

Primary Care 2025

A Scenario Exploration



Institute for
Alternative
Futures

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THE KRESGE FOUNDATION

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a project of the Institute for Alternative Futures
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Introduction

Primary Care 2025: A Scenario Exploration is a project developed by the Institute for Alternative Futures (IAF) with support from the Kresge Foundation to consider the range of forces, challenges, and opportunities shaping primary care in the United States. Complex change comes as new technologies meet an aging society in a time of growing economic and political divides. This is not a time for reactive decisions based only on a view of past trends in health care. The inherently uncertain future of primary care in a time of great flux means that a systemic understanding of future possibilities is all the more important for informing what we do today and tomorrow.

With the advice and assistance of numerous experts around the country, IAF staff developed four Primary Care 2025 scenarios using the “Aspirational Futures” technique that IAF has developed over the last three decades. The four scenarios explore the different deployment of these advances along with parallel social and economic conditions along likely (Scenario 1), challenging (Scenario 2) and visionary (Scenarios 3 and 4) paths to the future. These scenarios are described in this document and are now freely available at <http://www.altfutures.org/primarycare2025>.

The hope is that the Primary Care 2025 scenarios will enable leaders in health care to make strategic decisions that more effectively take the future into account. In September 2011, IAF convened a national workshop in Alexandria, VA where leading authorities from around the country reviewed four scenarios and generated a set of recommendations in health education and other areas that are intended to support progress toward the realization of the more desirable scenarios. Those recommendations are presented in this document along with the scenarios themselves.

Why Scenarios?

Scenarios are different stories describing how the future may unfold. Scenarios force us to consider the systems surrounding our topic and to clarify our assumptions. Given persistent uncertainty, they bound that uncertainty into a limited number of paths. These paths help us think about different probabilities in a larger space of possibilities. People who work with scenarios find more creative options than those who develop plans based only on the past and present. Strategies, plans, and actions that are created can also be “future tested” against the different scenarios to assure robust initiatives rather than continued efforts based on outdated assumptions. Scenarios are the best method for systematically addressing the uncertain future.

IAF has developed various types of scenarios using the “Aspirational Futures” technique. This technique develops scenarios in three zones (see Figure 1, next page):

- A “zone of conventional expectation” reflecting the extrapolation of known trends, the expectable future;
- A “zone of growing desperation” which presents a set of plausible challenges that an organization may face, a challenging future; and
- A “zone of high aspiration,” in which a critical mass of stakeholders pursues visionary strategies and achieves surprising success. (Two scenarios are developed in this zone in order to offer two alternative pathways to surprisingly successful or visionary futures.)

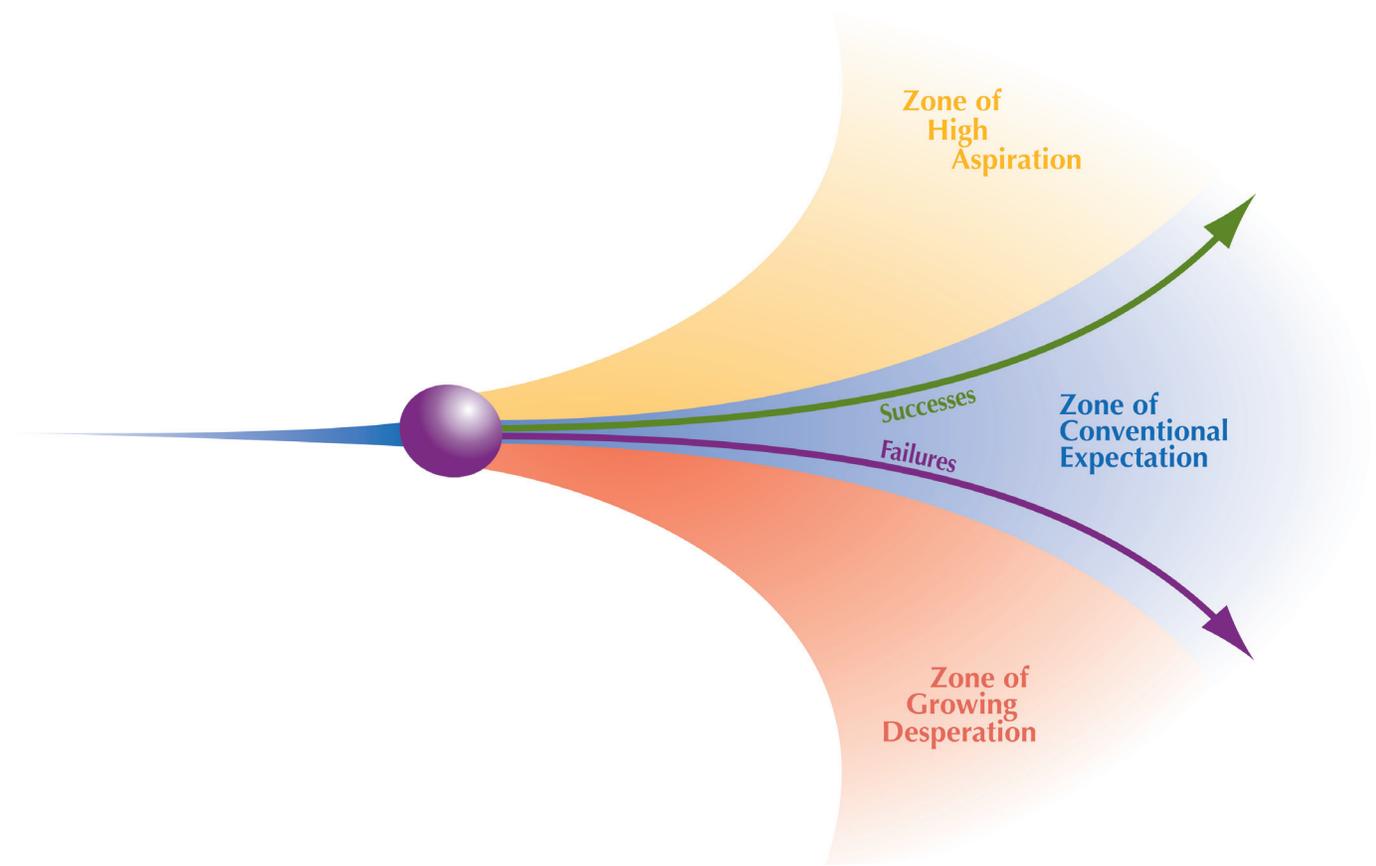


Figure 1. IAF’s “Aspirational Futures” Model

Development of the Primary Care 2025 Scenarios

Using the “Aspirational Futures” technique just described, IAF staff sought out to develop four Primary Care 2025 scenarios. At the outset, IAF staff identified and recruited an advisory committee of particularly knowledgeable and experienced individuals from health provider organizations, the health professions, policy and academia to inform its development of these scenarios. The members of the advisory committee are identified in Appendix 1.

To develop the scenarios, IAF staff performed research on the meanings of primary care and focused on the key forces shaping health care, particularly primary care, gathered the forecasts and analyses in the literature, and reviewed and integrated IAF’s health futures work. In addition, IAF staff conducted interviews with 56 leading experts, identified in Appendix 1, on primary care and related fields, often using preliminary forecasts of the key forces shaping primary care. These key forces and forecasts are included as Appendix 2.

IAF staff also convened focus groups with primary care providers in fee-for-service (FFS), managed care, community health centers (CHC), and other settings. Focus group participants were asked to consider primary care in their settings in 2025, exploring key forces and forecasts. As noted, the forecasts, as well as key forces shaping primary care, are summarized in Appendix 2.

IAF has learned to create a bias toward successful futures to counter the human tendency to emphasize the futures we fear. We hope that stakeholders within the primary care community will find these scenarios valuable as they grapple with today’s challenges and pursue opportunities to enhance primary care in the years to come. We anticipate that their strategies will be oriented toward the images of success described by these scenarios.

The four Primary Care 2025 scenarios developed by IAF and described in this report include a scenario for primary care from the “zone of conventional expectation” (Scenario 1); a scenario for primary care from “zone of growing desperation” (Scenario 2); and two scenarios from the “zone of high aspiration” (Scenarios 3 and 4). At the September 2011 national workshop, participants reviewed the Primary Care 2025 scenarios and provided their insights and recommendations which are summarized in this document.

As noted, the Primary Care 2025 scenarios deal with key forces shaping primary care and provide a range of futures for 2025. They cannot, given the limitations of time and resources for this project, deal with all related aspects and issues for primary care. Thus, for example, these scenarios do not provide detailed numerical forecasts for the primary care workforce in 2025, though we reviewed many extrapolative forecasts in the literature. Instead, this report forecasts the different types of primary care teams in the various delivery settings for primary care in 2025.

There are other areas worthy of more extensive futures exploration that relate to primary care, including health professional education, specific disease-related demand forecasts, effectiveness and quantitative estimates of the impact of prevention on demand, and quantitative estimates of the areas where care by digital coaches or similar tools would affect demand. Although these topics emerged as important during the development of the Primary Care 2025 scenarios, this report does not address them in depth.

Evolution of Primary Care in the United States

Primary care in the United States has taken many different forms. For example, while most independent primary care has been delivered in small practices, over one-third of American primary physicians are employed by health maintenance organizations, hospitals, CHCs, and other large health systems. Furthermore, primary care providers are unevenly distributed geographically, leaving shortages in many areas. Across these different settings, many primary care providers are dissatisfied that they earn less than their specialist counterparts. Many feel that they are on the “hamster wheel” that requires an ever increasing number of ever shorter patient visits.

But primary care is evolving. Even the notion of what primary care is and does has changed. In 1979, the Institute of Medicine characterized primary care as care that is accessible, comprehensive, coordinated, continuous, and accountable.¹ In 1992, Barbara Starfield defined primary care as care that is characterized by first contact, accessibility, longitudinality, and comprehensiveness.² More recently, great attention has been paid to the notion of a “medical home”—specifically, a patient-centered medical home (PCMH). Four primary care physician organizations—the American Academy of Family Physicians, the American Academy of Pediatrics, the American College of Physicians, and the American Osteopathic Association—identified these characteristics for primary care in the PCMH:³

1. **Enhanced access to care**—The practice offers same-day appointments, expanded hours and new options for communicating with clinicians (e.g., e-mail).
2. **Care continuity**—Patients see the same personal physician each time they visit.
3. **Practice-based team care**—A team of individuals at the practice level, including nonphysicians, work together to manage patients’ care.

- 4. Comprehensive care**—The practice provides or arranges for all of a patient’s health care needs (e.g., acute and chronic care, preventive screening, end-of-life care).
- 5. Coordinated care**—The practice monitors all other care received by their patients (e.g., from specialists, hospitals, home health agencies, nursing homes).
- 6. Population management**—The practice proactively reaches out to patients with chronic diseases to make sure symptoms are under control.
- 7. Patient self-management**—The practice teaches patients techniques to manage their chronic conditions on a day-to-day basis.
- 8. Health information technology**—The practice generates and exchanges electronic health information to deliver care, measure performance, and communicate with providers and patients.
- 9. Evidence-based**—Evidence-based best practices and clinical decision support tools guide decision-making.
- 10. Care plans**—The practice strives to help patients reach goals defined in partnership with patients and their families.
- 11. Patient-centered care**—Care is based on the needs and preferences of patients and their families.
- 12. Shared decision-making**—Patients actively participate in selecting treatment options.
- 13. Cultural competency**—The practice ensures information is conveyed to patients in a language and method they understand, taking cultural differences into account.
- 14. Quality measurement and improvement**—The physician is held accountable for performance.
- 15. Patient feedback**—The practice solicits feedback from patients to ensure expectations are being met and to facilitate practice quality improvement.
- 16. New payment systems**—The practice receives enhanced reimbursement.

The PCMH expands primary care’s roles and responsibilities and is spreading rapidly through the primary care community, including community health centers (CHCs). There are other primary care models emerging as well—among them, the comprehensive health home, and the community-centered health home (CCHH), that move further still (see forecasts in Appendix 2). The number and type of primary care providers in the United States is growing—including physicians, nurse practitioners, physician assistants, and others joining the primary care team. Moreover, the “what” and “how” of primary care is evolving. This evolution of primary care will be accelerated over the next decade as disruptive technologies emerge, are proven, and are distributed.

IAF used the forecasts in Appendix 2 to explore the types of primary care providers, what and how primary care is given, and other driving forces with our experts and focus groups. We discovered that for many issues writer William Gibson’s statement about the future is true: “The future is already here—it’s just not evenly distributed.” There are amazing changes in primary care that have already been put in place in certain areas. In addition there are many emerging advances that will be developed and deployed in the years before 2025.

