# Assuring Access to Care under Health Reform:

## The Key Role of Workforce Policy

October 2011

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The central aim of the Patient Protection and Affordable Care Act of 2010 (ACA) is to increase health insurance coverage in order to make care more affordable for US citizens. Fears have arisen, however, that the new coverage will not translate into improved access to needed services, especially primary care.[1] Shortages of providers were projected nationwide even before the reform debate began,[2] and an aging population and increases in chronic conditions will further pressure the supply of care.

To succeed, the ACA's coverage and financing reforms need improvements in service delivery that promote ready access to appropriate care. Access needs to be maintained for the currently insured and developed for the newly covered—both without undue effects on overall affordability or quality. The sharp rise in coverage seems inevitably to necessitate some changes in how care is accessed, delivered, and paid for. Such change calls for supportive workforce policies, many of which are begun by ACA provisions. Perhaps even more important, caregivers and patients need to appreciate that business as usual may not best meet their needs.

The ACA lays the groundwork to support such change,[3] but much remains to be done to identify and expand on promising experiments in improving delivery. This brief discusses four possible avenues for change that can help meet expected demand under the ACA and the workforce policies that could contribute to their success. Educating more doctors and nurses is a logical response to feared shortage of access—but a slow one. More promising for the near term is re-organizing practices to make more productive use of nurses and other more rapidly trainable staff.

## Access to Care under Health Reform

### *Existing Access Concerns*

Evidence from the field suggests reason for concern about access. Problems are reported for the uninsured and underinsured and for people in provider-shortage locations.[4] Moreover, even well-insured people are said to face problems scheduling initial visits for primary care and certain specialties.[5] The adequacy of provider supply has historically been difficult to predict.[6] Nevertheless, a broad range of authorities say that a severe shortage of primary care providers has already begun or looms close ahead,[7] even before the surge in demand expected to follow increases in coverage. One estimate sees the estimated shortage of 9,000 primary care physicians pre-reform rising to 29,800 in 2015.[8]

The expectations of both caregivers and patients and the incentives they face drive the medical system's balance of supply and demand. Patients' choices of where to seek care, the dominance of one-on-one physician-patient encounters, the prevailing methods and levels of payment and the differences across payors, the customary configuration of the health care workforce within each site of care and across the entire system, and how various caregivers interact to "produce" patient visits—all these factors influence the system's overall capacity to provide access to primary care.[9] Under health reform, many of these factors can be expected to change.

### *Workforce provisions in the health reform legislation*

The ACA offers incentives to students and educators to increase the supply of clinicians and to medical care providers to offer opportunities for training and mentoring of new graduates. These incentives are designed to favor primary care over other specialties. The ACA also supports experimentation with new modes of care delivery and payment for care, meant to promote access, efficiency, and quality. (Specific provisions are discussed below.)

**Observation of Promising Practices**

Literature reviewed for this report abounds with descriptions of innovative approaches, with varying levels of evidence on performance. Belief that new models are emerging comes from the accretion of innumerable individual examples across disparate settings—such as TEAMCare,[10] teamlets,[11] Care Model Process,[12] and care platforms.[13] Each approach configures personnel differently to provide the full spectrum of primary care, from serving healthy patients to addressing multiple chronic conditions.

This paper uses boxes like this one to highlight examples of interest. A small number of exemplary institutions are repeatedly cited in the literature;[14] here, we intentionally highlight less well known examples.

To learn from this experimentation, the law provides for monitoring experience with delivery system change and workforce policies, assessing results, and disseminating successful interventions and workforce policies. It establishes the National Health Care Workforce Commission to evaluate the need for health care workers and identify

national workforce priorities. The law also calls for a National Center for Health Workforce Analysis, as well as state and regional centers, along with a competitive program of state workforce development grants.

The ACA's workforce provisions have the potential to help health care delivery evolve toward using health care workers more efficiently and providing patients with more reliable and equitable access to care. However, the scope of expanded support for training is dwarfed by the funding for coverage expansion, and investment in community health center capacity gets most of the remaining funding. The law recognizes the need for transformation of care at the practice level and system-wide, but provides relatively little funding. Support for physician graduate medical education (GME) continues to dominate all other educational funding, although with some redirection of funds toward primary care. At best, training funds are created as appropriations, not entitlements, which leaves them vulnerable to annual renewal pressure; some funding is only authorized and now faces considerable challenge to win appropriation in a difficult budgetary climate.

## Improving access under health reform: Four approaches

An estimated 32 million people will be added to the insurance rolls under the ACA.[15] It has been estimated that an additional 4,307 to 6,940 new primary care physicians will be needed to meet the new demand.[16] In this brief, we consider four broad types of change that could help meet access needs. For each approach, we explain its rationale, the policy levers available under the ACA as well as others that will be needed, and the possible challenges to implementation. We provide examples of the approaches based on reports of experimentation to date among forward-looking providers.

