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REVIEW ARTICLE

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Implementation of equity and access in Indian healthcare: current scenario and way forward

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ABSTRACT

Introduction: The Indian healthcare system is evolving towards better healthcare implementation and coverage. However, even today, the health-care system faces several challenges, a few of which are yet to be addressed. The present review is aimed to delineate the past and present healthcare scenarios in India, health-care policies, and other initiatives for achieving universal health coverage (UHC).

Methods: A literature search was done on various government databases, websites, and PubMed for obtaining data and statistics on healthcare funding, health insurance schemes, healthcare budget allocations, categories of medical expenses, government policies, and health technology assessment (HTA) in India.

Results: The available data indicates 37.2% of the total population is covered by any health insurance of which 78% are covered by public insurance companies. Around 30% of the total health expenditure is borne by the public sector, and there is high out-of-pocket (OOP) expenditure on healthcare.

Discussion: Several new health policies and schemes, an increase in 2021 budget for healthcare by 137%, vaccination drives, augmenting manufacturing of medical devices, special training packages, Artificial Intelligence/Machine Learning (AI/ML)-based standard treatment workflow systems to ensure proper treatment and clinical decision-making have been initiated by the government for improving healthcare funding, equity, and access.

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KEYWORDS
Equity; access; healthcare; health insurance; India

Introduction

The Indian healthcare system is undergoing a major transition due to increased income and health consciousness among the population, reduction in bureaucracy, price liberalization, and introduction of private healthcare funding. [1] In the National Health Policy 2009, health was prioritized as a fundamental right [2]. The National Health Policy set by the central Government of India provides a regulatory framework for the healthcare delivered to people by Indian states [3]. The Indian healthcare system is faced with several challenges, including increased healthcare costs, need for nursing and long-term care for senior citizens due to the rise of the nuclear family system, high financial burden on the poor, increasing burden of new diseases, and negligence of public health functions due to inadequate funding for healthcare sector. Although India achieved the World Health Organization (WHO)-recommended doctor-to – population ratio of 1:1000 in 2018 [4], there is uneven distribution of health workers in rural and urban areas in the counry [5]. For addressing out-of-pocket problems, health insurance has emerged as a financing option in India, which is not well-established – unlike in developed nations [1]. However, only 37% of the total Indian population is covered by health insurance [3].

In this article, we discuss the current scenario of healthcare in India with respect to universal health coverage (UHC), healthcare schemes, and fund allocation for different public sector undertakings. This paper analyzes health expenditure in private and public sectors in India, including out-of-pocket expenditure (OOPE), and discusses various recent schemes launched by the Indian government for improving healthcare delivery. Thereafter, recent proposals and strategies by the Government of India for improving healthcare coverage and delivery.

Methods

Data were derived from different Government of India databases (such as Health Sector Financing by Center

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and States/Union Territories in India, Ayushman Bharat – National Health Protection Mission, National Health Authority, Ministry of Health and Family Welfare, Department of Health Research), healthcare websites, and relevant articles on PubMed. The search keywords used were equity, access, healthcare, health insurance, health economic evaluation, health technology assessment (HTA), India. The findings are reported by leveraging information from the literature published in the last 10–12 years; databases were last accessed in May 2021. The data analysis has been adapted from these sources.

Results

Health economy

The $41 billion healthcare industry in India is growing due to a decline in infant mortality, longer life expectancy, an increasing population, emphasis of the government on the eradication of diseases, more disposable income, and, therefore, the ability to afford private healthcare facilities [6,7]. Public health expenditure in India, including that by both the central and state governments, was maintained constant at approximately 1.3% of GDP between 2008 and 2015 and increased marginally to 1.4% in 2016–17. The National Health Policy 2017 proposed to increase this figure to 2.5% by 2025. The total health expenditure, including the private sector, is estimated to be 3.9% of the total GDP [8]. About one-third of the total health expenditure (30%) comes from the public sector; this is lower compared to the corresponding figures for other developing and developed countries [8]. This implies that the individual consumer bears the cost of their healthcare [8].

