

Health Care Data Analytics

Using Data Analytics to Understand Health Care Challenges and Opportunities

Westat has significant expertise in using a range of data sources to understand demographic, structural, clinical, and economic challenges to improving Federal, state, and local health delivery systems. By working with a variety of data sources, we enhance the ability of clients to assess community needs and plan care interventions.



With Westat's expertise, health care planners gain a solid foundation to construct practical program goals, cost estimates, and monitoring systems. Our skills and experience provide data-driven health care analyses to Federal, state, and local government agencies; foundations; and the life sciences industry.

We have significant expertise in merging and analyzing health data files and, then, translating that data into actionable recommendations. Disparate data sources include Medicare and Medicaid files, commercial health claims and encounter data, electronic health records (EHRs), assessments for long-term supports and services, public health statistics, and other national, state, and local data.

Steps for a comprehensive analysis



Develop analytic plan and identify, request, and import required data



Review data quality and remediate data as appropriate



Merge and standardize files across disparate data sources



Enrich analytic files with custom fields, such as quality metrics, risk indicators, episode groupers, and others



Create initial profiles of critical population subgroups



Analyze health care access, quality, utilization, payments and outcomes



Produce reports and data visualizations highlighting opportunities for improvement

SELECTED PROJECTS

Home-Based Primary Care

For a professional organization of home-based primary care providers, we analyzed their participation in the CMS Independence at Home initiative, including proposing a revised model for computing shared savings. Based on the results, project sites realized significant additional savings through the shared savings model. We are producing national population profiles and analyses of participants in home-based primary care programs.

State Medicare/Medicaid Data Integration

We imported, standardized, and linked 2007-15 Medicare and Medicaid data, including Medicare assessment data from MDS and OASIS. We developed an innovative provider clustering algorithm to establish the existence of naturally occurring health neighborhoods for multiple states.

Managed Long-Term Supports and Services (MLTSS)

Over a 12-year period, our experts evaluated a state's MLTSS model combining Medicaid and Medicare data. The evaluation focused on nursing home entry among participants as compared to a matched fee-for-service cohort. The state and other stakeholders used the evaluation to suggest program modifications and develop similar initiatives for individuals under age 65 with disabilities.

Accountable Care Organization (ACO) Savings

We have conducted an ACO-sponsored project to model how cost and quality outcomes would have changed had patients joined the ACO in 2013. We also projected future performance based on improved cost mitigation and more accurate risk scoring. We continue to import Medicare data and provide monthly reports on expenditures and health outcomes for the ACO.

EHR-Based Analyses for Diabetes

EHR data represent a promising approach for diabetes surveillance, but EHR-based algorithms for diabetes require validation. Westat is linking responses from a survey of diabetes patients with their EHR data to validate the extent to which survey-based and EHR-based algorithms can predict Type 1 and Type 2 diabetes, using the gold standard of manual chart review. In a related project, we used EHR data along with national data sources to produce composite estimates of diabetes levels and risk factors related to the control of diabetes, prediabetes, and diabetes complications. Combined, these studies help improve our understanding of best practices for surveillance and monitoring outcomes of diabetes.

Burden-of-Illness Studies

For a large pharmaceutical company, we are analyzing disease impacts on health expenditures and health outcomes. Ongoing studies include burden of illness and symptom progression in different stages of Alzheimer's disease, including the impact of therapy.

Health System Performance Scorecard

Westat provides data collection, data management, and analytic support for the Commonwealth Fund Health System Scorecard (<http://www.commonwealthfund.org/publications/health-system-scorecards>), a series of performance benchmarks and improvement targets for states, communities, and the nation. Performance data are publicly reported for more than 40 measures of health care access, quality of care, health outcomes, efficiency of care, and income-based health disparities. The state scorecards measure health system performance in all 50 states and the District of Columbia. The local scorecard assesses performance in the nation's 306 hospital referral regions, which represent local markets for health care.

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