Healthcare in India

Emerging market report 2007

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A growing healthcare sector

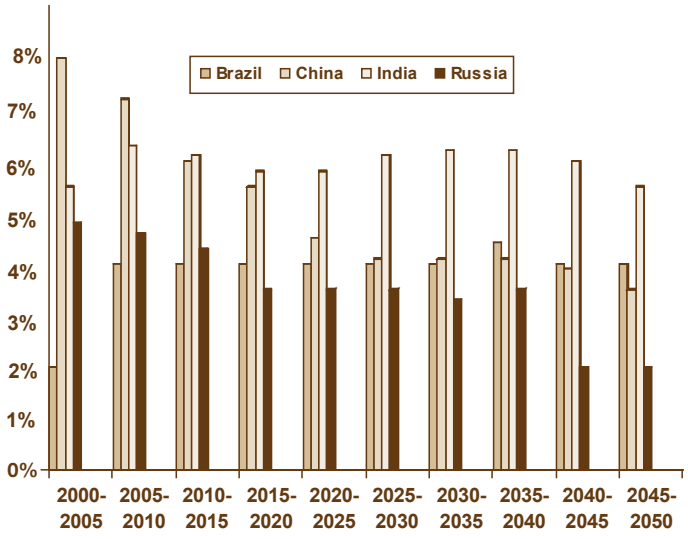
Healthcare is one of India's largest sectors, in terms of revenue and employment, and the sector is expanding rapidly. During the 1990s, Indian healthcare grew at a compound annual rate of 16%. Today the total value of the sector is more than $34 billion. This translates to $34 per capita, or roughly 6% of GDP. By 2012, India's healthcare sector is projected to grow to nearly $40 billion.

The private sector accounts for more than 80% of total healthcare spending in India. Unless there is a decline in the combined federal and state government deficit, which currently stands at roughly 9%, the opportunity for significantly higher public health spending will be limited.

Growing population and economy

One driver of growth in the healthcare sector is India's booming population, currently 1.1 billion and increasing at a 2% annual rate. By 2030, India is expected to surpass China as the world's most populous nation. By 2050, the population is projected to reach 1.6 billion.

Figure 1: India is forecast to grow by at least 5% a year for the next 45 years



Source: Goldman Sachs

This population increase is due in part to a decline in infant mortality, the result of better healthcare facilities and the government's emphasis on eradicating diseases such as hepatitis and polio among infants. In addition, life expectancy is rapidly approaching the levels of the western world. By 2025, an estimated 189 million Indians will be at least 60 years of age—triple the number in 2004, thanks to greater affluence and better hygiene. The growing elderly population will place an enormous burden on India's healthcare infrastructure.

The Indian economy, estimated at roughly $1 trillion, is growing in tandem with the population. Goldman Sachs predicts that the Indian economy will expand by at least 5% annually for the next 45 years (see chart), and that it will be the only emerging economy to maintain such a robust pace of growth.

Expanding middle class

India traditionally has been a rural, agrarian economy. Nearly three-quarters of the population still lives in rural areas, and as of 2004, an estimated 27.5% of Indians were living below the national poverty line. Some 300 million people in India live on less than a dollar a day, and more than 50% of all children are malnourished.

Middle class	% of entire population
1998–99	44.92
2001–02	50.53
2009–10 (estimate)	62.95
Source: CRIS Infac, 2005	

However, India's thriving economy is driving urbanization and creating an expanding middle class, with more disposable income to spend on healthcare. While per capita income was $620 in 2005, over 150 million Indians have annual incomes of more than $1,000, and many who work in the business services sector earn as much as $20,000 a year. While this is a fraction of the income that their US peers earn, it is the equivalent of more than $100,000 per year when adjusted for purchasing power parity.

More women are entering the workforce as well, further boosting the purchasing power of Indian households. Between 1991 and 2001, the percentage of women increased from 22% to 26% of the workforce, according to the latest Indian government census. Many of these women are highly educated: the ratio of women to men who have a college degree or higher level of education is 40:60.

