

## MARKET WATCH

**The Political Economy Of U.S. Primary Care**

The singular lack of balance between primary and specialty care has serious consequences for health care in the United States.

**by Lewis G. Sandy, Thomas Bodenheimer, L. Gregory Pawlson, and Barbara Starfield**

**ABSTRACT:** Compelling evidence suggests that the United States lags behind other developed nations in the health of its population and the performance of its health care system, partly as a result of a decades-long decline in primary care. This paper outlines the political, economic, policy, and institutional factors behind this decline. A large-scale, multifaceted effort—a new Charter for Primary Care—is required to overcome these forces. There are grounds for optimism for the success of this effort, which is essential to achieving health outcomes and health system performance comparable to those of other industrialized nations. [*Health Affairs* 28, no. 4 (2009): 1136–1144; 10.1377/hlthaff.28.4.1136]

THE UNITED STATES lags behind other developed countries in both population health and health system performance.<sup>1</sup> Although major differences exist in how industrialized nations organize and finance their health care systems, compelling evidence suggests that the poor U.S. performance—apparent even in its affluent, insured, and majority population—is in part a consequence of a decades-long decline in the vitality of U.S. primary care.<sup>2</sup> In this paper we outline the larger nexus of political, economic, policy, and institutional factors that have resulted in this decline. We also propose a broad-reaching agenda to advance health policy goals and the health of the U.S. population.

**A Century Of Decline**

■ **Science and the biomedical paradigm.** The roots of the primary care dilemma can be traced back a century and a half to the explosion of knowledge of physiology—the scientific understanding of body functions—which in turn led to the “biomedical model” of disease: the paradigm that explains disease as physical-chemical alterations in the body.<sup>3</sup> This new scientific paradigm facilitated the development of specialization in medicine. The biomedical model naturally led to conceptualizing “disease” as equivalent to “organ system dysfunction,” a view that largely excludes the social and behavioral considerations that are now part of our contemporary understanding of disease.<sup>4</sup> The Flexner Report of 1910 inspired reforms in medical education that focused on creating centers of excellence

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within teaching hospitals, further setting the stage for specialization. By the end of the 1930s, at least twelve specialty and subspecialty boards existed, with many more to come in the following decades.<sup>5</sup>

■ **The rise of hospitals and third-party payment.** Led by advances in surgery, hospitals underwent a major transformation in the early twentieth century. To attract surgeons, hospitals supplied needed facilities and nursing personnel free of charge and allowed surgeons to collect fees for their own services. When the Great Depression made hospitalization unaffordable for many people, the rise of Blue Cross (closely tied to the American Hospital Association) and Blue Shield insurance plans (sponsored by organized medicine) ensured that hospitals and surgeons would be paid by insurance for inpatient care.

The Depression also prompted broader health reform efforts. That era's Committee on the Costs of Medical Care recommended that the nation organize physicians into groups to provide care based on medical sciences; emphasize prevention; promote cooperation between the lay public and medical practitioners; treat the individual as a whole; facilitate continuing relationships between physician and patient; coordinate medical care with social welfare programs; and provide all necessary services to everyone—remarkably “modern” in the context of society seventy-five years later.<sup>6</sup>

However, in no small part because of opposition from organized medicine, which sought to maintain professional hegemony, nothing came of the committee's recommendations.<sup>7</sup> Instead, physicians—hurting financially from patients' inability to pay—focused on third-party physician payment. In 1939 California physicians created the first Blue Shield plan, and other plans soon followed. In most states these plans were organized by physicians closely associated with state medical societies.<sup>8</sup> They generally allowed physicians to set their own fees as long as fees were not much higher than the average fees charged by other physicians in the area—the “usual, customary, and reasonable” (UCR) payment system.<sup>9</sup>

Insurance coverage for surgery and radiol-

ogy grew much faster than insurance for office visits.<sup>10</sup> Without insurance coverage, primary care physicians (PCPs) generally kept their fees low and affordable. This dichotomy between common surgical and radiology insurance and rare office visit insurance set the stage for the emergence of the primary care-specialty income gap.

