Healthcare in Pakistan: The Case of Technology, Innovation, Entrepreneurs, and Institutions

Policy Brief

Acknowledgements

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1. Context

Pakistan has made significant progress in improving healthcare service delivery and is gradually joining the wave of digital transformation. The major service provider in the country is private sector with a share of 60%, followed by the public sector with a contribution of 30% and 10% by philanthropic and non-profit sector. A pertinent point to note is that out of pocket expenses of households constitute 90% of the total private expenditure in healthcare. The public sector has greater outreach in rural and remote areas through a network of primary healthcare facilities and a field force of lady health workers (LHWs). Despite the presence of public sector in primary care facilities in remote areas, quality healthcare is not accessible to citizens. The availability of qualified and specialist medical practitioners is concentrated in urban metropoles. The scale of these challenges is growing exponentially owing to rapid population growth as it exerts the pressure on healthcare services across the country. The conventional tools and approaches are not addressing the evolving needs, whereas, the technological solutions offer a massive opportunity to address the challenges at scale whether its data needed to devise policies or offering patient care to citizens in remote villages. The innovation in healthcare technology has expanded the frontiers of healthcare service delivery across the globe. Startups and small and medium enterprises are creating new products to offer a wide range of services ranging from hosting virtual consultations, offering medical advice to patients, dispensing drugs, to manufacturing prosthetics etc. The countries with conducive environment for technology entrepreneurs and adoption of emerging technologies are eventually attaining the goals of quality healthcare service delivery. Pakistan cannot miss this opportunity and therefore need to embark on the journey of digital transformation in healthcare sector.

2. Challenges & Opportunities

The healthcare landscape in Pakistanis faces tremendous challenges ranging from providing universal healthcare coverage (UHC), meeting the minimum service delivery standards, availability of credible data, to financing the services. The challenges also offer massive opportunities for innovation and bringing large scale impact into the lives of citizens and particularly the marginalised and vulnerable groups. The technology enabled enterprises are well placed to offer scalable and sustainable solutions to address these challenges owing to their widespread outreach and rapid speed of adoption. The World Health Organisation (WHO) outlined six building blocks of healthcare systems i.e. human resource, Health Management Information System (HMIS), healthcare financing, services (lab, radiology etc.), leadership and governance (Policy & Frameworks), and supplies. The subsequent sections elaborate the challenges and opportunities in each of these areas:

2.1 Human Resource in Health

The healthcare sector is host to diverse categories of human resource ranging from medical doctors, nurses, biomedical engineers, technicians, to cleaners. The availability of well-trained resources remains a challenge to date. Moreover, the concentration of investment and efforts to produce medical doctors has taken away the attention from allied health professionals. There are limited number of skills providers in the country for allied healthcare staff and those utilising the digital tools are negligible. Therefore, the regulators and institutions need to optimally utilise the potential of technology to train the human resource be it certifications, pre service and in-service trainings. This include leveraging technology-based solutions and tools to train the human resource at scale. Furthermore, this will also entail formal recognition of the institutions and the courses they offer. These programmes can exploit the potential of capable individuals in remote areas at marginal cost than the traditional modes.

2.2 Health Management Information System (HMIS)

The availability of accurate and timely data is essential for effective diagnosis, treatment, disease surveillance, emergency preparedness, planning, and effective decision making. This is only possible with a well-functioning HMIS that captures relevant information at the level of healthcare facilities. These systems enable healthcare providers to collect, store, manage, and analyse health-related data, such as patient information, clinical, and financial data. Thereby, helping the healthcare providers and policy makers to make informed decisions by providing **real-time data** and analytics.

Thus, they play a crucial role in improving the quality, efficiency, and effectiveness of healthcare services.

The adoption of digital tools is so slow in Pakistan as there is no centralised and digital HMIS in the country, and even the leading private sector tertiary care hospitals lack a well-functioning HMIS. The public sector in Pakistan uses a manual tool named District Health Information System (DHIS) for collection and analysis of data, which compromises the accuracy and timeliness. There is a dire need of digitalising all the healthcare facilities across the country in public, private, and non-profit sectors; this will eventually pave the way for a robust HMIS. There are examples in the country whereby regulators like Federal Board of Revenue (FBR) have not only ensured that the private sector uses softwares but also integrated it with the national databases for real-time access. A similar approach is need in the domain of healthcare by onboarding practice management software companies to pave the way for national HMIS.

