PRIMARY CARE ACCESS

30 Million New Patients and 11 Months to Go: Who Will Provide Their Primary Care?

A Report from Chairman Bernard Sanders
Subcommittee on Primary Health and Aging
U.S. Senate Committee on Health, Education, Labor & Pensions
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Where Have All the Providers Gone?

Today, nearly 57 million people in the U.S. – one in five Americans – live in areas where they do not have adequate access to primary health care due to a shortage of providers in their communities. According to the Health Resources and Services Administration (HRSA), we need 16,000 primary care practitioners to meet the need that exists today.[1] This shortage is felt most acutely in rural and low-income urban areas. Although more providers of all types are needed, the shortage is overwhelmingly a primary care provider shortage, and it is expected to get worse. 52,000 primary care physicians will be needed by 2025.[2]

Consider these sobering figures:

- Fifty years ago, half of the doctors in America practiced primary care, but today fewer than one in three of them do.[3]
- As many as 45,000 people die each year because they do not have health insurance and do not get to a doctor on time.[4]
- The average primary care physician in the U.S. is 47 years old, and one-quarter are nearing retirement.[5]
- In 2011, about 17,000 doctors graduated from American medical schools.[6] Despite the fact that over half of patient visits are for primary care, only 7 percent of the nation's medical school graduates now choose a primary care career.[7]
- Nearly all of the growth in the number of doctors per capita over the last several decades has been due to a rise in the number of specialists. Between 1965 and 1992, the primary care physician-to-population ratio grew by only 14 percent, while the specialist-to-population ratio exploded by 120 percent.[8]

This dramatic trend must be reversed.

Primary Care in America

Every person in the United States deserves access to high quality primary health care. In 2008, Americans made almost 1 billion (977 million) office visits to the doctor; 50 percent of those visits (462 million) were to primary care doctors.[9] The evidence is clear that access to primary health care results in better health outcomes, reduced health disparities, and lower spending, including on avoidable emergency room visits and hospital care. True primary care is comprehensive and is characterized by a continuity of coordinated care from prenatal care through the end of life. Primary care is not just provided by physicians but is also delivered by other members of the health care team including nurse practitioners and physician assistants. Primary care is intended to be, and should be, the foundation of the U.S. health care system.[10]

Lagging Behind: When Primary Care Becomes Secondary

The United States spends twice as much per person as any other nation on health care and 18 percent of our country's economic output goes toward health care expenditures. This extra spending, however, does not result in better health outcomes. Dozens of countries have lower infant mortality and longer life expectancy than the U.S. The percentage of Americans who visit emergency departments for ailments that could have been treated by primary care doctors was more than three times higher in the U.S. than in Germany or the Netherlands in 2008.[11] A recent Institute of Medicine (IOM) study confirmed that Americans die sooner and have higher rates of disease and injury compared to citizens of 16 other high income countries.[12]

One of the significant differences between the U.S. health care system and the health care systems of other highly developed countries is that the ratio of primary care providers to specialists in the U.S. is 30 percent primary care doctors to 70 percent specialists – a dramatic difference from the ratio in other countries.[13] These other countries have a significantly stronger primary care foundation as compared to the specialist-driven system we have in America.

Moreover, while most developed countries provide health insurance as a universal right of their citizens, today more than 48 million Americans remain uninsured and tens of millions more are underinsured. In fact, the United States is the only industrialized country that does not provide health coverage to all of its citizens, and this has serious consequences. Health insurance makes it easier to access health care services and helps protect individuals and families against the high costs of serious illness. Lack of health insurance alone is associated with 45,000 deaths per year in the United States, more than the number of deaths caused by kidney disease.[14] It is an atrocity that tens of thousands of Americans die because they are lacking health insurance or unable to afford the care they need.

