International Journal of Drug Research and Technology

Available online at http://www.ijdrt.com

Perspective

IMPACT OF NEW INFORMATION TECHNOLOGY APPLIED TO CLINICAL TRIALS

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PERSPECTIVE

New technology has recently begun to play a significant role in both our professional and personal daily environments. With computers increasingly being used at the bedside, healthcare is not exempt from this ongoing mutation. These new technologies are available to the clinical investigator, the patient, as well as to specialised departments for patient diagnosis and follow-up, and to various clinical research professions, and clinical research has demonstrated increased interest in them. Even though the use of new technology appears to simplify life by centralising data or by making data sharing between teams easier, it is still a matter of private data that must remain trustworthy, private, and secure whether it is being used in routine healthcare or in academic or industrial research [1,2].

Artificial intelligence can be incorporated into diagnostic tools, and real-world data (such electronic health records) can be used to recruit study participants. There is no longer a need for in-person engagement in clinical trials because they may be carried out totally online. A large body of published research indicates how digital strategies might enhance clinical trial design and execution [3].

Clinical trial development has resulted in significant advancements in the diagnosis, prognosis, and treatment of numerous diseases, including brain cancer. The way clinical trials are carried out today has been significantly influenced by medical advancements, including better surgical methods, new medications and technology, the use of statistical tools in research, and the creation of codes of ethics. In the future, techniques from the broad field of artificial intelligence, like radiomics, could have a significant impact on clinical trials and clinical practise. Radiomics is a technique for removing previously unknown patterns from frequently obtained imaging data

that are neither detectable by human vision nor by traditional image analysis.For the diagnosis and follow-up of patients with brain cancer, neuropathological investigations and the acquisition of neuroimages by MRI and PET are of the utmost importance; as a result, these are the ideal applications for the use of AI technology. The importance of non-invasive, next-generation evaluations is also increased by the difficulties and dangers associated with getting tumour samples from the brain. Additionally, initiatives to include cutting-edge picture analysis methods like radiomics in the standard criteria for response assessment amply demonstrate the technology' general acceptance, appeal, and potential [4-6].

Patients' reactions to various medications can vary greatly, thus this type of pharmacological therapy shouldn't follow a one-size-fits-all philosophy. To maximise pharmacological efficacy and reduce toxicity, therapeutic drug monitoring (TDM) refers to the measurement and modification of drug concentration within the body. As a result, TDM integration into clinical practise enables medical professionals to optimise medication therapy. Traditional TDM first appeared in the 1960s. TDM has significantly aided in the personalization of medication over the past few decades. The use of TDM in modern times has expanded to include a number of medical disorders.

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Date of Submission: 28-June-2022, Manuscript No. IJDRT-22-78279; **Editor assigned:** 30-June-2022, Pre QC No. P-78279; **Reviewed:** 13-July-2022, QC No. Q-78279; **Revised:** 17-July-2022, Manuscript No. R-78279; **Published:** 24-july-2022, DOI: 10.37421/2277-1506.2022.11.365
Cite This Article: Jirah G (2022). "Impact of New Information Technology Applied to Clinical Trials." ***International Journal of Drug Research andTechnology*** Vol. 11 (7) 1-3.