
GENNY LUENSMAN

WWW.LINKEDIN.COM/IN/GENNY-LUENSMAN-3530A020

Required Skills:

Mobile App, Web Development, Stand Alone App Development, Responsive Web Design, Human Centered Design, Workflow/Process Optimization, Project Management, Communications, Open Source Databases, Analytics/Machine Learning

Preferred Team Communications:

Skype or Conference call

Data Sources:

SQL database will be provided.

Other Items:

Project has timezone flexibility. Mentors and students will determine a good time for virtual meeting

COLLECTING INDUSTRY AND OCCUPATION DATA IN EMRS

In the US the majority of adults work and spend over half their waking hours at work. Work can affect health, and health has to be managed while at work. For example, managing diabetes can be difficult in a hot working environment or on a rotating shift. At a population level, it may be desirable to identify patients in particular occupations to provide preventative measures, such as screening house painters for blood lead levels and providing them informational materials.

Collecting accurate Occupational Data for Health (ODH) is an important part of providing care, yet these data are not routinely and consistently managed in electronic medical records. The most difficult values to collect are industry (type of business) and occupation (type of work) for a person's current job(s) and their usual, or longest-held work. The valueset for industry includes ~21,000 titles and the valueset for occupation includes ~30,000 civilian titles and ~27,000 armed services titles. The titles were designed for phonebook-style, manual look-up by trained coders, which impacts presentation of the titles in a data collection tool (e.g., there are entries that refer to "except" and "non-specific"). In addition, I/O each have hierarchical categories and some titles are in more than one category (so both category and title have to be identified). Then there are challenges in the way some workers are classified, such as government workers.

Achieving collection of I/O values for ODH requires managing the person's interpretation of "what do you want to know?", making sure recognizable terms are available for their selection, and providing enough context so that the person is comfortable with making a choice. This project will build off previous work led by CDC's National Institute for Occupational Safety and Health (NIOSH) to document ODH in the social history section of electronic medical records to help support patient care, population health, and public health.

PROJECT OBJECTIVES

NIOSH is seeking a technology tool for:

- Collection of ODH via a patient user interface, including
- effective (accurate) and efficient (minimal burden) conversion of any adult patient's self-definition of industry and occupation (I/O) into standardized titles and coded categories for their current or past jobs and longest-held type of work,
- in English (for now),
- with minimal burden to maintain the database of I/O terms,
- such that the data would become immediately available and
- part of the patient's electronic medical record (EMR) social history section within an electronic health record (EHR) or other health information system (HIS),
- to support patient care, population health (e.g., by a healthcare organization), or public health.

Intellectual Property: Project involves a government agency so the resulting project is made available to the public. Students do not own IP. Students will be recognized as contributors

SUCCESSFUL PROJECT

It is expected that the prototype solution(s) will collect ODH and will:

- provide help functionality;
 - strongly encourage seeking and selecting accurate standardized entries, while still allowing for free text entries (e.g., if an industry or occupation is so new that a standardized title is not yet available) and the choice not to provide a given data element;
 - minimize the time (including any latency time) and effort (e.g., number of clicks) required to enter the data;
 - avoid distractions that can be caused by user interface usability issues (e.g., apply commonly accepted practices for readable fonts, use of color, availability of going back, breadcrumbs, confirmation, etc.); and
 - comply with Section 508 of the Rehabilitation-Act.
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