URBAN DIGITAL HEALTH

Insights from India, Bangladesh, and Nepal
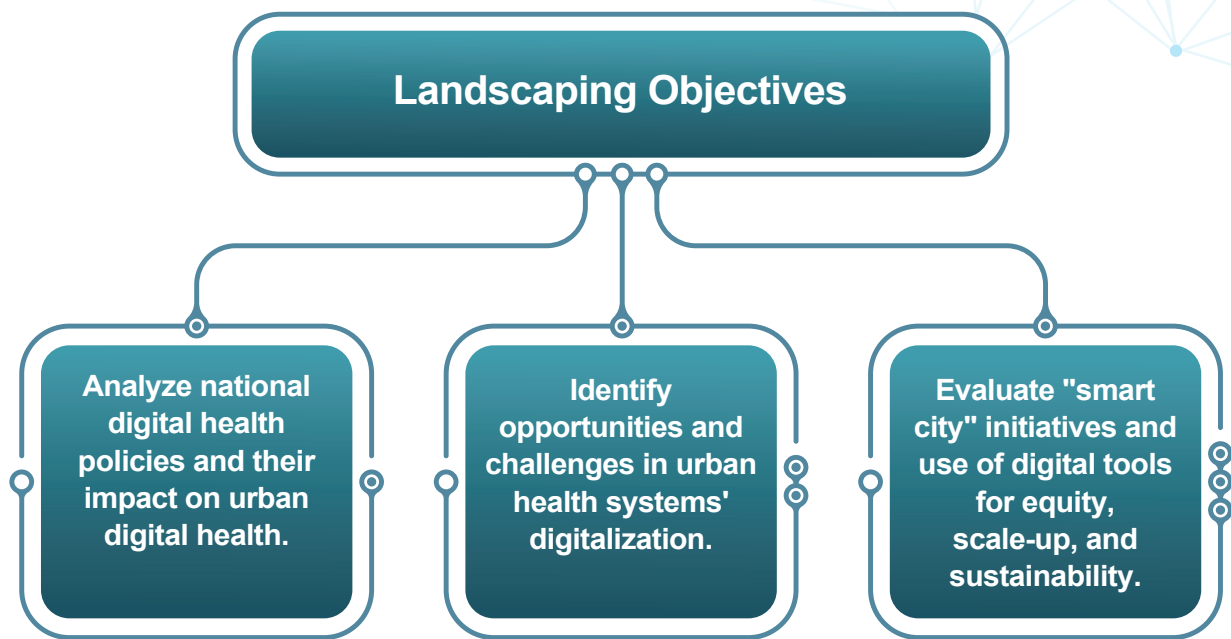
Executive Summary

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Background and Report Overview

The COVID-19 pandemic emphasized the importance of digital health and strong digital infrastructure in enhancing a country's resilience and response to crises, particularly in low- and middle-income countries (LMIC). With the projected global population reaching 9.7 billion by 2050 and urban residency expected to grow to 64%, city-level health systems in LMICs will face significant challenges. Therefore, there is a critical need to understand the current state of digital health policies, tools, and initiatives in urban spaces. To address this need, the Digital Square initiative at PATH, with support from the United States Agency for International Development (USAID) Bureau for Asia, conducted a landscape analysis of the digital health ecosystem in five cities across three Asian countries: Ranchi and Imphal, India; Chattogram and Sylhet, Bangladesh; and Kathmandu, Nepal.

The landscaping exercise had three core objectives: (1) outline the national digital health policies across the three countries and explore how these policies influence urban digital health; (2) identify digital health opportunities and challenges unique to urban health systems, focusing on equity, quality, resource optimization, and resilience; and (3) explore how smart city initiatives (where applicable) and national and municipal health authorities leverage digital tools and lead digital transformation efforts, with considerations for health equity, scale-up, and sustainability.

To conduct the landscape analysis, Digital Square employed qualitative research methods to gather and analyze data. The methodology first included a high-level desk review of a few key country level documents to contextualize downstream activities such as interview guides and the overall report structure. This was followed by a focused desk review of country specific documentation and 30 in-depth stakeholder interviews, evenly distributed across the three countries and various governance levels, to elicit insights into challenges and opportunities in the urban digital health ecosystem. The team also consulted with USAID country and regional experts to ensure accuracy and completeness of the findings.

The core analysis of this report is covered in the sections "Digital Health Policy Review" and "Digital in Urban Health", respectively. Each section concludes with relevant findings by way of summary. The policy review focuses on providing insights into national- and state-level policies, digital initiatives, and relevant governance around digital health, while the section on digital in urban health delves into the five focus cities and explores the relationship between digital health and aspects of equity, quality, resource optimization, and resilience at the urban level. The report then concludes by synthesizing information from the previous sections and shares actionable learnings and recommendations with the reader.

Landscaping Objectives

Analyze national digital health policies and their impact on urban digital health.

Identify opportunities and challenges in urban health systems' digitalization.

Evaluate "smart city" initiatives and use of digital tools for equity, scale-up, and sustainability.

Findings

South Asian countries are increasingly recognizing the importance of digital infrastructure and making significant progress in developing their digital health policy landscape, positioning them as important players in the global digital health ecosystem. Despite challenges, the strides made in South Asia's digital health policy landscape provide promising indications of future growth and leadership in this field.

