

## **ONLINE SUPPLEMENT – APPENDIX A: DATA SOURCE DESCRIPTION**

This study employed a retrospective cohort design and data from two large integrated US private healthcare claims repositories—Truven Health Analytics MarketScan<sup>®</sup> Commercial Claims and Encounters (CCAЕ) and Medicare Supplemental and Coordination of Benefits (MDCR) Databases (hereinafter, the “MarketScan Database”) and the Optum Clinformatics Claims Database (hereinafter, the “Optum Database”) spanning January 2005 through December 2015. The MarketScan Database contains healthcare claims information from employer-sponsored plans throughout the US that provide health benefits to >15 million persons annually, including employees, their spouses and dependents; ~10% of whom are aged ≥65 years. The Optum Database includes information from a large health plan that provide health benefits to >7 million geographically-diverse persons annually.

Available data from each facility and professional-service claim include dates and places of service, diagnoses, procedures performed/services rendered, and quantity of services (professional-service claims only). Available data from each outpatient pharmacy claim include the drug (class) dispensed, dispensing date, quantity dispensed, and number of days supplied. Medical and pharmacy claims also include amounts paid (i.e., reimbursed) by health plans and patients for healthcare services rendered. Selected demographic and eligibility information (including age, sex, geographic region of residence, dates of plan eligibility) is available for all health plan enrollees in the databases. All data can be arrayed to provide a detailed chronology of medical and pharmacy services used by each plan member over time.

The data extracts were de-identified prior to its release to study investigators, and thus their use for health services research is compliant with the HIPAA Privacy Rule and federal guidance on Public Welfare and the Protection of Human Subjects.