

Bright Health Project Summary and Key Findings

The Bright Health Project is an innovative initiative designed to strengthen primary healthcare delivery through solar-powered, climate-resilient digital health infrastructure. Under the leadership of Dr. Ronald Danny Nyatuka (Strathmore University) and in collaboration with Mr. Pazon Cherinet (Orbit Health, Ethiopia) and international partners, the Bright Health Project seeks to overcome the "Data-Power Paradox"—a major obstacle to digital health transformation in low-resource settings, where unreliable electricity and poor internet connectivity hinder the effective use of electronic medical records (EMRs) and other digital health technologies.. The proposed solution integrates solar-powered servers, offline-first digital health systems with satellite-enabled connectivity, battery backup, and interoperable EMRs to ensure uninterrupted healthcare services, even in remote communities.

To evaluate its feasibility, the project conducted a comprehensive mixed-methods study across 18 public health facilities in Kenya and Ethiopia, representing urban, peri-urban, and rural settings. The assessment examined technical infrastructure, economic viability, health system readiness, governance, workforce capacity, and stakeholder perspectives to determine the practicality of deploying solar-powered digital health solutions at scale.

The findings provide strong evidence supporting the feasibility and value of Bright Health. Across both countries, healthcare workers demonstrated 100% willingness to adopt digital health systems, indicating that the primary barriers to digital transformation are structural rather than behavioral. Key challenges include unreliable electricity, inadequate ICT equipment, poor internet connectivity, limited technical support, and financing constraints.

In Kenya, participants reported that solar-powered digital health infrastructure could reduce reliance on costly grid electricity and diesel generators while improving service continuity, record management, and staff efficiency. In Ethiopia, where many facilities experience frequent power outages, respondents viewed solar-powered infrastructure as essential for maintaining critical services, including maternal healthcare, immunization, and vaccine cold-chain management.

The study concluded that successful implementation requires an integrated approach combining renewable energy, adequate ICT hardware, offline-capable EMRs, reliable connectivity, workforce training, strong governance, and sustainable maintenance. Overall, the project established a compelling economic and operational case for investment, projecting lower operating costs, improved service continuity, enhanced data quality, and greater resilience to climate-related disruptions.

The findings demonstrate that frugal, renewable energy-powered digital health infrastructure offers a scalable and sustainable pathway to resilient healthcare systems in Africa. Based on the

evidence, the Bright Health Project is ready to advance to a second phase of pilot implementation in selected health facilities in Kenya and Ethiopia. The pilot will evaluate the solution under real-world conditions and generate evidence to support broader scale-up across the region.