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Strengthening the Healthcare System in Bangladesh: Progress, Persistent Challenges, and Policy Priorities

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Abstract

This manuscript examines the multifaceted healthcare system of Bangladesh, characterized by its decentralized and unregulated nature, with diverse control spanning for-profit entities, NGOs, the national government, and international welfare organizations. Despite substantial challenges, including inadequate public health facilities, a scarcity of skilled healthcare professionals, and significant healthcare inequity, Bangladesh has made commendable progress in health-related Millennium Development Goals. The COVID-19 pandemic underscored the system's shortcomings, notably in testing, national coordination, and treatment equity. This study explores these challenges in detail, alongside potential solutions aimed at improving healthcare financing, enhancing healthcare worker training, and promoting public-private partnerships. Recommendations for overcoming barriers include increasing government healthcare funding, improving rural healthcare facilities, and addressing healthcare inequity through a dynamic and visionary policy approach. This analysis seeks to contribute to the discourse on advancing healthcare in Bangladesh towards Universal Health Coverage.

Introduction

"Just as the country has guaranteed the right to education for all, there is a need for the right to universal access to public healthcare, Nobel Laureate Amartya Sen said," emphasized Nobel Laureate Amartya Sen. This statement underscores the crucial significance of ensuring equal and fair access to high-quality healthcare for every individual. Keeping this in mind, Bangladesh has identified healthcare as a key area of development with a focus on improving infrastructure, expanding services, and strengthening the overall healthcare system ^[1]. Bangladesh is facing many challenges. remarkable progress in achieving health and population indicators, particularly in achieving health-related (a) Millennium Development Goals (MDGs), such as MDG 4 and MDG 5, concerned with improving infant survival and maternal health, respectively as well as (b) Sustainable Development Goals (SDGs such as SDG3 concerned with the introduction of universal healthcare (UHC) ^[2]. Efforts are being made to enhance healthcare financing, increase the number of healthcare professionals, and promote public-private partnerships to address the existing challenges.

However, the healthcare system in Bangladesh remains highly decentralized and lacks regulation, with control vested in various entities, including for-profit organizations, NGOs, the national government, and international welfare organizations.

This fragmented landscape presents significant obstacles, such as a shortage of public health facilities, lack of skilled healthcare professionals, inadequate allocation of financial resources, deficiency in accountability and established guidelines, and disparities in healthcare accessibility [3][4]. The COVID-19 pandemic has further exposed these weaknesses, revealing insufficient testing centers, a disconnect in national health coordination, and unequal access to treatment, particularly among economically disadvantaged populations [5].

In the face of these challenges, Bangladesh is witnessing a significant outflow of medical tourists seeking treatment overseas owing to a lack of trust in local physicians and a weak diagnostic system. Annually, approximately 700,000 Bangladeshis travel abroad for medical care, spending approximately US\$3.5 billion. India, Singapore, Thailand, and Malaysia [6]. The growth of outbound medical tourism is a concern raised by public health experts, who predict that it will continue to rise unless local healthcare institutions can earn the trust and confidence of their patients [6]. The decision-making process for medical tourism is influenced not only by cost, insurance coverage, and privacy concerns but also by perceived quality issues related to doctors, medical facilities, and required treatments [7].

The Constitution of Bangladesh, specifically Article 15(a), guarantees healthcare services as a fundamental right for all citizens and places responsibility on the State and the Government to ensure its realization. Article 18(1) emphasizes that improving public health and nutrition is the primary duty of the state. However, despite these constitutional provisions, the patients in Bangladesh experience serious hurdles when it comes to accessing healthcare services. The Bangladeshi healthcare system, which is highly decentralised and unregulated, is controlled by a variety of organisations, including for-profit entities, NGOs, the national government, and international healthcare organisations. In recent years, the Bangladesh government has prioritized healthcare as a key development area, aiming to improve healthcare infrastructure, expand services, and strengthen the overall healthcare system [1]. However, the public expenditure in healthcare (percentage of GDP) is only 2.63% in 2020 after a brief increase in 2016 (2.83%) [8].

As noted, the healthcare system of Bangladesh relies heavily on both the government and public sector for financing and setting overall policies and service delivery mechanisms [3]. However, the healthcare sector in Bangladesh suffers from a range of problems, including (a) lack of quality public health facilities, (b) shortage of skilled healthcare workers, (c) inadequate financial resource allocation for health services, (d) lack of accountability and established guidelines, and (d) healthcare inequity [4]. Political instability and the demise of ideal democratic practices are also significant contributing factors [9]. While the limitations of this paper prevent an exhaustive examination of the ongoing causes behind our healthcare challenges, it is essential to recognize that the sociocultural and financial deficiencies inherent at the macro level in developing countries, including Bangladesh, amalgamate to form the myriad obstacles encountered by individuals seeking medical assistance.

Current state of healthcare in Bangladesh

In a series of articles in *The Lancet* published in 2013, Mushtaque Chowdhury and co-authors referred to the “the Bangladesh paradox: exceptional health achievement despite economic poverty” that was achieved with gender- and

equity-oriented, highly focused nationwide interventions [10][11]. Among the many noteworthy achievements are (a) the improvement in life expectancy from 50 years in 1971 to 72 years in 2021 [11]. (b) The reduction in infant mortality (< 5 years of age) from 251 in 1971 to 31 deaths per 1,000 live births in 2021 [12]; (c) the reduction in the total fertility rate from 6.6 in 1975 to 2.0 births per woman in 2021 [13]; and (d) the expansion in coverage of childhood immunizations from 2% in 1978 to ~100% in 2021 [14].