The allocation to the Department of Health and Family Welfare has increased from USD 1552.096 million in 2006–07 (revised estimate) to USD 9732.214 million in 2021–22 (budget estimate). Over this period, the Compound Annual Growth Rate (CAGR) has been 13%, which is the annual growth rate over a certain period of time. In 2020–21 (revised estimates), the Department is expected to exceed the budget estimate by 21%. Overall, the Ministry is expected to have an additional spending of USD 2159.907 million at the revised stage in 2020–21. Out of this, USD 1941.417 million was spent for COVID-19 emergency response and health system preparedness package, and COVID-19 vaccination for healthcare and frontline workers [9]. (Dollar rate for the study was 1 USD = INR 73.23.)

OOPE is made directly by households at the point of receiving health care. This indicates that the extent of financial protection available for households towards healthcare payments is very limited [10]. The highest percentage (52%) of OOPE is made toward medications (Figure 1) [8]. Public spending on health majorly involves the delivery of allopathic medications in both urban and rural areas (38.01% and 26.29% respectively) [11]. Overall, only 14% in rural areas and 19% in urban areas are covered under any insurance scheme of health expenditure support. Nearly 7% of the population is pushed below the poverty threshold annually due to high OOPE [8] and with the pandemic the percentage of the population below the poverty line has increased to 28% [12].

Health insurance: implemented health insurance schemes in India

Health insurance schemes began in the early 1950s in India, with the launch of the Central Government Health

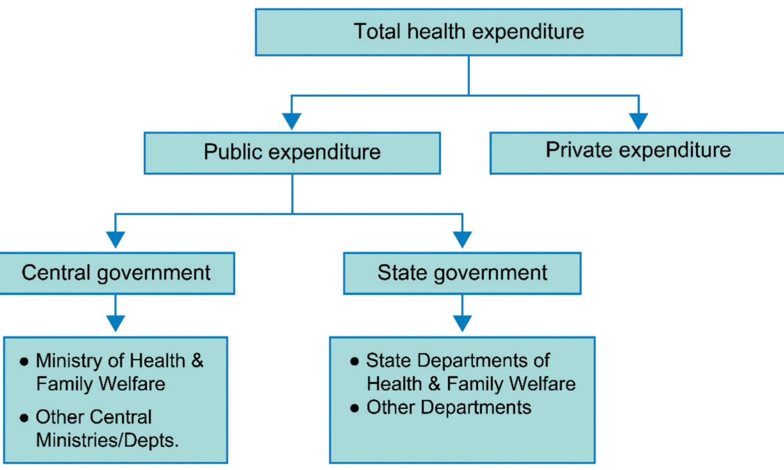

Figure 1. Different Segments of Out-of-Pocket Expenditure [8].

Scheme (CGHS, 1954) and Employees State Insurance Scheme (ESIS, 1952). In December 1999, the Insurance Regulatory and Development Authority (IRDA) Bill was passed to create a regulatory authority for governing the insurance industry in India. Until 2007, India had only three health insurance programs, viz. ESIS, CGHS, and PHI (Public Health Insurance); from then on, the country has been swamped by several insurance programs [13]. The scenario of health insurance in the country changed when state governments announced health insurance schemes specifically covering the poor or those below the poverty line [13].

At present, numerous public health insurances are available, including Employees' State Insurance Scheme (1948), CGHS (1954), Private Insurance – Mediclaim (1986), Ex-Servicemen Contributory Health Scheme (2003), Universal Health Insurance scheme (UHIS) (2003), Health Insurance Scheme for Handloom Weavers (2005), Shilpi Swasthya Yojana for handicraft artisans (2006), Rashtriya Swasthya Bima Yojana (RSBY) (2008), Niramaya health insurance scheme continued as Swavlamban Health Insurance Scheme in 2016 (2009), Senior Citizen Health Insurance Scheme (SCHIS) within RSBY (2016), National Health Protection Scheme (NHPS)/Ayushman Bharat – National Health Protection Mission (AB-NHPM)/Pradhan Mantri Rashtriya Swasthya Suraksha Mission (PM-RSSM) (2018) [14].

