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## ***State Pilots: Adding Clinical Data to Administrative Data***

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# Outline

- Rationale for AHRQ contracts to add clinical data to administrative data
- Overview of AHRQ-sponsored projects
- Pilot project activities to date

# Limitations of Administrative Data for Quality Measurement

- Lack clinically important information
  - Limited to ICD-9-CM diagnosis codes
  
- Often do not include present on admission (POA) indicator for diagnoses
  - CMS recently began requiring it
  - Most state data organizations do not require it on statewide data

# Limitations in Administrative Data Lead to Questions for Hospital- Specific Reporting

- Inadequate for risk adjustment to predict individual patient's risk of mortality
- Concern about penalizing providers with the sickest patients

# Rationale for Adding Clinical Data

- AHRQ-sponsored study (Pine et al.) showed adding a few clinical data elements significantly improves quality assessment using administrative data
  
- Important, cost-effective, additions:
  - POA
  - Lab values (numeric) on admission
  - (Potentially) vital signs

# ***AHRQ Contracts to Add Clinical Data to Statewide Administrative Data***

- Purpose:
  - Jumpstart the enhancement of administrative data
  - Expand data capacities for statewide data organizations that participate in AHRQ's Healthcare Cost and Utilization Project (HCUP)

# Two Types of Projects

## ■ In-depth pilots

- To add or link hospital clinical information to administrative data
- Sept. 2007 – Sept. 2009

## ■ Planning contract

- For organizations not yet ready to engage in pilots
- But seek to enhance their administrative data
- Sept. 2007 – Mar. 2009

# Awards to Statewide Data Organizations

## Pilots

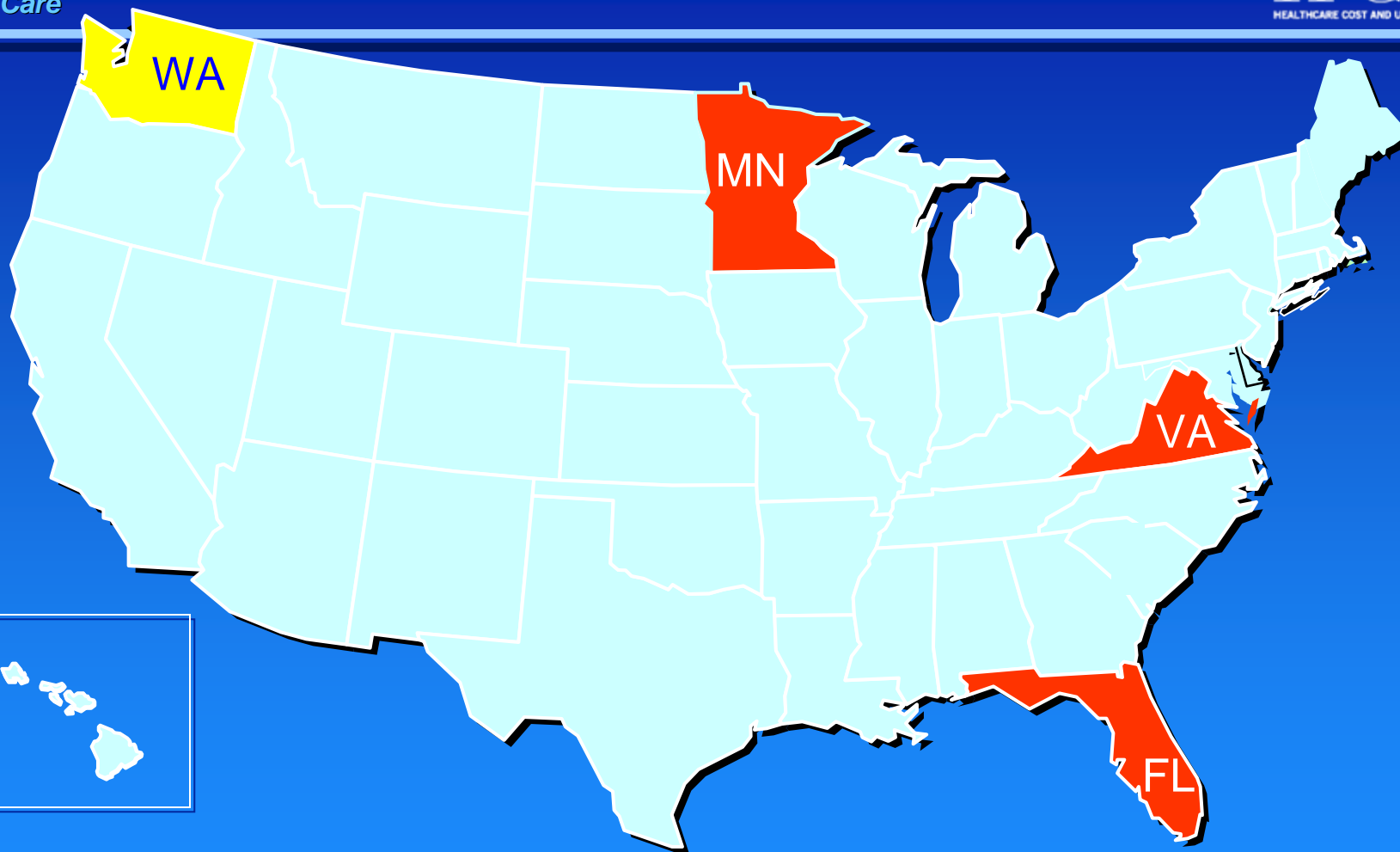
- **Florida** Agency for Health Care Administration
- **Minnesota** Hospital Association (MHA)
- **Virginia** Health Information (VHI)

