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# Healthcare 2015 and U.S. health plans

New roles, new competencies



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# Healthcare 2015 and U.S. health plans

# New roles, new competencies

By Jim Adams, Barbara A. Archbold, Edgar L. Mounib and David New

The U.S. healthcare system is on an unsustainable path that will force its transformation. As a result, we are witnessing changes to the purchasing, consumption and delivery of healthcare that will redefine the way health plans compete and operate. With this in mind, U.S. health plans should reassess what their future role will be, what competencies are needed to support this role, and how they will create value for customers and outperform competitors. They must also help shape and lead this healthcare transformation, or risk being marginalized.

The environment in which U.S. health plans operate is fundamentally changing as the healthcare system struggles to address everincreasing cost, quality and access pressures. U.S. healthcare expenditures per capita are 2.3 times higher than that of other developed countries<sup>1</sup> and are projected to increase 83 percent over the next ten years.<sup>2</sup>

Despite this spending, there are quality concerns. For example, medical errors cause between 48,000 and 98,000 patient deaths each year<sup>3</sup> and medication errors cost over US\$3.5 billion annually.<sup>4</sup> There are also significant access issues as 47.0 million Americans are uninsured<sup>5</sup> and an additional 15.6 million are underinsured for catastrophic healthcare expenses.<sup>6</sup> Although cost, quality and access issues are not new in the U.S., we believe today's healthcare environment has fundamentally changed, and, more importantly, is unsustainable. As documented in "Healthcare 2015: Winwin or lose-lose?," five factors - globalization, consumerism, aging and overweight populations, diseases that are more expensive to treat, and new medical technologies and treatments - are exacerbating cost, quality and access pressures.<sup>7</sup> Change will not come easily, though, given the inhibitors to transformation - funding constraints, societal expectations and norms, a lack of aligned incentives, the inability to balance short-term and long-term perspectives, and the inability to access and share information. In this prior paper, we also identified three prescriptions for healthcare systems - transforming value, transforming consumer responsibility and transforming care delivery - in order to help countries remain competitive in a global economy.

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The challenge today is whether stakeholders are willing and able to transform the healthcare system. We believe that the status quo is not a viable alternative and major changes will occur. Given the wide variety of potential changes, we will state the following assumptions to limit the range of possibilities.

We believe that the U.S. healthcare system will not achieve a comprehensive "win-win" transformation by 2015 because of political gridlock and the inability of key stakeholders to work collaboratively to reach solutions for the "greater good." Instead, we expect to see a piecemeal and incremental improvement approach implemented as a series of "point solutions."

Additional assumptions for the U.S. healthcare system through 2015 include the following:

- Universal coverage will be enacted, either nationally or on a state-level basis in a significant number of states, but alone, it will not solve the problem. Even if enacted nationally, it will not be administered and managed by the federal government. And because of the "job lock" challenge created by tying health insurance to employment,<sup>8</sup> most universal coverage solutions will focus on individual coverage rather than requiring employersponsored coverage.
- Health and financial responsibility will continue to be transferred to individuals.
- Healthcare delivery models and capabilities will continue to proliferate at increasing rates. However, no major efforts will be taken to control the supply side of healthcare.<sup>9</sup>

 Health plans will not be immune to these healthcare system changes. Caps on health plan administrative costs and profits could be enacted either in some states or on a national basis.

Combining potential "quick-fix solutions" such as a single payer system with other factors such as the lack of trust and confidence in health plans have led many pundits to predict a bleak future for U.S. health plans. But that is not a predestined future. Health plans can – and should – help lead the transformation to a more patient-centric, value-based, accountable, affordable and sustainable U.S. healthcare system. This will also require health plans to transform themselves.

A typical successful U.S. health plan in 2015 could look quite different from today's health plan – with major changes in key roles and with significantly fewer employees in some roles and more in other roles, some commodity functions outsourced, some functions performed collaboratively with or by business partners, and greatly improved and enhanced business processes and IT-related capabilities with a much greater focus on maintaining or improving its members' health.

The purpose of this study is to provide recommendations for health plans regarding what they need to do to thrive in the new order. In the next sections, we examine how key external factors will evolve and affect health plans. We then conclude with a description of key roles that health plans will assume and competencies needed in order to meet the evolving needs of the marketplace and to succeed in a much different future environment.

# Healthcare 2015 and U.S. health plans

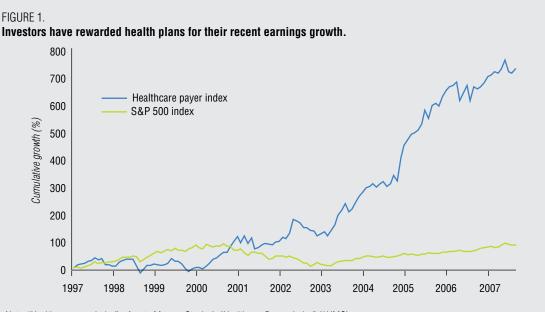
New roles, new competencies

On the surface, the staggering growth expected in healthcare expenditures suggests opportunities for U.S. health plans, but it also brings complexity and challenge.

# Emerging challenges to U.S. health plans

Health plans are experiencing a period of financial prosperity. This reflects the industry's shift in focus from enrollment growth to overall earnings growth, as well as health plans' ability to effectively price ahead of actual claims in recent years. The industry was also boosted by expansion of new U.S. markets, such as Medicare with the passage of the Medicare Prescription Drug, Improvement and Modernization Act (MMA) of 2003.<sup>10</sup> Investors have welcomed and rewarded these changes (see Figure 1). Looking forward, U.S. healthcare expenditures are forecasted to increase from US\$2.26 trillion (US\$7,498 per capita) in 2007, to US\$4.14 trillion in 2016 (US\$12,782 per capita, 6.9 percent annual growth).<sup>11</sup> While this will seemingly offer health plans new opportunities, it will also pose new challenges.

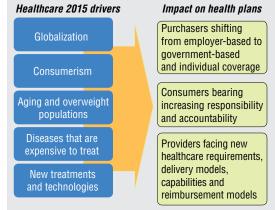
The growth in healthcare spending, combined with drivers for healthcare transformation, will have three key impacts on health plans (see Figure 2). In this section, we explore the challenges resulting from these changes in how healthcare will be purchased, consumed and delivered.



