

Report on the Health System of India

A delegation of U.S. health care executives with the Academy of International Health Studies visited the Indian capital of New Delhi October 24 to November 1, 2008. In an effort to better understand how the Indian health care system faces the dual challenges of a teeming population and low health care expenditures, this chief clinical officer trade/study mission reviewed (and viewed first hand) the quality of care that is possible, but not prevalent, in India.

India has been described as a “country of contradictions.” In launching a rocket to the moon this year, it has joined the elite group of countries with the necessary combination of highly advanced technologies, and trained scientists and engineers to attain this lofty goal. Yet, the technological development has outpaced the need for basic infrastructure development for its 1.12 billion residents. Its business economy is also a contradiction—a recent boom in economic growth has not yet helped erase the depths of poverty experienced by a large portion of the population. It is a country with a proud heritage of peace but maintains huge internal police forces and militaries to address tense relations with neighbors on at least two borders as well as maintain internal peace.

A country of open farms, crowded villages, and tumultuously active cities, India possesses a seemingly endless pool of human capital—and growing economic capital—but relatively little of it spent on healthcare. Even considering the economic and credit market pullbacks, experts in India are projecting a 7.0% to 7.5% economic growth rate, continuing a period of increasing prosperity for this country. However, the government pays only 1.1% of its gross domestic product (of a total \$1.1 trillion) on public healthcare, and an additional 3.7% is privately financed, for a total 4.8% of GDP on health spending. Three-quarters of all health spending is borne by Indian households, meaning that

India is one of Earth’s largest consumer-directed healthcare markets.

Can this market work, when approximately 300 million people are impoverished, 300 million are middle class, and perhaps 400 million fall in between? The answer is not simple, as India is a complex society, still affected by the caste system, and with stark differences among the overpopulated urban areas, 60,000 teeming villages, and rural areas.

India is beginning to address the challenge of building healthcare markets, with a pilot program that seeks bids from private insurance companies to create local/regional medical networks, in which the insurer negotiates packaged rates with providers, said Alam Singh, Assistant Managing Director, Milliman India, New Delhi. Coverage to those who are below the poverty line would receive available healthcare services for free. It is hoped that this program will be introduced nationally within the next five years.

THE HEALTHCARE BACKGROUND

What does India receive for its public health expenditures? The average life expectancy for Indians is 63 years, but this is subject to wide variation—it is higher in the cities, and lower in the rural areas, where access to healthcare and basic public health services, such as clean water and sanitation services, is inadequate, stated Mr. Singh. The result is endemic malaria,

typhoid, hepatitis, among other infectious diseases. The government tries to address the problem primarily by promoting immunizations rather than addressing the more expensive infrastructure problems.

Institutional healthcare is difficult to define in India: hospital licensure does not exist, and therefore, the definition of what exactly is a hospital (vs. a nursing home or other care facility) is somewhat vague. However, uniform accreditation has just been implemented (up to 40 hospitals have been accredited to date). Far fewer have sought and obtained accreditation through the Joint Commission International.

Those who do not fall below the poverty line usually access charitable hospitals, those with religious missions, or individual private-governmental-sponsored programs for care.

Hospitals such as Sir Ganga Ram, a New Delhi nonprofit hospital established in 1954, are the exception rather than the rule. This physician-run hospital devotes 20% of its beds to patients who cannot pay. It is well equipped, with 24 operating theatres, but it does not have a trauma center. More than 600 physicians practice at the hospital, mostly trained in the United Kingdom or United States, but are not employed by the hospital. The affiliated doctors contribute 20% of their income from their outpatient practices to the hospital to pay for services. Rates for a deluxe room, including all food, physician, nursing, and pharmacy services, are \$120 per day (but the average Indian citizen earns less than 10% of that for the average American).

POSITIONING AND GROWTH OF THE PRIVATE SECTOR

Insurance. The private healthcare sector is still fragmented in India, and certainly unregulated. Today, more than 20 million people are covered by private health insurance—1.7% of India's population. The

reason is simple: Only in 2006 was private health insurance permitted to be sold separately from other forms of insurance (i.e., life and property). When the initiative was announced, two companies offered standalone health insurance. Today, that number is 14.

The market for the private health insurance sector in India is currently at \$1.2 billion, but this is growing at a rate of at least 30% annually. Private health insurance premiums are also growing rapidly, from 35% in 2006 to 55% in 2008, related in part, to the recent increase in average disposable income in India. The premiums for private health insurance are usually shared between the employer and worker. Private health insurance is regulated by a centralized federal authority.

