

# Green Healthcare: Challenges and Opportunities in Pakistan

## 1. Introduction

Green healthcare is the smart way of integrating procedures that provide sustainable solutions for environmental ecosystems. This sustainable approach is the means to minimize and control the carbon footprint of medical institutions. At the same time, it aims to enhance patient well-being and welfare. Green healthcare stresses that energy and natural resources should be utilized to ensure maximum utility and minimum waste and ecological damage.

Furthermore, sourcing equipment, technology, and infrastructure that supports and enables sustainable medical facilities is the key pain point in the implementation of green healthcare. It requires systems which are beneficial to reduce operational expenses, advance public health services, and employ renewable or alternate energy. Hospital waste management is also among the top priorities of green healthcare initiatives. The aim is to develop ecologically safe spaces and to safeguard against climate risks.

## 2. Key Green Healthcare Practices

Any healthcare facility following green health practices delivers top-quality services and ensures that it prevents and minimizes its harmful consequences on the environment. This is achieved through the planned usage of renewable energy, reduction of plastic waste, water conservation, and green waste management and treatment.

**a) Energy Efficiency:** A huge amount of energy is consumed by hospitals and healthcare facilities to operate heavy equipment, continuous lighting, and centralized air conditioning and ventilation systems. Instead, green healthcare employs power-saving technologies that use smart ways to decrease energy consumption, with sensors to manage lighting, and to monitor temperature control through advanced HVAC systems.

**b) Waste Management:** Hospitals produce different kinds of waste in large quantities. This includes two broad categories: hazardous and non-hazardous waste. The first type of waste comprises biomedical waste, which is dangerous and can cause contamination and spread disease. Waste such as chemical, pharmaceutical, pathological, sharp instruments, and radioactive materials are all part of this category. The general waste is non-hazardous and includes daily items such as paper, food, packaging, etc.

A systematic waste management and recycling protocol is crucial to ensure patient and general safety. In facilities following green healthcare, the waste is treated through sustainable means to mitigate ecological contamination and responsibly recycled to reduce landfills and prevent air and plastic pollution.

**c) Water Conservation:** Healthcare requires tons of water on a daily basis to operate efficiently. However, given the scarcity of water resources, responsible use is critical. A good green healthcare approach would be to implement technologically intelligent water manage-

ment practices to prevent waste. Additionally, water consumption can be reduced through low-flow fixtures and sensor-based faucets. Moreover, wastewater can be recycled for reuse in cooling equipment. An on-site Wastewater Treatment Plant (WWTP) is a great way to recycle water.

### d) Paperless Systems:

Green healthcare is all about giving priority to sustainable healthcare needs and safeguarding natural resources for future generations. Paperless systems are one method that healthcare facilities can adopt to efficiently contribute to preserving the environment. Electronically smart solutions for record keeping, patient information, billing, and administration data significantly reduce the carbon footprint of the healthcare organization and minimize the use of paper that adds to waste material.

## 3. Green Healthcare in Pakistan

In Pakistan, healthcare is facing numerous challenges and drawbacks that prevent it from providing adequate facilities and healthcare solutions to its nationals. It is reported that Pakistan loses about USD 47.8 billion or 5.88% of its GDP in healthcare costs annually. Moreover, 22,000 premature deaths are reported due to poor air quality. Pakistan is critically behind in the race among Asian regions that are heavily investing in sustainable health systems and policies. Furthermore, Pakistan is among the few nations to enjoy "on track status" on SDG 13 on Climate Change. Despite the progress, Pakistan is at risk of major climate changes. Moreover, it lies in the 5th place in the list of countries most vulnerable to climate tragedies. Incidents such as heat waves and smog have had a huge impact on the people of Karachi and Sindh.

## 4. Challenges in Green Healthcare

**a) Financial Constraints:** Scarcity of financial and funding sources is one of the most challenging aspects of adopting green healthcare. The transformation from traditional infrastructure to a sustainable one requires large funding and substantial investment. The cost of alternative energy generation, such as solar units, is also high. Therefore, the financial barriers restrict and slow down the transition.



