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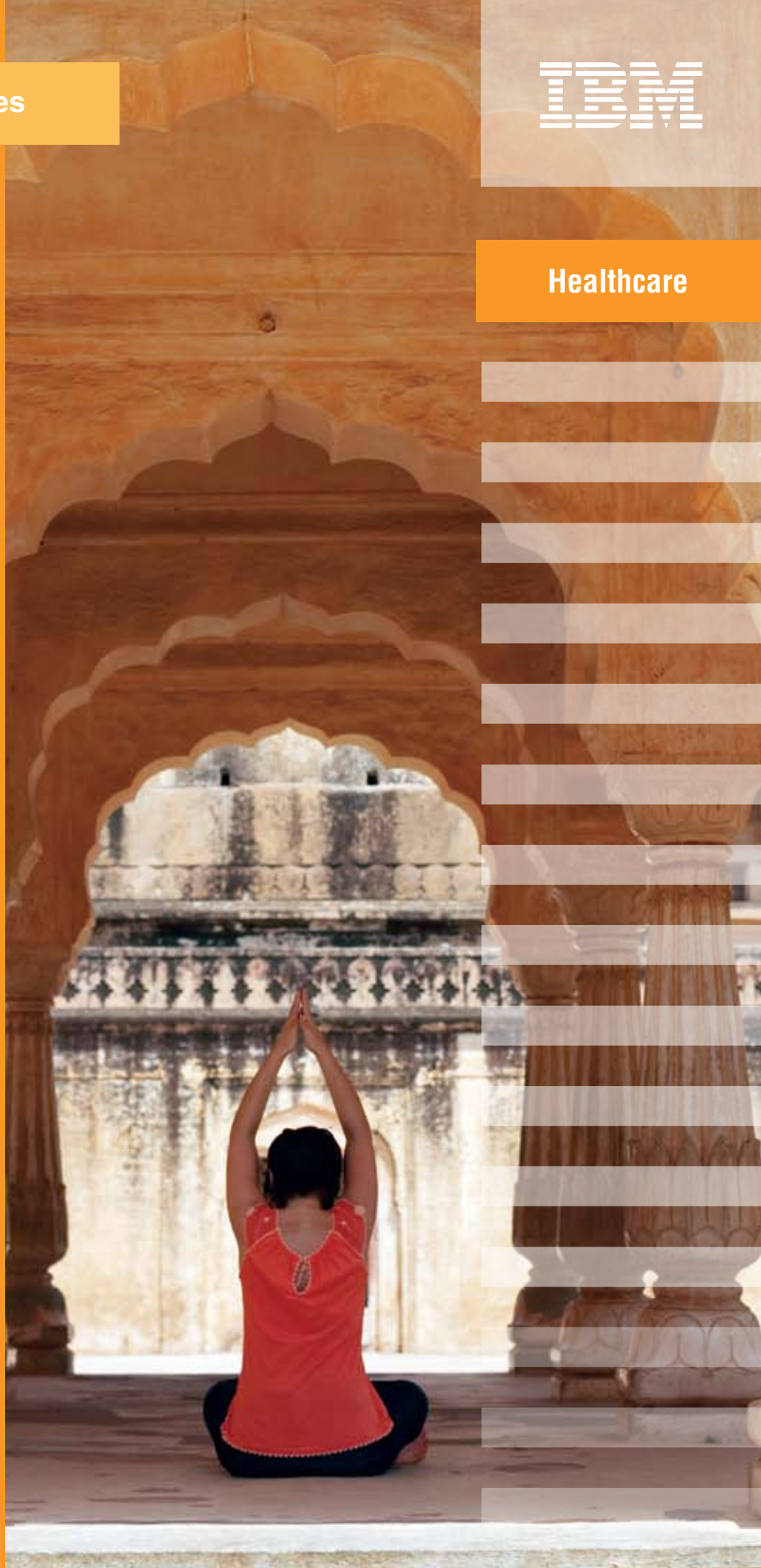
Healthcare

Healthcare in India

Caring for more than a billion



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Healthcare in India

Caring for more than a billion

By Srivathsan Aparajithan, Shanthi Mathur, Edgar L. Mounib, Farhana Nakhooda, Aditya Pai and Libi Baskaran

India's healthcare system is quickly expanding, but faces considerable challenges – to be expected in a country rapidly transitioning into a global economic power. It must satisfy the rising demands and expectations of the burgeoning middle class, while addressing the needs of those not benefiting from economic development. Nevertheless, India has an opportunity to avoid the problems that healthcare systems in many developed countries are experiencing by transforming financing and delivery, redefining the accountabilities of stakeholders, and improving quality and access.

Introduction

India has had notable health achievements since Independence in 1947. The country's population has increased from 361 million in 1951 to 1.13 billion in 2007 (313.0 percent increase), life expectancy has more than doubled (32 years to 68.6), infant mortality rate has decreased 76.3 percent (146 per 1000 babies to 34.6) and crude death rate has fallen 73.7 percent (25.1 per 1000 population to 6.6).[1]

Other achievements include eradication of some diseases (small pox and guinea worm) and near elimination of others (for example, leprosy and polio).[2] India's doctors and hospitals are also increasingly receiving recognition for the quality of care they provide. Their services cost a fraction of those of their western counterparts, and has helped fuel interest in India as a destination for "medical tourists" – those patients who travel across national borders for healthcare.

Nevertheless, India faces considerable challenges. The country accounts for a relatively larger share of the world's disease burden. That is, although India makes up 16.5 percent of the world's population, it accounts for "a third of diarrheal diseases, tuberculosis, respiratory and other infections; a third of parasitic infestations, and perinatal conditions; a quarter of maternal conditions; a fifth of nutritional deficiencies, diabetes and cardiovascular diseases; and the second largest number of HIV/AIDS cases in the world."[3]

India's burgeoning middle class has greater access to excellent healthcare, but the vast majority of citizens have limited access to basic healthcare of varying quality. While government health services are by law free, patients must often pay for drugs out-of-pocket to get sustained treatment. More than 40 percent of hospitalized patients borrow money or sell assets for medical care and 24 percent become impoverished due to medical crises.[4]

An examination of healthcare systems in other countries underscores the importance of achieving a value-based, affordable, sustainable healthcare system in India. In a recent study by the IBM Institute for Business Value, we demonstrated that unrelenting pressures are pushing many healthcare systems along an unsustainable path.[5] If left unaddressed, many countries will reach a breakpoint in their current paths, forcing immediate and major forced restructuring. What does this mean for India?

Without significant changes, an unsustainable path for India could have public health, economic, social and political ramifications. For example, the healthcare infrastructure will remain fragmented, focused on acute, reactive, episodic care and will be inaccessible, particularly in rural areas. There is also the potential impact on premature morbidity/mortality due to unaffordable, inaccessible and inconsistent quality of healthcare. And the insufficient healthcare delivery capacity would be exacerbated, as providers are burdened by such issues as workforce shortages, costs of treating the uninsured and overcrowding.

There are other ramifications of the *status quo*. Economically, continued depletion in the quality and quantity of general workforce can lead to lower national output in national income. Between 2005 and 2015, for example, heart disease, stroke and diabetes are expected to account for Rs 1,040,800 crores (US$236 billion) in lost productivity.[6]

Socially, there would likely be a reduced transfer of skills and wealth across generations and continued developmental losses for children. Politically, India could fail to deliver healthcare as a fundamental public right for all citizens. Moreover, there would be a possible loss of global competitiveness as the country's health status is unable to effectively support its ambitious economic growth plans.

This leads to two key questions. What can be done to set India on a sustainable path? And how prepared are its stakeholders to confront the challenges, to be held accountable and to successfully transform the healthcare system?

In this paper, we will address these questions by providing a better understanding the impending health and healthcare challenges in India, identifying key areas for transformation and detailing our recommendations and their implications for key stakeholders.

Healthcare in India

Caring for more than a billion

If India moves too quickly, the country's healthcare capacity problem may lead to sustainability issues.

A healthcare system in transition

The origins of India's healthcare system can be traced back to the country's colonial era. In 1946, the Bhore Committee, established by the colonial government to examine and suggest improvement in the public health system, recommended that health services "should be free to all without distinction."[7] These recommendations were implicitly accepted as India's health policy for decades. However, the healthcare system was strained by shortcomings, such as a weak referral system and an underdeveloped and ineffectively managed public health infrastructure.

Since the 1980s, government has taken a more comprehensive approach to healthcare. For example, the 2002 National Health Policy focused on a decentralized public health system while seeking greater contributions by the central government. It championed equitable access to healthcare, much wider roles for the private sector and non-governmental organizations (NGOs), public participation in health care, disease surveillance and the strengthening of primary health care delivery.[8]

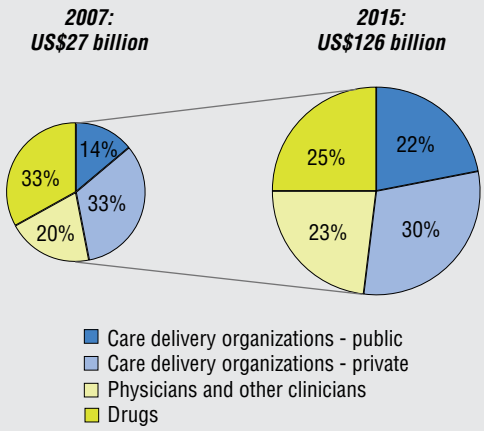
In addition to the public system, a vast private sector has emerged to address unmet healthcare needs. In recent years, corporate hospital groups such as Apollo Hospitals Group, Fortis Healthcare, Manipal Hospital, Max Healthcare and Wockhardt Hospitals have become centers of excellence, for example. They primarily cater to an emerging middle class and to medical tourists seeking affordable, high-quality care without long wait times.

Today, the challenges include satisfying the rapidly rising demands and expectations of a burgeoning middle class, while taking care of those not caught up in the rapid economic development. This is exacerbating a capacity problem, which will likely create a sustainability problem, especially if India moves too quickly and tries to provide "modernized" healthcare for everyone all at once.

Rising costs

We estimate India's healthcare spending on care delivery and drugs will increase from Rs 111,233 crores (US$27 billion) in 2007 to Rs 502,281 crores (US$126 billion) in 2015, or the equivalent of Rs 5820 crores (US$141) per person (see Figure 1).[9] This growth will be driven by increased spending at both private and public hospitals and by rising medical inflation.

FIGURE 1.
India healthcare expenditures on care delivery and drugs, 2007 and 2015.*



** Projected*
Source: IBM Institute for Business Value analysis.

Escalating costs may force some citizens to forego care altogether, except for life-threatening situations.