The first approach envisions expanding the supply of physicians sufficiently to meet the expected increase in demand while maintaining the current physician-centered pattern of care delivery. The second contemplates reorganization of the processes by which care is delivered so as to provide greater access to care by using the same resources more efficiently. The third approach assumes that some expansion in available primary care services would come from an enhanced role for clinicians other than physicians. The fourth is a long-run paradigm shift in which the system is re-imagined to meet patient needs in a variety of different ways.

The first three approaches address how care is delivered within primary care practices; the fourth goes beyond practice walls to include interactions between primary care practices and the larger health care system. Given the wide variety of needs, assets, and preferences in different communities across the country, in practice, system evolution will likely include varying aspects of each approach in a longer run, uniquely local mix of solutions.

### *Improve access by increasing the supply of primary care physicians*

Improving access by increasing the number of practicing primary care physicians would seem the most straightforward approach to assuring access. This strategy would minimize disruption to accustomed patterns of care seeking and care giving and thus would require no experimentation or validation to measure either its acceptability to clinicians and patients or its effects on access.

Although some increases in insurance coverage will occur earlier, the main ACA expansions start in 2014. The resulting surge in demand will be especially strong in areas with high uninsurance today, which generally also have low physician supply.[17] Meeting the demand surge solely by increasing physician supply would require not only a very large and nearly immediate increase in the number of primary care physicians but also a commensurate increased complementary personnel.[18]

Strong measures will be needed to recruit and retain more doctors in primary care, especially to practice in shortage locations. Some demand could be met through an increase in the number of foreign-educated physicians allowed to practice in the US. However, reliance on immigration is widely viewed as less desirable as a long-term solution than addressing constraints to producing more physicians in-country and attracting them to careers in primary care.[19]

Interest in primary care among medical students has been declining over the last fifteen years.[20] There are some early indications that this trend may have slowed or even reversed.[21] Students frequently identify concerns about medical-school debt and low anticipated income in primary care as important factors in their choice of specialty.[22] Less often mentioned but still important are the ways that current primary care practice can reduce career satisfaction and increase burnout.[23]

**Nurturing primary care physicians for rural practice**

The University of Alabama chooses 10 college students from rural areas each year for its Rural Medical Scholars Program. The program began in 1996 to provide pre-med students with an intensive introduction to rural and primary care. Once the students enter medical school, they are assigned a rural practitioner as a mentor for the duration of their studies. Some three quarters of the program's medical school graduates now practice in rural areas or small towns in Alabama.[24] Louisiana State University School of Medicine recently began a Rural Scholars' Track with similar aims.[25]

*Policy levers*

The goal of policy would be to make primary care practice more attractive by targeting both financial and non-financial aspects of practice.[26] Financial incentives would seek to bring average earnings for primary care closer to those for other specialties.[27]

Non-financial incentives would seek to improve the match between medical students and primary care practice and to address other issues that some physicians cite as even more important than reimbursement.[28]

Specific policies include reducing the up-front cost of primary care education and training, if not in current dollars, at least relative to the costs of specialty training. For example, educational loan repayment programs that reward choice of primary care specialties could be boosted. GME payment flows and residency slots could be shifted toward primary care. Training opportunities outside of hospitals could be increased. Requirements for graduation could be streamlined to eliminate those not necessary for primary care practice. The ongoing financial attractiveness of primary care could also be enhanced through increased payment for primary care services relative to specialty care.[29]

**Expanding and changing medical education**

The Carnegie Foundation, a century after publishing the 1910 Flexner report that set the traditional educational pattern, has called for fundamental shifts in medical schooling, including the ability for students to "fast track" to specialties.[30] The medical school at Texas Tech University has created a new educational pathway—the Family Medicine Accelerated Track. Focusing on primary care allows the curriculum to be shortened by one year, saving students some $50,000 in tuition. The program will also provide $13,000 to cover tuition and fees during students' first year, shaving about half off the cost of traditional four-year education. The school will enroll its first class in fall 2011.[31] The Lake Erie College of Osteopathic Medicine offers a Primary Care Scholars Pathway. The first class will graduate in 2011.[32] In 2009, Florida International University enrolled its first class of medical students into its "patient-centered" curriculum."[33]

Non-financial incentives could be developed to increase the attractiveness and prestige of the primary care profession[34] and to recruit students who are likely to enter primary care and explicitly nurture their generalist passion. Increased and positive exposure to primary care practice at early stages and throughout education has helped rural physician recruitment and retention, and this approach could be applied in non-rural contexts as well.[35] Finally, providing technical assistance to practices to support change could reduce provider burdens.[36]

The ACA provides limited support for this strategy:

- additional funding for scholarships and loan repayment for students choosing to practice primary care in underserved areas.
- an increase in the number of residency slots for primary care and in the time that these residents may spend training outside of hospital settings.
- grants for the development of "teaching health centers,"[37] to increase the exposure of new physicians to practice in primary care settings.
- increases in Medicaid primary care fees to Medicare levels and a 10 percent Medicare payment bonus for primary care providers in underserved areas—provisions that are time-limited, but that may be continued under political pressure.[38]
- a new primary care extension service, on the successful model of agricultural change, to help practices incorporate innovations to improve efficiency, access, and quality.[39]