■ **World War II and the postwar dominance of specialists.** World War II catalyzed the acceleration of prewar trends favoring specialization. Specialist physicians serving in the war received higher ranks, higher pay, and preferred assignments compared with general practitioners (GPs). After the war, subsidies for graduate medical education (GME) under the GI Bill of Rights and financial support from the Veterans Administration (VA, which later became the Department of Veterans Affairs) encouraged physician veterans to receive specialty training. The number of residencies skyrocketed from 808 in 1940 to 4,000 in 1950, 22,000 in 1960, and 45,000 in 1970.<sup>11</sup>

Demographic, economic, and cultural trends in the postwar era also fueled demand for specialty services. Population shifts from rural to urban locales increased access to specialists, who are typically concentrated in cities. A thriving economy and enthusiasm for science and technology were promoted through expanding media (such as television and cinema). For example, more than half of all commercial films from 1949–50 depicted physicians.<sup>12</sup> The 1946 Hill-Burton Act, enacted to expand hospital capacity, further enabled the growth of specialty services, particularly those based in hospitals.<sup>13</sup>

■ **Hard-wiring payment to procedures: the rise of the relative value unit.** In the 1950s the payment divergence between generalists and specialists was institutionalized through the advent of the relative value scale. In 1952 the California Medical Association (CMA) became concerned that insurers would abandon the UCR system because of the wide variation in fees charged by different physicians. To avoid the UCR's demise in favor of an insurer-determined fee schedule, the CMA created a Committee on Fees, which examined

hundreds of services, assigned each a “service code,” and defined for each service a relative value unit (RVU). For example, a brief follow-up office visit might have an RVU of 1, while a comprehensive hospital visit might have an RVU of 7. Payment would be based on the RVU multiplied by a “conversion factor,” determined by each insurer, which turned a service with its associated RVUs into a fee for that service.

The RVUs set by the CMA committee reflected the fees for different services existing in the community in the early 1950s. Because patients tended to have insurance for procedural services provided by surgeons and imaging services performed by radiologists, fees for those specialists were already much higher per time spent than fees for PCP visits, which were rarely covered by insurance. In this way, a bias was embedded in the “relative value” of the RVU and exacerbated as new procedures (with higher RVUs) were added over time and as conversion factors increased. For example, if the conversion factor was 5 for a service in a Blue Shield plan, the follow-up office visit would be paid a fee of \$5 (1 RVU  $\times$  5), while the comprehensive hospital visit would bring \$35 (7 RVUs  $\times$  5), or a difference of \$30. When the conversion factor increased to 10, the resultant fees would be \$10 and \$70, with a difference of \$60. Thus, specialists gained both from a rise in the conversion factor and from the creation of new services with higher RVUs, which were rarely adjusted downward when physicians gained experience and procedures took less time.<sup>14</sup>

The CMA’s RVU system became the prevailing U.S. model for reimbursement of physician services, including Medicare and most commercial insurance. Moreover, the Relative Value Scale Update Committee (RUC), a body of the American Medical Association (AMA) and professional specialty societies that Medicare charged with updating the RVU system, is dominated by specialists and has generally maintained the status quo.

Concerned over both growth in physician payments and geographic and specialty payment disparities, Congress enacted Medicare

payment reform as part of a 1989 budget reconciliation bill, including the resource-based relative value scale (RBRVS) system, a payment approach that attempted to recalibrate the RVUs based on “input” costs rather than historical norms.<sup>15</sup> This approach, designed in part to redress generalist/specialty payment imbalances and ultimately adopted by most private insurers, has not succeeded in redressing these payment imbalances.<sup>16</sup>

Why this is so is complex and multifaceted. One major reason is the Sustainable Growth Rate (SGR), a budgetary policy device that establishes an overall annual spending target for physician payments and then adjusts Medicare’s conversion factor (up or down) to change physician fees annually. In recent years the volume and intensity of physician services (especially among specialists) has exceeded the SGR targets. Consequently, the SGR formula dictates large cuts in physician fees, creating an annual political squabble with end-of-year “fixes.” Paradoxically, these dynamics have disproportionately disadvantaged PCPs, who have limited ability to increase service volume or intensity compared to specialists. In 2007 the average Medicare payment for a complex follow-up office visit (among the most common services provided in primary care) was \$94, compared with \$203 for a colonoscopy performed by a gastroenterologist and \$670 for a cataract extraction done by an ophthalmologist, each requiring about thirty minutes of physician time.

