.0 - 0.0)	25
Rheumatology	0.0 (0.0 - 0.0)	28.6 (0.0 - 80.0)	40.0 (0.0 - 80.0)	5.6 (0.0 - 15.8)	0.0 (0.0 - 0.0)	0.0 (0.0 - 0.0)	429
Nephrology	0.0 (0.0 - 12.5)	30.0 (11.1 - 52.6)	30.8 (11.1 - 50.0)	11.4 (0.0 - 25.0)	0.0 (0.0 - 0.0)	0.0 (0.0 - 0.0)	973
Endocrinology, diabetes, and metabolism	0.0 (0.0 - 0.0)	18.8 (0.0 - 63.5)	40.0 (0.0 - 77.8)	10.0 (0.0 - 23.9)	0.0 (0.0 - 0.0)	0.0 (0.0 - 0.0)	568
Infectious diseases	0.0 (0.0 - 14.3)	11.1 (0.0 - 40.0)	10.4 (0.0 - 33.3)	27.2 (5.0 - 70.0)	0.0 (0.0 - 0.0)	0.0 (0.0 - 0.0)	518
Procedural Subspecialties	**0.0 (0.0 - 1.0)**	**12.5 (0.0 - 33.3)**	**22.2 (0.0 - 41.2)**	**15.2 (5.0 -30.0)**	**25.5 (8.3 - 42.9)**	**0.0 (0.0 - 0.0)**	**4,182**
Cardiovascular disease	0.0 (0.0 - 2.1)	21.4 (0.0 - 44.4)	26.3 (2.0 - 50.0)	15.4 (3.5 - 31.6)	11.1 (0.0 - 22.2)	0.0 (0.0 - 0.0)	1,130
Critical care medicine +/- pulmonary disease	0.0 (0.0 - 6.3)	21.4 (0.0 - 37.5)	33.3 (14.6 - 50.0)	16.7 (5.3 - 33.3)	8.3 (2.6 - 16.7)	0.0 (0.0 - 0.0)	680
Pulmonary disease	0.0 (0.0 - 14.3)	14.3 (0.0 - 33.3)	29.4 (8.3 - 50.0)	14.3 (0.0 - 29.4)	9.1 (2.8 - 14.3)	0.0 (0.0 - 0.0)	105
Gastroenterology	0.0 (0.0 - 0.0)	6.3 (0.0 - 22.2)	15.8 (0.0 - 32.6)	19.4 (5.3 - 35.3)	40.0 (25.0 - 50.0)	0.0 (0.0 - 0.0)	1,071
Tertiary cardiovascular diseased[b]	0.0 (0.0 - 0.5)	11.8 (0.0 - 26.7)	20.0 (0.0 - 33.3)	12.5 (2.1 - 25.0)	37.5 (25.0 - 55.6)	0.0 (0.0 - 0.0)	1,196
Other multiple certification[c]	**0.0 (0.0 - 7.7)**	**19.4 (0.0 - 43.7)**	**24.3 (10.0 - 46.4)**	**12.5 (0.0 - 31.4)**	**5.6 (0.0 - 20.5)**	**0.0 (0.0 - 0.0)**	**112**

Numbers indicate median values with the interquartile range in parentheses

[a]Includes physicians with a medical oncology and hematology dual certification or oncology certification alone

[b]Includes physicians certified in cardiovascular disease plus clinical cardiac electrophysiology and/or interventional cardiology

[c]Multiple certifications involving separate training fellowships (e.g., cardiovascular disease and nephrology)

Table C. Mean percentage of clinical time reported for each clinical role by subspecialty