The Primary Care 2025 scenarios developed by IAF and described in further detail in the pages that follow explore the different deployment of these advances along with parallel social and economic changes under conditions of conventional expectations (Scenario 1), under conditions of growing desperation (Scenario 2), and under conditions of high aspiration (Scenarios 3 and 4).

Notes

¹ Institute of Medicine, Committee on the Future of Primary Care, *Primary Care: America's Health in a New Era*, Donaldson et al. (editors) (Washington, DC: National Academy Press, 1996). Available at: http://www.nap.edu/openbook.php?record_id=5152&page=27. Accessed November 4, 2011.

² Cited in Institute of Medicine, *op. cit.*, 1996.

³ American Academy of Family Physicians (AAFP), American Academy of Pediatrics (AAP), American College of Physicians (ACP), and the American Osteopathic Association (AOA), "Joint Principles of the Patient-Centered Medical Home," 2007, and "Guidelines for the Patient-Centered Medical Home, 2011, cited in R. A. Berenson, K. J. Devers, and R. A. Burton, "Will the Patient-Centered Medical Home Transform the Delivery of Care?" The Urban Institute, Washington, DC, August 2011, Available at: <http://www.rwjf.org/files/research/20110805quickstrikepaper.pdf>. Accessed November 4, 2011.

Four Primary Care 2025 Scenarios

Overview of the Four Scenarios

Considering the current state of primary care and the forces and factors shaping it, the Institute for Alternative Futures (IAF) project team created four alternative scenarios describing primary care in 2025. The four Primary Care 2025 scenarios are as follows:

Scenario 1: Many Needs, Many Models

An “expectable” future in which policymakers promote health prevention and self-management and there is an expansion of the patient-centered medical home (PCMH) model with the adoption of sophisticated electronic medical record (EMR) systems and health information technology to improve the cost and quality of primary care.

Scenario 2: Lost Decade, Lost Health

A “challenging” future with greater economic difficulties prompting significant cuts in health care spending with payment reductions that leave many providers more dissatisfied, leading to even greater workforce shortages and decreased access.

Scenario 3: Primary Care That Works for All

An “aspiring” future where the “Triple Aim” of health care initiatives (i.e., enhancing patients’ experience of care, reducing per capita health care costs, and improving population health) transforms the PCMH into a community-centered health home (CCHH) that effectively contributes to population health. Advanced knowledge technologies, along with community mapping, permit the identification and remediation of health hazards.

Scenario 4: I Am My Own Medical Home

A different “surprisingly successful” future for primary care that bifurcates between advanced, effective, efficient, cost-competitive, integrated delivery systems and sophisticated and personalized self-care, supported by advanced knowledge technologies that allow people to take over many functions of primary care for themselves.

Scenario 1: Many Needs, Many Models

Scenario Details

Primary care improved significantly throughout the 2010s as payment system changes offered incentives for collaborative care using the PCMH model. Reductions in payment rates to health care providers by government and private payers, along with changes in payment approaches, forced providers to reduce costs. Providers accomplished some cost reductions by focusing on prevention, shifting tasks to nonphysician providers, and increasing the share of patient contact that occurred online or by phone. Such efforts were coordinated using EMRs that captured patients' health data and used genetic and other personal information to anticipate the health challenges they might face.

With the establishment of health insurance exchanges mandated by the Patient Protection and Affordable Care Act (ACA) of 2010, many employers terminated their company health insurance benefit plans. The effectiveness of the health insurance exchanges in increasing access and reducing cost, however, varied widely from state to state. Health insurance exchanges in some states enhanced quality, pressed for lower cost and promoted competition. In other states, the exchanges offered little more than options that had already been available without encouraging better quality or lower prices. Some states moved to a single payer for the state—a move that tended to increase health care quality and constrain costs. A significant portion of Americans fulfilled the individual insurance mandate by buying consumer-directed health plans (CDHPs), which left them paying for much of their primary care out of pocket.

A shortage of primary care providers in the United States continued to be a problem. To compensate for the shortages, primary care teams expanded and most team members worked at the top of their licenses. Nurse practitioner-managed primary care increased in many states. As the primary care teams broadened, more nurses, social workers, community health workers, and pharmacists joined the team. Many of the primary care teams added care in virtual space on the Internet to their phone and email interactions with patients. The primary care provider shortages were also mitigated somewhat by the availability of support technologies like IBM's "Dr. Watson" and its successors and competitors, which provided clinicians with easy access to a wealth of proprietary and public health information.

Scenario Highlights

- The patient-centered medical home (PCMH) model expands, and sophisticated electronic medical record (EMR) systems improve the quality of primary care.
- Federal and state leaders adopt strategies to promote the prevention of health care conditions.
- Employers reduce their health insurance rolls, and employees increasingly use health insurance exchanges mandated by the federal Patient Protection and Affordable Care Act (ACA) of 2010 to buy health insurance (including many employees seeking high-deductible, catastrophic care plans).
- Primary care teams broaden, and nurse-managed health centers expand.
- Primary care improves in aggregate, but disparities in care persist among some poor, minority, and rural populations.

EMRs reached maturity in the late 2010s with new versions that captured genetics, injury history, and stress levels, along with social and economic circumstances. This information enabled the development of personalized “vital signs” that describe health for each patient, including a wider range of bio-physical, mental, neurological, and place/environmental measures. These signs were tracked, in many cases continuously, using biomonitors that could be worn or slept on. Some used breath, saliva, interstitial fluid, or urine. The data for any of these biomonitors was transmitted automatically to the patient’s EMR. This data included biomarkers of inflammation, DNA damage, reactive oxygen species, mental health functioning, and allostatic load (a measure of physical consequences of a person’s chronic stress). This enhanced the ability to predict or preempt major disease.

This expanded knowledge was increasingly made available to patients through digital health agents that helped patients take care of themselves and navigate the health care system. These systems were the descendants of IBM’s “Dr. Watson,” originally designed to help providers interpret their patients’ conditions, prognoses, and prescriptions. A variety of technology companies began offering similar systems to patients themselves. Many included a gaming or social networking component that allowed patients to share information with other people with similar health profiles and to manage their health in a context that was fun and engaging. These systems increasingly acted as health coaches, using simulations, models, and other techniques to guide their users toward healthy behaviors.

Primary care in the United States in 2025 varies by the level of integration that patients experience in their systems of care and by the nature of payment to health care providers, as described below:

- **Integrated systems**—Accounting for 40% of primary care, integrated systems are responsible for all care for a global fee. These integrated systems include managed care organizations such as Kaiser Permanente, as well as a large number of accountable care organizations which were built around local hospitals, multispecialty clinics, and some insurance organizations. The integrated systems all have advanced EMR and analytics. Most provide their members with very effective personal health avatars (digital coaches), focus on prevention and can enhance the health of populations enrolled in the fully integrated systems.
- **Semi-integrated systems**—Another 30% of Americans receive their primary care through semi-integrated systems that receive fee-for-service payments plus incentives or bonuses for health improvements among their patients. They also receive monthly payments for each person in their panel for providing preventive services and being available for phone and email contact. Primary care providers in this group have well-developed EMRs. Many provide patients with their health avatar (or can integrate the patient-acquired avatar’s information into their system). Most are certified as PCMH and have well developed primary care teams. Most community health centers are in this group.
- **Fee-for-service**—The remaining 30% of primary care occurs in fee-for-service models. For the affluent, “concierge” practices offer primary care to closed panels of patients who pay an additional fee for preferred access to providers via phone, e-mail, virtual reality, and in-person visits. Patients of most concierge practices can buy sophisticated health avatars linked to the practice. Some solo and small group physicians remain, particularly in rural areas and poor inner-city neighborhoods. They have rudimentary EMR systems (enough to qualify for meaningful use) and have had to struggle with flat or declining payments from Medicare, Medicaid, and private insurance for much of the last decade. The last group of fee-for-service providers are the retail clinics or “minute clinics” that offer low-cost urgent care. Most of these are part of national pharmacy chains or “big box” stores.

Although primary care has improved in aggregate, the benefits are not evenly distributed. Many poor and minority populations, for example, are stuck with early-version EMRs that capture information for billing and some administrative purposes but fail to improve coordination of care. Some poor and minority populations get higher quality care through CHCs, which tailor user-friendly digital coaches and health avatars to the culture, knowledge level, interest level, and learning style of their patients. But most poor and low-income patients outside of CHCs don't have access to this care. These populations often cannot afford the basic biomonitoring technologies that help to predict and preempt disease.

The combination of new technology and collaborative models has made quality primary care at the middle and top end of the market available to most Americans at a lower cost than health economists had projected back when health care reform passed. Health care accounts for 19% of GDP in 2025, reflecting the growing morbidity of an older society. Many experts expect this to change as advancements in the PCMH model continue to bring down costs, and as the lessons from primary care extend to other parts of the health care system. At the same time, there is a growing desire to reduce the health disparities that continue to affect low-income and minority populations.

Scenario 2: Lost Decade, Lost Health

Scenario Details

Hopes for even a slow economic recovery in the United States were dashed in 2012 and 2013. Global debt crises pushed the world economy back into an enduring recession that was dubbed “The Lost Decade and a Half.” All economic sectors in the country suffered, but health care was especially hard hit, shrinking faster than the rest of the U.S. economy. Primary care providers struggled to maintain income, and while some thrived most lost ground in the fragmentation that followed the failure to implement most of the Patient Protection and Affordable Care Act (ACA) of 2010.

By 2018, when payments on the national debt equaled Medicare costs, and international creditors raised interest rates and slowed lending, a crisis ensued. The federal government instituted across-the-board cuts of 10% in all its programs. This was sufficiently successful in stemming the flow of red ink in entitlements, that Congress cut another 10% in 2022, but it also meant that many Medicaid and Medicare “beneficiaries” had difficulty finding a provider.

The health insurance exchanges that were a key element of the 2010 ACA were successful in only a few states. In most states they were either underfunded or were unable to offer affordable, high quality options. However, businesses used these exchanges as an excuse to off-load the expense of providing insurance that employers had long seen as a drain on profitability. Given the unaffordability of health insurance for many Americans, the U.S. Congress enacted a series of temporary delays on the ACA’s individual health insurance mandate that eventually constituted a de facto repeal.

Earlier estimates of health care workforce shortages had failed to anticipate the retirement of many baby boomer doctors following even deeper cuts to Medicare and Medicaid payments than had been seen in the 2000s. These shortages were particularly problematic given the aging of the large boomer cohort into the stages of life when health care needs became more pronounced (in 2025, there are 60% more 65+ than in 2010). As a result, many health care providers operated beyond the scope of their licenses and a thriving black market for care grew after 2015 with both online and in-person offerings. Stories circulate that many caregivers perform procedures including providing diagnoses and performing minor surgeries that only doctors are licensed to provide, but many more people are desperate enough to take risks due to the hard times and shortages.

Scenario Highlights

- Recurring economic challenges prompt significant cuts in federal health care spending.
- Payment reductions leave many health care providers ever more dissatisfied. Many providers retire as soon as they can (many providers cannot retire). Shortages in primary care providers leave many insured individuals without access to actual care.
- The predominantly fee-for-service (FFS) primary care providers split between “concierge” practices for the rich and “minute clinics” for the poor.
- Integrated and semi-integrated health systems become the provider of choice for urban, middle-class consumers and those with access to community health centers.
- Many uninsured Americans turn to online primary care solutions of variable quality and pedigree.

The gap in access to quality health care between rich and poor grew ever wider every year, and primary care providers and insurers had to determine for which population their business models could work, especially as those serving the underinsured sustained ongoing cuts in government funding. As a result, in 2025 most primary care takes place in one of three settings:

- **Premium fee-for-service**—High-quality primary care providers increasingly created “concierge” practices in affluent communities, offering more sophisticated services like biomonitors and access to sophisticated health knowledge support systems. By 2018, personalized preemptive medicine had made major inroads against cardiovascular disease and cancers among those who could afford the care. Concierge practices offered their patients digital health coaches that integrated diagnostics and preventive regimens based on genomic, proteomic, and metabolomics profiles. By 2025, these practices accounted for 15% of primary care in the United States
- **Low-cost fee-for-service**—On the other side of the gap, primary care providers had neither the time nor the technology to enhance their patients’ health because they had to treat the growing illness burden. The large number of unemployed, uninsured, and underinsured Americans began overwhelming the diminishing supply of primary care providers in many different settings. Retail clinics in large pharmacies and “big box” stores proliferated to fill the gap in primary care, but the limited purchasing power of the poor and middle class left people looking for less expensive options. Insurers increasingly pushed high-deductible catastrophic care health plans that left individuals and families paying for most primary care out of pocket.

