

# Results of a Nationwide Veterans Affairs Initiative to Align Graduate Medical Education and Patient Care

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**P**REDICTION OF PHYSICIAN WORKFORCE needs for the United States has proven to be imprecise at best. Such predictions have generally used assumptions based on historical data and practice patterns,<sup>1,2</sup> but this approach has been unable to accommodate unforeseen changes in either patient care strategies or the broader health care system. With the benefit of hindsight, comparison of recent policy proposals from the mid 1990s with the actual workforce outcomes in the year 2000 indicates substantial imprecision in such predictions. For example, in the mid 1990s, the Council on Graduate Medical Education proposed graduate medical education (GME) policies that were designed to avert a projected surplus of 80 000 to 165 000 physicians in the year 2000, all of whom would be specialists.<sup>1,2</sup> These policies advised training a substantial proportion of US medical school graduates in primary care specialties. In spite of a subsequent failure to achieve the proposed primary care targets, the United States has not experienced the predicted surplus of physicians. Rather, some argue that there continues to be a mismatch of competencies and distribution of physicians in comparison with health care needs.<sup>3</sup>

To advise Veterans Affairs (VA) executive management regarding future physician workforce needs, a special ad-

**Context** Planning for the US physician workforce is imprecise. Prevailing policy generally advocates more training in primary care specialties.

**Objective** To describe a program to increase primary care graduate medical education (GME) in a large academic health system—the Veterans Health Administration of the Department of Veterans Affairs (VA).

**Design** In 1995, a VA advisory panel recommended a 3-year plan to eliminate 1000 specialist training positions and add 750 primary care positions. After assessing the impact of the first year of these changes on patient care, the VA implemented modifications aimed at introducing primary care curricula for training of internal medicine subspecialists, neurologists, and psychiatrists. The change in strategy was in response to the call for better alignment of GME with local patient care and training needs to provide coordinated, continuous care for seriously and chronically ill patients.

**Setting** The VA health system, including 172 hospitals, 773 ambulatory and community-based clinics, 206 counseling centers, and 132 nursing homes.

**Participants** A total of 8900 VA residency training positions affiliated with 107 medical schools.

**Main Outcome Measure** Proportion of residents in primary care training during the 3-year alignment.

**Results** Over 3 years, primary care training in the VA increased from 38% to 48% of funded positions. Of this total, 39% of the increase was in internal medicine subspecialties, neurology, and psychiatry.

**Conclusion** In this case study of GME realignment, national policy was driven more by local patient care issues than by a perceived national need for primary care or specialty positions.

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visory panel of national academic leaders and health policy experts—the Residency Realignment Review Committee (RRRC)—was formed in 1995. At that time, 38% of the VA's funded residency positions were in primary care disciplines. Based on the prevailing national policy recommendations described above, the committee's overriding recommendation was to realign GME in VA-sponsored programs during a 3-year period to achieve approximately equal

numbers of primary care and specialist residency training positions.

We describe the implementation process that the VA health care system and

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its 107 medical school affiliates undertook to accomplish these changes in GME. The experience provides a case study of realignment of GME in a system that is undergoing extensive redesign to accommodate a changing health care environment. The initial policy was crafted to align residency training based on prevailing workforce projections. The final policy that emerged, however, aligned GME with local current and evolving patient care needs in the VA health system, and especially the perceived need to have specialists provide coordinated and continuous care for seriously and chronically ill patients.

### Development of a Systemwide GME Strategy

In late 1995, the VA embarked on a radical comprehensive transformation from a hospital-based system to a health care system.<sup>4,7</sup> A hallmark of this change was a movement toward providing coordinated continuous care within an integrated health care system with a strong emphasis on primary and ambulatory care. As a result, the system progressed to provide health care in more than 1200 facilities, including 773 ambulatory and community-based clinics, 206 counseling centers, 132 nursing homes, and 172 hospitals, all of which were integrated into a national system of 22 geographically dispersed Veterans Integrated Service Networks. These changes were accompanied by increased emphasis on health promotion and disease prevention; a multipronged initiative to improve access to care; and an intensified focus on providing continuous and coordinated care, patient safety, and documented health care quality.<sup>5</sup> An integral goal of this reengineering effort was to more closely align GME with patient care needs, with particular emphasis on expert, accessible, continuous, and integrated primary care.