Thanks to rising income, today at least 50 million Indians can afford to buy Western medicines—a market only 20% smaller than that of the UK. If the economy continues to grow faster than the economies of the developed world, and the literacy rate keeps rising, much of western and southern India will be middle class by 2020.

Rise of disease

Another factor driving the growth of India's healthcare sector is a rise in both infectious and chronic degenerative diseases. While ailments such as poliomyelitis, leprosy, and neonatal tetanus will soon be eliminated, some communicable diseases once thought to be under control, such as dengue fever, viral hepatitis, tuberculosis, malaria, and pneumonia, have returned in force or have developed a stubborn resistance to drugs. This troubling trend can be attributed in part to substandard housing, inadequate water, sewage and waste management systems, a crumbling public health infrastructure, and increased air travel.[1]

[1] http://www.cdc.gov/ncidod/dvbid/dengue/

In addition to battling infectious diseases, India is grappling with the emergence of diseases such as AIDS as well as food- and water-borne illnesses. And as Indians live more affluent lives and adopt unhealthy western diets that are high in fat and sugar, the country is experiencing a rise in lifestyle diseases such as hypertension, cancer, and diabetes, which is reaching epidemic proportions (see sidebar, *The Indian Diabetes Epidemic*).

Over the next 5-10 years, lifestyle diseases are expected to grow at a faster rate than infectious diseases in India, and to result in an increase in cost per treatment. Wellness programs targeted at the workplace, where many sedentary jobs are contributing to an erosion of employees' health, could help to reduce the rising incidence of lifestyle diseases.

Pharmaceuticals

Paralleling the rise of disease is the emergence of a robust pharmaceutical industry in India. The Indian pharmaceutical market is one of the fastest growing markets in the world; sales increased by 17.5% to $7.3 billion in 2006, according to IMS Health. Many factors, including a strong economy and the country's growing healthcare needs have contributed to the accelerated growth, which is especially strong in the over-the-counter (OTC) market.

Overall, the domestic pharmaceutical industry is highly fragmented; more than 10,000 firms collectively control about 70% of the market. Only three foreign multinationals rank in the top 10 companies, as measured by sales, and collectively they have only 11.9% of the market between them. But many of the local players are generics producers specializing in anti-infectives, and as the illnesses of affluence and age increase, the demand for innovative new pharmaceuticals will rise.

The federal government uses price controls to ensure that vital drugs are affordable to the Indian population. Under the proposed pharmaceutical policy 2006, the government revealed its intention to raise the number of essential drugs under price controls from 79 to nearly 354, which would

The Indian Diabetes Epidemic

Diabetes is a life-long, incurable disease marked by high blood sugar levels. It is estimated that almost 41 million Indians are diabetic, and that figure is expected to reach 73.5 million by 2025. The total annual cost to treat India's diabetic patients (including direct and indirect expenses) is estimated at $420 per capita. If that per capita expenditure were to remain constant, the total estimated cost of treating the disease would reach $30 billion by 2025. However, it's likely that treatment costs will be even greater by then, due to growing affluence in India and improvements in standards of care.

The incidence of diabetes is much higher in affluent urban areas of India than in rural villages, and the rates are increasing: In the 1970s, only 2.1% of Indians living in urban areas had diabetes. Today that figure is 12.1% for adults over the age of 20. The incidence is higher in the south than in the north, particularly in cities such as Chennai and Hyderabad, where about 16% of the population is diabetic.

Indians seem more vulnerable to Type 2 diabetes. This form of the disease can be caused by genetics but also obesity, and it can lead to amputations, heart failure and blindness.

In addition to lifestyle changes that are causing diabetes—the dietary excess, reduced physical activity and increased stress associated with more affluence—Indians have a strong genetic vulnerability to the disease. As a result, Indians often contract diabetes a decade earlier than their counterparts in the developed world—a trend that is likely to have an enormous impact on India's working age population in the future.

bring almost a third of the industry under price controls and adversely impact foreign pharmaceutical firms that want to business in India.[2] It is an ongoing challenge to balance the commercial interests of pharmaceutical companies with the broader social objective of curing disease and preventing epidemics that could decimate the Indian population.