Many doctors, nurses, and pharmacists who had hoped to retire in their sixties had to work into their seventies. The primary care workforce in 2025 largely practices in small groups or as solo practitioners, but there are not enough to meet demand. Their fees are largely paid by lowered Medicare and Medicaid payments (for those who still see these patients), and out-of-pocket cash payments from those with catastrophic insurance, or who are uninsured. Local primary care providers who have not switched to concierge care or whose patients could not afford the switch remain on the hamster wheel—running faster at five minutes a visit. Medicare and Medicaid patients face long lines, except where they can access community health centers (CHCs that offer highly effective primary care teams).

- **Integrated and semi-integrated systems**—Approximately 30% of primary care takes place in integrated health systems such as Kaiser Permanente, which use global payments covering all care. Their payments have been reduced by large payers, but they have made up for it with their quality improvement systems. These systems have become the provider of choice for urban, middle-class Americans who can afford them. About 20% of primary care occurs in semi-integrated settings in which a mix of FFS and pay-for-performance payments shape care in many group practices and CHCs.

Many Americans rely on the growing number of “virtual doctor” products offered by technology companies, though many elders and some minorities have never trusted these products. The concierge systems were able to offer high-quality knowledge supports that helped patients get highly personalized answers to any health question with software linked to their electronic medical records (EMRs). Likewise systems were essentially given away so that vendors working with the avatar developer could market to the patients using the free avatar. In 2020, this situation led to a terrible tragedy as a supplement vendor developed a new herbal product and marketed it through one of the lower quality avatars, EconoDoc. After the herbal product was successfully promoted by patients’ avatars—an undiscovered and lethal interaction between the herbal product and an often used prescription medicine was discovered. Three thousand people died as a result. Regulators and industry associations have promised that the safety of these give-away primary care avatars will improve, but for many Americans, the recall of EconoDoc just meant there was one less option for their primary care.

Scenario 3: Primary Care That Works for All

Scenario Details

Over the 15 years to 2025, primary care in the United States was reshaped by a series of policy and delivery system measures that focused on value and equity. The most significant of these measures was the aggressive expansion of the PCMH model as a means to improve collaboration among providers and to reduce cost. PCMH expansion was driven by a shift in reimbursements, first by Medicare, then by most states for their Medicaid populations, and then by private insurers changing from fee-for-service to risk-adjusted global health care payments. This approach gave provider teams a single capitated payment that was calculated based on population data that considered the relative health risks of the patient. These payments gave providers incentives to optimize health outcomes while reducing costs.

The health insurance exchanges that had been mandated by the Patient Protection and Affordable Care Act (ACA) in 2010 proved effective in expanding the range of available insurance options for individuals and families while reinforcing this shift to global payments. By 2018, the exchanges had yielded near universal health care coverage. In some communities where digital health coaches were not widely deployed, shortages of human primary care providers made it difficult to obtain care. With effective health insurance exchanges in place, many employers backed away from providing health care insurance benefits, though most employers offered support systems and rewards for healthy behaviors that reduced medical care demands.

By the mid-2010s, policymakers, providers and the public fully supported the “Triple Aim” (i.e., enhancing patients’ experience of care, reducing per capita health care costs, and improving population health) as the goal and focus of health care initiatives. The objective of improving population health required an explicit system-wide focus on the social determinants of health, which had long been known to have a greater effect on health outcomes than the health care system itself.

The resulting policies accelerated the evolution of PCMHs into CCHHs, which provide primary care to 85% of the population. This care is fully capitated in 2025. About 10% of the population receives fee-for-service (FFS) “concierge” care aimed at the very rich, who have insurance but pay additional fees for special services; 5% of the population remains uninsured in 2025 and gets primary care, if and when they get it, from emergency rooms and community health centers (CHCs).

Scenario Highlights

- Policymakers in the United States actively pursue the “Triple Aim” in health care initiatives: (1) enhancing patients’ experience of care; (2) reducing per capita health care costs; and (3) improving population health.
- The patient-centered medical home (PCMH) evolves into community-centered health home (CCHH) that focuses on the individual and the community and that effectively leverages the social determinants of health at the community and neighborhood levels.
- Primary care team expands to include social workers and community health workers.
- Advanced knowledge technologies and community mapping allow for identification and remediation of “hot spots” of ill health.
- Payment systems use sophisticated statistical methods and apply the decision principle, “If it’s smart, we’ll pay for it.” Most payments to health care providers are capitated payments with additional rewards for improved health outcomes.

■ **Community-centered health homes (CCHHs)**—In CCHHs, health care providers deliver primary care while also working with public health officials and the community to create the social and economic foundations of health throughout the community. The CCHH primary care team has grown to include social workers, community organizers, and others with the skills required to leverage the social determinants of health. By addressing factors such as neighborhood safety, the quality of the food supply, and physical activity, CCHHs have reduced medical costs while increasing neighborhood wealth.

CCHHs also used technology effectively to improve the primary care they delivered. All patients have an electronic medical record (EMR) that captures genomic, epigenetic, proteomic, and other health data, as well as information on lifestyle, employment status, education, and residence location. These EMRs provide a comprehensive view of a patient’s health status and prospects, and are updated with biomonitoring data and alerts regarding health issues affecting the community. Members of the care team interact with patients via phone, e-mail, and virtual reality, or by looking over the virtual shoulder of the patient’s “health advocate avatar.” These avatars are digital health coaches that are configured with a patient’s health information and routinely and effectively interact with the patient.

At the community level, CCHHs use sophisticated data mapping platforms to better understand the community dynamics that drive health. The maps allow CCHHs to identify “hot spots” of ill health and to take part in collaborative strategies (with the community, public health, employers, schools and others) for their remediation.

Many CCHHs have found that a disproportionate share of their reimbursement is attributed to poor or minority patients within their panels. The risk-adjusted global payments effectively reflect the increased health risks of low-income individuals and families with greater rewards as outcomes improve. To improve outcomes however, CCHHs have found that they must also address a wider range of medical and social factors to serve these patients. Effective providers move upstream and collaborate in effecting community changes that improve health. The payment systems that support CCHHs rely on statistical methods that use population data to calculate risk-adjusted global health care payments. These payments reflect the expectable costs and outcomes given a patient’s health characteristics and history. When providers deliver better outcomes at lower costs, they keep the savings. This approach has proven critical in reorienting primary care toward value and moving upstream to affect the social determinants of health.

Managed care organizations embracing the “Triple Aim” were among the leaders in moving toward the CCHH model. Other leaders included CHCs. Those who have tracked the evolution of CCHHs point to CHCs as trailblazers for many of the methods that have now become widespread. CHCs became leading CCHHs, and in most communities the CHCs are linked to Accountable Care Organizations. This ensures seamless transfers when tertiary care is needed. CHCs continue to serve low-income and marginalized populations, but have become providers of choice in many areas even drawing patients with high-end insurance who appreciate belonging to diverse communities. All integrated and semi-integrated providers deploy digital health coaches or avatars and other technologies that are tailored to the culture, knowledge levels, interest levels, and learning styles of their patients.

■ **Concierge practices**—In 2025, primary care for 10% of the population is still delivered through a fee-for-service (FFS) concierge model that offers the newest health care innovations to the very rich. Often, these innovations are later adopted by the CCHH providers. A small number of low-end FFS providers offer care to people who want to remain outside community care and reject the benefits of systems supporting health.

For most Americans looking back at the acrimonious health care debates of previous decades, there is now pride in having established a primary care system that improves health for individuals and for communities.

Scenario 4: I Am My Own Medical Home

Scenario Details

The U.S. economy slowly recovered from the recession, but persistent budget deficits produced periodic bouts of acrimony and deadlock within the federal government. Unemployment remained high and pressure on health care expenditures remained intense. The Patient Protection and Affordable Care Act (ACA) of 2010 was largely implemented, but there remained wide variation in how states supported its components. Health insurance exchanges were established, accountable care organizations (ACOs) expanded, access to insurance increased, and parity was achieved between Medicaid and Medicare fees for a few years. The most important changes in primary care, however, did not come from these policy reforms.

More important were the disruptive technologies that developed throughout the 2010s that put more and more control of health and health care into the hands of patients. New smartphone “apps” monitored a person’s diet, physical activity, and sleep patterns, and collected this data in personal health records (PHRs). New biomonitoring devices that measured blood pressure, blood chemistry, and even blood flow noise within the body could alert people to changes in their health. Lab tests conducted by the device at home, or sent by mail to a lab, provided a low-cost alternative to similar services previously provided in formal health care settings. Social networks, both in large population platforms like Facebook and Google, and in targeted networks like PatientsLikeMe, helped to formalize and extend the informal relationships that had always provided a large share of people’s health-related information.

At the same time, many technology companies recognized the value of “owning the patient” in health care. New technology platforms gave consumers access to a wealth of health advice through a user interface that led them directly to what they needed to know. Many consumers chose to configure these tools using the data contained in their PHRs, which strictly adhered to required ethical guidelines and interoperability standards. Companies offering these tools were following the example of Google, Facebook, and WebMD, which had been successful by giving away their main product in exchange for customer information, advertising revenue, and the opportunity to sell higher-value products to the customer in the future. Thus, for example, some companies offered avatar-based health coaching for free, then sold personalized physiomic analysis as an add-on service.

As a result, a significant proportion of the population now administers much of its own primary care, relying on catastrophic coverage for great risks and self-referring through avatars for enhancements, such as cosmetic surgery or performance boosting procedures. Patients easily navigate health knowledge systems to diagnose conditions,

Scenario Highlights

- Advanced knowledge technologies allow individuals using self-care to take over many functions of primary care.
- Consumers buy health-related products and services through competitive markets that offer high transparency of costs and quality; health costs are significantly reduced.
- The insurance market divides between consumer-directed health plans and integrated health systems, with some remaining fee-for-service (FFS) options.
- Integrated health systems provide primary care to patients who prefer a whole package of care services, including procedures and hospitalizations, from a single entity with competitive annual fees.
- The demand for professional primary care providers declines.

access the appropriate tests, and even obtain the appropriate medications. The U.S. Food and Drug Administration switched many medicines from prescription to over-the-counter status, because the increasing transparency of data and massive electronic medical record (EMR) collections allow identification of efficacy, side effects and related issues. This information supports the ability to target problem side effects quickly. Avatars use this information to personalize recommendations and warnings based on genomic and proteomic profiles. Even people with multiple chronic diseases can largely take care of themselves with their avatars, often aided by using social networks to access the experiences of others with similar conditions and taking advantage of the sophisticated clinical pharmacy components of their health avatar's knowledge base and protocols.

Consumers routinely choose where they want to be along a spectrum from “going it alone” to relying completely on a primary care provider. Approximately 30% of Americans have no long-term relationship with a primary care provider in 2025. Their health avatar and social networks provide much of their needed information and recommendations. Some people use low-cost subscription services that offer the discipline of a provider relationship—e.g., by sending e-mail reminders, managing health data, configuring new health apps, and offering periodic health tips. Still others use the self-care technologies, but do so in the context of a relationship with a primary care provider, who confirms the diagnosis, prescriptions and motivational reinforcement from the patient's avatar/coach.

These changes occurred in the midst of a reshaping of the insurance industry that continued throughout the 2010s. Although the health insurance exchanges mandated by the Patient Protection and Affordable Care Act (ACA) of 2010 were established on schedule, they were not the key drivers of this change. More significantly, many employers shifted to a defined contribution health benefit rather than provide the comprehensive health insurance benefit they had offered in the past. Simultaneously, many insurers bought up medical practices in order to create accountable care organizations and manage costs at the point of delivery. The result is a market that is made up primarily of two segments.

The first segment of the market, about 40% of the U.S. population, relies on consumer-directed health plans (CDHPs) while using advanced self-care tools. These tools include user agreements to embrace the “Triple Aim” (enhancing patients' experience of care, reducing per capita health care costs, and improving population health). To support population health, the self-care tools share the person's health data with secure and trusted data aggregators. Such sharing is done with ethical constraints and protections of privacy, security and discrimination. The availability of aggregated data is important for tracking population health and producing rapid comparative effectiveness and safety studies.

The second major segment of the market, also 40% of the U.S. population, wants more traditional health care providers and the personal relationships they bring. They can afford the more costly health insurance premium payments and choose to go with integrated health systems, either through established players like Kaiser Permanente, or newer options that have evolved with the growth of hospital, insurance, or multispecialty practice led ACOs.

