

Connecticut 2009 Primary Care Survey: Physician Satisfaction, Physician Supply and Patient Access to Medical Care

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ABSTRACT—Objective: To provide a more detailed evaluation of the attitudes and opinions of Connecticut's primary-care physicians, the practice environment in which care is provided, and how the evolving practice environment might affect the availability and quality of medical care in the state. **Methods:** Primary-care physicians affiliated with the Connecticut Chapter of the American College of Physicians (n = 1088), the Connecticut Chapter of the American Academy of Pediatrics (n = 699), and the Connecticut Academy of Family Physicians (n = 376) were invited to participate in a brief online survey. Participation was limited to physicians who were actively engaged in primary-care medicine. **Results:** Four hundred ninety-eight primary-care physicians practicing in Connecticut completed the survey resulting in an overall response rate of 23%. Primary-care physicians in Connecticut were generally satisfied with their careers in medicine, although 20% of respondents reported contemplating a career change because of the practice environment in the state. Statistically significant differences in satisfaction among primary-care specialists were observed, with pediatricians expressing greater satisfaction relative to family physicians and internists with hours worked, the Connecticut malpractice environment, level of administrative burden, income, and overall satisfaction. Analyses seeking to account for the greater levels of satisfaction among pediatri-

cians relative to family physicians and internists identified income as a key explanatory factor. Problems related to access to care were also identified, with 23% of primary-care physicians reporting that they were not accepting new patients, and wait time for routine office visits for existing patients averaged 13.4 days. **Conclusion:** These data, combined with information from the US Census Bureau and the state licensure database, indicate that the potential new patient load tied to expanded insurance coverage under health reform may place a significant burden on primary-care physicians in Connecticut's urban areas and could overwhelm physicians in rural communities.

Introduction

THE intense interest in health care reform at the state and federal levels and its potential impact on the practice of medicine highlights the critical need for an accurate and comprehensive assessment of the Connecticut physician population. Because of the emphasis on expansion of coverage to the previously uninsured in both Connecticut's SustiNet Health Plan and the Obama administration's health reform legislation, the challenges faced by, and resources available to, Connecticut's primary-care physicians are of particular import.

Historically, there has been little information available on the physician practice environment in Connecticut. Research conducted by the Connecticut Economic Research Center in 2005 identified what appeared to be emerging trends related to physician availability and access to medical care.¹ These trends were largely confirmed in a comprehensive study of the Connecticut physician workforce conducted in 2008 by the Connecticut State Medical Society (CSMS), which found that the practice environment in the state appeared to be having a demonstrable impact on the supply of physicians in certain specialty areas and on patients' access to care.² Nearly 20% of physicians across all specialty areas reported

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that they were contemplating a career change because of the Connecticut practice environment, with those in the surgical specialties most likely to have contemplated a career change. Roughly 40% of those in primary-care specialties reported decreases in the number of generalists in their geographic area, and almost half of physicians in the sample reported that obtaining referrals or consultations for their patients had become more difficult over the past three years.

As a result of these findings and growing concern regarding the impact of health reform on the demand for primary-care services, CSMS, with financial support and assistance from the Universal Health Care Foundation of Connecticut (UHCF), embarked on a study of Connecticut's primary-care physicians and their practice environment. This study sought to provide a more detailed evaluation of the attitudes and opinions of Connecticut's primary-care physicians, the practice environment in which care is provided, and how the evolving practice environment might affect the availability and quality of medical care in the state.

Methods

Sample and Study Design.—CSMS, with financial support from UHCF, conducted a statewide survey of primary-care physicians in three areas (family practice, internal medicine and pediatrics) from October to December of 2009. CSMS was chartered by the Connecticut General Assembly in 1792 as a federation of eight component county medical associations. Today, CSMS has a total membership exceeding 7,000 physicians and medical students and is interested in the perceptions and interests of Connecticut physicians regarding their respective practices and the medical care provided to Connecticut citizens. The mission of CSMS is to serve both its physician members and their patients, the citi-

zens of the state, by advancing the medical knowledge of all physicians and protecting the public health.

Members of the Connecticut Chapter of the American College of Physicians (n = 1088), the Connecticut Chapter of the American Academy of Pediatrics (n = 699), and the Connecticut Academy of Family Physicians (n = 376) with email addresses on file (constituting approximately 80% to 85% of each society's total membership) were invited to participate in a brief online survey hosted at www.surveymonkey.com. Participation was limited to physicians who were actively engaged in primary-care medicine thereby eliminating some pediatric surgical and medical subspecialists, as well as residents and fellows.

Three email solicitations from the presidents of each society and the president of CSMS were sent over a six-week period in November and December 2009. Four hundred ninety-eight physicians completed the survey, resulting in an overall response rate of 23%. Response rates varied considerably across the specialties, with 39% of family physicians, 29% of pediatricians, and 14% of internists participating in the survey. Estimates presented in the analysis below were weighted to reflect the relative numbers of physicians in the state in each specialty area according to the combined membership of the participating specialty societies.

