

# Adding Clinical Data Elements to Administrative Data: Predicting Hospital Quality Indicators Using Present on Admission Codes and Laboratory Data

**AHCA** Agency for Health Care Administration  
FLORIDA AGENCY FOR HEALTH CARE ADMINISTRATION

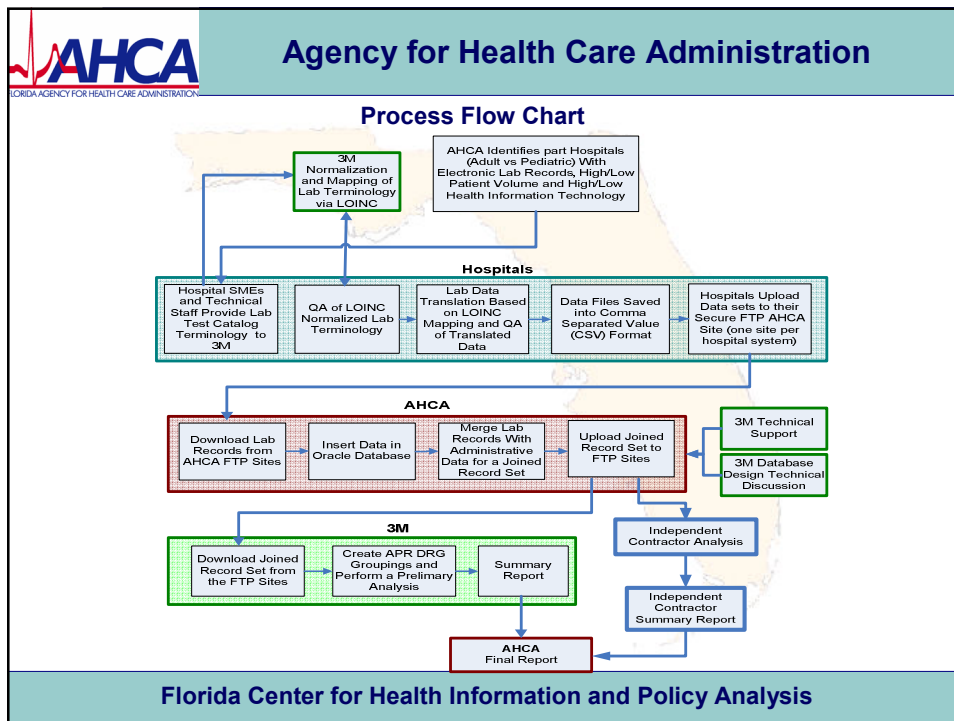
## Adding Clinical Data Elements to Administrative Data

### Predicting Hospital Quality Indicators Using Present on Admission Codes and Laboratory Data


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 Florida Agency for Health Care Administration

HCUP Partner's Meeting - April 28, 2008

Florida Center for Health Information and Policy Analysis



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## Florida's Approach to the Pilot Project

- Administrative and Present on Admission data collected through statutory requirement.
- The Florida Center has a history of working with 3M HIS to risk adjust Florida data.
  - [www.FloridaHealthFinder.gov](http://www.FloridaHealthFinder.gov)
- The Florida Center reports selected AHRQ Quality Indicators for all hospitals in the state.

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## Florida's Approach to the Pilot Project

- Active participation of hospital representatives in the State Consumer Health Information Policy Advisory Council aided the recruitment of hospitals for this project.
- Selection of participating hospitals includes adult and pediatric facilities.
- 3M HIS will work with participating hospitals to map laboratory values to LOINC terminology.

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## Barriers to the Pilot Project

- State government bureaucracy led to major delay in budget approval and initiating project.
- Lack of AHCA HL7 background and training, and sensitivity for hospital resources, convinced us to use a delimited dataset for uploading rather than HL7.
- Inclusion of Vital Signs on admission was not possible – not captured electronically.

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## Analysis of Merged Datasets

- Data will be collected from pediatric and acute care hospitals to assess both AHRQ Adult and Pediatric Quality Indicators.
- The laboratory values selected are those most appropriate for 3M HIS risk adjustment and analysis.
- Analysis conducted by both 3M HIS and an independent academic analyst.

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## POA Indicators as the Basis for Analysis

- POA indicators are used to compute admission APR DRG, severity level and risk of mortality, and exclude secondary diagnoses not present on admission from the APR DRG.
- POA Codes are Collected for Principal Diagnosis, Secondary Diagnoses, and External Cause of Injury:
  - Yes - Present at time of admission
  - No - Not Present at time of admission
  - Unknown - Documentation is insufficient to determine
  - Exempt - The condition is exempt from POA reporting

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## Incorporating Lab Data into 3M APR DRGs

- 3M Risk Adjustment and APR DRGs
  - An expected value is computed by using the APR-DRGs to severity adjust for the hospital's mix of patients.
- The admission APR DRG is used to assign patient to risk pools and severity of illness and risk of mortality levels within each risk pool.
- Lab values are incorporated into the admission APR DRG logic resulting in refinement of the risk pools and severity of illness and risk of mortality levels within each risk pool.

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## 3M HIS Analysis of the Hospital Data

- 3M will use the multi-hospital database of merged clinical and administrative data to develop a plan for the analysis of hospital-level quality statistics based on the merged data.
- 3M will focus on evaluating the extent to which the risk adjustment model used in our public hospital performance comparison can be made more accurate by the availability of the clinical data.

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## 3M HIS Analysis of the Hospital Data

- For APR DRGs with sufficient volume 3M will identify clinical data elements that improve the prediction of hospital-level quality measures.
- Once appropriate clinical data elements are identified 3M will incorporate those data elements directly into the APR DRG logic.
- 3M will develop regression models that have APR DRGs and clinical data elements as input variables to predict quality indicators.

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## Lessons Learned and Lessons to Learn

- Hospital Incentives: Individualized reports were welcomed by each hospital quality director we contacted.
- Benefits of LOINC mapping accrue to each hospital due to 3M training.
- Work with an independent researcher will help the Florida Center in its research efforts.
- Working with good people gets you further than expected.

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