Note: "Healthcare payer index" refers to Morgan Stanley's "Healthcare Payors Index" (^HMO). Source: Yahoo! Finance, January 1997 through July 2007.

#### FIGURE 2.

Health plans will encounter key challenges in the evolving healthcare system.



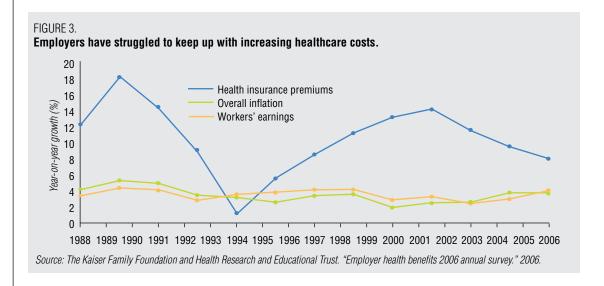
Source: IBM Global Business Services and IBM Institute for Business Value.

# Purchasers – Shifting from employer-based to government-based and individual coverage

Since its inception during World War II, employer-sponsored health coverage has been a vital component of the U.S. healthcare system. Sixty-one percent of the nonelderly population receives its health insurance coverage from employers.<sup>12</sup> However, employers have struggled to provide coverage as premiums have increased at multiples of general inflation and workers' earnings (see Figure 3). Looking forward, premiums are forecasted to increase even further. Employer-sponsored health benefits for family coverage will increase from US\$8,167 (18 percent of median household income) in 2005, to US\$17,362 (30 percent) in 2015 (7.8 percent annual growth).<sup>13</sup> Single coverage will increase from US\$3,413 (8 percent of median household income) in 2005, to US\$7,368 (13 percent) in 2015 (8.0 percent annual growth).

Employers have been exploring various options in response to rising premiums.

 Controlling costs among active employees. In the 1990s, employers turned to restrictive managed care models – a move ultimately rejected by patients and providers. Employers have since turned to preferred provider organizations (PPOs) as a more flexible, but also more costly, alternative. In 2006, PPOs accounted for 60 percent of private insurance enrollees, an increase from 41 percent in 2000.<sup>14</sup>



Employers have been exploring various options in response to rising premiums. Employers are increasingly sharing healthcare costs with their employees in the forms of higher deductibles for hospital/ physician services and co-payments for drugs. Employees are also paying higher premiums, as their monthly contributions have increased from US\$129 for family coverage in 1999, to US\$248 in 2006 (9.8 percent annual growth); single coverage increased from US\$27 to US\$52 (9.8 percent annual growth).<sup>15</sup>

Benefits are increasingly targeting the management of prevalent chronic conditions, as well as promoting healthier lifestyles, such as: offering incentives for smoking cessation, physical activity and completing health risk assessments; providing on-site fitness facilities; providing healthy lifestyles counseling; and eliminating deductibles or co-pays for preventive care. Additionally, some employers are penalizing employees for unhealthy behaviors by imposing financial penalties for poor physiologic measures, such as high cholesterol or blood pressure readings. However, the current challenge is to determine what is really needed to change consumer attitudes and behaviors.

Employers are increasingly eliminating coverage altogether. The proportion of employers offering coverage to working age adults has declined from 69 percent in 2000 to 61 percent in 2006<sup>16</sup> and is projected to drop below 50 percent by 2015, impacting both health plans and their brokers. This decline will particularly affect employees of employees that have a smaller number of employees, have a higher proportion of lower-wage employees.<sup>17</sup>

Restricting retiree benefits. Employers' commitment to retirees has also weakened, for example, as coverage among large firms (200 or more workers) decreased from 66 percent in 1988 to 35 percent in 2006.<sup>18</sup> Reasons include rising healthcare costs, increasing life expectancy and changes to the Governmental Accounting Standards Board (GASB)/Federal Accounting Standards Advisory Board (FASAB) requirements.

Among employers who offer retiree health benefits, the qualifications for coverage are becoming more stringent. For example, employers are increasingly tightening eligibility requirements, such as rewarding longer service employees. Many are also incorporating caps or ceilings on their future retiree health obligations. This can limit their liability by requiring retirees to assume a greater share of costs if and when spending on a particular retiree healthcare plan exceeds its cap. Among the employers polled in a 2005 survey, 49 percent indicated they had a cap on their largest retiree health plan. For those with these plans, 59 percent had already hit the cap, 8 percent will hit it in the next year, 19 percent will reach it in the next three years and 14 percent will not hit it in the near future.<sup>19</sup>

 Shifting from full to self-insurance.<sup>20</sup> Between 1999 and 2006, self-insurance rates increased from 44 to 55 percent among all employers, and from 62 to 89 percent among employers at firms with 5,000 or more employees.<sup>21</sup> This approach is attractive for various reasons. Employers are able to spread risk across large pools of enrollees and often purchase stop-loss insurance to limit their exposure. Moreover, per ERISA (the Employee Retirement Act of 1974), self-funded plans are exempt from state regulations covering things such as reserve requirements and premium taxes.

As employer-sponsored coverage erodes, Americans will be forced to seek out other coverage options or forego coverage. Some will turn to the individual markets and purchase their own health plans. The number of U.S. subscribers to individual coverage has risen from 16.1 million in 2000 to 17.8 million in 2005<sup>22</sup> and is expected to increase to 20 million in 2010.<sup>23</sup>

The combination of the push for universal coverage, the erosion of employer-sponsored insurance and the aging population is expected to drive this continued shift to individual and government-based coverage. Federal and state governments will provide coverage relief to other Americans. Medicaid enrollment is projected to increase 14 percent from 62.2 million in 2007 to 70.8 million in 2015.<sup>24</sup> However, benefit spending will rise 90 percent from US\$172.2 billion in 2007 to US\$326.2 billion in 2015 (8.3 percent annual growth).<sup>25</sup> This increased spending will be driven by the elderly and disabled enrollees who account for 25 percent of membership but 70 percent of spending. These mounting demands will particularly strain states' ability to manage and fund the Medicaid program.<sup>26</sup>

Medicare is being tested by the aging of the population. As in the case of Medicaid, growth in Medicare expenditures will accelerate faster than enrollment. That is, Medicare enrollment is expected to increase 22 percent from 43.8 million in 2007 to 53.6 million in 2015, while spending will increase 82 percent from US\$437.9 billion in 2007 to US\$798.5 billion in 2015 (7.8 percent annual growth).<sup>27</sup> Moreover, total Medicare expenditures are expected to increase at a faster pace than either workers' earnings or the economy overall.<sup>28</sup> And, the funding for Hospital Insurance, or Medicare Part A, is projected to be exhausted in 2019.<sup>29</sup>

In summary, the combination of the push for universal coverage, the erosion of employerbased insurance and the aging population is expected to drive this continued shift to individual and government-based coverage.

