Aga Khan Health Services

Afghanistan: Aga Khan Health Service, Afghanistan
Digital health – Carbon-friendly and Cost-effective Delivery of Quality Health Services to Remote Areas

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The Aga Khan Health Service, Afghanistan (AKHS, A), is committed to reducing carbon emissions and achieving net zero by 2030. AKHS, A operates a hub-and-spoke healthcare model, with main facilities (hubs) and satellite facilities (spokes) serving both urban and remote populations in Afghanistan. However, challenges remain in reaching underserved communities in remote regions. These include: the geography with high mountain terrain, harsh winters with heavy snow, security concerns, high travel costs, long distances, and unpaved roads. These factors have made it difficult for patients from spoke facilities to access specialised care at hub facilities. Some health centres are located up to 21 hours away by road, necessitating an overnight stay during the journey between spoke and hub facilities.

To partly overcome these challenges, the AKHS, A initiated the digital health program through the AKDN Digital Health Resource Centre that is located at the Aga Khan University (AKU) in Karachi. The initiative was phased as described below[1]. In the hub-and-spoke model at AKHS, A, this program connects facilities across 10 districts in Afghanistan.

AKHS, A used the AKDN carbon management tool to track emissions and document how digital health lowers carbon emissions and saves finances while also improving the delivery of quality healthcare services.

[1] The initiative began in 2007 with teleradiology: CT scan and MRI images were sent to AKU for reporting and quality checks. Since 2008, various e-health sites have been established across its network, equipped with the necessary tools and staffed by dedicated focal persons. In 2010, three additional interventions - live teleconsultation, telepathology, and eLearning - were incorporated into the digital health program covering various medical specialities. eLearning includes online sessions designed to build the capacity and empower health professionals, particularly in spoke facilities. Components include increased knowledge, clinical, and managerial skills while familiarising them with digital health tools.



Figure 1: Digital Health connection across AKHS, Afghanistan.

Between January 2020 - October 2024, AKHS, A served approximately 18,000 patients. These patients would have collectively traveled 11,300,000 kilometers, incurring transport costs of USD 397,000 (to the hospital and back home). This avoided travel is estimated to have prevented 1,600 tCO2e emissions (assuming the use of public transport). In addition, through eLearning, around 5800 staff have been trained. In this report, we have not included emissions generated from teleconsultations due to the complexity of context-specific scenarios. However, various studies[2] [3] have shown that telemedicine systems are significantly less carbon-intensive compared to the walk-in model of healthcare delivery.

[2] https:/pmc.ncbi.nlm.nih.gov/articles/PMC8004323/: Does telemedicine reduce the carbon footprint of healthcare? A systematic review

[3] https://www.nature.com/articles/s41746-023-00818-7: Telemedicine and the environment: life cycle environmental emissions from in-person and virtual clinic visits