Citizens will continue to largely bear this financial burden, as out-of-pocket spending accounts for almost 78 percent of overall spend, which varies by awareness, accessibility and ability to pay.[10] Escalating medical inflation – which increased more than 200 percent between 1995 and 2005 – will increasingly force citizens to choose between public and private services or to forego care altogether, except for catastrophic or life-threatening situations.[11]

Central and state governments have struggled to establish an adequate public healthcare system due, in part, to inadequate funding. Looking forward, there is reason to expect this will change, as the combined fiscal deficit of central and state governments has been reduced from 10 percent of GDP in 2002 to about 6 percent of GDP in 2006.[12]

Health insurance companies will likely help improve the affordability of healthcare through risk pooling and bulk purchasing of medical and hospital services. The health insurance market has been projected to increase from a value of Rs 2,200 crores (US$485.6 million) in premiums to Rs 34,000 crores (US$7.5 billion) by 2015.[13] This will likely get a boost from a recently proposed stipulation that would increase the Foreign Direct Investment limit on standalone health insurance companies from 26 percent to 51 percent and require a minimal capital investment of Rs 250 million (US$5.4 million).[14]

Government is also playing a role in providing insurance coverage, particularly among the poor and needy. Central government recently announced plans to offer health, life and disability insurance to 400 million of India's working poor.[15] And the Insurance Regulatory and Development Authority (IRDA) mandates that at least 5 percent of insurance companies' business cover citizens in rural areas and, in the case of health insurance, each member have at least Rs 10,000 (US$252) of coverage.[16]

Inconsistent quality

As in many other countries, the Indian healthcare system faces quality concerns. Rural medical practitioners, who deliver 80 percent of outpatient care, are often unqualified, with some even lacking a high school diploma.[17] This is in part due to a general reluctance of qualified providers to practice in rural areas and a shift from individual to institutional practice (such as hospitals).

India also lacks widespread quality standards, measurement and reporting. In response, private hospitals have begun to report their quality performance as a way of differentiating themselves. Accreditation organizations such as the National Accreditation Board for Hospitals and Healthcare Providers (NABH) and the Joint Commission International (JCI) – the international arm of the U.S.-based Joint Commission on Accreditation of Healthcare Organizations – are also helping promote widespread adoption of quality standards. Corporate hospitals are largely pursuing this accreditation, while government hospitals have been slow to do this.

The healthcare system has also lacked extensive outcomes/quality research on traditional medicine and practices, which account for about half of care delivered in the country. As a result, such practices as Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy have been dismissed by modern or allopathic medical practitioners. The tide is turning as

these traditional forms of medicine are now increasingly incorporated in tertiary care hospitals to promote wellness and prevention and are being researched by government and private organizations for their effectiveness.

Insufficient access

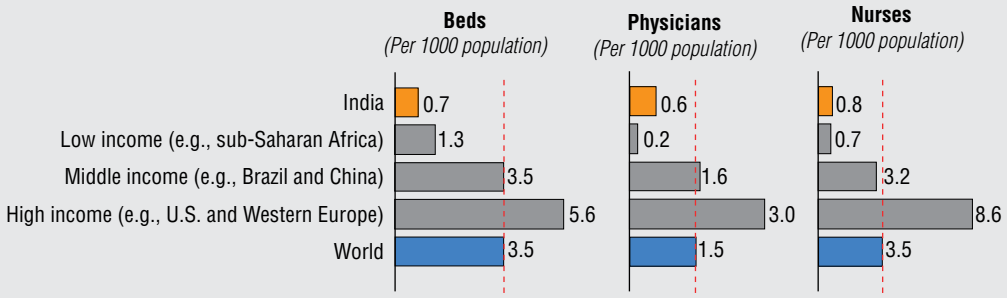
Another challenge to India's healthcare system is insufficient access to care delivery. For example, 20 percent of outpatient patients and 45 percent of inpatient receive their care from public facilities. This is the result, in part, of an inadequate infrastructure (see Figure 2) and high employee absenteeism, which is often 40 percent nationwide.[18]

Corporate hospitals are helping to help fill this void. They are expanding operations, particularly in urban areas, to meet rising domestic and international demand of Indian health services. Many hospitals are also exploring innovative uses of technology to expand their reach. For instance, most large hospital chains have invested in telemedicine, where medical information is transmitted by telephone, the Internet or other electronic means, to reach the lower socio-economic strata. Government has supported this initiative. For example, the Indian Space Research Organization (a government agency) provides satellite bandwidth at subsidized prices to private sector hospitals.

Government is increasingly pursuing a strategy of Public-Private Partnerships (PPP) to improve access to complex, life-saving medical procedures for its poorer and more needy citizens and to address challenges in creating and managing tertiary care hospitals. Government is accomplishing this by employing one of three methods:

1. Invest in joint ventures with the private sector
2. Provide land at no cost to the private sector, in return for free/subsidized medical treatment for citizens
3. Hand over government-owned hospitals (existing/new) to the private sector to manage.

FIGURE 2.
India is experiencing resources shortages relative to other countries.



Source: World Health Organization. "World health statistics 2007." http://www.who.int/whosis/en/index.html.

Another factor limiting access to care is considerable workforce shortages (see Figure 2). These shortages are exacerbated by the recruitment of Indian healthcare professionals by other countries. Faced with a nurse shortage, for example, the United States has turned to other countries, including India, to help fill this gap, earmarking 50,000 visas for foreign nurses.[19]

The limited growth in the number of medical college graduates is also intensifying workforce shortages. This has been due in part to the resistance of creating new colleges. Colleges are also having trouble filling faculty positions because of the low salaries they can offer professors.[20]

In response to workforce shortages, we note various developments. Indian-born physicians are emigrating back to work at Indian hospitals, for example. Many of these physicians made a mark for themselves in leading hospitals around the world and are now helping shape India's healthcare delivery system. They are also forging meaningful alliances with healthcare systems from around the world that benefit healthcare delivery systems in India. Corporate hospital groups are also creating their own medical and graduate programs to help supply their facilities with enough physicians and other workers.

Drivers of change in healthcare

In our study of healthcare systems worldwide, we identified five drivers of change – globalization, consumerism, evolving burden of disease, demographic shifts and new medical technologies and treatments – that will increase the aforementioned cost, quality and access pressures. These drivers are critical for India, albeit in unique ways, as they will change the *status quo* and must be addressed at some point.[21]

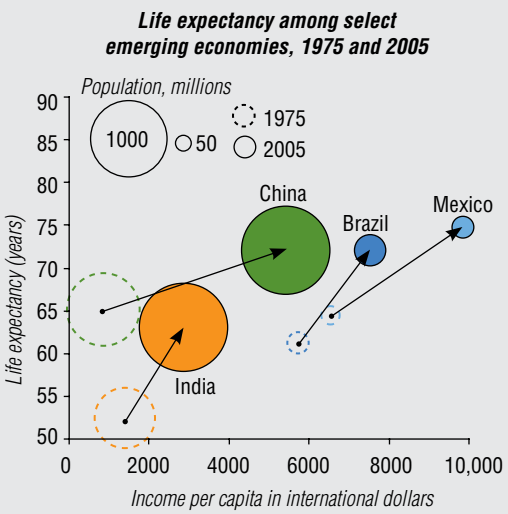
Globalization

India has promoted globalization as a means for modernization. It has reaped the rewards of reforms that, beginning in the 1990s, lowered barriers to trade and liberalized capital markets. GDP rose on average 8.5 percent per year from 2003 to 2007 and is projected to grow 7.5 percent between 2008 and 2012.[22] Economic growth will likely to remain strong in ensuing years, driven by investments and consumption.

As India prospers, Indians have and likely will continue to experience improved health overall (see Figure 3). Higher incomes enable consumers to afford better nutrition and to access better healthcare, leading to improved health status and productivity. In fact, the World Health Organization has estimated that each 10 percent improvement in life expectancy is associated with an increase in economic growth of about 0.3 to 0.4 percent per year.[23]

Globalization is also raising societal expectations and fueling demand for greater spending on social services, including healthcare. There are calls for more government spending, for

FIGURE 3.
The health status among developing countries has benefited from economic prosperity.



Source: IBM Institute for Business Value analysis; World Health Organization. "World health statistics 2007." http://www.who.int/whosis/en/index.html); International Monetary Fund. "World economic outlook database for October 2007."

Overall, healthcare spending, per capita, in India is among the lowest in the developing world.

example, as overall healthcare spending per capita in India is among the lowest in the developing world and is largely paid by the private sector (82.7 percent), not the government.[24] This is important for those who will not benefit from globalization: 380 million Indians still live on less than a dollar a day.[25]

Globalization is also laying the foundation for healthcare without borders. There is growing business interest in looking for India to be a health service provider to the world. This is attracting 150,000 foreign medical tourists each year and fueling business process outsourcing (for example, teleradiology).[26]

There are negative effects to healthcare without borders, too. India is more susceptible to global threats such as infectious diseases (for example, Avian Flu) and bio-terrorism. It is also experiencing an outmigration of healthcare workers to other countries, as noted earlier, that is contributing to capacity issues.

Consumerism

Consumerism in healthcare is part of a broader movement promoting consumer interests and placing more power and control in the hands of individuals. In healthcare, consumerism is producing increasingly assertive medical services buyers willing and able to promote and defend their interests. In particular, these buyers, who are increasingly in India's emerging middle class, are more knowledgeable about the risks posed by healthcare and the value proposition of medical services worldwide. And as their disposable income increases, so will their demand for high-quality healthcare (see Figure 4).

FIGURE 4.
Despite the burgeoning middle class, the vast majority will struggle with healthcare costs.

	Upper/Middle class	Poor
Young	• 34M population in 2005, 203M in 2015 • Benefited from recent economic growth - Increasing per capita and disposable income - Becoming increasingly reliant on employer-based insurance coverage • More focused on wellness, prevention • Lured to the healthcare "experience"	• Is the largest and most distributed cohort - Rural: 622M population in 2005, 657M in 2015 - Urban: 245M population in 2005, 153M in 2015 • Struggling to address basic environmental and healthcare needs - Relatively higher morbidity due to infectious diseases, illnesses, etc.
Senior	• 3M population in 2005, 19M in 2015 • Prosperous before recent economic growth - Ability to pay with disposable income is less than young and upper/middle class • Has a sacrificing nature – willing to make lifestyle and other non-monetized changes • Attracted to the "defined value" (optimal combination of cost, quality and access/choice), or functional utility, of healthcare delivery - Require chronic care	

Note: 2005 figures are estimates; 2015 figures are projected.
Source: IBM Institute for Business Value analysis; Girish Rao.

