

A health systems view of research

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ABSTRACT

Summary: Clinical research is the fundamental building block of evidence-based medicine, which is the fundamental building block of healthcare. However, the traditional model of clinical RCTs is increasingly supplemented by non-clinical real-world evidence, patient-reported outcomes and Big Data/AI/ML. Researchers using old and new research tools may benefit from integrating a health systems view into their work, by bringing together clinical, patient-reported, economic, equity, population health, policy and service delivery outcomes in an inter-disciplinary approach.

Precision medicine versus personalised medicine

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ABSTRACT

Summary: The term “personalised medicine” means tailoring of medical treatment to the individual characteristics of each patient, leading to a treatment approach of “the right drug, for the right patient, at the right time.” The terms precision medicine and personalised medicine have been used interchangeably. However, personalized medicine is the older term. Actually, precision medicine is the prefer term, as the focus is on identifying which approaches will be effective for which patients based on genetic, environmental, and lifestyle factors. One of the examples is pharmacogenomics which combines pharmacology (the study of drugs) and genomics (the study of genes) to develop effective, safe medications and doses tailored to a person’s genes. In cancer targeted therapy, the detection of specific molecular markers that are found only on certain types of cancer, can be used to treat cancer more effectively. For example, the presence of HER2 gene amplification in breast cancer (seen in 20% of cases, a more aggressive phenotype), can be treated by Trastuzumab (Herceptin), a monoclonal antibody with excellent outcome. The implementation required a multi-disciplinary approach involving, surgeons, oncologists and pathologists. Stem cells and regenerative medicine is another form of precision medicine. By isolating and manipulating an individual stem cells, it could be used to repair a damage organ of that individual. CAR-T therapy and PDL1 are some of the others recently established forms of precision medicine. Many researchers are investigating the role of gut microbiome in regulating our health status and brain function, and the to understand the benefit of introduction of probiotics to improve gut bacterial flora. Currently, molecular testing is still very expensive and many are not able to receive this treatment. In conclusion, to improve healthcare in the country, everyone should be given the opportunity to precision medicine therapy.