■ **Biomedical research and the rise of the academic medical center.** The Flexner Report, with its focus on teaching hospitals, formed the conceptual underpinning of the academic medical center (AMC). In the early twentieth century, medical schools began to formally affiliate with teaching hospitals and create “university” hospitals as centers for teaching, specialty care, and research. The postwar era, with broad enthusiasm for investments in medical science and technology, was a time of exponential growth in U.S. medicine. Postwar medical schools’ revenue growth was dramatic, occurring alongside major shifts toward research funding and increasing reim-

bursement for hospital-based subspecialty surgery and procedures. During the 1940s, medical school spending on research increased more than 700 percent. Consequently, medical education moved away from emphasizing the everyday clinical care of patients toward highly technical procedures and treatments for relatively rare conditions. Specialized investigators largely replaced generalists as clinical teachers. Expertise in clinical teaching was devalued as research publications became the coin of the realm.<sup>17</sup>

Medical students—influenced by specialty-oriented teachers and hospitals—chose residencies and fellowships in subspecialties.<sup>18</sup> Specialist residents and fellows assumed more of the teaching and clinical duties of medical school faculty and served as cheap physician labor for medical school-affiliated teaching hospitals. Expanded postwar residency training capacity accelerated and solidified the movement of U.S.

medical graduates (and, later, many foreign medical graduates as well) into specialty and subspecialty training.

■ **Medicare, workforce policy, and the marketplace.** Medicare further fueled the growth of specialty training programs via its open-ended per trainee payment system. Under cost-based reimbursement, beginning in 1966, and continuing when Medicare's diagnosis-related group (DRG) system for paying hospitals was introduced in 1983, Medicare supported residency slots through its generous direct and indirect medical education (DME/IME) payments to teaching hospitals.<sup>19</sup> This “uncapped entitlement” to hospitals (rather than directly to training programs) placed few limits on the number of residency positions that Medicare would support until some modest changes were introduced in the late 1990s as part of the Balanced Budget Act.<sup>20</sup>

To promote more balanced physician supply and distribution, Title VII of the Public

Health Service Act supported primary care training initiatives, but this program's minuscule budget could not overcome the overwhelming forces driving growth of specialty care. By the mid-1990s, Title VII's budget for PCP training was less than \$90 million per year, or 1 percent of the nearly \$9 billion for Medicare's IME and DME support to hospitals.<sup>21</sup> While most developed nations created national policies regarding the proportion of physicians who would be generalists versus

**“While most developed nations created national policies regarding the proportion of generalists versus specialists, the U.S. government ceded this key decision to academic medicine and hospitals.”**

specialists, the U.S. government ceded this key health policy decision to academic medicine and hospitals, whose leadership naturally focused on expanding specialty-oriented research, training, and clinical care.

In the 1980s and 1990s, unopposed growth of specialty services fueled by payment and supply imbalance drew attention as a cost driver.<sup>22</sup> Capitation (payment of a fixed amount per patient, regardless of services used) and

the use of PCPs as “gatekeepers” were seen as a way not only to reduce cost growth but also to revive interest in primary care; indeed, during the mid-1990s both occurred. However, the backlash against “gatekeeper” primary care and managed care generally ended a brief, nonsustained rise in interest in primary care. Moreover, the evolution of the health insurance marketplace away from closed-panel health maintenance organizations (HMOs) to open-access preferred provider organizations (PPOs) greatly increased the power of specialty-focused provider organizations, and many communities saw major consolidation of specialists into larger groups.<sup>23</sup> These groups, with strong “market leverage,” negotiated very favorable contracts with insurers and had the ability to expand their range and volume of services.