The VA funds 9% of all US residency training positions. Through formal affiliation agreements with 107 of the nation's 125 medical schools, it funded more than 8900 residency positions distributed among some 2000 training programs in 1995. Because an

average of 4 residents spend a portion of their training in each of these funded positions over the course of the academic year, approximately one third of all resident physicians in the United States receive training in the VA health care system every year.<sup>6</sup>

The RRRC reviewed published studies and policy recommendations regarding the US physician workforce that were available as of 1995. Representative policy recommendations included analyses from the Council on Graduate Medical Education,<sup>1</sup> the Institute of Medicine,<sup>8</sup> and others.<sup>2,9-11</sup> The RRRC also received testimony and other input from a broad range of stakeholders.

Based on these analyses, the RRRC advised the VA to realign its GME to achieve approximately equal numbers of primary care and specialist training positions. This was to be achieved by eliminating 1000 specialist positions and creating 750 generalist positions. The RRRC advised implementation of these changes over a 3-year period.<sup>12</sup>

The proposal divided training programs into 4 categories based on level of specialization (TABLE 1). Category I comprised generally recognized primary care disciplines, including general internal medicine, family practice, geriatrics, obstetrics and gynecology, as well as preventive medicine and occupational medicine. These disciplines were targeted to receive more positions in the distribution process. Categories II through IV included progressively more specialized disciplines from which residency positions would be eliminated. The RRRC recommended that the first half of the total changes be implemented in year 1 (academic year 1997-1998) and one fourth each be implemented in year 2 (academic year 1998-1999) and year 3 (academic year 1999-2000).

To implement these changes, the RRRC recommended that numerical targets for the 4 categories be provided to each of the 22 Veterans Integrated Service Networks. A committee would be established in each network to determine changes for specific specialty disciplines within the 4 categories. Each committee was expected to negotiate its

annual assignment of resident allocations among the specialty disciplines to each of its hospitals. These committees would include local educational, clinical, and administrative leadership. Negotiations would require collaboration among hospitals, affiliated medical schools, and Veterans Integrated Service Network management. In consultation with clinical leadership, another specially constituted advisory group, the Residency Oversight Council at the VA headquarters in Washington, DC, would integrate its recommendations. At the beginning of every academic year local decisions would be aggregated at the national level for analysis.

Before the proposal was implemented, the RRRC draft recommendations for residency realignment were circulated for public review and comment. Representatives of 148 involved organizations, teaching hospitals, medical schools, and VA facilities provided written responses. The public comments made a compelling case to assess the initial impact of realignment on a smaller and more manageable proportion of residency positions. To reduce the initial pace of change, the fraction of residency training changes proposed for year 1 was reduced to a quarter of the total, with half reserved for the second year and the final quarter completed in year 3.

### Modifications After Year 1: Matching GME to Local Patient Care Needs

The negotiations conducted by network committees in year 1 resulted in the residency changes listed in Table 1. Anesthesiology, pathology, and diagnostic radiology programs were reduced substantially. Other specialties saw substantial but less severe cuts. These changes evoked widespread concerns from clinical settings and specialty leadership that continued reduction of subspecialty positions would impair the system's capacity to provide quality care for its many seriously and chronically ill patients.

Accordingly, the system leadership conducted a review of the initial

**Table 1.** Realignment of Number of Residency Positions by Specialty During 3 Years in the Veterans Affairs Health System