Not surprisingly, the government's health expenditure as a percentage of the gross domestic product (GDP) is among the lowest in the world at 0.7%. The percentage of out-of-pocket expenditures is among the highest in the world (67%) [15]. Public sector financing accounts for only 23% of Bangladesh's total health expenditure, and this percentage declined from 37% in 1997 [16]. Moreover, the per capita total health expenditure was only US\$37 [17]. Government healthcare expenditure is inequitable, with impoverished rural municipalities receiving lower allocations per capita, and government tertiary hospitals providing disproportionate care to better-off or politically well-connected citizens.

Challenges

The health care system in Bangladesh faces several challenges in different domains. These challenges can be categorized into structural, health professional-related, and organizational factors. The key challenges within each category are as follows.

(A) Structural factors

(i) Healthcare resource scarcity: The Bangladeshi government has established many government-funded hospitals in rural areas to provide cheaper treatment for rural citizens. These hospitals are often poorly funded, understaffed and crowded. These challenges are magnified by the unequal geographic distribution of populations throughout the country, in which 60% of Bangladeshis are primarily concentrated in rural areas, whereas 40% are concentrated in urban areas [6]. Moreover, the current shared public and private healthcare systems and non-governmental organizations are predominantly partial against rural demographics, providing unequal treatment between socioeconomic classes [18].

Solution: Increased government funding for healthcare: The allocation of resources to the health sector in Bangladesh has historically been limited [19]. Despite recent increases, the health budget remains insufficient to address critical shortages of trained personnel, medical equipment, and supplies. Consequently, Bangladesh's healthcare system relies heavily on out-of-pocket payments, which create a significant financial burden for impoverished families [20]. Increasing government funding for healthcare can reduce the financial burden on individuals and ensure that everyone has access to affordable healthcare.

(ii) Socioeconomic inequality: inequality affects healthcare in Bangladesh. Impoverished citizens cannot afford certain treatments or services because of the high out-of-pocket costs. Limited government funding also led to high out-of-pocket payments, creating a significant financial burden for impoverished families. A recent study revealed that approximately 25% of individuals incurred catastrophic health expenditures, 14% of the population had forgone healthcare for various reasons, and nearly 69% of total health expenditures continued to be paid out-of-pocket by Bangladeshis [12]. Financial

burden and forgone care were greater among households with older populations or chronic illnesses, and those who used either public or private health facilities [21]. Finally, paralyzed by mismanagement, high population density, and corruption, to secure treatment by reputable healthcare professionals, patients must usually rely on external connections, a luxury that, unfortunately, most of the general population is unable to exploit [10].

Solution: Incorporating social safety nets into the health financing system can help alleviate the financial burden on vulnerable populations, such as older people or those with chronic illnesses, and ensure that they have access to healthcare services [22]. To address health inequities and strengthen primary health care, key strategies include improving accessibility, staffing, and equipment in health care facilities. Emphasis should be placed on preventive care, early intervention, and health education programs that target vulnerable populations. Gender disparities must be addressed by promoting equality and providing specialized services for women [23]. Strengthening health data, collaborating with international partners, engaging communities, utilizing technology, and establishing monitoring mechanisms are also vital for progress. These efforts aim to enhance healthcare access, reduce disparities, and improve overall health outcomes [24].

(iii) Corruption: Enhancing primary health care (PHC) through the strengthening of health systems is crucial for the progression towards Universal Health Coverage (UHC) in low-income nations like Bangladesh. Corruption poses a significant obstacle, undermining the UHC objectives of equity, quality, and system responsiveness, leading to devastating increases in health care costs. However, challenges such as low GDP, limited education, weak democratic values, and patriarchal norms have hindered efforts to reduce corruption. Moreover, it constitutes a deliberate disregard of duty and hence a loss of public trust, ultimately resulting in adverse effects on health outcomes, particularly for the impoverished and disadvantaged. For instance, according to the corruption perception index by Transparency International, corruption is estimated to cause 140,000 annual deaths globally among children under five [25][26][27].

Solution: (i) addressing socioeconomic and cultural barriers and (ii) testing community-based interventions such as public hearings and community-based healthcare monitoring. This can benefit frontline workers and those in power by improving community health and generating good will. Further research is needed to refine these interventions and explore new methods to address corruption. The accountability of healthcare providers, raising awareness of service entitlements, and comprehensive multisectoral efforts are essential [28]. By engaging and empowering the community, corruption mitigation can be part of broader health system reforms for universal health coverage [29].

