

Mining Electronic Health Records for Possible Drug Repositioning Opportunities

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Computational Drug Repositioning (CDR) is the task of discovering potential new uses for existing drugs by mining large-scale heterogeneous drug-related data sources. Leveraging the patient-level temporal ordering information between numeric physiological measurements and various drug prescriptions provided in Electronic Health Records (EHRs), we propose a Continuous Self-controlled Case Series (CSCCS) model for CDR. As an initial evaluation, we look for drugs that can control Fasting Blood Glucose (FBG) level in our experiments. Applying CSCCS to the Marshfield Clinic EHR, well-known drugs that are indicated for controlling blood glucose level are rediscovered. Furthermore, some drugs with recent literature support for potential blood glucose level control are also identified.