Consumers' health-related buying decisions in 2025 are supported by transparency of available costs and quality data on virtually all health care providers. This transparency was aided by health care-focused sites on the model of Yelp and Angie's List that gave consumers access to ratings of various providers as well as their prices, and ultimately their outcomes (as they became publicly available). This knowledge gives individuals and families with particular conditions (e.g., childhood asthma, advanced diabetes, rare neurologic conditions) the ratings on providers for those specific conditions. Consumers can learn which providers do best with different types of patients (e.g., infants, elderly people, people of a particular culture, and people with various degrees of impairment). These

programs let buyers consider the track record and interests of primary care teams and providers within their chosen system—some patients choose team providers close to them in age, with similar movie or entertainment preferences. Thus, consumers in 2025 have the ability to check for quality and cost of the providers or provider teams within health care systems and assess what is the best value and fit for them.

The expansion of self-care has forced other forms of primary care to compete to survive. The integrated systems, which account for 40% of the population, have lowered their premiums significantly and added discounts for health-related products and enhanced electronic tools for patients. By 2018, integrated systems were given a boost in market share by states, which largely move their Medicaid programs into capitated payment approaches.

“Concierge” practices, which account for 10% of primary care in 2025, have had to add high-value offerings like personalized physiome models and simulations for predicting health. Even with these offerings, it is only the most charismatic and well recognized providers who can maintain a profitable concierge practice with the relatively small numbers of patients they allow in their panel.

About 10% of the population (the near poor, individuals removed from Medicaid in periodic retrenchments, and individuals with income who choose to fully avoid insurance) remains uninsured, some purchasing wisely when they do access care and have the money, the rest continuing to use emergency rooms and community health centers.

By 2025, primary care in the United States has improved significantly. Many Americans use self-care tools that obviate the need for a long-term physician relationship. Others continue these relationships with highly effective primary care teams and strong personal relationships as well as effective avatar support and coaching. As a result, there is less in-person interaction overall with providers. The demand for professional primary care providers has diminished significantly, leaving many primary care doctors wondering if it might not have been smarter to choose a specialty after all.

Comparative Matrix

Dimension	Scenario #1 Many Needs, Many Models	Scenario #2 Lost Decade, Lost Health	Scenario #3 Primary Care That Works for All	Scenario #4 I Am My Own Medical Home
Leading Definitions of Primary Care	Patient-centered medical home (PCMH)	PCMH for integrated systems, community health centers (CHCs)	Community-Centered Health Home (CCHH) for most providers PCMH for concierge practices	PCMH plus “Triple Aim” (i.e., enhancing patients’ experience of care, reducing per capita healthcare costs, and improving population health) for integrated delivery systems Accepted by most people in consumer-directed health plans (CDHP), as well
“Triple Aim” as Quality	Accepted by most integrated systems; populations usually mean their patients	Pursued by CHCs and some integrated systems	Central focus of almost all primary care	Central focus of integrated systems and supported by most CDHP consumers
Shortages of Primary Care Providers	Worsening shortages of primary care providers as the Affordable Care Act of 2010 adds 32 million and elderly population grows 60%	Worsening shortages of primary care personnel as cuts in Medicare and Medicaid hasten retirement of those providers who can retire	Shortages of primary care personnel alleviated by growth of primary care team members and addition of online avatars	Surplus of primary care personnel as sophisticated self-care and avatars decrease demand
Evidence-based Medicine	Grows slowly after electronic medical record (EMR) systems make evidence-based medicine easier	Spotty	Powerful, ubiquitous, transparent, and enables price and outcome comparison of providers, modalities, and drugs	Powerful, ubiquitous, transparent, and enables price and outcome comparison of providers, modalities, and drugs, including complementary and alternative medicine
Employer-provided Care/ Insurance (decline among adults from 49.2% in 2008 to 45% in 2011)	Employers continue dropping coverage and shifting to CDHP As health insurance exchanges function, more employers shift to defined contribution or drop health insurance benefit altogether	Employers continue dropping health insurance for employees or shift coverage to defined contribution	As health insurance exchanges function well, most employers eliminate defined health insurance benefit plan; some maintain defined contribution; others drop all health insurance benefit Most employers give incentives for health behavior independent of health care	Little employer-funded comprehensive health insurance benefit after health insurance exchange functioning

Comparative Matrix (continued)

Dimension	Scenario #1 Many Needs, Many Models	Scenario #2 Lost Decade, Lost Health	Scenario #3 Primary Care That Works for All	Scenario #4 I Am My Own Medical Home
<p>Payment Forms</p> <p><i>In fully integrated systems (accountable care organizations [ACOs], capitated)</i></p> <p><i>In semi-integrated systems</i></p> <p><i>In fee-for-service (FFS), not concierge</i></p> <p><i>In concierge FFS</i></p>	<p>40% - most paid with global payments (per member per month)</p> <p>30%</p> <p>20%</p> <p>10%</p>	<p>30%</p> <p>20%</p> <p>35%</p> <p>15%</p>	<p>85% capitated with risk-adjusted, global healthcare payments; lead to CCHH</p> <p>5% uninsured emergency room and CHCs</p> <p>10%</p>	<p>40% capitated with risk-adjusted, global healthcare payments</p> <p>40% CDHPs, with effective health avatars guiding self-care and purchasing of primary care services when needed; and 10% uninsured, who rely on emergency rooms and community health centers</p> <p>10%</p>
<p>Transparency of Prices and Outcomes of Provider Systems and Primary Care Teams, Individual Providers</p>	<p>High</p>	<p>Enhanced</p> <p>Especially for concierge services, integrated and semi-integrated providers</p> <p>Though freeware obfuscates some price/outcome comparisons</p>	<p>Very high</p>	<p>Very high</p> <p>Outcomes include Triple Aim/ community health</p> <p>Transparency enables more effective self-care/CDHP choice of providers and services</p>
<p>Knowledge Tech/ Decision Support</p>	<p>Biomonitoring integrated to EMR and care protocols</p> <p>Consumer personal health records (PHRs) and integrated EMRs</p> <p>Health avatars, digital coaches</p> <p>New vital signs and community health measures</p>	<p>EMRs are not interoperable</p> <p>Little consumer uptake (due to both cost and relevance)</p> <p>New vital signs, biomonitoring, most effective avatars, available for the affluent</p>	<p>Interoperable EMRs that include genetic, epigenetic, biomic, community and other factors</p> <p>Health avatars supporting individual and community health</p>	<p>Interoperable EMRs that include genetic, epigenetic, biomic, community, and other factors</p> <p>Health avatars supporting individual and community health</p> <p>Quality standards set for avatars, both sold and given for free</p>

Comparative Matrix (continued)

Dimension	Scenario #1 Many Needs, Many Models	Scenario #2 Lost Decade, Lost Health	Scenario #3 Primary Care That Works for All	Scenario #4 I Am My Own Medical Home
Community Health Centers (CHCs)	Affordable Care Act of 2010 expansions of CHCs Most CHCs are advanced health homes by 2018 CHCs join accountable care organizations (ACOs) Some CHCs lose their identity; some lost patients to ACOs and to other providers in state exchanges; other CHCs do well in the state exchanges	CHCs continue to do a lot with a little, deliver high-quality care; in some communities CHCs compete with leading primary care providers But after the two rounds of 10% cuts, many CHCs close, particularly newer CHCs and CHCs in states with drastic Medicaid cuts	CHCs lead in defining the CCHH, shaping community conditions Networks of CHCs develop culturally appropriate health avatars CHCs own some managed care plans; participate in ACOs Community health workers are major primary care team members	Lead in developing the CCHH Some compete with leading primary care providers Provide competitive fee-for-service schedules for CDHP shoppers Develop appropriate avatars and biomonitoring tools for their patients Complementary and alternative medicine practitioners and modalities integrated Community health workers are major primary care team members
7% of primary care, or 20 million patients in 2010	50 million patients in 2025	30 million patients in 2025	30 million patients in 2025 as universal access moves some patients to other providers	50 million patients in 2025
Role of Social Determinants of Health	SDH integrated into the more complex “vital signs” that providers use to track patients’ health	Little attention to SDH beyond CHCs	SDH role understood and built into care protocols, data gathering SDH a major focus of CCHH provider activities	SDH role understood and built into care protocols, data gathering SDH a major focus of CCHH provider activities
Health Care Share of U.S. Gross Domestic Product (GDP)	19%	15%	18%	12%

Primary Care 2025: National Workshop

Background

On September 19–20, 2011, leading health experts from across the United States participated in a national workshop, *Primary Care 2025: A Scenario Exploration*, convened by the Institute for Alternative Futures (IAF) in Alexandria, Virginia, to explore scenarios developed by IAF for primary care 2025 and develop recommendations. Workshop participants realized that the opportunity to shape a better future is here now. They explored the four scenarios described in the previous section: a likely future for primary care that is neither healthy nor affordable; an even worse future indicating a failure of primary care that will make the future much more desperate; and two futures where primary care evolves and improves, enabling a far healthier America with affordable care that other nations will want to emulate. They explored the implications of each scenario and reflected on their preferred future.

From these discussions, leaders at the national scenario workshop generated several recommendations focusing on five areas related to primary care:

- A. Health professional education;**
- B. Individual and community capacity and accountability for health;**
- C. Health information technology;**
- D. Population health; and**
- E. Political and cultural change**

Recommendations and Robust Strategies

The following recommendations for strategies and actions to pursue beginning in 2012 are intended to direct the momentum in primary care beyond the most likely future to more successful futures. They deal with four areas related to primary care (A-D, above), as well as a fifth area (E) that considers how a broader social movement on health could help the country weather the challenging times ahead.

One benefit of considering a wide range of alternative futures is that some strategies emerge that will be effective no matter what the future holds. These “robust” strategies that will advance primary care in multiple scenarios are listed by category below:

A. Health Professional Education

Changes in funding for health professions education

1. Reprioritize current governmental funding of health professions education. Currently, funding is primarily in the form of graduate medical education (GME) focused on physicians (residencies and internships). GME funding must be expanded so that the present level of primary care physicians can be maintained or expanded, while supporting the training of an expanded number of nurse practitioners, physician assistants, and others. Funding to hospitals is funneled through the Centers for Medicare and Medicaid Services (CMS), and some states provide funding through Medicaid. The Health Resources and Services Administration (HRSA) provides grant funds to schools of medicine, osteopathic medicine, nursing, dentistry, veterinary medicine, optometry, podiatry, and pharmacy and community health centers (CHCs). There is little or no funding from CMS for physician assistants, nurse practitioners, nurses, and others. Thus the specific recommendations are to:

- Change the distribution of expanded funds to support the full range of primary care team members and vary training location to include primary care settings.
- Identify opportunities to reduce the costs of medical school and other health professions schools.
- Remove regulatory barriers to executing flexible GME training programs and expand training venues. Address several of the limitations that currently exist within CMS rules for expanding applications of Medicare GME funds to non-hospital care sites. Invite CMS to use its authority to fund innovative GME demonstration projects.
- Explore adding additional payers who benefit from having an increased supply of primary care providers, including foundations, public and private organizations, private insurers, partnerships, and corporations.

The funds that are now concentrated for GME training in hospitals need to be redirected to give priority to the nation's needs in terms of the primary care health professions workforce. The Teaching Health Center program, administered by HRSA exemplifies this recommendation, but the funding ends in 2015. The time limitation and restrictive eligibility requirements make the program difficult to administer. This type of program should be expanded.

Approximately 0.1% of Americans in an average month receive health care at an academic referral center, yet the training is concentrated there. Meanwhile, 11.3% of Americans visited a primary care physician's office each month. Outpatient primary care is vastly different from that given in tertiary academic centers.⁴ This reallocation toward primary care training requires addressing GME training requirements, admission criteria that favor students oriented to primary care in rural and inner-city settings, and altered faculty and infrastructure designs for residencies (e.g., allow physicians to be taught and supervised by nurses, midwives and/or pharmacists in clinical settings).

Changes to the health professions education curriculum

2. Implement a team-based and team-oriented curriculum. Develop and implement guidelines for a new, clarified model of care that covers leadership, roles, "boundary busting," necessary skills and evidence-based competencies for interdisciplinary and patient-centric training approaches. The accreditation and standard setting organizations related to medicine, osteopathic medicine, chiropractic, nursing, and physician assistants must enable and require these approaches so that relevant deans can implement such a curriculum and get support from professional organizations.

- This inter- and intra-profession focused training must provide all health professionals the capacity to deal with the current and emerging information environment and technologies (including active electronic medical records, personal health records, biomonitoring and new vital signs, digital health coaches, outcome measures and transparency of outcomes and results).
- Develop funding that supports inter-professional education.