(B) Health Professional-Related Factors

(i) Healthcare personnel shortage: Enrollment in medical colleges and healthcare training facilities has increased, but the shortage of healthcare workers and clinical equipment is a significant issue, with most physicians and healthcare workers concentrated in urban areas, leaving rural areas with inadequate healthcare facilities [30]. Moreover, in a study regarding career choices of Bangladeshi medical students, overwhelming 90% of students chose major cities as practice locations, with 51% wanting to immigrate and practice abroad [30]. Without prompt intervention, these statistics allude to a collapsing future healthcare system, characterised by chronic shortages of competent personnel, especially in rural areas of highest

demand, It is worth mentioning as well, lifestyle-related and preventative medicine were two of the least attractive specialties – a commentary of the requisite refashioning of the medical education to include community-based teaching and exposure to practising in suburban and mostly rural settings quite early on ^[31]

Solution: The growing threat of non-communicable diseases (NCDs) is a significant challenge that many countries, including Bangladesh, are grappling with. NCDs, such as cardiovascular diseases, cancer, respiratory diseases, and diabetes, are now the leading cause of mortality worldwide, accounting for over 70% of all deaths globally. In the context of Bangladesh, the burden of NCDs is substantial, with an estimated 572,600 (67%) deaths caused by NCDs annually, and 22% being probable premature deaths. This highlights the urgent need to address the rising NCD epidemic in the country. As the threat of non-communicable diseases grows in Bangladesh, BRAC, a non-governmental organization, launched a pilot program in early 2020 to leverage community health workers to improve the health outcomes of patients with hypertension and diabetes. Preliminary results were promising, with 90% of both home-based and clinic-based patients showing clinical improvements, and 91% being retained in care. Additionally, 98% of community health workers had on-time follow-up of patients with NCDs, demonstrating the effectiveness of this community-based approach. These findings highlight the critical gaps in NCD detection, management, and linkages to continued care in Bangladesh, as well as the need for a better-skilled and appropriately trained workforce to provide quality NCD services^[32]. However, despite these promising approaches, barriers to effective self-management of NCDs persist in many rural communities, particularly in South Asia^[33].

Training and educating more healthcare workers: Bangladesh has a shortage of physicians, specialists, and clinical equipment, particularly in rural areas. Increasing the number of healthcare workers, including traditional healthcare providers, by providing training and educational facilities can help address this shortage and ensure that everyone has access to healthcare services. Healthcare providers should receive ongoing training and support to maintain a high standard of care^[31]. Understanding these contextual barriers is crucial when designing interventions to improve self-management of NCDs in these settings. For instance, Thailand's Collaborative Project to Increase Production of Rural Doctors (CPIRD) was established in 1994 to recruit and train medical students from rural backgrounds to serve in rural areas after graduation. This program includes targeted recruitment, subsidized medical education, and mandatory rural service contracts, with evaluations showing that over 80% of CPIRD graduates continue to work in rural areas long-term^[34]. Similarly, the Malawi Medical Assistant Training Programme, launched in the 1960s, trains medical assistants to provide primary care in rural and remote areas. The program focuses on recruiting and training individuals from rural communities and providing them with a career path in healthcare, and studies have found it to be successful in improving access to healthcare in underserved regions^[35].

Improving healthcare facilities in rural areas: Most physicians and healthcare workers are concentrated in urban areas, leaving them with inadequate healthcare facilities. Healthcare systems and infrastructure should be strengthened to support quality-improvement initiatives. Community health programs or community-directed interventions, school-based and student-led healthcare services, mobile clinics, family health program, community health funding schemes, telemedicine, working with traditional healers, working with non-profit private sectors and non-governmental organizations including faith-based organizations are the key strategies identified from international experiences. Patel J *et al*

underscore the significant role of mobile medical units (MMUs) in addressing healthcare disparities, particularly in resource-limited settings. The adaptability and cost-effectiveness of MMUs make them an ideal solution for primary healthcare delivery, especially in regions of India. It lays a foundation for future research and policy-making, emphasizing the need for innovative, equitable, and sustainable healthcare delivery models like MMUs to transform and strengthen healthcare systems^[36]

(ii) Teaching: “A physician, well-versed in the principles of science of medicine but incompetent in his art because of want of practice as well as the physician, experienced in his art but short on the knowledge of Ayurveda, is like a one-winged bird that is incapable of soaring high in the sky” - Shushruta Samhita 300-400 BC

South Asia is experiencing a rapid increase in the number of medical schools, particularly in the private sector, driven by demand for doctors in the private health sector. However, the accreditation process has been ineffective in maintaining the standards of basic medical education and has become irrelevant to the healthcare needs of the nation^[37]. This poses a problem, as the significance of medical education in delivering quality healthcare is increasingly being recognized by stakeholders. Without addressing the quality of medical education, it is impossible to improve healthcare delivery. Implementing global standards without considering broader factors is unlikely to lead to significant improvements in health care quality. Challenges such as resistance to change, limited resources, faculty readiness, navigating accreditation, sustainability, cultural factors, and stakeholder coordination further hinder the implementation of medical education reforms^[38].

Solution: Several solutions can be considered: 1. Curriculum Reform: Designing a four-year medical curriculum that emphasizes a patient-centered approach and aligns with the core values of humanism, professionalism, health equity, and lifelong learning. 2. Scholarly Exploration: Dedicate a year to an in-depth exploration of scholarly interests across various scientific disciplines to prepare future physicians as change agents in the healthcare field. 3. Clinical Experiences: Provide students with clinical experiences in both general and specialized fields, facilitated by top healthcare providers, to enhance their practical skills and knowledge. 4. Mentorship Programs: Establish mentorship programs involving faculty and student leaders to support students throughout their learning journeys. 5. Addressing challenges: Overcoming challenges related to infrastructure, curriculum, faculty development, financing, and interprofessional education to improve the quality of undergraduate medical education^[39].

Collaboration between governments, educational institutions, and stakeholders is essential to accomplish these reforms. Prioritizing efforts and ensuring that healthcare systems are equipped to meet evolving healthcare needs By investing in delivering high-quality, relevant, affordable, and community-centric medical education, South Asia can nurture competent and compassionate healthcare professionals who can deliver high-quality care to diverse populations^[40].

