

Accelerating the adoption of connected health

Executive summary

The demand for value and an increasingly competitive environment are prompting many health care organizations to find new and more effective ways to improve care delivery. This includes making services more accessible and potentially less expensive by enabling patient-provider connectivity “anytime and anywhere.” Specifically, these health care organizations are exploring ways to:

1. Facilitate communication between providers and consumers,
2. Engage consumers, and
3. Support prevention and management of chronic care outside traditional settings.

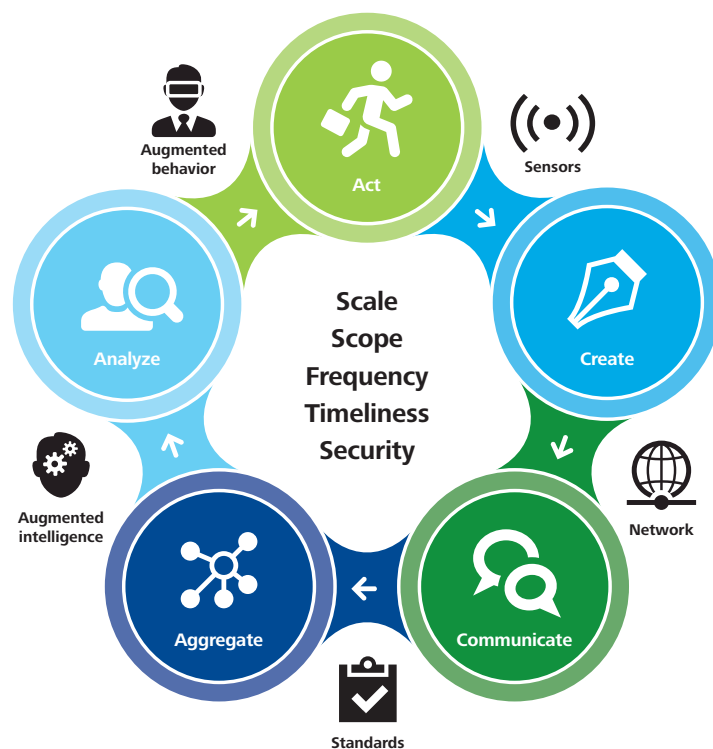
Connected health (cHealth) is technology-enabled integrated care delivery that allows for remote communication, diagnosis, treatment, and monitoring. An important goal of an effective, patient-centered cHealth approach is to improve digital connectivity between providers and patients to allow individuals to access the care they need, anytime and anywhere.

cHealth solutions span applications (apps), smart devices (wearable and non-wearable), aggregation platforms, and analytics, creating business models across the “information value loop” (Figure 1).

Are health care providers and consumers ready for this transformation? Findings from the Deloitte Center for Health Solutions’ annual surveys of physicians and health care consumers show that consumers’ interest in health technologies still exceeds their use, but the gap is slowly closing. And while most physicians are interested in cHealth and believe it has clinical value, many are not yet convinced about its ability to monitor patients’ conditions and adherence.

Deloitte analysis shows that a well-planned cHealth strategy that uses remote monitoring and telehealth for a targeted, high-cost patient population has the potential to increase health care cost-effectiveness under value-based payment models such as accountable care organizations (ACOs) or global capitation. This paper features cHealth scenarios applied to patients with congestive heart failure (CHF), a common and costly chronic condition in the US. Deloitte analysis suggests that using cHealth strategies such as remote patient monitoring or telehealth for a patient with CHF might save between \$1,054 and \$1,956 per patient per year.

Figure 1: cHealth solutions create business models across the “information value loop” that can help improve the patient journey



Source: Deloitte analysis

Across the spectrum of care, cHealth strategies may help to reduce costs and improve health outcomes, patient satisfaction, and long-term consumer engagement. Yet, data integration challenges, privacy and security concerns, and provider resistance to adopt new business models have slowed cHealth adoption. Consumer demand and expectations, and the public and private sectors' rapid uptake of value-based care (VBC) initiatives are changing the landscape for cHealth. In response, technology developers and health care organizations should consider the potential of cHealth savings, the investment costs for new cHealth technology, and targeted strategies for the patients who may benefit most.