2.3 Health Financing

The healthcare financing is a multidimensional and critical component that requires immediate attention as it impedes the ability to provide quality healthcare services. One of the core challenges is inadequate public funding for healthcare, which has led to an underfunded and poorly equipped healthcare system. In addition, the government's spending on healthcare is highly concentrated in urban areas, leaving rural populations with limited access to healthcare. As a result, majority of citizens are unable to access essential healthcare services, and those who do often face high out-of-pocket expense. Therefore, to address these challenges, Pakistan needs to increase public spending on healthcare, and scale up the national health insurance system that ensures universal health coverage for all citizens.

Another dimension of healthcare financing is the foreign and private sector investment in the sector. With the growing number of investors and entrepreneurs recognizing the potential of the healthcare sector, the investment climate for healthcare startups in Pakistan is rapidly evolving. However, the investors' confidence has been shattered due to high degree of volatility and uncertainty, lower returns on investment, and regulatory hurdles. It is evident from the fact that there are only twelve private equity funds in the country with only one domiciled in Pakistan. Therefore, institutional arrangements need to be made on priority basis to facilitate investors to attract financing. They need to be offered security of their investments and ease of doing business.

2.4 Leadership & Governance (Policy & Frameworks)

Effective leadership and governance is pivotal to strengthen health systems, improve accountability and transparency, and mobilize resources to support sustainable health development. The institutional policies and regulatory frameworks are instrumental for harnessing the potential of startups, and early stage entrepreneurial initiative to develop and grow. The policies that support research and development (R&D) and innovation can help to promote the creation of new startups in the healthcare sector. The establishment of Offices of Research, Innovation, and Commercialisation (ORIC) across higher education institutes is a great step towards this, however, they are not operating at their optimal levels to innovate and deliver products to solve local problems. Additionally, policies that promote public-private partnerships can help to facilitate collaboration between startups, academic institutions, and government agencies, leading to increased innovation and knowledge-sharing.

Furthermore, the regulatory frameworks that provide clear guidelines and standards for product development and approval can help to ensure that startups meet the necessary requirements to bring their products to market. The procedural inefficiencies of regulatory frameworks discourage the new actors. A case in point is that FBR has not even granted access to startups to file their taxes directly online into national database using Pakistan Revenue Automation Limited (PRAL). The facilitation from all of the three key institutions is crucial for ease of doing business for technology entrepreneurs and eventually innovation in Pakistani market and this include:

1. State Bank of Pakistan (SBP)

2. Federal Board of Revenue (FBR)
3. Securities & Exchange Commission of Pakistan (SECP)

These institutions need to adopt a more collaborative approach by engaging in dialogue with the entrepreneurs, understand their operational and strategic needs, and adapt the policies and frameworks to enable their growth. Thus, the leadership of these institutions need to create an environment of stimulus for startups and entrepreneurs that are leveraging digital technologies.

2.5 Service Delivery

The delivery of healthcare services in Pakistan is impacted by the inadequate healthcare infrastructure and shortage of healthcare professionals, particularly in rural areas. Additionally, there are significant disparities in healthcare outcomes across different socioeconomic groups. Despite these challenges, there are ongoing efforts to improve healthcare service delivery, including investments in healthcare infrastructure, workforce development, and digital health technologies. Entrepreneurs are leveraging technology to address these challenges through telemedicine. The permission for emergency use of telemedicine during Covid-19 generated positive results and improved access to outpatient consultations. However, the progress in this sphere is hampered due to unavailability of national policy on telemedicine. The regulators and ministry of national health need to catalyse the efforts of technology entrepreneurs in this sphere as this has the potential to reduce the burden on secondary and tertiary healthcare facilities and reducing the disease burden at scale. Even large scale integration of telemedicine in the outreach activities of primary healthcare led by Lady Health Workers (LHWs) can bring transformative changes in prevention of diseases at early stages.