The Indian government has actively incentivized the growth of private health insurance, making premiums tax deductible. H. Srinivasan, Assistant Vice President, Star Health, Chennai, pointed out that the Indian government is now one of the biggest customers for private insurance. As the economy grows, Mr. Srinivasan said, "the number of employer-oriented schemes is increasing, including coverage for retired employees. Companies are using this benefit to help retain and recruit valued employees in this economy." It seems that awareness of the availability of private health insurance is one of the limiting factors in its growth.

Mr. Srinivasan added that in a private health insurance plan, the policy holder can seek care from a medical network (of physicians and hospitals) that has been set up by a third-party administrator.

Hospitals. A bill proposed in India's legislative houses would require licensure for private healthcare providers, but no clear-cut framework yet exists, according to Mr. Singh.

The principal private healthcare players in India include six organizations (Apollo, Fortis, Max, Wockhardt, Esorts, and Maripel), and many of these focus on specialty hospital care. Private specialty hospitals are not obliged to provide care to anyone who walks in, but they are responsible for stabilizing the patient before transferring him or her to a public facility.

At Apollo's private hospital system, about 20% of beds are paid for through private health insurance, according to Chandra Sekhar, Marketing Director at Apollo DKV. "Fully 60% pay for their care completely out-of-pocket," he said.

PHARMACEUTICAL CARE AND MANUFACTURING

Ranbaxy Pharmaceuticals and Dr. Reddy's Laboratories play an outsized role in healthcare, not solely in pharmaceutical manufacturing. For example, Ranbaxy is an investor in Fortis, the private healthcare provider, and Wockhardt, another pharmaceutical manufacturer, is moving away from their primary business and moving more towards investment in private healthcare.

According to Mr. Singh, 10,000 pharmaceutical companies participate in the \$7.3 billion Indian market, but the drug industry is heavily price-regulated—more than 500 drugs are subject to government price controls.

Outpatient pharmacy benefits do not exist in India—in general, only hospital procedures are covered along with medicines that are provided in the hospital setting and within 30 days of discharge. In contrast, childhood immunizations are covered, and Mr. Singh commented that immunization rates exceed 80% for most preventable diseases.

The need for low-cost alternatives in health care is driving the drug industry in India. The pharmaceutical companies do

not focus on introducing new molecular entities, but strive to bring currently available technology to market at low price—often at the risk of patent infringement. Rajinder Kumar, MD, President of Research and Development, Dr. Reddy's Laboratories, one of India's foremost pharmaceutical companies, said that he has a total budget of \$100 million to introduce new products to market. In his former job at GlaxoSmithKline, he worked with a budget of \$1.6 billion. That limits production to me-too products and generic drugs.

He stated that a biosimilar form of Roche's rituximab (Rituxan[®]) took four years to develop but was ultimately successful. The biosimilar is priced at one-quarter of Rituxan[®]'s \$10,000 price tag. But does the need for lower priced products trump the need to protect the patent of branded products? India's pharmaceutical industry is embroiled in controversial patent protection lawsuits and filings to prevent generic copies of agents from being brought to market prematurely. Dr. Kumar stated, "India signed onto the [agreement to honor intellectual property rights], but this can be superseded if the indigent population is shown to be in need. India must demonstrate that it is serious in intellectual property protection."

THE HEALTHCARE WORKFORCE

India has systemized training for physicians (principally family practitioners) and specific health providers through its 600 medical colleges and 1,500 schools of nursing schools, but it does not focus on primary care physician extenders, such as nurse practitioners or physician assistants. On the other hand, approximately 200,000 nurse midwives are registered in India.

Currently, 993,500 physicians practice in India, beside 2,510,250 nurses, but this is far below the number necessary to treat the growing threats to Indian healthcare. O.P.

Yavada, MD, CEO of the National Heart Institute in New Delhi, stated that only 3% of the physicians practice in rural areas, “but this is where 80% of the population live.” The average physician supply ratio is 1.2 per 1,000, including doctors practicing traditional techniques. Dr. Yavada cautioned that for every legitimate Indian physician practicing today, “we have two unqualified quacks.”

One consulting organization estimated that India would need an additional 200,000 doctors and 500,000 nurses to result in an adequate ratio, but far more are needed to match access statistics in Western countries. One of the major challenges is that 10% of Indian healthcare workers, once trained, leave the country for Western positions. Estimates suggest that 11% of the United Kingdom’s physician workforce is from India, compared with 5% in the United States.