The Crisis Grows Bigger

In 2010, Congress passed the historic Patient Protection and Affordable Care Act (ACA), the most sweeping health care reform legislation since the passage of Medicare in 1965. The law will dramatically expand health insurance coverage, primarily by expanding Medicaid and by creating state "exchanges" where people who today have no affordable employer-provided coverage can purchase insurance from a private insurance company. The coverage expansion is a major milestone towards ensuring that all Americans have access to affordable health care coverage, but insurance coverage alone does not guarantee access.

Even before health reform, a multitude of studies warned that the U.S. would face a shortage of primary care providers as large as 45,000 by 2025 just to address the current shortage and the increased demand from our growing and aging population.[15]

Peter Gibbins, Denver, CO "I'm currently a student, so I have access to the clinic on campus, but before attending school, I was working full time. Even though I had "Cadillac" insurance through my job, there were no primary care physicians accessible through my plan within 10 miles of my house. I live within a mile of downtown Denver! I spent two years on the waiting list for a primary care physician at the main hospital and remained on that list until I started school. Every six months, I would have to call them so that my name wasn't dropped off the list. As a result of the long wait, I ended up making appointments with specialists (my plan allowed this without a referral), but I felt 'over-treated' by these providers."

The U.S. population will grow 15 percent from 2010 to 2025, with the segment of the population over 65 experiencing the fastest growth.[16] The shortage will further increase as a result of the insurance expansion which will go into effect in 2014. With 30 million newly-insured individuals seeking care, at least 52,000 new providers will be needed by 2025.[17]

Prestige and Profits Over Primary Care

Much has been written about the political, economic, and institutional factors that have contributed to this severe decline in the primary care physician workforce.[18] Several key factors have been identified. Notably, the system for setting physician reimbursement in this country is largely determined by the 31 physicians who sit on the American Medical Association (AMA) committee called the Relative Value Scale Update Committee (RUC). The RUC, whose payment recommendations are accepted by the Centers for Medicare and Medicaid Services (CMS) over 90 percent of the time and are adopted by many private insurers, is dominated by specialists. Therefore, it should come as no surprise that it has accelerated higher payments – larger paychecks – to specialists over primary care doctors.[19]

The median debt for medical students upon graduation is more than $160,000, and almost a third of students owe more than $200,000.[20] Not surprisingly, students increasingly opt for specialized training to boost their starting salaries and lifetime earning potential. Over a doctor's lifetime, specialists earn as much as $2.8 million more than primary care providers.[21] Radiologists and gastroenterologists, for example, have incomes more than twice that of family physicians.[22]

Other factors exacerbate this trend: Disparities in salaries contribute to the perception that specialty fields are more prestigious, which students may consider when selecting a specialty. Fewer primary care doctors teaching at medical schools mean fewer mentors and role models. Primary care practitioners often are (and are seen by medical students as being) overworked and overburdened by administrative responsibilities, lessening the appeal of primary care even further. A downward spiral persists.

At the same time, Medicare has promoted the growth of residencies in specialty fields by providing tremendous sums – $10 billion each year – to teaching hospitals without requiring any emphasis on training primary care doctors. Although most developed nations have policies on the proportion of primary care versus specialists, the U.S. does not. Because of the strong financial incentives to train specialists, many hospitals have shifted away from training primary care doctors over time.[23]

David Margolius, MD, Internal Medicine Primary Care Resident, University of California, San Francisco (UCSF): "I chose the profession of medicine for the opportunity to heal, and this to me means treating the whole patient, not just one specific disease or condition. As I've advanced further in my training, I've realized that primary care also allows me to consider the health of an entire community and how health care is delivered there. I strongly believe if more medical students were provided with the opportunity to experience firsthand the incredible power of primary care, more trainees would choose to pursue primary care careers."

Challenges in Rural America

Not only is a maldistribution of physician provider types contributing to primary care access challenges, but geographic maldistribution also contributes to severe shortages in rural communities across the United States. The ratio of primary care doctors in urban areas is 100 per 100,000 people, double the ratio in rural communities (46 per 100,000).[24]

What the Primary Care Shortage Means for Patients

Charlie Sherman, Rutland, VT: "I had the same doctor for 8 or 9 years, but this year he decided to start charging a flat fee per year for "premium care." He was an excellent doctor, and I was disappointed I didn't have the money to pay his new fee. Someone referred me to my local community health center where I saw a physician assistant, and I think I'm getting good care from him. I will be 95 years old in April, so I give a lot of credit to the doctors I've had over the years."

