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# SRIDEVI WILMORE & ARUNKUMAR SRINIVASAN

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## Required Skills:

Web Development, Java, Python, Responsive Web Design, Human Centered Design, Workflow/Process Optimization, Open Sources Databases, Analytics/Machine Learning, Technical Writing, Project Management, Communications

## Preferred Team Communications:

Conference call

## Data Sources:

Georgia Tech synthetic data will be sufficient for the project.

## Other Items:

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

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## CLINICAL DECISION SUPPORT FOR IDENTIFYING CHRONIC DISEASE POPULATIONS

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EHRs and other health information technology offer opportunities to advance chronic disease management and prevention. Defining the algorithms to identify at-risk populations is the starting point for public health intervention. To optimize the use of EHR data, timely and accurate determination of the population is essential. To achieve this, the use of clinical decision support (CDS) becomes

This project is to represent the Stroke and/or Breastfeeding Mother determination logic using one of the framework and submit the findings from the implementation exercise.

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## PROJECT OBJECTIVES

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This project aims to compare and assess two CDS frameworks that are currently evolving in the industry namely:

1. clinical querying language (CQL)<sup>1</sup> and 2. SMART clinical decision support (CDS) hooks<sup>2</sup>
2. The goal of this effort is to assess the effectiveness of CQL and CDS hooks in representing and authoring decision logic and executing them against clinical data accessed using HL7 FHIR.

Develop algorithms and subsequently use CQL / CDS hooks to identify stroke patients/ breastfeeding mother populations of interest. Clinical algorithms to identify these populations will be developed to inform the mapping of algorithm data elements to FHIR resources. The approach will adopt the CDSConect platform to implement CQL logic and/or the SMART CDS hooks mechanisms to build these algorithms. These solutions will help to rapidly identify and connect intervention populations to providers and other health resources in order to improve health outcomes.

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## SUCCESSFUL PROJECT

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- 1) Map the data elements from the clinical algorithms to identify breastfeeding mothers and stroke patients to FHIR resources
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**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**

- 2) Develop a technology platform using the FHIR resources to implement CQL to identify both populations
  - 3) Develop a technology platform using the FHIR resources to implement CDS hooks to identify both populations
  - 4) Demonstrate the application of CDS logic to clinical data.
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