



Bioinformatics and Pharmacogenomics in Drug Discovery and Development

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Abstract:

Objective: Literature review to evaluate the extent to which Bioinformatics has facilitated the drug discovery and development process from an economic perspective Problem: A plethora of genomic and proteomic information was uncovered by the U.S Human Genome Project (HGP). Despite the projected impact that Bioinformatics and Pharmacogenomics were projected to have in the drug discovery and development process, the challenges facing the pharmaceutical companies – in this regard, still persist. Design: An extensive integrated literature review of library resources such as MEDLINE, ERIC, PsychInfo, EconLit, Social Services Abstracts, ABI/INFORM and LISA (all 1990 – Present). These electronic databases were researched because of their focuses on the healthcare sector, medical and scientific innovations, economic modeling and analysis, bioinformatics and computational biology, applied social research and technology applications. Semi-structured interviews of Bioinformatics professionals were also conducted to complement the literature review. Also, Internet-based databases from reliable resources were also researched resulting in serendipitous discoveries. Sample: Published English language reports of studies and research carried out worldwide from 1990 to 2004, relating to drug discovery and development. Selection criteria: Primary focus was on research publications and journals that identify and discuss the practice of Bioinformatics, especially in the area of drug discovery and development. Premium was placed on articles and publications that discussed the economic impacts of Bioinformatics in the drug discovery process. Results: Though the goals of Bioinformatics have been clearly defined, and the discipline is widely practiced in the pharmaceutical industry, this study has not found any definite attempts to evaluate its economic and regulatory impact specifically in facilitating the drug discovery and development process, and the delivery of personalized drugs. Discussion: Bioinformatics

and Pharmacogenomics are the new facets of the ever-evolving drug discovery and development process. It may still be a while before their full impact and potential is attained.

Description:

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