Primary care, although modestly expanding “ancillary services,” remained focused on ambulatory visits. From 2000 to 2005, the

number of office visits per Medicare beneficiary for established patients increased only 12 percent, while specialty services increased at far higher rates: colonoscopies, 40 percent; cardiovascular stress tests, 45 percent; and magnetic resonance imaging (MRI) scans, 94 percent. Indeed, technology growth, abetted by specialist-oriented workforce and financing policy, has become the leading cause of high U.S. health spending.<sup>24</sup>

Higher fees, higher volumes, and an increasing procedure orientation explain the widening income gap between primary care and most specialties. In 1973 the average surgeon earned 136 percent of the average family physician's income; by 1983 this gap was 211 percent. By 2004 the income of radiologists was 260 percent that of family physicians; invasive cardiologists, 253 percent; and gastroenterologists, 218 percent.<sup>25</sup> In contrast, PCPs experienced a 10.2 percent reduction in inflation-adjusted income in 1995–2003.<sup>26</sup>

■ **Institutional and cultural forces: the academic-industrial complex and the millennial generation.** The rapid growth of biomedical knowledge and capabilities within academic medicine has resulted in what some have termed the “academic-industrial complex” (a term originally coined to encompass a broad range of concerns regarding academic-industry relationships).<sup>27</sup> With its heavy biomedical orientation, academic medicine has tended to focus its power on biomedical aspects of disease rather than on overall aspects of population health.<sup>28</sup> And although biomedical science has clearly made extraordinary advances in understanding and treating diseases, the singular lack of balance in the United States between primary and secondary/tertiary care has had serious consequences for population health and the U.S. health system.

Today's millennial-generation medical students, viewing major prestige differences and a wide primary care–specialty income gap, and more interested in lifestyle balance than earlier generations were, are abandoning primary care in favor of “ROAD” specialties (radiology, ophthalmology, anesthesiology, and dermatology).<sup>29</sup>

## The Future Of U.S. Primary Care

This political-economic review of the inexorable decline in U.S. primary care over more than a century suggests that incremental efforts are unlikely to overcome the powerful forces that have created today's situation. A re-evaluation of the imperatives that produce such a system is needed. These include the dominance of the hospital (particularly teaching hospitals, with their focus almost entirely on specialist care); the failure of public policy to address the erosion of primary care—the bedrock capability for population health improvement; the continuing resistance of the medical profession to changes that could affect its autonomy; and the failure of both primary care and specialist physicians to reorient the goals of their practice toward the health problems of the population.

On the other hand, there are grounds for optimism. There is increasing recognition of the crisis in primary care and the relatively poor U.S. population health. Tools that can measure morbidity burden in individuals and populations will further reveal the special contributions of person-focused medicine that primary care provides. The adverse effects of specialist oversupply on costs and quality are becoming clearer. The increasing recognition of the importance of an evidence base for health decisions will spotlight the benefits of primary care-oriented health systems.<sup>30</sup>

New organizing approaches and technology support can further increase the benefits of primary care. These include greater accessibility through approaches such as same-day appointments; new primary care-based models for ongoing care; electronic health records (EHRs) that facilitate coordination of care; and “e-visits” and other technology-enabled innovations that increase the comprehensiveness of primary care and decrease reliance on unneeded specialist services.

The recent willingness of the major primary care constituencies to unite in an effort to highlight the patient-centered medical home (PCMH) is novel and promising, but also limited.<sup>31</sup> Although the PCMH may prove

superior to traditional ways of organizing and financing primary care, it is likely being “over-sold” as a solution to the more fundamental issues discussed in this paper. Even if it spreads as an innovation, the larger nexus of political, economic, and social forces that have led to the current state remain. If the PCMH is an incremental “2x” innovation, we believe that a more comprehensive, multifaceted strategy—a “10x” solution—is required to revive primary care.