*Implementation challenges*

The necessary increase in primary care physicians will be difficult to achieve through domestic education, given the magnitude of the currently projected shortages in primary care physicians and nurses along and the foreseeable limitations in the U.S. "pipeline" of physician training. An increase in immigration by graduates of foreign medical schools raises challenging issues of language and cultural competency in relating to patients and other caregivers, and some observers have noted ethical issues with diverting physicians from countries that often have even worse physician shortages.[40] But meeting access needs solely through increased physician supply may be logistically infeasible without greater reliance on foreign medical school graduates.[41]

**Primary care teamwork to improve quality, revenue, and access**

In a demonstration project in rural North Carolina, advanced practice registered nurses made weekly visits to each of 5 small practices to provide intensive case management to patients with diabetes using group visits, an electronic registry, and a visit reminder system. There were documented improvements in achieving diabetes management goals, and also in improved productivity and billable encounters for the practice.[42]

The Family Health Team is a flexible model of interdisciplinary practice teams used in Ontario, Canada, since the early 1990s. It was designed to expand the capacity of primary care through the use of teams. A physician's typical panel is 1400 patients; adding a nurse practitioner allows the panel to expand by 800 patients.[43]

Geisinger Health System, which functions as both a provider and a payor, recognized the importance of helping its enrollees manage their chronic conditions. It pays the salaries of nurses to assist in primary care practices, not only in its own clinics but also in independent practices that see Geisinger patients.[44]

It may also already be too late to rely on a physician supply-based strategy alone. The ACA incentives take effect immediately or from 2014. But it takes seven years of education and training to produce a physician, so changes in physician supply will not even begin to be evident until 2018 or later. Some provisions could affect the existing workforce by helping to retain physicians in primary care practice, and if the current medical school cohort responds to the incentives, some new primary care physicians could be found among students now in medical school or residencies. Some specialists might also shift their practices to provide more primary care services. However, changing physician

attitudes toward primary care and increasing its prestige are both likely to be long-term projects.

As to the educational pipeline, the Association of American Medical Colleges (AAMC) has called for a 30 percent increase in the number of medical schools.[45] Five new allopathic medical schools have opened in recent years, at least two of which have a stated primary care focus. An additional 10 to 12 more are in the planning or accreditation stage.[46] Schools of osteopathic medicine, which have historically focused on primary care, are also gearing up to meet the increased demand.[47] Finding professors and residency slots will take some time as well.

Even with an increased number of medical school graduates, residencies are a critical bottleneck in shifting physician supply toward primary care.[48] The additional residency slots to be opened under ACA are to target primary care through new community-based "teaching health centers."[49] However, hospitals depend on the GME funding associated with each slot to support their staff, and any shifts of trainees away from hospital residencies could meet with strong opposition.

Very few primary care practices are staffed by physicians alone. Finding administrative personnel for new physician offices will be less challenging than finding the necessary clinician complements to physicians. Predicted shortages of nurses are as severe as those for physicians.[50]

Even if a sufficient and timely increase in physician supply were feasible, this strategy might be unaffordable, both in up-front costs and in paying customary fees to new practitioners.[51] Given the cost of physician labor relative to alternatives, the creation of an extensive new physician pipeline might not be in the long-term interests of the health sector.

*Discussion*

As noted, a physician-centric approach would cause the least disruption to current expectations of both physicians and patients. But it relies on immediate and large changes in the numbers of new graduates and in specialty choices. The likely policy levers are not fast acting. The most immediate levers are those affecting the cost-benefit calculations of current and would-be primary care practitioners. Policies that affect the financial aspects of primary care practice will be effective only to the extent that cost is the dominant issue.

Many educational changes seem good policy for the longer run, independent of their immediate effect on supply and access, as is creating a health care system that values primary care. The current national morbidity profile and the aging U.S. population coupled with the coming increase in insurance coverage, however, argue for bolstering primary care physician supply as a component of all strategies rather than as a solution in itself.

## Improve access by increasing the efficiency of care provision

Many observers believe that changes in processes of care within existing physician practices can yield efficiencies that will improve access by allowing more primary and other care to be delivered from existing resources.[52] A recent survey found little consensus on what characterizes "best practice" in medical care. Greater use of electronic health records and employment of nurse practitioners, however, were identified as the features of the most efficient practices.[53] The magnitude of existing shortages and the length of the relevant education and training pipelines offer a strong argument for seeking change that maximizes the productivity of the existing workforce. Some argue that improving efficiency will also increase the attractiveness of primary care as a clinical specialty, as it can improve net earnings.[54]

### Nurse practitioners lead patients' routine care

At Duke University's outpatient cardiology program, a physician and nurse practitioner are together responsible for the initial evaluation of patients with congestive heart failure. The nurse practitioner thereafter uses standardized protocols to manage the patient's routine care. Dieticians provide nutritional counseling, and non-clinical partners in the community assist patients with shopping for affordable food. The physician is called in if the patient's condition worsens.[55]

In a research-demonstration project, registered nurses with experience in diabetes management were given training in behavioral health. They then collaborated with primary care physicians and specialists to manage care for patients with a diagnosis of diabetes and depression. The 12-month intervention used guideline-based care and proactive follow-up of patients. The result was better health outcomes and higher patient satisfaction with care.[56]

Innovations and emerging models run the gamut from relatively little modification in customary delivery patterns to quite extensive change. For the affected physician office or other practice site, however, even the simplest changes represent disruption and require full commitment to the outcome. Many of the innovations require or would work more smoothly with increased health information technology (HIT) and electronic communication,[57] which adds another task to a practice's learning curve.