	Clinical roles, mean (SD)						Total, N
	Primary care	Principal care	Longitudinal consultative care	Medical consultative care	Procedural care	Other care	
Total	**5.1 (13.6) [d]**	**29.2 (30.8) [d]**	**29.9 (29.3)**	**20.2 (24.2) [d]**	**15.2 (21.5) [d]**	**0.5 (5.5) [d]**	**8,020**
Nonprocedural subspecialties	**6.7 (16.6)**	**38.5 (34.7)**	**33.7 (33.1)**	**18.9 (25.9) [d]**	**1.8 (7.2) [d]**	**0.5 (5.7) [d]**	**3,726**
Medical oncology +/- Hematology[a]	3.4 (11.9) [d]	50.2 (36.4)	31.7 (33.9) [d]	13.3 (20.7) [d]	1.1 (4.4) [d]	0.4 (5.8) [d]	1,213
Hematology	6.4 (20.3) [d]	48.4 (35.1)	27.4 (35.0) [d]	17.0 (23.2) [d]	0.9 (2.2) [d]	0.0 (0.0)	25
Rheumatology	3.7 (13.5) [d]	39.4 (38.2)	42.5 (37.1)	13.1 (21.2) [d]	1.2 (4.0) [d]	0.2 (3.6) [d]	429
Nephrology	9.6 (16.5) [d]	34.2 (27.3)	33.5 (27.3)	18.3 (22.1) [d]	3.4 (11.4) [d]	1.1 (6.7) [d]	973
Endocrinology, diabetes, and metabolism	4.3 (13.4) [d]	33.0 (35.8) [d]	42.0 (36.7)	18.4 (25.8) [d]	2.2 (7.4) [d]	0.1 (1.5) [d]	568
Infectious diseases	14.1 (25.7) [d]	24.1 (30.1) [d]	22.5 (29.2) [d]	38.4 (36.0)	0.2 (1.4) [d]	0.7 (7.5) [d]	518
Procedural subspecialties	**3.5 (9.6) [d]**	**20.9 (23.9) [d]**	**26.6 (25.0)**	**21.4 (22.6) [d]**	**27.2 (22.9)**	**0.4 (5.3) [d]**	**4,182**
Cardiovascular disease	3.7 (9.1) [d]	26.8 (27.3) [d]	31.5 (28.4)	23.0 (25.2) [d]	14.5 (15.5) [d]	0.6 (6.2) [d]	1,130
Critical care medicine +/- pulmonary disease	5.3 (12.6) [d]	25.2 (25.0)	36.0 (26.7)	21.2 (21.0)	11.9 (13.2) [d]	0.4 (4.5) [d]	680
Pulmonary disease	10.5 (17.2) [d]	21.8 (23.2) [d]	34.4 (29.6)	22.1 (26.0) [d]	10.6 (9.9)	0.7 (6.7) [d]	105
Gastroenterology	2.0 (7.2) [d]	15.4 (21.7) [d]	20.7 (22.0) [d]	24.3 (24.6) [d]	37.3 (22.2)	0.4 (6.0) [d]	1,071
Tertiary cardiovascular disease[b]	3.1 (8.3) [d]	17.8 (19.9) [d]	21.1 (19.5)	17.3 (17.8) [d]	40.5 (22.0)	0.2 (3.5) [d]	1,196
Other multiple certifications[c]	**9.2 (20.4) [d]**	**27.3 (29.0) [d]**	**30.3 (27.6)**	**19.8 (22.2) [d]**	**12.4 (16.2) [d]**	**1.1 (8.4) [d]**	**112**

Numbers indicate mean values with standard deviation in parentheses

[a]Includes physicians with a medical oncology and hematology dual certification or oncology certification alone

[b]Includes physicians certified in cardiovascular disease plus clinical cardiac electrophysiology and/or interventional cardiology

[c]Multiple certifications involving separate training fellowships (e.g., cardiovascular disease and nephrology)

[d]Coefficient of Variation (CV) exceeds 100%

Table D. Mean clinical time reported in each clinical role focus categories

	Clinical time engaged in each clinical role focus	
	n	mean (SD)
Total[a]	7,674	76.0 (14.6)
Clinical role focus		
Primary Care	156	81.4 (15.1)
Principal Care	1,852	77.4 (15.5)
Longitudinal Consultative Care	1,702	77.2 (15.3)
Medical Consultative Care	783	80.1 (16.7)
Procedural Care	658	67.6 (12.7)
Mixed clinical role focus[b]		
Principal + Longitudinal Consultative Care	635	77.6 (11.6)
Principal + Medical Consultative Care	258	74.6 (11.4)
Principal + Procedural Care	272	73.2 (11.8)
Medical + Longitudinal Consultative Care	467	74.1 (11.8)
Procedural + Longitudinal Consultative Care	466	74.1 (11.6)
Procedural + Medical Consultative Care	425	73.9 (13.2)

[a]Excludes 320 physicians without a singular or mixed clinical role focus and 26 physicians with an "other" clinical role focus

[b]Clinical time for mixed focus classifications consist of the sum of time in each of the 2 clinical roles

Table E. Physicians with multiple certifications involving separate training fellowships, number of internal medicine subspecialists reporting a majority clinical role focus

	Other Multiple Certifications Total[d], N (%)
Primary care[a]	8 (7)
Principal care[a]	23 (21)
Principal + long. consult. care[b]	10 (9)
Principal + medical consult. care[b]	5 (4)
Longitudinal consult. care[a]	23 (21)
Long. + medical consult. care[b]	6 (5)
Medical consultative care[a]	10 (9)
Procedural care[a]	3 (3)
Procedural + long. consult. care[b]	5 (4)
Procedural + medical consult. care[b]	10 (9)
Procedural + principal care[b]	2 (2)
Other[c]	7 (6)
Total	**112**

consult., consultative; long., longitudinal.
Numbers indicate count of physicians with column percentages in parentheses.
[a]Single clinical role focus defined as the singular most common role that composes a majority of a subspecialist's clinical time.
[b]Mixed clinical role focus defined as the 2 most common individual roles that together compose a majority of a subspecialist's clinical time.
[c]Other, or not clinical-role–focused.
[d]Multiple certifications involving separate training fellowships *(eg, cardiovascular disease and nephrology)*.