The growing primary care physician shortage has led to increasing wait times for the average American. In 2012, it took about 45 days for new patients to see a family doctor, up from 29 days in 2010.[25] After Massachusetts expanded health insurance coverage in 2006, the waiting time for new patients to see a primary care provider increased 82 percent despite the already high ratio of providers-to-patients and a strong network of community health centers.[26]

C. Anne Lowe-Salmon, Milford, CT: "When my husband died, my daughter and I lost our insurance through his employer. We were forced to go on HUSKY (Connecticut's health care program for low income families). With the switch in insurance, we lost all our doctors. None of our former doctors accepted HUSKY or Medicaid, and I could not find a doctor who took HUSKY who was accepting new patients. I never got a new primary care doctor, and my daughter never got a new pediatrician. My daughter and I were forced to use emergency rooms and clinics. Even in the ER, once the intake people saw the HUSKY card, we were bumped down in priority. People who came in after us – people with good insurance – were treated ahead of us. When my daughter aged out of HUSKY (at age 19), we lost our lousy coverage. We are currently uninsured and are still without primary care doctors. We don't get the regular, preventive care we need, and I don't know what we'll do if either of us needs the emergency room."

While the wait to see a primary care provider can be long with any type of insurance, people with Medicare and Medicaid sometimes wait longer and have more challenges in accessing care.

In addition to growing wait times during increasingly busy office hours, it can be difficult to find a primary care provider who can treat conditions that arise unexpectedly at night or on weekends. The packed schedules of primary care physicians leave little time for patients with acute health problems.[27] And only 29 percent of U.S. primary care practices provide access to care on evenings, weekends, or holidays as compared to 95 percent of physicians in the United Kingdom.[28]

Today millions of Americans - one in five sick people - visit the emergency room for care they could have received from their primary care practitioner. In fact, half of emergency room patients would have gone to a primary care provider if they had been able to get an appointment at the time one was needed.[29] Visits to emergency rooms are not only more expensive, but the lack of continuity in care can result in extras tests, limited follow up care, and an increased risk for medical errors. Also, acute, nonurgent cases can crowd emergency rooms, making it more challenging for emergency room physicians to provide care to the most serious cases.

Common illnesses such as seasonal influenza can take a heavy toll on the health care system. Today, only 42 percent of the 354 million annual visits for acute care are made to patients' personal physicians. The rest of the visits are made to emergency departments (28 percent), specialists (20 percent), or outpatient departments (7 percent). Emergency physicians handle a quarter of all acute care visits and more than half of acute visits among those who are uninsured, but they make up less than 5 percent of the total number of doctors.[30] Our system places a heavy burden on emergency rooms and emergency providers.

Claudia Fegan, MD, Chief Medical Officer, John H. Stroger Jr. Hospital of Cook County, IL: "There is no question that the recent flu outbreak has caused a greater strain on all health facilities across the country. If more people had regular access to health care, i.e. a primary care provider, they could have been seen there as opposed to everyone coming to the emergency room. Every year, for more than 20 years, 30,000 people die from influenza. Our hospitals in Cook County Health and Hospital System were forced to limit access to visitors in an attempt to protect our patients. Our intensive care unit was treating 2-3 patients with influenza over the past several weeks."

Why We Must Act Now

The shortage of primary care providers has reached a critical level due to a combination of fewer physicians entering primary care, geographic and specialty maldistribution, retirement, a growing and aging population, and the upcoming expansion of coverage under the ACA. These factors mean that people are having a harder time finding a source of primary care, which translates to more visits to emergency rooms, and in tragic cases, more deaths. When people delay or fail to receive primary care and preventive services, everyone pays the price. It is not only our moral responsibility to ensure primary care access now and into the future, but it is fiscally sensible to act quickly to expand this critical workforce.

