

Adding Clinical Data to Statewide Administrative Data Pilot Project

The Agency for Health Care Administration (AHCA), Florida Center for Health Information and Policy Analysis, was awarded a contract from the Agency for Healthcare Research and Quality (AHRQ) that runs through September 2009 for a pilot project to study new ways to approach hospital quality measures. The pilot project funding is provided to add clinical laboratory data to the hospital administrative data already collected by the Agency under statutory authority. By adding clinical data to administrative data, AHRQ hopes to develop better predictors for hospital quality indicators. Florida is one of only three states that have received these grants.

Research has found that through the addition of present on admission to diagnoses it was possible to create risk adjustment models that have discriminatory power for rating hospital performance on selected AHRQ Inpatient Quality Indicators and Patient Safety Indicators.

One purpose of the pilot project is to demonstrate and evaluate the process required to 1) standardize laboratory data into a common nomenclature; 2) merge clinical data with hospital administrative data; 3) complete a statistical analysis of the merged dataset; 4) assess the added value of using clinical data to evaluate the quality of patient care within hospitals; 5) and describe all findings in a Final Report.

The Agency will work with 3M Health Information Systems, Inc (3M HIS) and the pilot hospitals to map their laboratory values to standardized Logical Observation Identifiers Names and Codes (LOINC) terminology and to evaluate the extent to which the 3M risk-adjustment model can be used in public hospital performance comparisons and can be made more accurate with the availability of the clinical data. During this contract (see Process Flowchart page 3):

The Agency will

- Develop a data sharing agreement with hospitals to support acquisition of clinical data for linkage to existing Agency information.
- Load the clinical lab data received from hospitals into an Oracle database in the Agency that holds the existing administrative inpatient data collected from the hospitals. The clinical and administrative datasets will then be joined into a single file for each hospital, combining the clinical with the administrative data.
- Send the combined file to 3M HIS using secure File Transfer Protocol (FTP).
- Provide participating hospitals with summary information and reports.
- Complete a final report that details the processes of normalizing laboratory terminology, linking clinical and administrative datasets and assessing the added value in the use of clinical data to determine the quality of patient care within the hospitals in the pilot project.

3M HIS will:

- Provide technical assistance to hospital quality and technical staff in creating a map of standardized values based on the coding sheet of their laboratory data terminology.
- Work with each hospital to standardize its laboratory data terminology and values to Logical Observation Identifiers Names and Codes (LOINC) standards. Currently 3M uses LOINC version 2.22, but will be using the new LOINC version released by Regenstrief after July 2008.
- Work with each hospital to verify accuracy of the final normalized map of laboratory values and then send each hospital its LOINC map.

- Group the merged clinical and administrative data into All Patient Refined Diagnosis Related Groups (APR DRGs) for analysis. 3M HIS will identify the individual clinical data elements, if any, that demonstrate an ability to improve the prediction of hospital-level quality measures.
- Provide a summary of its findings to the Agency.

Hospitals will:

- Attend a meeting with the Agency, other hospitals and subcontractors in May 2008.
- Send their laboratory data catalogue to 3M Terminology Consulting Services (3M TCS) to initiate the LOINC mapping (see 3M data dictionary template). The data collected for the pilot project, as shown in Table 1, will consist of specific clinical laboratory data elements and a set of demographic indicators that will be used to link the clinical data with the administrative data.
- Extract three quarters of laboratory data, from April 1, 2007 – December 31, 2007, on all patients, for all laboratory tests conducted.
- Apply the LOINC mapping to convert their unique laboratory values to LOINC standardized values and terminology.
- Conduct quality assurance to ensure data mapping is correct.
- Upload the standardized laboratory dataset, using standard messaging format, such as in a Comma Separated Value (CSV) to the secure FTP site at the Agency.

For more information, visit the website at: <http://www.fhin.net/FHIN/HITinitiatives/AHRQaddingClinData.shtml>

Table 1: Clinical and Demographic Data Elements for the Pilot Project

Clinical Data Elements	Abbreviation	Low	High	Units
SGOT	AST	8	35	U/L
CPK MB	CKMB	0	3	ng/mL
Potassium	K	3.5	5.1	mmol/L or mEq/L
Sodium	Na	135	145	mmol/L or mEq/L
Troponin I	TnT		<0.10	ng/ml
pH	pH	7.35	7.45	
PO2.sat	PO2	80	90	mmHg
pCO2	pCO2	35	45	mmHg
Prothrombin time- International Normalized Ratio (PT-INR)	PT	11	13	seconds
Albumin	ALB	35	50	g/L
Base Excess		-3	3	
Total bilirubin fractions	Tbil	2	14	umol/L
Calcium (total)	Ca	8.6	10.1	mg/dl
Calcium (ionized)	Ical	1.15	1.29	mmol/L or mEq/L
Creatinine	CREAT	0.7	1.3	mg/dL
Glucose	GLUC	70	105	mg/dL
Alkaline phosphatase	ALP	40	130	U/L
Blood urea nitrogen	BUN	7	18	mg/dL
Hematocrit (Indices - MCV MCH)	HCT			
Hematocrit (male)	HCT	38	52	%
Hematocrit (female)	HCT	35	47	%
Mean cell Hemoglobin	MCH	26	34	pg
Mean Cell volume	MCV	80	98	fL
Platelets	Plt	150	400	x10 ⁹ /L or K/mm ³
White blood cell count	WBC	4	11	x10 ⁹ /L or K/mm ³
Chloride	Cl	95	108	mmol/L or mEq/L
Bicarbonate	HCO3	22	26	mEq/L
Gamma glutamyl transferase	GGT		50	U/L
SGPT	ALT	8	40	U/L
Phosphorous	PO4	1.9	4.7	mg/dL
Total Hemoglobin (male)	HGB	14	18	g/dL
Total Hemoglobin (female)	HGB	12	16	g/dL
Partial thromboplastin time	PTT	29	41	seconds
Blood/Lymph Culture-Positive				

Additional Lab Data Elements

Date of specimen Run
Time of Specimen Run
Type of test performed
Reference range of test

Demographic Data Elements

Demographic Data Elements	Type	Width
Date of birth		
Gender	string	1
Ethnicity	string	1
Social Security Number	Number	9
Zip Code	string	5
the Agency Hospital Identification Number	Number	8
Hospital unique patient tracking number or Billing number	Number	8
Admission Date		
Discharge Record date		
Discharge Record quarter	string	1

FL AHCA / AHRQ Project
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Process Flow Chart