The policy review reveals that the adoption of digital policies and technologies in public health care varies across these three countries. The maturity of digital health depends on factors such as the existence of a digital health strategy, national-level electronic health record generation, a focus on interoperability, and mandated institutions with specific digital remits. Our analysis indicates that India, Bangladesh, and Nepal are moving toward a digital health ecosystem approach at the national level, with varying degrees of progress at subnational levels. India has designated digital health funding, empowered a digital health institution, and rolled out a foundational digital infrastructure, whereas Bangladesh and Nepal are in the process of taking these steps.

At the city level, the "Digital in Urban Health" section highlights growing salience and interest in harnessing digital tools among patients and health workers in Ranchi and Imphal (India), Chattogram and Sylhet (Bangladesh), and Kathmandu (Nepal). Municipal governments and city-level organizations are implementing context-appropriate digital technology, including for underserved populations. Efforts are also focused on improving the responsiveness of health care systems through legacy digital systems that enhance timeliness, quality, and reporting of data and processes.

We observed a continued high dependency of city-level health systems on the private sector and an imbalance between the capacities available and those required from public health workers. Additionally, health worker capacity building with respect to digital health continues to be a clear area of concern. While our focus cities have shown the ability to adapt their health systems to changing environments, the absorptive capacity of city-level systems appears to be weak. Challenges, including the gendered digital divide in accessing urban health care, a siloed approach to digital health and lack of interoperability of existing systems remain relevant.

Key Learnings

Our comprehensive review of digital health policies, in-depth analysis of urban health, and interviews with key stakeholders yielded eight important insights:

1 Urban health systems in the three focus countries struggle to provide sufficient and high-quality primary health care due to rapid and unplanned urbanization. However, digital infrastructure, such as electronic health records, facility and health worker registries, and a strong focus on interoperability, can help overcome these challenges.

2 Capacity building and increased staffing are vital prerequisites for deploying digital tools in public health. Urban health workers currently lack the necessary resources to fully leverage digital tools, hindering their potential to enhance work efficiency and reduce workload. Addressing these underlying challenges is crucial for successful implementation of digital health solutions, ultimately alleviating the burden on health workers and improving equity and quality in public health.

3 Engaging the private sector in digital health initiatives can enhance universal health coverage and address existing gaps in public health. However, it is crucial to monitor their involvement to ensure service quality and alignment with comprehensive efforts.

4 Data and technology at the city level is primarily being used to improve how cities adapt and respond once a shock (such as a pandemic or natural disaster) has occurred. However, technology and data must now be leveraged to improve how cities prevent, prepare for, and absorb the initial brunt of these adverse events.

5 Digital solutions alone cannot address the complex challenges facing urban health systems in the three focus countries. Investing in underlying crosscutting factors outside of the health sector, including smart city infrastructure, integrated command and control centers, scalable digital infrastructure, and smart grids is crucial. Further, policy and regulatory frameworks and effective public-private partnership models are also essential when building resilient urban health systems.

6 Customized approaches to national digital health that acknowledge the unique characteristics and nuances of each focus country, along with the comfort level of its citizens, are essential. While similarities exist, they should serve as a means for cross-border learning, exchanging best practices, and gaining insights into successful strategies, rather than aiming for uniformity.

7 Current data privacy and protection policies are either aged, simplistic, or contested. The focus countries should prioritize the improvement of comprehensive regulations to ensure responsible use of health data, build trust in digital health systems, and safeguard personal information for patient-centered care and population benefit.

8 Interoperability in our focus countries can be achieved through different approaches, not necessarily involving the integration of legacy systems. Leapfrogging older systems entirely and building core digital health infrastructure that is interoperable by design can be a viable option depending on the circumstances. Thus, considering both integration and leapfrogging strategies as pathways to achieve interoperability is crucial.

Recommendations

Municipal health authorities, the USAID Asia Bureau, USAID cross-sectoral communities of practice, and Asia Resilient Cities implementing partners can use these learnings to inform investment decisions, actions, and further research. The report highlights the following actions that we recommend be taken by donors, policymakers, and urban health ecosystem actors:

Conduct further research on how digital solutions can reduce out-of-pocket expenses and improve the financial sustainability of urban health systems (e.g., the growing use of digital health financing mechanisms and telemedicine to reduce health care costs and improve access to care).

Conduct further research into proxy access to digital tools for secondary caregivers, such as family members, to drive equity. Improving our understanding and developing user-friendly digital tools that enable these caregivers to deliver more effectively will help drive equitable health.

Conduct further research to deepen the understanding of gender dynamics in digital access, use, and impact, as well as a strengthen the collection and analysis of gender-disaggregated data, to help inform the development of a gender-transformative digital health strategy and guide targeted interventions for women and girls.

Make investments in smart city technologies that have the potential to enhance the public health ecosystem, improving health care delivery, access to care, and overall population health outcomes (e.g., scalable digital infrastructure, practical artificial intelligence applications, telehealth services, and integrated information systems).

Develop city-level One Health roadmaps, that leverage digital health based on existing national-level policies and guidance. The focus cities are undergoing transformative trends, necessitating integrated approaches that will help bolster their health systems.

Pilot resilience-focused early warning systems leveraging available databases and existing smart city infrastructure at the intersection of digital health and climate change. This could help mitigate the impact of non-health shocks and stressors. The pilot projects can be crucial in identifying best practices and informing further investments in digital health.

In conclusion, these insights into the digital health landscape in South Asia emphasize the potential of digital solutions to enhance urban health systems and outcomes. Future research can leverage our deep dive into these five cities to contribute to the growing knowledge base supporting the development of smart city approaches for advancing universal health coverage in South Asia.