Life Sciences 4.0

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ABSTRACT

Summary: Life Sciences 4.0, a new term coiled to address empowerment of the latest technology to support smart and decision-making in the field of life sciences. It includes utilising smart tools, integrated Internet of Things (IoT)/ Internet of Medical Things (IoMT) and automated solutions to improve quality and reliability in the multi-omics and health sciences world. Life Sciences 4.0 is crucial to address integration of high-throughput, multi-disciplinary and translational research in various omics, namely genomics, proteomics, transcriptomics, metabolomics and phenomics. This "genome to phenome" phenomena allow a wholistic approach from science to medicine, providing "personalised" and "targeted" diagnosis, treatment, predisposition and prognosis. The availability of big data in life sciences and healthcare opens possibilities for predictive, preventive and innovative measures to improve our lives. A good example of such transformation is digital health. Digital health allows empowering patients to have more control over their health, promoting better health and wellbeing. Digital health allows improvement in terms of communication, access, quality, personalising treatment and reducing cost. Various digital health technologies such as telemedicine, telepharmacy, mobile health (mhealth) and wearables in medicines integrated latest technologies and data analytics to drive innovation and value. Ultimately, to achieve this goal, researchers and practitioners are urged to constantly unlearn and relearn new skills and knowledge. Thus, remain open-minded in this new paradigm shift in life sciences to achieve greater objectives.