Specialty	Baseline, Academic Year 1995/1996	Year 1, Academic Year 1997/1998	Year 2, Academic Year 1998/1999	Year 3, Academic Year 1999/2000
<b>Category I</b>				
Family practice	109.5	135.0	136.7	147.5
General internal medicine	3195.0	3338.7	3439.1	3475.9
Geriatric medicine	104.0	132.0	159.6	169.8
Gynecology	8.0	15.5	20.5	21.0
Obstetrics and gynecology	0.0	2.0	5.0	7.0
Occupational medicine	4.3	4.0	14.4	16.5
Preventive medicine	21.0	32.0	38.0	38.0
Subtotal (primary care disciplines)	3441.8	3659.2	3813.3	3875.7
Primary Specialist Program	0.0	0.0	199.5	280.7
<b>Total</b>	<b>3441.8</b>	<b>3659.2</b>	<b>4012.8</b>	<b>4156.4</b>
Category I, % of total	38.6	41.4	46.0	48.0
<b>Category II</b>				
Addiction psychiatry*	0.0	0.0	0.0	0.5
Geriatric psychiatry*	19.0	18.0	22.9	22.5
Physical medicine and rehabilitation*	199.5	196.5	191.5	187.3
Psychiatry*	849.8	819.1	723.7	689.7
<b>Total</b>	<b>1068.3</b>	<b>1033.6</b>	<b>938.1</b>	<b>900.0</b>
Category II, % of total	12.0	11.7	10.8	10.4
<b>Category III</b>				
General surgery	834.0	802.5	733.2	706.4
Neurological surgery	65.5	58.5	56.5	57.0
Neurology*	308.5	283.6	246.9	224.1
Ophthalmology	240.3	237.6	238.8	237.0
Orthopedic surgery	231.5	229.8	221.6	216.3
Plastic surgery	48.8	48.8	44.7	46.8
Urology	189.0	189.5	185.0	179.2
Vascular surgery	9.2	8.5	8.5	7.0
<b>Total</b>	<b>1926.8</b>	<b>1858.8</b>	<b>1735.2</b>	<b>1673.8</b>
Category III, % of total	21.6	21.0	19.9	19.3
<b>Category IV</b>				
Allergy and immunology	12.0	10.9	9.9	9.5
Anesthesiology	327.7	246.6	198.6	187.0
Cardiology*	270.9	266.6	238.3	229.4
Colon and rectal surgery	1.0	1.0	1.0	1.0
Critical care	7.0	7.0	7.0	7.0
Critical care anesthesiology	0.0	1.0	0.0	0.0
Dermatology	142.5	144.0	148.1	140.0
Diagnostic radiology	327.5	308.5	273.1	262.1
Emergency medicine	3.0	6.0	6.6	5.7
Endocrinology and metabolism*	62.0	61.2	57.4	53.3
Gastroenterology*	193.4	184.3	166.5	159.0
Hematology*	16.0	11.0	8.4	13.1
Hematology and oncology*	102.0	105.1	89.1	77.9
Infectious diseases*	90.0	87.0	70.4	65.7
Nephrology*	91.7	86.2	75.1	70.0
Nuclear medicine	46.5	38.5	30.0	28.5
Oncology*	13.0	12.0	6.4	5.9
Otolaryngology	183.5	176.9	165.1	161.7
Pathology	263.3	235.4	211.8	197.8
Pulmonary diseases*	0.0	0.0	0.0	1.8
Pulmonary/critical care*	174.9	169.9	150.8	140.7

(continued)

**Table 1.** Realignment of Number of Residency Positions by Specialty During 3 Years in the Veterans Affairs Health System (cont)

Specialty	Baseline, Academic Year 1995/1996	Year 1, Academic Year 1997/1998	Year 2, Academic Year 1998/1999	Year 3, Academic Year 1999/2000
Category IV (cont)				
Radiation oncology	27.5	28.5	26.0	23.8
Rheumatology*	59.3	52.3	44.6	39.9
Thoracic surgery	58.3	56.5	51.0	48.5
<b>Total</b>	<b>2473</b>	<b>2296.4</b>	<b>2035.2</b>	<b>1929.3</b>
Category IV, % of total	27.8	26.0	23.3	22.3
<b>Grand total</b>	<b>8909.9</b>	<b>8848.0</b>	<b>8721.3</b>	<b>8659.5</b>

\*Portions of positions in these specialties appear as category I under the Primary Specialist Program.

**Table 2.** Six Elements That Established Eligibility for a Training Program's Inclusion in the Primary Specialist Program

Patient Care
1. Define panels of patients
2. Manage the majority of health care needs of panel members
3. Ensure access, continuity of care, and integration between ambulatory and inpatient settings
Curriculum Development
4. Provide program advice from primary care faculty
5. Identify knowledge necessary for health promotion and disease prevention
6. Attend to biopsychosocial issues in disease

realignment strategy at the end of year 1 in coordination with the Residency Oversight Committee. The review focused on training strategies that would improve access and continuity of care for patients in resident specialty clinics and practices. From this review came an additional initiative, the Primary Specialist Program, which concentrated on incorporation of comprehensive primary care into 2 training areas: internal medicine subspecialties and neurology, and psychiatry. A design team identified 6 elements that focused principally on changes in both resident ambulatory practices and formal residency curriculum. These 6 elements targeted practice organization, appropriate faculty involvement, and the specific competencies that were centered on training and care for chronically ill patients (TABLE 2).