Examples of the innovations requiring the least (although not necessarily insignificant) disruption include streamlined or same-day scheduling (often called open or advanced access) to reduce appointment wait times[58] and streamlined operations to reduce overall appointment duration while maintaining or increasing time with clinicians.[59] Increased automation of routine tasks allows delegation of tasks across traditional roles, providing physicians with time for more complex and specialized functions.[60] For example, physicians have created protocols for prescription refills that allow medical assistants trained

in their use to authorize refills for specific medications without further physician input.[61]

Some modifications, such as same-day scheduling, may entail challenging changes for staff, but they would not affect patients' accustomed relations with their caregivers. Other changes would require adjustment by patients as well as staff. Examples include new modes of access such as group visits, telemedicine, telephone and email consultations, online assistance, and support for patient self-help and for family care-givers,[62] and increased teamwork within primary care practices, such as that embodied in patient-centered medical homes.[63]

### Same-day scheduling to improve access and quality

Waits to obtain medical appointments are a prime indicator of access problems. Delays frustrate patients, while no-shows and backlogs waste caregivers' time. Standard medical office practice schedules almost all available time slots in advance, but—counter-intuitively—queuing theory and practical experience show that access can be streamlined by leaving many or most slots vacant until needed. Offices can schedule almost all patients for the same day that they seek care yet also reduce downtime. To adopt such "same day" scheduling (also called "advanced-" or "open-access"), an office needs to understand the periodicities and flows that characterize its patient population, and must dedicate start-up effort to change accustomed routines. Experts in practice improvement promote such scheduling,[64] and at least one careful comparison of family medicine teams found that advanced access scheduling was superior to standard appointment scheduling in appointment delays, continuity of care between provider and patient, and provider satisfaction.[65] Many case reports address other aspects of success, for example, improved clinic net revenues.[66]

*Policy levers*

The goal of policy would be to identify innovations that enhance productivity, to assess their replicability, and promote expansion of successful practice innovations through identification and reduction of the legal and financial barriers to their larger success. Promotion could be direct in the case of public programs. For private programs, promotion could take the form of education and leading by example. Policy should also seek to align education, training, and scopes of practice for all clinicians with the new practice tasks. Where existing payment mechanisms render new efficiencies unprofitable, a realignment of reimbursement will also be needed. Today, payor requirement for accreditation or licensure may be more influential even than public regulation. Change may mean a shift of funds from one level of care to another.

Technical assistance for dissemination of best practices and the development and dissemination of HIT at various critical levels would provide a framework on which to build all innovation. In addition, policies should focus on education and training and on public awareness. These include the development of teamwork-friendly educational programs, that is, ones that encourage all caregivers in training to understand and respect the capabilities of all types of providers who collaborate in successful teams.[67] Also needed are educational materials and campaigns, individual and mass media that promote appreciation of the roles of various clinicians and the responsibilities of patients.[68]

### Nurse practitioner-led medical homes

Federal funding is supporting pilot nurse-led medical homes programs in 12 states. But, in Maryland, the initiative has come from the private sector. One of the largest insurers in Maryland, CareFirst BlueCross BlueShield, announced that it would credential nurse practitioners to serve as independent primary care providers within its Primary Care Medical Home program that starts in January 2011. The announcement followed new state legislation allowing expanded roles for nurse practitioners. Previously, nurse practitioners were only allowed to practice independently in designated underserved areas. The press release noted the need to expand access in anticipation of coverage increases under federal health reform.[69]

The variety of relevant provisions in the ACA suggests that its framers knew that the best way forward is not clear especially in light of the variety of localities. The law provides general support for innovations in care processes rather than for specified activities. It establishes a Center for Medicare and Medicaid Innovations for testing innovations in public programs and provides grants for a variety of local innovations. Evaluation of these initiatives is built into the funding mechanisms, to encourage systematic assessment of replicable and scalable improvements.

### Federal support for the expansion of health information technology

At the national level, HHS now provides technical support for interoperability standards; at the state and regional level, it supports development of regional HIT systems and standards; and at the practice level, it provides capital subsidies and technical assistance for implementation of electronic health records. Support for HIT expanded markedly after the 2009 stimulus legislation included the Health Information Technology for Economic and Clinical Health.[70]

The ACA supports this strategy in several specific provisions:

- experimentation with new forms of reimbursement for new ways of delivering care, with particular support for medical homes in Medicaid.
- promotion of coordination of care across payors, especially for dual eligibles, those enrolled in both Medicare and Medicaid.
- support for new "accountable care organizations" that may themselves ultimately alter the flow of funds among their participating providers and across different services.
- further supports for HIT, already began in the early 2000s and greatly enhanced under the Stimulus Act in 2009.