## Planning

- **Washington** Center for Health Statistics, State Department of Health



# AHRQ Adding Clinical Data Pilot & Planning Awards



Key:

- Pilot State
- Planning State

# Objectives of Pilots

- Establish feasibility of linking clinical and administrative data
- Develop reproducible approach
- Set the stage for integrating clinical and administrative data streams in the future

# Project Requirements

- Identify and select clinical data elements to add to administrative data; POA a must
- Translate clinical data from electronic format
- Electronically transfer data from at least five hospitals to the data organization
- Process data into a multi-hospital database
- Collaborate with stakeholders
- Engage in peer-to-peer learning, information sharing, dissemination

# Activities To Date

- Develop Final Plan
- Recruit hospitals
- Develop data collection method
- Standardize lab data using LOINC
- Provide education & data feedback on POA
- Begin data collection
- Participate in peer learning network

# Recruit Hospitals

- Build the business case
  - Advantages of adding clinical data to admin data
  - Incentives for participation, e.g.
    - Data quality feedback
    - Hospital quality feedback reports
  
- Assess hospital readiness
  - Electronic lab data
  - LOINC coding
  - HL-7 transmission

# Recruitment Very Successful

<b>Project</b>	<b>Number of Hospitals Expected</b>
Contract Requirement	5
Florida	20+
Minnesota	25-30
Virginia	30+

**Florida Health Information Network (FHIN)**

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- [AHRQ Pilot Project](#) [Rural Health Care Project](#) [Medicaid Project](#) [ePrescribe Clearinghouse](#)
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**AHRQ Pilot Project**

**Adding Clinical Data to Statewide Administrative Data**

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 AHCA under statutory authority. By adding clinical data to administrative data, AHRQ hopes to develop better predictors for hospital quality indicators. Florida is one of three states, Washington State Department of Health Center for Health Statistics, [Virginia Health Information \(VHI\)](#), and [Minnesota Hospital Association \(MHA\)](#), that have received these grants.

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 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 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.

**22 Participating Hospitals - Click Image to Enlarge**



The project will move through several discrete [processes](#). To begin, AHCA recruited [22 hospitals](#), with various stages of health information technology, to participate in the pilot project. 3M HIS will work with each hospital to transform its unique coding of [clinical data elements](#) to a standardized set of terms using the Logical Observation Identifiers Names and Codes standard (LOINC). Hospitals will submit the standardized lab data and demographic data to AHCA via secure FTP. AHCA staff will load the clinical lab data into the Orac database 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. This combined file will then be sent to 3M HIS using secure FTP.

3M HIS will group the merged clinical and administrative data into All Patient Refined Diagnosis Related Groups (APR DRGs) for analysis. 3M HIS currently uses APR DRGs to risk-adjust hospital-level quality measures such as mortality and readmissions. For APR DRGs with sufficient volume, 3M HIS will identify the individual clinical data elements, if any, that demonstrate an ability to improve the prediction of hospital-level quality measures. 3M will provide a summary of its findings to AHCA.