- First, training programs were to define a panel of patients that each specialty resident would manage prospectively in his or her ambulatory practice throughout the duration of training. The purpose was to select patients who would benefit most from prospective

and continuous care under the purview of a subspecialty trainee. The estimates by training program leadership for the size of such subspecialty continuity practices for each resident ranged from 20 to 150 patients, depending on the specialty.

- Second, each resident was to manage the majority of health care needs for his or her patients. The intent was to provide the best possible primary care in the specialty practice and to reduce the need for referrals outside the resident practice.

- Third, strategies were to be developed that would maximize access and continuity of care for chronically and seriously ill patients. Typical changes included improved telephone access, extended practice hours, and explicitly defined cross-coverage systems.

- Fourth, primary care faculty—usually from general internal medicine—were to advise the process of program development.

- Fifth, each participating residency program was required to define explicit curricula that focused on health promotion and disease prevention.

- Sixth, each training program was to broaden the curriculum to include topics centered on biopsychosocial issues in health and illness.

The initiative drew heavily on the Institute of Medicine's definition of primary care,<sup>8</sup> and it was crafted to be compatible with Accreditation Council for Graduate Medical Education Residency Review Committee requirements for the respective specialties.<sup>13</sup>

Based on these elements, a formal solicitation for proposals was conducted among all VA-affiliated specialty train-

ing programs in medicine (internal medicine subspecialties and neurology) and mental health (psychiatry). Peer review committees were assembled from selected training program directors, chiefs of service, and hospital chiefs of staff. They conducted systematic reviews of all training program applications and selected those that appeared most likely to implement effectively the intended primary care training strategies.

It is noteworthy that a strong incentive for academic health centers to develop Primary Specialist Programs came from the potential to rescue fractions of specialty positions from the possibility of elimination. Programs would receive category I—that is, primary care—"credit" for that portion of the residency curriculum that was subsequently allotted to the program.

**Final Results of 3 Years of GME Realignment**

The realignment process exerted continued pressure to reduce the numbers of anesthesiology, pathology, and diagnostic radiology positions throughout the 3 years. Similarly, funding for training in disciplines such as psychiatry, neurology, and surgical subspecialties continued to be substantially reduced. General internal medicine programs benefited the most. Substantial proportional increases also occurred for geriatrics (64%) and preventive medicine (34%).

As a result of the modifications embodied in the Primary Specialist Program, 56% of residents in internal medicine subspecialties and neurology and 40% of residents in psychiatry re-

ceived training in programs with specially focused primary care strategies and curricula (TABLE 3). A relatively consistent pattern emerged for each subspecialty for the proportion of time that was committed to the Primary Specialist Program curriculum.

Training programs developed a variety of approaches, usually driven by local strategies for patient care of seriously and chronically ill patients. For example, many programs grouped patients with similar health problems into primary care clinics where specialists provided care. Two common examples include patients with diabetes with advanced complications who receive their care in clinics managed by endocrinologists, and patients with severe chronic congestive heart failure under the primary care of cardiologists.

The primary care of patients with serious chronic mental health problems required different kinds of strategies since psychiatry residents generally do not have the prior training in general internal medicine that is required of internal medicine subspecialty trainees. Veterans Affairs clinics provided care for patients with chronic mental health disor-

ders in either medical or mental health clinics. This required either that psychiatrists participate on an interprofessional team providing care in medical clinics, or that general medical supervision be made available in psychiatry clinics. All such strategies required attention to patient assignment in synchrony with organization of the curriculum.

The mean proportion of patient care and curricular components devoted to the Primary Specialist Program in each discipline is summarized in Table 3. It ranged from 11% for pulmonary diseases to 40% in oncology. By year 3, the total number of full-time-equivalent positions in these specialties that could be attributed to primary care (category I) were 186.6 positions for medical subspecialties and neurology and 94.1 positions for psychiatry.