In the world of connected health, the combination of sensors, networks, standards, augmented intelligence, and consumer behavior are creating opportunities to impact and improve the patient journey. Key objectives of cHealth include:

- Improve digital connectivity among consumers, providers, health plans, and life sciences companies.
- Facilitate self-managed care, with the help of technology-enabled solutions, in a secure environment that protects consumer privacy.
- Deliver care outside the traditional clinical setting, potentially providing better access to care at a lower cost.
- Assist chronic care management and improve population health outcomes.



Introduction

Joe is retired and lives alone. Prone to falls, his family is relieved that he has a wearable device that can track his movement, sense a fall, and call an ambulance or emergency call center while sending all related data immediately to the hospital and his physician. Joe also has multiple chronic conditions that can be complicated to manage. His daughter helps him — she can access his lab results using her mobile phone and view the report. She also can read the consultation notes from his last appointment and schedule his next visit using the same app.

Scenarios like Joe's provide a glimpse into the future of cHealth. Already, digestible, embedded, and wearable sensors that work like a thin e-skin are being developed; some have even hit the market. These sensors are starting to measure important health parameters and vital signs — temperature, blood markers, and even neurological symptoms — 24 hours a day. They can automatically transmit health data to the cloud and send real-time alerts to all stakeholders.

The promise of cHealth is exciting but remains far from being fully realized; mostly because the marketplace lacks strong incentives for providers, payers, and consumers to fully embrace cHealth technologies. The health care system is straddling two canoes as the shift from volume to value takes place. Providers and life sciences companies are under increasing pressure to demonstrate value and contain costs, while the federal government and private sector payers pursue ambitious goals for transitioning to value-based reimbursement models. Many providers still operate in a fee-for-service (FFS) world,¹ and while widespread adoption of electronic health records (EHRs) is occurring,² the transition to a value-based, connected health care system is in its early stages.

Other hurdles to cHealth adoption will need to be overcome. Consumers want to know how their data is being used and assurance that the data is private and secure.³ Physicians want to see that the data produced by cHealth aids clinical decision support in meaningful, actionable ways; they also will need to incorporate cHealth technologies like email and telemedicine into their workflow.

An aging population, increased incidence of chronic diseases, shifts in care delivery, and market and technology disruptions by non-traditional players are prompting many health care industry leaders to explore new ways of doing business and engaging informed and empowered consumers. Various cHealth solutions may help providers improve care and curb costs but, for now, providers are proceeding cautiously and uptake has been slow. According

to findings from Deloitte's 2015 *Survey of US Health Care Consumers*, use of digital tools to help consumers adhere to their treatment plan is low but appears to be rising. Among surveyed consumers who take prescription medications, 13 percent report receiving electronic alerts or reminders; this ranges from five percent of Seniors, up to 29 percent of Millennials. Over half of current medication users express interest in using technology to prompt them to take their medication; 42 percent say they haven't yet tried this kind of support.⁴

Traditionally, much of the US health care system has been organized around acute care and providers are paid for acute care procedures. Recent activity in both public and private insurance markets indicates that the system is moving towards more accountable care, where providers are responsible for a population and payment is based on outcomes.⁵ In this evolving system, value and payment are based, in part, on avoiding hospital readmissions and reducing complications through early detection of risks. Although there is potential for cHealth to play a large role in VBC, stakeholders in the cHealth ecosystem are seeking clarity around regulatory guidance and standards, as well as observing how the reimbursement landscape continues to reshape itself.

Payment models

Value-based payment models aim to reduce spending while improving health care quality and outcomes. Organizations are implementing value-based payment as an alternative to traditional FFS approaches. Models include:

- **Shared-savings:** Generally, an organization is paid using the FFS approach, but at the end of the year, total spending is compared with a target. If the organization's spending is below the target, it can share some of the difference as a bonus.
- **Bundles:** Instead of paying separately for the physician, hospital, and other services, a payer bundles payment for services linked to a particular condition, reason for hospital stay, and period of time. An organization can keep the money it saves via reduced spending on some care components in the bundle.
- **Shared-risk:** In addition to sharing savings, if an organization spends more than the target, it must repay some of the difference as a penalty.
- **Global capitation:** An organization receives a per-person/per-month (PP/PM) payment intended to pay for all of the individual's care, regardless of the services they use.



