Global Imperative to Redesign the Nucleus of Care

An Intel® White Paper on Coordinated Primary Care

Introduction

Information technology (IT) is correctly recognized as a building block for healthcare transformation, crucial to improving health and controlling costs. But an even more important factor will help to determine the success or failure of healthcare systems worldwide in coming decades: teamwork.

Team-based, collaborative workflows are essential to high-quality and cost-effective care, especially for people with complex needs.

Care coordination is about more than moving a patient’s information from Point A to Point B, which remains a challenge even in communities and countries with high adoption of electronic health records (EHRs). What patients really need is for their care teams to communicate, collaborate and plan—often across organizational boundaries—based on “whole person” needs.

The nucleus for such coordination is primary care. In emerging care models, this nucleus is not merely a healthcare clinic or a single gatekeeper, such as a physician. Instead, it is a team that coordinates across the continuum of care and community. The primary care team may include not only physicians, nurses and other healthcare workers but also social workers, community partners, and crucially, patients and their family members. To improve healthcare outcomes while managing costs, it takes a team.

Globally, there is widespread lack of coordinated primary care, creating both a crisis and an opportunity to develop more effective approaches. As they grapple with rising healthcare costs and growing demand for services, healthcare systems worldwide are beginning to replace traditional approaches to primary care with a team-based, problem-solving model that focuses on the needs of each individual.

Over the past decade, Intel social scientists, clinicians, and architects have studied healthcare teams across 20 countries. Adopting a team approach to care is a daunting challenge that will require new IT capabilities, changes to payment systems, and a restructuring of roles and responsibilities. But the potential results are worth the investment required. Countries that emphasize coordinated primary care tend to have better outcomes, at lower cost, than countries that do not.1 Redesigning the nucleus of care is a global imperative.

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Demand Drivers for Coordinated Primary Care

Several factors are driving the demand for coordinated primary care, from rising patient volumes to new business incentives and reimbursement models.

Increase in primary care volume

Worldwide population growth and aging trends are pushing the demand for primary care. The U.S. population is projected to grow to 350 million by 2025—more than 16 percent over the 2006 level.2 The global population is expected to reach 9.3 billion by mid-century—an increase of more than 2 billion compared to the 2011 level.3 Growing, more urbanized populations will put more pressure on healthcare systems worldwide. Frontline healthcare workers will need more intelligent tools to move an increasing volume of patients into more cost-effective care delivery and health promotion models.

It’s not just growth but the aging of the world’s population that will boost demand for primary care. In the more developed regions of the globe, the segment of the population at least 60 years old is projected to rise to 416 million by 2050, a 58 percent increase over the level in 2009. In less developed regions, the population aged 60 or older will more than triple over the same time period, reaching 1.6 billion.4 These aging populations will place an enormous strain on primary care, as older adults account for a higher percentage of healthcare expenditures.

Shortage of primary care workers

The United States could face a shortage of 124,000 physicians by 2025, even as demand for primary care increases due to population growth and aging.5 Already, some 60 million people in the United States have inadequate access to primary care due to a workforce shortage, and the percentage of new doctors going into primary care has dropped to single digits. The overriding reason is simple: under today’s predominantly fee-for-service reimbursement model, primary care providers work longer hours and get paid less than specialists. The shortage of primary care physicians drives many patients to more expensive emergency care.6 Globally, physician supply varies widely by country, with some countries, particularly in Africa, facing significant shortages.7

Healthcare costs threaten the long-term prosperity and competitiveness of advanced economies with aging populations. The United States already spends twice as much per capita on healthcare as other industrialized nations. Public, corporate and family budgets are increasingly squeezed by healthcare insurance premiums, which outpace the rate of general inflation in the United States.8 Globally, the situation is much the same, according to a report by Towers Watson, which found that in all but two of 37 countries surveyed, health insurance costs exceeded the general inflation rate.9
The high cost of chronic conditions
About 5 percent of the U.S. population — those with the greatest need for care coordination — account for nearly half of all medical expenses.\textsuperscript{10} Heart disease, cancer, trauma, mental health disorders, and pulmonary problems are among the biggest cost drivers. Chronic conditions such as diabetes are also expensive to treat over time, due in part to complications that require hospitalization.\textsuperscript{11} Improvements in primary care quality and efficiency are critical to the prevention and optimal treatment of chronic conditions, several of which (e.g., obesity, diabetes, lung disorders) are increasing at alarming rates.

