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Precision Medicine

DATA SCIENCE - MULTIOMICS - BIOMARKERS - TARGETED THERAPY

Editorial

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Precision Medicine

Precision medicine, also called personalised medicine, involves tailoring medical treatment and interventions to the individual characteristics of each patient. These characteristics may include genetic makeup, molecular profiles, environmental factors, lifestyle choices, and personal preferences. The goal of precision medicine is to optimise the effectiveness of healthcare by providing treatments that are tailored to the unique characteristics of patients. This approach contrasts with traditional medicine, which often relies on a one-size-fits-all approach based on general population averages.

Precision medicine represents a paradigm shift in healthcare, moving towards a more individualised and proactive approach to diagnosis, treatment, and prevention. It can potentially improve patient outcomes, enhance patient satisfaction, and reduce healthcare costs. It offers the promise of revolutinising healthcare through tailored treatment plans, improved diagnosis, targeted therapies, reduced adverse reactions, cost savings, and patient empowerment.

At the same time, it presents several challenges related to patient data privacy and security, data integration and interoperability, ethical and social implications, implementation costs and access, physician education and training, patient education and engagement and validation and reproducibility.

In this cover story, our contributors explore precision medicine and its benefits and application in healthcare while addressing the challenges associated with its implementation. They also discuss the need for collaboration among major stakeholders in healthcare to ensure the responsible and equitable implementation of precision medicine.

Begoña San José talks about the transformative potential of personalised wellbeing within the framework of precision health and disucsses practical strategies for optimising individual health.

Sara Green discusses the benefits of precision medicine, the challenges associated with it and the impact of its use on healthcare costs, testing and monitoring, and the inequality in access to healthcare services.

Carlos Larrañeta discusses Procure4Health, a community tasked with enhancing healthcare services across healthcare organisations and highlights the seven areas of focus where innovation could alleviate challenges associated with the implementation of precision medicine.

Paula Amorim, Gabriel Pires and Henrique Martins discuss the benefit of customizing rehabilitation based on individualized patient assessment using Human-Machine Systems (HMS) and how this could improve accuracy in assessment, monitoring and supportive tasks to increase productivity across fields of rehabilitation.

Sergey Ivanov talks about the rise of smart devices, telecare, and Internet of Things (IoT) healthcare apps to facilitate diabetes diagnostics and management and how this techonolgy opens opportunies for simpler and earlier diagnosis, prevention, symptom management, and minimisation of the consequences of diabetes.

Harvey Castro talks about new technologies, what they mean for healthcare in 2024 and what leaders need to know before they can fully embrace innovation.

Somashekara Koushik Ayalasomayajula and Kim Rochatexplore the current applications of AI in the MedTech sector, its key areas of utilisation, the challenges encountered in AI integration, and gain insights into the ongoing evolution of the regulatory framework.

Miguel Ángel Martínez Sánchez provides an overview of the experience of the Green Hospital project by Fundació Sanitària Mollet (Barcelona), which has successfully achieved the goal of becoming a net zero hospital in direct emissions.

We hope you enjoy reading this issue and welcome any feedback.

Happy Reading!