(C) Organizational factors

(i) Lack of a quality management system: Quality of care in both public and private services has been consistently poor due to the unfortunate (a) lack of assessments and monitoring of provider care quality, (b) widespread suboptimal

professional knowledge, and (c) lack of proper established guidelines in clinical practice. It must be noted that, to a great extent, the unavailability of healthcare professionals, lack of drugs, and long waiting times contributed to a very limited use of public healthcare services, as low as 30%^[36]. It must also be noted that private sector hospitals are concentrated in the country's capital, Dhaka; therefore, geographical distance and travel hassles collectively impede those living in suburban or rural places from receiving their required care^[10]. According to global standards, the Bangladeshi government has one of the lowest budgetary allocations for public health. Even so, these already meager resources undergo massive irregularities in distribution due to institutionalized corruption. A circumstance is exacerbated only by political influence, nepotism, and the lack of preventative and corrective measures^[41].

Solution: Development of a comprehensive national healthcare quality strategy. This strategy should include a clear vision for improving healthcare quality and specific goals, aims, and action plans to achieve these goals^[15]. The strategy should prioritize patient-centered care, evidence-based practice, and continuous quality improvement. Strengthening governance and leadership structures: effective governance and leadership are critical for creating a culture of quality and accountability within healthcare organisations^[42]. This includes establishing clear roles and responsibilities for quality management, developing quality standards and guidelines, and building capacity for quality improvement ^{[43][44]}

Private practice: The private sector, which includes various non-state actors such as companies, NGOs, and individual practitioners, plays a significant role in healthcare, but faces challenges in fulfilling its obligation to promote social justice and the right to healthcare. While the private sector is preferred in some cases due to perceived advantages, such as management efficiency and improved access, there are complaints about its inadequacies, including poor infrastructure, low-quality equipment, lack of qualified personnel, high costs, and unethical practices^[45]. The provision of private healthcare services raises concerns about social justice and the right to health care. Bangladesh, for example, should prioritize effective regulation and monitoring of private healthcare, strengthen its capacity for governance and accountability, and develop a comprehensive strategy to ensure social justice and the right to healthcare for its citizens^[46]. This can be done through initiatives such as national health protection schemes, the engagement of ombudsman for monitoring private providers, and incentivizing providers based on their adherence to social justice and the right to healthcare^{[47][48]}.

(4) Digital healthcare

Digital technology advances offer the potential to enhance PHC quality and efficiency. However, the exponential rise of digital health adoption during the last few years may have created a challenge to establish the extent of impact from digital health on quality healthcare. Challenges associated with digital health include ethical concern on information security, acceptability on new practice, and whether the technology really is practical and feasible to be implemented in real practice particularly in a LMIC context^[49]. Digital health solutions can help address healthcare disparities, but their success depends on needs and readiness of the broader health system. Like other settings, factors like individual, organizational, technological, and system-level elements all influence the performance of digital health solutions in rural settings^[50].

Digital healthcare state in Bangladesh

Challenges: Although significant progress has been made in digital health adoption in recent years, South Asia still faces fundamental challenges in fostering a thriving digital health ecosystem. This has led to a digital divide in healthcare, affecting the potential for transformative improvements in health services and outcomes across the region. Inadequate access to the best health technologies for the majority of the population raises ethical concerns for healthcare practice.

In 2011, Bangladesh was awarded a United Nations Digital Health for Digital Development Award. However, like other countries in the region, Bangladesh must address several priorities as it continues to implement digital health solutions. These include strengthening governance and regulation of technologies, ensuring data privacy and security, and accrediting health-related apps for consumer use. The Ministry of Health is working on a shared health record (SHR) project to create a national electronic archive of citizens' lifetime health records that can be accessed anywhere in the country and transferred between health facilities. Yet, the healthcare sector's receptiveness to digital change remains mixed at best^[51].

Solution: To address these challenges, Bangladesh needs to develop digital transformation guidelines specifically for the healthcare sector. The government must also overcome policy implementation issues to fully embrace the digital revolution in healthcare. These challenges should be tackled through engaging key stakeholders, including patients, informal caregivers, healthcare providers, health services organizations, technology providers, local and regional regulatory bodies, and other entities who can inform the development and implementation of equitable digital health platforms across South Asia. Effectively addressing health disparities in the region requires leveraging digital health technologies through robust decision-making and improved access to care^[52].

Medical tourism

Globalization has brought about significant changes in the healthcare landscape, creating both risks and opportunities. As physicians, medical technologies, and patients have become increasingly mobile, Western healthcare standards and funding are now seeping into developing countries, while cost differentials between nations are becoming harder to ignore as quality gaps disappear^[53].

This issue is particularly relevant in Bangladesh, where medical tourism is growing rapidly. The unequal distribution of economic power and status in Bangladeshi society can translate to disparities in the quality of hospitals and treatments received by patients. Those with lower socioeconomic status may be more vulnerable to receiving substandard care in certain foreign facilities, raising concerns about issues of justice and access to quality healthcare^[54].

The consequences of these unaddressed issues are reflected in the increasing number of medical tourists. In the fiscal year 2018-19, Bangladeshi citizens spent approximately \$5 billion USD on overseas healthcare expenses. According to a 2021 report by the Times of India, a substantial proportion (54.3%) of the medical tourists who visited India in the previous year were from Bangladesh^[55].