**Faraz Ahmad Memon, FCMA**  
Director,  
Risk Management & Costing  
Patel Hospital, Karachi

- b) Infrastructure Gaps:** Although many medical facilities plan to adopt green healthcare practices, their own infrastructure falls short for this transition. The existing infrastructures display problems such as old building designs that are inadequate to sustain modern green standards. Moreover, upgrading the structure would itself incur hefty financial costs along with more environmental damage due to building and construction.
- c) Policy Alignment:** The standard monitoring and regulation policies implemented in hospitals pose a misalignment challenge with green practices. Sustainable healthcare facilities are only possible if they follow the stringent safety protocols of the medical institutions and the sector. Therefore, it becomes a challenging and time-consuming task to ensure alignment of green practices with institutional policies.
- d) Resistance to Change:** Traditional organizations and leadership are generally resistant to change. Therefore, transformation of the mindset is critical before a physical or operational change. The first step is to ensure that the leadership team is fully onboard with sustainability. Green healthcare practices should be included in the vision and mission statements of organizations and become part of the overall narrative. Without management's ownership of the sustainability initiative, there will be no acceptance from the employees. Additionally, the staff who are already comfortable with traditional medical practices would show reluctance to learn and adopt green practices. Employee awareness, training, and upskilling are major hurdles to achieving sustainable healthcare.
- e) Supply Chain Issues:** In countries like Pakistan, where green healthcare is still somewhat a nascent concept, sourcing sustainable building materials is a challenge. It also includes the financial aspect, as green construction resources will cost more than traditional building materials.
- f) ROI Concerns:** Converting to green healthcare is subject to the availability of funds for investing in sustainable civil infrastructure along with supporting technology and employee development. It calls for a comprehensive and overall transformation from traditional to transformative practices. However, hospital management, stakeholders, and investors are often concerned about Return on Investment (ROI). Therefore, investor fear and reluctance is a major hurdle in adopting green healthcare. Decision-makers expect a clear timeline and action plan that ensures their investments will bring them favorable returns.

## 5. Healthcare Financial Crisis

Pakistan is under severe financial crisis for a long time. Therefore, insufficient funds act as a hindrance in numerous sectors, such as health and well-being. Pakistan is reported to be behind India (USD 57), Ghana (USD 85), and Philippines (USD 165) with only USD 38 per capita spending on healthcare in 2022. The inadequacy explains the below-par state of healthcare and medical facilities in the country. It's also the reason behind the unavailability of qualified medical practitioners in remote and far-flung areas.

- a) Unequal Fund Distribution:** Pakistan has an unequal distribution of medical resources as reported in the Community Health Index (CHI). Pakistan obtained a score of 16.59, which shows that top-order districts are 16.59 times more healthy than low-tier regions. Simultaneously, rural areas are in dire need of quality equipment, diagnostic facilities, and urgent patient care.
- b) Universal Health Coverage:** World Health Organization (WHO) introduced Universal Health Coverage (UHC), which works and promotes the provision of equal healthcare to people despite their financial standing. UHC is part of the Sustainable Development Goal 3, which emphasizes health. Moreover, Pakistan has taken several steps to make an active contribution towards attainment of SD Goals by 2030.
- c) Sehat Sahulat Program:** Pakistan's Sehat Sahulat Program (SSP) is one such initiative towards SD Goal 3. SSP is a public health insurance program for deserving Pakistani nationals. The vulnerable communities in Khyber Pakhtunkhwa (KPK) province were the first to receive health insurance under the SSP program in 2015. The government launched SSP in other provinces by 2019. The Government of Pakistan (GoP) is the primary investor of the program, and the Ministry of National Health Services Regulations and Coordination (MNHSRC) is responsible for spearheading its smooth implementation and daily operations.

## 6. Conclusion

Green healthcare is not a buzz word anymore, rather it has become a worldwide issue to ensure sustainable health and well-being. Alternate energy consumption, reduced carbon footprint, ecological waste management systems, and water recycling are among major aspects of global green healthcare. However, there are challenges too, such as limited investment, change resistance, procurement issues, and policy regulation. For Pakistan, sustainable healthcare is still a novel concept. Programs like SSP are great initiatives that contribute towards affordable healthcare, which is a good sign. Nonetheless, issues such as uneven resource distribution are hurdles in the way of achieving sustainable healthcare to its full potential.

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**About the Author:** **Faraz Ahmad Memon**, a Fellow Member of ICMA, is Director of Risk Management & Costing at Patel Hospital, Karachi, and serves on its EC-Finance Committee. He has over 24 years of experience across healthcare, food and retail, and the garment sectors, with expertise in business transformation, risk management, internal controls, financial management, budgeting, and costing. He is pursuing an MBA (Healthcare) from the Institute of Business & Health at Dow University of Health Sciences.