



Some Problems and Opportunities in Biomedical Informatics



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ABSTRACT:

Federal policy is fostering a national wave of electronic health record (EHR) adoption, which opens a new source of data on patients' illnesses, treatments and outcomes. For example, researchers are now using EHR data from large populations to conduct phenome-wide association studies (PheWAS) that seek to discover the full range of disease entities or outcomes associated with a particular gene or condition. However, uses of EHR data are limited by a lack of working semantic standards for many domains as well as poor application of the semantic standards that exist. I will review the history of work on controlled vocabularies and ontologies that seek to represent health-related concepts in a computer-interpretable form. EHR systems also create opportunities to influence health care practice patterns by delivering information to providers at the time of decision-making. However, in practice, such alerts often have weak effects, in part because they are triggered inaccurately and also because providers misunderstand their importance. Better models of provider knowledge and their actions under time constraints might substantially advance the efficacy of clinical decision support. Forthcoming changes in health care financing, such as accountable care organizations, may help to align incentives toward finding solutions to these problems.

Host: Tom Chou, Ph.D.

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