An Analysis of the Economics of Health in India: Prospects and Challenges

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Abstract: ***The Healthcare Industry in India is projected to reach $ 372 billion by 2022, and it is projected that by 2025 the government would spend almost 2.5% of the GDP on provision of public health care. The requirement for capital investments in this sector is huge and at the same time there is a growing share of the labour force associated with this sector. The recent outbreak of the Coronavirus pandemic has indeed shaken the entire global economy, with India not being an exception. Undoubtedly India as a nation was able to withstand and brace strongly against the pandemic. However, it has led the authorities to seriously rethink and recalibrate the entire system. In this paper an attempt has been made to understand and analyze the following aspects 1) Overall growth prospects of the Health Care Sector and its contribution to the economy. 2) Employment of labour force in the Health Care sector in India. 3) Cost benefit analysis of Health Care Sector in India. 4) Policy Initiatives undertaken by the authorities to improve healthcare facilities in India. 5) The road ahead in terms of challenges and opportunities in the Indian Health Care Sector***

Keywords: Labour Force, Cost Benefit Analysis, Policy Initiatives

1. Introduction

"Health is a state of complete physical, mental, and social well - being and not merely the absence of disease or infirmity. " The above definition of health, given by WHO, states that health has to be viewed in a holistic manner where adequate focus should be given to the mental and social well - being as much as is given for physical well - being. The health care sector in India comprises infrastructure (hospitals, labs, etc.), pharmaceuticals, diagnostics, medical equipment and supplies, medical insurance and telemedicine. The basis of the current health strategy and healthcare structures in India was first presented by the Bhore Committee Report in 1946. It had recommended that protective and remedial healthcare facilities should be provided to both rural and urban areas. However, India's first National Health Policy (NHP) was formulated in the year 1983, with a focus on provision of primary health care to all by the year 2000. The NHP, 1983 states that "India has a rich, centuries - old heritage of medical and health sciences. The approach of our ancient medical systems was of a holistic nature, which took into account all aspects of human health and disease". India thus has a rich legacy to offer and all attempts should be made by the government and authorities to make healthcare systems more accessible, affordable, equitable and inclusive.

According to WHO '… It is the right of every individual to enjoy and experience good health irrespective of caste, creed, religion, socio - economic or political situation'. Undoubtedly every citizen has a right to have access and acquire health care facilities in a country. However, it involves a cost. Expenditure incurred on health care facility is both a cost and an investment. There are both costs as well as benefits that can be accrued from investing in health care sector. An attempt has been made to analyze the cost benefit analysis in the health care sector.

Cost Benefit Analysis (CBA):

A cost benefit analysis aims at finding, quantifying and adding all the positive factors which are benefits and subtracting all the negatives, in the form of costs. The need for CBA was felt in 1929 after the onset of the Great Depression which had taken a toll on the life of innumerable masses. Classical economists like J. B. Say had formulated the well acclaimed Says Law of Markets which suggested that automatic adjustment forces in the wages, labour and product market would bring the economy into equilibrium, but unfortunately it didn't happen as was proposed. It was then that Keynesian economics came as a rescue to help restore the economy. John Maynard Keynes had emphasized the need for government intervention which would enable the economy to bounce back on its path of recovery. It was thus after the great depression of 1929 that the government started expending on providing adequate health and healthcare facilities. But it was only from 1965, with the introduction of medic care and medic aid in the U. S. A. that the concept of cost benefit analysis started gaining ground. In CBA generally the measurement is done in money terms and this becomes a challenging task as the changed improvements in health and well - being have to be computed in monetary terms. Further analysis in this area had led health analysts to formulate innovative ways to evaluate CBA. They preferred using the term economic evaluation rather than CBA as it impacts not only an individual but the whole society. In recent times Cost Effectiveness Analysis (CEA) and Cost Utility Analysis (CUA) are used alternatively for CBA. A measure of the cost - effectiveness is obtained by measuring costs against outcomes. CUA is a form of CEA. It introduces various measures of benefits that reflect individual's preferences over the number of health consequences of varied alternative programs that affect them. CBA undoubtedly addresses and accounts for the measurement problems, however its evaluation is behest with many challenges. Thus, the general understanding of CBA rests on the foundation that any policy intervention will be considered beneficial if its Benefits exceed the Costs. Since there is a long drawn out argument for having an ideal measure, one of the best conclusions that has been drawn out to measure CBA is to find out the net benefits derived by subtracting net costs from net benefits. This method adopted aims at finding out if the programs and projects which have been formulated have net benefits which are greater than zero and which show a positive return on Investment. If they fulfil these criterion, then it suggests that it is feasible to go ahead with it.