Table 1 presents the geographic distribution of primary-care physicians participating in the survey and compares this distribution with data obtained from the National Center for the Analysis of Healthcare Data (NCAHD), which provided an updated and de-duplicated version of the Connecticut Department of Public Health's state licensure database. The vast majority of physicians were concentrated in Connecticut's three largest counties, although family physicians had a larger presence in Connecticut's smaller counties relative to

Table 1.—Distribution of Connecticut Primary Care Physicians by County

County of Primary Practice Location	State Licensure Data*			2009 Primary Care Survey		
	Pediatricians	Internists	Family Physicians	Pediatricians	Internists	Family Physicians
Fairfield	30%	27%	21%	19%	31%	17%
Hartford	28%	26%	27%	29%	21%	26%
Litchfield	4%	4%	4%	1%	3%	10%
Middlesex	3%	3%	11%	5%	6%	15%
New Haven	26%	31%	14%	37%	35%	14%
New London	4%	5%	12%	7%	3%	9%
Tolland	3%	2%	5%	2%	0%	6%
Windham	1%	2%	6%	1%	2%	4%
Total N	793	1,812	557	699	1,088	376

*The National Center for the Analysis of Healthcare Data (NCAHD) provided an updated and de-duplicated version of the Connecticut Department of Public Health's state licensure database.

the other primary-care specialties. With the exception of the percentage of pediatricians practicing in Fairfield and New Haven and family physicians practicing in Litchfield, the geographic distribution of physicians participating in the survey was quite consistent with state licensure data. This lends some confidence to the validity of survey results despite the low response rate.

Survey Instrument.—Using recent surveys developed by the Massachusetts Medical Society (MMS) and CSMS as a frame of reference, we developed and pilot-tested a self-administered online survey. Data for this analysis were limited to questions related to a) physician satisfaction with various aspects of their career and specialty; b) recruitment, retention and career plans; c) access to care; d) physician administrative burdens; and e) demographic information, including age, gender and practice setting.

Questions regarding satisfaction related to their: 1) overall career in medicine; 2) practice in their specialty area; 3) practice in Connecticut; 4) the number of hours worked as a physician; 5) the amount of time they can spend with individual patients when providing care; 6) the Connecticut malpractice environment for their specialty; 7) the administrative requirements of practicing medicine; 8) opportunities for providing care coordination to patients with chronic conditions; and 9) satisfaction with their net income as a physician. All satisfaction questions were assessed on a five-point Likert scale ranging from “not at all satisfied” to “very satisfied” (higher values = more satisfied).

Difficulties in recruitment, retention and career plans were assessed with the following five questions: 1) “Over the past three years, has the number of physicians in your specialty in your geographic area stayed the same, increased, or decreased?”; 2) “How difficult is it for practices in your area to fill physician vacancies in your specialty area—very difficult (coded 4), somewhat difficult (3), not very difficult (2), not at all difficult (1)?”; 3) “Are you contemplating a career change because of the current practice environment in Connecticut?”; 4) “Are you planning to move out of Connecticut to practice medicine in the next five years because of the current practice environment?” A series of follow-up questions asked physicians to rate the importance of a number of possible explanations for increases/decreases in the number of physicians in their specialty area in their region. Explanations included: a) income potential, b) malpractice environment in Connecticut, c) cost of living in your area, d) quality of life in your area, e) managed care environment, and f) overall appeal of the specialty. Responses ranged from “very important” to “not at all important” on a four-point scale (higher values = more important).

Limitations in access to care were assessed using responses to the following two questions: 1) “Over the past three years, how difficult has it been to obtain referrals or consultations for your patients—has it stayed the same, become less difficult, or more difficult?”; and 2) “From today, how long (in calendar days) would a patient have to wait for a routine office visit with you?” Wait times were obtained for both new and existing patients. A

Table 2.—Demographics by Specialty

	Family Physicians (N = 147)	Internists (N = 151)	Pediatricians (N = 200)	Total (N = 498)
Gender*				
Male	63.8%	63.3%	47.1%	58.5%
Female	36.2%	36.7%	52.9%	41.5%
Employment*				
Self	45.1%	39.7%	41.7%	41.5%
Hospital	16.9%	24.6%	11.4%	18.7%
Medical School	2.8%	10.3%	6.6%	7.7%
Group	21.1%	17.5%	31.9%	22.7%
Other	14.1%	7.9%	8.4%	9.4%
Race				
White	85.3%	83.6%	86.4%	84.6%
Black	1.5%	1.7%	2.6%	1.8%
Asian	9.6%	13.8%	7.8%	11.3%
Hispanic	3.7%	0.9%	3.2%	2.3%

*Differences by primary-care specialty significant at .05 level.

series of follow-up questions asked physicians to rate the importance of various reasons for the difficulty in obtaining referrals/consultations, including: a) reimbursement rates, b) malpractice concerns, c) health plan restrictions, d) the supply of physicians in some specialty areas, and e) the supply of physicians in your geographic area. Responses ranged from “very important” to “not at all important” on a four-point scale (higher values = more important).