Solutions

There are many things we can do to address this crisis in primary care access in the short and long terms. The Affordable Care Act included many opportunities to address the primary care crisis, and these provisions should be fully funded and implemented. Options include expanding community health centers to serve more people, increasing opportunities for education and residencies in primary care in community settings, better preparing students to practice primary care and encouraging careers in primary care, building the primary care workforce by increasing the number of scholarship and loan-repayment opportunities, and expanding the role of non-physicians.

Community Health Centers

Federally Qualified Health Centers (FQHCs), also known as community health centers, are non-profit primary care clinics located in high-need areas across the country. Community health centers must serve everyone in the community, regardless of their health insurance and ability to pay, and often offer onsite mental health and dental services in addition to primary care medical services. There are over 1,100 centers across all states with more than 8,500 delivery sites serving 20 million patients each year, 72 percent of whom are living below the federal poverty level. Nearly half of FQHC patients live in rural areas. FQHCs are the largest network of primary health care providers, and collectively they ensure timely access to primary care by reducing barriers, improving health, and lowering health system costs by $24 billion annually.[31] For example, rural counties without a community health center were found to have significantly higher emergency room visit rates among the uninsured than rural counties with a community health center clinic site.[32] In Vermont, community health centers serve one in four residents with Medicaid and who are uninsured.[33]

The ACA approved $11 billion in new dedicated funding for health centers over five years to expand primary care access and build health care capacity as millions of uninsured Americans living in underserved communities gain insurance coverage. This funding would assist health centers to grow from serving 20 million to 40 million people. Unfortunately, FY2011 appropriations for health centers were reduced by $600 million, and so only 67 new sites received funding that year instead of the 350 that were originally planned. Over the five year expansion period, this reduction will likely mean that $3 billion of the original $11 billion of funding will be lost. As a result, the expansion is smaller than anticipated, but the health centers continue to increase the number of people they serve.[34]

Dan Hawkins, Senior Vice President, Public Policy and Research, National Association of Community Health Centers (NACHC): "In the new health reform law, our Congress and our President have made clear their belief and their expectation that health centers will grow to reach millions of people who stand to gain coverage under the ACA and yet may have nowhere to turn for needed health care. Even though the new ACA funding was scaled back by funding cuts, the federal investment in health centers is still expected to extend care to more than 15 million additional people – reaching a total of at least 35 million health center patients by 2015."

Teaching Health Centers

The ACA also created the Teaching Health Center (THC) program. This program creates new residency sites to move training out of academic teaching hospitals and into community-based settings, where most medical care across the country is delivered. Studies have shown that residents trained in community health centers or rural communities are more likely than those trained in other settings to make a career practicing in underserved or rural areas.[35] The THC program was the only new investment in Graduate Medical Education (GME) in the ACA, and the five-year (2011-2015) funding of $230 million – a tiny percentage of overall GME spending – is expected to produce 600 new primary care residents by 2015.[36] Although these physicians will serve thousands of patients, the scope of the need in this country is so great that this program must be dramatically expanded.

Preparing Students and Encouraging Careers in Primary Care

In addition to encouraging providers to locate in shortage areas, there are many ways we can encourage medical schools to prepare students for careers in primary care. Schools could, for example, receive additional funding if they meet a benchmark goal of a certain number of graduates entering primary care residencies.

Increasing reimbursement under Medicare and Medicaid for primary care providers will also serve as a critical incentive. Our current health care system has what is known as a "fee-for-service" model, which means that health insurers, including Medicare and Medicaid, reimburse doctors for each service provided. It is a system that rewards quantity over quality and specific services over treatment of the whole person. Not only does this model drive up overall health care costs, but it also does not reward the provision of comprehensive, high quality, person-centered primary care.

