Identifying Adverse Effects (AE) of Multi-Drug Interactions

During development of a new drug, clinical trials are run to determine the benefits and risks – including AE of the drug. If the clinical trials go well, the drug then becomes commercially available to the public. Once on the market, healthcare professionals and drug manufacturers must report any cases they become aware of concerning AE of this drug to the FDA. As more reports of AE are sent to the FDA, their reports database grows. The FDA staff is responsible to comb through this mountain of data to identify the most critical cases to further investigate. However, while staff time and resources are limited, the data continues to grow beyond bounds. Yet no efficient method exists to date to reliably find the AE of multi-drug interactions from this data. In response to this need, a new technology has been developed by researchers at Worcester Polytechnic Institute (WPI) that uses machine learning to extract a prioritized list of the most critical adverse effects from multi-drug interactions, which can then be reported to other patients, drug manufactures, and doctors. By automatically identifying severe yet unknown AEs caused by multi-drug interactions, the FDA can protect the public and potentially save lives by banning certain drugs and by issuing warnings about the combination of such drugs.

Key Features

-Utilizes machine learning to determine adverse effects of multiple drug effects
-Analyzes FDA public data by applying the proposed detection technology
-Generates a report of the extracted findings deliverable to patients and doctors

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