$$B - C > 0$$

Alternatively, there is another way of analyzing the CBA. The projects could be ranked according to the benefit to Cost (B/C) ratio. A higher B/C ratio generally indicates a project or an intervention that will deliver greater social benefits for the amount of expenditure incurred on it. The concept of CBA can also be analyzed by taking into account the principle of marginal analysis given by noted economists like Hugh Dalton and Musgrave. In this concept the Marginal Social Benefits Curve represents the sum of all beneficial effects from increasing the abatement program by one unit which makes the curve downward sloping and the Marginal Social Cost Curve on the other hand represents the sum of all costs of increasing the program by one unit which makes the curve upward sloping. Thus, it can be inferred that society's maximum net benefits will occur where Marginal Social Benefits equals Marginal social costs.

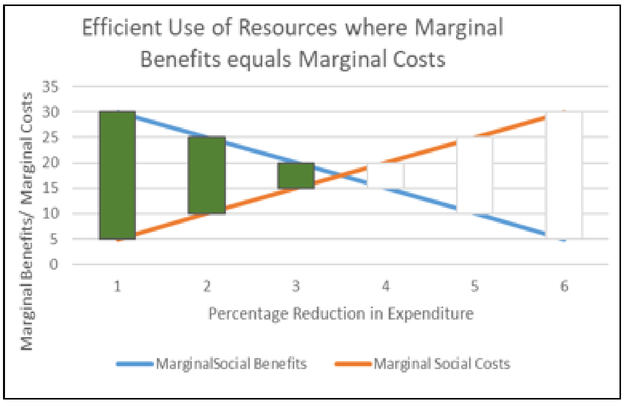

Figure 1: Efficient use of resources where Marginal Benefits equals Marginal Costs
Source: (Sherman Folland, 2017)

Alternatively, Cost Effectiveness Analysis (CEA) also provides a more practical approach to decision making (Garber and Phelps, 1997) as CEA compares the costs of achieving a particular nonmonetary objective such as saving a life. In CEA one assumes that the objective is desirable even if the benefits have not been evaluated in monetary terms. Thus, in CEA the ratio of incremental costs to incremental output is computed.

$$\text{CEA Ratio} = C2 - C1/E2 - E1$$

where C represents the costs in context to the health care intervention provided and E stands for the gains in health output because of the intervention. Improvement in health output by reducing the cost of expenses borne by the consumers should be given a lot of priority by the authorities. Though authorities would be more concerned to incur less costs as compared to the benefits accrued, yet for the holistic development of the nation more focus should be made on prioritizing provision of healthcare facilities to the underprivileged and the poor irrespective of the costs. Studies have also been conducted to analyze the impact of how reduction in costs borne by the individual user could lead to better prospects and health outcomes for them. Numerous studies have been conducted on establishing the correlation between reducing the user fees or out of pocket expenditure of the consumer to that of the health outcomes. In a study by V. M. Qin (et al) titled "The impact of user charges on health outcomes in low - income and middle income countries: a systematic review" they have observed that a reduction in user charges has a positive correlation to improved health results, particularly for less - income groups and children in Less Income Countries. The study helped in concluding that if government provides universal health cover by making some advance payment by way of taxes and insurance cover, it could lead to improved health outcomes and thus lead to decrease in health inequalities in less income countries. This in turn would lead to greater benefits not only to the individual but in the process the entire society and nation gets the benefit of it. In another study conducted by Vincent Pagiwa (et al) titled, "A Review of the User Fees Policy for Primary Healthcare Consultations in Botswana: Problems with Effective Planning, Implementation and Evaluation", they have emphasized that turning away or eliminating user charges in healthcare could lead to better potential outcomes and thereby suggested that the benefits incurred would certainly outweigh the costs. But all this points to an increased financial pressure and burden on the government. In context to this there was a study made by Bijoya Roy et al in their work titled, "Public - Private Partnership (PPP) and User Fees in Healthcare: Evidence from West Bengal where they have focused by comparing the diagnostic rates charged by Government hospital, private hospitals and hospitals established under PPP model in the State of West Bengal. The study concluded by suggesting that incorporating the PPP model could be one of the ways to help people acquire greater benefits as compared to the cost borne by them. It will lead to the provision of better and improved health facilities as a result to better health outcomes and prospects of the nation. This leads us to understanding and probing further important facets and facts associated with health. What is our understanding of producing good health? How is it to be measured? How do people value it? What are the factors which can affect the demand and supply of health? How can a balance be achieved between demand and supply? The understanding of all these would necessitate the need for analyzing the concept of the Economics of Health.

