

TITLE: Preventive Care in a Clinical Setting: How to Choose What to Recommend to a Patient?

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RESEARCH PROJECT DESCRIPTION

Background: Currently, the United States Preventive Services Task Force (USPSTF) makes a variety of recommendations pertaining to preventive care, from managing chronic conditions, to cancer prevention and early cancer detection. In a primary care setting, physicians have an average of 13 minutes per patient, including the primary reason for the visit. Therefore, there isn't enough time to address all the recommendations. The overarching theme of this project is to develop an informatics tool to make evidence-based choices with respect to USPSTF guidelines, at the point-of-care

Hypothesis: well structured machine learning algorithms can help us parse through the extensive choices among the current USPSTF guidelines, and can be implemented in an effective and efficient manner to optimize clinical decisions in a family medicine and internal medicine context, and therefore ease the process of choosing what guidelines to focus on to maximize patients' health.

Methods: a student will be expected to familiarize themselves with the current guidelines, their classification, and how they impact patients' health. Additionally, they will be exposed to current decision-making and machine learning techniques that can be used to construct decision strategies in a clinical context. Highly motivated students will also be exposed to informatics development, in particular on mobile platform, under HIPAA regulations.

Role of medical student: A medical student will be expected to work with the PIs, Dr. Modave and Dr. Bian, as well as with the clinical departments involved (Family and Community Health, and Internal Medicine) on summarizing the current preventive measures, how they relate to patients, and their clinical outcomes if followed. Expected outcomes include a poster presentation at UF or preferably at a national meeting, as well as publication in a quality venue journal. Advantages include collaborating with a highly multidisciplinary team, spanning public health, biomedical informatics, internal medicine and family medicine, and exposure to a variety of biomedical informatics tools that are essential to the 21st century physician.

Related Literature:

1. Yarnall KS, Pollak KI, Ostbye T, Krause KM, Michener JL. Primary care: is there enough time for prevention? *Am J Public Health*. 2003;93(4):635-641. PMID: 12660210.
2. Gottschalk A, Flocke SA. Time spent in face-to-face patient care and work outside the examination room. *Ann Fam Med*. 2005;3(6):488-493. PMID: 16338911
3. Modave F, Shokar NK. Non-Additive Measures: A Theoretical Approach to Medical Decision-Making. *J Inform Tech Softw Eng* 2013;3: 124. doi: 10.4172/2165-7866.1000124