*Implementation challenges*

From the perspective of the individual practice, redesign will involve varying levels of disruption in patterns of care. Resistance from many providers can be expected.[71] Moreover, the disruptions may temporarily reduce access before producing the desired increases. Management challenges also arise in coordinating different types of visits, processes of care, and service provision by different types of personnel.[72] Transition to new practice models also imposes new costs, both financial and non-financial, only some of which will be subsidized under the ACA. As with the first approach, shortages of nurses and other personnel may hamper reorganization. Finally, practice redesign takes time to implement, although much less than starting a medical school or producing a new physician. Also as for other changes, a learning curve may delay full realization of new efficiencies.[73] Prompt implementation would have to begin very soon to affect access in advance of the ACA-induced demand surge.

**Cross-discipline education to support better teamwork in practices**

Beginning in fall 2010, health professions students—medical, nursing, dental, allied health, pharmacist, veterinary, and public health—at the University of Minnesota will be required to take a course or get experience that will allow them to achieve inter-professional competencies, including communication and collaboration. The University's Center for Interprofessional Education was chartered in 2006 with the goal of aligning health professions education with the needs of the health care system.[74] Similar initiatives can be found at Creighton University, Medical University of South Carolina, St. Louis University, University of Minnesota, University of Washington, and Western University.[75]

Start-up costs for implementation of HIT systems can be significant,[76] although some subsidies are available.[77] But hardware and software do not alone produce results. Staff must be trained in its use so the benefits of more available and more complete information can be realized. And the long-term cost of maintaining the new systems is still unclear.

Change in how care is delivered will affect patients. Some changes will require adjustment in patient behavior and expectations. However, many of the changes will make visits proceed more smoothly. A shift toward email and telephone contacts with clinicians seems likely to be very popular as an improvement in access. Its challenge is how to finance the caregiver time involved.

Finally, at the regulatory and policy level, the necessary changes in scopes of practice of all caregivers are likely to be difficult to achieve in many states. It may take several years to identify and test payment modes and levels that will encourage efficiency and promote the improved access that such efficiency can bring.

**The primary care visit redesigned**

At HealthPartners Medical Group, a large multi-specialty practice in Minnesota, primary care has several components: pre-visit, visit, post-visit, and between visit. Before a client's visit, a LPN or medical assistant, working with a clinician, determines what services or lab test will be needed either during or before the visit and contacts the patient or sends in the order. Once the patient arrives, the nurse meets with the patient to perform any necessary tasks before the clinician arrives and enters pertinent information into the electronic record system. Post-visit work (still under development at HealthPartners) may include follow-up on lab work, visit summary, or patient education and counseling. Between-visit care is generally focused on assuring care for patients with chronic conditions. All of this work by nurses, LPNs, and medical assistants is aimed at shifting routine work away from the primary care clinician to allow them to focus on more complex medical problems in the practice.[78]

*Discussion*

Individual practice redesign has great potential to improve efficiency and thereby provide access to more people from the same resources. The potential is matched by the challenges. Most physicians' offices are small businesses. Like any small business, they exhibit great variety in structure and operations as well as varying degrees of adaptability and willingness to change.[79] Some primary care can be routinized (including much chronic care management, an expensive category of care), but by its nature, primary care must cope with diverse patients with diverse needs. It remains to be seen whether the pressure to expand access to match expanded insurance coverage will provide sufficient motivation to practices to accelerate the diffusion of new models of care. Creating sufficiently strong incentives to overcome inertia and resistance by patients and providers will be a challenge for any changes in accustomed practice.

## Improve access through enhanced roles for other primary care clinicians

An extension of the improved efficiency strategy is to use other clinical personnel to perform some of the many tasks in primary care that do not require the full capabilities of a physician. This approach goes one or more steps beyond the "efficiency" strategy just discussed. The idea of substituting other healthcare professionals for physicians is not new.[80] As many emerging models show, physicians can increase their productivity by working with other clinicians, thereby expanding access. Further broadening of roles for other clinicians could expand access yet further. The innovation observed in large and small practices and under public and private delivery and insurance regimes indicates that many practicing physicians believe that there are tasks that can be safely and efficiently provided by nurse practitioners and physician assistants, with no loss of quality, when these clinicians practice within the bounds of their education and training.[81] This line of thinking transfers the focus of change from the traditions of provider practice patterns to the needs of the patient.