Schools could be encouraged to train physicians alongside nonphysicians for portions of their training to better prepare students for providing team-based approaches to care.[37] Care teams extend the reach of all providers and better meet the needs of patients. Increasing the number of primary care providers in the community who are available after normal business hours is an essential part of efforts to

Melissa Marotta Houser, MD, University of Vermont College of Medicine '12: "Started from scratch by a family doctor, The Health Center (a community health center in Plainfield, VT) is a visionary, interdisciplinary practice that provides primary care to more than 10,000 Vermonters, many of whom would not otherwise have access to care. I spent hundreds of hours there during my training under the guidance of dedicated mentors and teachers. These experiences taught me the rewards of practicing medicine in an intimate rural community. As a result of the time I spent at The Health Center during my training, I developed confidence – in my skills, in my goals, and in myself – and a sense of where I belonged in the world. I found family medicine."

shift visits away from emergency rooms and back to primary care settings.[38]

Studies also show that minority physicians are more likely to practice medicine in underserved communities, so programs that expand the recruitment and training of minority medical students may increase the diversity of the profession, address cultural barriers, and address the challenge of geographic maldistribution.[39]

The ACA created an independent National Health Care Workforce Commission of 15 experts to review current and projected workforce needs and to make recommendations to the President and Congress. However, this Commission has never been funded, and several other provisions not mentioned in this report have also failed to receive funding. In order for the promise of expanded coverage passed into law by ACA to become a reality, the provisions designed to reach those goals must be fully funded and implemented. We need to make sure that our health care system has the infrastructure in place to provide the care necessary to prevent diseases and improve the health of all Americans.

George Rust, MD, MPH, Director, National Center for Primary Care, Morehouse School of Medicine: "We must train clinicians who are just as diverse as the communities we care for. Specifically, we need more African American and Latino and Native American physicians. We need physicians who are fluently bilingual and bicultural. We need doctors who know how to speak the language and show respect and earn the trust of their communities. Students of color are more likely to have personal or family experience with unmet health needs, and are therefore more likely to practice in settings where they are needed and valued."

National Health Service Corps

The physician and allied health professional primary care workforce should be expanded through increases in the number of scholarships and loan repayment options for primary care practitioners. The National Health Service Corps (NHSC) can help to lessen salary differential and lifetime return on investment over the full career and incentivizes service in underserved areas. Created in 1970, the NHSC provides scholarships and loan repayment for those committed to serving in areas with the greatest need for more providers. The NHSC adds to the supply of primary care providers, retains primary health care workers in underserved areas that need providers most, and increases access to primary health care for underserved populations. There are currently 10,000 NHSC participants serving over 10 million patients.[4]

The Primary Care Workforce: The Role of Allied Health Providers

Beyond physicians, other providers play an extremely important and growing role in the provision of primary care. Nurse practitioners (NPs) now account for 19 percent of the U.S. primary care workforce and physician assistants (PAs) account for 10 percent.[41] Studies

have shown that the NPs and PAs are safe, effective, and improve access to care.[42] Some workforce experts believe that the need for additional primary care providers could be met by including shared practice and team approaches to the delivery of care and by permitting allied health professionals to practice at their highest level of training.[43] Additionally, the shorter length of training for nonphysician primary care providers means that people can begin to practice more quickly and often graduate with less educational debt. They are also more likely to choose primary care careers and are known to be more nimble in their ability to move between primary care and specialty careers.

Linda Aiken, PhD, RN, Claire M. Fagin Leadership Professor of Nursing, University of Pennsylvania: "Nurse practitioners are a good solution to the shortage of primary care that will worsen when millions of currently uninsured Americans get health insurance as a result of the Affordable Care Act. Research shows that care by nurse practitioners is excellent, highly satisfactory to patients, accessible, and affordable. Access to primary care in Pennsylvania improved significantly when the state acted to improve consumer access to nurse practitioners and nurse midwives by removing legal restrictions to their practices."