The total number of hospital beds, at 1.1 million, results in a rate of 0.7 beds per 1,000 population, which is far below that for other countries (world average, 3.96 per 1,000).

India also faces a difficult situation in terms of emergency medical services. Though recognizing its value, highly congested traffic in the cities and thinly spread health facilities throughout the villages and countryside, make for difficulties not seen in most developed nations. Furthermore, India does not have a significant workforce of paramedics or emergency medical technicians. In general, physicians or nurses man the ambulances in urban settings. And it takes innovative thinking to address the problem: Instead of trying to reach patients quickly with ambulances, some hospitals (particularly private hospitals) are turning to motorcycles, equipped with medical supplies, which can navigate the congested streets more rapidly. They reach the patient

first, with the ambulance following when it can.

Another basic problem is that India’s telecommunications system is built on the cell phone model. Two-way radio communication is not ubiquitous. The use of cell phones can be uniquely dangerous when one envisions emergency workers on motorcycles trying to read a cell-phone message or make a call while riding to the scene of an emergency.

HEALTHCARE CHALLENGES

India is faced with a number of disease-related challenges, some resulting from inadequate sanitation and potable water, seen especially in small villages and rural areas. One disease that has grown rapidly in India is diabetes, somewhat unexpectedly in a land where obesity is relatively rare. However, Nikhil Tandon, MD, Professor of the All India Institute of Medical Sciences, New Delhi, pointed out that more processed foods have been introduced into Indian diets, particularly as the average income has risen in recent years. The prevalence of diabetes mellitus in India was only 1.5% in 1971. The overall prevalence has been holding at 12% since 2001 but it is estimated to be as high as 20% in residents 20 years of age or greater, and possibly as high as 30% in those age 60 years or older. An estimated 17.3 million Indians have diabetes. Furthermore, the incidence is rising in urban areas, where the availability of fast food outlets is coincidentally increasing.

Dr. Tandon emphasized that as India becomes more prosperous, the body mass index of the average Indian has indeed risen, along with the prevalence of central adipose tissue (which leads to insulin resistance) and lack of physical activity. Of course, one cannot discount a possible genetic disposition to diabetes, in which in-

sulin resistance occurs at a lower threshold (in terms of body mass index) compared with that in the United States.

Patients with insulin generally have poor glycemic control, according to Dr. Tandon, who pointed out that half of the patients with the disease have HbA1c levels above 9.0%. Awareness of the disease and education about its long-term complications seem to be lacking as well; one study pointed to a 39% prevalence of foot problems and 31% prevalence of retinopathy within 10 years of diagnosis. Dr. Tandon said, “Among diabetics, only 41% were aware it could result in long-term complications, and one-quarter of an urban population were not even aware of what the term diabetes meant.”

Most of the healthcare costs are borne directly by Indian citizens, and the direct and indirect costs per Indian with diabetes can be as high as \$850 per year if hospitalization is included, according to one study. This is greater than many patients’ annual salary, said Dr. Tandon. The mean expenditure for a person with diabetes is approximately 7% of their annual household income.

Exacerbating the situation, physicians in India do not generally utilize diabetes practice guidelines. This challenge to evidence-based medicine is also worsened by the population’s resistance to insulin use. “If a patient is told by one doctor that he or she needs to use insulin,” said Dr. Tandon, “that patient will often seek out a different doctor who offers a different treatment.”

Dr. Tandon estimated that 40% of the patients with end-stage renal disease, of which 2,500 are new dialysis patients every day, are related to diabetes. However, the government is not currently incentivizing the expansion of public or private outpatient dialysis centers (currently, available in hospital centers only).

One of the underlying problems in addressing diabetes in India is the lack of endocrinologists or diabetologists. “Ideally,” Dr. Tandon stated, “we should have a system in which the primary care doctor can refer a patient to a specialist, when the burden of disease increases. Currently, the primary care doctor has no backup [except the hospital].”

Beyond basic sanitation and water supply difficulties, and sporadic power outages, particularly outside of the cities, another public health challenge is high levels of air pollution. Much of the population uses kerosene, wood, or coal for heating and cooking, and even in New Delhi, the smell of wood fires is often in the air. The lack of air pollution controls, a congested traffic system, and high population density contribute to very high smog levels, certainly rivaling those of other heavily affected cities (e.g., Beijing). It is expected that the incidence of respiratory ailments is high, and studies bear this out, particularly relating to rising lung cancer and emphysema rates.