Existing health insurance schemes are as follows: (1) Voluntary health insurance schemes or private, for-profit schemes. For private insurance, premiums are collected from private insurance buyers, while in the public sector, voluntary schemes are provided by the General Insurance Corporation (GIC) and its four subsidiary companies, viz. National Insurance Corporation, Oriental Insurance Company, New India Assurance Company, and United Insurance Company, which has offered Mediclaim since 1986, limited mostly to the middle class owing to high premiums. (2) Mandatory health insurance schemes or government-run schemes include ESIS and CGHS; these cover people employed in factories and central government employees (including retirees, certain autonomous, semi-government organizations), respectively. (3) Insurance offered by non-government organizations (NGOs)/community-based health insurance is funded by NGOs or charitable trusts with nominal premiums and is financed by government grants, patient collection, and donations. (4) Employer-based schemes are provided by employers to their employees; benefits include lump-sum payments, reimbursement of health expenditures, medical allowances, or coverage under group health insurance schemes [1].

The most recent health protection Scheme 'Ayushman Bharat' was launched in September 2018; it will cover more than 10 crore poor families and around 50 crore beneficiaries, providing coverage of up to five lakh rupees per family. Entitlement based on the criteria in the Socio Economic and Caste Census (SECC) database and premium cost will be shared between the central and state governments. PMJAY is expected to significantly reduce OOPE, covering nearly 40% of the population – including the poorest and most vulnerable sections [15].

The progress of AB-PMJAY (as on 26th Nov 2019) is as listed below [16].

- Currently, 32 States/UTs are implementing PM-JAY
- Hospital admissions = 0.191 million
- Amount authorized for admissions = USD 2394.51 million
- Hospitals empaneled = 24,653 (Public: Private = 54:46)
- E-Cards issued = 1.734 million
- Portability cases = 0.15 million
- 14 hospital admissions per minute
- 13 beneficiaries verified per minute
- 8 hospitals get empaneled per day

However, implementation of Ayushman Bharat, the largest government-funded health insurance scheme in the world, is associated with several challenges: ensuring the provision of high-quality care, high cost of services, lack of beneficiary awareness, maintaining the quality and security of data, and building capacity of the health workforce. For overcoming these hurdles, the Government of India has issued 'a call for action' to the Indian startup community (Startup India) [17].

Healthcare regulation

Current health systems and policies in India have evolved from the landmark Bhore Committee Report, 1946, which laid the foundation for a three-tier public healthcare (PHC) system comprising subcenters, primary and community centers. It was meant for ensuring equitable access to primary healthcare; however, the poor capacity of PHC systems resulted in the parallel evolution of the private healthcare industry in India [18].

Currently, the Ministry of Health and Family Welfare, state governments, and local municipal bodies are key public stakeholders in the healthcare system. States regulate healthcare delivery through a dedicated Directorate of Health Services and the Department of Health and Family Welfare [3]. However, private sector regulation is unclear, with multiple agencies under different ministries having overlapping jurisdictions over the private healthcare sector as shown in Figure 2 and 3 [3].