Three questions were used to assess the administrative burdens associated with providing patient care in Connecticut. Physicians were asked to estimate the numbers on a typical day of: 1) prescription refill requests by telephone or fax; 2) medication prior-authorization requests; 3) diagnostic imaging test prior-authorization requests.

Results

Data were analyzed using SPSS 16.0. Table 2 presents a basic demographic profile of the physicians in the sample, separately by specialty. The sample was 59% male and 85% White, which is consistent with the CSMS physician membership database for primary-care physicians in Connecticut. Pediatricians were more likely to

be female (53%) than family physicians or internists. The most common employment arrangement was self-employed (42%), with 23% in medical groups and 19% employed by a hospital.

Among those responding to the survey were a number of physicians (N = 42) who did not identify themselves as primary-care physicians or who provided primary-care services to less than 20% of their patients (data not shown). Because this study was focused on characteristics and concerns of Connecticut physicians providing mostly, but not exclusively, primary-care services, these physician respondents were omitted from the analyses presented below.

Table 3 presents the practice characteristics of primary-care physicians in Connecticut. Physicians averaged approximately 42 hours per week of direct patient care. Internists and, to a lesser extent, pediatricians provided significantly more hours of patient care in inpatient settings than family physicians. Pediatricians on average saw approximately .5 more patients per hour than other primary-care physicians. Family physicians were most likely, and internists least likely, to have a solo or small-group practice, and pediatricians were significantly

Table 3.—Characteristics by Specialty

	Family Physicians (N = 143) Mean (95% CI)	Internists (N = 128) Mean (95% CI)	Pediatricians (N = 185) Mean (95% CI)	Total (N=456) Mean (95% CI)
How many hours direct patient care per week—Outpatient settings?	37.6 (34.9, 40.2)	33.8 (29.8, 37.8)	37.2 (34.5, 39.8)	35.7 (33.8, 37.6)
How many hours direct patient care per week—Inpatient settings?*	1.57 (1.06, 2.08)	7.21 (4.37, 10.0)	4.71 (3.04, 6.38)	5.15 (3.96, 6.33)
Total hours of direct patient care per week?	41.7 (39.2, 44.1)	43.0 (39.7, 46.2)	41.0 (38.5, 43.5)	42.1 (40.5, 43.7)
Patients seen per hour when providing direct patient care?*	3.63 (3.50, 3.76)	3.54 (3.32, 3.77)	4.07 (3.88, 4.27)	3.73 (3.62, 3.84)
How do you currently pay for your professional liability insurance?	43.1 (34.7, 51.5)	40.8 (31.1, 50.4)	30.3 (22.9, 37.7)	37.8 (32.9, 42.8)
Percent who pay for their own professional liability insurance*	74.1 (66.7, 81.5)	56.6 (46.6, 66.5)	63.8 (56.1, 71.5)	62.9 (57.9, 67.8)
Percent employing physician assistants	32.8 (24.8, 40.9)	24.5 (15.6, 33.3)	21.2 (14.5, 28.0)	25.3 (20.7, 29.8)
Percent employing APRNs	35.8 (27.6, 44.0)	50.0 (39.7, 56.2)	48.0 (39.8, 56.2)	46.1 (40.9, 51.4)
Percent employing RNs*	50.8 (42.2, 59.3)	57.5 (47.3, 67.6)	77.4 (70.5, 84.3)	62.6 (57.5, 67.7)
Percent employing LPNs*	51.5 (42.9, 60.1)	42.6 (32.4, 52.7)	58.2 (50.1, 66.3)	49.8 (44.5, 55.0)
Median number of administrative FTEs in practice group	6.00	5.40	4.84	5.26

*Differences by primary-care specialty significant at .05 level.

more likely than the other two specialties to employ one or more registered nurses in their main practice. Family physician practices tended to have slightly more administrative staff than internal medicine or pediatric practices.

Table 4 presents data on physicians' satisfaction with various aspects of their careers in medicine. Without exception, pediatricians expressed the greatest level of satisfaction on each question, with all but two of these assessments achieving statistical significance at the .05 level. Pediatricians' mean response to the question, "In general, how satisfied are you with your career in medicine?" ranged between "satisfied" and "very satisfied," and their likelihood of recommending practicing in their specialty ranged between "very likely" and "somewhat likely." Similar but somewhat less favorable ratings were obtained from family physicians and internists. The three specialty areas were on average "somewhat likely" to recommend practicing in Connecticut, although again, pediatricians were more positive than the other two groups. Pediatricians were also significantly more satisfied with the number of hours they worked; with the Connecticut malpractice environment for their specialty; with the administrative requirements for practicing medicine; and with their net incomes as physicians than either family physicians or internists, with income appearing to be a particular source of dissatisfaction for internists. Similar to the results observed in the CSMS 2008 Physician

Workforce Survey,² primary-care physicians as a group expressed a great deal of dissatisfaction with the administrative requirements of practicing medicine, with the typical response ranging between "not at all satisfied" and "not very satisfied." The Connecticut medical liability environment was also a source of dissatisfaction, as were opportunities for providing care coordination to patients with chronic conditions.