Challenges

1. Insufficient and uneven medical Resources in Areas beyond Dhaka leading to disparity in resources and divergent health outcomes among regions.
2. Concerns over the widespread prevalence of unnecessary medical procedures, such as improper prescription of medications and excessive diagnostic examinations. These practices impose additional financial burdens on patients and pose potential health hazards.
3. The quality of communication between healthcare providers and patients is frequently identified as a significant problem with physicians failing to provide sufficient information or engage in meaningful dialogue regarding treatment options.
4. A persistent challenge in the scarcity of medical personnel, particularly in specialized fields like oncology. The healthcare provider-to-patient ratio falls well below the standards.
5. Widespread discontent exists regarding the services provided by local hospitals, influenced by factors such as extended waiting periods, allegations of corruption, inadequate communication, and unnecessary medical interventions. This erodes patient confidence in the domestic healthcare system and motivates them to seek medical care abroad

Solutions

1. Bangladesh must focus on improving its domestic healthcare system to meet international standards. This would reduce the need for patients to seek care abroad and alleviate the financial burden that medical tourism places on families.
2. The government should implement enforceable legislation, policies, and guidelines to regulate the quality and standards of hospitals where Bangladeshi patients can seek care overseas.
3. Patients should be provided with comprehensive information about the benefits and risks of medical tourism, and any discontinuity in medical treatment upon their return should be addressed.
4. Regulate the activities of brokers and intermediaries who arrange for patients to travel abroad. This would help ensure that patients receive accurate and complete information about foreign healthcare providers and the associated risks.
5. Collaborate with international partners, engaging with other nations to harmonize regulatory frameworks and patient protection standards^{[56][57][58]}.

Conclusion

In examining the healthcare landscape in Bangladesh, this manuscript has highlighted the multifaceted challenges the country's healthcare system faces, including resource scarcity, socioeconomic inequalities, corruption, healthcare workforce shortages, and organizational deficiencies^[59]. Despite the country's remarkable progress in achieving key health-related Millennium Development Goals, significant barriers persist in ensuring equitable access to quality healthcare services.

The key thesis of this analysis is that a holistic, multi-stakeholder approach is necessary to strengthen the healthcare system in Bangladesh and work towards the goal of Universal Health Coverage. Specific recommendations include increasing government funding for healthcare, incorporating social safety nets, addressing corruption through community engagement, reforming medical education, developing national quality management strategies, and leveraging digital technologies^{[14][15][60]}.

The evidence presented underscores the interconnected nature of these challenges, requiring coordinated efforts from the government, healthcare providers, private sector partners, and civil society. Enhancing good governance with transparency to minimize corruption, fortifying data systems, and promoting collaboration among diverse stakeholders emerged as vital strategies for integrating inclusive healthcare practices into the national health system^{[61][62]}.

While this analysis has covered a wide range of issues affecting the Bangladeshi healthcare landscape, there remain additional factors that warrant further exploration. For instance, the impact of political instability and the role of international cooperation in supporting healthcare development could offer valuable insights. Additionally, in-depth case studies of successful community-based interventions and public-private partnerships could inform the design of future initiatives.

In conclusion, the findings of this manuscript emphasize the urgency of addressing the multifaceted challenges facing the healthcare system in Bangladesh. By adopting a comprehensive, evidence-based approach that prioritizes equity, quality, and sustainability, Bangladesh can work towards creating a healthcare ecosystem that serves the needs of all its citizens and contributes to the broader goal of global health equity.

Tables

Table 1. Socioeconomic indicators of healthcare in Bangladesh

Subject	Indicators	Values
Population	Total population in millions	156.6
	Density (population/km ²)	1015
	Crude death rate per 1000 population	6
Life Expectancy (years)	Male	66.6
	Female	68.8
	Persons per hospital bed	1860
	Number of persons per 10,000 population	7.7
Economic Indicators	GNI per capita (USD)	640
	PPP GNI per capita (USD)	1620
	Annual growth rate (percent)	6.3
Health Facilities/ Hospitals	Sub-district hospitals	413
	Secondary & tertiary hospitals	117
	Medical colleges	17
	Infectious Disease Control Centres	5
	Chest hospitals	12
	Community clinics	10,723
Health Workforce in Public Facilities	Physicians	11,300
	Nurses	13,483
	Medical technologists	4,658
	Medical assistants	3,694
	Domiciliary staff	23,285
	Non-medical	218
Health Services	Persons per hospital bed	1,860
	Number of doctors per 10,000 population	7.7
Health Financing	GDP spent on healthcare (percent)	3
	Health expenditure as a % of government budget	7.4
	OOP expenditure for health (%)	65.9
	Per capita total expenditure on health (%)	23
	Percentage coming from developmental aid/partners	8

Table 2. summary of the strategies the government can employ to incentivize private sector

No	Strategy	Mechanism
1	Performance-based incentives	Reward providers who meet or exceed social justice and healthcare quality standards.
2	Public-private partnerships	Collaborate with private providers to serve underserved areas and marginalized populations.
3	Tax benefits and subsidies	Provide financial incentives and support through tax breaks, reduced fees, or government funding.
4	Recognition and accreditation	Establish a system to recognize and accredit providers who prioritize social justice
5	Capacity building and training	Offer programs to enhance providers' skills in cultural competence, ethics, and equitable service delivery
6	Transparent accountability mechanisms	Implement monitoring, audits, patient feedback, and public reporting of performance indicators
7	Public recognition and awareness campaigns	Highlight and promote the efforts of providers