A growing awareness of risks and adverse events is also driving consumerism in healthcare. The mass media is playing an increasingly prominent role in public education about such things as chronic conditions, the importance of proper diet and smoking cessation. As citizens become more educated on such matters, they are likely to become less and less willing to accept negative outcomes as inevitable or as the luck of the draw.

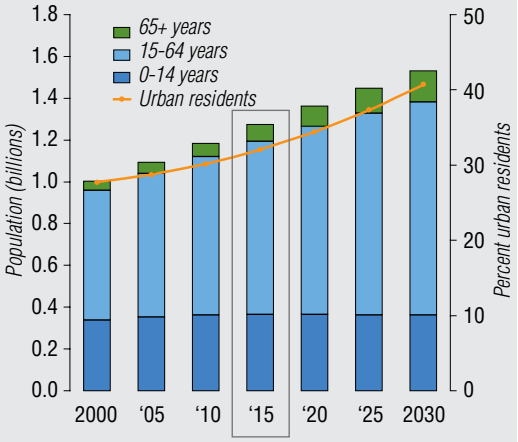
Despite the promises of consumerism, healthcare will likely continue to be a secondary issue for the vast majority of Indians. Most will lack both the disposable income and/or the awareness to effectively address their healthcare challenges. And their lack of active involvement in their health and healthcare will lead to continued premature morbidity/mortality.

Demographic shifts

Demographic shifts, which will require the re-examination of resources and priorities, as well as the development of new care paradigms, are also likely to drive healthcare change.

Primary among these shifts is urbanization, as citizens seek economic prosperity (see Figure 5). Corporate hospitals, diagnostic centers and other private providers are emerging to address the increasing demand for greater value from these citizens with more disposable income. However, many city migrants will remain impoverished and live in slums that lack basic sanitation and clean water. This will further burden the existing public health infrastructure and force government to plan for and address the needs of this growing group.

FIGURE 5.
Urbanization and aging are two key demographic shifts that will drive healthcare change.



Source: IBM Institute for Business Value analysis; Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2005 Revision, http://esa.un.org/unpp

The number of overweight citizens in India is another demographic driver in healthcare. The prevalence of overweight males is projected to increase from 98.7 million in 2005 to 160.5 million in 2015 (62.6 percent increase), while the number of overweight females is expected to increase from 83.1 million in 2005 to 133.7 million in 2015 (60.9 percent increase).[27] Weight is also a concern among children. A 2005 survey of 3,800 Delhi school children found that 17 percent were overweight, a figure likely to increase since 62 percent of Indian children eat unhealthy food.[28]

Another demographic driver is malnutrition. Forty-six percent of Indian children are malnourished, and they constitute a third of the world's malnourished children.[29] In particular, poor nutrition is contributing to a relatively high prevalence of anemia among children (79 percent in 2005-2006, up from 74 percent in 1998-1999), as well as women (56 percent in 2005-2006, up from 52 percent in 1998-1999).[30]

A final, key demographic driver is aging of the population, which will drive healthcare demand and costs. India is relatively young: median age will increase from 23.8 years in 2005 to 26.5 in 2015. In comparison, in 2015, the median age in China will be 36.4 years and the United States 36.9 years. But what is of particular concern is the size of the senior population. In 2015, 75.3 million (5.8 percent of total) Indians will be 65 years or older, a considerable number when compared to 46.4 million (14.1 percent) senior Americans.[31]

Evolving burden of disease

India is following a classic epidemiological transition model that postulates an association between national economic development and health.

On the one hand, mortality from numerous infectious diseases is decreasing (see Figure 6, page 10).[32] At the same time, some diseases have become drug-resistant, such as tuberculosis. Others, such as AIDS, can be kept in check for long periods of time, but not cured. Yet others are re-emerging in certain regions, or are unaffected by human immunity (for example, SARS).

On the other hand, mortality from chronic conditions (for example, cancer and cardiovascular conditions), as well as from accidents and violence, is increasing. In the case of chronic conditions, such as diabetes, asthma and congestive cardiac conditions, they require ongoing care and management and are not amenable to "one-shot" fixes.

While new technologies promise improved quality of care, costs are also likely to increase, limiting availability of new treatments to those who can afford them.

All of these are contributing to the ever-rising costs of healthcare and the increasing need for change. Yet, India's healthcare system is organized to provide episodic care as a whole. It is neither structured nor resourced for the coordinated, ongoing care of chronic diseases, let alone prevention.

New medical technologies and treatments

New medical technologies and treatments promise improved population health and higher quality care, but will often include higher unit costs and greater overall demand, which may well result in higher aggregate costs. Genomics, regenerative medicine and information-based medicine are three rapidly emerging technologies that will be major drivers of healthcare change.[33]

If current circumstances do not change, the promises of these technologies and treatments will largely be limited to those who can afford them. Health insurers will increasingly play an increasingly important role in this by obtaining discounted prices from providers.

Yet, it is the lack of technologies and treatments for the masses that will drive change. For example, there has been relatively little effort in research and development about non-communicable diseases endemic to India. Of the 1,556 new drugs marketed from 1975 to 2004, only 21 (1.4 percent) target tropical diseases like malaria and tuberculosis.[34] This failure will contribute to the ongoing spiral of ill health, particularly among the vulnerable.

FIGURE 6.
India will likely continue to struggle to address the increasing disease burden.

Disease/condition	*Number of cases per 100,000 lives*	
	2005	*2015*
Communicable diseases, maternal and perinatal diseases		
Tuberculosis	85 (2000)	NA
HIV/AIDS	51 (2004)	190
Diarrheal disease episodes	760	880
Malaria and other vector born conditions	20.37 (2004)	NA
Leprosy	3.67 (2004)	Eliminated
Infant mortality per 1000 live births	63 (2002)	53.14
Otitis media	3.57	4.18
Maternal mortality per 100,000 live births	440	NA
Non-communicable conditions		
Cancer	8.07 (2004)	9.99
Diabetes	310	460
Mental health	650	800
Blindness	141.07 (2000)	129.96
Cardiovascular diseases	290 (2000)	640
COPD and asthma	405.20 (2001)	596.36

Source: National Commission on Macroeconomics and Health, "Burden of disease in India." September 2005.

Summary

We believe these five change drivers – globalization, consumerism, demographics, evolving burden of disease and new, expensive technologies and treatments – are upsetting the *status quo* of India's healthcare system and will continue to do so. These drivers are creating a healthcare environment that is fundamentally different than that of the past. These drivers are creating higher costs, burgeoning demand and increasing regulation. India will have to fundamentally adjust to its dictates.

Inhibitors of change in healthcare

No healthcare system is immune from the drivers of change, but the extent to which the drivers actually create change is also dependent on a variety of inhibiting factors. An inhibitor is a force that supports the *status quo*, prevents change and/or creates barriers to the forces driving the change. The strength of these inhibitors helps determine the healthcare system's resistance or willingness to change. At any given time, the amount of change occurring – incremental or transformational – depends, in part, on the cumulative strength of the driving forces compared to the inhibiting forces.

Financial constraints

Funding constraints are consistently ranked among the chief inhibitors of change in healthcare systems. Healthcare must compete for funding with a wide range of other needs, such as physical infrastructure and education. India is no exception. Government's current Five Year Plan focuses on "inclusive growth" in which there will be a higher prioritization for health and education, nutrition and sanitation, rural development and employment, among others.[35] This will require that investments are sufficient and well managed – two aspects where India has traditionally struggled.

In the private sector, providers are expanding their presence by making investments that will yield expected returns. The challenge is how to bring the costs down so that treatment provided by these hospitals are within reach of the masses, or how to create means that enable the masses to pay for these.

As noted earlier, there is also an overall under capacity of beds, doctors and nurses, underscoring the need for substantial investment. This, combined with rising medical inflation, will likely make healthcare increasingly unaffordable for more and more Indians.

Societal expectations and norms

Societal expectations and norms, especially those regarding rights, lifestyles and acceptable behaviors, can also inhibit change.

Around the world, many countries are struggling to reconcile societal expectations, particularly delineating between societal rights and market services. India has not reached this point. Today, its society lacks an expectation for a basic set of core healthcare services as a fundamental right. For example, should more expensive but effective AIDS medications be provided to all AIDS patients or not? These are questions that other countries are grappling with. As India prospers, this debate will become more mainstream.

Lifestyle expectations can be equally contentious. The stakeholders within healthcare systems will have to decide the lifestyle expectations that are reasonable and those that are not – resetting the balance between societal rights and market services – or risk "hitting the wall."

Social norms around acceptable behaviors can have a similar inhibiting effect. Communities that embrace unhealthy behaviors can inhibit the development of personal responsibility. The high prevalence of tobacco use in India is one such example: 57 percent of men and 11 percent of women use some form of tobacco. Tobacco use is more prevalent in rural areas (61 percent of men and 13 percent of women) where the use of unfiltered

beedis, a strong cigarette made of tobacco wrapped in a *tendu*, is common, as is the habit of chewing tobacco.[36]

Another example of a social norm is the propensity of consumers to seek care at tertiary care and specialist hospitals, even for common ailments. They believe these facilities provide the best care when, in actuality, lower level providers may be a more cost effective and accessible alternative. This tendency reflects the failure of India's referral system, which has helped ingrain this approach over time.

Lack of aligned incentives

The barriers to healthcare change are typically exacerbated by the lack of alignment in the incentives among stakeholder groups. For example, how can collaboration be encouraged among providers, payers, suppliers and patients when each has divergent forms of healthcare incentives? Realigning incentives is a daunting task further complicated by governmental policy and regulations, many of which were instituted in and for different healthcare environments and in different periods of India's history.

Major alignment issues revolve around the quality and timeliness of care. Misaligned financial incentives also inhibit the rational management of healthcare institutions. For example, more than 70 percent of Indians live in rural areas, where 20 percent of all hospital beds are located.[37] To help address this, government has announced income tax exemption for the first five years for 100-bed hospitals set up in rural areas. However, five years is often not enough time to recoup investments.

Inability to balance short-term and long-term perspectives

The inability to formulate, agree upon and act from a long-term perspective can be a serious inhibitor of change in healthcare. Of course, when healthcare systems are on unsustainable paths, the longer that stakeholders take to appropriately balance long-term and short-term thinking, the more drastic and difficult the decisions required to avoid hitting the wall become.

Many governments and other stakeholders ignore the problem of unsustainable growth in the long-term and focus instead on more "urgent" short-term needs and wants, particularly those pertinent to the coming election. This is also a lifestyle issue in that many consumers are reluctant to adopt healthy lifestyles today – when the benefits of decisions to eat well and exercise regularly may not be fully realized for many years.