Meeting the critical challenge of utilizing the low, limited funding for healthcare services and getting adequate care to the outlying villages and rural areas requires innovative thinking—using very different approaches than we would consider in the United States. In the technology-hungry U.S. health system, the first impulse is to create new and higher-tech ways of meeting the problem (e.g., more advanced use of telemedicine). In India, these outlying areas are in need of more basic services. For instance, just obtaining an electrocardiogram (ECG) may require a burdensome trip to a hospital or health center.

From India’s General Electric (GE) Healthcare subsidiary, Director Ashish Shah described one project that has broad application to the Indian population and typifies the approach that is needed: Can

portable ECG machines be reengineered, so that they cost far less to produce and use away from medical facilities? “Can you make an MRI system for \$250,000 instead of \$2.5 million? This is what the population of India needs.” Pointing out that the average annual salary of a physician in rural India may reach \$15,000, who will take the risk to purchase these machines?

One of the solutions involves taking the currently available portable ECG machines and asking, “What features are actually needed?” If all that is required is that it prints out a tape, without any reporting features, Mr. Shah emphasized, “We only need a power button. Once you make that decision, the cost of producing the machine is reduced greatly.”

QUALITY OF CARE

In terms of quality of care, medical care is largely unmeasured in public hospitals and physician offices. “Many people will travel long distances to seek care in a public hospital in a different state, under the perception (which may not be supported by data) that care is better,” said Mr. Singh.

Most organizations, even the private hospital systems, are just beginning to look at data on surgical outcomes, lengths of stay, and rates of readmission. This may present a larger problem over the long term, because most of the health services provided by the Indian system is on a fee-for-service basis, which, given enough resources, will encourage waste in the system. As private health insurance grows, and with it the indemnity-based system, India must be careful to avoid the same trajectory that was faced by the United States, which helped spur the move to capitation. This is not the case for the growing medical tourism sector, which emphasizes the use of global payments or case rates.

One may expect more innovation on the quality front from the private sector hos-

pitals, who will increasingly compete for growing numbers of patients.

Although many Indians do utilize Western medicine, they have a particular focus on “traditional” medicine techniques, such as Ayurvedic treatments, homeopathy, and allopathy, to emphasize a more holistic view. Dr. Yavada commented, “There is a difference between curing and healing; these traditional approaches help address a patient’s healing. The other benefit to these approaches is that they are inexpensive.”

MEDICAL TOURISM (AKA “MEDICAL VALUE TRAVEL”)

One of the bright spots for the Indian medical economy is the burgeoning interest in medical tourism. Private hospital facilities in the country have demonstrated experience in such procedures as cosmetic surgery, hip replacements, kidney transplants, and even liver transplants, and considerable private investment is being made in growing this business.

However, the Indian medical value travel concept may not be the best fit for U.S. patients at this time, as a number of issues have yet to be worked out, such as medicolegal concerns, the ability to entice Americans (not simply expatriates) to take 15-hour plus trips by air to India, and the lack of networks of American providers to provide aftercare or follow-up for patients treated by Indian surgeons. Why would medical tourism be attractive to U.S. citizens or companies? Low cost and excellent customer service are just two reasons.

The cost of care in India is considerably less than that in the United States (Table). However, comparisons of charges can be somewhat misleading. In India, hospital or physician’s office charges are paid in full. In the United States, this is rarely the case. In fact, managed care often pays less than 40% of the total charges billed by the U.S.

TABLE: CHARGES AND TYPICAL PAYMENTS FOR MANAGED CARE, MEDICARE, AND MEDICAL TOURISM IN INDIA FOR THREE PROCEDURES

Procedure	U.S. Hospital Charge*	Managed Care Care Payment	Medicare Payment	Indian Hospital†
Hip Replacement	\$ 49,700	\$17,400	\$18,000	\$6,500
Coronary Bypass Surgery	\$144,950	\$47,760	\$43,645	\$8,500
Cardiac Pacemaker Insertion	\$ 70,630	\$38,470	\$20,500	\$7,500

*Charges at one California hospital.
 †Wockhardt Hospital.

hospital. Once this is considered, the overall cost of care difference, although still substantial, may not be quite as compelling for certain procedures, considering the cost of travel for patients and family members, and hospitality services. At hospitals such as Indraprantha Apollo, which charge of 2,500 Indian rupees (INR) for a bed in a four-bed room (about \$55 per day)—which includes meals and nursing services—with deluxe rooms and VIP suites available, the pricing seems extremely attractive. Private hospitals, such as Indraprastha Apollo and Max Super Specialty, provide care in attractive and clean facilities. These particular hospitals have been accredited by Joint Commission International, but the question of outcomes measurement remains. There is no question that these providers are experienced, however. Anupam Sibal, MD, Director of the Apollo Hospitals Group, stated that his organization has treated 60,000 patients from 55 countries, performing more than 10,000 joint replacements and 5,000 kidney transplants.