Table F. Physician median time engaged in different clinical roles stratified by demographic and practice characteristics

	Clinical time engaged in each clinical role focus, median (IQR)					
	Primary care	**Principal care**	**Longitudinal consultative care**	**Medical consultative care**	**Procedural care**	**Other care**
Total	0.0 (0.0 - 5.0)	20.0 (0.0 - 50.0)	22.4 (0.0 - 47.4)	11.8 (0.0 - 27.8)	3.2 (0.0 - 25.0)	0.0 (0.0 - 0.0)
Medical School and Nativity						
US Med School : US Born	0.0 (0.0 - 0.0)	21.1 (0.0 - 50.0)	25.0 (0.0 - 50.0)	11.1 (0.0 - 26.3)	0.0 (0.0 - 25.0)	0.0 (0.0 - 0.0)
US Med School : Int. Born	0.0 (0.0 - 5.0)	17.7 (0.0 - 44.4)	23.5 (0.0 - 46.7)	12.5 (0.0 - 31.6)	5.0 (0.0 - 29.4)	0.0 (0.0 - 0.0)
Int. Med School : US Born	0.0 (0.0 - 5.3)	19.4 (0.0 - 50.5)	20.6 (0.0 - 44.4)	11.1 (0.0 - 29.4)	0.0 (0.0 - 16.7)	0.0 (0.0 - 0.0)
Int. Med School : Int. Born	0.0 (0.0 - 6.1)	20.0 (0.0 - 50.0)	22.2 (0.0 - 44.4)	12.5 (0.0 - 28.6)	5.6 (0.0 - 26.0)	0.0 (0.0 - 0.0)
Sex						
Male	0.0 (0.0 - 5.3)	18.8 (0.0 - 44.4)	22.2 (0.0 - 44.4)	12.5 (0.0 - 28.6)	7.1 (0.0 - 31.6)	0.0 (0.0 - 0.0)
Female	0.0 (0.0 - 0.0)	25.0 (0.0 - 62.5)	23.5 (0.0 - 52.9)	11.1 (0.0 - 25.0)	0.0 (0.0 - 6.3)	0.0 (0.0 - 0.0)
Practice Type						
Private Practice	0.0 (0.0 - 5.6)	20.0 (0.0 - 44.4)	25.0 (2.0 - 49.3)	11.1 (0.0 - 27.3)	5.6 (0.0 - 27.8)	0.0 (0.0 - 0.0)
HMO/Hospital-owned practice	0.0 (0.0 - 0.0)	20.6 (0.0 - 50.0)	25.0 (0.0 - 50.0)	11.1 (0.0 - 26.3)	5.6 (0.0 - 26.7)	0.0 (0.0 - 0.0)
Academic/Teaching	0.0 (0.0 - 0.0)	21.4 (0.0 - 55.6)	21.1 (0.0 - 46.2)	12.5 (0.0 - 28.6)	0.0 (0.0 - 20.0)	0.0 (0.0 - 0.0)
Other	0.0 (0.0 - 6.3)	15.0 (0.0 - 50.0)	11.1 (0.0 - 33.3)	14.3 (0.0 - 33.3)	0.0 (0.0 - 16.7)	0.0 (0.0 - 0.0)
Practice Size						
Solo	0.0 (0.0 - 7.7)	15.6 (0.0 - 42.9)	22.2 (0.0 - 47.4)	12.0 (0.0 - 31.3)	4.6 (0.0 - 22.2)	0.0 (0.0 - 0.0)
2 to 10	0.0 (0.0 - 5.6)	20.0 (0.0 - 50.0)	25.0 (0.0 - 50.0)	11.1 (0.0 - 26.9)	3.8 (0.0 - 25.0)	0.0 (0.0 - 0.0)
11 to 50	0.0 (0.0 - 1.0)	22.2 (0.0 - 50.0)	22.2 (0.0 - 44.4)	11.1 (0.0 - 25.0)	6.7 (0.0 - 33.3)	0.0 (0.0 - 0.0)
51+	0.0 (0.0 - 0.0)	20.0 (0.0 - 52.6)	23.5 (0.0 - 50.0)	12.5 (0.0 - 28.6)	0.0 (0.0 - 25.0)	0.0 (0.0 - 0.0)
Unknown/Don't Know	0.0 (0.0 - 5.0)	17.7 (0.0 - 50.0)	12.5 (0.0 - 42.1)	15.8 (0.0 - 35.7)	0.0 (0.0 - 10.5)	0.0 (0.0 - 0.0)
2013 NCHS Urban-Rural Classification Scheme for Counties code						
Large central metro	0.0 (0.0 - 4.2)	20.0 (0.0 - 50.5)	22.2 (0.0 - 46.2)	11.1 (0.0 - 28.6)	0.0 (0.0 - 23.5)	0.0 (0.0 - 0.0)
Large fringe metro	0.0 (0.0 - 5.0)	20.0 (0.0 - 45.0)	25.0 (1.0 - 50.0)	12.5 (0.0 - 27.8)	4.2 (0.0 - 26.3)	0.0 (0.0 - 0.0)
Medium metro	0.0 (0.0 - 2.6)	20.0 (0.0 - 48.7)	25.0 (5.0 - 50.0)	11.8 (0.0 - 27.0)	5.9 (0.0 - 30.0)	0.0 (0.0 - 0.0)

