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Editorial note for Clinical sciences

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Clinical sciences or clinical research is the branch of healthcare science. This branch is concerned with the determination of safety and efficacy of the drugs, medicines, and the treatment and the diagnostic procedures used for humans. It is associated with the prevention, diagnosis and treatment of the disease. It is very much distinct from the clinical practice, as in clinical practice established treatments are used and clinical research includes procedures for establishing a treatment.

The "clinical research" in general terms is concerned with the entire life history of a drug or device or any test article starting from its inception in laboratories to its introduction in the market for consumer use. Prior to the clinical research studies the promising candidate or the molecule is subjected to pre-clinical studies or animal studies where different aspects of the test article like safety, toxicity and efficacy are studied. The results obtained from the pre-clinical studies or other supporting evidence, case studies are submitted in support of an Investigational New Drug (IND) application to the Food and Drug Administration (FDA) for review before conducting the studies that may involve even one human and a test article, if the results are intended to be submitted to or held for inspection by the FDA in near future. Whereas devices are submitted to the FDA in support of an Investigational Device Exemption (IDE) application to know if the device shows a significant risk in its usage before its submission to the FDA. Institutional Review Board (IRB) and other institutional committee reviews, Privacy Board, Conflict of Interest Committee, Radiation Safety Committee, Radioactive Drug Research Committee, etc. together carries out the procedures of clinical research prior to its submission to the FDA. The procedures are usually carried out at academic medical centers and affiliated research institutes in metropolitan cities that may provide an advantage of large number of medical participants. The affiliated research centers have their own built board members to examine the ethical conduct of medical research.

The wide system of Clinical research involves the usage of complex network sites for data management, various pharmaceutical companies and research institutes. This lead the data management and operational factors of clinical research as an emerging field providing greater job opportunities.

The experiments or the procedures done in clinical research include clinical trials. These studies are carried out to examine new treatments like vaccines, drugs, diet supplements and novel medical devices. The data obtained from clinical trials indicate the efficiency and safety of the novel treatment or diagnostic procedures. Clinical trials are carried out only when they receive an approval from the health authority committee. The investigators in the clinical trial committee initially enroll the volunteers depending on the type of the product and its stage of development, subsequently the investigation is carried out in larger scale comparative studies. Each clinical trial differs with its cost, as they can involve a single research center or multiple centers, in one country or in multiple countries. The aim of the clinical sciences is to ensure the validity of the results.