Economics of Health

The credit to propound and popularize the concept of Economics of Health goes to two Economists. It was the contribution and insights brought by them which led to the better understanding of this subject. Thus the contributions made by Kenneth Arrow (1963) in his paper, "Uncertainty and the Welfare Economics of Medical Care" and another paper written by Michael Grossman (1972) on, "Health Capital and The Demand for Health" paved the way for associating the relationship between economics and healthcare policies. Thus applying economic theories, concepts and tools to the areas associated with health and health care is what defines the concept of Economics of Health. There are various issues that generally are a point of contention in this area. For eg. How much funding is needed, the challenge of scarcity of resources, the interplay and importance given by the Centre and the State to address and resolve the health care crisis and various other issues. The essence and importance of health Economics can be conceptualized in an input - output analysis which aims at establishing a correlation between economics of health to that of increase in GDP growth of a nation.

$$Y = A\ F\ (K, hL)$$

where Y is output or product, A is the "total factor productivity (TFP), F () is a production function, K is physical capital, L is labour, and h is the "quality of labour", or human capital.

Through this production function, we can conclude that if a nation has to grow, it needs to focus on increasing TFP which is dependent on the quality of human labour which forms an essential part of this analysis. There was a study conducted by Gary Becker (1961) as well as Theodore Schultz (1961and they observed that investing in human labour leads to greater increase in returns than investing in physical capital. In the study it was observed that the total stock of educational capital in the labour force of the U. S. rose from $ 63 billion to $535billion in a span of 50 years and the ratio of the stock of physical capital rose from 22% to 42 % in a span of 50 years. Through this study thus a positive correlation between investments on education to that of economic development was established. This certainly necessitates greater investments and expenditure by the government on the healthcare sector. However, in India the investments incurred on healthcare sector in India is abysmally very low. In the table given below the Government Health Expenditure as share of GDP (%) of India and USA have been presented.

Table 1: Government Health Expenditure as share of GDP (%) of India and USA

Year	India	USA
F. Y.14	1.2	17.1
F. Y.15	1.2	17.4
F. Y.16	1.3	17.7
F. Y.17	1.4	17.7
F. Y.18	1.4	17.6
F. Y.19	1.3	17.6
F. Y.20	1.8	19.7

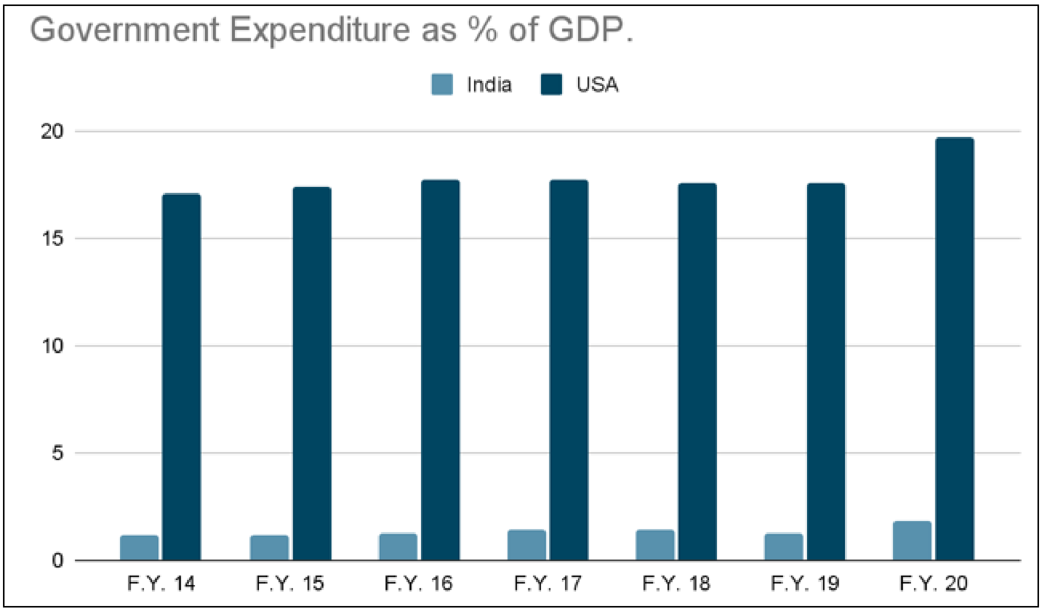

Figure 2: Government Expenditure as percentage of GDP
Source: Ministry of Commerce & Industry, GOI