Table 5 presents data on physicians' career plans, separately by specialty. Nearly one-fifth of physicians across all specialty areas reported that they were contemplating a career change because of the Connecticut practice environment, with another 18% not sure. Statistically significant differences by specialty were observed, with pediatricians far less likely to have contemplated a career change than family physicians and internists. Although few physicians had plans to move out of Connecticut in the next five years (7%), almost one-quarter across all three specialty groups were unsure of their future plans.

Table 6 presents results related to the recruitment and retention of physicians in Connecticut practices. Thirty percent of primary-care physicians indicated that their ability to retain their existing physician staff has worsened, with this problem particularly acute for internists (39%) and far less problematic for pediatricians (18%); differences by specialty were significant at the .05 level. On average, physicians reported that it was "somewhat

Table 4.—Physician Satisfaction by Specialty

	Family Physicians Mean (95% CI)	Internists Mean (95% CI)	Pediatricians Mean (95% CI)	Total Mean (95% CI)
In general, how satisfied are you with your career in medicine?*	3.92 (3.76, 4.08)	3.87 (3.70, 4.04)	4.25 (4.13, 4.37)	4.01 (3.92, 4.09)
Recommend practice in your specialty?*	3.09 (2.94, 3.24)	2.97 (2.80, 3.14)	3.42 (3.31, 3.53)	3.15 (3.06, 3.23)
Recommend practice in Connecticut?*	2.92 (2.79, 3.04)	2.84 (2.67, 3.00)	3.17 (3.06, 3.28)	2.97 (2.89, 3.05)
Satisfaction with the number of hours you work as a physician*	3.18 (3.00, 3.36)	3.30 (3.09, 3.51)	3.52 (3.35, 3.69)	3.35 (3.24, 3.46)
Satisfaction with the amount of time you can spend with individual patients	3.09 (2.92, 3.27)	2.96 (2.76, 3.16)	3.14 (2.97, 3.31)	3.05 (2.94, 3.15)
Satisfaction with the Connecticut malpractice environment for your specialty*	2.25 (2.07, 2.44)	2.29 (2.08, 2.50)	2.67 (2.52, 2.83)	2.42 (2.31, 2.52)
Satisfaction with the administrative requirements of practicing medicine*	1.71 (1.57, 1.83)	1.83 (1.65, 2.01)	2.13 (2.00, 2.28)	1.91 (1.82, 2.00)
Satisfaction with your opportunities for providing care coordination to patients with chronic conditions	2.88 (2.72, 3.05)	2.81 (2.61, 3.01)	2.76 (2.60, 2.92)	2.81 (2.71, 2.91)
Satisfaction with your net income as a physician*	2.84 (2.66, 3.02)	2.68 (2.48, 2.87)	3.15 (2.99, 3.31)	2.87 (2.76, 2.97)

*Differences by primary-care specialty significant at .05 level.

Table 5.—Physician Career Plans by Specialty

		Family Physicians	Internists	Pediatricians	Total
Contemplating a career change because of the current practice environment in Connecticut?*	Yes	25.2%	22.0%	10.4%	18.6%
	No	58.7%	55.1%	78.1%	63.5%
	Not sure	16.1%	22.8%	11.5%	17.9%
Planning move out of Connecticut to practice medicine in the next five years?	Yes	7.7%	10.2%	4.4%	7.7%
	No	67.8%	63.8%	74.7%	68.0%
	Not sure	24.5%	26.0%	20.9%	24.3%

*Differences by primary-care specialty significant at .05 level.

difficult” to fill physician vacancies in their specialty (mean = 3.05 on a four-point scale), with recruitment significantly less difficult for pediatricians. This disparity is also seen in estimates of the number of months to recruit a new physician, which ranged between 13 and 15 months for family physicians and internists but was only nine months for pediatricians. The most prominent explanations regarding the difficulty in recruiting across all three specialties were income potential (mean = 3.51) and cost of living in their area (mean = 3.39), although income potential was significantly less likely to be cited by pediatricians. Also, pediatricians were significantly less likely to cite the overall appeal of the specialty in explaining recruiting difficulties.