### **A New Charter For Primary Care: The 10x Program**

Implementing balance between secondary/tertiary care and primary care will take correspondingly profound actions based on an explicit national primary care policy. This policy’s preamble might state: “To achieve U.S. health policy goals of accessibility, affordability, quality, safety, and equity, a robust primary care sector must become the foundation of U.S. health care; the United States must ensure that a sufficient number of primary care clinicians are trained to meet the needs of the population; the nation must invest in primary care practices to provide the technology and trained workforce that are necessary to provide access, improve quality and equity, and optimize spending across the entire population; public and private payers must rebalance relative reimbursement levels and the proportion of health care expenditures going to specialized services; and the nation’s medical education system must be reoriented to serve these goals.” This national policy would become the blueprint and driving force for an integrated set of policy changes, which would include the following.

■ **Reimbursement.** Health care reimbursement must be greatly rebalanced commensurate to the individual and population health value created by patient engagement; care coordination; and comprehensive, personalized, longitudinal care, as opposed to the current system that rewards technical procedural volume. In the short term, this requires congressional action to recalibrate the RBRVS fee structure for Medicare and Medicaid (and

hence, adoption by private insurers); and to split the Medicare SGR formula into two pools, one for primary care (that is, nonconsultative services and consultative cognitive services) and the other for procedural/imaging services. This would ensure that primary care services (as well as specialty cognitive-based services) are rewarded for cost containment and quality efforts and not penalized for the volume increases that occur disproportionately among procedural/imaging services.<sup>32</sup> Moreover, gainsharing approaches that reward both primary care and specialty physicians for quality improvement and reduced inappropriate variation could be developed.<sup>33</sup>

In the long term, financial support for primary care should become a predominant consideration as various approaches to health system and financing reform are considered in the United States. It is important to note that no other developed country bases financial support for primary care solely on a fee-for-service system; many countries have adopted blended payment systems that consist of a salary-like base supplemented by incentive payments for particularly needed services or for achieving quality standards, or both. For example, one payment model suggested in the United States designates about one-third of total funds for base payment supporting practice infrastructure, including EHR systems and coordination-of-care capabilities; one-third for visit-based care; and one-third for performance, including quality, patient experience, prompt access, and cost efficiency.<sup>34</sup> These payment reforms would not lead to the recreation of a “gatekeeper” system (patients would continue to have broad but more appropriate access to specialists); they would have the effect of providing incentives for more effective, efficient, and coordinated care.

■ **Clinician workforce.** The United States should move toward the goal of having 50 percent of active patient care clinicians (physicians, nurse practitioners, and physician assistants) in primary care practice. Primary care clinician-to-population ratios should be developed and respect the reality that optimal primary care—even with supporting teams—

would likely have 1,000–2,000 patients per clinician. Moreover, the opinion of some that a specialist shortage exists fails to take into account that about half of visits to specialists are follow-up visits that are often more appropriately performed in primary care settings.<sup>35</sup>

Achieving the 50 percent primary care goal will require Congress to mandate the Centers for Medicare and Medicaid Services (CMS) to redirect direct GME funds from hospitals to graduate educational training programs, with the requirement that at least half of these funds be targeted to primary care training. Federally backed loans would be available for up to half of a given medical school's undergraduate enrollment, and substantial or full loan forgiveness would be available for clinicians staying in primary care fields, similar to current loan-forgiveness programs for service in underserved areas.

■ **Medical education.** Today, the emerging science in the social determinants of health may be as profound a conceptual shift for the twenty-first century as the “biomedical model” was a century ago with the Flexner Report.<sup>36</sup> There is now an urgent need for a new “Flexner Report” and other actions that would engender a shift in AMCs toward a balanced and accountable social mission, one that would facilitate, not impede, the national primary care policy described above. A major foundation, or a consortium of foundations, should launch this independent reexamination of the focus, financing, curriculum, and faculty teaching related to medical education and then work with policymakers, organized medicine, and the certifying and accrediting bodies in medical education to implement the recommendations into public policy.