From this data it is evidently observed that government has been expending very little towards health care sector which certainly calls for greater attention. WHO has recommended 1 medical doctor and 3 nurses for 1, 000 people. According to a report by India Brand Equity Foundation (Ministry of Commerce & Industry, GOI) as of September 2019, India had 1 medical doctor for every 1, 404 people and 1.7 nurses per 1, 000 people. This is such lower than the recommendation of WHO. The table below provides a glimpse of the number of doctors, nurses and availability of beds per 10, 000 people in some select countries.

Table 2: Doctors, Nurses, Availability of Beds per 10, 000, as on 2017 in select countries

Countries	Doctors per 10, 000 (As on 2017)	Nurses Per 10, 000 (As on 2017)	Availability of beds per 10, 000 (As on 2017)
USA	26.12	145.48	28.7
Brazil	21.6	97.37	20.9
China	19.7	26.6	43.1
India	7.7	21	5.3

Source: Ministry of Commerce & Industry, GOI

The data given above clearly reveals the fact that India has not been faring too well as far as Health care infrastructure is concerned which certainly needs improvement. Health as we know affects labour efficiency and quantity available of labour in different ways. Only individuals who have good

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health will be able to participate actively in physical and mental activities and thereby lead to increased productivity. It has been observed that countries which have laid emphasis on increasing the governmental expenditure in this sector have not only improved their health outcomes but they have also been able to reduce unemployment rates phenomenally.

Employment and Healthcare:

Employment and Health are inseparably linked together. Only people with good health would be able to contribute productively in an economy. There will be value addition not only for themselves but through them the entire nation gets the benefit. This has been explained in the following figure.

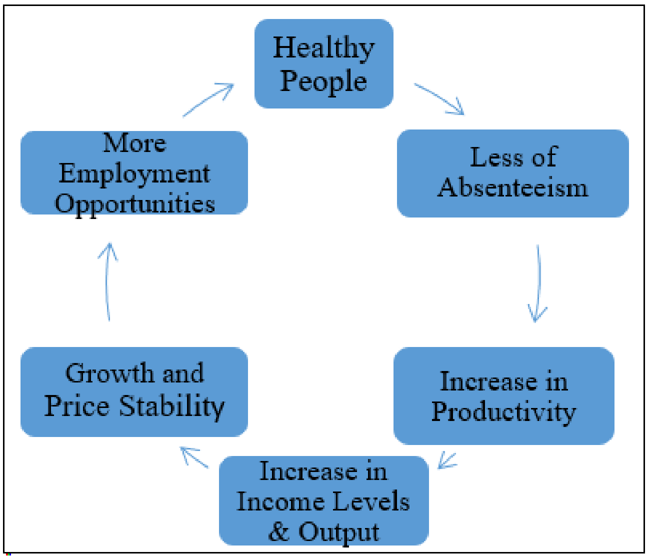

Figure 3: Correlation between Health and Economic Growth Prospects

However just focusing on provision of health facilities alone may not be sufficient. There is an urgent need to increase employment opportunities in this sector as well as there is a huge shortage of health personnel's and infrastructure facilities in India. In the words of Sarah Downey, President and CEO, Michael Garron Hospital, "It's a system that is very hard to transform and change. You don't have many levers and we cannot produce personnel quickly. We've got a huge amount of work going into inclusion and diversity, which mirrors what's going on in the system. But what really worries me over the next couple of years is how to rebuild our workforce to be able to maintain access to healthcare for those who will need it."

The above statement of Sarah Downey emphasizes the importance of the healthcare workers in the healthcare sector. No matter how innovative and modern technologies are introduced in the health care sector, the need for human workers will always be a prerequisite. The labour force in the healthcare sector comprises doctors, nurses, surgeons, specialists, administrators, operators, etc. who act as one of the important pillars of the entire sector. It was during the corona virus outbreak; the shortage of labour force was realized in this sector not only in India but across the globe.