# Consumers – Bearing increasing responsibility and accountability

Consumers are assuming greater responsibility for managing and paying for their healthcare services, as well as their personal health management. If they are to successfully do this, they will need to make more sound health and wellness choices, realize greater value from the healthcare system, and make better financial plans for future healthcare needs (see Figure 4).



# Consumers must make wiser health and financial decisions as patients and purchasers.



Source: IBM Global Business Services and IBM Institute for Business Value.

As they assume greater responsibility for managing and paying for their healthcare, consumers will be rewarded for good health and lifestyle choices.

#### Better health through better choices

Today, many consumers largely disregard personal lifestyle. Lifestyle factors such as diet, smoking, exercise, alcohol, sleep, weight and stress have the largest impact on personal health status.<sup>30</sup> However, the relative widespread neglect of them has resulted in the increased incidence in illnesses and conditions that dramatically reduce the consumer's quality of life. One study, for example, estimated that half of all deaths in the U.S. could be attributed to largely preventable behaviors and exposures.<sup>31</sup>

Looking forward, we believe lifestyle choices will be more explicit and poor choices will come with short-term consequences. Healthier consumers will need less healthcare and, as a result, will pay less in total healthrelated expenditures and treatments. Healthy living education and behavior change programs will be prevalent.

#### Personalized high-value care delivery

Consumers will need to better realize value from the healthcare system as they increasingly assume greater responsibility for their healthcare. This is demonstrated by the increasing coverage by HSA/high-deductible health plans. According to America's Health Insurance Plans (AHIP), 4.5 million Americans are covered by HSA/high-deductible health plans in 2007, an increase of 1.3 million over the previous year.<sup>32</sup>

As consumers bear the financial burden of managing their healthcare, they will need to effectively navigate through the healthcare system to optimize their patient-centered, value-based, episodic and longitudinal care experiences. This includes selecting the appropriate health plan, providers, and diagnostic and therapeutic treatments for the consumer's unique situation and also appropriately coordinating care and communicating across provider settings.

#### Better financial planning for healthcare

The need for financial planning for consumerborne total healthcare expenditures is a critical need as healthcare costs keep rising and a larger portion of the financial burden continues to be shifted to the consumer. For example, a 65-year-old couple that retired in 2006 and lived to an average U.S. life expectancy (82 years for men and 85 years for women) would require an additional US\$295,000 in savings to supplement Medicare. If this couple lived until 95 years, they would need US\$550,000 (see Figure 5). A couple retiring in 2016 at 65 years of age would need US\$560,000 if they lived an average lifespan. They would need US\$1.05 million if they lived to 95 years. Many people are poorly prepared for these expenses, with over 40 percent of people over 55 having US\$50,000 or less saved.<sup>33</sup> Not surprisingly, half of all bankruptcies are in part due to medical expenses.<sup>34</sup>

#### FIGURE 5.

Projected savings needed per individual for sufficient Medicare supplemental health insurance.

Age at death (years)	Retirement at age 65 in (US\$)	
	2006	2016
80	115,000	219,000
85	162,000	307,000
90	214,000	409,000
95	275,000	524,000
100	343,000	656,000

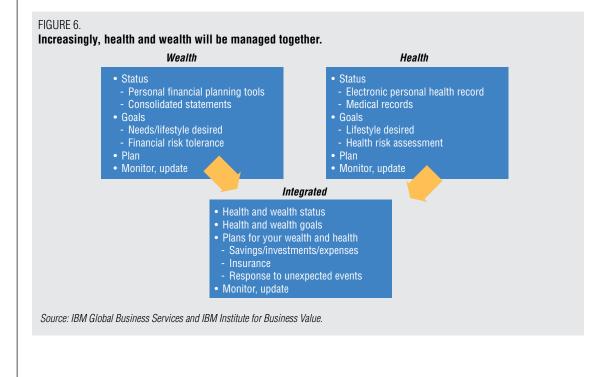
Source: Fronstin, Paul. Employee Benefit Research Institute (EBRI) Issue Brief, No. 295, July 2006. Given the broad range of needs, consumers could have a health coach, a value coach and a wealth coach. This shift of financial responsibilities to consumers will raise a whole new set of requirements. For example, how should they best save for their healthcare and other retirement expenses? How should consumers pay for unexpected or large healthcare expenditures? What kind of long-term care insurance is needed? Who can help consumers make their current healthcare payments more efficient and comprehensible? Where can they receive sound healthcare and financial advice? Which health plan is the best fit for a consumer?

As a result of these requirements, health will begin to be managed like – and along with – wealth (see Figure 6). On an individual level, consumers are beginning to integrate plans for future wealth needs with future lifestyle needs increasingly with the assistance of financial planners. These plans typically include insurance and contingency funds to cover unexpected events.

#### Rise of the "health infomediary"

As consumers' responsibility for their health and healthcare rises, so will the numbers of people who will require assistance in obtaining and interpreting the available information, and applying it in their decision making. As a result, we envision the proliferation of "health infomediaries" (HIs) who help consumers navigate the insurance, channel and service options in care delivery.<sup>35</sup> HIs will become a fixture in the landscape for both the well and the chronically ill, and for a much broader socioeconomic segment of the population.

Given the broad range of needs, some consumers could have multiple HIs or a "general HI" supported by "specialist HIs." For example, a "health coach" could provide expertise in healthy lifestyles and behavioral change to help consumers make better choices. A "value coach" would provide expertise in health benefits, provider pricing and quality, comparative cost-effectiveness of



alternatives and care coordination to help a consumer get better value from the healthcare system. Finally, a "wealth coach" would provide a strong knowledge of financial planning, financing options and insurance options to help consumers with their financial planning for health-related and other needs.