Case Study

Beyond the buzzwords: Moving toward VBC

Blackford Middleton is Chairman of the Board of Directors of the American Medical Informatics Association. He previously directed health IT initiatives at Vanderbilt and Partners Healthcare. According to Dr. Middleton, the US Department of Health and Human Services' (HHS) recent initiatives to speed the transition from volume- to value-based care are changing the landscape around cHealth. In 2014, Medicare paid providers and physicians \$362 billion under the traditional, non-Medicare Advantage program. In early 2015, HHS announced that, by 2018, it aims to have 90 percent of all payments in the traditional program tied to quality and value, and 50 percent of Medicare payments overall tied to quality or value through alternative payment models such as ACOs and bundled payment arrangements.⁶ HHS has adopted a payment taxonomy framework to guide its efforts and measure the outcome. The more advanced categories build alternative payment models into FFS arrangements or can encompass population-based payments.

Dr. Middleton says, "Those goals have put a flag in the sand that we are without a doubt moving quickly towards a value-based care model. And provider organizations are gradually waking up and figuring out how they can provide care that will meet these expectations." Dr. Middleton notes the significance of this VBC-initiative as a tipping point for change. Of all the interesting and transformative activities happening in health care, he is most excited about the HHS initiatives to accelerate the adoption of VBC. Alternative payment models such as bundled payments or ACOs enable providers to own some degree of risk, and this may prompt them to mitigate exposure to unexpected costs.

Dr. Middleton concludes, "The idea of the engaged patient is powerful;" but that the health care system has to be thoughtful about what kind of remote monitoring is truly valuable. The focus on all the 'buzzwords' in health care is starting to come to fruition, as providers move towards making care more patient-centered, with an increasing focus on prevention and wellness.

What is the incentive for health care organizations to invest in cHealth?

An aging US population and rising rates of chronic disease mean increasing costs for associated hospital and emergency room (ER) visits. According to a Deloitte physician panel,¹ adopting cHealth strategies has the potential to reduce the costs of chronic care treatment by encouraging self-care, keeping patients out of the hospital and ER, increasing drug adherence, and reducing adverse drug interactions. Such cost savings might encourage health organizations to further invest in cHealth opportunities, if they are paid under VBC models that allow them to share savings.

We used data from the Medical Expenditure Panel Survey (MEPS), a comprehensive, national snapshot of specific health services, to examine typical care patterns and costs for common chronic conditions. MEPS includes data on frequency of services use, cost of services, payment method, and the cost, scope, and breadth of health insurance held by and available to US workers. Figure 2 provides a snapshot of cardiac conditions, diabetes, asthma, and Chronic Obstructive Pulmonary Disease (COPD), chronic illnesses that are associated with a high cost of health care services, including ER use, hospital stays, and prescription medications.

According to the Centers for Disease Control and Prevention (CDC), cardiovascular disease is the leading cause of death in the US for both men and women — about 610,000 people die of cardiovascular disease every year. We looked at the potential for cHealth strategies to change treatment costs for CHF, a common type of cardiovascular disease. About 5.1 million people in the US have CHF, resulting in an estimated \$25 billion per year in direct health care costs. This total is estimated to increase to \$30 billion by 2020 and \$47 billion by 2030.⁷ We focused on how adoption of remote patient monitoring (RPM) and telehealth might affect spending for CHF and provide financial incentives for providers to make the related investments, given different VBC payment models.

Figure 2: Cost of health care services across cardiac conditions, diabetes, asthma, and COPD

Conditions		Hospital visits	Emergency visits	Prescribed drugs
Cardiac conditions	Cost (\$)/1,000 users	\$826K	\$196K	\$431K
	No. of visits/1,000 users	2,979	140	—
Diabetes	Cost (\$)/1,000 users	\$313K	\$25K	\$1,364K
	No. of visits/1,000 users	2,935	32	—
COPD/ Asthma	Cost (\$)/1,000 users	\$566K	\$61K	\$555K
	No. of visits/1,000 users	1,805	75	—

Source: MEPS* data, 2012; N ~ 39,000

* MEPS is a set of large-scale surveys of families and individuals, their medical providers (doctors, hospitals, pharmacies, etc.), and employers across the US.

¹ We interviewed a group of physicians from Deloitte with expertise in cHealth strategies and experience working with providers and health systems in cHealth integration. We presented them with data from the MEPS on typical care patterns and costs for common chronic conditions, including heart disease and diabetes, and asked them how certain cHealth strategies, including RPM and telehealth, may influence these care patterns and costs.

