

## Technology and mHealth in Saudi Arabia

The utilization of technology and mobile health (mHealth) has become crucial in Saudi Arabia's response to noncommunicable diseases (NCDs). NCDs and their associated risk factors have emerged as significant public health concerns in the country, accounting for approximately 78% of all deaths, with cardiovascular diseases alone responsible for nearly half of the fatalities. Previously, healthcare services in Saudi Arabia were delivered through three primary channels:

integrated NCD services at the primary health care level, incorporating essential medications;

comprehensive management of chronic diseases, including rehabilitation, offered at secondary and tertiary care hospitals; and

support through call centers and mobile applications.

However, the COVID-19 pandemic led to substantial disruptions in NCD services due to the implementation of control measures and lockdowns. Additionally, healthcare providers were reassigned to COVID-19 response efforts, further impacting the delivery of NCD services. Moreover, the fear among the public of contracting the virus from healthcare facilities and the consistent advice for people living with NCDs to stay home and maintain social distancing, given their increased vulnerability to severe COVID-19, have collectively affected the provision and utilization of NCD services.

In response to these challenges, the Ministry of Health of Saudi Arabia turned to technology and mHealth to ensure the continuity of care for people living with NCDs during the pandemic. Telephone hotlines and smartphone applications have been made readily accessible throughout Saudi Arabia for people living with NCDs.

## **Telephone hotlines**

The 937 service center operates round the clock, offering remote consultations and support via phone calls. Recently, they have expanded their services to include consultations through the WhatsApp application.

Smartphone applications

The Seha app connects users with specialists, general practitioners and artificial intelligence channels from the Ministry of Health. It provides medical consultations, answers COVID-19 symptom-related inquiries and offers audio-video tips for maintaining good health and well-being.

The Sehhaty app enables tele-consultations, appointment booking for COVID-19 tests and primary healthcare centers, electronically-generated prescriptions, pharmacy searches, electronically-generated sick leaves, monitoring of vital signs, tracking physical activity steps and registration for COVID-19 vaccination.

The Wasfaty app connects users to a vast network of pharmacies, facilitating prescription filling and medication refills. It is integrated with primary healthcare centers and other healthcare facilities.

The Mawid app focuses on e-booking services, allowing users to book, reschedule and cancel appointments at primary healthcare centers and for referral services.

The Tabaud app serves as the official contact tracing application, developed in collaboration with the Ministry of Health and the National Information Center of the Saudi Data and Artificial Intelligence Authority. Its purpose is to ensure efficient contact tracing and follow-up.

The Twakkalna app streamlines the issuance of electronic movement permits during curfew periods.

## Social media platforms

Social media platforms, such as Twitter, were utilized to address public queries and provide virtual health services, consultations and psychological support.

A health volunteering platform was established to recruit volunteers nationwide and provide them with training to deliver health services at various levels. Over one million volunteering hours were effectively utilized through this platform.

To meet the rising demand for telemedicine services, Saudi Arabia enhanced the capacity of its different platforms and increased the recruitment and training of healthcare providers in telehealth service provision. Additionally, Artificial Intelligence technology was introduced. The country intends to maintain the digital health and telemedicine implementations for future use, while also improving the current platforms to offer more integrated, comprehensive and easily accessible services through mobile applications.

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