Small metro	0.0 (0.0 - 5.6)	23.3 (0.0 - 50.0)	22.2 (3.7 - 46.2)	12.5 (0.0 - 27.8)	5.2 (0.0 - 25.0)	0.0 (0.0 - 0.0)
Micropolitan	0.0 (0.0 - 6.1)	20.0 (0.0 - 52.1)	21.4 (0.0 - 50.0)	11.1 (0.0 - 28.2)	7.6 (0.0 - 22.9)	0.0 (0.0 - 0.0)
Noncore	0.0 (0.0 - 18.8)	14.1 (0.0 - 25.0)	25.0 (6.3 - 33.3)	17.4 (6.7 - 25.0)	7.1 (0.0 - 25.0)	0.0 (0.0 - 0.0)
Health and Human Service region						
Region 1: Boston	0.0 (0.0 - 0.0)	12.5 (0.0 - 50.0)	29.4 (5.6 - 56.4)	12.5 (0.0 - 27.1)	0.0 (0.0 - 17.2)	0.0 (0.0 - 0.0)
Region 2: New York	0.0 (0.0 - 10.0)	21.4 (0.0 - 50.0)	22.2 (0.0 - 44.0)	11.1 (0.0 - 28.2)	0.0 (0.0 - 17.9)	0.0 (0.0 - 0.0)
Region 3: Philadelphia	0.0 (0.0 - 0.5)	18.8 (0.0 - 50.0)	25.0 (0.0 - 47.4)	12.5 (0.0 - 28.6)	0.0 (0.0 - 22.2)	0.0 (0.0 - 0.0)
Region 4: Atlanta	0.0 (0.0 - 5.3)	22.2 (0.0 - 52.1)	21.8 (0.0 - 44.4)	11.1 (0.0 - 25.0)	5.6 (0.0 - 27.8)	0.0 (0.0 - 0.0)
Region 5: Chicago	0.0 (0.0 - 2.9)	17.9 (0.0 - 50.0)	25.0 (5.1 - 44.4)	12.5 (0.0 - 28.6)	5.6 (0.0 - 30.0)	0.0 (0.0 - 0.0)
Region 6: Dallas	0.0 (0.0 - 5.3)	22.2 (0.0 - 50.0)	25.0 (0.0 - 47.1)	11.1 (0.0 - 25.0)	6.9 (0.0 - 27.8)	0.0 (0.0 - 0.0)
Region 7: Kansas City	0.0 (0.0 - 4.5)	20.0 (0.0 - 50.0)	24.4 (5.4 - 50.0)	11.1 (0.0 - 26.6)	0.0 (0.0 - 25.0)	0.0 (0.0 - 0.0)
Region 8: Denver	0.0 (0.0 - 2.2)	21.4 (0.0 - 45.9)	22.2 (0.0 - 45.0)	11.4 (0.0 - 25.5)	5.6 (0.0 - 29.4)	0.0 (0.0 - 0.0)
Region 9: San Francisco	0.0 (0.0 - 5.0)	17.7 (0.0 - 47.4)	22.2 (0.0 - 50.0)	11.1 (0.0 - 31.1)	5.0 (0.0 - 25.0)	0.0 (0.0 - 0.0)
Region 10: Seattle	0.0 (0.0 - 0.0)	16.7 (0.0 - 50.0)	25.0 (0.0 - 50.0)	15.6 (5.0 - 33.3)	1.1 (0.0 - 25.0)	0.0 (0.0 - 0.0)

