

*“Using Clinically-Enhanced  
Claims Data to Guide Treatment  
of Acute Heart Failure”  
An AHRQ Grant to MHA*



## Data Acquisition & Transmission

### Pharmacy Data



Minnesota Hospital Association



# Overview of Data Acquisition Strategy

- Establish data specifications and formats
  - Phase 1: 15 hospitals submit developmental data
  - Project team prepares data specifications and formats
  - Project team maps data for Phase 1 hospitals
  - Phase 2: remainder of hospitals map own data with assistance
- Implement operational protocols to submit data from electronic repositories using established data specifications and formats
- Test data submissions to validate protocols
- Transmit data for comparative effectiveness study

# Pharmacy Data Acquisition - Phase 1

- Phase 1 hospitals will
  - be limited to hospitals with CPOE systems
  - include no more than two hospitals from a single chain using the same pharmacy order system
  - submit all hospital drug orders for patients with a principal diagnosis of heart failure discharged during a one year period
  - provide identifiers required to link drug orders to claims data already submitted to MHA
- Project team will evaluate the type and completeness of data provided by Phase 1 hospitals and will map these data into the standard format developed for this project

# Evaluation of Phase 1 Pharmacy Data

- Evaluation of Phase 1 pharmacy data will
  - focus on drugs related to the planned research study
  - assess the variability of data across sites and systems to establish minimum requirements for data acquisition
- Findings will be used to prepare
  - a final list of drugs to be monitored, a dictionary of drug order data elements, and a customized drug classification system for this project based on existing non-proprietary systems
  - a standardized flat file data layout, field definitions that conform to existing standards whenever possible, and instructions for submission of data by all participating hospitals

# Special Issues for Phase 1 Evaluation

- The Phase 1 analysis of drug order data will pay particular attention to how potentially problematic issues are managed at different hospitals
- Examples include
  - use of order messages that are strictly informational (e.g., dosing reminders, clarifications, verifications)
  - management of order cancellations and discontinuations
  - identification of PRN and one time orders
  - Identification of patients' own medications that are not dispensed by the hospital pharmacy

# Types of Drugs to Treat Heart Failure

- Angiotensin converting enzyme inhibitors (ACEI)
- Angiotensin II receptor blockers (ARB)
- Antiarrhythmics
- Anticoagulants
- Beta blockers
- Diuretics
- Inotropic agents
- Statins
- Vasodilators

# Drug Order Data Fields

- Drug name
- Internal drug code
- External drug code, e.g., NDC, RxNorm, SNOMED-CT (if available)
- Drug strength/unit
- Drug dosage
- Route of administration
- Order start/stop dates and/or duration of order
- Interval (i.e., frequency)

# Drug Classification Systems

- Alternative classification systems are available to support the collection and analysis of standardized electronic pharmacy data.
- Several promising non-proprietary systems will be evaluated to determine their strengths and weaknesses for use in this study
- Systems to be evaluated will include
  - RxNorm
  - SNOMED-CT
  - NLM MeSH Drug Categories



# Pharmacy Data Acquisition - Phase 2

- Phase 2 hospitals will
  - map their electronic data into the standardized flat file format based on data specifications established in Phase 1
  - submit completed data maps for review by project team
- Project team will
  - Prepare standardized materials to support data mapping by Phase 2 hospitals
  - assist individual hospitals in preparing their data maps
  - review completed maps for completeness and accuracy
  - provide feedback and assistance as needed

# Future Collection and Use of Drug Data

- A principal goal of this project is to test the feasibility and value of collecting drug order data to determine the comparative effectiveness of alternative therapies
- A secondary goal is to learn from participating hospitals whether electronically captured drug dispensed and/or administered data could replace drug order data
- After collection and transmission of study data are completed, hospitals will be surveyed to document their experiences and to learn how data acquisition and transmission processes could be improved