Demand to improve quality
Healthcare purchasers (e.g., governments, insurers, employers, patient groups) are frustrated with healthcare fee variations that have no connection to quality. There are well-documented problems with both under-treatment (e.g., preventive regimen not followed, cost-effective medications not prescribed or taken) and over-treatment (e.g., unnecessary ER visits, hospital readmissions, redundant tests). A shift from fee-for-service to performance-based reimbursement requires dramatic improvements in data capture, reporting and analysis. Overburdened providers need improved tools that automate these functions. Coordinated primary care is recognized as a front line in this challenge, particularly for patients with complex needs.

Availability of new business incentives and reimbursement models
Globally, hundreds of billions of dollars are spent by governments driving new investments in health information technology. In the United States, the Affordable Care Act (ACA) is incentivizing experimentation with bundled payment models designed to reward providers for better care coordination and outcomes in patient populations. One goal is to reduce the number of hospital readmissions, which in 2004 alone cost Medicare an estimated $17.4 billion.\textsuperscript{12}

To support primary care, the ACA offers a 10 percent bonus in Medicare fees to primary care providers and compensation for providers who accept new patients who become eligible in 2014. In addition, state reimbursements for primary care services under Medicaid will increase to Medicare rates by 2014.\textsuperscript{13}

The ACA also has a provision to expand the primary care workforce and experiment with “accountable care organizations” (ACOs) and “medical homes,” designed to coordinate a patient’s care across various providers and the patient’s family. (Both ACOs and medical homes are discussed in more detail below.)

In summary, today’s primary care workforce is understaffed and poorly equipped. We need to redesign, retrain and reimburse in new ways to make primary care a viable nucleus for care coordination. Primary care providers will also require secure, intelligent tools to support a myriad of functions, from remote monitoring and decision support to clinical collaboration and patient and family engagement.
Elements and Benefits of a Primary Care Medical Home

The American Academy of Pediatrics (AAP) introduced the medical home* model in 1967, focusing on the need to centralize children’s medical information. By 2002, AAP expanded the model, and soon after the American Academy of Family Physicians (AAFP) and the American College of Physicians (ACP) put forward medical home models. In 2007, these three professional societies were joined by the American Osteopathic Association (AOA) in issuing the Joint Principles of the Patient-Centered Medical Home. Today these principles are endorsed by 19 medical specialty societies as well as the American Medical Association:

- **Ongoing relationship with a personal physician:** A foundational relationship between the primary care physician and the patient.

- **Physician-directed medical practice:** The primary care physician serves as the leader of the care team—responsible for care coordination and creating care plans along with the patient and the patient’s family.

- **Whole-person orientation:** Proactive, comprehensive, holistic care with a commitment to optimizing the patient experience.

- **Care is coordinated and/or integrated:** The team organizes a patient’s care and leverages nonmedical support and services when appropriate.

- **Quality and safety:** This includes continuous quality improvement, evidence-based guidelines, reports on performance, patient engagement, and use of health information technology.

- **Enhanced access to care:** This principle anticipates open scheduling, expanded hours and new options for communication between patients, their personal physician, and practice staff.

- **Payment that recognizes the added value:** This principle calls for paying primary care physicians for coordinating and communicating outside the traditional face-to-face office visit (e.g., use of health information technology for quality improvement and communications, remote patient monitoring data, etc.).

To be most effective, the patient-centered medical home must work with a “medical neighborhood”—a network of specialists, hospitals and other providers in the community. Whether or not the medical neighborhood is a formal ACO, it should be accountable for ensuring that members of the community receive the appropriate care at home, in the workplace, at the pharmacy, and elsewhere.  