With access to information about consumers. health plans are well positioned to serve this HI role, but they are and will increasingly face potential competition from both traditional (for example, physicians could serve as a health and/or value coach) and non-traditional sources (for example, financial services companies could serve as a wealth coach), given the lack of trust and confidence that consumers typically have for health plans and the broad range of skills required. In an August 2007 consumer survey, hospitals and banks were among the highest ranked institutions, with nearly 80 percent of participants stating these companies were "doing a good job." In contrast, health insurers ranked in the lowest tier, with 60 percent suggesting health plans were "doing a bad job."<sup>36</sup> So, health plans are and will increasingly compete with other stakeholders to be the trusted health-wealth advisor.

#### Better access to information

Another challenge is the healthcare system's information technology infrastructure, adoption and interconnectivity. Today, the U.S. lacks a robust health information infrastructure, which has led to financial waste and service failures in the form of misdiagnoses, unnecessary repeated tests and the use of medications that contradict one another.

Electronic health records used by providers and personal health records controlled by consumers are needed to encapsulate and communicate an individual's critical health information. These records will enable consumers and their HIs – working with their chosen providers – to make highquality decisions about their care. Moreover, with access to trusted, reliable information about healthcare options, costs and quality, consumers will also be empowered to make better-informed choices regarding care delivery channels and providers.

#### Providers – Facing new healthcare requirements, delivery approaches, capabilities and reimbursement models

Today, healthcare delivery is overly focused on the episodic treatment of acute care. However, the emphasis of the healthcare system will continue to expand from episodic acute care services to include prevention, chronic condition management and better care coordination.

New delivery approaches will continue to emerge in response to these requirements. For example, providers will increasingly be able to deliver more personalized medicine as predisposition testing, screening techniques and diagnostic and therapeutic capabilities improve through the use of genetics, nanotechnologies and advanced imaging technologies. More and more, consumers will seek out information about the comparative value of complementary medicine providers (for example, those offering massage, chiropractic care, hypnosis, biofeedback or acupuncture), to which the number of visits already exceeds visits to primary care doctors.<sup>37</sup>

Health plans will increasingly compete with other stakeholders to be the trusted health-wealth advisor. Delivery approaches and reimbursement models must adapt to a greater focus on prevention and chronic condition management. These new approaches will continue to spur the emergence of new delivery models. Today, for example, we are witnessing the emergence or expansion of retail healthcare, centers of excellence, ambulatory surgery centers, diagnostic imaging centers, specialty hospitals, medical tourism and telemedicine.

In turn, these new delivery models will prompt new reimbursement approaches. For example, payers and providers will have to work together to determine how to fairly and appropriately pay for performance, prevention, care management and other forms of valuebased reimbursement approaches. This will also affect benefits design, claims processing, customer service and other functions.

Take personalized medicine, for example, which is still in its infancy and will likely take years to mature. Even so, it is helping shift the focus from reactive medicine to more efficient diagnoses, or even prevention of conditions and illnesses. Health plans and other payers will struggle to determine which diagnostics and therapeutics have true clinical value, to define and measure value and then to determine how to fairly reimburse for personalized medicine.

Providers may struggle to deliver truly personalized medicine because it will require a change in mindset to increasingly focus on prevention and wellness, rather than solely delivering acute and chronic care. They will also need major investments in information technology-related capabilities, such as access to genotypic information combined with robust analytics. And, of course, if providers spend resources on such capabilities, they will be keen on getting a timely positive return on their investments. As illustrated in Figure 7, key opportunities do exist for provider-health plan collaboration. Some of these requirements for providers and opportunities to collaborate may seem basic or obvious. Even so, good examples of them are difficult to find in today's environment.

#### FIGURE 7.

Health plans and providers will have to collaborate to succeed in a patient-centric, value-based system.



Source: IBM Global Business Services and IBM Institute for Business Value.

#### Focus on wellness

First, a goal of any country's healthcare system should be optimal population health, given the resources that can be devoted to healthcare. A focus on wellness, which has been lacking in the U.S., will obviously improve health status, but will also reduce utilization and costs by reducing demand for healthcare services. A wellness focus must include mutually reinforcing behavior change programs, both from health plans and from providers, tailored to help each member or patient permanently adopt healthier lifestyles.

#### Consistently provide cost-effective care

When care is needed, providers should be able to consistently provide cost-effective care. Today, there is more variability at the point of contact with the consumer (that is, the point of care) than in virtually any other industry. As a result, there are wide variations in costs and quality across providers. One problem creating these wide variations is the lack of knowledge regarding what actually works in medicine.

Another problem is not consistently applying what we do know – or think we know – at the point of care. For example, only 24 to 29 percent of diabetic patients receive regular glycosylated hemoglobin tests, which are critical to assessing the effectiveness of treatments and to the early detection of disease complications.<sup>38,39</sup> Health plans can help overcome these problems, not only through value-based reimbursement models, but also through education and information-sharing with providers.

#### Reward safety, quality and innovation

Providers who can consistently provide safe, high-quality care should be rewarded. Today, our reimbursement system, which is based more on volumes than on value, can penalize safe, high-quality providers by reducing payments for high-quality, effective treatment of a condition. Health plans must also appropriately encourage innovation – while balancing it with safety and quality. We must develop better approaches to safely test new technologies or clinical practices, evaluate their cost-effectiveness, appropriately incorporate the new approaches into practice and fairly reimburse providers.

#### Align incentives

Currently, financial and other incentives are not sufficiently aligned across providers, payers and consumers, creating conflict, mistrust and undesirable behaviors. Incentives that are aligned across these key stakeholders will be important in helping create an environment of trust, flexibility and open-mindedness required to collaboratively promote wellness, consistently provide high-value care and reward safety, quality and innovation.

#### Collaborate

Over the years, stakeholders have become adversarial, which contributes to a broken system. The problems with the broken system were created in a siloed fashion, but they will not be solved in a siloed fashion. It will require collaborative innovation among all stakeholders – particularly health plans and providers – to help change consumer behaviors, anticipate care needs for health plan members, provide high-value care and streamline administrative functions, such as claims management and payments.

### The changing competitive landscape – Implications for health plans

Changes in healthcare purchasing, consumer responsibility, and delivery requirements and models described in the previous section are reshaping the competitive landscape for health plans. Differentiation will be increasingly important. Today, the industry is largely undifferentiated and products are viewed as similar commodities, frequently competing primarily on price.