Inability to access and share information

Information is an inhibitor as well as an enabler of change. Non-digital and digital healthcare data is being generated at unprecedented rates. The volume at which this data is accumulating and the speed with which it is proliferating is creating an indigestible information glut. Doctors increasingly face the onerous task of storing, organizing, accessing and integrating large amounts of patient data to deliver a more personalized care experience.

The challenge is how to facilitate healthcare decisions by getting the right information in the right form to the right person at the right time. Infrastructure and process are key issues here. Particularly in rural areas, the absence of information infrastructure and serious

A win-win transformation in India's healthcare system is possible if stakeholders act with accountability and demonstrate a willingness and ability to change.

deficiencies in existing infrastructures are clear barriers to change. Complicating this is the pervasive cultural behavior in which citizens maintain their own medical records by keeping extensive paper copies of medical records, lab tests and medical images.

In more developed areas, the challenge revolves around standards-based systems interoperability and the reengineering of processes that are inefficient and/or counterproductive, yet firmly entrenched. The technology exists to solve these problems, but the challenge becomes ever greater as information proliferates at unprecedented rates.

Summary

In summary, we believe these five inhibitors – financial constraints, societal expectations and norms, misaligned incentives, short-term thinking and the proliferation of information – are and will continue to create resistance to change in India's healthcare system. Each will have to be overcome in the process of mapping and navigating a new, sustainable healthcare path.

Ingredients of a "win-win" transformation

If stakeholders can act with accountability and demonstrate the willingness and ability to change, India can better harness the drivers of change and achieve a "win-win" transformation. The healthcare system can begin to become more efficient and effective. It can help the citizens it serves lead healthier, more productive lives, and help enable the country and its companies compete globally. It can also help India win a competitive advantage in the emerging global healthcare industry.

Action and accountability are the basic ingredients of change. To create a win-win transformation in its healthcare system, we believe India should undertake the following actions (see Figure 7):

- *Focus on value* – Consumers, providers and payers should agree upon the definition and measures of healthcare value and then direct healthcare purchasing, healthcare services delivery and reimbursement accordingly.
- *Develop better consumers* – Consumers need to make more sound lifestyle choices and become more astute purchasers of healthcare services.
- *Create better options for promoting health and providing care* – Consumers, payers, and providers should seek out more convenient, effective and efficient means, channels and settings for health promotion and care delivery.

FIGURE 7.
Keys to a win-win healthcare transformation.

Source: IBM Institute for Business Value.

A clear accountability framework enables these actions. Accountability must span the system, with providing adequate healthcare financing and rational policy, healthcare professionals adhering to clinical standards and delivering quality care, payers encouraging preventive and proactive chronic care and citizens taking responsibility for their own health.

The value transformation

Value is in the eye of the purchaser, but, today, value in healthcare is difficult to see. For example, data regarding quality is scarce and mostly anecdotal or incomprehensible. Compounding this is prevalence of multiple forms of medicine, from allopathic medicine (most common form) to more traditional but less regulated forms such as Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy.

To complicate matters, the purchasers and benefactors of healthcare – consumers, payers and society – all have different opinions as to what constitutes good value. Balancing and resolving these conflicting perspectives is one of the major challenges in the successful transformation of healthcare systems.

Today, consumers are largely responsible for bearing the costs of healthcare, and their ability to predict healthcare quality is equivalent to a roll of the dice. Payers – consumers, public or private health plans, employers and governments – shoulder the burden of healthcare costs, but have largely been disintermediated from or disinterested in the quality of care discussion.

In the win-win scenario we envision, consumers will assume much greater responsibility for their healthcare, which, in turn, will drive the demand for value data that is readily accessible, measurable, reliable and understandable. In response, payers will help empower consumers by enabling greater transparency into care costs and quality.

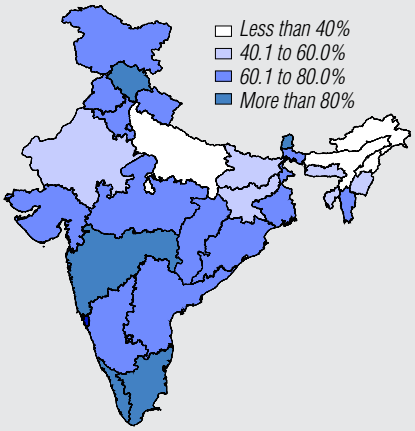
In the absence of pressure from consumers or payers for greater scrutiny, most providers have not been forthcoming in providing data around value. Recently, for example, some voluntary disclosures have emerged as some corporate hospitals have begun to pursue accreditation from organizations such as the National Accreditation Board for Hospitals and Healthcare Providers (NABH) and the Joint Commission International (JCI) in order to promote their adoption of quality standards.

Payers also will take a more holistic view of value – looking not simply at the episodic costs of procedures, but at how investments in high-quality preventive care and proactive health status management can improve quality and help minimize the long-term cost structure of care.

Finally, society will demand that payment for and quality of healthcare services be aligned to the value those services return both to the individual and to the country as a whole. (See sidebar, *Hierarchy of healthcare needs model: A framework for advancing the debate,* Page 15.) For example, since the perception that immunizations create good value is near universal, society will increasingly insist that all Indian children receive immunizations against measles (see Figure 8).

FIGURE 8.
India must address the basic healthcare needs of its citizens.

Proportion of 1-year old children immunized against measles (%), 2005



Select emerging economies	*Immunization (percent)*
Brazil	99
China	86
India	58
Mexico	96

Source: Department of Family Welfare, Ministry of Health and Family Welfare. "National child health programme." http://mohfw.nic.in/NRHM/Presentations/Child_Health_strategy_May_2007; World Health Organization. "World health statistics 2007." http://www.who.int/whosis/en/index.html.

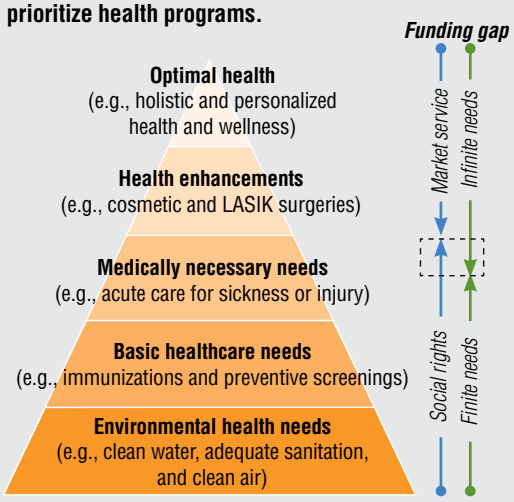
Hierarchy of healthcare needs model: A framework for advancing the debate

Psychologist Abraham Maslow developed a hierarchy of needs to explain why people are driven by a particular need at a given time.[38] We have developed a similar construct to understand needs for healthcare – a "hierarchy of healthcare needs" model.[39] This hierarchy of healthcare needs model helps us move beyond the simplistic binary view of healthcare needs. It provides a framework we can use to consider the appropriateness of public programming in relation to different levels of need (see Figure 9). We believe this hierarchy can also help guide deliberations on how to maintain the sustainability of India's healthcare system.

As with Maslow's hierarchy, the healthcare hierarchy has five levels. Starting at the bottom of the hierarchy, they are:

- *Environmental health needs* – Rudimentary healthcare needs, such as clean water, adequate food and nutrition, clean air and adequate sanitation, form the base of the pyramid.
- *Basic healthcare needs* – Basic medical care, such as immunizations and preventive screenings, which substantially eradicate premature death.
- *Medically necessary needs* – Medical treatment of acute, episodic illness, injury and chronic disease. Conceptually, this level includes affordable treatments (as determined by societal opportunity costs) that enable patients to perform the activities of daily living.
- *Health enhancements* – Treatments that are not strictly medically necessary, but improve overall health and the quality of life, such as lifestyle drugs that address problems that are not seriously health-threatening.

FIGURE 9.
A basic framework can be used to help better prioritize health programs.



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

- *Optimal health* – A higher and more holistic understanding of health in which individuals attain optimal physical and mental health, a state beyond the mere absence of symptoms or disease. Treatments at this level include genetic testing and personalized wellness plans

Generally speaking, there is a natural precedence in the healthcare needs hierarchy, with the lower levels taking priority over the higher levels for both individuals and societies. And each healthcare system copes with the demand for resources by drawing a line between needs and wants that are considered societal rights and those that are generally considered market services. In any given system, if you compare the position of the societal rights/market services line to the position of the finite/infinite needs line, you can obtain a sense of the magnitude of the funding gap the system faces (see Figure 9, right graphic).

In the case of India, the hierarchy of healthcare needs is unique as there is a dichotomy between the uppermost and lowermost levels of the hierarchy.

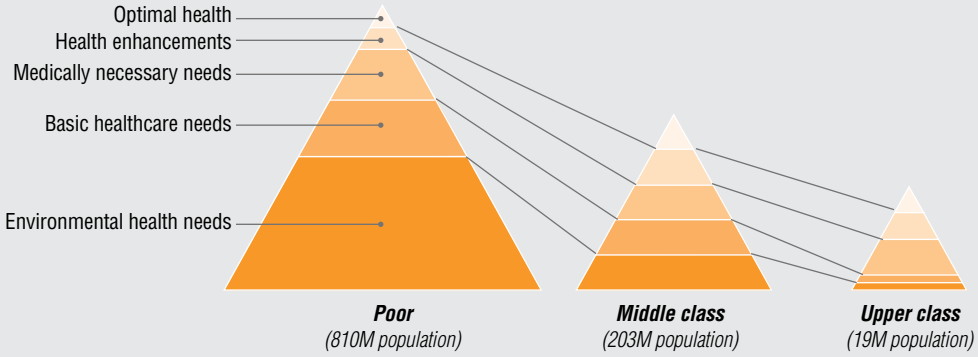
The burgeoning upper and middle classes have been moving up the hierarchy needs, a shift accompanied by higher expectations of the healthcare system (see Figure 10). There is a tremendous demand for continued spending on affordable education and the physical infrastructure, such as water, sanitation, energy and transportation. At the same time, the need to maintain a healthy population is critical and the demands for additional healthcare services are growing. But the upper and middle classes are increasingly susceptible to chronic diseases, which are not only expensive to treat but also negatively impact productivity.

The poor in India have been largely bypassed by the effects of the drivers of healthcare change, particularly globalization. They require a sound physical infrastructure enabling healthy lives. India as a whole cannot progress up the economic ladder if these citizens are in poor health and must devote large portions of their time to acquiring basic needs, such as clean water and food. So, India has a strong need to address environmental health issues, particularly for this group.