Other References

- National Institute of Population Research and Training (NIPORT), and ICF. 2019. Bangladesh Demographic and Health Survey 2017-18: Key Indicators. Dhaka, Bangladesh, and Rockville, Maryland, USA: NIPORT, and ICF.
- Adams AM, Ahmed R, Shuvo TA, et al (2019). An exploratory qualitative study to understand the underlying motivations and strategies of the private for-profit healthcare sector in urban Bangladesh. *BMJ Open* 2019; 9:026586. doi:10.1136/ BMJ open-2018-026586.
- Akhtar A. Health care regulation in low and middle-income countries: a review of the literature. *Health Policy and Health Finance Knowledge Hub: Working Paper Series*. Melbourne, Australia, Nossal Institute for Global Health, 2011.
- Bangladesh Ministry of Health and Family Welfare (2012). *Expanding Social Protection for Health: Towards Universal Coverage*. Health Care Finance Strategy 2012-2032. Health Economics Unit. Dhaka, Bangladesh, Planning Wing, Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh.
- Rahman, R. Private sector healthcare in Bangladesh: Implications for social justice and the right to healthcare. *Global Public Health* 2020; 17(2), 285–296.

References

1. ^{a, b}Bryce, J., Black, R.E. & Victora, C.G. *Millennium Development Goals 4 and 5: progress and challenges*. *BMC Med* 11, 225 (2013). <https://doi.org/10.1186/1741-7015-11-225>
2. [^]Chowdhury S, Banu LA, Chowdhury TA, Rubayet S, Khatoon S. *Achieving Millennium Development Goals 4 and 5 in Bangladesh*. *BJOG*. 2011 Sep;118 Suppl 2:36-46. doi: 10.1111/j.1471-0528.2011
3. ^{a, b}Kabir, A., Karim, M.N. & Billah, B. *The capacity of primary healthcare facilities in Bangladesh to prevent and control noncommunicable diseases*. *BMC Prim. Care* 24, 60 (2023). <https://doi.org/10.1186/s12875-023-02016-6>
4. ^{a, b}Murshid, Munzur-E; Haque, Mainul. *Hits and misses of Bangladesh National Health Policy 2011*. *Journal of Pharmacy and Bioallied Sciences* 12(2):p 83-93, Apr–Jun 2020. | DOI: 10.4103/jpbs. JPBS_236_19
5. [^]<https://coronavirus.jhu.edu/region/bangladesh>
6. ^{a, b, c}van Weel C, Kassai R, Qidwai W, et al. *Primary healthcare policy implementation in South Asia*. *BMJ Glob Health*.

2016 Sep 6;1(2):e000057. doi: 10.1136/bmjgh-2016-000057.

7. [^]Wongkit, M., & McKercher, B. (2015). *Desired Attributes of Medical Treatment and Medical Service Providers: A Case Study of Medical Tourism in Thailand*. *Journal of Travel & Tourism Marketing*, 33(1), 14–27.
<https://doi.org/10.1080/10548408.2015.1024911>
8. [^]Afzal Hossain Sakil (2018) *ICT, youth and urban governance in developing countries: Bangladesh perspective*, *International Journal of Adolescence and Youth*, 23:2, 219-234, DOI: 10.1080/02673843.2017.1330697
9. [^]Dawes, D., Amador, C., & Dunlap, N. *Determinants of Health: A Global Panacea for Health Inequities*. *Oxford Research Encyclopedia of Global Public Health*. Retrieved 1 Jun. 2024, from
<https://oxfordre.com/publichealth/view/10.1093/acrefore/9780190632366.001.0001/acrefore-9780190632366-e-466>.
10. ^{a, b, c}Perry HB, Chowdhury AMR. Bangladesh: 50 years of advances in health and challenges ahead. *Glob Health Sci Pract*. 2024;12(1): e2300419. <https://doi.org/10.9745/GHSP-D-23-00419>
11. ^{a, b}Quayyum Z, Begum T, Basnin B, et al. Health care financing. In: Chowdhury A, Ahmed A, Islam K, Moral S, eds. *50 Years of Bangladesh: Advances in Health*. University Press in association with Bangladesh Health Watch; 2023:302–329.
12. ^{a, b}Chowdhury AMR, Bhuiya A, Chowdhury ME et al. The Bangladesh paradox: exceptional health achievement despite economic poverty. *Lancet*. 2013;382(9906):1734–1745.
13. [^]UNICEF. *The State of the World's Children 2023: For Every Child, Vaccination*. UNICEF Innocenti – Global Office of Research and Foresight; 2023. Accessed December 7, 2023. <https://www.unicef.org/reports/state-worlds-children-2023#SOWC>
14. ^{a, b}Evaluating quality strategies in Asia–Pacific countries: survey results. WHO and OECD 2015
15. ^{a, b, c}Rahman MM, Islam MR, Rahman MS, et al. Forgone healthcare and financial burden due to out-of-pocket payments in Bangladesh: a multilevel analysis. *Health Econ Rev*. 2022 Jan 10;12(1):5. doi: 10.1186/s13561-021-00348-6. PMID: 35006416; PMCID: PMC8751265.
16. [^]data.worldbank.org
17. [^]World Health Organization (WHO). (2018). *Health service delivery profile: Bangladesh*. Retrieved from https://www.who.int/healthinfo/systems/WHO_MBHSS_2014_full_web.pdf
18. [^]Rajabi M, Ebrahimi P, Aryankhesal A. Collaboration between the government and non-governmental organizations in providing health-care services: A systematic review of challenges. *J Educ Health Promot*. 2021 Jun 30;10:242.
19. [^]Quayyum Z, Begum T, Basnin B, et al. Health care financing. In: Chowdhury A, Ahmed A, Islam K, Moral S, eds. *50 Years of Bangladesh: Advances in Health*. University Press in association with Bangladesh Health Watch; 2023:302–329.
20. [^]Ahmed, S. M., & Hossain, M. A. *Challenges and prospects of healthcare services in Bangladesh*. *International Journal of Business and Social Science* 2017; 8(3), 69-77.
21. [^]Al-Zaman MS. *Healthcare Crisis in Bangladesh during the COVID-19 Pandemic*. *Am J Trop Med Hyg*. 2020 Oct;103(4):1357-1359. doi: 10.4269/ajtmh.20-0826. PMID: 32828138; PMCID: PMC7543838.
22. [^]<https://www.worldbank.org/en/news/infographic/2018/04/04/social-safety-nets-help-reduce-poverty-and-income-inequality>