*Also called a primary care medical home (PCMH) or health home. The term “home” can lead to confusion because it denotes a physical location. Certainly, the primary care physician’s practice serves as the nucleus of the care model, yet the core concept revolves around the relationship between the patient and the health care team, which the primary care physician coordinates.
**Affordable Care Act provides a boost**

Medical homes are part of the Affordable Care Act legislation, allowing states to enroll Medicaid participants in medical home programs.\(^6\) The overarching theme is coordination by a healthcare team incentivized to provide quality care at a lower cost. The primary care physician leads the healthcare team, referring patients as needed to specialists who share objectives for coordinating care. The premise is that incentives and technology will drive innovation for more coordinated care in line with the U.S. Centers for Medicare & Medicaid Service’s (CMS) Triple Aims of improving health and the quality of care while controlling costs. This direction de-emphasizes visit-based, fee-for-service payments in favor of more “bundled” compensation for providers to manage the health of groups of patients, and loosens the concept of “medically necessary” services, so that providers have more leeway to determine what their patients need to stay healthy (e.g., telehealth services, assignment of a care coordinator, housing or transportation assistance). CMS expects that medical homes will generate cost savings as a result of fewer emergency room visits, hospital admissions and re-admissions, as well as better adherence with recommended care and less reliance on long-term care facilities.

**Telehealth-based programs show results**

The U.S. Department of Veterans Affairs (VA) began a home telehealth program in 2003 to coordinate care of veterans with chronic conditions and avoid long-term institutional care when possible. Among the results of the monitoring program was a nearly 20 percent decline in hospital admissions. Further, the program cost is only $1,600 annually for each patient, just 2 percent of the annual cost for nursing home care. Two international studies also showed significant benefits of home telehealth programs for heart failure patients, a group that accounts for a high percentage of healthcare costs. A European study found that patients who used an interactive telehealth system spent 73 percent fewer days in hospitals, and a Canadian home telehealth program saw a 79 percent reduction in hospital readmission rates among patients after two years, generating more than $2 million in savings, or about $20,000 per patient.\(^7\)
Critical Steps to Community-based Coordinated Primary Care Projects:

The vision Intel® has for community-based primary care redesign is framed by shared community health goals, shared business incentives, shared risk and accountability, and shared services in the cloud.

1. Shared community health goals: There is no one-size-fits-all solution for developing health goals. Patient populations and provider landscapes vary significantly from one community to the next. Leadership is important to identify ambitious but achievable goals to meet a community’s needs. Because change is difficult in healthcare as in other sectors, it’s important to rally political and business leaders, healthcare providers and workers, and patients around a shared set of specific goals. These could include reducing complications of diabetes, decreasing the number of unnecessary ER visits or hospital re-admissions, controlling blood pressure, or cutting the rate of adverse drug events. The goal is to create an objective that is concrete (“We are going to attack Problem X,”) rather than abstract (“We are forming an ACO.”).

2. Shared business incentives: In isolation, even the most advanced medical home can do only so much to coordinate care. If the rest of the medical community - specialists, hospitals, pharmacy services, labs, etc., has little business motivation to integrate their workflows with primary care providers, the results will be limited. For this reason, proponents of the primary care medical home view it as the nucleus of the patient’s care community, helping coordinate medical services according to the patient’s needs and wishes. In the United States, the Affordable Care Act creates ACOs designed to align networks of providers to improve quality and lower costs compared to the expected results of the fragmented status quo. The ACO model calls for participating providers to retain a portion of the cost savings as part of their compensation, along with bonuses for good results.
Shared risk and accountability:
The core of this pillar is the ability to measure contributions and results across the continuum of care. Information technology should be configured to facilitate the capture of information for quality reporting, even as patients and providers go mobile. In a model with shared business incentives to control unnecessary costs, ideally all participants are incentivized to avoid, for example, a non-emergency ambulance ride to the ER that could have been handled easily with a taxi ride to an after-hours urgent care facility. A strong relationship between the patient and a primary care team (with after-hours coverage) is helpful in this scenario.