Remote patient monitoring

RPM technologies enable patient monitoring outside of conventional clinical settings. RPM uses digital technologies to collect health data from an individual in one location and digitally transmit that information securely to a health system in a different location. RPM has the potential to improve patients' satisfaction with care; reinforce adherence to complex medical regimens for patients on multiple prescriptions; and help patients track and monitor their health, including signs and symptoms that may trigger the need for medical care.

For example, one program using RPM for cardiac care allows a health system to provide home-based care for patients with heart failure. These devices frequently collect and transmit back health data such as vital signs, weight, heart rate, pulse, and blood pressure. This process might enable health systems through centralized monitoring centers to more effectively assess patient status and provide real-time care and patient education. With more frequent monitoring and outreach, patients also may become more engaged in their care. A critical component of RPM is to ensure that the technology is user-friendly and well-integrated into the patient's routine and workflow.

Research literature has produced a number of estimates for potential RPM-generated savings:

- According to one estimate, RPM might save nearly \$200 billion across all conditions over the next 25 years, mainly by managing chronic care in the US.⁸
- Another estimate states that RPM can reduce costs for elder care in rural areas by 25 percent.⁹

Turning to the example of CHF, Deloitte's panel of physician experts and research literature evidence agreed that RPM technologies could reduce some types of spending for patients with CHF. Some of the pilot studies estimated that RPM has the potential to reduce CHF-associated hospital visits by as much as 65 percent and ER visits by as much as 77 percent. The panel observed that those projections may be too optimistic and provided a more moderate projection of around 35 percent reduction in hospital visits and around 50 percent in ER visits over the next five years due to RPM adoption.

According to Deloitte analysis of the CHF patient data (Figure 3), a health system with 150 CHF patients for whom providers are paid under an ACO program with shared savings might save between \$79,000 and \$146,000 per year with a successful RPM initiative, assuming a shared savings rate of 50 percent and not factoring in the investment costs. For a health system managing a CHF population under a global capitation model, an RPM initiative might yield savings of \$158,000 to \$292,000 per year. Assuming 100 percent adoption, we found that RPM might save \$5.38-\$9.94 billion for US patients with CHF per year.

The sensors and devices used in RPM are often associated with the suite of technologies described as the Internet of Things (IoT). By making measurement and analysis automatic, IoT applications promise to help improve and personalize care — and create new value for industry players.

To see how health care organizations can put this particular aspect of cHealth to work, overcome the hurdles to implementation, and realize the benefits outlined above, please see [No appointment necessary: How the IoT and patient-generated data can unlock health care value](#).

Figure 3: Business case for RPM adoption for CHF patients under different VBC payment models

		Share of total spending (%)	Spending per capita (\$)	Optimistic estimate for savings (%)	Saving amount (\$)	Less optimistic estimate for savings (%)	Saving amount (\$)
Number of people with CHF	5.1 million	—	—	—	—	—	—
Total spending	\$25 billion	—	\$4,902	—	—	—	—
Hospital visits	\$15 billion	60%	\$2,941	65%	\$1,912	35%	\$1,029
ER visits	\$250 million	1%	\$49	77%	\$38	50%	\$25
Potential annual savings per capita due to RPM adoption in the US					\$1,950		\$1,054

Scenario 1: A health system has 150 CHF patients under an ACO program which has a 50 percent savings formula.

Savings for hospital under ACO program, per year	\$975 * 150 ~ \$146K	\$527 * 150 ~ \$79K
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Scenario 2: A health system operates under a global capitation model and is managing a population of 150 CHF patients. The hospital receives per-person payment regardless of the services they use so the total savings would be the savings generated for the entire managed population.

Savings for hospital under global capitation, per year	\$1,950 * 150 ~ \$292K	\$1,054 * 150 ~ \$158K
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Source: American heart association, 2010; Center for disease control and prevention, 2010; Deloitte analysis

Telehealth

Telehealth is the use of electronic information and telecommunications technologies to support long-distance clinical health care and patient and professional health-related education. Telehealth lets health care providers connect with patients and consulting practitioners across vast distances. A typical telehealth program for cardiac care would provide patients with multiple phone or video sessions in which health care professionals guide their treatment, provide psychological support, and monitor their progress.¹⁰

The US Department of Veterans Affairs (VA) provides care through different telehealth applications to more than 717,000 patients with 2,100,000 telehealth consultations. The VA attributes a 54 percent reduction in hospital days, 32 percent reduction in hospital admissions, and savings of \$2,000 per year per patient to its telehealth strategy.¹¹ Recent studies also show that telehealth visits are associated with lower costs than traditional in-office visits and could result in Medicare savings.¹²

Deloitte's physician panel and the research literature evidence support the adoption of telehealth to improve outcomes for patients with CHF over the next five years. Some of the pilot studies estimated that telehealth has the potential to reduce CHF-related hospital visits by as much as 65 percent and ER visits by as much as 90 percent. Our panel observed that those projections may be too optimistic, and provided a more moderate projection of around 35 percent reduction in hospital visits and around 70 percent in ER visits over the next five years due to adoption of telehealth.