Deteriorating infrastructure

India's healthcare infrastructure has not kept pace with the economy's growth. The physical infrastructure is woefully inadequate to meet today's healthcare demands, much less tomorrow's. While India has several centers of excellence in healthcare delivery, these facilities are limited in their ability to drive healthcare standards because of the poor condition of the infrastructure in the vast majority of the country.

Of the 15,393 hospitals in India in 2002, roughly two-thirds were public. After years of under-funding, most public health facilities provide only basic care. With a few exceptions, such as the All India Institute of Medical Studies (AIIMS), public health facilities are inefficient, inadequately managed and staffed, and have poorly maintained medical equipment.

The number of public health facilities also is inadequate. For instance, India needs 74,150 community health centers per million population but has less than half that number. In addition, at least 11 Indian states do not have laboratories for testing drugs, and more than half of existing laboratories are not properly equipped or staffed.

The principal responsibility for public health funding lies with the state governments, which provide about 80% of public funding. The federal government contributes another 15%, mostly through national health programs.

[2] Pandeya, Radhieka. "Outside the Sick Bay," Business Standard, June 28, 2007

However, the total healthcare financing by the public sector is dwarfed by private sector spending. In 2003, fee-charging private companies accounted for 82% of India's $30.5 billion expenditure on healthcare. This is an extremely high proportion by international standards.[3] Private firms are now thought to provide about 60% of all outpatient care in India and as much as 40% of all in-patient care. It is estimated that nearly 70% of all hospitals and 40% of hospital beds in the country are in the private sector.

Per Lakh (100K) population	Beds	Hospitals	Dispensaries
Urban	178.78	3.6	3.6
Rural	9.85	0.36	1.49
Source: Review of Health Care in India, 2005			

The healthcare divide

When it comes to healthcare, there are two Indias: the country with that provides high-quality medical care to middle-class Indians and medical tourists, and the India in which the majority of the population lives—a country whose residents have limited or no access to quality care. Today only 25% of the Indian population has access to Western (allopathic) medicine, which is practiced mainly in urban areas, where two-thirds of India's hospitals and health centers are located. Many of the rural poor must rely on alternative forms of treatment, such as ayurvedic medicine, unani and acupuncture.

The federal government has begun taking steps to improve rural healthcare. Among other things, the government launched the National Rural Health Mission 2005-2012 in April 2005. The aim of the Mission is to provide effective healthcare to India's rural population, with a focus on 18 states that have low public health indicators and/or inadequate infrastructure. These include Arunachal Pradesh, Assam, Bihar,

[3] The average percentage of private sector healthcare expenditures is 27% for the G7 countries (Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States) and 59% for BRIC

Chhattisgarh, Himachal Pradesh, Jharkhand, Jammu & Kashmir, Manipur, Mizoram, Meghalaya, Madhya Pradesh, Nagaland, Orissa, Rajasthan, Sikkim, Tripura, Uttaranchal and Uttar Pradesh. Through the Mission, the government is working to increase the capabilities of primary medical facilities in rural areas, and ease the burden on to tertiary care centers in the cities, by providing equipment and training primary care physicians in how to perform basic surgeries, such as cataract surgery.

While the rural poor are underserved, at least they can access the limited number of government-support medical facilities that are available to them. The urban poor fare even worse, because they cannot afford to visit the private facilities that thrive in India's cities.

Lack of insurance

A widespread lack of health insurance compounds the healthcare challenges that India faces. Although some form of health protection is provided by government and major private employers, the health insurance schemes available to the Indian public are generally basic and inaccessible to most people. Only 11% of the population has any form of health insurance coverage. For the small percentage of Indians who do have some insurance, the main provider is the government-run General Insurance Company (GIC), along with its four subsidiaries, The New India Assurance Company, Oriental Fire and Insurance Co., National Insurance Co., and The United India Insurance Co. GIC is able to obtain funds for underwriting from other countries, although foreigners are not allowed to own insurance companies. Only 1% of the population was covered by private health insurance in 2004-05. Group insurance accounted for 35% of the total health insurance business during that period.

