Editorial

Sustainable Healthcare Practices in Low-and-Middle-Income Countries: The Pakistan Perspective

Allied Medical Research Journal
Vol:3 No.1: 1-2

Shujaat Hussain Memon

Isra Institute of Rehabilitation Sciences, Isra University, Hyderabad, Pakistan

The global shift to sustainable healthcare presents specific challenges in Low-and Middle-Income Countries (LMICs) and therefore deals with context-specific solutions. *Pakistan*—a country with more than 220 million people and a multi-dimensional and multi-layered complex healthcare landscape has both the challenges and possibilities in the movement toward sustainable healthcare that balances environmental sustainability and health improvement.

Pakistan's healthcare system is severely constrained in its resources. Approximately 3% of GDP is designated for its healthcare—far below international recommendations[1]. These stringent conditions have produced an ironic condition where sustainable practices emerged as a necessity instead of a luxury. The challenge will be to establish these approaches as the norm while addressing the access gaps in healthcare delivery.

Community-based healthcare service delivery is a potentially sustainable community initiative in Pakistan. The Lady Health Worker (LHW) program provides basic healthcare services at the doorsteps of households in rural communities through over 100,000 workers. The zero-carbon (or low-carbon) service delivery approach achieves community health goals while prompting access to health services, removing unnecessary travel to far-off healthcare delivery points, and focusing on preventive care[2].

Email: shujaat.memon@isra.edu.pk

DOI: https://doi.org/10.59564/amrj/03.02/001

That said, a systematic evaluation of these programs using sustainability measures is still in its infancy. Management of pharmaceutical waste leaves another vital sustainability challenge. A survey of the tertiary hospitals in Karachi found that only 22% of the facilities had effective waste disposal policies for pharmaceutical waste[3].

Most facilities will typically engage in practices contaminating water resources with active pharmaceutical ingredients. Releases into the environment from municipal wastewater or incineration operations are probably the source of long-term environmental and public health impacts to follow. Some low-cost waste segregation interventions could also be applied nationally, as demonstrated by the pilot projects implemented in district hospitals in Punjab.

Telehealth also poses a potential area for sustainable healthcare delivery in Pakistan. Balochistan, Sindh, and Khyber Pakhtunkhwa implemented telehealth programs during COVID-19 that vastly reduced patient-related travel emissions and created continuity of care. Female physicians provided virtual consultations from homes to underserviced areas in communities, as was evident in a project delivered through the Sehat Kahani platform. It is hard to quantify, but the Sehat Kahani intervention represents social change and advancement of gender equity while at the same time providing better access to care and a reduced environmental footprint[4]. Digital health, which allows health system change, will require an investment commitment to the country's digital infrastructure, which could bring sustainable health system returns over time.

Energy solutions for healthcare facilities in areas off the electricity grid provide another area of innovative progress. In Balochistan and Khyber Pakhtunkhwa, solar-powered refrigeration for vaccine storage contributes to increased vaccination rates since health facilities will rely less on the electrified grid, which may be intermittent, or diesel generators, which are environmentally costly[5]. The broader application of these sustainable energy use models in healthcare could potentially sit alongside other renewable energy applications in Pakistan's health infrastructure.

For Pakistan to support a sustainable healthcare agenda, it will need proper policy support, alignment with global frameworks, and localization strategies for implementation. While the Ministry of Health's Green Healthcare Initiative is an encouraging first step, it must be implemented with working mechanisms and appropriate funding sources for meaningful change. Collaborative partnerships between healthcare providers, environmental agencies, and multinational agencies will also be required to facilitate knowledge sharing and provide technical support for sustainable transitions.

In emphasizing sustainable healthcare practices with contextual factors unique to Pakistan, improvements can be made in the quality of care, negative environmental health externalities, and delivery system resilience. This approach has benefits not only for Pakistan but also for other LMICs facing similar resource constraints and environmental challenges.

REFERENCES

1. Nasir J. The Problem of Public Health Care. In: Development Challenges of Pakistan: Constraints and Choices. Singapore: Springer Nature Singapore; 2024. p. 115-156. **DOI:** https://doi.org/10.1007/978-981-97-3064-3_5
2. Khattak AF, Rahman AU, Khattak M, Qazi M, Gilani H, Khan A, et al. Toward sustainable healthcare systems: a low and middle-income Country's case for investing in healthcare reforms. Cureus. 2023 May 22;15(5) **DOI:** https://doi.org/10.7759/cureus.39345
3. Alam S, Fatima A. Prospects for the Development of Solid Waste Management System: A Case Study of Metropolitan City Karachi [Internet]. Presented at: RASTA Conference; 2022 Mar 28-29; [location unknown]. Islamabad: Pakistan Institute of Development Economics; 2022 [cited 2025 Apr 30]. (CGP#154). Available from: https://rasta.pide.org.pk
4. Batool S. Solar Energy Development in Pakistan: Barriers and Policy Recommendations [Internet]. **DOI:** http://10.250.8.41:8080/xmlui/handle/123456789/46712
5. Lingam L, Bhushan A, Kumar R. A Gender Perspective on Health Policies and Programs: An Overview of Frameworks and Experiences. Handbook on Sex, Gender and Health: Perspectives from South Asia. 2024 Nov 12:1-44.