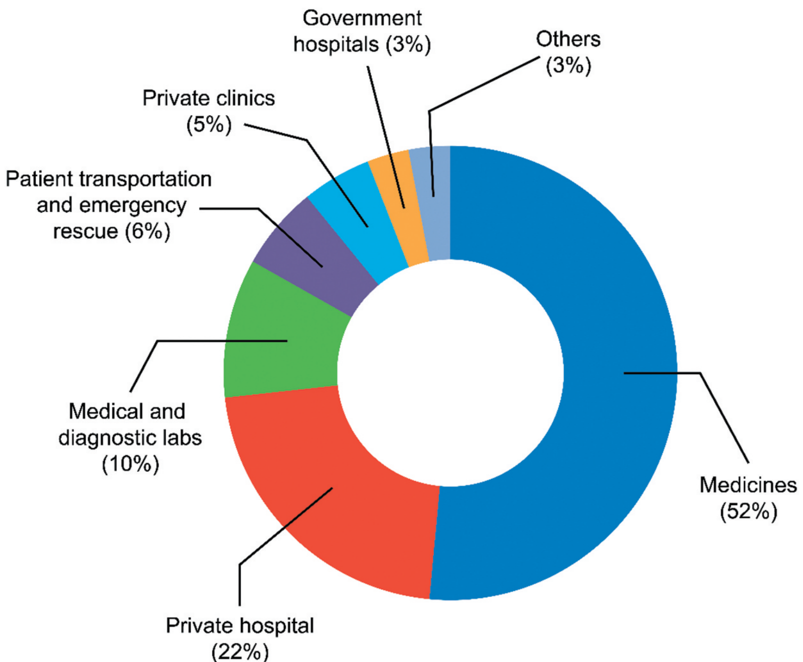

Figure 2. Organization of Healthcare Structure in India. The different levels in the Indian healthcare sector according to hierarchy are national level, state level, district level and block level. The flow of information and line of reporting between the different levels and their respective departments has been delineated [3].

Healthcare delivery system

Public sector

Primary, secondary, and tertiary facilities are the three pillars of the government healthcare system; they offer medical interventions ranging from preventive services to active treatment. The healthcare demands of rural India are addressed by primary health centers and community health centers. The primary healthcare system is connected to the community through a subcenter. State governments are responsible for community health centers. These centers cater to the health needs of 80,000 to 120,000 people [3].

At present, the community healthcare workers include the community healthcare workers, namely, Accredited Social Health Activist (ASHA), Auxiliary Nurse Midwife (ANM) program, and Anganwadi workers (AWW). The ASHA, ANM, and AWW programs were launched by the Ministry of Health and Family Welfare (MoHFW) to promote child development services through Integrated Child Development Service (ICDS). Apart from providing care at subcenters, ANMs visit villages and receive support from AWW and ASHA workers. The AWWs and ASHA workers work solely in their villages, performing various activities related to maternal and child health; ASHA workers refer patients to the subcenter when required. There are around 208,000 ANMs, 1.2 million AWWs, and 857,000 ASHA workers who have their own supervisory and payment systems [19].

Private sector

The Indian private healthcare sector has remained largely unregulated. Health services have been provided by single-owned practitioners, small nursing homes, or large chains of hospitals. Recently, there has been a rapid expansion of the private hospital sector. As a part of public – private partnerships, government-sponsored health schemes also depend on private hospitals. In 2016, private hospitals provided around 60% of inpatient care and 80% of outpatient care [20].

Economic evaluation of health and medicine

For the efficient use of available resources, and for maximizing health benefits, decision-makers derive information from health economic studies. To generate consistent evidence from various economic evaluation studies, the implementation of a structured economic evaluation model is required [21]. However, previously, there was no systematic economic model for the assessment of health, such as health technology assessment (HTA), in