India's first medical insurance scheme for the poor was launched in the 1996-97 budget. The "Janarogya Yojana" scheme is marketed by the four subsidiaries of GIC, and covers people between the ages of 5 and 70 for pre– and post–hospitalization expenses, for up to 30 and 60 days, respectively. The insurance coverage costs around $122 per annum.

More than four million policyholders were expected to enroll during the first year of operation, although reports suggest this was not the case. One problem is that the insurance is provided on a reimbursement basis: patients are required to pay for treatment out of their own pockets and then claim reimbursement—a process that can take up to six months, according to local reports.

While public sector health insurance has not fared well, the market for private health plans is expanding in India. In some cases, the government is partnering with the private sector to provide coverage at a low cost. For instance, the Yashaswini Insurance scheme, launched in 2002 in the state of Karnataka by a public–private partnership, provides coverage for major surgical operations, including those pertaining to pre-existing conditions, to Indian farmers who previously had no access to insurance. The premium is only Rs 60 annually (roughly $1.50), which virtually all workers can afford, and the government contributes an additional Rs30 annually for each policyholder. While the Yashaswini scheme has been successful, it only provides coverage for approximately 50,000 farmers.

Because so little insurance is available to the population of India, out-of-pocket payments for medical care amounted to 98.4% of total health expenditures by households, as of the most recent (2001–02) census. Without insurance, the poor must resort to taking on debt or selling assets to meet the costs of hospital care. It is estimated that 20 million people in India fall below the poverty line each year because of indebtedness due to healthcare needs.

Clearly there is an urgent need to expand the health insurance net in India. Among other things, that will require more state governments to pursue microinsurance initiatives, such as the Yashaswini Insurance scheme in Karnataka, so that most or all of the population can afford to purchase at least a minimum level of coverage. The widespread availability of health insurance would help to drive demand for services and provide additional revenue to improve the quality of care.

Opportunities within India's Healthcare sector

Given the current state of India's healthcare system, its challenges and its growth prospects, PricewaterhouseCoopers has identified a number of market opportunities for foreign companies that want to participate in the sector.

Medical tourism on the rise

Medical tourism is one of the major external drivers of growth of the Indian healthcare sector. A Google search of "India medical tourism" turns up more than two million results.

The emergence of India as a destination for medical tourism leverages the country's well educated, English-speaking medical staff, state-of-the-art private hospitals and diagnostic facilities, and relatively low cost to address the spiralling healthcare costs of the western world. India provides best-in-class treatment, in some cases at less than one-tenth the cost incurred in the US (see chart). India's private hospitals excel in fields such as cardiology, joint replacement, orthopaedic surgery, gastroenterology, ophthalmology, transplants and urology.

Cost of Key HealtCare Procedures

Currency: USD	US	Thailand	India	India HC cost–x of US
Cardiac surgery	50,000	14,250	4,000	12.5
Bone marrow transplant	62,500	62,500	30,000	13.33
Liver transplant	500,000	75,000	45,000	11.11
Orthopaedic surgery	16,000	6,900	4,500	3.56

Source: India Brand Foundation Report, IBEF Research

According to a joint study by the Confederation of Indian Industry and McKinsey, Indian medical tourism was estimated at $350 million in 2006 and has the potential to grow into a $2 billion industry by 2012.[4] An estimated 180,000 medical tourists were treated at Indian facilities in 2004 (up from 10,000 just five years earlier), and the number has been growing at 25-30% annually. India has the potential to attract one million medical tourists each year, which could contribute $5 billion to the economy, according to the Confederation of Indian Industries.