KPMG's report "2021 Healthcare CEO Future Pulse" states that the major concerns of the CEO's in the healthcare sector are meeting the demand for the labor force, focusing on acquisition of required talents and resources, adjusting to new operating models and providing support to the workforce wellness. This certainly demands a need to identifying labor force with the required skill sets, and also with the ability to adapt to the changing techniques and operating process. Apparently, shortages of skilled labor force in the health sector is a challenge for many nations with India being no exception. With the onset of the coronavirus pandemic, the demand for healthcare workers have exponentially increased especially in India. The reason for the increasing demand of the workforce in the healthcare sector is due to the difference between the growth rate of the population and growth rate of hiring employees in the healthcare sector. KPMG's report, "Strengthening healthcare workforce in India - the 2047 agenda", gives the estimated data for demand and supply of workforce in the health care sector between 2017 and 2047.

Table 3: Demand and Supply Gaps of workforce in healthcare Sector

Year	Demand (in millions)	Supply (in millions)	Gap (in %)
2017	5.8	3.1	46.4
2022	6.1	4.6	25.2
2027	6.4	5.2	18.4
2032	6.6	5.9	11.3
2037	6.8	6.6	3.5
2042	6.9	7.3	-5.5
2047	7	7.5	-6.2

Source: KPMG/FICCI Report - 2022

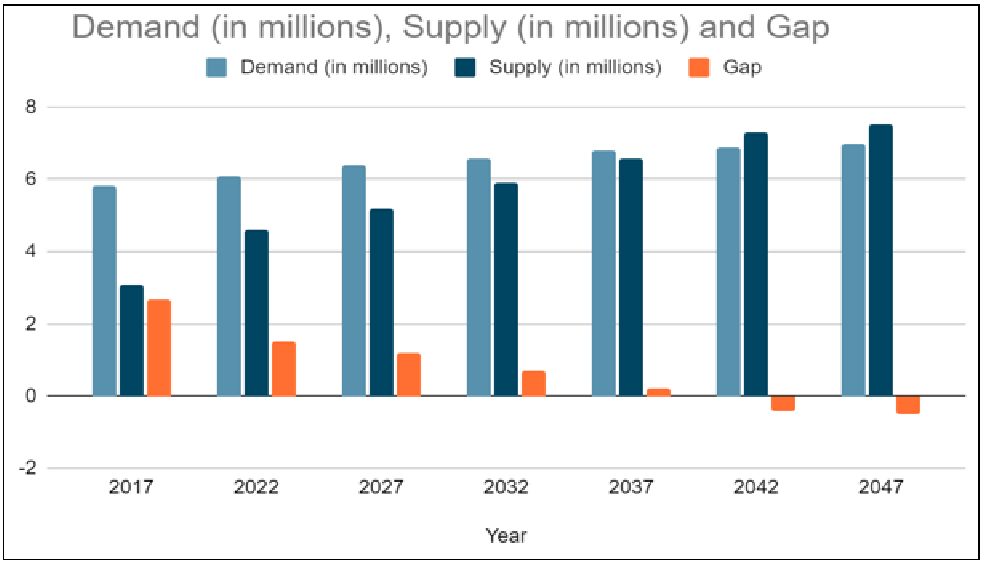

Figure 4: Demand and Supply Gaps of workforce in healthcare Sector
Source: KPMG/FICCI Report - 2022

The data reveals that till 2037 there will be an inherent gap with demand being higher than the supply as far as the workforce in health care sector is concerned. It can be observed that from 2042 onwards there would be a reversal in the workforce supply and demand. However, it certainly highlights the fact that over the years there has been an improvement in the number of people employed in this sector which certainly is commendable. According to the, "Investment opportunities in India's Healthcare sector" report by NITI Aayog, the Healthcare sector is projected to create 2.7 million further jobs in India between 2017 - 2022 – which is around 5, 00, 000 new jobs per year. This has been achieved through the various initiatives and schemes instituted by the government. The implementation of these programs has led to the opening up of various employment opportunities for people who have been associated with this sector. Following are few of the programs:

Table 4: Few Healthcare Schemes initiated by the Government of India

Program	Initiative
Ayushman Bharat Digital Mission (ABDM)	**Ayushman Bharat Digital Mission (ABDM)** which was earlier operative under the banner National Digital Health Mission (NDHM) was launched in 2021 to provide digital health facilities through robust infrastructure development. There are around 1, 07, 381 registered healthcare professionals as a part of this initiative which is an addition to the workforce participation rate.
Ayushman Bharat:	**Ayushman Bharat**: Ayushman Bharat (AB) which was launched in 2018 has two components: First is the Health & Wellness Centre (HWCs) which aims at providing comprehensive primary health care free of cost to all the users. Till 2021 there were more than 77, 786 Health & Wellness Centres in operation. The second component is the Pradhan Mantri Jan Arogya Yojana (AB - PMJAY): This scheme aims at providing Rs.5 lakh health insurance coverage to 10 crore families seeking care. According to data available, till 2021 around 33 states//Union Territories had implemented the scheme. It has been estimated that around 11 lakh jobs are going to be generated due to Ayushman Bharat scheme in the next five to seven years.
PM Ayushman Bharat Health Infrastructure Mission (PM - ABHIM)	**PM Ayushman Bharat Health Infrastructure Mission (PM - ABHIM)** which was earlier called as Prime Minister Atmanirbhar Swasth Bharat Yojana' (PMASBY) Scheme was launched in 2021. It aims at establishing 11, 024 urban Health and Wellness Centres in all the States, 3382 Block Public Health Units in 11 High Focus states, As per the National Skill Development Corporation (NSDC), this scheme will generate around 2.7 million additional jobs in the country between 2017 and 2022.
National Health Mission (NHM):	**The National Health Mission** was launched in 2013 has two major components: i. The National Rural Health Mission (NRHM) and ii. The National Urban Health Mission (NUHM). According to the Annual Report (2020 - 21) of the Department of Health & Family Welfare, NHM has been able to provide over 2.74 lakh additional health human resources to the States including 13, 074 GDMOs (Govt General Duty Medical Officer Jobs), 3, 376 Specialists, 73, 847 Staff Nurses, 85, 834 ANMs (Auxiliary Nurse and Midwife), 48, 332 Paramedics, 439 Public Health Manager and 17, 086 Program Management staff.

Source: https: //nha. gov. in

The Government is thus making efforts to provide direct as well as indirect employment opportunities by implementing various health care schemes. The proper implementation of these schemes will provide dual benefits. It will not only lead to provision of improved health care facilities to the masses but also to generation of more jobs. The report presented by NITI Aayog has provided data which gives a glance at the direct employment generated in the healthcare sector in India between 2017 and 2022.

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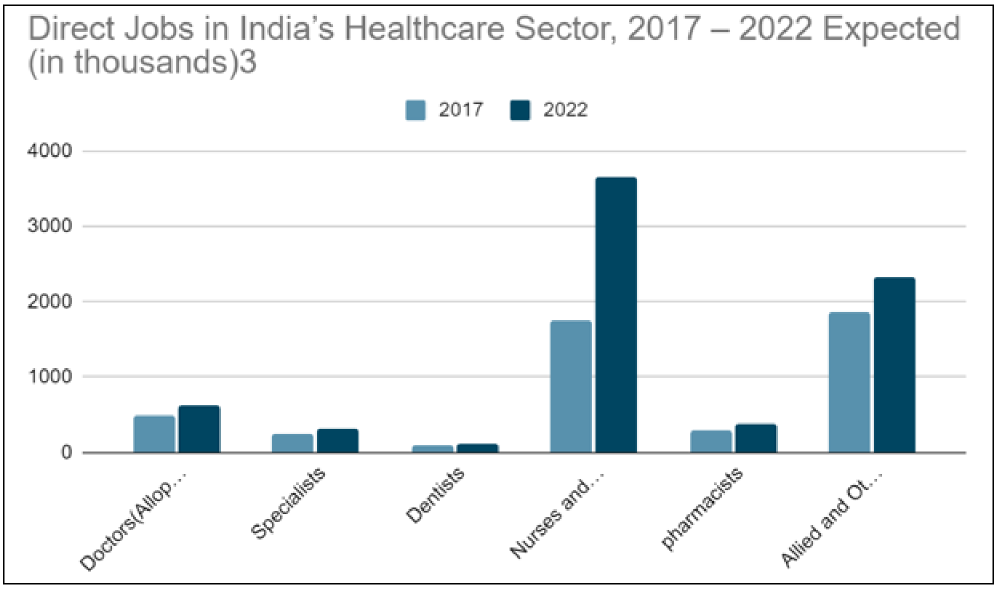

Figure 5: Direct Jobs Expected (thousands) in India's Healthcare Sector (2017 - 2022)
Source: NITI Aayog Report on Investment Opportunities in Healthcare Sector

Through the chart it is evidently observed that as compared to 2017, India in 2022 has been able to increase direct employment opportunities for the workforce in the healthcare sector. It is indeed creditable that India has seen an upswing in its employment trajectory in the healthcare sector, yet there are numerous challenges that needs to be addressed.