Another example: When patients are discharged from the hospital, the hospital and primary care team would be accountable for communicating with hospital staff and pharmacies to ensure appropriate follow-up and avoid unnecessary readmissions.

When communities of providers and community-based health workers collaborate on “workflows that work,” health IT tools should be configured to reinforce these good processes. For example, primary care workers could be electronically alerted the day after a patient returns home from the hospital to make sure the patient is adhering to, and not having problems with, a new medication regimen.

Shared services in the cloud:
In order to facilitate information access and communication across a continuum of care, it is increasingly important that providers share information. Health information exchanges (HIEs) are being developed around the world to enable access to patient records by authorized providers. These exchanges are designed for the rapid, secure sharing of health information to improve the quality and efficiency of care.

Among the countries that have adopted HIEs are Australia, Canada, England, France, Germany, Singapore, Spain, and the United States. Most countries are still early in the process of adopting HIEs, although some, such as Spain and England, are relatively mature in their use of HIEs for primary care.

Securing financing for the development of HIEs is a significant challenge. One option is for states and regions to leverage cloud computing to create a collaborative model that enables them to share infrastructure costs. The U.S. Office of the National Coordinator for Health Information Technology (ONC) is helping to finance states’ initiatives to build HIEs through the State HIE Cooperative Agreement Program, designed to help create a public health IT infrastructure.

“ACOs are a U.S. phenomenon ... however, the trends driving the establishment of ACOs are universal, and the importance of care coordination and payment reform are widely recognized. ACOs share goals and approaches with projects and pilots around the world, including GP commissioning in the U.K., networks of Medicare Locals for primary care in Australia, and new payment paradigms in China for rural healthcare delivery. All reflect the need to care for larger populations of sicker patients with fewer providers; all are driving toward a new paradigm of 21st-century healthcare based on integrated, personalized, distributed, and coordinated care delivery.”

Source:

The Pioneer ACO model, launched in January 2012 and overseen by the Center for Medicare and Medicaid Innovation, was designed for providers and organizations that are experienced in delivering coordinated care. The model will test the effectiveness of alternative payment models in improving the quality of care and health outcomes while reducing the cost of care.

During the first two years, the Pioneer ACOs’ payments will be based on shared savings and risk. In the third year, ACOs that have met specified levels of savings will be able to transition to a population-based model for a major proportion of their payments. Under this model, the ACOs will be paid a certain amount per beneficiary per month, replacing fee-for-service payments. This model gives the ACOs the flexibility to deliver services that Medicare doesn’t normally cover, such as phone consultations and telehealth services. Thirty-two organizations were chosen to participate in the Pioneer ACO project, which began in January 2012 and which HHS estimates could save as much as $1.1 billion over five years.

Under ONC’s Beacon Community Cooperative Agreement Program, begun in 2010, 17 communities throughout the United States were awarded funding to strengthen their health IT infrastructures to improve care coordination and quality while reducing costs. A key goal is to show that IT can help to transform local healthcare systems. The focus of each community varies. For instance, some communities are exploring the use of mobile technology to improve health. Others are focused on tackling chronic illness. One rural program is sharing student health information with schools, so they will know which children need primary care appointments.

Coordinating Primary Care: Lessons from Pioneer ACOs and Beacon Communities

Several communities in the United States have been organized as Pioneer ACOs or Beacon communities. These communities are at the forefront of experiments into new ways of delivering and paying for coordinated primary care.

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These experiments are still in the early stages, but initial observations point to at least ten priorities for communities that want to establish or strengthen coordinated care models:

1. **Engage stakeholders**
   - Be inclusive with stakeholders across the continuum of care. Engage patients and the community, including non-traditional health workers, not just in the vision but in the actual solution design and testing process.

2. **Embrace community goals**
   - Get top-down and bottom-up commitment to a high-level objective. Aim for making all important players responsible for meeting milestones.