In addition to receiving traditional medical treatments, a growing number of western tourists are traveling to India to pursue alternate medicines such as ayurveda, which has blossomed in the state of Kerala, in southwestern India. The number of medical tourists visiting Kerala was close to 15,000 in 2006 and is expected to reach 100,000 by 2010.[5]

To capitalize on medical tourism and build a sustained public-private partnership in the hospital industry, the Indian government is supporting an initiative by well known heart surgeon Dr. Naresh Trehan to build a “Medi City” in Gurgaon, on the outskirts of Delhi. The compound will include a 900-bed hospital that supports 17 super specialties, a medical college and para-medical college. The project, on 43 acres of land, will cost an estimated $493 million. The Medi City will integrate allopathic care with alternative treatments, including unani, ayurvedic and homeopathic medicine, and it will provide telemedicine services as well.

To encourage the growth of medical tourism, the government also is providing a variety of incentives, including lower import duties and higher depreciation rates on medical equipment, as well as expedited visas for overseas patients seeking medical care in India.

[4] Finance Wire, July 2006

[5] http://www.blonnet.com/2007/04/02/stories/2007040205221500.htm

Emerging health insurance market

In recent years, there has been a liberalization of the Indian healthcare sector to allow for a much-needed private insurance market to emerge. Due to liberalization and a growing middle class with increased spending power, there has been an increase in the number of insurance policies issued in the country. In 2001-02, 7.5 million policies were sold. By 2003-4, the number of policies issued had increased by 37%, to 10.3 million.

The Insurance Regulatory and Development Authority (IRDA) eliminated tariffs on general insurance as of January 1, 2007, and this move is expected to drive additional growth of private insurance products. In the wake of liberalization, health insurance is projected to grow to $5.75 billion by 2010, according to a study by the New Delhi-based PHD Chamber of Commerce and Industry. The IRDA believes that eliminating tariffs will encourage scientific rating and adoption of better risk management practices, and lead to independent pricing for each line of business, so that premiums will be based on actual risks and costs. The implementation of the new policy also will encourage the development of innovative practices and customer-friendly options for policyholders, boosting penetration.

Removal of tariffs also will result in wider acceptance of individual health coverage. Health insurance will make healthcare more affordable to larger segments of the populace, boosting healthcare expenditures per household and driving the demand for quality care. Finally, the elimination of insurance tariffs will serve as a litmus test for further legislation, such as co-payments and hospital accreditations, which the government plans to implement over the next two to three years.

In the post liberalization era, some companies have been licensed to act as third party administrators of health services. The objective is to strengthen the health insurance industry and increase its penetration by bringing more professionalism to claims management, facilitating cashless services to policyholders, and reducing the claims ratio. Currently there are 25 licensed third party administrators in the Indian health insurance industry.

In another effort to improve the insurance prospects for India, the IRDA is focused on standardizing medical definitions to ensure consistent pricing and products, and is providing incentives for stand-alone insurance

companies. (Currently only Star Health exists as a stand-alone health insurance company.) In addition, government subsidies and tax incentives for health insurance are expected to attract key players to the industry.

In response to liberalization, a large number of international private insurance companies are moving into India and forming joint ventures. Two prominent examples are Max New York Life, a joint venture between Max India and New York Life, and ICICI Prudential Life Insurance, a joint venture between the ICICI Group and UK-based Prudential plc. Some companies are experimenting with more targeted forms of insurance coverage. For example, ICICI Prudential is offering plans designed specifically for diabetics. We can expect to see more innovations as the health insurance market evolves in the coming years.

While the liberalization of the healthcare sector will increase the penetration of insurance policies, the widespread use of health insurance in India could take many years. One reason is that insurance companies lack the data they need to assess health risks accurately. In addition, today's insurance products work on an indemnity basis—that is, they reimburse patients only after they have paid their healthcare bills. Since many people cannot afford such large payments, even if they are subsequently reimbursed, they will not choose to purchase medical insurance.

Growth of telemedicine

Only 25% of India's specialist physicians reside in semi-urban areas, and a mere 3 % live in rural areas. As a result, rural areas, with a population approaching 700 million, continue to be deprived of proper healthcare facilities.

One solution is telemedicine—the remote diagnosis, monitoring and treatment of patients via videoconferencing or the Internet. Telemedicine is a fast-emerging trend in India, supported by exponential growth in the country's information and communications technology (ICT) sector, and plummeting telecom costs.