The cumulative numbers allocated for all residency training positions over the 3 academic years of the VA's residency program realignment (1997-2000) are also shown in Table 1. The base year for all comparisons is academic year 1995-1996. Primary care training increased from 38% to 48% of VA-supported GME positions. These included residency

training positions in both traditional primary care disciplines and fractions of specialty positions in the Primary Specialist Program. In the aggregate, 39% of the new category I (primary care) positions consisted of primary care training for the specialist trainees in internal medicine subspecialties, neurology, and psychiatry.

## COMMENT

The extent of patient care changes in the VA in the late 1990s, which was reflective of similar changes seen in the broader US health care system, was not fully anticipated when residency realignment was initiated in 1995.<sup>4,14,15</sup> Representative outcomes of the first 5 years of VA's reengineering included a 24% net increase in patients for whom the VA provided direct care and a 35% increase in ambulatory visits. Conversely, these increases were associated with a 55% reduction in total inpatient beds, a 68% reduction in bed-days of care per 1000 patients, and a 32% reduction of inpatient admissions.

The RRRC originally focused on increasing the proportion of primary care residency positions to 50%, which was

**Table 3.** The Primary Specialist Program Relative Proportions of Trainees' Time for Each Specialty

Specialty	Total Trainees in Specialty, No.	Trainees at Primary Specialist Sites, No.	Mean % Primary Care Credit Per Position	Total Positions Attributable to Primary Specialist Program, No.
Cardiology	267.00	162.90	23	37.59
Endocrinology and metabolism	63.67	39.77	26	10.38
Gastroenterology	180.22	113.42	19	21.23
Hematology	16.13	11.30	26	2.99
Hematology/oncology	98.09	75.95	27	20.22
Infectious diseases	81.08	60.58	25	15.42
Nephrology	88.64	62.24	30	18.63
Neurology	255.32	141.82	22	31.22
Oncology	8.70	7.00	40	2.83
Physical medicine and rehabilitation	188.90	8.00	20	1.60
Pulmonary diseases	2.00	2.00	11	0.22
Pulmonary/critical care	156.72	92.00	17	16.05
Rheumatology	48.10	30.20	27	8.25
Subtotal (internal medicine subspecialties and neurology)	1454.57	807.18	23	186.63
Addiction psychiatry	1.00	1.00	50	0.50
Geriatric psychiatry	28.00	15.00	36	5.47
Psychiatry	777.80	305.15	29	88.14
Subtotal (psychiatry)	806.80	321.15	29	94.11
<b>Total (Primary Specialist Program)</b>	<b>2261.37</b>	<b>1128.33</b>	<b>25</b>	<b>280.74</b>

consistent with prevailing projections of physician workforce needs in 1995 from numerous sources.<sup>1,2,9-11</sup> However, the RRRRC also left room for modifications that could accommodate unforeseeable changes. The committee placed heavy emphasis on local decision making that focused on network needs and a Washington-based oversight committee that had national prerogatives to respond to the changing VA health care system.

As a result, feedback from clinical settings after the first year of implementation strongly suggested the need for re-examination of training for primary care of patients who required complex medical management. This feedback was unequivocal: exclusive emphasis on replacement of specialists with primary care positions, while supported by physician workforce policy that was advocated at the inception of this process, provided incomplete options for meeting the needs of the system's patients. A consensus emerged that primary care should define a process of care delivery rather than simply delineate categories of medical specialties. The result was that local decisions and eventually national policy were driven more by local patient care and training issues than by a need for numbers of primary care or specialist residency positions.

There is ongoing controversy about the appropriate scope of generalist and specialist practice.<sup>16-19</sup> Evidence suggests that specialists may be more effective in narrow ranges of care for seriously ill patients.<sup>17</sup> However, they may be less effective at performing appropriate screening and preventive measures.<sup>17,18</sup> Rosenblatt et al<sup>18</sup> and Hart et al<sup>19</sup> reported that while Medicare patients frequently selected specialists for their chronic care, specialists were less effective at providing preventive care than were primary care physicians.

Moreover, concerns have emerged that under continued pressure to economize in some clinical settings, primary care physicians may be providing specialty care that is beyond their appropriate scope of practice. In a survey of 12 385 primary care physicians and specialists,

St Peter et al<sup>20</sup> reported that 24% of primary care physicians and 38% of specialists thought that the scope of care provided by primary care physicians was greater than it should be.