3. **Follow the data**
   - Define suboptimal healthcare utilization patterns, both over- and under-utilization. Identify high-impact interventions and workflows, and plan early wins.

4. **Identify target patients and teams**
   - Deploy team members where they can be most effective, e.g., in the hospital, in the home, at the pharmacy.

5. **Assess tools**
   - Determine what health IT and shared services will help teams to collaborate, and design a plan to integrate them into care delivery.

6. **Test options**
   - Do small experiments fast and evaluate as you go. Avoid monolithic approaches.

7. **Refine processes**
   - Document both successes and failures. Modify health IT to facilitate “workflows that work.” Particularly for high-risk patients, strive to improve processes across the healthcare continuum, from the hospital to the home and all vital points in between.

8. **Reinforce successful workflows**
   - Commit to key processes across institutions and build health IT solutions that reinforce successful behaviors.

9. **Measure**
   - Build metrics that matter, i.e., that show progress toward achieving community objectives.

10. **Reward success**
    - Work toward a sustainability model that aligns the interests of key participants, including patients.

Readmissions are a complex problem caused by factors ranging from psycho-social issues to fragmented care and lack of follow-up. Given an aging population, sicker patients, and rising use of outpatient procedures, it’s not surprising that readmissions are difficult to reduce. But they’re not impossible. Presbyterian Healthcare Services (PHS) show that comprehensive efforts to coordinate care as patients move through the healthcare system, supported by healthcare information technologies and a commitment to the whole patient, can produce striking improvements. PHS’s readmission rates are well below the national average, and the organization is driving them lower.

Can ‘Hotspotting’ Transform Primary Care?

“Hotspotting” is a term gaining momentum as communities better understand how social dynamics impact health. Jeffrey Brennan, MD, dug into statistics in his hometown of Camden, New Jersey, and determined that people who lived in particular neighborhoods accounted for disproportionately high healthcare costs.

These “hotspots” with high concentrations of people with multiple chronic conditions, Brennan figured, required more intensive clinical and community interventions—somewhat similar to the “community policing” model in which law enforcement targets high-crime neighborhoods for a deeper community involvement. He developed a program to have clinicians visit high-risk patients in their homes to steer them toward community resources for help. For example, in some people, clinical depression severely impacted their ability to manage other chronic conditions. A visiting clinician can spot signs of depression in the patient’s home before it may be detected during a clinic visit for some other medical problem, and thus direct the patient to treatment for the underlying mental health condition. The premise is that it’s ultimately more effective and less expensive to apply resources upstream (e.g., home visits) rather than downstream (e.g., in the emergency room).

According to Dr. Atul Gawande’s feature on Dr. Brennan’s work in the New Yorker, the Camden Coalition, which Brennan formed in 2009 to focus on his unorthodox program full-time, has shown impressive results. The Coalition measured the long-term impact of the program on its 36 initial “super-utilizers.” This group averaged 62 hospital and ER visits monthly before joining the program but just 37 afterward—a decline of 40 percent. The hospital bills for the patients, which used to average $1.2 million monthly, are down 65 percent, to just over half a million dollars.

There are other signs that Brennan’s approach can work. For instance, a Medicare demonstration program launched in 2006 offered providers an extra monthly payment to cover the cost of coordinating care and offered to share the savings if costs fell more than 5 percent. One participating hospital, Massachusetts General Hospital, had 2,600 patients who accounted for $60 million in Medicare spending. Three years after joining the program, the number of hospital stays and ER visits declined more than 15 percent, the hospital made its 5 percent cost savings target, and there’s potential to improve results further.

Another success story is the Special Care Center in Atlantic City. The clinic is administering an experiment involving the cities’ two largest employers: AtlantiCare Medical Center and the casino workers’ union. The clinic applies a personalized approach to coordinating care in return for a monthly flat fee for each patient. After one year, hospital admissions and ER visits declined...
more than 40 percent, surgeries were down 25 percent, and all but three of the 503 patients with high blood pressure had their symptoms under control. Perhaps most remarkable, 63 percent of patients with heart and lung disease had quit smoking. Cost savings are preliminary and based on a small sample of patients. But it’s notable that the casino workers in the program had 25 percent lower costs than their counterparts in Las Vegas.