Table G. Physician mean time engaged in different clinical roles stratified by demographic and practice characteristics

	Clinical time engaged in each clinical role, mean (SD)					
	Primary care	**Principal care**	**Longitudinal consultative care**	**Medical consultative care**	**Procedural care**	**Other care**
Total	5.1 (13.6)	29.2 (30.8)	29.9 (29.3)	20.2 (24.2)	15.2 (21.5)	0.5 (5.5)
Medical School and Nativity						
US Med School : US Born	4.1 (12.8)	30.3 (31.5)	31.0 (29.9)	19.3 (23.4)	14.7 (21.7)	0.6 (6.5)
US Med School : Int. Born	4.9 (13.5)	27.5 (30.8)	29.4 (29.0)	21.7 (25.7)	16.3 (22.5)	0.2 (2.1)
Int. Med School : US Born	4.7 (11.4)	28.4 (31.5)	30.8 (32.8)	23.7 (29.4)	12.2 (20.7)	0.3 (2.7)
Int. Med School : Int. Born	6.1 (14.4)	28.6 (29.9)	28.9 (28.6)	20.4 (24.3)	15.5 (21.0)	0.5 (5.3)
Sex						
Male	4.9 (12.6)	27.4 (29.4)	29.0 (28.2)	20.4 (23.8)	17.8 (22.5)	0.4 (4.7)
Female	5.5 (16.0)	34.4 (33.9)	32.5 (32.2)	19.5 (25.4)	7.4 (15.6)	0.7 (7.4)
Practice Type						
Private Practice	5.3 (13.1)	28.0 (29.4)	30.9 (29.2)	19.8 (23.9)	15.6 (20.2)	0.4 (4.3)
HMO/Hospital-owned practice	3.9 (12.7)	29.9 (31.9)	30.9 (29.8)	19.0 (23.9)	16.0 (21.4)	0.2 (3.6)
Academic/Teaching	4.3 (12.4)	31.6 (32.5)	28.4 (29.0)	20.9 (24.2)	14.2 (23.7)	0.7 (7.4)
Other	10.1 (23.6)	27.8 (32.2)	23.1 (29.0)	24.5 (28.6)	13.0 (23.2)	1.4 (10.0)
Practice Size						
Solo	7.5 (15.7)	27.2 (30.1)	30.0 (30.5)	22.0 (26.4)	12.9 (17.9)	0.3 (4.4)
2 to 10	5.5 (14.1)	29.0 (30.4)	30.8 (29.2)	19.9 (24.2)	14.3 (19.9)	0.5 (5.5)
11 to 50	3.9 (11.6)	29.8 (30.6)	28.6 (28.1)	18.7 (22.0)	18.5 (23.4)	0.5 (5.8)
51+	3.8 (12.2)	29.9 (31.8)	30.7 (30.3)	20.2 (23.7)	15.2 (23.2)	0.2 (3.6)
Unknown/Don't Know	6.3 (16.5)	29.0 (32.3)	24.5 (28.6)	26.3 (30.6)	12.2 (23.7)	1.7 (10.7)
2013 NCHS Urban-Rural Classification Scheme for Counties code						
Large central metro	5.4 (14.5)	30.2 (32.0)	29.0 (29.4)	20.4 (24.8)	14.5 (21.9)	0.6 (6.2)
Large fringe metro	4.9 (13.2)	27.8 (29.5)	31.3 (29.7)	20.6 (24.8)	14.9 (20.6)	0.4 (5.3)
Medium metro	3.9 (11.2)	28.6 (30.0)	30.7 (29.1)	19.3 (22.3)	17.1 (22.3)	0.5 (5.7)
Small metro	5.3 (13.1)	29.6 (29.7)	29.7 (28.7)	20.2 (24.5)	15.0 (20.7)	0.2 (3.0)
Micropolitan	6.4 (15.0)	28.7 (30.1)	29.7 (29.7)	20.2 (24.3)	14.8 (19.2)	0.2 (2.3)
Noncore	15.7 (26.9)	19.7 (21.9)	27.0 (27.5)	21.7 (22.8)	15.9 (18.1)	0.0 (0.0)
Health and Human Service region						
Region 1: Boston	4.2 (13.7)	26.6 (30.4)	35.3 (31.3)	20.7 (25.1)	12.7 (20.8)	0.5 (5.5)
Region 2: New York	8.0 (16.9)	29.7 (31.4)	28.6 (29.5)	20.4 (24.7)	12.9 (20.7)	0.5 (5.6)
Region 3: Philadelphia	4.4 (13.7)	29.6 (31.4)	30.4 (29.5)	21.1 (25.2)	13.9 (21.7)	0.6 (6.8)
Region 4: Atlanta	5.0 (13.3)	31.0 (31.1)	28.8 (29.1)	18.6 (22.8)	16.1 (21.2)	0.5 (6.0)
Region 5: Chicago	4.0 (11.3)	27.9 (29.5)	29.5 (28.1)	21.0 (24.2)	17.0 (22.7)	0.6 (5.6)
Region 6: Dallas	5.0 (12.1)	30.1 (30.7)	29.7 (28.4)	18.3 (22.0)	16.3 (20.9)	0.7 (6.5)
Region 7: Kansas City	4.0 (10.3)	29.3 (31.1)	31.5 (30.5)	19.7 (24.7)	15.0 (22.2)	0.5 (3.9)
Region 8: Denver	4.9 (14.1)	28.8 (30.9)	28.3 (29.3)	20.4 (24.9)	17.6 (23.6)	0.0 (0.0)
Region 9: San Francisco	5.4 (14.3)	28.5 (30.8)	29.7 (30.1)	21.3 (25.8)	14.9 (21.2)	0.2 (2.9)
Region 10: Seattle	4.1 (13.7)	27.3 (30.4)	31.3 (29.3)	22.5 (24.4)	14.4 (20.6)	0.4 (5.7)