The role of the health professions in the community

3. Expand role of health professions in the community in health professions curriculum to include aspects of population health as described in several recommendations below—namely, recommendation 5 (“Support ‘community resilience’”), recommendation 14 (“Support ‘communities of solution’ collaboratives”) and recommendation 15 (“Support reforming regional health systems...”) below. The goal is to tie health professions education to community health and pipeline issues, including teaching health professions students how to best engage the community and how to leverage the social determinants of health.

B. Individual and Community Capacity and Accountability for Health

- 4. Enhance self-management**—Patient-centered medical homes and other primary care settings should create environments where patients are actively involved in self-management and in shared decision-making with providers (“no decision about me, without me”). To encourage a sense of ownership on the part of patients and improve health outcomes, the specific recommendations include:
- Enhancement of consumer education at an early age—School-based health education (grades K-12) should promote self-efficacy to expand consumer health assessment capabilities in order to help people make better choices. This will be tied to advanced technology that provides personalized support and will democratize the knowledge (see community resilience).
 - Self-management plans—Encourage patients and primary care providers to develop and track self-management plans together.
 - Measurement of decision quality—Develop, validate, and deploy “decision quality assessments” for all preference-sensitive decisions. It is not possible to manage and promote good decision-making if decision quality metrics are insufficient or inadequate. There must be much greater and faster transparency across quality of outcomes at the medical service level, not just at the health insurance premium level. These metrics are currently lacking.
 - Patient activation metrics—Develop, validate and deploy patient activation assessments for key health risk behaviors. The patient plays an important role both in determining care (e.g., involvement in care plans and treatment decisions) as well as in terms of lifestyle and health behaviors. Primary care should be able to provide effective support in both arenas, including tracking and measuring, not just attitudes toward behavior change, but the behavior change efforts themselves. For example, it is known that success in behavioral change is greatly dependent upon having a goal and someone to monitor how well the patient is progressing toward that goal. Some metrics are already available for this activation, but they need to be validated and enhanced.
 - Value-based and consumer-directed benefit designs—Insurers and employers should develop and deploy value-based and consumer-directed benefit designs which identify and reward self-management and care engagement behaviors such as setting and reaching goals for health improvement, chronic disease management and shared decision-making with providers across the care continuum. According to a survey conducted by the National Business Group on Health of employers for 2012 benefits, 73% of large employers will deploy a consumer-directed health plan (CDHP), and 17% will have or move to a total replacement CDHP.

5. Support “community resilience” by implementing community-based, community-focused health education:

- Health education in K-12. Health education in primary through secondary educational institutions should educate students about health, healthy eating, self-care, and physical activity, as well as about community health factors such as “complete streets”, community engagement, community supported agriculture and elimination of food deserts, reduction of social isolation, violence prevention, and civic engagement.
 - Directly bring health professional students and their faculty in contact with the K-12 population to partner in building healthy communities and to create informal and formal mentorship activities.
 - Develop community boards to make basic decisions about priorities and empower them with the ability to allocate some aspect of health care funding to providers, hospitals, and other institutions to support those goals.
- Importance of recruiting health professionals from the community. Pathways into the health professions should be more widely used to increase health professionals who will serve their community. Local communities should become the source of health professionals who care for members of those communities. Area Health Education Centers (AHECs) and related organizations should promote this mindset.

C. Health Information Technology

High tech for personal health informatics

6. Fund small business innovation research processes (merged with Defense Advanced Research Projects

Agency (DARPA)–like visioning) devoted to innovation in technology to provide new vital signs, biometrics, dynamic personalization, virtual visits, automated coaching, genomics personalized medicine, and personal health informatics platforms. Innovations that allow providers to maximize patients’ self-care can in turn help them provide health care services at lower cost and increase the competitiveness of the businesses where those healthier workers are employed.

7. Provide portable personal health records and related health education and choice services for all. Provide incentives through employers, health plans, and the health delivery system for the creation and ownership of a core personal health record by all Americans of all ages (similar to the existing “continuous care document” used to transmit patient clinical summaries from one provider to another). Doing this will better inform, engage, empower, and hold accountable consumers and patients to improve their health. New technologies that will allow Americans to share information from their personal health record with their provider-based electronic medical record (EMR) will more rapidly improve health and could help lower cost.

8. Ensure that advances in information technology are evidence based, designed to be safe and easy to use for patients, as well as ethical and applicable to a variety of primary care settings. For CHCs, for example, innovations need to take into account that these organizations serve a culturally diverse and low-income population. Developers must also ensure that avatars or digital health coaches are culturally appropriate, ethical, and provide the most effective and age appropriate information. And development of these technologies will need to balance high touch and high tech, between human relationships and effective technology for primary care to create successful models.

Low-cost genome and epigenetic testing—and what it means to you

9. Accelerate the trend toward low-cost genome and epigenetic testing and educate the public on their value and use. The genome and epigenetic knowledge will be an important component of self-care as they will help

patients know their risks and manage them. One’s genetic information is the blueprint for risk of many illnesses, the list of which continues to grow. We are already on track for mapping of the genome to cost less than \$300 in the next three to five years. As the cost declines and it is shown to be effective, it will be possible to make that kind of testing available to all patients. Patients and the public will need to be educated on the use of this information particularly in knowing one’s probable risks.

Interoperability and portability

10. The federal government should accelerate and assure data portability and interoperability by creating a standard platform that can support research and innovation (e.g., the application programming interface underlying Google maps and its ease for developers to build on it). Individual care and empowerment requires access to integrated and portable data, and population health requires a population level view of all these data.

11. The federal government, state government, health care providers, and vendors must assure security and discrimination protections related to emerging personal health information. While there are some protections in place, particularly the federal Genetic Information Nondiscrimination Act (GINA), they lack enforcement mechanisms and related resources. GINA needs enforcement “teeth” to gain power and authority for validation and enforcement. As genomic data enters medical records, it may become harder to have de-identified data for certain applications. This makes security and discrimination protections more urgent.

D. Population Health

Resources for working in population health, including the social determinants of health

12. Leverage potential new resources under the Patient Protection and Affordable Care Act (ACA) of 2010 for population health work. Population health considerations must inform primary care in order to begin to improve outcomes. Population health refers to the health of the community—not simply the health care provider’s panel. The resources made available by the ACA for population health, and the growth of the “Triple Aim” that counts increased population health as one of the three major aims of health care, are part of a growing trend toward a broader focus for health care quality. The resources included in the ACA should be leveraged for the benefit of the community and public health, including portions from profit margins of accountable care organizations (ACOs) and insurance companies. Funds may also be available from the Population Health Models Group of the Centers for Medicare and Medicaid (CMS) Innovation Center.

13. Ensure that advanced informatics includes more data that reflects population health. There is an opportunity in information technology to use data from electronic medical records (EMRs) and public health to enhance population health. Additionally the patient-centered medical home (PCMH) model can be used to integrate community health records to advance population health metrics. This integration process has begun, however, it is necessary to build infrastructure, expertise, assurance and policy for conscious and effective integration of population health data and its interpretation along with patients’ privacy, security and discrimination protections. Innovations are needed in design and development of these systems as well as business models and policies to sustain the process.

Expanding and exploring population health activities

14. Support “communities of solution” collaboratives. Borrowing a phrase from a 1966 report by the National Commission on Community Health Services, this is a recommendation for supporting profound and authentic community engagement. “Communities of solution” are essentially large, community-wide collaboratives

including primary care, health care, public health and other key community stakeholders (including business, community based organizations, academia, and media) to engage in issues around how to improve the health of the community. The community health center should be a leader in these efforts to get foundations, CHCs, health systems, and public health working together. The federal government should continue providing resources to communities, including funding and related policies.

Community transformation grants and sustainable community efforts can become vehicles for community health centers to pursue and innovate around population health activities and share the information with all primary care stakeholders.

15. Support reforming regional health systems that leverage the broader determinants of health to lower costs and achieve better outcomes. There are financial incentives for health care providers to go upstream to “leverage the broader determinants of health” in their communities (i.e., in capitated systems incentives to lower overall demand among the patient population); also hospitals have incentives to move upstream to increase health and prevent readmissions). This is a movement that should be encouraged and supported, especially by defining, monitoring, and reporting on community health outcomes.

E. Political and Cultural Change

The perception that Primary Care 2025 Scenario 2 (“Lost Decade, Lost Health”) had a high likelihood of occurring prompted a proposal for a very large effort to link health to broader aims behind which political momentum could be generated. While this proposal came as a recommendation from the group addressing the most desperate of the four scenarios, its ambitious scope prompted people from the other groups to support the idea and add ideas for a larger effort beyond the traditional boundaries of primary care.

A broader social movement for health

16. Create messages that link health to other broadly held values—It is important to connect with the American public in an emotionally meaningful way to mount a social movement and galvanize political will for improved primary care and overall health. Currently, for example, many Americans are concerned about the economy and the country’s world status both for their own well-being as well as that of their children. Many parents no longer anticipate that their children will be better off than they were. This situation presents an opportunity for a long-term campaign in America to promote social consciousness and reset cultural norms toward health and more effective health care. Political, public, media, and medical establishments can be focused to a new national agenda—striving for improved primary care and overall health in the name of “maintaining our global edge,” and “securing our children’s future.” This effort may be more successful when approached from the local and state level first.

To mount such a movement, it is critical to do the following:

- Recruit key leaders from different sectors and levels to communicate critical but complementary messages. This includes leaders in sports, business, religion, education, and medicine, as well as senior states people, women and families, local health leaders (both federal and civilian), and others such as popular talk show hosts and respected public school teachers.
- Foundations funding population health should form a consortium. Organizations such as the Kresge Foundation, Robert Wood Johnson Foundation, Bill and Melinda Gates Foundation, and Pew Charitable Trusts have the credibility to bring together key thought leaders to start working on this issue.

- The White House should elevate the role and authority of the National Committee on Public Health, Prevention, and Integrative Medicine to coordinate across all of the federal agencies and programs, including health, education, housing, agriculture, and other related areas to establish “health in all policies.”
- Use consistent and clear messaging. The objective is to create a mindset across society akin to “It’s patriotic to be healthy. Ask not what your country can do for your health—ask what you can do for the health of your country.” For this purpose, it is important to have leaders and the public speak in the same simple and clear terms. This effort should be a national, bipartisan messaging campaign, much of which may also go under the radar screen for increased effectiveness. For effective messaging:
 - Create and use a nationally reported, publicly understood “American Health Index” with a limited number of easy to understand and meaningful summary statistics that are made available for community, state and national levels. This can help unite the public and stakeholders in primary care in making overall health a shared goal necessary for maintaining our global edge, and securing our children’s future.
 - Clearly articulate the link between health and economic prosperity for the public, and use Community Health Rankings to attract businesses. Community health status rankings and “score cards” such as the County Health Rankings, should be used for attracting businesses and innovations into communities.
- Have the health care system support the messaging with concrete actions.
 - Major health funders and health insurance plans should provide incentives that promote personal and community health.
 - Health professional education should instill this mindset as well as accountability among the current and future health care workforce.
 - Provide sufficient health care funding to support and promote prevention.

Notes

⁴ E. J. Lindbloom, B. G. Ewigman, and J. M. Hickner, “The Laboratories of Primary Care Research,” *Medical Care* 42(4 Suppl), April 2004. Available at: http://www.ohsu.edu/orprn/about/director/articles/MedCare04_PBRN.pdf. Accessed on October 10, 2011.

Conclusion

The Primary Care 2025 scenarios developed by the Institute for Alternative Futures (IAF) identified expectable, challenging and visionary paths for U.S. primary care. The scenarios can become a living tool for strategy formulation by allowing organizations to see if current strategies will be effective in the different scenarios. Using these scenarios can help leaders and their organizations more effectively adapt to the changing environment. An approach to using these scenarios in a workshop, including specific instructions and worksheets, is available on the project website: <http://www.altfutures.org/primarycare2025>.

Leaders from across the nation met at a national scenario workshop held in September 2011 to explore these Primary Care 2025 scenarios and to develop recommendations. Workshop participants stepped into these futures, explored the implications of each, and considered their own sense of what needs to be done to get to their preferred futures. Their recommendations, which are presented in this report, represent steps toward better primary care futures, and deserve support to promote and develop more effective primary care. We encourage organizations and individuals to support these recommendations, to be aware of their own preferred future for primary care, and to move forward to effectively create that future.

Appendix 1: Acknowledgements

In developing the Primary Care 2025 scenarios, the Institute for Alternative Futures (IAF) project team consulted participants in a national workshop on Primary Care 2025, members of the project advisory committee, 56 leading experts on primary care and related fields, and focus groups with primary care providers. We acknowledge and thank them for their contributions.