■ **Practice infrastructure.** The federal government, perhaps through the Medicare quality improvement organizations (QIOs, formerly known as peer-review organizations, or PROs), should provide direct monetary and technical assistance to build primary care ca-

capacity in the areas of access, quality improvement, technology support, coordination of care, cost control, and population management—in other words, a “Hill-Burton” program for primary care. Practices cannot make requisite improvements without up-front investments. Although the PCMH might not encompass all of the critical elements, it appears to be a reasonable starting point, and the CMS's planned PCMH demonstration project is a promising first step in this direction.

■ **Health system performance measurement.** Integral to a national primary care policy would be the development of “key performance indicators” that track both the “health” of the nation's primary care system and the health of the patients cared for within each primary care

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practice. Along with tracking of workforce and access metrics, the volume and proportion of visits to specialists as well as the purpose of these visits would be important indicators to track.<sup>37</sup>

The number of visits to U.S. specialists now exceeds the number of visits to PCPs, and this excess is particularly pronounced among the elderly. The number of visits in the ambulatory sector is a direct contributor to higher use of and spending for hospital care without evidence of improved outcomes.<sup>38</sup> And the number of outpatient specialists is a major contributor to higher use of tests, procedures, and costs.<sup>39</sup> Referral rates in the United States are much higher than in other countries, with many more visits to secondary care physicians.<sup>40</sup> Concomitantly, the comprehensiveness of primary care in the United States is less than in comparable nations.<sup>41</sup> Other indicators would track the continuity, coordination, and comprehensiveness of care.

## Concluding Remarks

These five points constitute a New Charter for Primary Care. It will take a concerted, coordinated effort advancing all five aspects nearly simultaneously to create real change.

Such a charter will not be accepted or implemented without the creation of a strong political coalition capable of overcoming the advantages of inertia. Many stakeholders, however, have a common interest in promoting such a charter. Employers are recognizing that costs can be contained only with a strong primary care foundation for the health care system. Health plans and federal, state, and local governments, groaning under the weight of rising costs, would similarly benefit from the cost containment potential of primary care. Patients are currently organized chiefly into disease-specific organizations, but groups such as AARP, the Consumer Purchaser Disclosure group, and others could become active advocates of accessible, comprehensive, high-quality primary care. The formation of the Patient Centered Primary Care Coalition might prove to be an important step in creating the political force that can drive change.<sup>42</sup>

We have no illusions about the challenges and barriers that need to be overcome for this charter to see the light of day. In particular, the existing health care delivery/financing system, a public accustomed to immediate access to specialists and technology, and our collective enthusiasm for technical innovation as the main measure of progress for our health system may lead to inertia and block change. But without this agenda, the void will be filled with small proposals that cannot overcome the profound nature of primary care's devaluation. If we are serious about improving health in the United States and reforming our health system, we need to think big—10x—about the place of primary care.

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**NOTES**

1. K. Davis et al., "Mirror, Mirror on the Wall: An International Update on Comparative Performance of American Health Care," 16 May 2007, [http://www.commonwealthfund.org/publications/publications\\_show.htm?doc\\_id=482678](http://www.commonwealthfund.org/publications/publications_show.htm?doc_id=482678) (accessed 8 April 2009).
2. J. Banks et al., "Disease and Disadvantage in the