Looking forward, competition will increasingly be driven by product or service design attributes and quality of the provider network, combined with less tangible – but equally important – factors such as trust and perceived product or service quality, rather than simply cost. Health plans must deliver a more personalized experience and provide information members can act on, while becoming a valued business partner to healthcare providers and other stakeholders. This will require many health plans to change their leadership, culture, competencies, business models, organizational structures, sourcing strategies, processes and information technology to meet the changing market and consumer preferences. Figure 8 describes some key implications for health plans.

One way of summarizing many of these changes is to consider the mindset of the health plan – from a "wholesale" or businessto-business products mindset, to more of a "retail" or business-to-consumer products and services business model. These changes will affect health plans in a number of ways.

First, more sales may be made to individuals, rather than group purchasers such as employers and governments, requiring more market segmentation, more flexible products and services (for example, the ability to provide different benefits and customized

#### FIGURE 8.

Changing components of U.S. health plans	From (typical of today's environment)	To (typical of future environment)
Health plan sponsorship	<ul> <li>Primarily private groups (at-risk or self- insured) with some individual or government plans</li> </ul>	<ul><li> Private groups</li><li> Governments</li><li> Individuals</li></ul>
Competitors	<ul> <li>Primarily regional with some national competitors</li> </ul>	<ul> <li>Regional</li> <li>National</li> <li>Non-traditional, such as financial institutions</li> </ul>
Basis for competition	<ul> <li>Price, coverage, network size, claims processing and responsiveness</li> </ul>	<ul> <li>Personalized information consumers can act on to improve health and healthcare</li> <li>Targeted products and services across a broader healthcare spectrum of needs and delivery channels</li> </ul>
Innovation	<ul> <li>Customer profitability analysis</li> <li>Better forecasts</li> <li>Contain medical loss ratios</li> </ul>	<ul> <li>Providing personalized products and services</li> <li>Providing a wellness ROI</li> <li>Removing barriers to innovation by providers and suppliers</li> <li>Transitioning to value-based reimbursement</li> </ul>
Revenues	<ul><li>Self-insured groups</li><li>Fully insured groups</li></ul>	<ul> <li>Government plans</li> <li>Self-insured groups</li> <li>Fully insured groups</li> <li>Individual plans</li> </ul>
Profits	<ul> <li>Fully insured groups (typically smaller employers)</li> </ul>	<ul> <li>Ability to manage self-insured and government- funded plans</li> <li>Healthcare financial transactions and managing investments</li> </ul>
Provider networks	<ul> <li>Regional</li> <li>Traditional settings</li> <li>One size fits all</li> <li>Inclusion based on willingness to accept reimbursements</li> <li>Frequently adversarial relationship</li> </ul>	<ul> <li>Regional, U.S. centers of excellence and global</li> <li>Non-traditional settings included</li> <li>Specialty networks</li> <li>Inclusion based on demonstrable value and effectiveness</li> <li>Collaborative relationship</li> </ul>

Source: IBM Global Business Services and IBM Institute for Business Value.

These changes in how healthcare is purchased, consumed and delivered will push health plans toward a more retailoriented product and services model. services for each family member associated with an employee) and more retail distribution channels (for example, Web-based channels, retail storefronts and mobile venues like recreational vehicles) than in the past.

Additionally, the primary customer for many health plans will become the member (a retail customer) rather than the employer (a wholesale customer). As we have seen in other industries, consumerism has created a much more demanding set of retail customers, both for product quality (can this product be tailored to meet my needs?) and service quality (can you help me stay healthier or navigate the health system when I am ill?). As a result, health plans may leverage their call centers to make outbound calls to members, for example, to remind them to have recommended tests done, triggered by the member's demographic characteristics and personal/ family health history.

This increased focus on service may also lead to health plans migrating to both a products and a services company or wrapping their products with services. For example, certain services to help members stay healthy may be provided without additional cost to the members, while other value-added health promotion services may be provided at additional cost.

We are also witnessing the early stages of administrative processes such as claims processing and payments moving from bulk processing (wholesale) to point-of-service processing for members and providers (retail payments). The ability to process claims and payments at the point-of-service (when a patient is leaving a doctor's office) would improve cash flow and reduce administrative costs for the doctor, simplify the patient's interactions with the health system (no confusing explanation of benefits or frustrating bills months after the service was delivered) and reduce administrative costs for the health plan.

The shift to a retail mindset and business model will have a significant impact on both administrative costs and the need for flexibility and agility. Health plans have traditionally focused on reducing costs and optimizing efficiencies in an era where member needs, products and services were relatively undifferentiated and provided in bulk on a wholesale basis.

Looking forward, this will be more difficult in a new era with more and customized products, and services being sold to a wider variety of clients through an expanded distribution channel. Members will increasingly have higher expectations for service, convenience, the delivery network and overall value from the health plan, and the provider network that is delivering personalized care through a wider variety of care venues and settings. With this added complexity, controlling administrative costs becomes inordinately more difficult for health plans.

Also, given the potential changes in the healthcare landscape over the next few years, health plans will also need to make strategic decisions to enable the underlying processes, information and technologies needed to achieve the necessary agility to adapt over time. For example, some functions that health plans perform today, such as claims processing, may become commoditized or performed as an industry utility, perhaps by high-volume transaction processors from other industries. Other functions, such as call centers, could migrate from primarily handling inbound calls to proactively engaging Over time, we believe health plans will assume one or more of the following roles: Health/Wealth Services Advisor, Health Services Optimizer, Applied Research Advisor or Transaction Processor. members in their health. Still other functions, such as managing investments in consumerdirected accounts, could be performed by a health plan or by a more traditional investment firm.

# Value creation – Recommendations for health plans

Changes in the healthcare landscape will force many health plans to reassess their business strategy and their relationships with key stakeholders, such as plan members, providers, employers and brokers/producers. One way of framing part of the strategy discussion is to consider the role or roles that health plans will perform in the changing healthcare environment, as well as the underlying competencies needed for these roles.

#### Emerging roles for health plans

In light of these industry challenges, we anticipate successful health plans will excel in key roles over time – across business cycles, industry disruptions and other challenges. In particular, they will assume one or more of the following roles: Health/Wealth Services Advisor, Health Services Optimizer, Applied Research Advisor and Transaction Processor.