Conclusion

The primary health care system in America and its workforce is in significant need of a check-up. As the population grows and ages, as more doctors retire, and as the primary care pipeline dries up, we face a severe shortage of providers. The result is that millions of Americans are not getting the care that they need now and the situation may only get worse. Although the ACA took important steps towards expanding access points by increasing funding for community health centers and the National Health Service Corps, for example, the tremendous scope of the problem requires further attention and action. Just like an illness from which it will be more difficult and costly to recover from the longer we wait, we must take steps now to address the primary care access crisis in America.

References

1. Health Resources and Services Administration [HRSA]. *Shortage Designation: Health Professional Shortage Areas & Medically Underserved Areas/Populations*. Last accessed January 24, 2013, from http://bhpr.hrsa.gov/shortage/

2. Petterson S et al. "Projecting US Primary Care Physician Workforce Needs: 2010-2025." *Annals of Family Medicine*, Vol. 10, No. 6, 503-509; 2012.

3. American Academy of Family Physicians [AAFP]. "Advancing Primary Care." *Council on Graduate Medical Education: Twentieth Report*. December 2010. See also Halsey III A. "Primary-Care Doctor Shortage May Undermine Reform Efforts: No Quick Fix as Demand Already Exceeds Supply." *Washington Post*. June 20, 2009.

4. Wilper A et al. "Health Insurance and Mortality in US Adults." *American Journal of Public Health*, Vol. 99, No. 12, 2289-2295; 2009.

5. AAFP. "Advancing Primary Care." See note 3.

6. Kaiser Family Foundation [KFF]. "Total Number of Medical School Graduates, 2011." Accessed January 23, 2013, from http://www.statehealthfacts.org/comparemaptable.jsp?ind=434&cat=8

7. Abrams, M et al. "Realizing Health Reform's Potential: How the Affordable Care Act Will Strengthen Primary Care and Benefit Patients, Providers, and Payers." *The Commonwealth Fund*. January 2011.

8. Bodenheimer T and Pham H. "Primary Care: Current Problems and Proposed Solutions." *Health Affairs*, Vol. 29, No. 5, 799-805; 2010.

9. Petterson S et al. See note 2.

10. Starfield B, Shi L, and Macinko J. "Contribution of Primary Care to Health Systems and Health." *Milbank Quarterly*, Vol. 83, No. 3, 457-502; 2005.

11. Schoen C et al. "In Chronic Condition: Experiences Of Patients With Complex Health Care Needs, In Eight Countries, 2008." *Health Affairs*, Vol. 28, No. 1, w1-w16; 2009.

12. Institute of Medicine [IOM]. *U.S. Health in International Perspective: Shorter Lives, Poorer Health*. January 9, 2013.

13. Leigh JP et al. "Lifetime Earnings for Physicians Across Specialties." *Medical Care*, Vol. 50, No. 12, 1093-1101; 2012. See also Halsey III A, see note 3.

14. Wilper A et al. See note 4.

15. Abrams, M et al. See note 7.

16. Association of American Medical Colleges [AAMC]. "Physician Shortages to Worsen Without Increases in Residency Training." Last Accessed January 24, 2013, from https://www.aamc.org/download/153160/data/physician_shortages_to_worsen_without_increases_in_residency_tr.pdf

17. Petterson S et al. See note 2.

18. See, e.g. Sandy L et al. "The Political Economy of U.S. Primary Care." *Health Affairs*, Vol. 28, No. 4, 1136-1144; 2009.

19. American Medical Association [AMA]. "RUC Members Effective July 1, 2012." Last accessed January 28, 2013, from http://www.ama-assn.org/resources/doc/rbrvs/ruc-members-current.pdf. See also Chen P. "How One Small Group Sets Doctors' Pay." *The New York Times*. September 22, 2011. Available from http://well.blogs.nytimes.com/2011/09/22/how-one-small-group-sets-doctors-pay/.

20. AAMC. "Trends in Cost and Debt at U.S. Medical Schools Using a New Measure of Medical School of Attendance." Vol. 12, No. 2; July 2012. https://www.aamc.org/download/296002/data/aibvol12_no2.pdf

21. Leigh JP et al. See note 13.

22. Sandy L et al. See note 18.

23. Chen C, Chen F, and Mullan G. "Teaching Health Centers: A New Paradigm in Graduate Medical Education." *Academic Medicine,* Vol. 87, No. 12, 1752-1756; 2012. See also Sandy L et al., see note 18.