However, the poor are not immune from the rise of chronic illnesses arising from previously fatal infectious diseases and lifestyle choices, such as tobacco use, while remaining in the least capable position to manage them. The ability to provide the healthcare needs for this group is also affected by high birth rates. This group will continue to experience higher population expansion than the upper and middle classes.

In sum, the hierarchy of healthcare needs model highlights the challenges of responding to the health needs of the two Indias, particularly how difficult it is in the context of the public side of the healthcare system to address both. Presumably, publicly funded services should be focused mainly on India's poor. For the upper and middle classes, the focus from a public policy perspective will be more regulatory in nature trying to create a framework that promotes a win-win scenario. Nevertheless, the hierarchy of healthcare needs model can be used a starting point for healthcare business leaders and policy makers to deal ethically with these two Indias.

FIGURE 10.
The unique needs of Indians warrant attention and focused investments.



Note: Population numbers are 2015 projections.
Source: IBM Global Business Services and IBM Institute for Business Value.

The consumer transformation

The second key element in the win-win transformation of India's healthcare system is increased responsibility by consumers for managing their healthcare services, as well as their personal health management. As India is pressed ever closer to the edge of a healthcare crisis, the pressure is building for consumers to change counterproductive health behaviors and actively participate in their healthcare decisions.

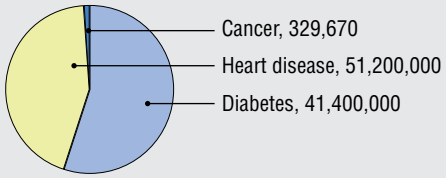
Today, consumers will not or cannot define value in healthcare. Some do not care what healthcare costs because they see it as free or prepaid. Some do care, but find it prohibitively difficult to access meaningful information they need to make sound choices. And still others do not have the health literacy skills required to navigate these choices.[40]

Compounding the problem is the fact that there is a disregard for healthy lifestyle choices. For example, the prevalence of tobacco use is high in India, despite government efforts to curtail this. Instead, Indians should be actively engaged to combat illnesses and conditions, especially since lifestyle behaviors are a major contributor to health status (see Figure 11).

In the win-win scenario, we believe consumers will increasingly comparison shop for healthcare in the same manner that they shop for other goods and services. Lifestyle choices will also be more explicit, with poor choices being accompanied by short-term consequences.

FIGURE 11.
Consumers must lead healthier lifestyles.

Cases of select non-communicable conditions preventable through lifestyle behaviors,* 2015



**Number of cases avoidable through healthier diets, increased physical activity and smoking cessation.*
Source: IBM Institute for Business Value analysis; National Commission on Macroeconomics and Health. "Burden of disease in India." September 2005; World Health Organization. "Facts related to chronic diseases." http://www.who.int/dietphysicalactivity/publications/facts/chronic/en/print.html

Health infomediaries, or coaches, who help patients identify the information required to make sound choices, interpret medical and financial information, choose between care alternatives and channels and interact with the providers they choose, will become fixtures in the healthcare landscape for both the well and the chronically ill, and for a much broader socioeconomic segment of the population.

A current example of health infomediaries is the National Rural Health Mission's Accredited Social Health Activists (ASHAs). There are 456,000 female ASHA volunteers positioned at the village level and trained in preventive health. They promote sanitation and hygiene, disseminate information on basic preventive healthcare and facilitate access to public health facilities, particularly for women and children.

Healthcare delivery is overly focused on episodic acute care; it must shift and expand to include and embrace prevention and chronic condition management.

The care delivery transformation

The third key element in the win-win transformation of healthcare is a fundamental shift in the nature, mode and means of care delivery. Healthcare delivery is overly focused on episodic acute care; it must shift and expand to include and embrace prevention and chronic condition management in order to respond to the emerging environment.

Preventive care

Today, preventive care, which focuses on keeping people well through disease prevention, early detection and health promotion, is a concept without a champion. Generally speaking, consumers ignore it, payers do not incent it and providers do not profit from it.

In the win-win scenario, we expect that the notion of preventive healthcare itself will expand, combining allopathic and indigenous approaches and the best of the old and the new. Consumers will seek this care in new settings, such as their workplaces and homes, which offer lower prices, enhanced convenience and more effective delivery channels than traditional healthcare venues.

Among the poor, the focus is on prevention and the achievement of improved health status in terms of water supply, sanitation, nutrition, access to vaccines, vitamins and other low cost but vital services.

Preventive care may also be delivered by midlevel providers – including physiotherapists, nutritionists, exercise experts and midwives – in close coordination with doctors to address India's health workforce shortages of qualified clinicians. This will require a change in the mindset among many consumers to accept new forms for caregivers.

Chronic care

Today, as the incidence of chronic illness increases, chronic care management remains expensive, labor intensive and plagued by wide variations in the effectiveness of care.

In the win-win scenario, particularly among the upper and middle classes, we believe chronic patients, increasingly assisted by health infomediaries, will be empowered to take control of their diseases through IT-enabled disease management programs that improve outcomes and lower costs. Their treatment will center on their location, thanks to connected home monitoring devices, which will automatically evaluate data and, when needed, generate alerts and action recommendations to patients and providers.

The poor will continue to struggle to meet basic environmental needs and, thus, will lack the infrastructure to substantially limit the progression of chronic disease. Efforts to stem chronic disease will necessarily be aimed at the infectious and lifestyle contributors to chronic conditions.

Acute care

Today, acute care is the foundation of the healthcare economy and its effectiveness depends heavily on the expertise of the individual doctor. In the win-win scenario, we anticipate that standardized approaches to acute care, developed through the careful

analysis of clinical data and the unrelenting documentation of patient variation, will be a widespread starting point in care delivery.

The availability of high quality care information will enable the treatment of non-urgent acute conditions, such as strep throat and sinusitis, at the patient's home via the use of telemedicine or at-work settings that provide low cost, good quality and convenience. This will free doctor time and encourage the transformation of today's massive, general purpose hospitals into "centers of excellence" devoted to specific conditions and combination triage centers, which determine the specialized facility patients should go to, and post treatment recovery centers, in which patients are monitored before returning home.

And in poorer areas, care standards will enhance the education of local providers. In most situations, however, with the exception of scarce mobile healthcare services, people living in remote locations without basic services will still rely on traditional means of treating acute illness.

Summary

New models of care delivery will generally progress from the traditional focus on reactive healthcare to a more proactive and personalized approach to healthcare delivered by midlevel providers in variety of channels and venues located ever closer to the consumer. Moreover, India will have started down the path of individualized care delivered by a more affordable and effective healthcare team at more convenient locations.

A prescription for accountability and win-win transformation

In the preceding pages, we have described why we believe India's healthcare system must undertake transformational change. We have painted a portrait of a win-win transformation and used it to illustrate the fundamental differences between the unsustainable paths many healthcare systems are now following and new paths that could create winning outcomes for all of their stakeholders over the next decade.

We fully recognize the depth and difficulties of this transformation, and we also realize that a few broadly drawn portraits of change cannot detail and fully address the complex needs of individual healthcare systems located throughout the development spectrum. But we are just as firmly convinced that change is essential, that a commitment to start the transformation journey must be made and that action must be initiated. Toward that end, we conclude this report by summarizing the implications of our findings in the form of practical, relevant and broadly applicable prescriptive recommendations for transformation of the healthcare system.

Toward a value-based and sustainable healthcare system

The transformational challenge facing the healthcare system is daunting (see Figure 12). It must expand the primary focus on often poorly coordinated episodic care to encompass the life-long and coordinated management of preventive, acute and proactive chronic care. This expansion must be accomplished with limited incremental funding in an increasingly competitive global economy and healthcare environment. This task will further require the establishment of a clear, consistent accountability framework supported by aligned incentives and reconciled value perspectives across key stakeholders.

FIGURE 12.
Implications for India's healthcare system.

Healthcare system factor	From (typical of today's healthcare)	To (successfully transformed)	Comments on progress
Focus of system	• Acute, reactive, episodic	• Predictive, preventive, chronic; life-long, coordinated management; personalized	• Early examples of organizations beginning to improve the patient-centered, value-based, longitudinal care experience – but small scale and limited to private sector • Large-scale efforts targeting more environmental and basic healthcare are promising, but need longterm stakeholder support
Perspectives on value	• Each stakeholder's individual perspective, with no recognition of other perspectives or tradeoffs; largely focused on cost containment	• Win-win compromises balancing stakeholder interests across value dimensions (cost, quality, access and choice); patient/consumer value made much more explicit	• Inhibitors such as a lack of aligned incentives prevent change • As competition intensifies, stakeholders increasingly highlighting value of differentiating services/products
Care delivery	• Shaped by habit, history and tradition; siloed, disconnected service channels; medical doctor-centric	• Patient centric teams of caregivers; evidence based, standardized care; multiple aligned, integrated service channels	• Large private hospital chains pursuing patient-centric strategies but are in early stages of truly delivering evidence-based personalized care • Public sector still lags as it grapples with issues such as funding and management
Locations	• Hospital, doctor office centric	• Additional physical and virtual venues, movement toward the patient and provider, greater consumer choice of delivery channels	• Many large private hospital chains moving care from hospital environment closer to the home, but efforts have had small impact on the overall needs of the country, particularly rural areas
Patient information & clinical knowledge	• Paper-based, non-standard but not shared – you are your own health record	• Electronic, evidence based, standard, shared and interoperable, guiding clinical decisions at the point of care	• Private hospitals increasingly investing in IT systems; most progress is in areas such as billing, accounting and administrative systems, rather than clinical information systems
Patient/consumer responsibility	• Unclear or lacking of definition	• Take care of their health through good lifestyle choices; understand how to get good value from the healthcare system	• Young urban population making wiser health and healthcare decisions but majority of citizens are not for various reasons (for instance, lack of affordable and accessible of healthcare, and health illiteracy)

Source: IBM Institute for Business Value.

Healthcare transformation is predicated on the development of a shared vision and comprehensive long-term plan.

The rewards of successful transformation are correspondingly high. The transformed healthcare system could become a national asset, instead of an open-ended, under-funded liability. It will help the citizens it serves lead healthier, more productive lives and its country and industries compete globally. This transformation can offer businesses operating in India another lever to use in their war for talent. It will also help win a competitive advantage in the emerging global healthcare industry. We offer six recommendations for India's healthcare system:

- Develop a shared vision and a comprehensive, long-term plan.
- Build and sustain a case for change.
- Develop a set of principles to guide transformation.
- Provide at least a basic package of universal coverage.
- Fully leverage the capabilities of IT.
- Balance collaborative innovation with proven global best practices.