The human relationship between the high-risk patient and visiting providers is critical to the hotspotting model. It is now important to experiment with how information technology may be able to enhance the relationship by ensuring that the patient’s information is accessible anytime, anywhere. Mobile technology such as the Intel®-inspired Ultrabook™ laptops can give on-the-go clinicians quick access to patient information. The devices combine high performance in thin and lightweight packages, with capabilities such as “instant on,” ultra-low power consumption for a long battery life, touch screen, built-in security and remote manageability (including the ability to disable lost or stolen devices).

Home-based Primary Care at the VA

Intel® researchers have engaged with the Home Based Primary Care (HBPC) program of the U.S. Department of Veterans Affairs (VA) to understand more about the workflows and technology needs of coordinated care teams and mobile clinicians. This innovative program provides interdisciplinary, longitudinal primary care in the home to frail patients with complex chronic conditions whose care costs are among the highest among users of VA services. HBPC is a model of care that has been shown to reduce total cost while improving access. In an ethnographic research project spanning 10 sites across the United States, Intel researchers shadowed clinicians and conducted in-depth interviews to identify best practices, workflow challenges, and visions for the future of coordinated care. These findings will enable Intel and the VA to identify innovative ways to scale this valuable program in order to bring it to a larger population of veterans.
New Skillsets for New Care Models

New care models and innovations such as hotspots demand new health worker skillsets to scale. Given the global shortage of physicians and research findings that many aspects of primary care can be handled safely and effectively by non-physician clinicians, there's a need to expand some clinical roles and integrate non-traditional roles into the care of patients.

Many primary care practices are expanding the range of providers on their teams to improve the quality and coordination of care. For instance, New Pueblo Medicine (NPM), a seven-physician practice in Tucson, Arizona, includes a family nurse practitioner, nurse care advocate, and pharmacy technicians. One of the physicians is a full-time hospitalist who coordinates care when the clinic’s patients are in local hospitals. Depending on the needs of the patient population served, a practice might include other types of caregivers, including behaviorists and specialists in substance abuse.

Coordinating care requires more than synchronizing the work of clinicians typically involved in direct patient care. It will involve the development of new or higher-profile roles for social workers, case managers, care coordinators, health coaches, etc., and bringing assistance across the community and into the home.

Innovative programs are springing up to engage medical assistants and specially trained volunteers to help patients navigate through the maze of health care services.

Numerous patient navigation programs have been developed to assist cancer patients in overcoming barriers to care and adhering to treatment protocols. Navigators can be professionals or community members and training programs can vary from 16 hours to 500.

There is a history of involving volunteers to achieve holistic, patient-centered care. Hospice has traditionally relied on volunteers to provide peer support and respite services, and many hospitals train and rely on volunteer patient advocates to help patients navigate the system. Metropolitan Family Services, a social service agency in Portland, OR, utilizes volunteers to staff a program that
provides transportation to medical appointments for elderly and disabled individuals. The Spring Institute for Intercultural Learning, based in Colorado, relies on older volunteers to accompany immigrants and refugees to medical appointments. Among other things, program volunteers have helped patients to acquire free hearing aids and eyeglasses, and helped to decipher their Medicare bills.29

These members of the “medical neighborhood” can be a powerful force in improving the overall health of the community. Individuals such as peer wellness counselors, community health workers, family caregivers, and even taxi services, may conceivably be engaged to help high-need patients get to services or make behavioral changes necessary to sustain their health. Engaging the resources of the medical neighborhood can also result in cost savings. For example, a chronic pain patient may have a flare-up at night and be unable to drive. After normal clinic hours, the only alternative may be calling an ambulance to get treatment at the ER—the most expensive transportation and treatment options. If the patient’s primary care provider had on-call coverage for a nurse to do some triage and arrange a taxi ride to an after-hours clinic or pharmacy, it is a better and more cost-effective experience for the patient than an ambulance to the ER. Or, as another example, care coordinators or community healthworkers could be trained to do home assessments and report back to doctors how a home environment may affect a person’s ability to manage a chronic condition such as severe asthma.