24. Bodenheimer T and Pham H. See note 8.

25. LeBlanc S. "Survey: Access to Mass. Doctors Improving Slightly." *Associated Press*, August 8, 2012. http://www.boston.com/news/local/massachusetts/2012/08/08/survey-access-mass-doctors-improving-slightly/iUmobYPYH8jwvduZ1rKrZI/story.html

26. Ghorob A and Bodenheimer T. "Sharing the Care to Improve Access to Primary Care." *New England Journal of Medicine*, Vol. 366, No. 21, 1955-57; 2012. See also Petterson S et al., see note 2.

27. Pitts SR et al. "Where Americans Get Acute Care: Increasingly, It's Not At Their Doctors Office." *Health Affairs*, Vol. 29, No. 9, 1620-29; 2010.

28. Schoen C et al. "A Survey of Primary Care Doctors in Ten Countries Shows Progress In Use Of Health Information Technology, Less In Other Areas." *Health Affairs*, Vol 31, No. 12, 2805-16; 2012.

29. Abrams, M et al. See note 7.

30. Pitts SR et al. See note 27.

31. National Association of Community Health Centers [NACHC]. "United States: Health Centers Fact Sheet." Last accessed January 16, 2013, from http://www.nachc.com/client/US11.pdf

32. Rust G et al. "Presence of a Community Health Center and Uninsured Emergency Department Visit Rates in Rural Counties." *Journal of Rural Health*, Vol. 25, No.1, 8-16; 2009.

33. Bi-State Primary Care Association. "VT's Federally Qualified Health Centers and Health Care Reform." Presentation given by Susan Barrett, December 6, 2011. http://gmcboard.vermont.gov/sites/gmcboard/files/Barrett_12611.pdf

34. KFF. "Community Health Centers: The Challenge of Growing to Meet the Need for Primary Care in Medically Underserved Communities." March 2012. http://www.kff.org/uninsured/upload/8098-02.pdf

35. Chen C, Chen F, and Mullan G. See note 23.

36. The White House. "FACT SHEET: Creating Health Care Jobs by Addressing Primary Care Workforce Needs." April 11, 2012. http://www.whitehouse.gov/the-press-office/2012/04/11/fact-sheet-creating-health-care-jobs-addressing-primary-care-workforce-n

37. Mullan F et al. "The Social Mission of Medical Education: Ranking the Schools." *Annals of Internal Medicine*, Vol. 152, No. 12, 804-811; 2010.

38. Cunningham P. "Nonurgent Use of Hospital Emergency Departments." Subcommittee on Primary Health and Aging Hearing, *Diverting Non-urgent Emergency Room Use: Can It Provide Better Care and Lower Costs?* March 11, 2011. http://hschange.org/CONTENT/1204/1204.pdf

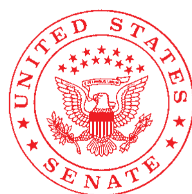
39. Mullan F et al. See note 37.

40. HRSA. "National Health Service Corps." Last accessed January 24, 2013 from http://www.hrsa.gov/about/organization/bureaus/bcrs/nhscoverview.html

41. Agency for Healthcare Research and Quality. "Primary Care Workforce Facts and Stats No. 2." October 2011. Available from http://www.ahrq.gov/research/pcwork2.htm

42. O'Malley A. "After-Hours Access To Primary Care Practices Linked With Lower Emergency Department Use and Less Unmet Medical Need." *Health Affairs*, Vol. 32, No. 1, 175-183; 2013.

43. Green L, Savin S, and Lu Y. "Primary Care Physician Shortages Could Be Eliminated Through Use of Teams, Nonphysicians, and Electronic Communication." *Health Affairs*, Vol. 32, No. 1, 11-19; 2013.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