We believe each recommendation is key to making a transformational change in the Indian healthcare system; however these recommendations are in no way mutually exclusive, nor are they in sequential order.

Recommendation 1: Develop a shared vision and comprehensive plan

Healthcare transformation requires a shared vision and a comprehensive, long-term plan created through an open, inclusive process (see Figure 12). This seems obvious, but is rarely done. Too often, change is addressed in a piecemeal fashion and solutions are generated by a few experts working behind closed doors. The result is systemic chaos and minimal buy-in.

As a starting point for this discussion, we offer the following vision for India. This vision is a multifaceted one that addresses the gaps – financial, infrastructure, professional resources – India's healthcare system may face. It also requires key stakeholders to collaborate in its refinement and to define an explicit set of values for desired future healthcare system.

As illustrated in Figure 13, the core of this vision is predicated on the healthcare system achieving three key elements:

- Consistently deliver safe, consistent, high-value, and evidence-based care. That is, the right care must be delivered to the right person at the right time, in each instance.
- Shift in focus from reactive medicine to wellness, disease prevention and health promotion. For example, India should increase diabetes education and screening efforts to help curb this epidemic that currently affects 41 million Indians.[41]

FIGURE 13.
Proposed vision for India's healthcare system.

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

- Innovate to addresses the changing needs of its citizens, while not compromising safety and quality. This innovation could be, for example, in the form of new care approaches, interventions, diagnostics, clinical processes, drugs and devices.

India's healthcare system can realize these three core elements through three enabling activities (middle layer of Figure 13):

- Enact universal coverage through rational coverage decisions for both who and what is covered to improve access to healthcare services. This will be particularly important as healthcare costs continue to rise.
- Align incentives, particularly through value-based reimbursement and payment reform. While aligned incentives include more than payment reform, payment reform is a key tool to align incentives across stakeholders, particularly the payers and the providers.
- Provide useful information about costs, quality and evidence on effectiveness of diagnostics and treatment approaches in order to facilitate transparency and choice.

Four themes are key to achieving these enabling activities (outer layer of Figure 13):

- Undertake an experimental learning approach toward reform. Healthcare is too complex to conceptualize the solution, so experiments are needed to learn what works and what does not.
- Implement a robust information infrastructure so there is good information to support processes/transactions and research/analytics needs.
- Attain a sustainable cost structure by matching supply with demand. The current imbalance (for example, lack of sufficient long-term care) may improve significantly with transparency and choice, combined with aligned incentives and payment reform.
- Achieve greater mutual accountability – and collaboration – on the part of all stakeholders to achieve a value-based, affordable, sustainable healthcare system.

Once a shared vision is established, a master plan for change must be created. In addition to the shared vision and values, such a plan might include:

- A list of "non-negotiables" that are so important that they cannot be compromised in the process of developing the vision and plan (for example, all children will be immunized for measles)
- A transition plan focusing particular attention on areas that received low ratings regarding ability to change
- An overall implementation plan showing the sequencing and dependencies of the major transformation initiatives
- An accountability framework and a set of incentives designed to maximize stakeholder success within the context of the greater good
- A scorecard or performance management system to measure the healthcare system's transformation progress
- A decision framework, perhaps based on the hierarchy of healthcare needs, to establish the proper line between societal rights and market services

- A change management plan, including education and communication plans
- An overall governance model including representatives from key stakeholders to oversee implementation of and revisions to the plan.

Recommendation 2: Build and sustain a case for change

Given the level of change needed, the number of people impacted in healthcare transformation and their extraordinary sensitivity to healthcare issues, the resistance and reluctance to change will be significant barriers. Decisions will be vigorously challenged by those negatively impacted, even when they are clearly the best course for the greater good. Constant reminders of the need for change will be required to keep the collective will for change alive and strong.

The case for change developed in the assessment must be clearly documented in a form that can be understood by all key stakeholders, including consumers. This case must be communicated frequently, both to educate and to "sell" the eventual benefits of transformation. The case for change should include a likely lose-lose scenario, illustrating what would happen if the healthcare system hit the wall and reminding stakeholders of the risks and downside of not changing.

As the change may involve greater adjustments in the short term and benefits may accrue in long run, leading to inertia and resistance among stakeholders, an adequate consensus on the necessity of this transformation must be generated among the stakeholders.

Recommendation 3: Develop a set of principles to guide transformation

We live in an ever-changing environment, and no plan can predict every possibility or anticipate the changes that are sure to occur during extended implementations. Therefore, a set of principles is needed to help guide decision making and other activities. These principles might include statements such as:

- The healthcare system should be consistent with the country's health-related values.
- The healthcare system must be sustainable. Changes made to the healthcare system should be considered in light of the overall environment and evolving healthcare needs.
- The healthcare system should be affordable to the individual, third party payers and society.
- The healthcare system should provide universal coverage for a core set of services reflecting the shared vision. This core set of services may change as the society evolves itself.
- Services not available through universal coverage should be available as a market service. India might also add the principle that the provision of market services should not undermine the delivery of universally covered services.
- Pricing and quality should be transparent, relevant and comprehensible in support of value-based purchasing and value improvement.
- Solutions to transform the healthcare system should be practical in both the short-term and the longer term, and be as fair as possible to impacted stakeholders.

Universal coverage, including a core package of products and services, with subsidies for lower income citizens, is necessary for healthcare to be considered a true asset for India.

- Public funds should be allocated on the basis of greatest need and greatest benefit/return to society at large. Ideally, this would include the metrics to help determine need and benefit.
- Providers should not benefit from medical failures, such as fixing treatment errors, or the misuse, overuse or under use of medical diagnostics and treatments.
- Solutions proposals should include estimates based on *total* cost, including administrative or other expenses that would offset potential savings or benefits.
- Proposed solutions should be compared to the "lose-lose" scenario, not the current unsustainable situation.

Recommendation 4: Provide universal coverage

All healthcare systems should embrace universal coverage and appropriately balance comprehensiveness with overall affordability. No matter how it is achieved, India's healthcare system must offer a core package of covered products and services for all citizens, with subsidies for those who cannot afford coverage, to be truly considered value-based and an asset to its citizenry and country.

India should experiment with different approaches to achieve universal coverage. One approach is for the central and/or state governments to fund coverage for all citizens, similar to single-payer healthcare systems in Europe. There are also market-based approaches, such as giving vouchers to every citizen to pay for basic health insurance. As well, there could be mixed schemes that include individual mandates and subsidies to the most vulnerable in the population.

Recommendation 5: Fully leverage the capabilities of IT

Rational healthcare choices of all kinds and win-win transformation require better information. A robust IT infrastructure, enabling interoperable electronic health records, personal health records and networks connecting key stakeholders is needed to provide the information required to improve quality and cost; to minimize clinical and administrative waste; to improve clinician productivity; to inform and, thereby, empower consumers; to make informed decisions; and to trigger insights that can lead to innovations.

Transformation plans must include a vision, strategies and funding for the development of IT infrastructure. This must also include the adoption of IT standards by stakeholders to help make sure of the interoperability of information systems. Government can take a role of sponsoring education on standards to promote awareness of the technology needed for India to achieve the creation and exchange of electronic health records, which provide more complete information and, therefore, better healthcare for its citizens.

Recommendation 6: Balance collaborative innovation with proven global best practices

The case for healthcare change in Recommendation 2 answers the question, "Why change?" But questions remain that still need to be answered, including:

- What do we need to do to transform the healthcare system?
- How do we do what needs to be done?
- How do we gain acceptance for the changes needed?
- How do we implement the changes needed?

The answers to these questions will rarely be evident. Instead, they will be determined by a combination of innovative responses and proven best practices from around the globe.

Innovations capable of addressing the system wide, multi-enterprise and enterprise-specific challenges inherent in healthcare transformation will require broad collaboration, commitment and effort across disciplines and stakeholders. Whenever possible, these innovations should be tested through pilot programs designed to demonstrate feasibility and reveal second order consequences.

While every healthcare system is unique, this realization should not inhibit the identification and utilization of proven best practices. Certainly, many best practices cannot be lifted from one healthcare system and simply inserted into another. But they can and should be evaluated and serve as a basis for new ideas, lessons and modified solutions.

Care delivery organizations (CDOs)

The healthcare system is centered on hospitals, clinics and doctor's offices. But the face of care delivery is changing, bringing with it new business models, delivery channels, services, facilities, skills and the need for improved administrative and clinical information. Figure 14 summarizes the changes we believe are needed for Indian care delivery organizations to be successful in a transformed healthcare system.

FIGURE 14.
Implications for Indian care delivery organizations.

CDO Factor	From (typical of today's healthcare)	To (successfully transformed)	Comments on progress
Information management	• Paper-based • Non-standardized information • Limited information management	• Electronic • Standardized information • Evidence-based knowledge • Shared, interoperable, accessible, secure, and private, guiding clinical decisions at point of care	• Many large hospitals investing in IT solutions, while mid-sized hospitals and physicians' practices slower to adopt • Overall, provider segment needs to better earmark funds to support, implement and benefit from IT
Innovation	• Disparity in use of innovations depending on healthcare setting (private versus public)	• Keeping people healthy • Improvements to the overall value and quality of care • Faster adoption of best practices and methods	• As demand for high-value care has increased, private sector in particular has seen innovation in care delivery and business models (for example, corporate hospitals investing in tertiary care referral centers, secondary care hospitals and primary care centers and entering other markets like pharmaceutical retailing and health insurance) • Some CDOs using the latest medical technologies and treatments, such as cardiac stents • Greater innovation needed to truly realize the promises of prevention and wellness, as well as evidence-based and personalized medicine
Basis for competition	• Geographic coverage and reputation; limited medical tourism • Broad array of services • New technologies	• Differentiated value (for example, cost, quality and access) • Focused higher-value services • Channels/sites closer to the patient	• Hospitals investing in new technologies and services to attract consumers with more disposable income • They are also pursuing strategies making services more affordable for the lower income strata, but pace of innovation is slow

Source: IBM Institute for Business Value.

Our recommendations for Indian CDOs include:

- Recognize that the ever greater complexity of the healthcare environment will make it less likely that your organization can be all things to all patients.
- Help inform and empower consumers by providing transparency into pricing and quality.
- This will be further demonstrated by the continued proliferation and adoption of accreditation, standard setting and licensure systems.
- Gain a comprehensive understanding of your cost structure, particularly as medical inflation rises.
- Focus on improving your operational efficiencies and management.
- Segment customers and develop a channel strategy to make offerings affordable for the different socio-economic segments they will encounter.
- Evaluate growth plans in light of the possible changes in the healthcare environment.
- Develop teams of caregivers and match their skill levels and locations to consumer needs
- This may include midlevel providers for such things as preventive care.
- Move away from paper-based systems to electronic systems with the target of electronic health records.
- Develop and utilize evidence-based, standardized processes and care plans to guide care delivery.
- This may very well increasingly include more traditional and indigenous forms of medicine.
- Actively support research into what works (effectiveness or comparative effectiveness), including indigenous, non-allopathic forms of medicine.