Several major private hospitals have adopted telemedicine services, and a number of hospitals have developed public-private partnerships (PPPs), among them Apollo, AIIMS, Narayana Hridayalaya, Aravind Hospitals and Sankara Nethralaya.

The early successes of telemedicine pioneers have led to increased acceptance and proliferation of telemedicine. Today there are approximately 120 telemedicine centers throughout India. The Asian Heart Institute (AHI) is planning to establish 60 more telemedicine satellite centers across the interiors of Maharashtra.

The government has also made a major commitment to the growth of telemedicine. The Indian Space Research Organization (ISRO) plans to establish 100 telemedicine centers across the country. ISRO has already connected 25 major hospitals in the mainland and plans to link at least 650 district hospitals by 2008. The government also is reducing import tariffs on infrastructure equipment. And while India has yet to pass legislation on telemedicine related issues, the Ministry of Information Technology has developed "Recommended Guidelines & Standards for Practice of Telemedicine in India," with the goal of standardizing digital communication in telemedicine. The Medical Council of India has formed committees to explore this and other legal aspects of telehealth.

There is a growing movement within India to establish a health grid that connects medical institutions and practitioners throughout the country. This would allow super specialists to exchange case studies, compare experiences, and hold virtual conferences to discuss critical disease patterns and provide treatment. Eventually, telemedicine likely will be practiced in the majority of Indian hospitals, initially in a separate department, and eventually, integrated into medical specialties.

Healthcare infrastructure expansion

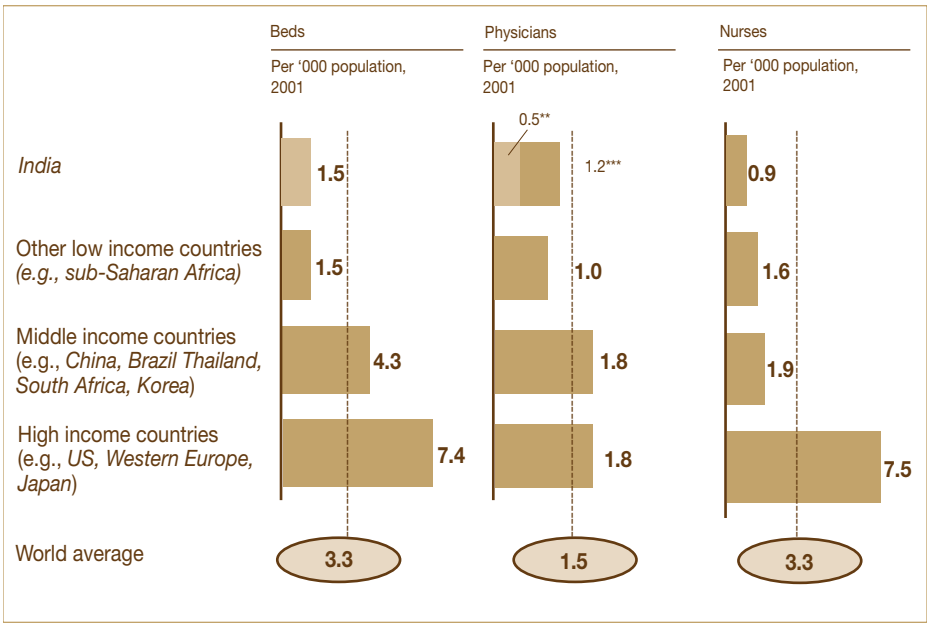
An enormous amount of private capital will be required in the coming years to enhance and expand India's healthcare infrastructure to meet the needs of a growing population and an influx of medical tourists. Currently India has approximately 860 beds per million population. This is only one-fifth of the world average, which is 3,960, according to the World Health Organization. It is estimated that 450,000 additional hospital beds will be required by 2010—an investment estimated at $25.7 billion. The government is expected to contribute only 15-20% of the total, providing an enormous opportunity for private players to fill the gap.[6]

6 CRISIL

Recently we have seen many new investments in healthcare infrastructure facilities in India. For instance, ICICI Venture, the country's largest private equity fund, has invested $8.6 million in a chain of diagnostics facilities, along with Metropolis Health Services Ltd. And in 2006, General Electric announced a $250 million investment in infrastructure and healthcare projects in India.

