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Required Skills:

Strong analytic skills and experience working with and linking large data sets. Students with Health Information Technology application development experience, and related technology experience as referenced in the project description above are strongly preferred. Further, student's willingness to learn about opioid prescribing and PDMP programs will be helpful and valuable.

Preferred Team Communications:

WEBEX, Skype or Conference call

Data Sources:

Project mentor, Fred Aabedi, will provide synthetic data, which will be sufficient for the project.

Other Items:

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

OPIOID PRESCRIBING GUIDELINE RECOMMENDATIONS AND ANALYTICS

The Centers of Disease Control and Prevention (CDC) is working to reverse the prescription drug overdose epidemic, a priority for both CDC and the US Department of Health and Human Services (HHS), by focusing on three areas (1) improving data quality and tracking trends to monitor the epidemic, (2) strengthening state efforts by helping states target and tailor public health prevention resources to high burden areas, and (3) improving patient safety by supplying health care providers with data, tools, and guidance for evidence-based decision making that improves population health. (To learn more about CDCs opioid overdose prevention efforts go to <https://www.cdc.gov/drugoverdose/prescribing/guideline.html>) This project falls under the third area (improving patient safety by supplying health care providers with data, tools, and guidance for evidence-based decision making). One helpful tool to assist in evidence-based decision making are state-run prescription drug monitoring programs (PDMPs), which compile data on controlled substance prescribing, including opioids. When queried, all opioids prescribed to a given patient are listed including who prescribed them, date they were filled, dosage, etc. It can be challenging to interpret a dispensing history of opioid prescriptions, which may include several different types of opioids with variable strengths that must be standardized by converting to morphine milligram equivalents (MME). The proposed HL7 Fast Healthcare Interoperability Resources (FHIR) application will calculate the current daily MME (Morphine Milligram Equivalents), MPE (Multiple Provider Episodes) and Provider Score Card from the PDMP. Calculate the daily MME for the prescription the provider is about to write. If time permits, then the FHIR enabled App will also alert providers when a patient has been coprescribed an opioid with a benzodiazepine

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

PROJECT OBJECTIVES

Provide real time and useful and actionable analytics and calculations and guidelines to healthcare practitioners/prescribers at point of care based on Prescription Drug history of the patient to reduce the risk of Prescription Opioid addiction or health risk or death.

SUCCESSFUL PROJECT

Develop a FHIR enabled application within an EHR that can Query the state PDMP (Prescription Drug Monitoring Program) Identify patients'™ current opioid prescriptions. Calculate the current daily MME (Morphine Milligram Equivalents), MPE (Multiple Provider Episodes) and Provider Prescribing Reports from the PDMP. Calculate the daily MME for the prescription the provider is about to write. If time permits, then the students may also develop flags or alerts within the FHIR enabled App when a patient has been coprescribed an opioid with a benzodiazepine