### Nurse practitioner roles in retail clinics

Nurse practitioners and physician assistants provide expanded access in non-traditional settings. The Little Clinic is a for-profit venture that manages walk-in clinics in six states. The clinics are staffed by a nurse practitioner or a physician assistant and located, for patient convenience, in grocery stores that have pharmacies. They offer a standard service list for diagnosis and treatment of common conditions. A collaborating physician is available by phone.[82]

AeroClinic provides a similar service for the convenience of travelers and airport personnel at airports in Atlanta and Philadelphia. The staff includes physician assistants, nurse practitioners, and a part-time physician.[83]

Emerging models have emphasized such changes as promoting greater flexibility in matching personnel skills to functions and facilitating substitution among types of workers through standardization of tasks and delegation of both clinical and non-clinical functions to personnel according to their capabilities.[84] Some practices have experimented with stratification of the patient population and appointment types to allow intra-practice specialization among all clinicians in the practice by, for example, training some practice nurses in diabetes management and others in arthritis pain management. Increasingly, nurse practitioners and physician assistants are working in more settings of independent practice and in non-conventional practice settings such as workplaces, schools, home visits, and retail clinics.[85] Some of these new practice settings are being developed along the lines of successful models from shortage areas, such as the rural health clinic model[86] and nurse midwife-led birth centers.[87] Within existing practices, nurses are taking responsibility for panels of patients in nurse-led medical homes.[88]

Systematic evaluation is needed to learn what works. The diversity of settings and situations in which primary care is delivered argues against a one-size-fits-all solution. Most solutions, however, will benefit from changes in scope of practice regulations, payment reform, and expansion of health information technology. Moreover, this and other broader solutions will often require a change in expectations both among primary care practitioners of all types and among patients.

*Policy levers*

The goal of policy would be to support the development of education and training programs that can produce the number and types of clinical personnel with the requisite skills to staff the new models of care. Support could be provided for students, where necessary, to encourage adequate interest by qualified applicants. In addition, to assure that access gains are realized, policy needs to address regulatory and payment issues affecting the efficient use of personnel.

Specific policies in clinical education could include capacity building in schools of nursing to increase both the number of students that can be accommodated and the number and quality of faculty and facilities[89] and promotion of bachelors-level education as the dominant entry-level degree among nurses to ensure the foundation of skills is sufficient for building greater practice independence. Newly graduated APRNs, PAs, and RNs should be offered or even required to complete residencies that enhance skill sets and ease transition from training to practice. To assure a sufficient number residency slots, institutions should receive support for the development and administration of the residencies.[92] These policies will help assure that clinicians' training matches the new demands of the workplace. Shared education and clinical rotations across practitioner types should be developed to better reflect how care is delivered and to increase knowledge of and appreciation for the skills of other clinicians. Finally, support for the new training opportunities should include funding to develop standards for accreditation and accountability of training programs and for formal ongoing evaluation and dissemination of models that work.

### Intra-practice specialization in primary care

In a series of case studies of teams in primary care, Thomas Bodenheimer found that establishing clear definition and assignment of tasks and clear communication among team members allowed physicians to confidently delegate a large share of their activities to other caregivers. These other clinicians and non-clinicians were carefully trained for the functions they were expected to perform regularly. In addition, practice staff were cross-trained to allow them to substitute across roles as needed.[90] ThedaCare in Wisconsin is one example of this strategy in action. Nurses are used to ensure that quality criteria are met in a collaborative care model.[91]

### Facilitating substitutions among workers

General practitioners in the United Kingdom responded to a quality improvement and pay-for-performance initiative in the United Kingdom with several practice changes, including the delegation of more tasks to nurses within the practice. Nurses in these practices now take on about one third of all consultations. While the long-term effects on patient outcomes is not yet certain, nurses report increased job satisfaction, physicians report working fewer hours without loss of income, and quality of care has improved.[93]

At the Salud Clinic in Brighton, CO, physicians are available to consult for complicated cases but delegate much work to staff nurse practitioners and physician assistants.[94]

In many states, new roles for clinical staff will require changes in licensure and accreditation. Policy should promote the revision of scope of practice regulations and the harmonization of other state regulations to fit new practice models[95] and should identify and remove other legal and regulatory barriers to practice.[96]

The new models of care are unlikely to be broadly sustained with payment reform. Policy should develop and fund payment methodologies that support

the new practice models,[97] and revise reimbursement schedules so that the task rather than the title of the person performing it determines payment.

The ACA supports this strategy in a number of ways:

- new support for institutions to expand nursing education and training programs and for nurses to pursue teaching careers.
- extended existing funding programs of scholarships and loan repayments for primary care clinicians to include nurses as well as physicians working in underserved areas and new institutional grant funding for education of physician assistants.
- promotion of nurse-led medical homes through pilot projects within public coverage programs and nurse-led clinics at schools and health centers.

*Implementation challenges*

As the examples show, nurses and physician assistants are often a key to making this strategy work. However, a shortage of nurses at all levels was predicted even at the pre-ACA level of demand.[98] The education and training period for nurses is long, although shorter than for physicians. While there are willing and qualified candidates for nursing programs, there are capacity constraints at nursing schools, including faculty shortages.[99] New schools have been added in recent years and others are planned, but faculty development is a long term process.[100] Even if the new resources are sufficient, the lack of sufficient clinical training sites and mentors for new nurses remains an issue.[101] Many in the nursing profession would like to see increased independence for practicing nurses, but there is some disagreement as to exactly what form the independence should take.[102]

Nurse practitioners and physician assistants, like physicians, may reduce their hours, leave practice, or choose non-primary care specialties—for many of the same reasons.[103] Experience suggests that such problems can be reduced through practice reorganization, improved working conditions, and additional autonomy for nurses, nurse practitioners and other healthcare professionals; but these are longer term propositions. Making primary care more attractive and more remunerative for all clinicians is essential to improving access.