Numbers indicate mean values with standard deviation in parentheses

Table H. Number of internal medicine subspecialists reporting a majority clinical role focus by demographic and practice characteristics

	Medical School and Nativity, No. (col%)				Physician Sex, No. (col%)	
	US Med School : US Born	US Med School : Int. Born	Int. Med School : US Born	Int. Med School : Int. Born	Male	Female
All	3,419 (100)	1,087 (100)	154 (100)	3,360 (100)	6,010 (100)	2,010 (100)
Primary Care[a]	59 (2)	18 (2)	1 (1)	78 (2)	90 (1)	66 (3)
Principal Care[a]	848 (25)	230 (21)	39 (25)	735 (22)	1,254 (21)	598 (30)
Principal + Long. Consult. Care[b]	284 (8)	73 (7)	12 (8)	266 (8)	461 (8)	174 (9)
Principal + Medical Consult. Care[b]	104 (3)	25 (2)	3 (2)	126 (4)	185 (3)	73 (4)
Principal + Procedural Care[b]	117 (3)	35 (3)	3 (2)	117 (3)	235 (4)	37 (2)
Long. Consult. Care[a]	772 (23)	226 (21)	34 (22)	670 (20)	1,183 (20)	519 (26)
Medical + Long. Consult. Care[b]	182 (5)	81 (8)	4 (3)	200 (6)	365 (6)	102 (5)
Procedural + Long. Consult. Care[b]	179 (5)	78 (7)	5 (3)	204 (6)	412 (7)	54 (3)
Medical Consult. Care[a]	297 (9)	120 (11)	26 (17)	340 (10)	574 (10)	209 (10)
Procedural + Medical Consult. Care[b]	169 (5)	65 (6)	6 (4)	185 (6)	375 (6)	50 (2)
Procedural Care[a]	294 (9)	95 (9)	12 (8)	257 (8)	595 (10)	63 (3)
Other/No Clear Majority[a]	114 (3)	41 (4)	9 (6)	182 (5)	281 (5)	65 (3)

	Practice Type, No. (col%)			
	Private Practice	HMO/ Hospital-owned practice	Academic/ Teaching	Other
All	4,422 (100)	1,193 (100)	2,053 (100)	352 (100)
Primary Care[a]	74 (2)	20 (2)	34 (2)	28 (8)
Principal Care[a]	924 (21)	287 (24)	564 (27)	77 (22)
Principal + Longitudinal Consultative Care[b]	374 (8)	79 (7)	157 (8)	25 (7)
Principal + Medical Consultative Care[b]	130 (3)	39 (3)	75 (4)	14 (4)
Principal + Procedural Care[b]	178 (4)	47 (4)	37 (2)	10 (3)
Longitudinal Consultative Care[a]	960 (22)	278 (23)	409 (20)	55 (16)
Medical + Longitudinal Consultative Care[b]	263 (6)	66 (6)	125 (6)	13 (4)
Procedural + Longitudinal Consultative Care[b]	306 (7)	76 (6)	73 (4)	11 (3)
Medical Consultative Care[a]	433 (10)	101 (8)	199 (10)	50 (14)
Procedural + Medical Consultative Care[b]	259 (6)	71 (6)	81 (4)	14 (4)
Procedural Care[a]	296 (7)	97 (8)	228 (11)	37 (11)
Other/No Clear Majority[a]	225 (5)	32 (3)	71 (3)	18 (5)