According to Deloitte analysis of the CHF patient data (Figure 4), a health system with 150 CHF patients who are cared for under an ACO program might save between \$80,000 and \$147,000 per year with a successful telehealth initiative, assuming a shared savings rate of 50 percent and not factoring in the investment costs. For a health system managing a population under a global capitation model, adopting a telehealth-based cHealth initiative could result in savings of \$160,000 to \$293,000 per year for this specific population. Assuming 100 percent adoption, we found that telehealth might save \$5.43-\$9.98 billion per year for US patients with CHF.

We do not provide an estimate of potential savings resulting from reduced readmissions but acknowledge that some of the CHF-associated hospitalizations in our data may be readmissions.

Recent Deloitte analysis shows that a connected health strategy that includes physician extender visits, e-visits, and retail clinics could enable the physician to become 15-25 percent more efficient and productive, as they can delegate tasks and take care of more patients.¹³

For health systems operating under a bundled payment model, the RPM and telehealth initiatives may not generate any savings. This is because, under this model, payment is linked to a particular condition and episode, and not to preventing hospitalizations or reducing care following a hospitalization.

Figure 4: Business case for telehealth adoption for CHF patients under different VBC payment models

		Share of total spending (%)	Spending per capita (\$)	Optimistic estimate for savings (%)	Saving amount (\$)	Less optimistic estimate for savings (%)	Saving amount (\$)
Number of people with CHF	5.1 million	—	—	—	—	—	—
Total spending	\$25 billion	—	\$4,902	—	—	—	—
Hospital visits	\$15 billion	60%	\$2,941	65%	\$1,912	35%	\$1,029
ER visits	\$250 million	1%	\$49	90%	\$44	70%	\$34
Annual savings per capita due to telehealth adoption in the US					\$1,956		\$1,064

Scenario 1: A health system has 150 CHF patients under an ACO program which has a 50 percent shared savings formula.

Savings for hospital under ACO program, per year	\$978 * 150 ~ \$147K	\$532 * 150 ~ \$80K
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Scenario 2: A health system operates under a global capitation model and is managing a population of 150 CHF patients. The hospital receives per-person payment regardless of the services they use, so the total savings would be the savings generated for the entire managed population.

Savings for hospital under global capitation, per year	\$1,956 * 150 ~ \$293K	\$1,064 * 150 ~ \$160K
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Source: American heart association, 2010; Center for disease control and prevention, 2010; Deloitte analysis

Case Study

Connected health strategies to enhance the patient experience

Neil Evans, MD, is the Co-Director, Connected Health (Clinical Director) for the Office of Information and Analytics (OIA) at the Veterans Health Administration (VHA) and the Associate Chief of Staff for Informatics, Washington, D.C., VA Medical Center. Dr. Evans and his team are leading the effort to improve services to veterans, their families, and caregivers by increasing access, fostering continuity, and promoting patient empowerment through electronic health technologies. Dr. Evans describes a basic cHealth framework under which the team works that involves increasing access to care and improving care delivery at the right time.

A critical component of any cHealth strategy is not losing sight of the importance of the patient and provider relationship, Dr. Evans explains. The technology needs to be usable and easily integrated into the patient's and provider's lives, but beyond that, patients on their health journey value personal relationships. Technology and data collection are only one part of a cHealth strategy — the human element and the trust must be there for the value proposition to be clear to the patient. Transparency, connectedness, and the ability for patients to feel like they are better at understanding and being able to manage their own health is the way that cHealth strategies extend the reach of the health care system. For some, this could be making health care system transactions easier. Many consumers want to manage tasks such as booking appointments and filling prescriptions on their own. These types of cHealth services can enhance the patient experience and may improve system efficiency.

