

## **Telemedicine in Sudan**

Telemedicine was implemented in Sudan to address the significant disruption in healthcare services caused by the COVID-19 pandemic. Noncommunicable diseases (NCDs) accounted for 52% of deaths in Sudan, with half of them being premature. The primary healthcare centers operated by the Federal Ministry of Health served as the main providers of healthcare services for people living with NCDs. However, the closure of health centers, diversion of services towards COVID-19 response, shortage of personal protective equipment and other challenges hindered access to these services.

In response to the pandemic, the Federal Ministry of Health collaborated with the WHO Sudan Country Office to establish telemedicine services. This initiative allowed virtual consultations through a telephone hotline accessible to people living with NCDs in all states of Sudan. The primary goals of this intervention were to maintain NCD healthcare services during the COVID-19 pandemic and strengthen the role of primary healthcare and family physicians in

Sudan's healthcare system.

The telemedicine hotline offered various services, including medical consultations, triaging, medication prescriptions, health education, counselling and referrals. It utilized an automated Interactive Voice Recorder system to determine the patient's location and chronic diseases. Additionally, the WhatsApp API facilitated the exchange of prescriptions and lab investigations, as well as provided information on health and well-being. Personal protective equipment and basic diagnostic equipment were provided to primary healthcare facilities to ensure efficient referrals and the safety of staff and patients.

Service providers underwent online training on telemedicine modalities, the management of NCDs during the pandemic and electronic patient records. The success of this intervention relied on partnerships and the early involvement of key stakeholders, including regulatory authorities, telecommunication operators, medical societies and other relevant organizations. Public-private partnerships played a crucial role in ensuring sustainable high-quality services, including the provision of cloud-based servers and customer relationship management systems for patient record management.

The Federal Ministry of Health recruited family doctors under specific terms of reference to provide telemedicine services. These family physicians received support from volunteer specialists and consultants who offered guidance and management to patients. Furthermore, the project included training service providers on telemedicine modalities, the management of NCDs during COVID-19 and the development of electronic patient records.

The implementation of telemedicine in Sudan has laid the foundation for future work in this area and emphasized the important role of family physicians as the first point of contact and primary providers of healthcare services. Sudan is committed to sustaining and expanding these telemedicine services, recognizing their potential to revolutionize healthcare delivery across the country, especially in the face of ongoing emergencies.

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