Additional data on physician capacity and its effect on access to care are presented in Table 7. Nearly one-quarter of all primary-care physicians in Connecticut reported that they were no longer accepting new patients, a figure that was substantially higher among family physicians and internists than pediatricians. Wait times for a routine

office visit were substantial, averaging 18 days for a new patient (among physicians accepting new patients) and 13.4 days for an existing patient. Wait times for existing patients varied significantly by specialty, with wait times for family physicians (7.2 days) half the duration of those for internists (14.5 days) and pediatricians (15.8 days). It is important to note that the wait times for existing patients were substantially longer than those observed among primary-care physicians in the 2008 CSMS Physician Workforce Study, which ranged between four days for family practitioners to over six days for internists and over 10 days for pediatricians.²

In addition, 50% of the sample indicated that obtaining referrals and consultations for their patients had become more difficult over the past three years, and this percentage did not vary by specialty (data not shown). The bottom portion of Table 7 presents physicians’ ratings of the importance of various factors in accounting for the increased difficulty for their patients. Among those reporting increased difficulty in obtaining refer-

Table 6.—Physician Recruitment and Retention by Specialty

	Family Physicians Mean (95% CI)	Internists Mean (95% CI)	Pediatricians Mean (95% CI)	Total Mean (95% CI)
Percent saying ability to retain staff worsened over past three years*	27.1 (19.4, 34.7)	38.8 (29.8, 47.8)	18.3 (12.8, 24.9)	29.9 (25.4, 34.4)
How difficult is it for Connecticut practices to fill physician vacancies in your specialty?*	3.24 (3.13, 3.35)	3.30 (3.17, 3.43)	2.56 (2.44, 2.68)	3.05 (2.97, 3.12)
How important are the following factors in explaining recruitment difficulties:				
Income potential *	3.54 (3.45, 3.65)	3.59 (3.47, 3.70)	3.27 (3.11, 3.41)	3.51 (3.44, 3.58)
Malpractice environment in Connecticut for your specialty	3.06 (2.93, 3.19)	3.03 (2.86, 3.20)	3.02 (2.86, 3.19)	3.04 (2.95, 3.13)
Cost of living in your area	3.39 (3.27, 3.52)	3.37 (3.22, 3.52)	3.41 (3.26, 3.57)	3.39 (3.30, 3.47)
Quality of life in your area	2.59 (2.42, 2.75)	2.62 (2.43, 2.80)	2.77 (2.57, 2.97)	2.64 (2.54, 2.75)
Managed-care environment	3.03 (2.91, 3.16)	2.95 (2.82, 3.09)	2.87 (2.71, 3.04)	2.95 (2.87, 3.03)
Overall appeal of the specialty*	3.45 (3.33, 3.55)	3.39 (3.24, 3.54)	2.90 (2.72, 3.08)	3.30 (3.21, 3.38)
How many months does it take to recruit a physician for your practice?*	13.3 (12.0, 14.7)	14.7 (12.6, 16.9)	9.08 (7.94, 10.2)	12.6 (11.6, 13.6)

*Differences by primary-care specialty significant at .05 level.

Table 7.—Difficulties in Obtaining Referrals and Wait Times for Patient Visits by Specialty

	Family Physicians Mean (95% CI)	Internists Mean (95% CI)	Pediatricians Mean (95% CI)	Total Mean (95% CI)
Percent not accepting new patients*	25.9% (16.3, 35.4)	27.5% (21.2, 33.8)	15.5% (10.1, 21.0)	23.2% (19.1, 27.3)
How many days would a new patient have to wait for a routine office visit with you?	13.8 (10.9, 16.8)	19.8 (15.3, 24.4)	17.7 (14.7, 20.6)	17.9 (15.8, 19.9)
How many days would an existing patient have to wait for a routine office visit with you?*	7.17 (5.77, 8.57)	14.5 (11.0, 18.0)	15.8 (12.8, 18.8)	13.4 (11.7, 15.1)
Reasons for referral difficulties:				
Reimbursement rates *	3.48 (3.32, 3.63)	3.52 (3.31, 3.75)	3.16 (2.97, 3.34)	3.38 (3.27, 3.50)
Malpractice concerns *	2.76 (2.58, 2.93)	2.91 (2.66, 3.16)	2.48 (2.31, 2.65)	2.73 (2.61, 2.85)
Health plan restrictions	3.74 (3.61, 3.86)	3.59 (3.42, 3.76)	3.61 (3.46, 3.75)	3.63 (3.54, 3.71)
Supply of physicians in some specialty areas *	3.29 (3.10, 3.49)	3.40 (3.20, 3.60)	3.72 (3.61, 3.85)	3.50 (3.40, 3.60)
Supply of physicians in your geographic area*	3.00 (2.79, 3.21)	2.91 (2.67, 3.15)	3.39 (3.22, 3.56)	3.10 (2.98, 3.22)

*Differences by primary-care specialty significant at .05 level.

rals/consultations, the reason cited as most important was health plan restrictions (mean = 3.63 on a four-point scale), followed by the supply of physicians in some specialty areas (mean = 3.50) and reimbursement rates (mean = 3.38). The overall supply of physicians in some specialty areas was cited as a more important factor in explaining referral difficulties among pediatricians, while reimbursement rates were significantly more prominent in explaining such difficulties among family physicians and internists.