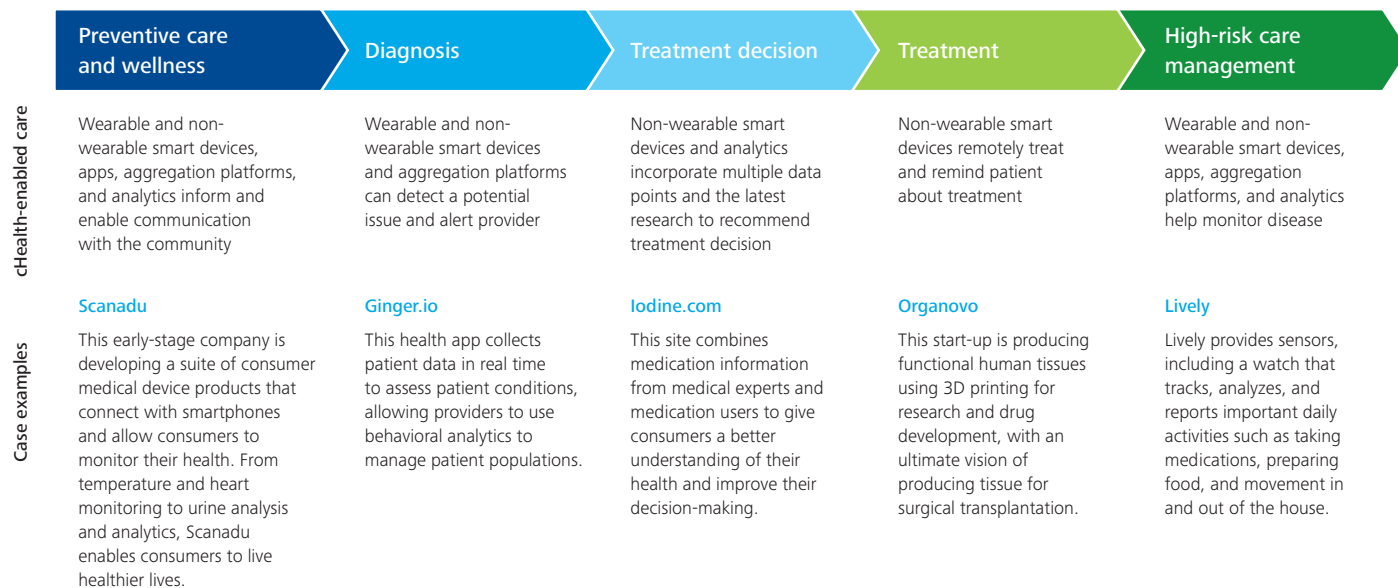
Beyond transactions, some consumers want the ability to communicate with their care team over the phone, through secure emails, text, and video chat. Having access to real-time, synchronous expert care through telehealth can help improve access to care, the patient experience, care delivery and, ultimately, health outcomes.

The VA has published some results of its home telehealth programs for non-institutionalized care patients with chronic conditions, and the studies show that the programs have resulted in sizable declines in several health care cost drivers (e.g., ER visits and admissions).¹⁴ In addition, individuals who would have long-term or frequent hospital admissions are able to live independently in their homes. While the VA is an integrated health system, Dr. Evans notes that there are elements of its successful cHealth programs that are scalable to other organizations. As the shift towards VBC models continues and more consumers enroll in ACOs and other quality-based payment models, cHealth can be an important part of the value equation.

One critical success factor is scale and segmentation: certain cHealth strategies, such as remote monitoring and telehealth, may not make sense for all patients. The cHealth strategy should be scaled across targeted populations based on certain risk factors and other characteristics. The right clinical teams need to be in place, as well.



Figure 5: The patient journey experience will continue to evolve as cHealth solutions are adopted by more patients and providers



Source: Deloitte analysis

Mobile health

Mobile health (mhealth) is the utilization of mobile technologies to provide health related solutions across the patient journey. Deloitte's 2015 *Survey of US Health Care Consumers* finds that 13 percent used video, computer programs, or mobile apps to learn about treatment options and 17 percent are very interested in doing so in the future. The same survey also notes that 23 percent of those with major chronic conditions use mobile apps to refill prescriptions.¹⁵

mHealth strategies have the potential to improve quality and consumer satisfaction as well as reduce costs. Some organizations are investing in mHealth for many reasons — with smartphone use on the rise consumers are interested in using mobile technology to better manage their health care. Health plans are developing or investing in applications that enable consumers to track health and fitness goals, refill prescriptions, set medication reminders, find health care information, make health care pricing more transparent, locate nearby providers and urgent care facilities, and make secure payments for services.