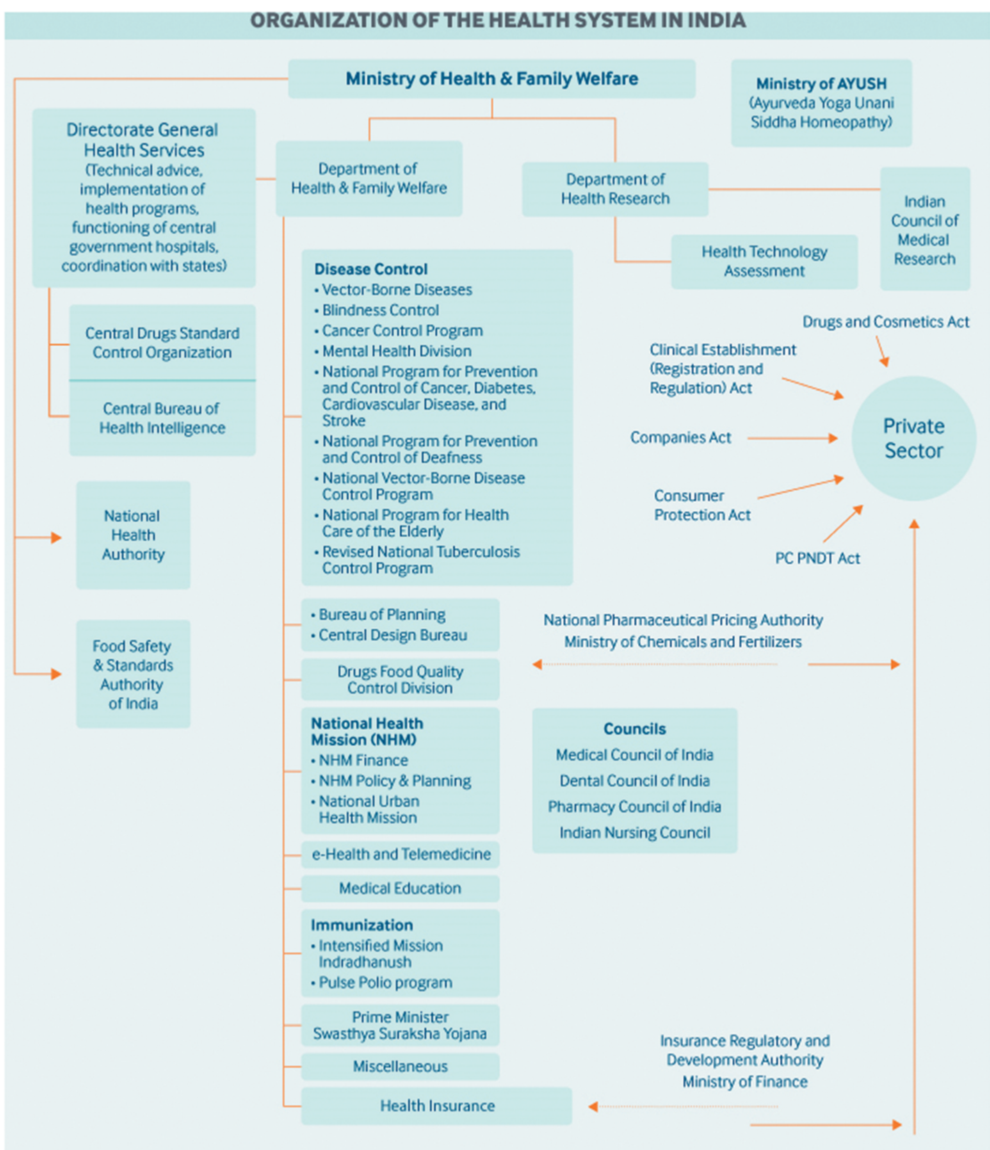

Figure 3. Organization of Health System in India

India, owing to several challenges in the development of effective HTA – including low budget allocation, lack of professional experts, noneffective reporting system, and lack of a national health service [21]. In 2020, the implementation of HTA in India is in the initial stages due to unclear guidelines [22].

HTA and Medical Technology Assessment Board (MTAB) in India

Health technology assessment is an international gold standard that provides a broad template for comparative analyses of cost, safety, clinical effectiveness, and equity can be conducted to ascertain whether a given intervention is a cost-effective investment, which is especially relevant in the Indian context, where budgetary constraints are a major concern. At present, the Department of Health Research (DHR), under MoHFW, is in the process of establishing a MTAB, which will act as a central agency for undertaking HTA activities in India [23].

HTAs are particularly useful when introducing a new vaccine into the National Immunization Program (NIP). According to a survey, HTA could be realistically implemented in most countries to assess the cost-effectiveness of a new vaccine: for example, in the case of pneumococcal vaccine; 57.1% of the countries have a national HTA agency, and national sources of data are available for 78.6% of the countries for assessing the cost of *S. pneumonia*-related diseases [24].