Doctors and other caregivers

Many of the same factors that impact care delivery organizations will also impact caregivers. Caregivers will have to meet the needs of smarter shoppers seeking higher value from the healthcare system. Figure 15 summarizes the changes we believe are needed for Indian doctors and other caregivers to be successful in a transformed healthcare system.

Our recommendations for Indian doctors and other caregivers include:

- Develop collaborative partnerships with patients.
- Expect and monitor patient compliance.
- Be prepared to work as part of a networked team of caregivers.
- Develop and utilize evidence-based, standardized processes and care plans to guide care delivery
- Embrace technological innovation.
- Help develop meaningful outcomes measurements and data.
- Where possible, utilize interoperable electronic health records in order to have access to relevant patient information and medical content throughout the course of treatment and to better coordinate care.
- Recognize the challenge of win-win transformation, help shape the future and become part of the solution
- Move from reactive healthcare to a more proactive and personalized medicine.

We believe fundamental changes in consumer attitudes and behaviors are needed for them to make more sound health and wellness choices.

FIGURE 15.
Implications for Indian doctors and other caregivers.

Doctors and other caregivers factor	From (typical of today's healthcare)	To (successfully transformed)	Comments on progress
Information management	• Patient information is based on memory and paper records; clinical decisions are based on experience	• Supported by electronic systems with comprehensive patient information and advanced clinical decision support	• Doctors and other caregivers responding more favorably to IT solutions, including small percentage using clinical decision support systems – but will need greater support to understand and benefit from these solutions
Innovation	• Some doctors overwhelmed by innovation and new knowledge, while others have embraced innovation offering world-class medical care privately	• Incentivized to adopt new knowledge and approaches through the use of clinical decision support tools	• Small number of doctors and other care givers leveraging clinical decision support tools, but greater adoption is paramount • Non-technical solutions important, such as approaches to promote better health and healthcare choices to patients • Discrepancy remains between doctors offering innovative medical care in private offices versus medical care by doctors in publicly funded hospitals
Basis for competition	• Reputation, highly protective of medical profession	• Higher value and personalized care	• Physicians demonstrating willingness to be more responsive to patient needs, but greater collaboration needed with other stakeholders to deliver evidenced-based and personalized healthcare
Patient relationship	• Paternalistic • Prescriptive	• Collaborative partnerships • Knowledge sharing in decision making	• Relationship predominantly paternalistic, but will slowly change as patients, particularly in urban areas, become more active purchasers of high-value care
Treatment approach	• Individual decisions based on experience and "sphere of influence" (for example, teachers or local peers)	• Standardized and evidence-based tailored to individual situation • Part of a collaborative, networked team	• Few doctors experimenting with evidence-based medicine • Some hospitals, particularly larger ones, have teams of caregivers to more effectively address the patient's needs

Source: IBM Institute for Business Value.

Consumers

Consumers must make more sound health and wellness choices, realize greater value from the healthcare system and make more astute financial plans for future healthcare needs. This will require fundamental changes in their attitudes and behaviors. Figure 16 summarizes the changes we believe Indian consumers will need to make to help transform healthcare.

FIGURE 16.
Implications for Indian consumers.

Supplier factor	From (typical of today's healthcare)	To (successfully transformed)	Comments on progress
Information management	• Manual process to manage information about personal health or about specific conditions (a patient is his/her own health record) • Little assistance from others	• Automated and integrated information management processes • Assistance from "health infomediaries" • Accessible and online	• Consumers increasingly seeking information from new sources, such as the Internet • New breed of health infomediaries, or coaches, beginning to emerge from corporate settings to rural villages, but consumers need incentives to create and maintain own health data electronically
Innovation	• Use traditional means to access healthcare	• New ways to live a healthier lifestyle • How best to utilize the healthcare system to address individual needs	• Various healthcare stakeholders beginning to educate and enable more active healthcare consumers through portals, for example, but largely limited to the young urban young population
Overall attitude and expectation	• Reactive approach to own health	• Proactive approach to living a healthy lifestyle • Healthcare system should help me live my life	• Growing number of consumers living a healthier lifestyle through improved diet and exercise but limited to relatively small number of citizens
View of health	• Passive relationship • Health viewed as a lack of symptoms	• Active/activist • Forward looking, proactive, better informed and more knowledgeable about health conditions/risks	• More active and proactive healthcare consumers more common as disposable incomes have risen, but the poor and needy continue to take a passive role in health and healthcare
Health concern	• More concerned with lower and middle levels in hierarchy of healthcare needs	• Increasingly concerned with health enhancement and optimization	• Consumers with additional disposable income actively pursuing more holistic and personalized care but, not even a concern for vast majority
Approach to choosing providers	• Anecdotal information from friends and family • Individual perceptions on service with no ability to discern true clinical value due to a lack of information	• More educated and smarter shoppers with increasingly more "coaching" to help varying levels of health literacy • Overall value	• Healthcare consumers with more disposable income increasingly differentiating providers by perceived value, including quality

Source: IBM Institute for Business Value.

Our recommendations for Indian consumers include:

- Learn about health and take responsibility for living a healthy lifestyle.
- Learn about the healthcare system, become a smart shopper and utilize health infomediaries.
- Expect CDOs and clinicians to provide pricing and quality information.
- Do not assume that your provider or care delivery organization is "one of the good ones."
- Create and maintain an electronic personal health record.
- Document advanced health care directives and make sure that your family and your caregivers know your expectations and wishes.

- Expect your providers to accept information from your electronic personal health record and to use electronic health records with clinical decision support for diagnosis and appropriate therapeutics.

Payers

As is the case in healthcare systems in transformation, private and public payers will also increasingly shift from at-risk insurers and payment administrators to value-added service providers with more clearly defined customers. However, they must overcome fundamental challenges, such as moral hazard and adverse selection (for example, reported claims ratios have been in the range of 120 to 130 percent for some policies).[42]

Figure 17 represents the changes typically required for Indian payers to be successful in a transformed healthcare system.

FIGURE 17.
Implications for Indian payers.

Payer factor	From (typical of today's healthcare)	To (successfully transformed)	Comments on progress
Information management	• Internal administrative/ operational focus	• Greater external focus to improve patient health status and to help providers deliver higher value services	• Third party administrators receiving electronic claims from larger hospitals, on the basis they share insights with providers and carriers, but must also collaborate with mid-sized hospitals, which also generate large volumes of claims
Innovation	• Better forecasts and contained medical loss ratios	• Personalized products and services • Remove barriers to innovation by providers and suppliers	• Many life and new supplementary health insurance companies offer policies have focusing on critical conditions new distribution channels • Ability to innovate products and services, operational processes and business models can be a competitive advantage as competition builds[43]
Basis for competition	• Price, coverage, network size, claims processing and responsiveness	• Personalized and actionable information to improve health and healthcare • Targeted services across a broader healthcare spectrum of needs and delivery channels	• Minimal information sharing between payers and other stakeholders, which can help members change behaviors through rewards for healthier lifestyles • Insurers creating products for increasingly segmented market, including consumer-driven products • Differentiation in terms of roles and underlying competencies will be key as competition intensifies[44]
Coordination of public and private insurance	• Uncoordinated, sometimes prohibited by regulations	• Coordinated and aligned with more sharing of best practices	• Proliferation of micro health insurance companies and larger ones in rural areas helping offset urban focus • At least 700 million people will likely have no form of insurance in 2015[45]

Source: IBM Institute for Business Value.

Our recommendations for payers include:

- Adopt sophisticated customer segmentation strategies and develop multiple coordinated channels (product design – service offering design) to better serve customers, particularly the most vulnerable.
- Take a longer-term, ideally lifelong, view of value.
- Align reimbursement and incentives with preventive and proactive chronic care, as well as with innovative, cost-effective approaches to health and healthcare.
- Work collaboratively with CDOs and clinicians to develop a viable transition plan to value-based reimbursement.
- Reward providers who achieve better outcomes and value – and help less effective providers improve their performance.
- Be transparent in coverage rationale and provider value for key medical conditions.
- Streamline administrative operations to make them more customer-centric and friendly.
- Develop intra- and interoperable information systems to enhance the exchange of data and to convert data into meaningful information.

Pharmaceutical companies and other suppliers are likely to encounter increasing pressure to create products that offer long-term value.

Suppliers

In a healthcare system focusing on accountability and value, pharmaceutical companies and other suppliers will encounter increasing pressure to create products that offer substantive long-term value (for example, preventing or delaying treating, and managing a chronic disease) as opposed to "me-too" products and treatments that compete but do not represent true advances. This is particularly important in light of recent Indian court rulings that have blocked patents for "incremental" innovations.[46]

Figure 18 summarizes the changes we believe are needed for Indian suppliers to be successful in a transformed healthcare system.

Our recommendations for suppliers include:

- Collaborate with stakeholders to develop innovative, more effective and affordable approaches/solutions to address the needs of the vast majority.
- Recognize that as providers implement interoperable electronic health records, they will increasingly possess the most valuable outcome data and will be able to revise care protocols faster than your companies can conduct studies.
- Collaborate with CDOs and clinicians.
- Tap into the provider's IT-enabled initiatives.
- Identify and establish relationships with the new influencers of healthcare purchasing.
- Realize that healthcare is frequently highly fragmented with little knowledge of patient progress or outcomes across silos (for example, hospitals, clinics, doctor offices and home health).
- There is an opportunity to interconnect these silos toward improving care delivery.
- Recognize the impact that patients and providers have on longer-term product results.
- Help identify the right patients and providers and then educate them to achieve better results with key products.
- Use these strengthened relationships to better track and improve product results over the entire product and care lifecycle.

FIGURE 18.
Implications for Indian suppliers.