Table H (continued)

	Practice Size, No. (col%)				
	Solo	**2 to 10**	**11 to 50**	**51+**	**Unknown/ Don't Know**
All	838 (100)	3,430 (100)	1,862 (100)	1,539 (100)	351 (100)
Primary Care[a]	20 (2)	78 (2)	23 (1)	23 (1)	12 (3)
Principal Care[a]	177 (21)	776 (23)	424 (23)	390 (25)	85 (24)
Principal + Long. Consult. Care[b]	61 (7)	294 (9)	150 (8)	102 (7)	28 (8)
Principal + Medical Consult. Care[b]	29 (3)	106 (3)	66 (4)	49 (3)	8 (2)
Principal + Procedural Care[b]	23 (3)	114 (3)	88 (5)	43 (3)	4 (1)
Long. Consult. Care[a]	189 (23)	745 (22)	353 (19)	351 (23)	64 (18)
Medical + Long. Consult. Care[b]	47 (6)	213 (6)	88 (5)	101 (7)	18 (5)
Procedural + Long. Consult. Care[b]	42 (5)	219 (6)	136 (7)	60 (4)	9 (3)
Medical Consult. Care[a]	108 (13)	339 (10)	144 (8)	140 (9)	52 (15)
Procedural + Medical Consult. Care[b]	48 (6)	176 (5)	107 (6)	81 (5)	13 (4)
Procedural Care[a]	36 (4)	207 (6)	224 (12)	154 (10)	37 (11)
Other/No Clear Majority[a]	58 (7)	163 (5)	59 (3)	45 (3)	21 (6)

	2013 NCHS Urban-Rural Classification Scheme for Counties code, No. (col%)					
	Large central metro	**Large fringe metro**	**Medium metro**	**Small metro**	**Micropolitan**	**Noncore**
All	3,482 (100)	1,737 (100)	1,708 (100)	736 (100)	324 (100)	33 (100)
Primary Care[a]	80 (2)	29 (2)	22 (1)	14 (2)	7 (2)	4 (12)
Principal Care[a]	871 (25)	360 (21)	371 (22)	166 (23)	82 (25)	2 (6)
Principal + Long. Consult. Care[b]	263 (8)	153 (9)	142 (8)	56 (8)	18 (6)	3 (9)
Principal + Medical Consult. Care[b]	97 (3)	63 (4)	58 (3)	28 (4)	10 (3)	2 (6)
Principal + Procedural Care[b]	93 (3)	61 (4)	71 (4)	36 (5)	10 (3)	1 (3)
Long. Consult. Care[a]	725 (21)	375 (22)	370 (22)	150 (20)	77 (24)	5 (15)
Medical + Long. Consult. Care[b]	210 (6)	97 (6)	103 (6)	41 (6)	15 (5)	1 (3)
Procedural + Long. Consult. Care[b]	169 (5)	132 (8)	110 (6)	41 (6)	13 (4)	1 (3)
Medical Consult. Care[a]	363 (10)	175 (10)	142 (8)	67 (9)	34 (10)	2 (6)
Procedural + Medical Consult. Care[b]	160 (5)	85 (5)	106 (6)	54 (7)	17 (5)	3 (9)
Procedural Care[a]	304 (9)	120 (7)	160 (9)	48 (7)	22 (7)	4 (12)
Other/No Clear Majority[a]	147 (4)	87 (5)	53 (3)	35 (5)	19 (6)	5 (15)

eTable H (continued)