- United States and in England," *Journal of the American Medical Association* 295, no. 17 (2006): 2037–2045.
3. G.L. Engel, The Need for a New Medical Model: A Challenge for Biomedicine, *Science* 196, no. 4286 (1977): 129–136.
4. E.J. Campbell, J.G. Scadding, and R.S. Roberts, "The Concept of Disease," *BMJ* 2, no. 6193 (1979): 757–762.
5. R. Stevens, *American Medicine and the Public Interest* (New Haven and London: Yale University Press, 1971), 218.
6. R. Lee and L. Jones, *The Fundamentals of Good Medical Care* (Chicago: University of Chicago Press, 1933).
7. Stevens, *American Medicine and the Public Interest*, 187.
8. W. Rothstein, *American Medical Schools and the Practice of Medicine* (New York: Oxford University Press, 1987).
9. T. Delbanco, K. Meyers, and E. Segal, "Paying the Physician's Fee: Blue Shield and the Reasonable Charge," *New England Journal of Medicine* 301, no. 24 (1979): 1314–1320.
10. P. Starr, *The Social Transformation of American Medicine* (New York: Basic Books, 1982), 358.
11. Stevens, *American Medicine and the Public Interest*, 300.
12. M. Cohen and A. Shafer, "Images and Healers: A Visual History of Scientific Medicine," in *Cultural Sutures: Medicine and Media*, ed. L. Friedman (Durham, N.C.: Duke University Press, 2004), 197–214.
13. Starr, *The Social Transformation of American Medicine*, 348.
14. California Medical Association, "Committee on Relative Value Studies, California Relative Value Studies" (San Francisco: CMA, 1975).
15. J.K. Iglehart, "Medicare's Declining Payments to Physicians," *New England Journal of Medicine* 346, no. 24 (2002): 1924–1930.
16. See R. Berenson, "Interactions between the SGR and RBRVS: Making Sense of Alphabet Soup," 13 February 2008, <http://healthaffairs.org/blog/2008/02/13/interactions-between-the-sgr-and-rbrvs-making-sense-of-alphabet-soup> (accessed 8 April 2009).
17. K.M. Ludmerer, *Time to Heal: American Medical Education from the Turn of the Century to the Era of Managed Care* (New York: Oxford University Press, 1999), 215.
18. S.D. Block et al., "Academia's Chilly Climate for Primary Care," *Journal of the American Medical Association* 276, no. 9 (1996): 677–682.
19. E.C. Rich et al., "Medicare Financing of Graduate