The MTAB was constituted, as the Government of India recognized the need for a dedicated body for planning and implementing healthcare policies in the country and for evaluating the cost-effectiveness and appropriateness of health technologies in India [25]. In the long run, this

will facilitate India's progress towards UHC, which demands that resource allocation be done very carefully and rationally [23]. A multi-tier structure is proposed for the operation of MTAB. The secretariat will form the base, while a technical appraisal committee (TAC) will be in the middle and the MTAB at the top. The final decision will be taken by the MTAB and sent to the MoHFW for approval [23]. The DHR/MoHFW has identified different steps of MTAB – including strategic planning, engagement and advocacy, political engagement, training, research, capacity-building, and HTA demonstration – as a means to establish a robust HTA system [25].

Several challenges are associated with the establishment of HTA in India, including (1) difficulty finding human resources suitable to conduct the relevant HTAs for which MTAB intends to conduct a series of training programs and online training; (2) difficulty in maintaining technical sanctity and consistency in methodology; (3) poor quality and availability of data, since the data infrastructure is not robust in India; (4) challenges with ethics and transparency of system, particularly concerning conflicts of interest; (5) resistance from clinicians and other stakeholders who disagree with recommendations made by MTAB; (6) the vast and complex Indian health system. The MTAB has been conceived to guide public sector health financing at the national level [23].

UHC in India

The UHC aims to ensure that everyone, everywhere, has access to healthcare services without facing financial hurdles. To achieve the UHC, four key financing strategies were identified by the WHO: increasing government budgets for health, increasing taxation efficiency, increasing development assistance for health, and improving innovation in financing for health [26].

Health financing can be improved by enhancing the tax: GDP ratio, along with optimal allocation and increased efficiency of health-related spending. The National Health Policy 2017 envisaged increasing health expenditures by the government to 2.5% of GDP by 2025, increasing state-level health spending to >8% of their budget by 2020, reducing the proportion of households facing catastrophic health expenditure by 25% by 2025 [27]. Moreover, the Union Budget 2018 announced the launch of the Ayushman Bharat scheme [27]. For addressing health service management, the MoHFW launched the National Rural Health Mission (NRHM), later designated the National Health Mission (NHM). Other key initiatives include Mission Indradhanush, Rashtriya Swasthya Bima Yojana (RSBY), and Janani Suraksha Yojana for providing financial risk protection to poor families through health insurance. To address OOPE and for achieving UHC, the National Health Policy (NHP) aims to deliver quality health services at an affordable cost [26]. The Affordable Medicines and Reliable Implants for Treatment schemes and the Pradhan Mantri Jan Aushadhi Pariyojana also reflect the commitment of the government to the reduction of OOPE [27].

Other initiatives by the government for implementing UHC in India are as follows: (i) transformation of subcenters into health and wellness centers (H&WC), (ii) inclusion of Ayurveda, Unani, yoga, and homeopathy practitioners in primary healthcare delivery, (iii) focus on hygiene sanitation (Swachh Bharat Abhiyan), increasing immunization coverage (Mission Indradhanush Kavach), (iv) the Maternal Death Surveillance Response program for reducing maternal mortality, (v) the Labour room Quality Improvement Initiative (LaQshya) program for improving quality of labor-room standards, (vi) use of information technology (ICT) for improving access to quality healthcare, (vii) strengthening national programs such as for AIDS and TB, (viii) increasing the number of medical colleges and nursing and midwifery schools for overcoming the scarcity of qualified doctors and healthcare personnel. All these initiatives indicate that there is a steady commitment in India toward the achievement of UHC [27].

Discussion

In India, the development of the healthcare infrastructure has not kept pace with economic growth. India's performance on health, equity, and quality indices has also been far from satisfactory [28]. To minimize the burden of OOPE, the government needs to increase spending on healthcare [29]. The percentage of total government expenditure on healthcare is lower in India (2.9%) compared to other countries such as the US (18.9%), Germany (17.3%), Japan (17.2%), the UK (15.9%), and China (10.1%). Again, out of the total health expenditure in India, the contribution of the central government is just 17.3%. This is lower compared to other countries such as the UK (86.3%), Japan (81.3%), Germany (76.9%), the US (44.7%), and China (38%). These figures indicate that, as compared to other countries, private health expenditure exceeds government expenditure in India, which largely comprises OOPE [1].

