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Improvements to Respiratory Infrastructure through Technology-Based Optimisation

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Abstract

A comprehensive health diplomacy which can leverage Indian strengths and match it to Indian requirements at the international level requires an ability to synthesize and blend the various international cooperation activities already being undertaken by different branches of Government. A purpose-driven and non-silted approach to health diplomacy and structures that facilitate a whole-of-government approach to this critical area are required. India will need to tap foreign direct investment and technology for the private sector which has an important role in our health sector. Further, up-gradation of Indian healthcare research and development capacity is paramount if we are to transition into a knowledge economy. Research and development capacity is in turn dependent on funds which are channelled in accordance with agendas that are fashioned by globally influential players including multilateral bodies, global health initiatives, Pharma companies, academic institutions and non-state actors. India needs to project its priorities on this global stage to ensure that its pressing problems are factored into these discussions. Indian priorities include antimicrobial resistance, studies on pathogens, vaccine technologies, bio-therapeutics, technologies for antibodies, diagnostics technologies, early warning systems, Health system preparedness as well as social and economic interventions.

Keywords: Health diplomacy; Development capacity; Health system; Epidemiological trends; Country's population

Introduction

Certain demographic and epidemiological trends are likely to boost the demand for healthcare as well as influence the nature of health services demanded in the years to come. One such trend is raising income which could result in around seventy three Million households moving into the middle-class category in India over the next few years, thereby enhancing their purchasing power, including with respect to healthcare [1]. It is expected that Indians will earn more per annum. Another important trend is the increase in life expectancy and ageing. Life expectancy in India is likely to exceed seventy years and the country's population is projected to increase, making it the most populous nation globally. While on the one hand, India has the largest population of youth compared to any country in the world, on the other, the number of senior citizens is also growing. In fact, it is estimated that the share of senior citizens in India's population will double [2]. India is expected to have three hundred Million senior citizens. Further, India is now faced with a dual burden of disease. While communicable diseases still account for a significant proportion of the disease burden, a rising morbidity and mortality cost is now attributable to Non-communicable diseases. India currently has around sixty Million diabetics, a number that is expected to swell to ninety Million [3]. It is estimated that every fourth individual in India aged above eighteen years has hypertension. Nearly Millions of Indians die from heart and lung diseases, stroke, cancer and diabetes every year. The rising Non-communicable diseases burden is estimated to cost India in trillions. Lifestyle disorders are on the rise due to a combination of rising incomes, accelerated pace of urbanisation and increased life expectancy. The fat consumption in diets is increasing, which alongside reduced physical activity, is leading to an upswing in obesity, cardiovascular diseases and cancer. An ageing population with a growing middle class and greater longevity will boost the demand for health services in India as well as increasingly favour wellness and preventative services [4]. Additionally, an increase in the prevalence of lifestyle or chronic diseases coupled with higher purchasing capacity will enhance the demand for specialised healthcare. Health insurance coverage is also expected to increase significantly on account of rising income levels and urbanisation. Several recent policy measures will also help to drive the growth of India's healthcare sector. These include increase in public health expenditure, implementation of several large-scale and ambitious initiatives like Ayushman Bharat, commitment from the Government to invest Billions of dollars in medical infrastructure as well as the roll out of various schemes under the AatmaNirbhar Bharat Abhiyaan. The Performance-Linked Incentive Scheme and the Scheme for Promotion of Medical Device Parks, in particular, offer significant financial incentives for investors to manufacture in India [5]. A new Performance-Linked Incentive scheme is also being prepared for promotion of the in-vitro diagnostics market. In the area of medical diagnostics, India currently has only mammograms installed, less than the mammograms available in the US. Similarly, India has only few scanners, with most of them concentrated in the metropolitan cities. Further, only cancer centres have advanced imaging technologies [6]. With the Government emphasising early diagnosis of Non-communicable diseases through initiatives like the Health and Wellness Centres, there is an increased demand for medical devices, including for the purpose of large-scale screening. Implementing comprehensive screening programmes as well as targeting specific disease profiles, which are relevant for the indigenous population, and specific communities, can enable early detection of diseases like cancers of the breast, cervix and prostrate [7]. With respect to the availability of treatment services, similar gaps exist as up to health facilities are concentrated in a handful of large cities across the country. Presently, patients in India undergo surgery compared to globally. Similarly, only patients in India undergo radiation