National Workshop Participants

On September 19–20, 2011, leading health experts participated in a national workshop, *Primary Care 2025: A Scenario Exploration*, convened by IAF in Alexandria, Virginia. IAF thanks the following individuals who participated in the workshop.

Michael J. Barry, MD

Medical Director
John D. Stoeckle Center for Primary Care Innovation
Massachusetts General Hospital

Ann Batdorf-Barnes, DO, MPH

Consultant
The Kresge Foundation

Jacqueline Barnett, MSHS, PA-C

Assistant Professor of Health Care Sciences
Physician Assistant Program
The George Washington University School of
Medicine and Health Sciences

Andrew Bazemore, MD, MPH

Assistant Director
The Robert Graham Center

Jo Ivey Boufford, MD

President
The New York Academy of Medicine

Fred Cecere, MD

Executive Director
Thought Leadership and Innovation Foundation

David Fukuzawa, M.Div, M.S.A.

Program Director
The Kresge Foundation

Lt. General Bruce Green, MD

Air Force Surgeon General
United States Air Force

Penny Kaye Jensen, DNP, FNP-C

President
American Academy of Nurse Practitioners

Wayne Jonas, MD

President and CEO
The Samueli Institute

Samuel Jones, MD

Director of Residency Program
Fairfax Family Practice- Virginia Commonwealth
University

Donald Kemper, MPH

Chairman and CEO
Healthwise

Barbara Krimgold

Director
Center for Advancing Health
Kellogg Health Scholars
Kaiser Permanente Burch Leadership Programs

Joseph C. Kvedar, MD

Director
Center for Connected Health
Partners HealthCare Systems, Inc.

Maryjoan Ladden, Ph.D., RN

Senior Program Officer
Robert Wood Johnson Foundation

John Mattison, MD

Chief Medical Information Officer
Assistant Medical Director
Kaiser Permanente
Southern CA Permanente Medical Group

William Meeker, DC, MPH

President
Palmer College of Chiropractic—West Campus

Karen J. Nichols, DO, MA, MACOI

Dean
Professor of Internal Medicine
Chicago College of Osteopathic Medicine
Midwestern University

Michael Parkinson, MD

Principal
P3 Health, LLC

Lynn Quincy, M.Econ.

Senior Policy Analyst
Consumers Union

Barbara Redman, Ph.D.

Dean
Wayne State University College of Nursing

Lewis G. Sandy, MD

Executive Vice President for Clinical Strategies
and Policy
UnitedHealth Group

Pamela Shaheen, DrPH

Adjunct Professor
University of Michigan School of Public Health
President
Delta Collaborative LLC

Steve Shannon, DO, MPH

President and CEO
American Association of Colleges of Osteopathic
Medicine

David Stevens, MD

Associate Chief Medical Officer and Director of
Office of Quality
National Association of Community Health Centers

Eric Weil, MD

Associate Chief for Clinical Affairs, General
Medicine Unit
Massachusetts General Physician's Organization /
PartnersHealth

Workshop Advisors

The IAF project team would also like to acknowledge the following individuals in their role as technical advisors to the workshop:

Ahmed Calvo, MD, MPH
Senior Medical Officer
Office of Health IT and Quality, Office of the
Administrator, HRSA

Kathleen Klink, MD
Director
Division of Medicine and Dentistry,
Bureau of Health Professions, HRSA

IAF Staff

The following IAF staff contributed to this project:

Clement Bezold, Ph.D.
Chairman and Senior Futurist
Jonathan Peck
President and Senior Futurist
Eric Meade
Vice President and Senior Futurist
Linda Berry, MD, MPH
Researcher

Yasemin Arikan
Researcher
Patricia Reid
Meeting Organizer
William Rowley, MD
Senior Fellow

Advisory Committee

The Primary Care 2025 project has been guided by an advisory committee, the members of which repeatedly provided input and feedback on the design and details of project activities and deliverables. Their support has proven invaluable. We appreciate the help of the advisory committee, which included the following individuals:

Andrew Bazemore, MD, Assistant Director, The Robert Graham Center for Policy Studies in Primary Care
Jo Ivey Boufford, MD, President, The New York Academy of Medicine
Ahmed Calvo, MD, Senior Medical Officer, Office of Health IT and Quality, Office of the Administrator, HRSA
Fred Cecere, MD, Executive Director, Thought Leadership and Innovation Foundation

Lt. General Bruce Green, MD, Air Force Surgeon General, USAF, MC, CFS
Michael Parkinson, MD, Principal, P3 Health, LLC
David Stevens, MD, Associate Chief Medical Officer and Director of Office of Quality, National Association of Community Health Centers

In Memoriam

We would like to acknowledge Barbara Starfield for her lifetime of research on and advocacy for primary care in its most effective and equitable forms. Shortly after giving us her forecasts for primary care in an engaging interview, Dr. Starfield passed away.

Experts Interviewed

We also appreciate the thoughtful input of the following experts who participated in interviews that helped IAF understand the forces shaping primary care, and responded to specific forecasts proposed by IAF:

Melinda Abrams, MS, The Commonwealth Fund
Ann Batdorf-Barnes, DO, Kresge Foundation
Andrew Bazemore, MD, The Robert Graham Center for Policy Studies in Primary Care
Maureen Bisognano, MS, Institute for Healthcare Improvement
Jo Ivey Boufford, MD, The New York Academy of Medicine
Ahmed Calvo, MD, Health Resources and Services Administration
Fred Cecere, MD, Thought Leadership and Innovation Foundation
Francis Chesley, MD, Agency for Healthcare Research and Quality
Tim Dall, MS, IHS Global Insight
Richard Duenas, DC, Westside Chiropractic, LLC
Douglas Eby, MD, Southcentral Foundation
Susan Edgman-Levitan, PA, John D. Stoeckle Center for Primary Care Innovation
Ross Edmundson, MD, Florida Hospital
Timothy Ferris, MD, PartnersHealth
David Fukuzawa, M.Div, MSA, Kresge Foundation
Frank Funderburk, Division of Research, Office of Communications at Centers for Medicare and Medicaid Services
Bruce Green, MD, Lt Gen., U.S. Air Force
Susan B. Hassmiller, Ph.D., Robert Wood Johnson Foundation
Seiji Hayashi, MD, Health Resources and Services Administration
Angelica Herrera, MPH, Health Resources and Services Administration
Nikki Highsmith, MPA, Center for Health Care Strategies, Inc
Wayne Jonas, MD, The Samueli Institute
Don Jones, Wireless Health, Qualcomm Labs
Vincent A. Keane, Unity Health Care
Donald W. Kemper, MPH, Healthwise
Gaguik Khachatourian, Group Health Cooperative
Ilene J. Klein, MD, Qualcomm Health Center
Barbara Krimgold, Ph.D., Center for Advancing Health, Kellogg Health Scholars Program

Joseph C. Kvedar, MD, Center for Connected Health
David Labby, MD, CareOregon
Timothy Liezert, FACHE, Orlando VA Medical Center
John Mattison, MD, Kaiser Permanente
Christopher P. McCoy, MD, Mayo Clinic
Terry McGeeney, MD, TransforMed
J. Michael McGinnis, MD, Institute of Medicine
Bob McNellis, MPH, American Academy of Physician Assistants
Erica Oberg, ND, Institute of Complementary Medicine
Michael Parkinson, MD, P3 Health, LLC
Robert L. Phillips, Jr., MD, The Robert Graham Center
Barbara Redman, Ph.D., Wayne State University College of Nursing
Wendy Rheault, Ph.D., Rosalind Franklin University of Medicine and Science
Kyu Rhee, MD, IBM Corporation
Lewis G. Sandy, MD, UnitedHealth Group
Pamela Shaheen, DrPH, University of Michigan School of Public Health
Stephen C. Shannon, DO, American Association of Colleges of Osteopathic Medicine
Anthony Shih, MD, The Commonwealth Fund
Stephen Shortell, Ph.D., University of California, Berkeley
Barbara Starfield, MD, John Hopkins Health System
David Stevens, MD, National Association of Community Health Centers
Byron Sogie Thomas, MS, National Medical Association
Jonathan Tobin, Ph.D., Clinical Directors Network, Inc.
Thomas Trompeter, MPA, HealthPoint
Edward Wagner, MD, Improving Chronic Illness Care - Group Health
Gail L. Warden, Henry Ford Health System
John Weeks, The Integrator Blog News and Reports
Jim Winterstein, DC, National College of Chiropractic

Focus Groups

The project also included focus groups with 10 health care provider organizations or groups of providers. IAF asked focus group participants to forecast what primary care would look like in their setting in 2025. These organizations included:

Air Force Medical Service

Video Conference, Multiple Locations from the Pentagon

Army Medical Department

Teleconference, Multiple locations

Florida Hospital Primary Care

Orlando, Florida

Group Health

Seattle, Washington

HealthPoint

Renton, Washington

Henry Ford Health System

Detroit, Michigan

Institute of Complementary Medicine

Seattle, Washington

Kaiser Permanente

Teleconference, multiple locations, primarily San Francisco, California

New York Academy of Medicine

New York, New York

Wayne State University College of Nursing

Detroit, Michigan

The IAF project team greatly appreciates the participation and contributions of all of these individuals and organizations for the development of these Primary Care 2025 scenarios. We further acknowledge that although we sought their advice and input, IAF ultimately made the key choices on which aspects of primary care, key forces, and story lines to develop for these scenarios. The decisions we made may either have left out some forecasts discussed or included forecasts different from those discussed with some of our advisors, experts and focus group participants. IAF therefore takes full responsibility for any deficiencies in the report. Given the breadth and richness of the input we gathered, the construction of the four Primary Care 2025 scenarios could not include all that we learned. The forces and forecasts included in Appendix 2 identify the range of topics explored.

Appendix 2: Forces Shaping Primary Care

In developing the Primary Care 2025 scenarios, the Institute for Alternative Futures (IAF) gathered a range of forecasts for factors that would shape primary care—factors in the macro-environment, in health care, and in primary care itself. This appendix presents an abbreviated discussion of those key forces and forecasts we considered.

We used some or many of these preliminary forecasts to prompt discussion in the focus groups and many of the interviews of individuals identified in Appendix 1. Then we adjusted and combined forecasts and put them into the expectable, challenging and surprisingly successful patterns in the four Primary Care 2025 scenarios presented in this document.

Macroeconomic Forces

Economic Recession, Depression, Recovery—The United States is now experiencing the worst economic times in 80 years. It is possible that the U.S. economy will continue on the path of a mild recovery through 2012 and beyond. Alternatively, the country could experience a double-dip into another recession—or worse. Unemployment is likely to remain high in the near term. And when the economy does recover, a high level of structural unemployment may persist or grow in the years ahead. The worse the U.S. economy, the greater the pressures will be on health care spending.

Federal Deficits and Debt—Whether or not the economic recovery is smooth, interest payments on the federal debt will continue to grow. These annual payments are forecast to equal the annual costs of Medicare by 2018. Budgetary concerns could result in significant and/or abrupt cuts in Medicare. Likewise, state budgetary difficulties will likely yield cuts in Medicaid.

Continuing Advance of the Internet, Social Media, Virtual Reality—The rapid advance of information and communication technology will likely continue apace. Many of these advancements, such as social media and virtual reality, will reshape many of the things people do every day. For primary care, this suggests growth in virtual visits and practices, greater potential for cross-border telemedicine, and the emergence of powerful health databases that collect information from electronic medical records, social networks, “geotagged” social media, and other sources. There are already social media like activities, such as PatientsLikeMe. The evolving social media platforms and the breadth of their use will bring more health related applications.

Empowered Consumers, Transparency, Shared Risk and Costs—There is growing transparency of cost and value for products and services across most industries—from Consumer Reports to Angie’s List. The shared assessment of outcomes will grow. Local health care providers are rated now by some of these groups. This will grow and become more focused—you will be able to tell who has the best care for people with specific conditions and how their costs compare. Information will be more abundant and knowledge technologies such as natural language programs make it more easily accessible. Citizens will be able to hold health systems accountable for value because of this information. And they’ll be able to use it to choose providers for ongoing care or for specific procedures. This knowledge will be especially relevant as employers step back from providing defined benefit health insurance and workers need to make more choices.

