

# **A Scoping Review of Telemedicine for Post-operative Care in Rural Rwanda: A Sustainable Model for Surgical Missions**

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**Published:** 27 August 2026 | **Received:** 12 April 2026 | **Accepted:** 14 July 2026

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## **Abstract**

**Background:** Surgical missions deliver essential care in low-resource settings such as rural Rwanda, but maintaining post-operative follow-up is a persistent difficulty. Telemedicine has been suggested to address this, yet its specific use and long-term viability following missions need detailed analysis.

**Purpose and objectives:** This scoping review aimed to map the evidence on telemedicine for post-operative care after surgical missions in rural Rwanda. Its objectives were to synthesise reported applications, benefits, implementation barriers, and sustainability factors within this context from 2021 to 2026.

**Methodology:** The review adhered to the Joanna Briggs Institute methodology for scoping reviews. A systematic search of five electronic databases and grey literature was conducted for records published between 2021 and 2026. Literature focusing on telemedicine for post-surgical follow-up after humanitarian surgical missions in rural Rwanda was included.

**Findings/Key insights:** The field is nascent but developing. Applications predominantly used basic mobile phone calls and messaging for wound assessments and medication adherence. A key finding was the essential role of local community health workers as telemedicine facilitators. Reported patient satisfaction was high, with one study indicating over 80% acceptability for remote follow-up. Principal barriers were unreliable network connectivity, variable patient digital literacy, and uncertain funding after mission departure.

**Conclusion:** Telemedicine demonstrates potential for extending post-operative care continuity in rural Rwanda following surgical missions. Its sustainability, however, depends on integrating local healthcare personnel, employing appropriate low-bandwidth technologies, and establishing dedicated local funding.

Recommendations: Future initiatives should co-design telemedicine protocols with local practitioners and invest in comprehensive training for community health workers. Research should evaluate long-term clinical outcomes and cost-effectiveness to guide national policy.

Key words: telemedicine, post-operative care, surgical missions, global surgery, Rwanda, sustainability, rural health, scoping review.

Contribution statement: This review consolidates current knowledge on telemedicine for post-surgical follow-up in rural Rwanda, providing a foundation for developing sustainable models that enhance the impact of short-term surgical missions.

**Keywords:** *telemedicine, post-operative care, rural Rwanda, surgical missions, sustainability, global surgery, Sub-Saharan Africa*