2. Challenges & Opportunities

The road ahead for India's Healthcare sector is quite daunting. The outbreak of the recent Coronavirus pandemic has exposed the challenges that this sector faces. There is a huge potential that this sector offers and if channelized well it can lead to making our nation robust and resilient to face any kind of shocks in the future. However, it requires a deliberate and purposeful attempt to be made by the authorities to create an enabling and equitable environment for the masses. Following are few of the possible suggestions:

1) Creating Health Awareness: There are numerous schemes and programs introduced for the betterment of health and wellness of the masses. It is essential that proper awareness is provided so that it would create a visible change and impact in the society. For eg. The health indicators of Bangladesh as a nation has improved because of the concerted efforts made in this field. Around 100, 000 Community health workers have been trained and provided the necessary inputs to go from village to village in order to create awareness about health and hygiene to the people in the community. A similar model has been adopted in India where we have ASHA (Accredited Social Health Activist) and anganwadi workers who work on similar lines. However, we need more workers for its smooth and successful implementation. Truly commendable has been the efforts taken by the state of Bengaluru, where they came up with a very novel way of creating awareness amongst the people on heart related issues. There were heart symbols that were instituted in traffic signals instead of the standard symbols which made the people think and introspect on their own health conditions. Such novel innovative ideas and initiatives which are less expensive yet being very impactful should be promoted to create awareness amongst the people.

2) Increased Healthcare Infrastructure Facilities: We require more number of doctors, nurses, beds, hospitals, primary health care centres, community health Centre, district hospitals, regional and central level institutions, more trained staff in medical institutions, more medical good quality government institutions in each state. With the launching of various health care schemes by the government there should possibly be a progressive change in these services and facilities offered.

3) Financial Assistance: Support and assistance in the form of financial aid is essential for building a strong and vigorous health care system. Students studying in medical related fields should be provided with financial aid as well as incentives which will enable greater participation and thereby better prospects for the future. Public Private Partnership could be another model which could be adopted to facilitate better facilities and outcomes. The governments share of expenditure to the health care sector which is around 1.8 % of GDP should increase to at least 2.5 - 3% of GDP as has been proposed.

4) Skill & Training Programs: To address the needs of 1.3 billion populous country like India, we require a workforce which is skilled and equipped to cater to their demands. The workforce needs to skilled, reskilled and also upskilled so that we are able to provide good quality health professionals. Technological changes take place at a rapid pace and the professionals need to be abreast with it. Thus a skill development centre catering to upskilling professionals associated with health care sector should be instituted in every district and state.

5) Digital Literacy: Digital literacy amongst the health care workforce especially in the rural areas should be encouraged. More empowered workforce we have, more will they be able to empower and equip others who lack sufficient knowledge and understanding in this area thus creating a rippling effect in the economy. The fruits of this effort will be reaped in the form of rich harvests which will be evidently seen in the improvement of various health indicators like infant mortality rate, maternal mortality rate, life expectancy level etc. All these would certainly reflect positively in the ranking of India's Global Hunger Index.

3. Conclusion

Health care sector in India indeed has a lot of prospects and possibilities to offer. The recent outbreak of the pandemic has made it evident that this is a sector that needs to be well armed and equipped to face any sort of contingencies. The various schemes launched in this sector will certainly lead to better realization of our goals. It is the beginning of prospective future possibilities. However, it requires concerted and deliberate attempts made by the authorities and individuals. We need health care to be accessible, affordable and equitable in our country. It requires great amount of planning, investments and processes to realize this goal of achieving universal healthcare benefits to all. India has a lot of advantages, such as availability of a large pool of medical professionals, comparative cost advantage as far as cost of surgery and other treatments are concerned as well as having a very strong medical supply chain. Health as a right is viewed by some as a right analogous to justice or political freedom. WHO states that attaining the highest standard of health is the right of every human being with no barriers or precursors.

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