	Health and Human Service region, No. (col %)									
	Region 1: Boston	**Region 2: New York**	**Region 3: Philadelphia**	**Region 4: Atlanta**	**Region 5: Chicago**	**Region 6: Dallas**	**Region 7: Kansas City**	**Region 8: Denver**	**Region 9: San Francisco**	**Region 10: Seattle**
All	564 (100)	940 (100)	872 (100)	1,568 (100)	1,300 (100)	866 (100)	292 (100)	222 (100)	1073 (100)	323 (100)
Primary Care[a]	13 (2)	31 (3)	17 (2)	30 (2)	16 (1)	10 (1)	3 (1)	6 (3)	23 (2)	7 (2)
Principal Care[a]	125 (22)	223 (24)	205 (24)	395 (25)	276 (21)	200 (23)	69 (24)	46 (21)	240 (22)	73 (23)
Principal + Long. Consult. Care[b]	37 (7)	78 (8)	69 (8)	109 (7)	111 (9)	79 (9)	22 (8)	24 (11)	86 (8)	20 (6)
Principal + Medical Consult. Care[b]	18 (3)	34 (4)	24 (3)	62 (4)	36 (3)	25 (3)	7 (2)	4 (2)	33 (3)	15 (5)
Principal + Procedural Care[b]	11 (2)	22 (2)	29 (3)	64 (4)	50 (4)	32 (4)	10 (3)	14 (6)	31 (3)	9 (3)
Long. Consult. Care[a]	157 (28)	181 (19)	187 (21)	327 (21)	249 (19)	185 (21)	70 (24)	42 (19)	232 (22)	72 (22)
Medical + Long. Consult. Care[b]	34 (6)	46 (5)	56 (6)	72 (5)	85 (7)	45 (5)	14 (5)	11 (5)	76 (7)	28 (9)
Procedural + Long. Consult. Care[b]	35 (6)	45 (5)	47 (5)	94 (6)	86 (7)	54 (6)	14 (5)	10 (5)	58 (5)	23 (7)
Medical Consult. Care[a]	56 (10)	98 (10)	100 (11)	126 (8)	128 (10)	66 (8)	29 (10)	21 (9)	126 (12)	33 (10)
Procedural + Medical Consult. Care	18 (3)	42 (4.5)	28 (3)	98 (6)	86 (7)	56 (6)	17 (6)	11 (5)	54 (5)	15 (5)
Procedural Care[a]	42 (7)	68 (7)	85 (10)	117 (7)	130 (10)	66 (8)	23 (8)	29 (13)	77 (7)	21 (7)
Other/No Clear Majority[a]	18 (3)	72 (8)	25 (3)	74 (5)	47 (4)	48 (6)	14 (5)	4 (2)	37 (3)	7 (2)

Long = longitudinal; Consult = Consultative

Numbers indicate count of physicians with column percentages in parentheses

[a]Single clinical role focus defined as the singular most common role that composes a majority of a subspecialist's clinical time

[b]Mixed clinical role focus defined as the 2 most common individual roles that together compose a majority of a subspecialist's clinical time

[c]Other or not clinical role focused

Table I. Clinical activity, demographic, and practice characteristics of the 1,097 physicians who were excluded because they reported a majority of their time was spent on hospital care

Total	1,097 (100)
Hospital/ ICU care, mean (SD)	70.7 (19.1)
Primary care, mean (SD)	1.5 (5.7)
Principal care, mean (SD)	7.1 (11.9)
Longitudinal consultative care, mean (SD)	9.6 (13.3)
Medical consultative care, mean (SD)	7.4 (11.5)
Procedural care, mean (SD)	3.6 (6.7)
Other care, mean (SD)	0.3 (2.4)
Certification, No. (%)	
Cardiovascular disease	59 (5)
Pulmonary disease	32 (3)
Medical oncology +/- Hematology[a]	26 (2)
Gastroenterology	7 (1)
Nephrology	136 (12)
Infectious diseases	176 (16)
Endocrinology, diabetes, and metabolism	8 (1)
Rheumatology	3 (<1)
Critical care medicine +/- pulmonary disease	597 (54)
Tertiary cardiovascular disease[b]	24 (2)
Other multiple certifications[c]	29 (3)
Medical School and Nativity, No. (%)	
US Med School : US Born	509 (46)
US Med School : Int. Born	161 (15)
Int. Med School : US Born	39 (4)
Int. Med School : Int. Born	388 (35)
Sex, No. (%)	
Male	835 (76)
Female	262 (24)
Practice Size, No. (%)	
Solo	92 (8)
2 to 10	427 (39)
11 to 50	267 (24)
51+	204 (19)
Unknown/Don't Know	107 (10)
2013 NCHS Urban-Rural Classification Scheme for Counties code, No. (%)	
Large central metro	539 (49)
Large fringe metro	222 (20)
Medium metro	233 (21)
Small metro	75 (7)
Micropolitan	24 (2)
Noncore	4 (<1)
Health and Human Service region, No. (%)	
Region 1: Boston	77 (7)
Region 2: New York	107 (10)
Region 3: Philadelphia	146 (13)
Region 4: Atlanta	187 (17)
Region 5: Chicago	169 (15)
Region 6: Dallas	116 (11)
Region 7: Kansas City	50 (5)

Region 8: Denver	37 (3)
Region 9: San Francisco	163 (15)
Region 10: Seattle	45 (4)

[a]Includes physicians with a medical oncology and hematology dual certification or oncology certification alone
[b]Includes physicians certified in cardiovascular disease plus clinical cardiac electrophysiology and/or interventional cardiology
[c]Multiple certifications involving separate training fellowships (e.g., cardiovascular disease and nephrology)