The final deliverable to AHRQ will be a 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.

[FloridaHealthFinder.gov](#)  
Connecting Florida to Health Care Information



Florida Regional Health Information Organization Web Sites

[Big Bend Regional Healthcare Information Organization \(BBRHIO\)](#)

[Central Florida Regional Health Information Organization \(CFRHIO\)](#)

Northeast Florida Health Information Consortium (NEFHIC)  
[JaxCare, Inc.](#)  
and  
[Northeast Florida Regional Health Information Organization](#)



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[MNHospitalJobs.com](http://MNHospitalJobs.com)

## MHA and AHRQ contract to enhance data for quality studies

The Agency for Healthcare Research and Quality selected Minnesota Hospital Association to be part of a two-year project that allows **clinical lab data** to be paired with **administrative billing data**.

Hospitals already submit billing data to MHA. Any hospital can be part of this new initiative by agreeing to also submit their clinical lab data. Once the new lab data and billing data are merged, a more sophisticated severity adjustment system can be applied, and hospital performance on quality and patient safety measures can be more accurately analyzed. The new merged data will also help hospitals double-check their accuracy for coding conditions present on admission.

*Any hospital can participate.* There is no cost to take part, other than the staff time it takes to submit the clinical lab data, which will be facilitated by the subcontractor, Michael Pine and Associates.

To sign up or obtain more information, contact [Mark Sonneborn](#), MHA vice president, information services, at (651) 659-1423 or [Joe Schindler](#), senior director, data and finance policy, at (651) 659-1415.

### Lab Data Files and Layout Materials

- Q & A from July 15, 2008 conference call: [\[PDF\]](#)
- Letter to participants introducing the project's next step: "Adding Clinical Data to Administrative Data": [\[DOC\]](#)
- LOINC mapping tool instructions completing lab data worksheet: [\[DOC\]](#)
- LOINC code worksheet: [\[XLS\]](#)
- HL7 format for transmitting laboratory results to MHA: [\[DOC\]](#)
- *Laboratory Results to Be Collected Electronically*  
This list includes all chemistry, blood gas, and hematology laboratory tests to be collected electronically from hospitals participating in the AHRQ project: [\[DOC\]](#)

### HL7 and LOINC Primers

The following presentations were given by W. Ed Hammond on Feb. 25, 2008:

- "Introduction to HL7 Standards: version 2.x," [\[PPT\]](#)
- "Introduction to HL7, version 3," [\[PPT\]](#) and
- "An Introduction to LOINC (Logical Observation Identifier Name and Codes)," [\[PPT\]](#)

### Project Kick-Off Presentations from Jan. 15, 2008

MHA kicked off the project with an orientation event on Jan. 15, 2008 for participating hospitals. Three advisory groups were formed around hospital information technology, medical record coding and quality monitoring and improvement.

Following are presentation materials from that meeting which can give you a better understanding of the overall project:

- Background, Objectives, Details: [\[PDF\]](#)
- Project Overview: [\[PDF\]](#)
- Data Collection and Transmission: [\[PDF\]](#)
- Proper Use of the Present-on-Admission (POA) Modifiers: [\[PDF\]](#)
- The Hybrid Approach: Incremental Additions of Clinical Data to Administrative Data: [\[PDF\]](#)
- Potential Benefits to Participants in the Project: [\[PDF\]](#)

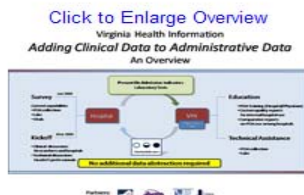




VHI-AHRQ Pilot Project  
 "Adding Clinical Data to Statewide Administrative Data"

LOGIN

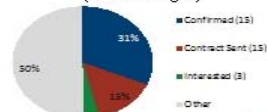
- Virginia Hospital Participation in Adding Clinical Data to Statewide Administrative Data



Click to Enlarge Status Map

"Adding Clinical Data to Administrative Data" Status Map

% of Total Hospital Discharge Volume by Contract Status (2,006 discharges)\*



31 Hospitals/Systems Involved (as of June 1, 2008)

VCU Health System  
 Carilion Medical Center  
 University of Virginia Medical Center  
 PeaceHealth  
 Centra Health  
 Piedmont Hospital  
 C2B Medical Center  
 Hennrich Medical Hospital  
 Stryker Washington  
 Piedmont Hospital Center  
 Longview Medical Center  
 Pulaski Community Hospital  
 Montgomery Regional Hospital  
 Abingdon Regional Hospital