The majority of medical tourists are from Southeast Asia, and Europeans also frequent Indian hospitals. Dr. Sibal stated that the medical tourism business from U.S. citizens was approximately \$450 million in 2006. The vast majority of U.S. medical travelers visiting the country are non-resident Indians.

Beyond the basic question over lengthy flights to India from North America, one of the thorniest of issues is the medicolegal

situation. Medical malpractice does not exist in India. Liability for any procedure performed in India must be resolved in India, although the avenue for such action is murky at best.

High-quality customer service, which extends from the hospitality industry to hospitals, to call centers, is truly a positive attribute of Indian culture. This results in a level of personal care that may not be experienced by many in the United States, and may be an underemphasized benefit of the medical value travel industry.

Dr. Sibal believes there is a great opportunity for medical value travel from the United States. Private hospitals in India are interested in working with American insurance companies to establish networks in the United States to provide aftercare for medical tourists. Wockhardt Hospitals in Mumbai has been established as an affiliate of Harvard Medical International (part of an initiative by Harvard University and Partners HealthCare System), which may provide further incentive to wary U.S. medical tourists.

MEDICAL OUTSOURCING

One of the newest trends internationally is to outsource certain capabilities to other countries, including radiology interpretation, nurse call centers, or claims management. However, this is not a necessarily a new service offered by Indian companies, but one that is only now being discovered by U.S. organizations. For instance, Palat

Menon, MD, Medical Director of Quest Diagnostics, said, "Medical process outsourcing is ready to take-off in India, but medical transcribing services are already well developed." For Quest's core business, laboratory testing, Dr. Menon emphasized that Web-based reporting and Indian laboratory accreditation is critical for this to move forward.

"Medical transcribing has been done offshore for 15 to 20 years," agreed Minalkulmar Patel, MD, Chief Executive Officer of Care Management International. He defined "offshoring" as the use of foreign services for noncritical functions, such as transcribing, underwriting, or claims processing. In contrast, "outsourcing" is the use of foreign services for critical tasks, such as disease management call center services, laboratory and radiologic interpretation.

Outsourced claims processing, however, is well established in India. Sameer Bhonsale, Executive Vice President, Tela India, commented that his organization, partnered with Adaptis in Seattle, already has 32 U.S. clients, mostly HMOs, PPOs, and IPAs. His organization processes nearly 100,000 claims daily, and anticipates a total of greater than 24 million claims in 2008.

Tele India is growing, and employed 550 employees in 2008. "The most experienced claims data employee earns \$267 per month," said Mr. Bhonsale, which offers cost savings of 60% compared with U.S. third-party administrators, while providing 24-hour turnarounds on processing.

Another aspect of this opportunity, Dr. Patel remarked, is that health professionals are well trained in India, but their income levels do not vary significantly. This means that it may be possible to have a physician or pharmacist handling disease management call-center services, rather than nurses

exclusively. "It might be just as cost effective," said Dr. Patel.

SUMMARY

India's system of consumer-paid health care (though not consumer-centered) offers some lessons. With low per-capita health expenditures, even compared with other developing countries, India must spend more in basic public health needs to compensate for a lack of access to primary care in various regions (in order to increase life expectancy, lower infant mortality, and reduce the incidence of preventable deaths).

The lack of basic quality measures and licensure for India's hospitals will delay any real improvement in patient care. In the absence of a change in governmental approach, the private sector seems to offer the best hope for improving the healthcare access and quality of care in India. Yet, the small but growing private hospital sector is focused on specific customer segments, including the medical tourists.

It will take a broader perspective and mission from the burgeoning health insurance industry to provide affordable access to the vast middle class, and construct care networks, including private hospitals, that can compete on quality and price.

Furthermore, India would benefit from a transition of emphasis on hospital care to a system of satellite primary care clinics throughout the country. This is problematic, owing to the shortage of healthcare personnel and the lack of physician extenders to operate them, particularly outside of urban centers. Better use of technology, such as telemedicine, can efficiently provide diagnostic services to remote areas, assuming the local infrastructure is in place to take advantage of it.