With the advent of private insurance and the emergence of India as a medical tourism destination, there also has been a surge of growth in so-called "super specialty" hospitals, which have teams of specialists, sophisticated equipment, links to other medical centers, and the ability to treat a broad range of ailments.

India Health Infrastructure



Some of these new facilities, such as the Rajiv Gandhi Super Specialty Hospital (see sidebar), are public-private partnerships. Government fiscal constraints are driving the growth of PPPs to help meet India's growing demand for healthcare infrastructure. Such partnerships have gained legitimacy worldwide in recent years as a major strategy for health sector development.

In addition to participating in infrastructure PPPs, opportunities are emerging for foreign companies to create super-specialty hospitals in collaboration with Indian corporations. For instance, Wockhardt Hospitals Group has partnered with Harvard Medical International to create a chain of super specialty hospitals in India. Two hospitals, in Mumbai and Bangalore, are attracting large volumes of medical tourists from the UK and US.

There also is strong demand for tertiary care hospitals, which emphasize the treatment of lifestyle diseases, focusing on specialties such as neurology, cardiology, oncology and orthopedics. Tertiary hospitals are projected to grow faster than the overall healthcare sector, in response to the growing incidence of lifestyle disease and the accelerating growth of medical tourism.[7]

In addition to a deteriorating physical infrastructure, India faces a huge shortage of trained medical personnel, including doctors, nurses and especially paramedics, who may be more willing than doctors to live in rural areas where access to care is limited. There is an immediate need for medical education and training, which could provide additional opportunities for private sector providers or public-private partnerships. The communications technology that enables telemedicine could also be used to deliver training courses.

Rajiv Gandhi Super Specialty Hospital: A Public-Private Partnership

One example of an Indian public-private partnership is the Rajiv Gandhi Super Specialty Hospital at Raichur, Karnataka, opened in 2000. This facility is the product of a public-private partnership between the Government of Karnataka and the Apollo Hospitals Group, with financial support from the OPEC Fund for International Development. The objective of the PPP is to provide low-cost, super-specialty care to families below the poverty line.

The Government of Karnataka provided the land, hospital building and staff quarters as well as support infrastructure, such as power, water, and road connectivity. Apollo Hospitals is mandated to operate the hospital with its own resources, including (among other things) medical specialists and support staff. The losses during the first three years of operation were borne by the Government. Approximately 30% of the profits from the fourth year onward are to be retained by Apollo, to meet modernization and expansion requirements. In the event there is no profit, the Government is liable to pay a service charge not exceeding 3% of gross billing. Separate monthly accounts are maintained for costs incurred on patients below the poverty line. These accounts are submitted to the Deputy Commissioner of Raichur for reimbursement.

7 CRIS INFAC

Medical equipment market

The rebuilding of India's healthcare infrastructure, combined with the emergence of medical tourism and telemedicine, will drive strong demand for medical equipment, such as x-ray machines, CT scanners and electrocardiograph (EKG) machines. Leading international companies market most high value medical equipment, while only consumables and disposable equipment are made locally. Many international companies have expanded their operations in the Indian market in recent years and established manufacturing facilities to assemble equipment for the domestic market and export sales. The competition is expected to intensify with the entry of more global firms into the medical equipment marketplace.

The government is encouraging the growth of this market, through policies such as a reduction in import duties on medical equipment, higher depreciation on life-saving medical equipment (40%, up from 25%), and a number of other tax incentives.[8]

Pharmaceutical industry opportunities

Despite widespread poverty and inadequate public healthcare provision, India has much to offer the leading drug makers. An increase in lifestyle diseases resulting from the adoption of unhealthy western diets, combined with a growing middle class that has more disposable income to spend on treatment, will provide new opportunities for global pharmaceutical firms.