- Medical Education," *Journal of General Internal Medicine* 17, no. 4 (2002): 283–292.
20. Council on Graduate Medical Education, "Summary of Resource Paper: The Effects of the Balanced Budget Act of 1997 on Graduate Medical Education," March 2000, [http://www.cogme.gov/resource\\_bba.htm](http://www.cogme.gov/resource_bba.htm) (accessed 13 June 2008).
  21. F. Mullan, "Powerful Hands: Making the Most of Graduate Medical Education," *Health Affairs* 15, no. 2 (1996): 250–253.
  22. S.A. Schroeder and L.G. Sandy, "Specialty Distribution of U.S. Physicians—The Invisible Driver of Health Care Costs," *New England Journal of Medicine* 328, no. 13 (1993): 961–963.
  23. A. Liebhaber and J. Grossman, "Physicians Moving to Mid-Size, Single-Specialty Practices," 2007, <http://hschange.org/CONTENT/941> (accessed 9 April 2009).
  24. P.B. Ginsburg, "High and Rising Health Care Costs: Demystifying U.S. Health Care Spending," October 2008, <http://www.rwjf.org/pr/product.jsp?id=35368> (accessed 8 April 2009).
  25. T. Bodenheimer, R.A. Berenson, and P. Rudolf, "The Primary Care—Specialty Income Gap: Why It Matters," *Annals of Internal Medicine* 146, no. 4 (2007): 301–306.
  26. H.T. Tu and P.B. Ginsburg, "Losing Ground: Physician Income, 1995–2003," Tracking Report no. 15, June 2006, <http://hschange.org/CONTENT/851/?topic=topic04> (accessed 9 April 2009).
  27. B.J. Culliton, "The Academic-Industrial Complex," *Science* 216, no. 4549 (1982): 960–962.
  28. S.A. Schroeder, J.S. Jones, and J.A. Showstack, "Academic Medicine as a Public Trust," *Journal of the American Medical Association* 262, no. 6 (1989): 803–812; and U.E. Reinhardt, "Academic Medicine's Financial Accountability and Responsibility," *Journal of the American Medical Association* 284, no. 9 (2000): 1136–1138.
  29. E. Dorsey, D. Jarjoura, and G. Rutecki, "The Influence of Controllable Lifestyle and Sex on the Specialty Choices of Graduating U.S. Medical Students, 1996–2003," *Academic Medicine* 80, no. 9 (2005): 791–796.
  30. B. Starfield, L. Shi, and J. Macinko, "Contribution of Primary Care to Health Systems and Health," *Milbank Quarterly* 83, no. 3 (2005): 457–502.
  31. American Academy of Family Physicians et al., "Joint Principles of the Patient-Centered Medical Home," February 2007, [http://www.aafp.org/online/etc/medialib/aafp\\_org/documents/policy/fed/jointprinciplespcmh0207.Par.0001.File.tmp/022107medicalhome.pdf](http://www.aafp.org/online/etc/medialib/aafp_org/documents/policy/fed/jointprinciplespcmh0207.Par.0001.File.tmp/022107medicalhome.pdf) (accessed 19 November 2008).
  32. Notably, the 2007 Children's Health and Medicare Protection (CHAMP) Act originally included a rebalancing of primary and specialty care payment under a reformed SGR, and the Medicare Payment Advisory Commission (MedPAC) has made extensive recommendations to Congress on alternatives. Many believe that these issues will be revisited by the 111th Congress.
  33. J. Wennberg et al., "Extending the P4P Agenda, Part 2: How Medicare Can Reduce Waste and Improve the Care of the Chronically Ill," *Health Affairs* 26, no. 6 (2007): 1575–1585.
  34. A.H. Goroll et al., "Fundamental Reform of Payment of Adult Primary Care: Comprehensive Payment for Comprehensive Care," *Journal of General Internal Medicine* 22, no. 3 (2007): 410–415.
  35. J.M. Valderas et al., "Ambulatory Care Provided by Office-Based Specialists in the United States," *Annals of Family Medicine* 7, no. 2 (2009): 104–111.
  36. World Health Organization, "Social Determinants of Health," [http://www.who.int/social\\_determinants/en](http://www.who.int/social_determinants/en) (accessed 9 April 2009); and WHO, "Closing the Gap in a Generation: Health Equity through Action on the Social Determinants of Health," November 2008, <http://www.ucl.ac.uk/gheg/whocsdh/videos> (accessed 9 April 2009).
  37. In fact, results from the National Ambulatory Medical Care Survey (NAMCS) show a progressive shift in visits from primary care to specialist physicians.
  38. J. Wennberg et al., *Tracking the Care of Patients with Severe Chronic Illness: The Dartmouth Atlas of Health Care 2008*, 2008, [http://www.dartmouthatlas.org/atlas/2008\\_Chronic\\_Care\\_Atlas.pdf](http://www.dartmouthatlas.org/atlas/2008_Chronic_Care_Atlas.pdf) (accessed 9 April 2009).
  39. E.S. Fisher et al., "The Implications of Regional Variations in Medicare Spending, Part 1: The Content, Quality, and Accessibility of Care," *Annals of Internal Medicine* 138, no. 4 (2003): 273–287.
  40. C. Forrest et al., "Comparison of Specialty Referral Rates in the United Kingdom and the United States: Retrospective Cohort Analysis," *BMJ* 325, no. 7360 (2002): 370–371; and A. Sicras-Mainar et al., "Adjusted Clinical Groups Use as a Measure of the Referrals Efficiency from Primary Care to Specialized in Spain," *European Journal of Public Health* 17, no. 6 (2007): 657–663.
  41. A.B. Bindman et al., "Diagnostic Scope of and Exposure to Primary Care Physicians in Australia, New Zealand, and the United States: Cross Sectional Analysis of Results from Three National Surveys," *BMJ* 334, no. 7606 (2007): 1261.
  42. See the Patient Centered Primary Care Coalition home page at <http://www.pcpcc.net>.