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## Precision health redefining the healthcare landscape in Qatar

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### **Precision health redefining the healthcare landscape in Qatar**

*Nearly a decade on: A closer look at Qatar's pioneering role in developing the Arab region's precision medicine infrastructure*

**Doha, Qatar, 25 April 2024:** Imagine a world where healthcare treatments are tailored to your unique genetic profile and lifestyle choices, maximizing their effectiveness and minimizing side

effects. This is the promise of precision health, a rapidly evolving field that is transforming healthcare globally.

Traditionally, clinical practice has relied on a one-size-fits-all approach, treating diseases with broad-spectrum therapies, while precision health takes a more individualized approach. By analyzing a patient's genes, environment, and lifestyle, doctors can gain a deeper understanding of their specific condition and likely response to treatment.

Qatar has been pioneering precision health in the region for close to a decade and aims to transform the way clinical screening is done for complex conditions such as cancer, diabetes, and autism, including screening for health issues specific to the Qatari and Middle Eastern populations.

An example of this is the BRCA Gene Mutations Study wherein 22 individuals with gene mutations contributing to breast and ovarian cancer susceptibility were identified and this led to early detection efforts. These patients were then referred to the National Center for Cancer Care and Research for treatment and management.

Additionally, a national initiative to implement Pharmacogenomics (PGx), a field exploring how genetics impact responses to medication for medication safety and efficacy, has been launched.

This field enables clinicians to tailor genetic-guided dosing therapies based on the patient's DNA significantly improving treatment outcomes.

Currently, cardiovascular patients are benefitting from this initiative in the Heart Hospital at the Hamad Medical Corporation.

However, the development of precision health in Qatar has not been without its challenges, one of them being the underrepresentation of Arab populations in genomic research.

Commenting on this, Mohammed H. Al-Dosari, Communications & Participant Recruitment Manager for Qatar Biobank, said: "Arab populations have been less represented in genomic research due to limited available datasets.

"This gap is particularly noticeable in studies that predominantly focus on gene pools from Western countries, leading to a lack of comprehensive understanding of genetic variations within Arab populations."

He added: "With genetic diagnosis based on actual population data, results are likely to be more relevant and accurate, leading to improved healthcare outcomes for the people of Qatar and beyond."

To address this gap, Qatar Biobank has collected biodata from around 40,000 participants, which is then sequenced by the Qatar Genome Programme, and includes more than 30,500 Qatari participants. This data creates a holistic view of the molecular, environmental, and physical profile of participants and helps in advancing precision health solutions.

Looking ahead, Qatar is dedicated to advancing preventive healthcare initiatives and population-wide health programs to empower individuals to make informed decisions about their health. By emphasizing early detection and lifestyle modifications, precision health will not only benefit individuals but also foster a healthier society.