Integrating a nontraditional workforce into coordinated care will require non-traditional workers to be able to report back to clinicians and care coordinators about a patient’s status, needs or unique challenges. This kind of comprehensive view of the patient’s health and social circumstance allows the medical care team to develop care plans tailored to each patient’s well-being and ability to self-manage. Likewise, the patient’s care coordinator will need information about the scope and timing of medical services. This kind of data exchange presents new integration and security challenges, and is largely not accounted for by current electronic health records (EHRs).
Care Planning—Another Area Ripe for Innovation

It’s simple but revolutionary to think of individual medical care in the context of a plan, with specific goals and tracking mechanisms. The healthcare experience changes fundamentally, particularly for a person with complex challenges such as cancer, if all members of the care team are engaged in the success of that plan.

Yet today, care plans are sparsely used by clinicians to manage the health of patients in ambulatory or home care settings. A few studies suggest that care plans could improve patient outcomes through improved clinician-clinician as well as clinician-patient communication.30 Others have reported that there’s insufficient empirical evidence to show that care plans improve patient outcomes, while citing other benefits from the formulation of goals and improved communication.31 While insufficient evidence exists to support that patient care planning will reduce errors, reduce costs, and increase provider productivity, studies do show that patients with care plans had a 65 percent reduction in the number of emergency room visits and hospital readmissions.32 Other impacts as a result of care plan implementation included improved access and quality of care, increased satisfaction, reduced unmet needs, increased caregiver benefits, and improved controllable costs.33 Other notable benefits are that plans empower patients, reduce tension and conflict among caregivers, make better use of clinical resources, and lower rates of staff turnover.34
If different disciplines are to improve quality of care for the same patient, what’s needed is a plan that is “jointly created and managed by the patient/family and health care team.” Using a plan should allow medical professionals to more proactively identify coordination needs and gaps. It provides an opportunity for physicians and other clinicians to clearly identify their roles, anticipate routine needs, track up-to-date progress toward patient goals, arrange for care, and evaluate the patient’s situation.

A key challenge to adopting a care plan model is education and training. Teams need enhanced training and workflow optimization strategies for developing and maintaining plans. A healthcare educational system must prepare current and future health care providers to work in interdisciplinary, collaborative, team-based models. Privacy concerns are another barrier that could hinder care planning acceptance. Patient confidentiality concerns may temper sharing patient information with external sources such as community services and ancillary health services.

A lack of standards for electronic care plans is a third barrier. Different medical facilities use different definitions, styles and approaches for plans. Yet, perhaps the most fundamental barrier to more widespread implementation of care plans, particularly in the United States, has been a lack of business incentives to coordinate care. With healthcare reforms under way to better align provider incentives toward collaboration, there is greater pressure to innovate with shared services and care planning tools.
Primary Care of the Future

Cloud-connected services, device portability, and continual advances in hardware and software are gradually transforming healthcare. Someday, health “records,” even electronic ones, could be largely a thing of the past. In the future, technicians, patients, and devices might enter information directly into knowledge management systems with artificial intelligence engines to suggest diagnostic and health regimens based on a complex set of individual attributes.

Genomic data may one day be integrated into the primary care practice to an extent unimaginable today. Computing power and virtual reality software will enable care teams to communicate and interact across the planet as if they were in the same room. Individuals will choose doctors based on detailed outcomes data for patients who match their profile. Accountability will be built into an increasingly intelligent set of systems. People may even carry implantable devices that administer precise doses of medication or micro-measurements of biometric data.

Technology will march ahead. But the fundamental primary care relationship—that between patients and providers—will remain as vital as ever. If we are to meet the healthcare challenges of tomorrow, we must redesign this nucleus of care today.

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25 Ibid.


36 Ibid.