Mobile health strategies can have a positive impact on patient activation and engagement and play a role in achieving better clinical outcomes. However, regardless of the end user — patient or physician — mHealth technology needs to be easy to operate, and patients and providers need to understand how the information is being used.



Interest in cHealth is strong, but uptake challenges remain

Among surveyed US physicians, interest in mHealth is strong, with access to clinical information as the most-cited benefit. The 2014 *Deloitte Survey of US Physicians* examined physicians' current use and overall views of mHealth technologies (defined in the survey as use of mobile devices), meaningful use, and electronic health records (EHRs). The survey shows that:

- Nine out of 10 physicians are interested in mHealth technology and believe it has clinical value.
- Twenty-four percent of physicians report using mHealth; of these, 49 percent use mHealth daily.
- Thirty-eight percent of physicians are not convinced that monitoring patients' conditions/adherence is a benefit of mHealth, despite a high interest in monitoring from consumers (60 percent).

Deloitte consumer survey data shows that, increasingly, consumers are using personal health devices, websites, and mobile apps to track changes in their health, receive alerts, transmit health data, and pay their medical bills. Deloitte's recent paper, *Health care consumer engagement: no "one-size-fits-all approach,"* provides findings on trends in consumers' use of online resources and health technologies from the Deloitte Center for Health Solutions' 2008–2015 surveys of US health care consumers. The 2015 survey shows that 74 percent of consumers with major chronic conditions are very interested or somewhat interested in monitoring technologies for health issues. That said, only 47 percent of those who are interested have actually used technology to monitor their health issue, which shows that a gap exists between interest and use.

Many stakeholders across the health care system are leveraging cHealth solutions to engage consumers in new and different ways.



Provider organizations have traditionally supplied patient care, but many are now growing their telehealth and disease management capabilities.



Telecom companies such as Qualcomm and Verizon are interested in real-time monitoring of chronic health conditions.



Research organizations such as Mayo Clinic are becoming active in real-time monitoring of chronic conditions, as well as wellness apps.



Pharmacies/pharmacy benefit managers (PBMs) are using apps to increase medication adherence capabilities.



Health plans are developing apps to help members make online payments, find physicians, access general health information, review patient records, and track fitness activities.

Regulatory landscape

Regulators have begun to change laws and regulations to encourage adoption of cHealth, but key issues remain around privacy and data security, payment, and interstate medical practice.

Privacy concerns and data security: The permeability of digital technologies has permitted widely publicized unauthorized access, undermining patient and provider confidence. Among mitigating efforts is California Assembly Bill 658, signed into law in 2013, which extends consumer medical information privacy protection to mobile apps.¹⁶

Payment to providers for cHealth applications: Medicare currently pays for telehealth services when the patient being treated is in a Health Professional Shortage Area (HPSA) or in a county that is outside of any Metropolitan Statistical Area (MSA), as defined by the Health Resources and Services Agency (HRSA) and the US Census Bureau, respectively. The telehealth site must be a medical facility, such as a physician's office, hospital, or rural health clinic, and not the patient's home. Medicare will only pay for "face-to-face" interactive video consultation services in which the patient is present, and does not cover store-and-forward applications as they do not typically involve direct interactions with patients. (Medicare does cover store-and-forward applications, such as tele-dermatology, in Alaska and Hawaii.)

Private payers vary in their coverage policies. Some will pay for a wide variety of telehealth services and others have not yet developed a policy, so payment may require prior approval.¹⁷ UnitedHealth Group offers telemedicine visits for three different provider networks that connect clinicians and patients via mobile device, tablet, or computer. The program may cover as many as 20 million of UnitedHealth's members by next year. In 2014, Cigna partnered with MDLive to provide access to PCPs. More than 80 percent of Cigna's clients have access to its "virtual house call" program. Aetna has had a relationship with a national telehealth vendor since 2011 and plans to expand telehealth to behavioral health care providers in the near future.¹⁸

State-licensure issues: According to a recent report,¹⁹ 10 state medical boards issue special licenses or certificates related to telehealth. The licenses could allow a provider in one state to render services via telemedicine to a patient in another state, or allow a clinician to provide services via telemedicine in a state if certain conditions are met (such as agreeing to not open an office in that state). Currently, 24 states and the District of Columbia have active laws that govern private payer telehealth reimbursement policies. Not all of these laws mandate reimbursement and some (not all) private payer laws require that the reimbursement amount

This spring, the Texas Medical Board voted to greatly restrict the practice of telemedicine in the state. The Texas Medical Association and other groups representing doctors in the state strongly supported the new restrictions because of patient safety concerns, even as telehealth advocates promote its benefits as a safe, affordable, and convenient health care option.

