Computational analysis of electronic health records to identify disease associations

Electronic health records (EHR) are becoming increasingly prevalent in the medical fields for tracking patient diseases. There is a wealth of information hidden within all the clinical information collected. Application for Discovering Disease Associations using Multiple Sources, or ADAMS, uses these EHRs combined with public information on diseases to identify associations between unrelated diseases. For example, this technology has identified an association with Kawasaki disease and the diagnosis of autistic disorder. With ADAMS, physicians and patients may be able to predict and prepare for the onset of specific diseases based on what the patient has previously experienced.

ADAMS, a method to find associations between diseases

This technology allows physicians to cross correlate EHRs to find associations between diseases. The information could assist physicians in making treatment decisions so as to mitigate symptoms and progression of associated diseases, decreasing costs associated with treating the associated disease. The information gained from ADAMS can also inform patients of the possibility of developing other diseases, allowing them to take actions to prevent the disease or to prepare financially and mentally for disease onset.

This technology has been used with EHRs from New York-Presbyterian Hospital.

Lead Inventor:

Raul Rabdan, Ph.D.

Applications:

- Tool for physicians to make treatment decisions based on associated diseases
- Provides information for patients as to what diseases may develop
- Tool for insurance companies to assign risk factors for certain disease
Advantages:

- Utilizes pre-existing data
- Focus disease associations on certain populations depending on information sources
- Association of primary disease with other diseases or factors such as seasons

Tech Ventures Reference: IR 2913

Related Publications:


Inventors

Raul Rabadan