Scope of practice regulations and payor requirements are a bigger barrier to changes in caregivers' traditional roles. Attitudes toward changing such rules vary across states, so reform faces different challenges in different places.[104] Resistance to change in scopes of practice has been strong from some professional societies. In contrast, some individual practices have chosen to delegate previously physician-only tasks to other staff, even where state scope of practice guidelines were unclear.[105] Standardization of scopes of practice within public programs has been difficult to achieve in the past, although federal policies have been influential.[106]

Even with a change in scope of practice for nurses and other clinicians, professional turf issues are likely to hinder fuller independence for nurses and physician assistants in some practice settings.[109] Physicians may be reluctant to cede responsibilities to nurses and physician assistants,[110] who may in turn be reluctant to cede responsibilities to licensed practical nurses or medical assistants.[111]

Each primary care encounter involves a patient as well as a provider, so patient acceptance of greater independence and responsibility for clinicians other than physicians is critical. On one hand, many people lack experience with nurse practitioners or physician assistants, and some people feel strongly that only a physician can adequately meet their care needs.[112] On the other hand, a growing literature finds public acceptance of new modes of care and good quality of care in such encounters.[113]

*Discussion*

The addition of other categories of clinicians to the supply of primary care providers offers the opportunity for much more rapid response to impending access problems. It may also help alleviate the geographic imbalance in primary care access since there is some evidence that nurse practitioners and physician assistants are more likely to practice in shortage areas or with underserved populations.[114] Regulatory changes are the most straightforward of the actions needed. Attitudes within both physician and non-physician professions could be more problematic. Scope of practice reform would allow not require change in practice patterns, and clinicians who prefer the existing hierarchy of responsibilities could clearly maintain it. Broader dissemination of the findings about the capabilities of other clinicians along with increased exposure to non-traditional caregivers will likely help improve public attitudes. Patients will have the opportunity to "vote with their feet," and their reactions to change should be monitored and included in any evaluation of the new models of care. Among the most important policies

**Medical education for the new health care landscape**

One medical student describes the range of innovations in medical education: "Medical students at the University of Texas Medical Branch partner with physical therapy and nursing students in anatomy lab, early in their training. At the University of Pennsylvania, students visit the Wharton School of Business to learn how car manufacturing standards can be applied to health care. At Tufts and Columbia, medical students can enroll in a primary care track in a rural setting that is dedicated to skills like teamwork and quality improvement. Harvard Medical School's recently announced $30 million Center for Primary Care promises opportunities for students to work with clinicians on practice-improvement projects."[107]

As part of a tri-state project funded by the Robert Wood Johnson Foundation to improve nursing education, hospitals in New Hampshire identify gaps in nurses' knowledge and skills and provide feedback to nursing programs in local colleges.[108]

will be those that facilitate changes in education and training for new clinicians to promote understanding of cross-disciplinary capabilities and payment reform that rewards the productivity gains possible with more efficient use of all clinicians.

## Improve access through system transformation

Many observers believe that practice redesign and redefinition of workforce roles, like those discussed, are necessary but not sufficient steps to achieve high-level performance in medical care delivery.[115] The health care system is made up of many individual practices, subsystems, and institutions, each dependent on many others to achieve desired health outcomes. Improvement in the transactions among the components of the system could conserve resources and thus serve more patients. In the long run, sustained improvement in access seems likely to require changes beyond the practice level that promote a greater focus on health rather than health care.

Multiple approaches can coexist. There could be concentration of services into larger group practices, with intra-practice specialization and clinician ratios that reflect patient needs and clinicians' training. Such shifts occur within prepaid organizations, public and private. There could also be greater decentralization of care with, for example, urgi-centers, retail clinics, school-based services, workplace clinics, home visits, and telemedicine, offering broader geographic access with continuity of care assured through virtual integration of services across practices and levels of care through expanded HIT. The degree of consolidation or decentralization could vary widely, but all would share the common theme of shifting from specialty- and procedure-dominated care to patient-centered and outcomes-oriented care. The overall result would be greater access with smaller increments to resources than would be needed in the system as currently configured.

*Policy levers*

The goal of policy would be to promote health care delivery redesign, changes in payment policy across payers, and reorientation of education and training. It will likely take some trial and error to find a mix of levers that produce the health care workforce of the appropriate size and with the mix of skills that the revised health care system needs. Systems change embodies too broad a set of component shifts to be achievable by any one particular policy lever. The ACA provides the opportunity for experimentation with new uses of workforce where scarcer and more expensive resources, such as physician skills, would be reserved for the tasks that require them, new payment methods would emphasize quality over quantity and promote coordination of care across delivery sites, and new ways to organize care would allow the US system to achieve access and outcomes that better reflect the level of resources invested.[116]

Many examples of system transformation can provide guidance. Policymakers can look to what has been achieved in large delivery systems that must serve a defined population within a defined budget, using a more or less unified delivery system. Geisinger Health System, Kaiser Permanente, the Veterans Health Administration, Group Health, and Denver Health and Hospitals are indicative of the range of organizational settings and payment arrangements in which new models have succeeded. The specifics of these systems differ, but their underlying similarity is that they track and manage total resource use—rather than considering each category of personnel or delivery site in isolation from the others. Similarly, responsibility for overall outcomes is system-wide, in contrast to the piecemeal accountability of individual practice sites.