Spert Sassano (Richmond Community Hospital)  
 PeaceHealth Central Hospital  
 Jervis Handrich Hospital  
 Clinch Valley Medical Center  
 Stone Memorial Hospital  
 Central Virginia Community Hospital  
 Colonial Parkway Hospital  
 Spert Sassano (Sperry Hospital)  
 Potomac Regional Medical Center  
 Shenandoah General Hospital  
 Potomac Regional Medical Hospital  
 Carilion Mountain Hospital



Hospital symbols correspond to chart legend



VHI-AHRQ KICKOFF MEETING MATERIALS

- Agenda (pdf)
- Introduction (pdf)
- Hybrid Database and Cardiac Care (pdf)
- Survey (pdf)
- Present on Admission Coding (pdf)
- Project Benefits (pdf)
- Draft Lab Data Elements (pdf)
- Next Steps (pdf)

ADDITIONAL MATERIALS

- POA Fact Sheet (pdf)
- POA/Lab Values File Specifications (pdf)
- MPN (VHI Provider Number) Lookup Table (pdf)
- Project Coordinator Contacts (pdf)

FREQUENTLY ASKED QUESTIONS

POA

- Q: POA "E" vs. "1" for exempt diagnoses
  - Q: Why is the project website called "hybriddata"?
  - Q: What is the "VHI Provider Number"?
  - Q: For the POA file, why are the 6th and 7th positions in the diagnosis codes always left blank?
  - Q: What is the naming convention for quarterly file transfer?
  - Q: What if we have more than 3 ECODES?
  - Q: Do the columns in the POA record need to have column names?
  - Q: Are nursing home discharges excluded from the POA transfer file?
  - Q: What is the date of the first data transmission?
- LAB**
- Q: For the lab value file, what kinds of comments are you looking for in the comments field?

"VHI's Long Term Care Consumer Guide is a must have for anyone looking for long term care."



# Develop Data Collection Method

- Select data elements to be collected
  - POA (already collected in FL)
  - Lab data elements
  - Linking data elements
- Develop standard data submission format
  - LOINC coding of lab names
- Develop methods for transmitting data
  - HL7 to be used by some Minnesota hospitals
  - HL7 fields to be used in Virginia
- Instruct hospitals on how to submit data

# Types of Lab Tests Included: Chemistry

- AST
- Albumin
- Alkaline Phosphatase
- Amylase
- Bicarbonate
- Bilirubin Total
- BNP
- Calcium
- C-Reactive Protein
- Creatine Kinase (CPK)
- Creatine Kinase MB
- Creatinine
- Glucose
- Lactic Acid
- Potassium
- Pro-BNP
- Sodium
- Troponin I
- Troponin T
- Urea Nitrogen (BUN)

# Types of Lab Tests Included: Other

## BLOOD GAS

- Arterial O<sub>2</sub> Saturation
- Arterial pCO<sub>2</sub>
- Arterial pH
- Arterial pO<sub>2</sub>
- Base Excess
- Bicarbonate
- FIO<sub>2</sub>

## HEMATOLOGY

- Hemoglobin
- INR
- Neutrophil Bands
- Partial Thromboplastin Time
- Platelet Count
- Prothrombin Time

# Type Information Collected on Lab Tests

- LOINC code for lab test name
- Observation value (lab result)
- Observation unit of measure
- Date/time of observation

# Standardize Lab Data Using LOINC

- Hospitals use different naming and coding conventions for their electronic lab data
- LOINC is an accepted EHR standard for lab data content
- Pilot projects are mapping individual hospitals' lab coding to LOINC to have a standard approach for analysis

# Education and Feedback on POA Data

- MHA and VHI have provided education to hospital staff on POA collection
  - MHA is developing a video for educating physicians
  
- VHI provided individual hospital data quality feedback report for the first wave of POA data collection (4<sup>th</sup> quarter of 2007)

# ***Participate in Peer Learning Network***

- Monthly conference calls with other pilot and planning state data organizations
- Document sharing
- California and the Veteran's Administration have joined to share their knowledge on similar activities