Growing Demand from Aging and Covering the Uninsured—Those over 65 average a demand of 208 full-time equivalent (FTE) primary care providers per 100,000 patients, up from a utilization of 123 FTE primary care providers by those 45 to 64. If the number of 65+ stayed the same that would mean a roughly 75% increase in demand for primary care providers (all else being equal) as people aged.⁵ Yet the number of people in the United States over 65 will grow by 60% between 2010 and 2025. Thus, if current utilization rates are maintained, primary care FTEs serving the elderly would increase 120% by 2025. Moreover, there would be growing demand resulting from covering the uninsured under the current Patient Protection and Affordable Care Act (ACA) of 2010 plans. Tim Dall estimates that expanded medical coverage to insure the uninsured would increase demand for primary care physicians by about 8,000–9,400 full-time physician equivalents; or if that need were met by nurse practitioners, 10,000–13,000 more full-time nurse practitioners would be needed (using Dall’s 1.25 conversion factor (1/0.8) to convert primary care physicians to nurse practitioners).⁶

Forces Related to Health Care and Primary Care

Growing Opposition to Increasing Health Care Costs—The fact that health care expenditures are approximately 17% of GDP and are trending toward 20% make health care a likely target for cuts in spending and continued pressure for change. Cuts in health care spending could be abrupt if other forces align, e.g., dramatic debt reduction action.

Health Reform: Implementing the Patient Protection and Affordable Care Act (ACA) or Not—Major increases in access to primary care are included as part of the 32 million additional people who will get health coverage. Legal and political challenges to the law and the 2012 election makes it uncertain how much of the law will be implemented. The individual mandate for purchase of health insurance, for example, is opposed by many states. Some lower court rulings thus far have supported it, others have declared it unconstitutional. That and other parts of the ACA will ultimately be decided by the U.S. Supreme Court.

Pressure for Cuts in Medicare and Medicaid Payment Levels—Medicare and Medicaid are under pressure to slow the growth in their payments or cut them. Medicaid is a significant and growing percentage of state budgets. And there is wide variation from state to state in what is covered and how many people are covered. The ACA calls for equalizing Medicaid payment levels with those of Medicare for 2013 and 2014. The federal government will pay for this initially. This could lead to cut backs if the federal government does not continue to make these payments.

Defining Health Care Quality as the “Triple Aim”—There is growing acceptance in policy circles of the “Triple Aim” originally introduced by the Institute for Healthcare Improvement.⁷ The Institute for Healthcare Improvement argues three aims should be pursued simultaneously in health initiatives:

1. Improving patients’ experience of care—this is the focus of the patient-centered medical home [PCMH], as well as the six aims for health care identified by the Institute of Medicine’s 2001 Crossing the Chasm report.
2. Reducing per capita costs of health care (or at least slowing the rate of growth of health care costs).
3. Improving the health of populations.

These were translated into national aims in the National Quality Strategy released by the federal government in March of 2011.⁸ The National Quality Aims are (1) to improve the health of the U.S. population by supporting proven interventions to address behavioral, social, and environmental determinants of health; (2) to deliver higher quality care; and (3) to deliver affordable care.

Health care providers, in particular primary care providers, are beginning to recognize and accept their responsibility for the health of the populations with which they work, though there is an argument over whether this should be defined in terms of the overall community of the areas they serve or simply in terms of their own patients.

- By 2025, quality in primary care will include the “Triple Aim” (i.e., enhancing patients’ experience of care, reducing per capita health care costs, and improving population health). Metrics for all three aims will be successfully measured. The efforts by primary care providers and their success in affecting the community environment and social determinants of health will be routinely measured.

Societal Dialogue on Shared Responsibilities—Ultimately, the dialogue on U.S. health care expenditures will more consciously and effectively involve the public. This development is likely to occur over the next decade through public dialogue via the Internet, social media and other means, sponsored by communities, organizations, and governments. Oregon showed in the late 1980s that the public could take part in the decisions about extending coverage while identifying limits. Some argue that will be necessary for limits to be publicly accepted for national health care costs. The Internet, media, and social media environments can support and facilitate this, along with offering a greater ability for misuse by interest groups.

Payment—Systems Deliver What They Are Paid to Deliver—There is general agreement that major changes in primary care will require changes in the way primary care is paid for. The current fee-for-service (FFS) payment system forces physicians to focus their practice on face-to-face visits of short duration. PCMH-supporting organizations focus on enhanced payments for care coordination, e-mail and phone visits, performance outcomes, and share in savings from hospitalizations prevented. The ACA is moving toward bundled payments for chronic disease treatment or episodes of care, as well as more complete risk sharing in accountable care organizations (ACOs), ultimately with global payments. Adjusting payments on the basis of the health of the population served—risk-adjusted global payments—is also getting additional attention.

Early in our interviewing one thoughtful expert provided a forecast for the distribution of payment system for primary care in 2025, in the context of current trends:

- The advance of ACOs with integrated systems and capitated payment, a set of “semi-integrated” primary care providers, a residual fee-for-service (FFS) set of providers. These three would have roughly 40%, 30%, and 30% of primary care:
 - Integrated payment—40% of primary care providers are formally operating within an ACO. Most of these primary care providers within ACOs operate medical home practices. Primary care provider team members are paid a salary with productivity and quality incentives.
 - Semi-integrated payment—30% of primary care providers would be contracting directly with payers as a “medical home” with a blended per member per month (PMPM) plus FFS-type arrangement plus pay-for-performance (P4P) incentives.
 - Fee-for-service—30% of primary care providers would largely be operating on a FFS model with some type of pay for performance quality incentives.

We subsequently used this as a base forecast in our interviews. While we did get a range of other forecasts, particularly higher in the fully integrated payment category, there was general acceptance of this 40% fully integrated, 30% semi-integrated, 30% FFS as a plausible “best estimate” for 2025, hence this is the assumption we’ve used in Scenario 1.

Which Home? The Patient-Centered Medical Home (PCMH), Advanced Health Home, Comprehensive Health Home, Community-Centered Health Home (CCHH)—The PCMH is the leading edge of defining primary care. Four major physician societies developed a definition for the PCMH in 2007 and then refined it. The activities or characteristics of the PCMH include the following:⁹

- **Enhanced access to care.** The practice offers same-day appointments, expanded hours and new options for communicating with clinicians (e.g., e-mail).
- **Care continuity.** Patients see the same personal physician each time they visit.
- **Practice-based team care.** A team of individuals at the practice level, including non-physicians, work together to manage patients' care.
- **Comprehensive care.** The practice provides or arranges for all of a patient's health care needs (e.g., acute and chronic care, preventive screening, end of life care, etc.).
- **Coordinated care.** The practice monitors all other care received by their patients (e.g., from specialists, hospitals, home health agencies, nursing homes, etc.).
- **Population management.** The practice proactively reaches out to patients with chronic diseases to make sure symptoms are under control.
- **Patient self-management.** The practice teaches patients techniques to manage their chronic conditions on a day-to-day basis.
- **Health IT.** The practice generates and exchanges electronic health information to deliver care, measure performance, and communicate with providers and patients.
- **Evidence-based.** Evidence-based best practices and clinical decision support tools guide decision-making.
- **Care plans.** The practice strives to help patients reach goals defined in partnership with patients and their families.
- **Patient-centered care.** Care is based on the needs and preferences of patients and their families.
- **Shared decision-making.** Patients actively participate in selecting treatment options.
- **Cultural competency.** The practice ensures information is conveyed to patients in a language and method they understand, taking cultural differences into account.
- **Quality measurement and improvement.** The physician is held accountable for performance.
- **Patient feedback.** The practice solicits feedback from patients to ensure expectations are being met and to facilitate practice quality improvement.
- **New payment systems.** The practice receives enhanced reimbursement.

Related evolving health home models are described below, including ones that are focused on the role of nurse practitioners and others on the primary care team. At present, the PCMH is the most widely used model for defining what primary care should be.

The Chronic Care Model developed by Edward Wagner has been widely used over the past two decades in community health centers (CHCs) through a series of Health Disparities Collaboratives that have improved the quality of care, improved health, and reduced disparities.¹⁰ Wagner has noted that the Chronic Care Model has

been a core component of the PCMH. In community health centers the medical home concept is continuing to evolve—to the Advanced Care Model and the Comprehensive Care Model. The Comprehensive Care Model recognizes importantly that complementary and alternative approaches need to be incorporated into care as clinically and culturally appropriate, and that health care providers must understand and leverage the social determinants of health.¹¹

Another proposal is the community-centered health home (CCHH).¹² This recognizes and goes beyond the PCMH to be more explicit on the role of health care providers in shaping community conditions. Developed by the Prevention Institute with the Community Clinics Initiative, the CCHH calls for health providers to do the following:

- Work with community partners to collect data on social, economic, and community conditions;
- Aggregate health and safety data; systematically review health and safety trends;
- Identify priorities and strategies with community partners and coordinate activity;
- Act as community health advocates; and
- Mobilize patient populations; strengthen partnerships with local health care organizations and establish model organizational practices.

The CCHH would not shift the focus away from the patient—all the advances of the PCMH and related models would be continued, but would add the recognition of the role that community conditions and the social determinants of health play. And it gives health care providers a more conscious and active role in improving those. The CCHH, and related efforts among health providers, particularly CHCs (see IAF’s Kresge Foundation–Funded Project on CHCs leveraging the social determinants of health¹³) are identifying the appropriate and effective roles that health care providers can play in this arena. The CCHH does not have health care providers doing the work of public health departments or community groups, but is partnering with them and others to understand the needs of their patients in their community, target priorities, advocate for policy changes, and support local efforts.

Managed Care—Managed care currently accounts for approximately 20% of primary care in the United States. These integrated delivery systems can optimize the way they deliver primary care without the constraint of fee-for-service payments. Some integrated systems, such as Geisinger Health System in Pennsylvania, are recognized as leaders in moving toward more effective primary care. Group Health in Seattle is another noted early leader in introducing the PCMH. By introducing PCMH, Group Health has decreased its panel size, improved health outcomes, lowered hospitalizations, and reduced cost.¹⁴

Managed care organizations, without the fee-for-service requirement, can also more easily get beyond face-to-face visits. Group Health has already moved effectively to using phone and email exchanges with patients to reduce face-to-face visits. Some Kaiser Permanente regions also report that half of their visits are now conducted by telephone or e-mail.

Southcentral Foundation, a nonprofit health care organization serving nearly 60,000 Alaska Native and American Indian people living in Anchorage and a wide surrounding area, developed its own redesign that was “like PCMH on steroids.” The care redesign offers patients a choice of the primary care team members, conducts 30–40% of clinical encounters by phone or e-mail, and encourages “maxpacking” visits with all required tests and procedures in a single day since the patient’s travel to the clinic is often difficult. Following implementation of the program in 1998, over the next 10 years per capita use of the emergency room and urgent care decreased 40–50%, specialty care visits decreased 65%, and primary care visits decreased 20%. Measurements of screening, illness prevention, and medical treatment improved. Hospital admissions and hospital days decreased by 20–30%.

Admissions for some chronic conditions such as childhood asthma decreased.¹⁵ Long term relationships and trust developed that allow deeper, more personal and threatening issues to be raised, such as substance use, stress management, parenting or marriage issues.

Primary care in capitated settings is moving in the direction set by these leaders. As we'll consider below, there exists a wide range of additional advances in primary care, many of which health care providers paid via capitation are well positioned to implement.

Community Health Centers (CHCs)—CHCs, including Federally Qualified Health Centers and similar organizations, provide about 7% of primary care in the United States through more than 1,100 independent CHCs (grantees of the federal Health Resources and Services Administration, HRSA) with more than 8,000 sites. They are the main safety net provider, other than emergency rooms, in the United States and they provide ongoing primary care to their patients. Over the last 15 years, CHCs have applied and adopted the Chronic Care Model through a series of Health Disparities Collaboratives that has improved the quality of care, improved health, and reduced disparities.¹⁶ Chronic Care Model developer Edward Wagner notes that the Chronic Care Model has been a core component of the PCMH. In CHCs, the medical home concept is continuing to evolve to the Advanced Care Model and the Comprehensive Care Model. The Comprehensive Care Model recognizes importantly that complementary and alternative approaches need to be incorporated into care as clinically and culturally appropriate, and that health care providers must understand and leverage the social determinants of health.¹⁷

CHCs could double in their number of patients, from 20 million to 40 million, because of the expansions of access in the ACA legislation as well as ACA provisions for investing in expanding CHCs. However, recent budget cuts imposed by Congress and further efforts to reduce the federal debt may limit the anticipated expansion.