23. [^] Brown AF, Ma GX, Miranda J, et al. *Structural Interventions to Reduce and Eliminate Health Disparities*. *Am J Public Health*. 2019 Jan;109(S1):S72-S78.
24. [^] Purnell TS, Calhoun EA, Golden SH, et al. *Achieving Health Equity: Closing The Gaps In Health Care Disparities, Interventions, And Research*. *Health Aff (Millwood)*. 2016 Aug 1;35(8):1410-5
25. [^] Naher, N., Hoque, R., Hassan, M.S. et al. *Influence of corruption and governance in the delivery of frontline health care services in the public sector: a scoping review of current and future prospects in low and middle-income countries of south and south–east Asia*. *BMC Public Health* 20, 880 (2020). <https://doi.org/10.1186/s12889-020-08975-0>
26. [^] Hanf M, Van-Melle A, Fraisse F, Roger A, Carme B, Nacher M. *Corruption kills: estimating the global impact of corruption on children deaths*. *PLoS One*. 2011;6(11):e26990.
27. [^] Ilona Kickbusch. *The political determinants of health—10 years on*. *BMJ* 2015;350:h81
28. [^] Glynn EH. *Corruption in the health sector: A problem in need of a systems-thinking approach*. *Front Public Health*. 2022 Aug 24;10:910073.
29. [^] Rajabi M, Ebrahimi P, Aryankhesal A. *Collaboration between the government and non-governmental organizations in providing health-care services: A systematic review of challenges*. *J Educ Health Promot*. 2021 Jun 30;10:242.
30. ^{a, b} Ahmed SM, Majumdar MA, Karim R, Rahman S, Rahman N. *Career choices among medical students in Bangladesh*. *Adv Med Educ Pract*. 2011 Feb 14;2:51-8. doi: 10.2147/AMEP.S13451. PMID: 23745076; PMCID: PMC3661246.
31. ^{a, b} Amin, Z & Merrylees, N & Hanif, A & Talukder, M. (2008). *Medical education in Bangladesh*. *Medical teacher*. 30. 243-7. 10.1080/01421590801947010.
32. [^] Haque A, Cameron A, Rahman A et Al. *Integrating a community-based approach to non-communicable diseases care: a pilot programme in Bangladesh*. *Lancet* March 2022
33. [^] Angela de Silva, a, q, Siddiqui F, Hewitt C, Jennings H, et al. (2024) *Self-management of chronic, non-communicable diseases in South Asian settings: A systematic mixed-studies review*. *PLOS Glob Public Health* 4(1): e0001668.
34. [^] Varghese C, Amin MR, et a. *Non-communicable diseases in South-East Asia: journeying towards the SDG target.*, * . *Lancet* 2023
35. [^] Mohammadiaghdam, N., Doshmangir, L., Babaie, J. et al. *Determining factors in the retention of physicians in rural and underdeveloped areas: a systematic review*. *BMC Fam Pract* 21, 216 (2020). <https://doi.org/10.1186/s12875-020-01279-7>.
36. ^{a, b} Patel J, More S, Sohani P, Bedarkar S, et al. *Reshaping the equitable and inclusive access to healthcare: A qualitative study*. *Clin Epidemiol Glob Health*. 2024 Mar-Apr;26:None. doi: 10.1016/j.cegh.2024.101544. PMID: 38707587; PMCID: PMC11067480
37. [^] Santen SA, Feldman M, Weir S, Blondino C, Rawls M, DiGiovanni S. *Developing Comprehensive Strategies to Evaluate Medical School Curricula*. *Med Sci Educ*. 2018 Oct 30;29(1):291-298. doi: 10.1007/s40670-018-00640-x. PMID: 34457479; PMCID: PMC8368468.
38. [^] Zainal, H., Xin, X., Thumboo, J. et al. *Medical school curriculum in the digital age: perspectives of clinical educators and teachers*. *BMC Med Educ* 22, 428 (2022). [https](https://doi.org/10.1186/s12916-022-02428-9)
39. [^] Tumlinson, K., Jaff, D., Stilwell, B. et al. *Reforming medical education admission and training in low- and middle-*

income countries: who gets admitted and why it matters. *Hum Resour Health* 17, 91 (2019).