While many states are easing restrictions on telemedicine, and requiring insurers to pay for it due to primary care physician (PCP) shortages and pressure to increase convenient access to medical care, this example shows that the debate around telehealth is not over.

for a telehealth-delivered service be equal to the amount that would have been reimbursed had the same service been delivered in person.

Mobile health regulations cut across many agencies:

The Office of the National Coordinator (ONC) coordinates nationwide efforts to implement and use the most advanced health information technology and the electronic exchange of health information. The Food and Drug Administration (FDA),²⁰ Federal Trade Commission (FTC),²¹ and Federal Communications Commission (FCC)²² are monitoring the connected health landscape and have worked with stakeholders to issue (and continually update) guidance.

Regulators have begun to change laws and regulations to encourage adoption of cHealth, but key issues remain around privacy and data security, payment, and interstate medical practice.

Case study

Investing in the future of cHealth

Jeroen Tas is CEO of the Philips Healthcare Informatics Solutions and Services Business Group. Tas and his team have evolved IT to become a fundamental enabler of growth for Philips as a real-time, connected company. Philips differentiates itself from others in the connected health space by having a range of health care professional and consumer offerings that can combine clinical and personal health data across the continuum to encourage prevention and healthy living, to speed diagnosis and treatment, and to enable better recovery and home care.

According to Tas, because so much of our overall health care spend is on chronic disease and is influenced by behavior related to nutrition, exercise, sleep, and alcohol intake, people can benefit from “behavioral nudges” to keep them on the right track: “We know what is right for us, and the digital world offers tools that can help prompt people to take their medication on time, monitor and measure themselves, and pick up warning signs.” He notes that the advertising industry spends billions of dollars on ads, a kind of behavioral nudging, which is, in part, why Philips is working with Salesforce.com to use their software in the company’s health care solutions.

One goal of Philips’ investment in connected health is to support older individuals in their remaining years and help them lead a dignified life under increasing constraints. Products include a wearable pendant with built-in sensors that detect falls and subsequently trigger a built-in cellular transceiver to place an outbound call to a response center. Other products alert individuals to take their medication at the prescribed time of day. When they’ve forgotten to do so, the products can send alerts to caregivers such as home nurses. They are also able to track medication compliance over a longer period of time. The products can provide comfort and reassurance, and can help people avoid ER visits, the most expensive part of a hospital stay.

Tas remarks that a major focus for the life sciences industry is finding ways to improve its understanding of individual patients, such as their genetic dispositions and symptoms and how they react to medications. Life sciences companies want the ability to go beyond clinical trials and compare data from large groups of patients using real-world evidence. Tas says, “This capability will allow companies to be much more precise in how we design medications. It is a very different model than the blockbuster drug model. It takes into account very specific conditions and patient profiles. Making this kind of change will be a long road, but most of the companies are pursuing these kinds of directions. They are looking to connect devices people are using — such as insulin pumps and ventilators — with blue tooth capabilities.” He notes that patients must opt-in to these programs but evidence shows they are willing to do so if there are privacy and security safeguards, and they see the benefits of sharing their data. “We will get a much richer picture of patients for these kinds of efforts,” he concludes.

Tas is optimistic about the future of connected health: “Change is occurring, but it won’t happen overnight. The set-up and organization of care, and the way providers are being paid, all have to change. Change is never easy, and not everyone wants it, but everywhere around the world, it is happening.”



Conclusion

This analysis shows that a well-thought-out cHealth strategy using RPM and telehealth for a population of patients with CHF can be cost-effective when integrated with value-based payment models such as ACOs and global capitation. Further, these scenarios illustrate how a provider might think through investing in individual cHealth strategies for a particular population of high-cost patients. Combined with the case studies featuring leaders in cHealth, these scenarios show it is possible to imagine a future in which health care stakeholders see the value in implementing the full spectrum of cHealth strategies across targeted chronic care populations and at different points throughout the patient journey.



Endnotes

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