# Sharing Lessons Learned with Other Organizations

- Interim Information on HCUP-US
  - Implementation Plans
  - Project summaries
  - Links to project websites
  - Links to other relevant projects, documents and presentations
  - [www.hcup-us.ahrq.gov/reports/clinicaldata.jsp](http://www.hcup-us.ahrq.gov/reports/clinicaldata.jsp)



## Enhancing the Clinical Content of Administrative Data

AHRQ-Funded Pilot and Planning Contracts

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Providing clinical detail within administrative data records will enhance the ability to report publicly on quality and costs of care, as well as improve the accuracy, transparency, research capacity, and value of administrative data. Adding clinical data, especially present on admission coding and laboratory results, to existing administrative datasets is seen as a practical, effective, and cost-effective method to produce more accurate and expanded quality assessments of hospitals; it will also provide the evidence base for quality improvement efforts.

In September 2007, four HCUP Partners were awarded Adding Clinical Data Pilot or Planning contracts to work in collaboration with hospitals in their States to explore feasible, practical solutions to adding clinical data to administrative discharge records. These projects build on recent work sponsored by AHRQ that assessed the incremental value of adding particular clinical data elements. In the first type of project, three HCUP Partner States are conducting a two-year in-depth pilot to add or link hospital clinical information to administrative (discharge abstract or claims) data. In the second type of project, a smaller planning award was provided to one HCUP Partner that seeks to enhance its administrative datasets with more clinical data, but is not yet prepared to conduct the actual linkage. The findings from these projects will be accumulated in a guidance document that AHRQ will produce to share lessons learned with other organizations interested in creating enhanced administrative databases.

The pilot projects are being conducted in: Florida (Center for Health Information and Policy Analysis, Agency for Health Care Administration), Minnesota (Minnesota Hospital Association); and Virginia (Virginia Health Information). The planning project is being conducted in Washington (Washington State Department of Health). Thomson Reuters and the National Association of State Health Policy will develop the guidance document based on the lessons learned in these four projects and they are providing assistance for these projects to share their experiences.

### AHRQ-Funded Pilots and Planning Contracts

#### Overview Presentation

This [presentation](#) (PDF File, 434 KB) given at the 12th Annual HCUP Partners Meeting provides descriptions of the Adding Clinical Data Pilot and Planning projects.

#### Implementation Plans

##### Pilot Sites

- [Florida](#) (PDF File, 169 KB)
- [Minnesota](#) (PDF File, 393 KB)
- [Virginia](#) (PDF File, 281 KB)

##### Planning Site

- [Washington](#) (PDF File, 29 KB)

#### Project Websites

- [Florida](#)
- [Minnesota](#)
- [Virginia](#)
- [Washington](#)

#### State Summary Document

This [document](#) (PDF file, 34 KB) summarizes activities and plans for each site, including team members, project status as of April 2008, and site-specific web sites.

#### Contract Scope of Work

- [Adding Clinical Data to Statewide Administrative Data: Pilot Projects](#)

### Other Related Activities and Information

#### Other State and National Activities

- [California Office of Statewide Health Planning and Development](#) (PDF file, 15 KB)

#### AHRQ-Sponsored Study on Adding Clinical Data Elements to Administrative Data for Hospital-level Reporting

- [Enhancement of claims data to improve risk adjustment of hospital mortality](#) (Pine et al, 2007 JAMA article)
- [Combining administrative and clinical data to stratify surgical risk](#) (Fry et al, 2007 Ann Surg. article)
- [Cost-Effective Enhancement of Claims Data to Improve Comparisons of Patient Safety](#) (Harmon et al, 2007 J Patient Saf article)

#### Reference Materials and Web Links

- [The Case for the Present-on-Admission \(POA\) Indicator](#) (PDF file, 246 KB)
- [An Introduction to LOINC](#) (W. Ed Hammond) (PDF file 141 KB)
- [AHRQ National Resource Center for Health Information Technology](#)

<http://www.hcup-us.ahrq.gov/reports/clinicaldata.jsp>

## ■ Complete Projects

- Collect clinical data and link with administrative data
- Produce multi-hospital data set
- Assess data quality
- Use data to produce hospital-level reports on quality
- Provide hospitals feedback

## ■ Final Lessons

- Final report from each site
- Synthesis of lessons across sites by Thomson Reuters & National Academy for State Health Policy (NASHP)

## Contact information

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