<https://doi.org/10.1186/s12960-019-0426-9>

40. [^]Datta V, Shukla A, Meena JL. Improving the quality of healthcare in resource-constrained settings: is improving undergraduate medical education quality the way out? *BMJ Open Quality* 2023;12:e002582. doi: 10.1136/bmjopen-2023-002582
41. [^]Siddiqui N, Khandaker SA. Comparison of services of public, private and foreign hospitals from the perspective of Bangladeshi patients. *J Health Popul Nutr.* 2007 Jun;25(2):221-30. PMID: 17985824; PMCID: PMC2754001.
42. [^]<https://www.thedailystar.net/opinion/views/interviews/news/health-services-deeply-troubled-corruption-lack-accountability-3366371>
43. [^]Gilson L, Agyepong IA. Strengthening health system leadership for better governance: what does it take? *Health Policy Plan.* 2018 Jul 1;33(suppl_2):ii1-ii4.
44. [^]Ahmed, S. M., & Hossain, M. A. (2017). Challenges and prospects of healthcare services in Bangladesh. *International Journal of Business and Social Science*, 8(3), 69-77.
45. [^]Drew JR and Pandit M. Healthcare leadership should embrace quality improvement. *BMJ* 2020;368:m872
46. [^]Goodair, B and Reeves A. The effect of healthcare privatization on the quality of care. *Lancet Public Health* 2024;9:e199-206.
47. [^]Adams AM, Ahmed SM, Evans TG. Universal health care in Bangladesh-promises and perils. *Lancet Glob Health*, 2018; 6:10-11
48. [^]Sheikh, N., Tagoe, E.T., Akram, R. et al. Implementation barriers and remedial strategies for community-based health insurance in Bangladesh: insights from national stakeholders. *BMC Health Serv Res* 22, 1200. (2022). <https://doi.org/10.1186/s12913-022-08561-7>
49. [^]Ibrahim MS, Mohamed Yusoff H, Abu Bakar YI, Thwe Aung MM, Abas MI, Ramli RA. Digital health for quality healthcare: A systematic mapping of review studies. *Digit Health.* 2022 Mar 18;8:20552076221085810. doi: 10.1177/20552076221085810. PMID: 35340904; PMCID: PMC8943311.
50. [^]Erku D, Khatri R, Endalamaw A, Wolka E, Nigatu F, Zewdie A, Assefa Y. Digital Health Interventions to Improve Access to and Quality of Primary Health Care Services: A Scoping Review. *Int J Environ Res Public Health.* 2023 Sep 28;20(19):6854. doi: 10.3390/ijerph20196854. PMID: 37835125; PMCID: PMC10572344.
51. [^]MAH Khan, VO Cruz, AK Azad. Bangladesh's digital health journey: reflections on a decade of quiet revolution *Health Information Systems Program (HISP) Bangladesh, Dhaka, Bangladesh. WHO South-East Asia Journal of Public Health | September 2019 | 8(2)*
52. [^]Navallo K and Detros K. Advancing the Digital Health Ecosystem in Southeast Asia. *Fulcrum.* Sep 2023.
53. [^]Runnels V and Carrera PM. Why do patients engage in medical tourism? *Maturitas* (2012), <http://dx.doi.org/10.1016/j.maturitas.2012.08.011>
54. [^]Zakaria M, Islam MA, Islam MK et al. Determinants of Bangladeshi patients' decision-making process and satisfaction toward medical tourism in India. *Front Public Health.* 2023 May 2;11:1137929. doi: 10.3389/fpubh.2023.1137929. PMID: 37200988; PMCID: PMC10185743
55. [^]Ganguli S and Ebrahim AH. A qualitative analysis of Singapore's medical tourism competitiveness. *Tourism*

Management Perspectives. Volume 21,2017, Pages 74-84

56. [^] Cortez N. *Patients without Borders: The Emerging Global Market for Patients and the Evolution of Modern Health Care. Indiana law Journal 2007. Vol. 83:71.*
57. [^] Johnston R et al. *What is known about the effects of medical tourism in destination and departure countries? A scoping review. International Journal for Equity in Health (2010)*
58. [^] Adeoye AO. *Assessing the associated medical, legal, and social issues in medical tourism and its implications for Nigeria. Pan African Medical Journal. 2023;45(14)*
59. [^] Schillinger D. *Social Determinants, Health Literacy, and Disparities: Intersections and Controversies. Health Lit Res Pract. 2021 Jul;5(3):e234-e243. doi: 10.3928/24748307-20210712-01. Epub 2021 Aug 7. PMID: 34379549; PMCID: PMC8356483.*
60. [^] <https://www.iqvia.com/insights/the-iqvia-institute/reports-and-publications/reports/scaling-up-inclusive-healthcare-initiatives-in-low-and-middle-income-countries>
61. [^] Marjadi B, Flavel J, Baker K, et al. *Twelve Tips for Inclusive Practice in Healthcare Settings. Int J Environ Res Public Health. 2023 Mar 6;20(5):4657. doi: 10.3390/ijerph20054657. PMID: 36901666; PMCID: PMC10002390.*
62. [^] [https://www.iqvia.com/insights/the-iqvia-institute/reports-and-publications/reports/scaling-up-inclusive-healthcare-initiatives-in-low-and-middle-income-countries.](https://www.iqvia.com/insights/the-iqvia-institute/reports-and-publications/reports/scaling-up-inclusive-healthcare-initiatives-in-low-and-middle-income-countries)