Health Reform and Primary Care Capacity

To further address questions related to access to care, we present in Table 8 an analysis in which we estimate the capability of the Connecticut primary-care physician workforce to accommodate the influx of new patients with enhanced insurance coverage under state and national health reform. This table presents a series of estimates of the additional patient load for family physicians and internists in each Connecticut county should currently uninsured residents come into the primary-care system with health insurance coverage. Data for these estimates were derived from three sources: the U.S. Census Bureau's Small Area Health Insurance Estimates,³ the NCAHD's Connecticut physician licensure data, and reports from physicians participating in the 2009 Primary Care Survey. (Universal coverage for children in Connecticut is already available through the Healthcare for Uninsured Kids and Youth [HUSKY] program). Given typical patient panel sizes of 2000–2500 per full time physician,⁴ the unadjusted number of additional patients

per physician (column four) with expanded coverage suggests a modest increase in patient load of roughly 5% to 8%, with Tolland approaching 10%. These estimates, however, are likely to overestimate physician capacity for two reasons: the Connecticut licensure database includes physicians who, while licensed to practice in Connecticut, have a primary practice that is outside the state or are no longer actively practicing, and we have not adjusted for the fact that many primary-care physicians are no longer accepting new patients, and/or some fraction of their practices are not dedicated to providing primary-care services. Using data from the present study to adjust for the percent of patients for whom physicians are providing primary-care services as well as the number of physicians who are not accepting new patients paints a much bleaker picture concerning primary care capacity (column eight). This is particularly true in rural counties, although it is important to emphasize that estimates of the number of physicians not accepting new patients from our survey data were based on very small numbers of physicians in Litchfield, Tolland and Windham counties.

Explaining Differences in Career Satisfaction by Specialty

Analyses presented earlier indicated that pediatricians reported higher overall satisfaction with their careers in medicine than family physicians and internists. This disparity in career satisfaction may be attributable to differences in practice conditions among the primary care specialties, as pediatricians reported significantly greater satisfaction with the number of hours they worked, the

Table 8.—Estimating the Impact of Universal Health Coverage on Primary-Care Physicians' Patient Load, by County

County	1	2	3	4	5	6	7	8
2008 Population Age 18-64 [†]	Uninsured Rate Age 18-64 [†]	Number of PCP [‡]	Unadjusted Patients per PCP	Pct Primary Care [§]	Pct Accepting New Patients [§]	Adjusted Patients per PCP*	Adjusted Patients per PCP**	Adjusted Patients per PCP**
Fairfield	549,026	14.2	614	127	80.3	85.2	158	186
Hartford	544,055	13.4	629	116	84.4	76.7	137	179
Litchfield	120,746	11.7	88	161	96.4	58.8	167	283
Middlesex	102,334	11.9	108	113	90.2	75.0	125	167
New Haven	526,770	13.9	638	115	79.8	75.0	144	192
New London	162,828	11.9	160	121	69.9	86.7	173	200
Tolland	89,489	13.9	61	204	96.3	50.0	212	424
Windham	75,517	12.8	71	136	97.4	37.5	140	373

Sources:

[†]U.S. Census Bureau: Small Area Health Insurance Estimates. <http://www.census.gov/did/www/sahie/index.html>.

[‡]National Center for the Analysis of Healthcare Data: Connecticut physician licensure database obtained from the Connecticut Department of Public Health.

[§]2009 CSMS Primary-Care Survey

Adjustments:

*Adjusting for percent of patients for whom physicians provide primary care

**Adjusting for percent of patients for whom physicians provide primary care AND percent accepting new patients

Table 9.—Predicting Satisfaction with Career in Medicine as a Function of Satisfaction with Income, Hours Worked, Patient Interaction, Administrative Burden, and the Connecticut Malpractice Environment

	Model 1				Model 2			
	b	se	Std Beta	Sig.	b	se	Std Beta	Sig.
(Constant)	4.243	0.066		0.000	2.341	0.144		0.000
Family Practice	-0.294	0.101	-0.150	0.004	-0.101	0.085	-0.052	0.235
Internal Medicine	-0.389	0.105	-0.192	0.000	-0.186	0.088	-0.092	0.035
Pediatrics (omitted)	—	—	—	—	—	—	—	—
Satisfied w/ hours worked	—	—	—	—	0.290	0.034	0.370	0.000
Satisfied with CT malpractice environment	—	—	—	—	0.093	0.039	0.113	0.016
Satisfied with administrative requirements	—	—	—	—	0.003	0.047	0.003	0.951
Satisfied with income as a physician	—	—	—	—	0.200	0.037	0.244	0.000
R ² adj				.031				.343

Connecticut malpractice environment, the administrative burden of providing patient care, and their net incomes than did family physicians and internists. To determine the extent to which factors such as administrative burden or compensation accounted for differences in overall satisfaction, Table 9 presents results from an analysis in which overall satisfaction was regressed on dummy variables for specialty and, in a second step (Model 2), in which satisfaction with hours worked, administrative requirements for providing medical care, the Connecticut malpractice environment, and income as a physician were controlled. Two other potential mediating variables—satisfaction with time spent with patients and opportunities for care coordination—were significant predictors of overall career satisfaction, but did not differ by specialty, suggesting that these factors could not explain differences in overall satisfaction by specialty.