2.6 Medicine & Supplies

Medicine and supplies are essential components of the healthcare sector, as they are necessary for the prevention, diagnosis, treatment, and management of diseases. The availability and accessibility of medicine and supplies can have a significant impact on the quality and effectiveness of healthcare services. Whereas, they key players operating in this segment often face procedural delays. The manufacturers and importers of critical drugs face challenges in registration process and setting prices; the process at Drug Regulatory Authority Pakistan (DRAP) can be streamlined to fast track these steps.

Furthermore, the steady supply of medicine and supplies requires provider networks throughout the country. The innovation through technology has enabled to expand the outreach in remote areas by establishing digital provider network whereby patients can place orders online. These technological advances are crucial for improving access to quality medicine. Furthermore, the innovation in local manufacturing of durable medical equipment e.g. Prosthetics was unheard of in Pakistan. There is a massive potential of not only meeting the local demand for prosthetics but also to export these in international market. The entrepreneurs need enabling environment to realise the potential in this area.

3. Policy Recommendations

Considering the regulatory and institutional arrangement in Pakistan, this section outlines critical steps needed to create an enabling environment for early stage companies and technology entrepreneurs to solve large scale healthcare problems.

3.1 Senior Political Leadership

The political leadership needs to take bold decisions to facilitate the technological advances and maintain continuity of policies.

› Promulgating the data protection and information security laws and ensure compliance from the local and global practice management companies to offer improved security of patient data.

› Developing local digital infrastructure to host public data in the form of centralised national health registry.

› Creating safety nets for investments and business continuity to facilitate local and international investors in the domain of healthcare technology. This can be in the form of tax breaks, tariff reduction, smooth process for registration and ease of doing business. Furthermore, the continuity of policies and incentives for agreed tenure will generate confidence among the investors.

› Removing barriers for entrepreneurs and companies for importing essential medicines, supplies and equipment needed to treat critical illness e.g. cancer. This may include reducing tariff, streamlining the processes for obtaining No Objection Certificates (NOCs), and licences.

3.2 Institutional Actors

A wide range of institutional actors are associated with the healthcare landscape; ranging from the ministries, regulators, research institutions to and foundations providing funds. The institutional buy-in and collaboration is critical to scale up the innovative solutions developed by tech entrepreneurs.

› The ministry of national health along with provincial health departments need to conduct a diligent review of the policies, frameworks, conduct of business rules, and procedures to remove any articles or clauses that hinder the technological adoption across the sector including, private, public, non-profit institutions.

› Enhancing and strengthening the coverage of mobile data in remote areas particularly at least at fixed public medical centres e.g. Basic Health Units. The 3G/4G connectivity serves like oxygen for any digital intervention and particularly for HMIS. This will involve cross ministerial collaboration with telecom service providers to ensure internet coverage by at least one provider at these centres.

› Providing concessional financing to early stage technology companies to innovate and scale in Pakistan. This can be achieved by optimally utilising the platforms like Special technology zones Authority (STZA) and National Science and Technology Park (NSTP). They can serve as steward and one window in the process of innovation, deployment, scale up, and particularly connecting all the stakeholders.

3.3 International Development Partners

The international development partners need to keenly observe the technology and entrepreneurial landscape in Pakistan. They can bring in international expertise to local market and a starting point can be to:

› Allocating at least 5% of their funds of large scale healthcare programs for healthcare technology and supporting small and medium entrepreneurs.

› Offering technical support by connecting incubators, accelerators, entrepreneurs, and investors with individuals in their home countries for peer to peer learning.

Annex: List of Participants

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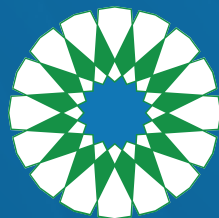
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Accelerate Prosperity is a global initiative of the Aga Khan Development Network (AKDN) in Central and South Asia which offers creative financial solutions as well as pre and post investment technical assistance to help grow early-stage businesses, startups, and innovative ideas.