Nurse Practitioners and Physician Assistants—Nurse practitioners and physician assistants represent a significant and growing part of primary care providers anticipated to play a larger role in medical home models, many CHCs, accountable care organizations (ACOs), and retail clinics.¹⁸

Consumer-Directed Health Plans (CDHPs)—There is a growing movement toward putting the consumer/patient as the head or director of the medical home, and having them more explicitly and consciously share the risk and incentives for managing their health and their health care. An estimated 28 million people were enrolled in CDHPs in 2010, up from 23 million in 2009.¹⁹ That represents 11% of all employees covered in employer-sponsored health plans in 2010. The larger the company, the more likely they are to offer CDHPs—ranging from 17% of small employers to 51% of the very largest employers, with all categories growing. The number of companies that only offer CDHP options will grow. In five years 9% of all employers and 10% of large employers expect that they will only offer CDHPs. Some large employers, such as the health insurance companies Aetna and CIGNA, already only offer their employees CDHP options.

Digital Coach, Health Advocate Avatar, Relational Agent—Primary Care providers and consumers will be actively using digital health coaches over the next decade. IBM will be selling “Dr. Watson” services to health care providers in 2013. These health coaches will provide a synthesis and analysis of all relevant knowledge focused on a particular problem.

WellPoint will provide IBM's Dr. Watson services available to its members (the Blue Cross providers in many states) in 2012. Over the next decade, these tools will move from expert diagnosis to recommending treatment, to interacting with patients in optimal ways. These systems will continue to improve and be sold or provided directly to consumers. Information companies, like Google, and entertainment companies will also provide these personalized digital health coaches or avatars.

“Siri,” is an example of a digital assistant and was built into the Apple iPhone 4S released in October 2011. Digital assistant services will grow in their capacity and effectiveness. For health care, they will incorporate the best of self-care and what groups like Healthwise are learning from “Shelly,” their digital self-care coach now available online, along with the entertaining and engaging aspects of computer games. Digital health coaches will be part of organized primary care. Some large integrated delivery systems will develop these and integrate their diagnostic and treatment regimes with their patients’ data. They will give these digital health coaches to their patients/members as part of their fees. Large information or computer companies, particularly Google and Microsoft, as well as entertainment companies, will compete to develop these tools. In some cases these will be given away as part of health coverage. Google or Microsoft might also give them away, with funding coming from advertising and product marketing. There are major issues of privacy, security and discrimination that will need to be developed for these to be deployed effectively. There will remain a variety of risks associated with their use and misuse, but they will be a significant part of primary care by 2025.

The Primary Care Team—At the moment, where there are primary care teams, their members include the patient, physician, physician assistant or nurse practitioner, and medical assistant. In some settings the teams include community health workers, pharmacists, behavioral health providers, and social workers. A small number of team members have personal contact and established relationships with each patient. In some settings such as Kaiser Permanente or Southcentral Foundation, phone calls, e-mails, and televisits already make up a majority of “visits.” In 2025, these primary care teams will have expanded and will interact with patients in new ways and using new protocols:

- **Pre-visit preparation.** Prior to any visit the relevant team members will review the summary of data from the patient’s history, biomonitoring, and other lab/test results prior to the visit. The team can then discuss evaluation and treatment protocols in preparation for the visit.
- **Relational agents (personal health avatars).** Besides a strong relationship between the patient and some of the primary care team members, most patients will have a digital health coach or personal health avatar made available by (or enhanced by) their health care provider. This digital health coach will provide health education, coaching, and reinforcement, driven by the person’s health systems advanced protocols, personalized to the person’s language, culture, style, and interests, and by the person’s biomonitoring data.
- **Health coaches.** Some settings will use “health coaches” who go into the community and into patients’ homes to encourage healthy behaviors and compliance with prescribed regimens. (Atul Gawande describes an advanced New Jersey clinic dealing with the sickest patients in an insured pool where half the staff are health coaches.²⁰)
- **Community health workers.** Community health workers, who typically are community residents who do not have health care training, will likely become more important in some primary care settings. Increasingly, for some primary care providers, particularly CHCs, these community health workers will be part of the primary care team and will routinely visit patients in their homes. Armed with the person’s medical record including personal biomonitoring data and neighborhood community health data, the community health worker will provide health coaching and checks for home safety. Given the advanced information systems and protocols of the primary care organization, including biomonitoring and other patient data, these community health workers will be able to handle many immediate issues, provide referrals and schedule the person for a physical or televisit when needed.

Patient-Provider Relationships—In 2025, trusting relationships between providers and patients will be the basis of primary care’s capacity for promoting health and managing disease.

- The primary care team members will work to instill caring, joy, love, faith, and hope into their relationship with each person.

- Once trust has been established, usually through in-person contact, effective communications using responsive and empathic email, phone calls, and avatar-based “cyber care” will reinforce this personal relationship. Many patients will find that virtual encounters with their personal health avatar, with its artificial intelligent “personality,” provide the empathy they seek but most people who are ill or dying will still seek the compassion provided by human healers.

Focus on Behavioral Change—Primary care routinely works with individuals to understand how to move choices from the limbic system of the brain that unconsciously controls emotionally directed behaviors to the frontal areas of the cognitive brain which controls conscious behaviors. Behavioral change protocols are personalized, based on the knowledge of the patient’s genomic, epigenetic, and biomonitoring data as well as their psychological and social dimensions.

Genome and Epigenetic Data Use—By 2025, most individuals’ genome will be mapped and in their electronic health record (EHR), with secure access available from anywhere according to established permissions. The role of genetic and epigenetic influences will be understood, e.g., how maternal health, prenatal care, injury history, stress levels, social determinants of health and current health status influence gene expression and protein production to predict and prevent adverse outcomes. The person’s genomic and epigenetic data will be included in the patient’s records and primary care protocols will integrate genomic and epigenetic understanding into the relevant assessments, diagnoses and treatment approaches.

Broadened Vital Signs—The nature of vital signs and their collection will have evolved to include a wider range of biophysical, mental/neurological, and place/environmental measures. System biology markers will be used to predict and preempt major diseases. Markers will include inflammation, DNA damage, and reactive oxygen species. Mental health functioning and allostatic load (physiologic consequences of chronic stress exposure) will be continuously monitored.

Personal and Community Vital Signs—In 2025, primary care is nearly inseparable from community health. Providers are networked with neighborhoods and share their data (with appropriate privacy and security protections) with public health officials, who coordinate activities to improve population health. Medical records include home location as a vital sign, with mapping information on the degree of health and safety risks, unemployment rates and other social determinants. Primary care provider information systems provide alerts on community health conditions and, as relevant, include that in each person’s record. This ongoing health data mining is used by local governments and providers to focus on changing local health threats or specific conditions. Primary care providers take the initiative to collaborate in addressing community needs.

Prospective Medicine—In 2025, primary care will encompass prospective medicine—predictive, preventive, personalized, participatory, progressively pre-disease focused—facilitated by genomics, proteomics, metabolomics, and epigenetics. This analysis will capture the upward and downward causation chains for each person starting with his or her genome, upward through the cellular level, tissue level, organ level, organism level, and on to the community level. With this capacity, health care providers will be able to effectively identify and measure changes in pre-disease and disease, and to predict which prevention approaches and therapies will be most effective for each person.

Shaping Community Conditions/Leveraging Social Determinants—Primary care providers will routinely consider what community conditions may be impeding their patients’ health and will in focused ways leverage these social determinants of health—e.g., starting schools, training for health jobs, facilitating access to healthy food, and supporting neighborhood safety and healthy activity. Primary care providers and the health systems of which they are a part will work within their communities to identify and address social and environmental factors that hinder individual and population health.

24/7 Health Care Access—By 2025, health care will be available anytime and everywhere. People seldom need to be evaluated in the primary care clinic. People will have 24/7 access to their digital health coach, and access to a human member of the primary care team by phone, email, or televisit most of the time.

Complementary and Integrative Care and Providers in Primary Care—There are several primary care providers who are licensed as independent providers of primary care in certain states, including naturopathic physicians (NDs) and chiropractors (DCs). The 4,000 naturopathic physicians are concentrated in Oregon and Washington state and are licensed in these two and 13 other states. They provide primary care, but may or may not be included in insurance coverage.²¹ There are approximately 50,000 practicing chiropractors. Fifty states license chiropractors and in some states their scope of practice includes primary care. Some chiropractic colleges train their graduates to do primary care; however most demand for chiropractic care relates to neuromusculoskeletal issues, particularly pain. Experts we interviewed estimated that 5% or about 2,500 of the 50,000 practicing chiropractors provide primary care. There are 25,000 providers of acupuncture and oriental medicine, licensed in 44 states.²² Although oriental medicine has a long history of providing primary care in its countries of origin, it is primarily treated as a specialty in the United States.

Historically, doctors of osteopathic medicine (DOs) were considered alternative and focus on more natural and less pharmaceutical practice, including manipulation. Nevertheless, such doctors had parallel status with allopathic physicians (MDs) in most states since the 1960s. Doctors of osteopathic medicine are disproportionately represented in primary care.

The growth of alternative providers, naturopathic physicians, chiropractors, and doctors of acupuncture and oriental medicine (DAOM) is slow and from a relatively small base in relation to the number of allopathic physicians, doctors of osteopathic medicine, nurse practitioners, and physician assistants in primary care. But some providers, including community health centers (CHCs), use these complementary and alternative medicine (CAM) providers in their primary care, as well as specific CAM modalities.²³ The use of CAM providers and modalities varies widely among populations, and some indigenous and immigrant populations routinely use or seek particular CAM approaches.

CAM modalities or specific practices continue to be widely used by the population. As specific modalities are proven effective and cost effective by conventional health care, they will be included in the protocols of primary care. The growth in electronic medical records (EMRs) and related growth in information systems in primary care, by CAM providers, and by consumers is likely to speed up the classical clinical testing of CAM modalities, but even more a structured sense of efficacy and cost effectiveness of these modalities.

- By 2025, there will be more licensed alternative or integrative providers as part of primary care teams. And as complementary and alternative modalities are proven effective and cost effective they will be integrated into the diagnostic and treatment protocols for primary care.

Future of Solo/Small Group, Largely Physician Practice—About 78% of primary care physicians practice in medical practice groups of five or smaller.²⁴ There is great dissatisfaction among primary care physicians with their pay differential in comparison with specialists, and primary care physicians increasingly feel that they are on a “hamster wheel” of many ever shorter visits to maintain their income. The patient-centered medical home (PCMH) is the emerging standard for defining primary care, as many large practices, community health centers, and some solo physicians, have become certified as PCMH. The coaching and changes to a medical practice to become a PCMH can cost \$30,000 to \$50,000. Moreover, PCMH may require additional staff.

Setting up a “concierge” practice is a major move for many medical practices and is essentially adding a per-member-per-month fee in order to provide greater access, phone, and email contact. There are also emerging developments of automating solo or small group practices that can allow fewer or no support staff.

Myca is an evolving set of tools for automating practices that is web-based, allows online scheduling, provides a complete electronic medical record system, e-prescribing, patient group management, keeps all clinical and administrative information in one place and provides a secure, source document repository. Myca can be used by practices that are insurance based or concierge/membership based.

Biomonitoring and other information technology advances will be introduced into primary care practices. While companies like Myca could make it feasible for solo and small physician groups to keep up with technology as its value is proven. Nevertheless, medical practice groups will remain under cost pressures, particularly if the economy does not recover soon. As noted above, there is good news for physicians that Medicaid payments will go up in 2013 and 2014, but both Medicaid and Medicare payments will be at risk for cuts in the years ahead.

Self-Care—Health care has always involved self-care. In the future, however, the lines between self-care and primary care will blur further as self-care tools are given to patients by their primary care providers. Patients’ use of self-care tools has been occurring for decades, at times with significant success. Much of self-care knowledge is and has been independent of patients’ doctors, and tools such as digital coaches or health avatars will be significant. Such tools may be provided by the person’s doctor or health care system or be bought or obtained for free, as noted above. As these tools become more powerful, they can be aligned with consumer-directed health plan (CDHP) tools to enable individuals to not only use self-care but to largely self-manage their care.

Notes

⁵ Estimated from T. Dall et al., “A Microsimulation Approach to Modeling Health Workforce Demand,” presentation to the AAMC Physician Workforce Conference, May 5, 2011, slide 33. Available at: https://www.aamc.org/download/187396/data/2011_pwc_dall_session_a.pdf. Accessed November 4, 2011.

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Using Primary Care 2025: A Scenario Exploration

Visit <http://www.alifutures.org/primarycare2025> for an electronic copy of this report, as well as a “toolkit” with which any organization or community can conduct a planning workshop using the Primary Care 2025 scenarios. The toolkit includes the scenarios, a workshop agenda, instructions, worksheets, and presentation materials.



Institute for Alternative Futures
100 N. Pitt Street, Suite 307
Alexandria, VA 22314

www.altfutures.org

THE KRESGE FOUNDATION

The Kresge Foundation
3215 W. Big Beaver Road
Troy, MI 48084

www.kresge.org

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