Because the VA's training programs are integrated with most US medical schools and frequently overlap with their non-VA teaching hospitals, these affiliations magnified the VA's impact on GME beyond its own health care system. Conversely, the environment that affected the VA's academic affiliates indirectly affected the VA's ability to change both its patient care and GME strategies. For example, such issues included local market pressures on academic practices, the impact of the Health Care Financing Administration's changing GME policy, and market competition that often exists between and among medical schools in the same geographic region.

The successful implementation of such an approach outside the context of the VA and its academic affiliates would require a mechanism for rapid assembly and processing of data associated with the capacity for rapid decision making. For example, we found that timely feedback to national policymakers from clinicians who both teach and care for patients was required to inform effective planning. To be useful, such feedback required the technology and resources for timely collection and assembly of data to support such a process. An additional but essential link was a valid forum for rapid and effective negotiation of policy modification. Finally, a link from definitive decision making to rapid implementation was essential.

The needs of the emerging US population—increasingly older and inevitably requiring greater expertise in the management of serious, chronic illness—may benefit from greater attention to primary care competencies for all physicians. However, additional studies are needed to investigate whether specialists trained in such settings actually provide enhanced quality of care for patients who are seriously ill with chronic medical and

psychiatric conditions, both in the training setting and later in their practices.

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## REFERENCES

1. Council on Graduate Medical Education Fourth Report. Washington, DC: US Dept of Health and Human Services; 1994.
2. Weiner JP. Forecasting the effects of health reform on US physician workforce requirements. *JAMA*. 1994;272:222-230.
3. Committee on Quality of Health Care in America. *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press; 2001.
4. Kizer KW. Transforming the veterans health care system—the “New VA.” *JAMA*. 1996;275:1069.
5. Kizer KW. The “New VA”: a national laboratory for health care quality improvement. *Am J Med Qual*. 1999;14:3-20.
6. Stevens DP. Opportunities for VA-academic affiliations in an era of change. *Am J Med*. 1997;103:458-459.
7. Wilson N, Kizer KW. The VA health care system: an unrecognized safety net. *Health Aff (Millwood)*. 1997;16:200-204.
8. Committee on the Future of Primary Care. *Primary Care: America's Health in a New Era*. Washington, DC: National Academy Press; 1996.
9. Cooper RA. Seeking a balanced physician workforce for the 21st century. *JAMA*. 1994;272:680-687.
10. Rivo ML, Kindig DA. A report card on the physician work force in the United States. *N Engl J Med*. 1996;334:892-896.
11. Kindig DA, Cultice JM, Mullan F. The elusive generalist physician: can we reach a 50% goal? *JAMA*. 1993;270:1069-1073.
12. *Report of the Residency Realignment Review Committee*. Washington, DC: Department of Veterans Affairs; 1996.
13. *Graduate Medical Education Directory 1998-1999*. Chicago, Ill: American Medical Association; 1998.
14. Stevens DP. GME reform needs visionary academic leadership. *Acad Med*. 1997;72:986-987.
15. Veterans Health Administration. *Veterans Equitable Resource Allocation: Equity of Funding and Access to Care Across Networks*. Washington, DC: Dept of Veterans Affairs; 1997.
16. Weinberger M, Oddone EZ, Henderson WG, for the Veterans Affairs Cooperative Study Group on Primary Care and Hospital Readmissions. Does increased access to primary care reduce hospital readmissions? *N Engl J Med*. 1996;334:1441-1447.
17. Donohoe MT. Comparing generalist and specialty care: discrepancies, deficiencies, and excesses. *Arch Intern Med*. 1998;158:1596-1608.
18. Rosenblatt RA, Hart LG, Baldwin LM, Chan L, Schneeweiss R. The generalist role of specialty physicians: is there a hidden system of primary care? *JAMA*. 1998;279:1364-1370.
19. Hart LG, Wagner E, Pirzada S, et al. Physician staffing ratios in staff-model HMOs: a cautionary tale. *Health Aff (Millwood)*. 1997;16:55-70.
20. St Peter RF, Reed MC, Kemper P, Blumenthal D. Changes in the scope of care provided by primary care physicians. *N Engl J Med*. 1999;341:1980-1985.