Health/Wealth Services Advisors are healthcare concierges focused on the needs of individual member and key market segments. For example, some consumers may want assistance in selecting a financial product like a health savings account, identifying benefits that best suit the member's unique needs, as well as differentiating between the pros and cons of other options. Segments of the market may want the services delivered through different channels – via a "high-touch" contact center, on the Internet or in person; and they may want to pay in different ways – bundled with the product, on a subscription basis or by the transaction.

Health Services Optimizers will help enable members to effectively and efficiently navigate the healthcare system to better manage their health from wellness to acute conditions to chronic care. They represent an evolution of today's medical management and network management into a full-service function aiding members. This function can include empowering members with better access to their health information, perhaps through payer-based health records, educational material and decision-making tools. For other members, it will provide guidance across the healthcare continuum. In the case of diabetics, for example, Health Services Optimizers could help members and their providers manage their condition across multiple providers.

Applied Research Advisors will help pull together existing knowledge (for example, existing comparative effectiveness research and costs), and combine it with new knowledge that can be extracted from the health plan's or partner's (for example, hospitals or pharmaceuticals) information systems. In turn, they can develop knowledge that is then applied to improve clinical policies and decisions, intraand inter-enterprise processes and overall value derived from the health system.

Transaction Processors are more traditional than what currently exists, as many health plans are more focused on being the highvolume, low-cost transaction processor. They have developed a labor pool and very efficient processes. So looking ahead, health plans may very well elect to focus on being the "clearinghouse" of choice for claims, financial and other transactions, but may face competition from new entrants such as banks and other high-volume transaction processors.

The degree to which a health plan specializes in one or more of these roles will be dictated in part by its size and scale. For the top six health plans who cover 60 percent of all commercially insured Americans, we expect they and other large organizations will attempt to adopt many, if not all, of these roles. In some cases, they will delegate a role to a subsidiary, which would operate efficiently and respond rapidly to changes in that area. For the over 500 small health plans that insure 20 percent of commercially insured Americans, they will likely specialize in one or a few roles.

#### Different roles require different competencies

Health plans will need to develop underlying competencies to flourish in these new roles (see Figure 9). These competencies should be supported by a mastery of strategically important capabilities by strengthening the value of distinctive internal capabilities, and/ or creatively and aggressively harnessing complementary, external capabilities.

Empowering members to assume greater accountability and make more informed health and financial choices is one such competency. Health/Wealth Services Advisors and Health Services Optimizers will especially need to provide members with tools and information to address both health-related and wealth-related - or integrated health-wealth - planning and decision making. Also, most consumers will need more than tools and information to assume greater responsibility and accountability for their own health and wealth: they will need access to "health infomediaries" to help make sense of the information and change their behaviors.

#### Different roles will require different competencies. Roles Health/Wealth Health Services Applied Research Transaction Competencies Optimizer Processor Advisor Advisor **Empower members** () $\bigcirc$ **Collaborate with** $\bigcirc$ providers Innovate $\square$ Optimize operational $(\mathbf{D})$ efficiencies **Enable through IT** Differentiator More than threshold capabilities required () Threshold Source: IBM Global Business Services and IBM Institute for Business Value.

#### FIGURE 9.

Health plans must determine their proficiency in the competencies that are most critical for their selected roles – and develop plans to fill gaps. *Collaborating with providers* to help enable them to succeed in a value-based reimbursement environment is another required competency. Particularly in the case of Health Services Optimizers and Applied Research Advisors, health plans and providers will need to work collaboratively and with other stakeholders to anticipate member needs, develop meaningful comparative effectiveness information for diagnostic and treatment approaches (the benefits, risks and costs of alternative approaches), disseminate the information appropriately, craft fair, value-based reimbursement mechanisms and streamline administrative processes.

Innovating products and services, intra- and inter-enterprise operational processes or business models will be key across the roles to meet the changing needs of customers and other stakeholders. This will require significant cultural changes across the various constituents in the value chain. It will also require partnerships and greater collaboration with other stakeholders, as some health plans have done with financial services organizations.

*Optimizing operational efficiencies* to continue to reduce costs or improve service levels, thereby helping to maximize margins in this highly regulated industry will be increasingly important. Operational efficiencies will also be more difficult to achieve as many health plans will sell a wider variety of products and services to a more diverse customer base through multiple channels, generating members who will have increasingly higher expectations for both the insurers and the provider network. Health plans must look across the enterprise's processes and technologies, as opposed to individual departments and individual point-of-service initiatives. Organizational change must occur across the whole value chain. This competency will especially be important for Transaction Processors who will be pressed to optimize transaction efficiencies and flexibility.

Enabling through information technology will be a particularly important competency across the roles and to enable other competencies. It is difficult, for example, to empower members or collaborate with providers without having reliable, trusted information that can be acted on. This will require health plans to have robust, flexible applications and architectures and strong business intelligence capabilities, combined with the ability to easily and securely share the information with external partners, as appropriate.

These roles, with their underlying competencies, will require health plans to conduct business very differently than today. We have provided some representative questions and sample key indicators to help them assess their realization of these competencies (see Figure 10) and develop a plan to address key gaps or deficiencies.

In summary, we recommend that U.S. health plans take the following steps:

- Fully recognize the need for and help shape a more patient-centric, value-based, accountable, affordable and sustainable U.S. healthcare system.
- Identify future roles and competencies necessary to thrive in the new order.
- Assess the readiness of their competencies to meet the changing needs of consumers, providers, healthcare purchasers and brokers/producers.

• Develop a plan to transition to the new role(s) and develop the new competencies required to support the roles. The plan could include key elements such as

business models, organizational culture, skills and competencies, organizational structure, sourcing strategies, internal and inter-enterprise processes and IT.

#### FIGURE 10.

Health plans should assess their readiness for the new healthcare environment.

