Project title:

Sexually Transmitted Disease Surveillance

Organization mentors:

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Project background:

A number of conditions are required by law to be reported to public health agencies in every state and territory. Frequently, these reportable conditions are transmitted manually (e.g. e-mail, facsimile, paper form), which can be cumbersome, error prone, and often lacking in key demographic elements. CDC's Division of STD Prevention (DSTDP) recently provided guidance for electronic case reporting based on current c-CDA based standard (Technical Guidance for electronic STI case reporting). The proposed project would explore a FHIR based application to simplify the process of electronic case reporting and to compliment the current c-CDA based reporting to the public health agencies.

Project objective(s):

DSTDP seeks to explore the use of HL7 FHIR, SMART on FHIR capabilities, and cloud based computing to support its effort to improve surveillance of sexually transmitted disease (STD) in the United States.

Description of the solution:

24) Map the most recent c-CDA based standard for STD reporting to FHIR resources to identify gaps. Specifically, this would include identifying: a) the data elements in the STD guidance that are not in the existing FHIR resources and b) the constraints on element optionality and code system/value set requirements in the STD guidance that are different than those in the existing FHIR resources

    a. Based on the data element gaps identified, develop the FHIR extensions needed for STD reporting
    b. Develop a FHIR profile to fully describe the STD report to be transmitted, including addressing the gaps identified in constraints and vocabulary requirements

25) Develop a tool for the public health agency to receive and process the FHIR data.
26) Additional functionality (assessing STD burdens and trend) may be added as time permits

Desired student skills/background:

• Willingness to read, interpret, and ask questions about existing c-CDA implementation guide and make recommendations on ways to re-cast the existing implementation guide using FHIR (e.g., POST a new STD event via a RESTful protocol as opposed to sending a c-CDA document).
• Experience with RESTful interfaces, backend development, and webservers
• Analytics to assess disease burden and trends

Data requirements and potential sources:

CDC will provide public data or specifications for synthetic data. Student team may need to help develop a limited synthetic data set to use during development

Other comments:

Collaboration on this project will assist CDC in advancing tools for capturing STD morbidity data and assessing STD burden and trends. Through participation in the project, the student will gain experience of working in federal sector and will have an opportunity to suggest technology innovation for the nationwide impact. The students will also have the opportunity to gain exposure to the CDC experts and infrastructure