In some instances payors have taken the lead within a less organized fee-for-service environment, which is more typical of U.S. care delivery in general. For example, Community Care of North Carolina was developed with the active consent of providers partly to forestall implementation of more formal managed care in Medicaid.[117] BlueCross BlueShield is actively promoting medical homes in places as varied as South Carolina, North Dakota, Texas, and Maryland.[118] Aetna is working to promote better utilization of nurses among providers in its networks.[119]

Components of policy to promote system change include many of the same levers already discussed. Integration across care boundaries, however, will require additional attention to health information technology and to training of personnel capable of overseeing care coordination and transitions across levels or modalities of care.[120] Even more than for earlier approaches, more than one "best" approach seems likely,[121] and each needs rigorous evaluation in comparison with others compatible with its circumstances.

*Implementation challenges*

All the challenges already noted for practice redesign also apply here. If practice redesign precedes system transformation, then many of the thorniest issues may already be on the road to resolution. The ACA broadly sets the stage for change, but leaves most details to evolve through support for innovation and carefully monitored experimentation. The impetus will be provided by the need to meet new demands for access by the newly insured and possibly also by pressures to improve care and cost effectiveness of care delivery.

## Concluding Discussion: Promising Trends and Time Frames

The large expansion of insurance coverage coming in 2014 under the Affordable Care Act will greatly pressure the ability of the existing cadre of clinicians to provide good access to care, especially primary care. Expanded demand from more complete financing that is not balanced by an increase in supply is likely to raise prices or create shortages. At the same time, public and private payors are demanding slower growth in medical prices and improved quality.

As explained in this brief, logic suggests four paradigms of change in the delivery of medical care that could help meet this surge in demand without compromising quality or greatly increasing costs. All four of these approaches have face validity. That is, any of them could increase the supply of medical caregivers relative to demand for health services.

This paper did not find consistent information on the likely costs and benefits of any of these responses. We can note that relying solely on increased physician supply or on system transformation both involve long-range changes of little immediate impact. The other two approaches could act faster. Moreover, increasing physician supply by itself faces the difficult additional challenges: Absent changes in structures or payment incentives, the same motivations that have led most physicians into specialty practice will continue. Even more additional nurses and other complementary personnel will be needed than doctors. And simply putting more caregivers into the same system of care delivery offers no increases in productivity or efficiency that will keep the approach affordable over time.

System transformation is the least well specified of the four approaches. However, it appears to hold substantial promise of matching supply with demand while maintaining quality and affordability, but in the longer run.

The other two approaches are improved productivity in existing sites of care and greater autonomy for clinicians other than physicians. These represent intermediate options along the continuum of change that ranges from physician-centric, business-as-usual care to wholesale system redesign. They both have clear potential to improve care as well as access to care. They imply some new educational investment to train people in new teaming approaches along with development of strong arrangements for referrals. Their main costs are those of dislocation and culture change within caregiving sites. They also call for changes in the traditional scopes of practice allowed by state professional boards and payors' payment rules.

Given the wide variety of innovation we see occurring across the country, our intuition is that there is no one right way to go. Change seems likely to prove most effective where it best matches local cultures in medicine, among prospective patients, and in regulatory and business offices. We also expect that blended approaches will prove useful in most circumstances, rather than any one of the pure paradigms discussed here.

New models of care delivery were spreading even pre-reform with little encouragement from existing policies on payment and on workforce. Workforce and delivery innovation may be accelerated by reform, depending on how the ACA is implemented and on the extent to which patients and providers embrace or reject its various changes. There is some risk that new approaches will fall short, as did earlier attempts at system-wide change such as health maintenance organizations, community oriented primary care, integrated delivery systems, and managed care organizations.

Development and implementation of new models should proceed with sensitivity to the needs and traditional expectations of both providers and patients. Payment and regulatory incentives have to be supportive of the general nature of change, but will best serve by leaving details to the parties affected. Monitoring and evaluation are key elements of success; good evidence on the contribution of change to access, efficiency, and quality will be needed to help persuade both patients and providers who might resist new models of medical care.

Workforce policy needs to be flexible enough to allow innovations to flourish, or not, on their merits. The workforce provisions of the ACA are a start, and their non-prescriptive nature is a plus. Patience is also needed. It will take time to find the most appropriate models to achieve the promise of access inherent in the ACA's coverage expansion at a cost that will be sustainable.

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The views expressed are those of the authors and should not be attributed to the Robert Wood Johnson Foundation, the Urban Institute, or their trustees or funders.

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## Acknowledgements

This research was funded by the Robert Wood Johnson Foundation.

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