Instead of the public sector, the private sector accounts for a significant proportion of outpatient services in low- and middle-income countries. For example, in Vietnam, the private sector provides 60% of all outpatient contacts, while in India, more than 90% of diarrhea-affected children approach private healthcare

providers [30]. Therefore, efforts must be made in the Indian context to increase government spending on public-sector healthcare services.

While comparing the healthcare system of a developed country such as the US with that of India, it is observed that the private sector is preferred in both countries. The US government has a prominent role in healthcare, outpatient care, and measures of utilization and appropriateness of care. In contrast to India, the US has higher spending per capita on healthcare, low OOPE on healthcare, enhanced availability of private health insurance with high length and breadth of insurance coverage [31]. Again, while comparing the healthcare system of India with that of China, it is observed that both these countries lack access to affordable primary and specialty care, as well as widespread insurance coverage. Moreover, increasing concern over rising healthcare costs is common in both countries, and both countries spend a relatively small percentage of their GDPs on healthcare. While the private sector is more developed in India, China places greater emphasis on the public sector. Since the mid-1990s, China has increased its healthcare spending as a percentage of GDP at a faster rate compared to India [31]. Based on the Health Access Quality (HAQ) index, a measure of the quality of health services, India stood at 145th among 195 countries, ahead of only two Asian countries, viz. Pakistan and Afghanistan. While Sri Lanka occupied the 71st position, Bangladesh stood 133rd, as per the HAQ index. Performance on the HAQ index is positively correlated with total health spending by the government, health system inputs, and socio-demographic index [28]. In 2016, although India achieved an improvement in the HAQ index, still large disparities were observed in subnational levels of healthcare quality and access, like in China [32].

Equity and access to healthcare should be evaluated for assessing the achievement of UHC. For measuring UHC, the following criteria should be used: (i) proportion of the population with access to essential quality health services, and (ii) proportion of population spending large amounts of household income on health. The development of robust financing structures is key to the attainment of UHC; high OOPE would mean the poor are deprived of most services accessible to the rich, while the rich may be exposed to more pronounced financial hardships in case of severe or long-term illnesses [33]. Apart from increasing public spending, strong primary care is another key factor for achieving equity and affordability of healthcare across the country [34].

For the optimum implementation of UHC in India, it may be wise to emulate developed countries that have successfully implemented UHC, focusing on maximum coverage of healthcare costs by the public sector and fortification of the primary healthcare system. In countries with single-payer systems or public insurance systems, the major players in healthcare are local, regional, or national governments [35]. In the UK, the National Health Service (NHS) provides access to healthcare without discrimination and is funded by general taxes, with a small portion coming from national insurance, a payroll tax. It covers all residents of the UK, i.e., universal coverage, and is nearly free [36]. In France, healthcare is a national responsibility; Statutory Health Insurance (SHI) funds the healthcare expenditure of the state. The SHI is primarily financed by employer and employee payroll taxes (50%) and national income tax (35%); its coverage is universal and compulsory for all residents [37]. Spain has universal coverage for its residents, with major funding coming from the Spanish National Health System (SNS) and the rest coming from taxation [38]. Moreover, several countries such as the UK, the US, Sweden, Australia, and Spain have implemented other policies for constant health monitoring, such as child health indicators, which are an important component of UHC criteria [39]. For improving infrastructure and finance for higher public spending on health, there is scope to raise more income tax revenue in India. Since India has a lower proportion of trained physicians and healthcare practitioners compared to global standards, better training of nurses and doctors, as well as prioritizing primary care, must be envisaged [34].