[8] http://www.ciionline.org/news_new/newsMain01-11-2006_3.html

Manufacturing

India has emerged as a major supplier of several bulk drugs, producing these at lower prices compared to formulation producers worldwide. The US Food and Drug Administration (FDA) already has approved 85 Active Pharmaceutical Ingredient (API) and formulation plants in India, the highest such number outside the US. India is poised to become a major exporter of pharmaceuticals, particularly generic and OTC drugs, to global markets. By 2010, India could be producing 15% of the world's bulk pharmaceuticals and drug intermediates. However, achieving that level of growth will require an estimated $1.2 billion investment in production capacity.[9]

Many multinational generics companies have been sourcing products from Indian manufacturers for some years. Some also use Indian contract manufacturers to manufacture the finished product. Contract manufacturing, currently estimated at $350 million, is expected to reach $1billion by 2010, according to CRISIL.

Some companies—encouraged by the relaxation of the rules on foreign ownership and a favorable tax regime—have gone beyond contract manufacturing, setting up their own local manufacturing facilities. The financial incentive is compelling: Goldman Sachs estimates that the cost of setting up and running a new manufacturing facility in India is one-fifth of the cost of doing so in the West.

Pharmaceutical research

Pharmaceutical research is one area that is expected to achieve tremendous growth in the coming decade, due to India's huge and growing population, low per capita drug usage, and increasing incidence of disease. Global pharmaceutical alliances with Indian drug firms are finally beginning to look like a two-way street, with major R&D deals

9 http://www.pharmabiz.com/article/detnews.asp?articleid=19066&sectionid=46

being struck. For instance, Glenmark Pharmaceutical has teamed with Dyax to identify biological entities for its three targets in cancer treatment, and with Merck KGaA for its prospective diabetes molecule GRC 8200. GlaxoSmithKline is working with Ranbaxy Laboratories to identify new targets and has partnered with TCS for data management, through a global drug development support center in Mumbai.

Clinical trials

India historically lacked the expertise to perform clinical trials, because most companies only tested different processes for producing copycat versions of Western products, and the rules were quite lenient. Several drug makers have also been caught behaving unethically or even illegally.

However, in recent years, India has become a more attractive market for clinical testing. One reason is that in November 2004, the federal government amended Schedule Y of the Drugs and Cosmetics Act to make the rules on clinical trials more consistent with international practice. In addition, in January 2005 India became compliant with the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Agreement and formally recognized product patents. This triggered growth in Indian clinical trial activity by contract research organizations, such as Quintiles, Omnicare, PharmaNet and Pharm-Olam, and by multinational corporations such as Novo Nordisk, Sanofi-Aventis, Novartis and GSK. Some multinationals, such as Pfizer and Eli Lilly, have been conducting tests locally for a while. Government taxation incentives are further boosting R&D in India.

As a market for clinical testing, India holds other attractions as well. According to a study by Rabo India Finance, a subsidiary of the Netherlands-based Rabo Bank, the huge patient population offers vast genetic diversity, making the country “an ideal site for clinical trials.” It has the largest pool of diabetic patients, the population is relatively easy to access, and many people are “treatment-naïve”; they have not been treated with medications being tested, which potentially could distort test results.

As a result of these favorable factors, the Indian clinical trials market, currently estimated at $120 million, is expected to reach $1 billion by 2010, according to Infomedia. To achieve that level of growth, India will have to address a lack of skilled workers, high wage inflation, and inadequate infrastructure.

For western companies that can navigate these obstacles, the rewards will be substantial: Clinical trials account for over 40% of the costs of developing a new drug, and Rabo India Finance estimates that a standard drug could be tested in India for as little as $90 million—60% of the cost of testing in the US.

Conclusion

The Indian healthcare sector can be viewed as a glass half empty or a glass half full. The challenges the sector faces are substantial, from the need to improve physical infrastructure to the necessity of providing health insurance and ensuring the availability of trained medical personnel. But the opportunities are equally compelling, from developing new infrastructure and providing medical equipment to delivering telemedicine solutions and conducting cost-effective clinical trials. For companies that view the Indian healthcare sector as a glass half full, the potential is enormous.

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