Supplier factor	From (typical of today's healthcare)	To (successfully transformed)	Comments on progress
Information management	• Intra-company and functionally siloed	• Interoperable across healthcare stakeholders, including regulators and CDOs	• Early examples of information sharing (for instance, Biocon and Narayana Hrudayalaya are sharing information in the area of oncology)[47] illustrate the opportunity for suppliers to improve value proposition
Innovation	• Costly research and development (R&D) leading to "one-size-fits-all" treatments that share certain therapeutic and economic features	• Collaborative disease-led innovation • Targeted solution packages for patients who will benefit the most • Personalized, miniaturized and mobile devices for home and other settings	• Indian pharmaceutical organizations investing in research and development, not simply on New Chemical Entities (NCEs) but also New Drug Delivery Systems (NDDS) • India emerging as new venue for clinical trials • Other healthcare organizations are venturing into the medical devices business, helping drive the threshold for innovation higher
Economic "buyer"	• Individual providers or CDOs • Payers, mainly public	• Increasingly private payers; independent, third-party research groups; and patients who are actively managing healthcare value	• Buyers and other influencers demanding demonstrable value, which will intensify as medical inflation increases
Basis for competition	• Blockbuster drugs for pharmaceuticals • New features/ functions of devices • Size of sales force and marketing budget	• Better longer-term outcomes or lower prices for equivalent outcomes • Impact on sales force and marketing budget	• Manufacturers of patented drugs approaching consumers directly to offset competition • Organizations beginning to optimize supply chains by investing in vendor-managed inventory systems, but will require greater collaboration and incentives to accelerate adoption among providers

Source: IBM Institute for Business Value.

Society

Societal expectations and norms are shaped by a number of groups, including governments, advocacy groups, the media, and businesses. While some consumers may refuse to change and others may already comply, societal expectations and norms can influence consumers' attitudes and behaviors over time.

Figure 19 summarizes the changes in Indian society we believe are needed to help transform healthcare.

FIGURE 19.
Implications for Indian society.

Society Factor	From (typical of today's healthcare)	To (to successfully transform)	Comments on progress
Information management	• Largely ignored	• Emphasize transparency and education	• Citizens have long history of managing own health records, albeit it in paper form • Citizens with more disposable income increasingly demanding greater transparency of value, particularly quality metrics
Innovation	• New foreign direct investment starting to pay dividends for Indian society through new innovative technologies	• New ways to promote healthier lifestyles, engaging all consumers in taking responsibility for their health and healthcare	• Notable government and media efforts to educate consumers on better health – but considerably more needed to address the scope of the country's health and healthcare issues
Expectations for healthcare	• Bipolar distribution: either healthcare should be "free" or healthcare is inaccessible or prohibitively expensive	• Recognition of limited funds, opportunity costs or tradeoffs needed when determining societal rights versus market services	• Disposable income increases leading to increased consumer expectations • The vast majority of consumers still have low expectations because of healthcare expense or availability

Source: IBM Institute for Business Value.

Recommendations for the groups that influence societal expectation and norms include:

- Become more knowledgeable about healthcare-related challenges.
- Actively participate in national or regional efforts to improve healthcare. Do not leave these efforts solely to healthcare insiders.
- Help educate consumers about healthcare issues and what they can do individually and collectively to make a difference.
- Help promote healthy lifestyles. For example, insist that physical education be part of all public school curriculums. Also demand that school meal programs support healthy living choices.
- Keep pressure on the healthcare system to change and meet the needs of its customers.

Government

Governments are both the most influential and the most reluctant change-makers in healthcare systems. They are most influential in their purchasing power – a typically large portion of healthcare services are publicly funded – and their ability to set policy and regulate. Citizens look to governments for leadership in solving the biggest challenges in society. At the same time, governments also tend to be the most reluctant change makers because of the difficulty and political liability of creating major change in healthcare.

The challenge to the Indian government is considerable. Change is often difficult but is too important to ignore. Figure 20 summarizes the changes we believe central and state governments need to make to help transform healthcare system.

FIGURE 20.
Implications for the central and state governments.

Supplier factor	From (typical of today's healthcare)	To (successfully transformed)	Comments on progress
Information management	• Fragmented and uncoordinated	• A healthcare information management/ information technology vision and roadmap • Electronic • Data availability and transparency to support research	• Many states requested proposals to implement IT projects to create, share electronic data, but these proposals are restricted in their scope
Innovation	• Inconsistent • Temporary solutions to long-term and complex problems	• Key strategic driver and economic engine for growth • Policies and education programs to improve health status • Drive policy on grassroots issues on health and wellness • Funding for independent research • Remove barriers to innovation	• Government increasingly demonstrating commitment to public-private partnerships, environmental and basic healthcare) and research (for instance in traditional medicine and the basic and applied health sciences)
Time horizon	• Short-term focus or lack thereof	• Balance short- and longer-term focus	• Healthcare policies largely shaped each political term, but healthcare transformation requires ongoing commitment across terms.
Policy/ regulations	• Lack of regulations – inconsistent where they do exist • Frequently counterproductive/ conflicting	• Emphasis on accountability and alignment • Health a consideration throughout public policy	• Current 11th Five Year Plan focuses on "inclusive growth," resulting in a higher prioritization for health and education, for example, but central government needs to better collaborate with state governments and other stakeholders to achieve goals
Alignment of jurisdictions	• Disconnected with poor upward and downward communication • Inconsistent regulatory and licensure environment	• Connected and aligned communications with ability to mobilize on issues of common concern (e.g. pandemics) • Broader geographic licensure and harmonization of metrics	• State governments discussed various initiatives to address these problems, but considerable efforts needed to accelerate progress here

Source: IBM Institute for Business Value.

Our recommendations for government includes the putting in place of a series of healthcare policies that encourage self-reliance, keep healthcare affordable, promote a healthy lifestyle and engage the community in the provision of healthcare. To do so, we believe government should:

- Lead, educate, and be willing to make tough decisions to help address the issues.
- Promote more effective utilization of the healthcare infrastructure (particularly in rural areas), supported by policies targeting key public health issues (for example, maternal and infant conditions).
- Expand education programs on common but preventable/manageable diseases and risks.

Successful transformation will require collaboration and change among all the stakeholders in Indian healthcare.

- Lead in the development of a referral system, particularly at the primary and community health centers (address the systemic deficiencies in the present system to enhance effectiveness).
- Better collaboration with other stakeholders. For example, create policies and regulations to develop and retain skilled healthcare workers, to establish outcomes standards, to explore synergies between allopathic and indigenous systems.
- Create more widespread public-private partnerships, which will help provide good management and adequate funding (for example, Singapore has encouraged public-private participation in healthcare financing and provisioning, which has conferred the country the advantage of flexible response as it faces the potentially conflicting challenges of becoming a regional medical hub attracting foreign patients and providing domestic access to affordable healthcare).
- Emphasize value, accountability, alignment of incentives and cost/quality transparency in health policies, regulations, legislations and government-run health systems and institutions.
- Understand that healthcare issues will take years to address and cross more than one administration, hence the need to define a minimum common understanding among the different political parties to allow continuity of path despite changes in the "government of the day."
- Determine affordable, sustainable funding levels and prioritize across the hierarchy of healthcare needs, while addressing environmental and basic healthcare needs for all Indians.
- For example, increase the coverage for India's poor and more needy populations (for instance, expand Children's Health Insurance Program coverage for all children).
- Establish a biosurveillance system to monitor disease patterns, possibly through public-private partnerships.
- Lead and encourage the development of innovative financing mechanisms to increase health insurance coverage.
- Develop a funding strategy for the healthcare infrastructure and for independent research on the comparative effectiveness of alternative therapies and research on keeping people well.
- Help protect the security and privacy of patient health information.
- Develop a consistent policy regarding healthcare delivery.

Conclusion

This report paints a portrait of what India's healthcare system could look like in 2015, but we fully acknowledge that bringing this portrait to life is an extraordinarily difficult task. Transformation is difficult, and there are very few arenas in which stakes are higher and more sensitive than in healthcare. All too often, the *status quo* is not a viable long-term option, and there are no politically expedient, quick fixes to challenges that are of the magnitude and complexity of healthcare system transformation. Successful transformation will require all stakeholders to actively participate, collaborate and change. Figure 21 summarizes recommendations by stakeholder to collectively transform to a value-based healthcare system with new models of delivering care to accountable consumers.

FIGURE 21.
Summary of stakeholder-specific recommendations by win-win transformation themes.

	Value	Consumer responsibility	Care delivery
Health system	• Develop a vision, plan, principles and metrics that enable and reward a shared perspective on value	• Provide universal insurance for core services, including preventive and primary care. • Reward good behaviors	• Remove barriers to innovation while still protecting consumers and other stakeholders
Care delivery organizations (CDOs)	• Focus on services that offer differentiated value • Develop teams of caregivers • Implement interoperable electronic health records to help enable high-value services	• Help inform and empower consumers by providing transparency into pricing and quality	• Develop channels and care venues that are closer to the patient • Implement interoperable EHRs to support information exchange across venues
Doctors and caregivers	• Utilize evidence-based guidelines and care plans • Help develop meaningful outcomes data.	• Develop collaborative partnerships with patients. • Help consumers take more responsibility for their health. • Monitor compliance.	• Expect interoperable EHRs to support information exchange among caregivers • Focus on the opportunities that come with change
Consumers	• Expect pricing and quality information • Become a smart shopper • Utilize a health infomediary (coach)	• Take responsibility for living a healthy lifestyle • Create and maintain a personal health record (PHR) • Document advanced healthcare directives	• Expect and demand new delivery models and coordination of care across these new models
Payers	• Develop a viable transition plan to value-based reimbursement • Help consumers navigate the health system	• Help provide personalized information and advice to help consumers maintain and improve their health status	• Align incentives with preventive and proactive chronic care and with innovative, cost-effective approaches
Suppliers	• Collaborate with CDOs to develop offerings that help provide better longer-term outcomes or lower prices for equivalent outcomes	• Help identify the right patients and providers and then educate them to achieve better results across all steps of the care process	• Help enable new models through simplification and miniaturization, mobile devices and personalized solutions packages
Society	• Clearly recognize the need for tough decisions, prioritization and tradeoffs • Actively participate in efforts to improve value	• Stress prevention and personal accountability • Expect and promote healthy lifestyles	• Keep pressure on the healthcare system to change and meet the needs of its customers
Governments	• Emphasize value, accountability and alignment of incentives • Require results reporting • Develop a funding strategy for the infrastructure and for independent research	• Help protect security/privacy of electronic health information • Require insurance coverage for everyone, with subsidies for those who need them	• Change and set policies, regulations and legislation in order to remove barriers and to promote the right actions

Source: IBM Institute for Business Value.

Healthcare transformation is an immense challenge. It cannot be solved without a clear and shared understanding of the severity of the problems and their consequences, compelling consensus-driven visions and plans and the commitment of stakeholders who will be called upon to work collaboratively with full accountability over the years that it will take to fully realize them. We hope that you will use our ideas as a starting point in your transformation effort. Whether you find our ideas helpful or have suggestions to improve them, we value your feedback.

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