In a nutshell, considering several unmet needs and the low healthcare budget, India's UHC strategy must be efficient and equitable. Amidst all the constraints, Ayushman Bharat reforms will focus on PHC, providing universal free PHC services. Greater public investment and political commitment to Ayushman Bharat wellness centers will enable India to achieve UHC by 2030 [40].

Way forward

Some of the measures that should be taken by India for the way forward are as listed below [41,42].

- An increase in budget for healthcare. This will help hospitals to expand and help in healthcare facilities sustainability.
- Installing electronic medical record software across the country to gather information about patients and diseases. It will help in identifying any challenges faced and providing support to augment the medical infrastructure and treatment.
- Upgradation and maintenance of medical facilities and equipment to cater to the needs of the huge

population of India which in turn will help in reducing panic among patients during epidemics.

- Standard regulations should be followed throughout the nation and NABH accreditation must be compulsory for each and every private clinic, hospitals, and nursing homes. Certain regulations should be tailored so that small clinics and nursing homes can follow in terms of area allocation, fire safety, biomedical waste management, and patient database.
- Introduction of tele-pathology in rural areas and expanding the capacities of existing diagnostic laboratories.
- Medical Tourism: Statistics have shown that over 3.5 lakh people from different countries visit India every year as our hospitals offer advanced, yet cost-effective medical care that is qualitatively at par with the best in the world. The medical tourism market in India has seen a growth of 22–25% from 2014. An increase that can be attributed to the major advancements in healthcare delivery that has been seen in our country in the recent years, coupled with the rising cost of medical treatment in developed countries. Given this scenario, it is safe to predict that India is set to become the hub for medical tourism in the very near future [42].

Limitations of the study

Our study has a few limitations. The theme of the manuscript is intended to cover a wider range of broader healthcare policies, its implementation and challenges. This theme is critical in the Indian context as it is faced with enormous challenges on both equity and access to health care. The objective of the manuscript is aimed at examining the entire gamut of health systems and policies and the methods are based on providing a gist of data sources employed without defining any metrics and hence the data sources used are from various government databases, websites, and PubMed searches that rely largely on healthcare financing. The results section involving the health economy is largely devoted to government health expenditure and not the broader health economy. The key results section on health insurance provides a plethora of health insurance programmes implemented in India since 1950, however the authors have not performed an analysis for a change over the years in terms of population coverage, benefit package available to beneficiaries, and the impact on cost coverage, which can be considered a topic for future publications. The results section on health regulation and healthcare delivery; on economic evaluation of health and medicine, and HTA & MTAB; and on UHC are descriptive and no analysis had been performed on these topics.

Considering the enormity and complexity In India, the manuscript is descriptive in nature and these are the best data sources that have been available from the country's perspective. We hope that a systematic literature review is performed to be able to obtain a better narrative, providing a clearer direction to overcome some challenges the country faces.

Conclusion

Healthcare delivery in India remains inadequate, despite the increasing demand for quality healthcare. While health insurance schemes are available to urban residents and the middle class, the vast rural population of India and people below the poverty line (BPL) are poorly covered by such schemes. Several of these challenges have now been addressed by the efforts of the central and state governments. Apart from several healthcare schemes for rural and BPL populations, a systematic approach for implementing HTA and MTAB has been initiated by the government. Improved healthcare access and implementation of NIP in the country are likely to lower the disease burden and increase the quality of life of the overall population. Moreover, the COVID-19 pandemic was an eyeopener for the healthcare system in India, which pointed out the requirement to augment several areas in the healthcare system. Therefore, the public health policy needs to be revisited to make it truly public in nature by enhancing the healthcare budget; improving patients' ratio: doctors, hospitals, beds, ICUs, ventilators, etc. Only the public health system can come to the rescue, requiring long-term planning and an adequate budget [43].

Author's contribution

The authors have equally contributed and made a substantial contribution to the concept or design of the work; or acquisition, analysis, or interpretation of data. Drafted the article or revised it critically for important intellectual content; Approved the version to be published and has participated sufficiently in the work to take public responsibility for appropriate portions of the content.

Disclosure statement

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