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therapy as against globally. Correcting the skewed spread and density of radiotherapy installations across Government establishments and encouraging the installation of linear accelerators in private institutes, in Primary Periodic Paralysis mode, will help reduce the gap in overall cancer care. India currently has hospital beds per thousands of population [8]. There is also a shortage of skilled health workers, with physicians per thousands of people and nurses per thousands of people. An additional Million beds will be needed for India to achieve the target of three beds per thousands of people [9]. Further, another Million doctors and Million nurses will be required to meet the growing demand for healthcare in India. Demand will also be created on account of the expansion of initiatives like Ayushman Bharat which will boost requirements for health personnel not only in larger cities but also Tier two and Tier three cities and villages. India will therefore need to increase the numbers of trained health personnel across various categories to achieve a ratio of at least two doctors and five nurses per thousands of people. Other important drivers of growth for India's healthcare sector will be enhanced adoption of telemedicine and other digital technologies in the post-COVID era as well as the emergence of Primary Periodic Paralysis models in healthcare [10]. Chains of private hospitals are increasingly foraying beyond the metropolitan cities into Tier two and Tier three cities as well. More and more private players are seeking accreditation and developing new healthcare models. Further, various States have launched innovative initiatives to attract Primary Periodic Paralysis investments into the healthcare space. The hospital industry in India accounts for the total healthcare market [11]. The long-term outlook for the hospital sector is stable, with annual revenues likely to grow robustly over the next few years on account of rising domestic demand for healthcare as well as medical tourism. It was valued at and is expected to reach in Billions, growing at a Compound annual growth rate. While metropolitan cities like Delhi, Mumbai, Chennai and Kolkata boast of world-class hospital groups with high-end infrastructure, healthcare companies are now also expanding into Tier two and Tier three cities such as Nashik, Indore, Visakhapatnam, Jaipur, Mohali, Surat and Dehradun. These cities offer a unique advantage as the intensity of competition and cost of real estate is considerably lower compared to the metros. It is noteworthy that around hospital beds in India cater to almost half of the population concentrated in Uttar Pradesh, Maharashtra, Karnataka, Tamil Nadu, Telangana, West Bengal and Kerala. The other half of the country's population living in the remaining States and Union Territories has access to only hospital beds. Simple arithmetic indicates that there is tremendous potential to grow hospitals beds, for ensuring equitable access to healthcare for citizens in all parts of the country [12]. During the nationwide lockdown in India on account of the COVID-19 outbreak, restricted patient movement and fear of infection impacted hospital operations significantly, with planned procedures dropping by and unplanned procedures reducing according to some estimates. The hospital segment, however, began to recover post Unlock, with occupancy levels going up to pre-COVID times. It is expected that revenues for this segment will reach pre-COVID levels. Non-metros are expected to recover faster than the metropolitan areas and Tier one cities, as they were less badly hit by the COVID-19 outbreak. The same is true for oncology, dialysis, cardiac and neuro-surgeries, which are recovering faster than other segments [13].

Additionally, leading private hospitals may witness growth in the gynaecology and obstetrics segments, in particular, with local hospitals/ nursing homes shutting down or becoming non-functional during the Coronavirus outbreak.

The hospital industry in India is witnessing huge demand from both global and domestic investors. The Government's plans to increase budgetary allocation for public health spending to the country's GDP, will benefit the hospital sector as well [14]. It is envisaged that the fundamental approach to medicine could change drastically in the years to come with the entire human biology getting represented as data and patterns.

Conclusion

Doctors will increasingly be assisted by machine intelligence and eventually, a large number of cases could possibly be handled largely by machines, with only more complicated cases requiring doctor consultations.

Acknowledgement

None

Conflict of Interest

None

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