	Questions	Sample indicators
Empower members	<ul> <li>Do you have a single view of the member across all products and business partners?</li> <li>Are you focused on wellness, cost-effective care and financial preparedness for the member?</li> <li>Do you have a proactive contact center that positively affects care outcomes?</li> <li>Do your members trust you to do the right thing for them?</li> </ul>	<ul> <li>The right answer to virtually any question can be obtained through any channel</li> <li>Realtime analytics regarding wellness calls, compliance and costs</li> <li>Contact center highly rated in member/provider surveys</li> <li>Member and health plan incentives are aligned</li> </ul>
Collaborate with providers	<ul> <li>Do you have differentiated arrangements with providers based on value?</li> <li>Do you have in place a "virtual" healthcare management process for high-value providers?</li> <li>Do key providers view you as a trusted partner in helping them succeed in a value-based environment?</li> </ul>	<ul> <li>Insurance plans that pay more for care by designated providers based on value</li> <li>"Gold pass" arrangements have been implemented with certain provider groups for selected services</li> <li>Physicians who understand the need for healthcare transformation want to be in your network</li> </ul>
Innovate	<ul> <li>Are you able to blend a "culture of innovation" with a Six Sigma mindset?</li> <li>Are you shaping or disrupting the market?</li> <li>Can you react quickly to new customer demands or new external threats?</li> </ul>	<ul> <li>Innovation efforts are adequately funded and are separated from continuous improvement efforts</li> <li>First-of-a-kind (FOAK)/speed to market projects underway</li> <li>Member, provider and broker loyalty</li> </ul>
Optimize operational efficiencies	<ul> <li>Are your intra- and inter-enterprise business processes flexible and adaptable?</li> <li>Do your business and technology-enabled initiatives improve customer value or provide the same value at lower costs?</li> <li>Have you eliminated redundancies in similar processes or functions across different product lines?</li> </ul>	<ul> <li>Key inter-enterprise business processes are monitored, analyzed and improved</li> <li>Key business metrics improve after implementing initiatives</li> <li>Number of similar processes or functions evaluated or streamlined</li> </ul>
Enable through IT	<ul> <li>Are your transactions systems flexible and efficient?</li> <li>Do you have robust analytics capabilities?</li> <li>Can you extend information to partners?</li> <li>Do you have strong IT governance capabilities?</li> </ul>	<ul> <li>High degree of reusable, interchangeable services</li> <li>Consistent answers (single version of "the truth") across multiple channels</li> <li>Clinical and claims information used to advise members, providers</li> <li>Major enterprise and inter-enterprise IT-related initiatives are coordinated and prioritized</li> </ul>

Source: IBM Global Business Services and IBM Institute for Business Value.

## Conclusion

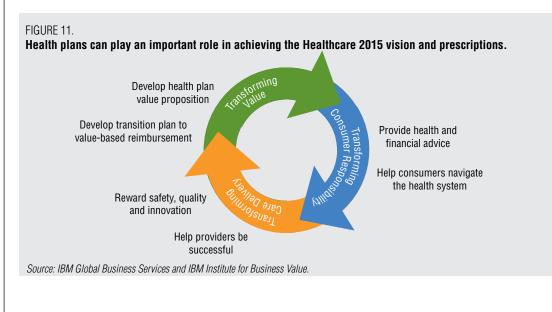
Transforming a badly broken healthcare system in a rapidly changing environment will obviously not be easy. No single stakeholder created the broken system, and no single stakeholder can solve the problems. In short, active participation, collaboration and change will be required on the part of all stakeholders.

Over the coming decade, health plans have the opportunity to participate – even lead – one of the most challenging transformations affecting our nation. Their actions will be critical in determining whether the future U.S. healthcare system is patient-centric, value-based, accountable, affordable and sustainable. Many health plans are well-suited to help shape and lead this transformation, given their financial resources, knowledge of the local markets and key relationships with providers, members and employers. These resources and relationships can help align incentives and facilitate change in other stakeholders. For example, health plans can help providers successfully transition to a value-based reimbursement environment and can help members change behaviors, in part through rewards for healthier lifestyles.

Even so, change will not come easy. Health plans must earn the "permission," trust and confidence of other stakeholders to help lead the change – no small task given the negative view of health plans held by many stakeholders. Concurrently, health plans must take on new roles and develop new competencies, which will require new leadership, culture, business models, organizational structures, sourcing strategies, skills, processes and technologies.

Stated differently, a typical successful health plan in 2015 could look quite different from today's health plan – with major changes in key roles and with significantly fewer employees in some roles and more in other roles, some commodity functions outsourced, some functions performed collaboratively with or by business partners, and greatly improved and enhanced business processes and IT-related capabilities with a much greater focus on maintaining or improving its members' health.

Health plans that successfully transform their organizations and help lead the reform of the U.S. healthcare system to one that is more patient-centric, value-based, accountable, affordable and sustainable – in other words, to the vision and prescriptions painted in "Healthcare 2015: Win-win or lose-lose?" – can continue to prosper. Those that fail to do so risk being marginalized in the changing healthcare environment.



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## **Related publication**

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### References

- "OECD health data 2007: Statistics and indicators for 30 countries." Organisation for Economic Co-operation and Development. July 18, 2007.
- <sup>2</sup> Poisal, John A., Christopher Truffer, Sheila Smith, Andrea Sisko, Cathy Cowan, Sean Keehan and Bridget Dickensheets. "Health spending projections through 2016: Modest changes obscure Part D's impact." *Health Affairs*. February 21, 2007.
- <sup>3</sup> Kohn, Linda T., Janet M. Corrigan and Molla S. Donaldson. *To Err is Human: Building a Safer Health System*. Washington D.C.: National Academy of Sciences. 2007.
- <sup>4</sup> Aspden, Philip, Julie A. Wolcott, J. Lyle Bootman and Linda R. Cronenwett. *Preventing Medication Errors*. Committee on Identifying and Preventing Medication Errors, Board on Health Care Services. Washington, D.C.: National Academy of Sciences. 2006.
- <sup>5</sup> "Income, poverty, and health insurance coverage in the United States: 2006." U.S. Census Bureau. August 2007. Available at http://www.census.gov/prod/2007pubs/p60-233.pdf (accessed on August 28, 2007).
- <sup>6</sup> Schoen, Cathy, Michelle M. Doty, Sara R. Collins and Alyssa L. Holmgren. "Insured but not protected: How many adults are underinsured?" *Health Affairs*. June 14, 2005.
- <sup>7</sup> Adams, Jim, Edgar L. Mounib, Aditya Pai, Neil Stuart, Randy Thomas and Paige Tomaszewicz. "Healthcare 2015: Win-win or lose-lose?" IBM Institute for Business Value. October 2006. Available at http://www.ibm.com/healthcare/ hc2015 (accessed on August 11, 2007).
- <sup>8</sup> By "job lock," we are referring to the difficulty employees may have in changing jobs because of the potential loss of or change in healthcare benefits.

