Health outcomes research with electronic health records: opportunities and challenges

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Abstract: Using electronic health records (EHR) to conduct health outcomes research presents unique opportunities to address research questions that have not been possible with the randomized study design, such as the relationship of race and outcomes. In this presentation, we use chronic kidney disease (CKD) as a case study to demonstrate great opportunities and challenges in the use of EHRs. CKD is a major public health problem in the US and worldwide, with the current estimated prevalence of 10-12% in the US. Many questions remain unanswered including the reasons behind the substantial difference in survival rates among racial and ethnic groups with dialysis treatment. Our project utilizes the U.S. veteran EHR database for >8.9 million veterans, the largest EHR database among U.S. health care systems. We present our study design, some modeling and analysis approaches including an event history analysis perspective, with accompanying challenges such as disease/outcome states ascertained from irregular follow-up visits.