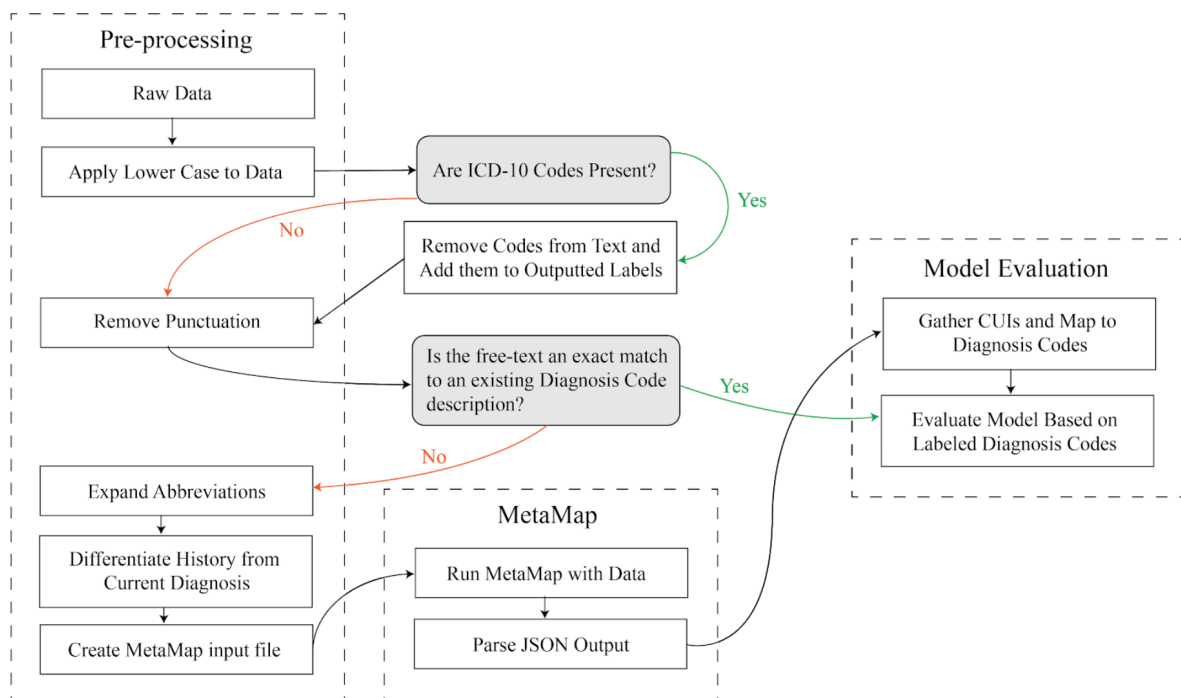


Title, abstract and a diagram:

## Title: Coding Free-Text Chief Complaints from a Health Information Exchange: A Preliminary Study

Abstract:

Chief complaints are important textual data that can serve to enrich diagnosis and symptom data in electronic health record (EHR) systems. In this study, a method is presented to preprocess chief complaints and assign corresponding ICD-10-CM codes using the MetaMap natural language processing (NLP) system and Unified Medical Language System (UMLS) Metathesaurus. An initial exploratory analysis was conducted using a set of 7,942 unique chief complaints from the statewide health information exchange containing EHR data from hospitals across Rhode Island. An evaluation of the proposed method was then performed using a set of 123,086 chief complaints with corresponding ICD-10-CM encounter diagnoses. With 87.82% of MetaMap-extracted concepts correctly assigned, the preliminary findings support the potential use of the method explored in this study for improving upon existing NLP techniques for enabling use of data captured within chief complaints to support clinical care, research, and public health surveillance.



**Figure 1.** The above diagram shows how the method that is used to map the phrases from their respective raw data to ICD-10-CM codes.