

## Enhanced Data to Accelerate Complex Patient Comparative Effectiveness Research

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### Infrastructure Description

This project used data from the Medicare Chronic Condition Data Warehouse (CCW) to develop an easy-to-use suite of analytic files and pre-coded algorithms for the study of comparative effectiveness of strategies to prevent cardiovascular disease recurrence among complex patients. More than 100 raw data files were joined to create research-ready person and service-level analytic files and code templates and macros while at the same time adding granularity, precision, and uniformity to the study of comorbid conditions and other covariates.

### Specific Aims

1. Create a data product consisting of analytic files for Medicare beneficiaries admitted with acute myocardial infarction (AMI) or stroke/transient ischemic attack. Tailor data elements to studying comparative effectiveness in complex patients. Create customized data products for AMI and stroke that contain a SAS<sup>®</sup> code library and macros for cohort selection, timeline, drug exposure, conditions and procedures; data documentation; and condition-specific summary files.
2. Expand institutional capacity to conduct comparative effectiveness research (CER) in complex patients by deploying the data product through an institutional collaboration between the Health Effectiveness Research Center and the University of Iowa's Clinical and Translational Science Award (CTSA).
3. Engage Centers for Medicare and Medicaid Services to develop a mechanism for researchers at other institutions to use the data product.

### Pilot Study

The enhanced data capacity was tested through a pilot study focused on the effectiveness and safety of statin use in individuals older than age 75 years with multiple chronic conditions, who had had an AMI in 2007.

### Infrastructure Goal

Develop easy-to-use data resources to enable study of comparative effectiveness of secondary prevention strategies among complex patients with cardiovascular disease.

### Data Sources

Medicare Chronic Condition Data Warehouse (CCW): longitudinal cohort of ~950,000 Medicare beneficiaries admitted with AMI or stroke in 2007 and followed through 2009.

### Data Access

Data are restricted to use by projects covered within the aims of the original research protocol and CMS-approved Data Use Agreements. Datasets created for this project may not be available after February 1, 2014, when the DUA covering this work will expire.

### Strategies Addressed from the HHS Strategic Framework on Multiple Chronic Conditions

- 1.B. Define appropriate health care outcomes
- 3.A. Identify best practices and tools
- 4.B. Understand the epidemiology of MCCs
- 4.C. Increase clinical research
- 4.D. Address health disparities

## Enhanced Data to Accelerate Complex Patient Comparative Effectiveness Research (continued)

A project analyst with no prior administrative claims data experience was able to use this data infrastructure to create an analytic dataset with minimal support. The analysis of secondary prevention with statin medications for older adults revealed that both clinical complexity and CVD risk were found to increase with age, and statin treatment rates declined with advancing age. In contrast, the benefit of secondary prevention with statin medications was found to increase with advancing age.

### Publications (as of September 2013)

Chrischilles E, Schneider K, Wilwert J, et al. Beyond comorbidity: Expanding the definition and measurement of complexity among older adults using administrative claims data. *Medical Care*. In Press, 2014.

(Additional papers currently in preparation).

### Posters and Presentations

Chrischilles E, Schneider K, Wilwert J, et al. Beyond comorbidity: Expanding the definition and measurement of complexity among older adults using administrative claims data. Poster accepted at: AcademyHealth Annual Research Meeting; 2013 Jun 23-25; Baltimore, MD.

Chrischilles E. Enhanced data to accelerate complex patient comparative effectiveness research. Poster presented at: Leveraging Knowledge and Action to Improve Health Care Quality. 6th Annual Conference of the Agency for Healthcare Research and Quality; 2012 Sept 9–12; Bethesda, MD.

O'Donnell B, Schneider K, Brooks J, and Chrischilles E. Standardizing Medicare payment information to support studies examining geographic variation in costs. Paper presented at: Optimizing Health and Healthcare. 4<sup>th</sup> Biennial Conference of the American Society of Health Economists; 2012 June 10–13; Minneapolis, MN.