PROMOTING INTEROPERABLE GPC QUERIES IN SNOW SHRINE

UNMC has received funding within a BD2K grant from NIH to develop and disseminate ONC compliant i2b2 metadata tools and datasets. The grant specifically names SNOMED CT, RXNORM, LOINC, ICD-10-CM, ICD-10-PCS, ICD-O-3 as primary objectives. Funding for the next two years supports development of software to produce i2b2 metadata for these terminologies for delivery in synchronization with the Standards Development Organization publication cycle, namely twice yearly and will include utilities for change management to allow sites to assess and update the coded data in their i2b2 datamarts for changes in the reference terminologies.

In conjunction with this grant, UNMC is working to structure the anatomic and molecular data coming from our pathology department for all cases of cancer. We have completed LOINC coding of breast and colon cancer synoptic data and are in the process of testing and installing interfaces to our biobank and to Epic. Extract to i2b2 will be supported seamlessly with our current lab extracts. This structured data will extend and enhance the data quality in our tumor registry data sets in response to request from our researchers.

We are also structuring and LOINC coding all microbiology data reported as cultures or DNA probes anticipating the deployment of an enterprise wide antibiogram for clinical medicine and decision support. An expanded metadata model for i2b2 will allow integration of all microbiologic data into our data warehouse.

A primary aim of the grant is to install ONC compliant metadata and demonstrate successful network queries using standard data between two or more datamarts. We propose that we would add the ONC metadata to the SCILHS metadata base we are now deploying for SNOW SHRINE and ask for collaborators within GPC to deploy these metadata for shared research. Working in conjunction with two or more GPC collaborator sites, we would propose demonstration of query functionality in support of questions such as:

* Does the frequency of diagnosis of ER-, PR-, Her2Neu- breast cancer vary by geographic region?
* Does the frequency of BRAF V600E+ colon cancer cases vary by region?
* How does the frequency of Vancomycin resistant enterococcus vary related to medication orders and use of penicillins, penems or vancomycin?