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Medlab Middle East to host a new zone and conference showcasing NextGen medicine from 5 - 8 Feb 2024

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Middle East genome projects to embark on the groundbreaking NextGen Medicine for precision medicine across a range of diseases and rare condition



Medlab Middle East, the region's largest medical laboratory exhibition, will bring together leading researchers in **NextGen medicine in 2024.** A cutting-edge field of healthcare, NextGen medicine uses genome sequencing to create targeted healthcare strategies for specific populations and individuals across a range of diseases and rare conditions. In collaboration with Express Med Diagnostics and Research, Medlab Middle East will host a new zone and conference dedicated to NextGen medicine, when the event takes place from **5 to 8 February.**

The National Human Genome Research Institute (NIH) based in the US, defines the 'genome' as the complete set of DNA instructions present in a cell, which contains all the necessary information required for an individual's development and functioning. In 2003, the Human Genome Project successfully developed the first complete sequence of the human genome, paving the way for one of the most transformative breakthroughs in science and healthcare.

Dr Karolina Kobus, Head of Genomics and Precision Medicine Lab Technology and Innovation Advisor at Express Med Diagnostics and Research, said: “In recent years, the advent of next-generation sequencing (NGS), proteomics and artificial intelligence (AI) have allowed research centres worldwide to initiate scientific programmes, discover new molecular pathways and develop personalised therapies. There are three key components of NextGen medicine – prevention, early detection, and the development of targeted treatments. The future of medicine is all about moving away from a 'one size fits all' approach, to more personalised health strategies. Screening strategies must be adjusted to the local reality as this will ultimately save lives, improve health outcomes, and reduce the costs associated with ineffective treatments.

“Global differences in the prevalence and distribution of diseases and their risk factors is a complex phenomenon determined by population history, adaptive evolution, environmental, social, demographic, cultural and genetic factors. Genomic inheritance is unique for every population, and this means that disease patterns might differ in a Caucasian individual compared with those native to the Middle East, for example. While significant progress has been made in genome projects in the Western world, we must acknowledge that the current human genome that is widely referenced is mainly based on data from Caucasian individuals.”

The goal for researchers is to replace the old ‘linear’ reference genome with a ‘graph’ genome that better represents genetic diversity across populations. In May 2023, the Human Pangenome Reference Consortium (HPRC) published an update on the human pangenome based on 47 individuals, which represents a wider genetic diversity. The Arab population however is still underrepresented in the human reference genome, a situation that researchers around the region are working to rectify.

Tom Coleman, Group Exhibition Director, Informa Markets Healthcare, said: “The Middle East genome projects have the potential to contribute significantly to global science and improve healthcare in the region. This field of study is extremely promising, and the findings could lead to major advancements in the treatment of various illnesses, such as diabetes, heart disease, and cancer.

“Medlab’s partnership with Express Med Diagnostics and Research at Medlab Middle East will showcase the latest advancements in medical technology, precision diagnostics and medical laboratory solutions. Chaired by Dr Karolina Kobus, the NextGen Medicine Conference will bring together top industry experts, researchers, and healthcare professionals who are driving innovations forward. The conference will share the latest updates on regional genome projects and delve into pressing topics such as early cancer detection, precision oncology, preventative health screening, and longevity.”

In March 2023, the UAE launched a 10-year National Genome Strategy to support the development and implementation of genomic research projects and improve public health priorities in the UAE. The project aims to accelerate developments in personalised medicine and combat chronic and genetic diseases. The Emirati Genome Programme is the founding project of the UAE’s National Genome Strategy and will explore the genetic profile of Emiratis using cutting-edge DNA sequencing and artificial intelligence.

Kobus added: “As shown by recent research, it is important to improve human genetics studies by including diverse ethnic groups. This will help us to better understand the risk, and design appropriate treatments and screening strategies accordingly. Country-specific genomes and cancer genomes programmes are critical as they will provide a road map of the reference human genome and a landscape of mutations across many disease types in Middle Eastern patients.”

The NextGen zone at Medlab Middle East is a unique platform in the region that will bring together a diverse group of experts and professionals to discuss the latest advancements in NextGen medicine. The conference will attract lab technicians, genetics scientists, medical oncologists, pathologists, surgeons, and representatives from pharmaceutical companies, who will engage in productive discussions about recent developments in the field. The exchange of ideas will pave the way for progress in NextGen medicine.

Medlab Middle East is expected to welcome more than 30,000 visitors and 900 exhibitors, with representation from 180 countries. Tracks at the event include Laboratory Management, Haematology, Quality Management, Clinical Microbiology, Histopathology, Clinical Chemistry, Clinical Genomic Interpretation, Future of the Lab, Immunology, Blood Transfusion Medicine, and Sustainability in the Lab. The Medlab Middle East Congress returns for another year, providing education and solutions to advance laboratory skills to over 5,000 delegates.

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