Results presented in Model 1 confirm the differences in overall satisfaction with career in medicine presented in Table 4, with the coefficients for family practice ($b = -.294$, $se = .101$) and internal medicine ($b = -.389$, $se = .105$) indicating that physicians in these specialties were significantly less satisfied than their pediatrician colleagues. To determine the extent to which hours worked, administrative requirements for providing medicine, the Connecticut malpractice environment, and income accounted for the differences in overall satisfaction among physicians, these potential mediating variables were added to the equation presented in Model 1. Results presented in Model 2 of Table 9 indicate that three of these variables were significantly related to overall satisfaction in the expected direction—e.g., greater satisfaction with income, hours worked, and the Connecticut malpractice environment were associated with higher levels of overall satisfaction. Standardized coefficients (Std Beta column) indicate that satisfaction with hours worked ($B = .370$) was the strongest predictor of overall satisfaction, with weaker effects observed for satisfaction with income ($B = .244$) and the malpractice environment ($B = .113$).

Controlling for these potential mediators had a substantial impact on differences in overall satisfaction by specialty. The coefficients in Model 2 reflecting the differences between family physicians and pediatricians ($b = -.101$) and internists and pediatricians ($b = -.186$) were reduced by approximately 55% to 65% relative to their magnitudes in Model 1, and in one case was no longer statistically significant. These results suggest that differences in overall satisfaction were largely explained by differences in physicians' ratings of practice conditions. However, they do not identify the particular factor or factors that accounted for overall differences in satisfaction. To determine the relative importance

of these three factors in explaining the differences in satisfaction among physicians, we calculated the indirect effects of specialty on satisfaction separately through each explanatory variable. The indirect effects were calculated by subtracting the direct effect of specialty from the specialty coefficients obtained in a series of models dropping each mediator variable.⁵ Results from this analysis are presented in Table 10. The indirect effects presented in this table indicate that differences in overall career satisfaction between family physicians and pediatricians were due to a different set of explanatory factors than the differences between internists and pediatricians. For instance, the only sizeable indirect effect accounting for the difference in overall satisfaction between internists and pediatricians was satisfaction with income ($-.064$). In contrast, differences in satisfaction with hours worked, with the Connecticut malpractice environment, and to a lesser extent satisfaction with income, all made small contributions to the differences in overall satisfaction between family physicians and pediatricians.

Discussion

Results from this survey provide compelling evidence of the potential for critical shortages in primary-care capacity in Connecticut. Against the backdrop of a dramatic expansion of health care coverage, Connecticut already has a scarcity of access, with 23% of primary-care physicians reporting that they are not accepting new patients, and wait time for routine office visits for existing patients averaging in excess of 13 days. Combining our data with information from other sources suggests that the potential new patient load tied to SustiNet and national health-care reform may be difficult to manage for primary-care physicians in urban areas, and could overwhelm physicians in rural communities. Furthermore, more than 40% of Connecticut physicians are over the age of 50, an age at which physicians begin to contemplate reducing their patient hours.⁶ The graying of Connecticut's population—both its physicians and patients—will only exacerbate the inadequacy of the state's primary-care capacity.

Yet another threat to primary-care capacity in Connecticut are concerns over career satisfaction and quality of life in the current workforce. Although results from this survey indicate that primary-care physicians in Connecticut were generally satisfied with their careers in medicine, a substantial number of those participating in this study (20%) stated that they were contemplating a career change because of the practice environment in the state, and large numbers of physicians expressed discontent with the administrative requirements for practicing medicine and the Connecticut malpractice environment for their specialty. Such discontent could further jeopardize access to care for many Connecticut

Table 10.—Explaining Differences in Career Satisfaction by Specialty through Satisfaction with Income, Hours Worked, Patient Interaction, Administrative Burden, and the Connecticut Malpractice Environment

	Family Physicians <i>vs</i> Pediatricians		Internists <i>vs</i> Pediatricians	
	b	se	b	se
Total Effect ^a	-0.294*	0.101	-0.389*	0.105
Direct Effect ^b	-0.101	0.085	-0.186*	0.085
Indirect thru: ^c				
Hours worked	-0.026		0.009	
Connecticut malpractice environment	-0.025		0.001	
Administrative burden	0.000		-0.009	
Satisfied with income as a physician	-0.017		-0.064	

^aThe total effects are the specialty coefficients from the reduced model presented in Table 9 (Model 1).