- <sup>9</sup> Somewhat simplistically, there are two ways to reduce overall healthcare costs: reduce utilization of healthcare resources (that is, the number of "units" consumed) or reduce unit costs. Reducing utilization can be accomplished by managing the demand (for example, health promotion, prevention, or value-conscious consumption/utilization) or by managing the supply (for example, controlling the capacity). Controlling capacity has created problems of long wait lists in other countries, but not controlling the supply in the United States, combined with volume-based reimbursement, has led to "supply creating its own demand."
- <sup>10</sup> Robinson, James C. "The commercial health insurance industry in an era of eroding employer coverage." *Health Affairs.* November/ December 2006.
- <sup>11</sup> Poisal, John A., Christopher Truffer, Sheila Smith, Andrea Sisko, Cathy Cowan, Sean Keehan and Bridget Dickensheets. "Health spending projections through 2016: Modest changes obscure Part D's impact." *Health Affairs*. February 21, 2007.
- <sup>12</sup> "Employer health benefits 2006 annual survey." The Kaiser Family Foundation and Health Research and Educational Trust. 2006. Available at http://www.kff.org/insurance/7527/ index.cfm (accessed on August 11, 2007).
- <sup>13</sup> Glasscock, Larry. "Strategic initiatives." WellPoint 2006 Analyst Meeting, December 12, 2006. Available at http://library. corporate-ir.net/library/13/130/130104/ items/224059/WLPInvDay06%20-%20Management%20-%201045AMPosting.pdf (accessed on August 11, 2007).

- <sup>14</sup> "Employer health benefits 2006 annual survey." The Kaiser Family Foundation and Health Research and Educational Trust. 2006. Available at http://www.kff.org/insurance/7527/ index.cfm (accessed on August 11, 2007).
- <sup>15</sup> Ibid.
- <sup>16</sup> Ibid.
- <sup>17</sup> Ibid.
- 18 Ibid.
- <sup>19</sup> Kitchman Strollo, Michelle and Tricia Neuman. "Prospects for retiree health benefits as Medicare prescription drug coverage begins." Menlo Park, CA: The Henry J. Kaiser Family Foundation and Lincolnshire, IL: Hewitt Associates. December 2005.
- <sup>20</sup> Refers to practice of outsourcing benefits management and/or claims management, while covering realized costs of care.
- <sup>21</sup> "Employer health benefits 2006 annual survey." The Kaiser Family Foundation and Health Research and Educational Trust. 2006. Available at http://www.kff.org/insurance/7527/ index.cfm (accessed on August 11, 2007).
- <sup>22</sup> Fronstin, Paul. "Sources of health insurance and characteristics of the uninsured: Analysis of the March 2006 Current Population Survey." Employee Benefit Research Institute (EBRI) Issue Brief, No. 298. October 2006.
- <sup>23</sup> IBM Institute for Business Value analysis.
- <sup>24</sup> "Fact sheet for CBO's March 2007 baseline: Medicaid." Congressional Budget Office. March 6, 2007. Available at http://www.cbo. gov/budget/factsheets/2007b/medicaid.pdf (accessed on August 11, 2007).
- <sup>25</sup> Ibid.
- <sup>26</sup> Ibid.

<sup>27</sup> "2007 annual report of the boards of trustees of the federal hospital insurance and federal supplementary medical insurance trust funds communication." U.S. Department of Health and Human Services, Centers for Medicare and Medicaid Services. April 23, 2007. Available at http://www.cms.hhs.gov/ReportsTrustFunds/downloads/tr2007.pdf (accessed on August 11, 2007).

28 Ibid.

<sup>29</sup> Ibid.

- <sup>30</sup> Fuchs, Victor. *The Health Economy.* Cambridge, MA: Harvard University Press. 1986.
- <sup>31</sup> Mokdad, Ali H., James S. Marks, Donna F. Stroup and Julie L. Gerberding. "Actual causes of death in the United States, 2000." *Journal of the American Medical Association*, Volume 291. March 10, 2004.
- <sup>32</sup> "January 2007 census shows 4.5 million people covered by HSA/high-deductible health plans." America's Health Insurance Plans. April 2, 2007. Available at http://www.ahipresearch.org/PDFs/FINAL%20AHIP\_HSAReport.pdf (accessed on August 11, 2007).
- <sup>33</sup> Fronstin, Paul. "Savings needed to fund health insurance and health care expenses in retirement." Employee Benefit Research Institute (EBRI) Issue Brief, No. 295. July 2006.
- <sup>34</sup> Himmelstein, David U., Elizabeth Warren, Deborah Thorne and Steffie Woolhandler.
   "Illness and Injury as Contributors to Bankruptcy." *Health Affairs Web Exclusive*, W5-63.
   February 2, 2005.
- <sup>35</sup> In their book, *Net Worth: Shaping Markets When Customers Make the Rules* (Harvard Business School Press: 1999), John Hagel III and Marc Singer define "infomediary" as a company that acts as the "custodian, agent and broker of sensitive consumer information." We have adapted this term to mean a professional employed to interpret health information, understand healthcare financing and navigate the global healthcare market.
- <sup>36</sup> "Some substantial changes in how Americans view different industries." Harris Interactive. August 8, 2007. Available at http://www.harrisinteractive.com/harris\_poll/index. asp?PID=795 (accessed on August 11, 2007).
- <sup>37</sup> Morris, Katherine T., Nathalie Johnson, Louis Homer and Deb Walts. "A comparison of complementary therapy use between breast cancer patients and patients with other primary tumor sites." *American Journal of Surgery*, Volume 179, Issue 15. May 15, 2000.
- <sup>38</sup> McGlynn, Elizabeth A., Steven M. Asch, John Adams, Joan Keesey, Jennifer Hicks, Alison DeCristofaro and Eve A. Kerr. "The quality of health care delivered to adults in the United States." *New England Journal of Medicine*, Volume 348, No. 26. June 26, 2003.
- <sup>39</sup> Saaddine, Jinan B., Michael M. Engelgau, Gloria L. Beckles, Edward W. Gregg, Theodore J. Thompson and K.M. Venkat Narayan. "A diabetes report card for the United States: quality of care in the 1990s." *Annals of Internal Medicine*, Volume 136, Issue 8. April 16, 2002.



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