**CS 6440 Student Project Proposal**

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| **Project Title:** Cancer Reporting from Laboratory Information Systems to State Cancer Registries | |
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| **Project Background:** After the laboratory completes the requested cancer diagnostic and/or biomarker tests with a final pathologist rendered interpretation and the data are entered into the LIS, then a determination of reportability will need to be made based on a coded trigger list. This can be done either internally within the LIS, or externally through a decision support service, such as a FHIR Cancer Registry service. If the case is determined to be reportable, then the LIS needs to request, complete, and transmit a cancer case report, using the FHIR Questionnaire/Questionnaire Response (Structured Data Capture) resources, to the state cancer registry. The cancer case report will be a FHIR questionnaire response based on the College of American Pathologists (CAP) Cancer Protocols and electronic Cancer Checklist (eCCs) Templates: <http://www.cap.org/web/home/resources/cancer-reporting-tools/cancer-protocol-templates?_afrLoop=39382695961083#!%40%40%3F_afrLoop%3D39382695961083%26_adf.ctrl-state%3D7q3ka3djh_4> | |
| **Project Objective(s):** FHIR-enable cancer reporting. | |
| **Description of the Solution:**   1. Develop a tool that can render the CAP eCCs into FHIR Structure Data Capture (SDC) compliant forms and identify any issues with the FHIR questionnaire resource that would not facilitate the capture of data according to the CAP Cancer Protocols and eCC Templates.    1. Based on any questionnaire design issues identified, develop recommendations for needed functionality in the FHIR questionnaire resource and/or extensions to meet the need for cancer laboratory reporting 2. Develop FHIR Server that provides the decision support to make a determination of cancer reportability requirement based on a coded trigger list (ICD9, ICD10, SNOMED lists already exist) and form manager to provide the LIS with the appropriate form for completion. (Note: This task overlaps with a similar task in the *FHIR Cancer Reporting from Physician EHRs* project). 3. Develop a tool for Central Cancer Registries to receive and process the FHIR questionnaire response (SDC) data. . (Note: This task overlaps with a similar task in the *FHIR Cancer Reporting from Physician EHRs* project). | |
| **Desired Student Skills/Background:**   * Willingness to read, interpret, and ask questions about existing CDA implementation guide and make recommendations on ways to re-cast the existing implementation guide using FHIR (e.g., POST a new cancer event via a RESTFul protocol as opposed to sending a CDA document). * Experience with RESTful interfaces, backend development, and webservers * Clinical decision support engine | |
| **Data Requirements and Potential Sources:** De-identified laboratory data in an HL7 2.3.1 or 2.5.1 message format will be provided for use. We can also provide sample CAP eCC data for use, if needed. | |
| **Other Comments:**  This project team is familiar with FHIR had has participated in some connect-a-thons. | |