^bThe direct effects are the specialty coefficients from the full model presented in Table 9 (Model 2).

^cThe indirect effects are the arithmetic differences ($B_R - B_F$) between the specialty coefficients from reduced equations omitting each mediator variable (B_R) and the coefficients from the full model (B_F).

residents and exacerbate existing issues identified in this study related to difficulties obtaining referrals for patients and wait times for office visits.

Differences among primary-care specialists were also apparent, as pediatricians expressed greater satisfaction relative to family physicians and internists on virtually every dimension assessed in this study, ranging from hours worked to malpractice environment, level of administrative burden, and income. Analyses seeking to account for the greater levels of satisfaction among pediatricians relative to family physicians and internists identified income as a key explanatory factor, which is fascinating given that pediatricians are generally the lowest-paid primary-care physician specialty. It is possible that these findings may reflect a recent and rather specific event in Connecticut tied to increased reimbursements to pediatricians. In 2007, new state legislation called for an increase in reimbursement under Medicaid and HUSKY programs for certain primary-care services. More than \$37 million in new funding was allocated to the HUSKY/Medicaid programs in Connecticut tied to the provision of primary-care services, with pediatricians seeing the majority of this new funding (the rate increases per service were more dramatic for pediatricians than their primary-care physician colleagues).

Another explanation for this pattern of results may have to do with selection factors drawing physicians into the different primary-care specialties. Given the income disparities among these specialty areas, pediatricians may have been attracted to the specialty by quality-of-life considerations or the intrinsic rewards associated with caring for children. The fact that pediatricians are able to make a good living practicing in an area that was appealing for noneconomic reasons, coupled with recent

increases in reimbursements from public payors, may explain their overall greater levels of satisfaction.

Conclusion

Assuming that the implementation of Sustinet and national health-care reform will provide health insurance coverage to the vast majority of those presently uninsured in Connecticut, the state may not have enough primary-care physicians to meet the expected demand for services. Fortunately, strategies for augmenting primary care-capacity have taken center stage in the health care reform debate in Washington, as well as in Hartford, as federal and state lawmakers have struggled with how to reallocate funding and/or incentivize more physicians to enter primary-care fields. “The Patient Protection and Affordable Care Act,” that was signed into law on March 22nd, 2010, by President Barak Obama, and the associated reconciliation act (H.R. 4872, “The Health Care & Education Affordability Reconciliation Act of 2010”), provide additional payment and related incentives for those who provide primary-care services. These adjustments, generally in the form of increased payments, are tied almost expressly and universally to medical care provided to Medicaid recipients, and in some cases, Medicare beneficiaries. What is more, once these legislative changes are fully implemented, especially the increases in payments and additional incentives for primary-care services, it is very likely that private health insurers and other payors of medical care and services will similarly adjust payments for primary care and prevention services. This increased focus on paying for primary-care services and prevention may have an impact on how primary-care physicians perceive their profession, their own practice and their personal satisfaction. For family physicians and internists who appeared to be more influenced or

affected by the lower reimbursement and associated income expectations of primary-care physicians, these increases in federal funding may have a profound impact on their personal satisfaction and their perception of their profession and the practice of medicine.

Promoting access to primary-care services in Connecticut will not be quickly or easily addressed. For the first time in more than a decade, our nation's medical schools saw in 2010 an increase in the number of graduating students who chose primary care as their specialty.⁸ While this is certainly good news, it will be a minimum of five years before these students have completed residency and are ready to become part of the physician workforce. Moreover, although educational initiatives and financial incentives may be successful in increasing the number of primary-care physicians in the US, there is no guarantee that these physicians will come to Connecticut after their medical school or residency training. Connecticut will need to invest in infrastructure and develop incentive programs to lure more primary-care physicians to the state to address its imminent unmet needs. Furthermore, attention to the practice environment in the state, particularly related to administrative burden and medical liability, might enhance the attractiveness of a Connecticut-based practice for both current and prospective members of the physician workforce.

Limitations

This study is based entirely on self-report measures which, although used previously in surveys of Massachusetts and Connecticut physicians, have not been subjected to rigorous quantitative tests of their validity and reliability. In particular, the reliability of physician reports of wait times for appointments are not established, and physicians may be less reliable reporters of wait times than their office staff who monitor patient flow on a more regular basis. The response rate of 23% presents a challenge to our efforts to generalize our findings to the Connecticut physician population. In particular, the low response rate raises concerns that our data were biased, perhaps reflecting the views and experiences of those most affected by recruitment and retention problems, or those who are more involved in medical associations. However, it is also likely that some portion of the nonresponse could be due to ineligibility, with physicians in administrative or teaching positions or not providing much if any primary care not participating, as the information disseminated about the survey strongly suggested that this study was focused on actively practicing primary-care physicians. It is important to note that comparisons with Connecticut data provided by the NCAHD offered some comfort concerning the representativeness of this sample.

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