## Appendix A: Economic Outcomes and Federally Funded Data Sources

TABLE A-1. Economic Outcomes Relevant to PCOR Analysis of Health Care Interventions

| **Economic Outcome Category** | **Economic Outcome Measure(s)** | **Economic Outcome Description** | **Economic Outcome Example(s)** | **Patient/ Family Perspective** | **Caregiver Perspective** | **Employer Perspective** | **Payer/ Insurer Perspective** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Formal Health-care Sector Costs** | Paid/reimbursed amounts | Amount that insurer pays a provider for any type of covered medical care | Paid for physician, inpatient, outpatient, pharmacy/drug, lab, paid home health care |  |  | X | X |
| Out-of-pocket (OOP) health care costs | Amount that individuals are responsible for after insurance | Copayments, coinsurance, deductibles, etc. associated with any covered service, including (1) costs associated with adverse events due to medical treatment, and (2) alternative medical treatments (e.g., acupuncture, massage, psychotherapy, personal trainers, and health coaches) | X |  |  |  |
| Other OOP medical expenses | Health-related expense not covered by an insurance plan | Over-the-counter drugs, other services not covered by insurance including (1) costs associated with adverse events due to medical treatment, (2) alternative medical treatments (e.g., acupuncture, massage, psychotherapy, personal trainers, and health coaches), or (3) genetic testing | X |  |  |  |
| Insurance premiums | Premium cost to purchase any type of health insurance | Health, dental, vision, drug, long-term care insurance, etc. | X |  | X |  |
| **Informal Health-care Sector Costs** | Transportation | Transportation costs associated with seeking medical care | Bus, taxi, car, mileage, gas, parking, etc. | X | X |  |  |
| Unpaid caregiver time | Time spent caring for patient needs because of their medical treatment or condition | Value of assistance (time) from an unpaid relative or friend |  | X |  |  |
| Patient time | Any time-related costs associated with health service, medical treatment, or condition | Time in doctor's office, waiting, receiving care, etc. | X | X |  |  |
| **Non-Health-care Sector Costs** | Childcare and other child-related expenses | Paid care when patient cannot do this due to medical needs | Babysitter, nanny (in or out of home), paid tutoring, or homeschooling | X | X |  |  |
| Housekeeping | Paid care when patient cannot do this due to medical needs | Housecleaner | X | X |  |  |
| Special food | Costs associated with dietary modifications for medical treatment or condition | Prep for colonoscopy | X | X |  |  |
| Home modification | Costs associated with accessibility changes at home | Bath, shower, stairs, ramps | X | X |  |  |
| Relocation/  moving | Costs incurred from a long-term, permanent move associated with treatment or condition | Cost of rent or mortgage associated with moving into a more accessible home, educational costs incurred by patient’s family members (e.g., children) because of relocation | X | X |  |  |
| Clothing/ laundry | Costs associated with specific modifications needed for medical treatment or condition | Hospital gown for home use | X | X |  |  |
| Home production and leisure time | Reduced home productivity and leisure associated with medical treatment or condition | Activity limitation days | X | X |  |  |
| Lost wages from absenteeism | Work loss (days/hours) associated with medical treatment or condition | Missed work | X | X | X |  |
| Lost wages from reduced productivity (presenteeism) | Reduced productivity on the job, associated with medical treatment or condition | Less productive on the job | X | X | X |  |
| Lost wages and benefits from losing work | Voluntary unemployment, involuntary unemployment, early retirement, or exit from labor force due to disability associated with medical treatment or condition | Labor force participation; retirement; permanent disability affecting work or career and associated earnings and benefits | X | X |  |  |

TABLE A-2. Federally Funded Data Sources for PCOR Economic Evaluations

| **Data Source Name (Abbreviation)**  ***Steward*** | **Source of Data** | **Lowest  Level of Aggregation** | **Data Nationally Representative/National Coverage?** | **Publicly Available Data?** | **Available Economic Outcome Categories** | **Available Economic Outcome Measures, by Category** | **Identifiable Social Determinants of Health\*** | **Demographics Available for Conducting Disparities/ Equity Analyses\*\*** | **Existing Data Linkages (with Federal and Non-Federal Data)** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Medical Expenditure Panel Survey (MEPS)**  ***AHRQ*** | Survey | Individual | Yes | Yes | Formal Health-care Sector Costs,  Informal Health-care Sector Costs,  Non-Health-care Sector Costs | Formal Health-care Sector Costs: Insurance premium, OOP health care costs  Informal Health-care Sector Costs: Unpaid caregiver time  Non-Health-care Sector Costs: Absenteeism | Social context, Economic context, Education, Physical Infrastructure, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Urban-rural status, Income or income status | NHIS |
| **State Inpatient Databases (HCUP-SID)**  ***AHRQ*** | Administrative | Encounter/ claim | No | No | Formal Health-care Sector Costs | Formal Health-care Sector Costs:  (Approximation of) paid/reimbursed amount† | Social context, Economic context, Physical Infrastructure, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Urban-rural status | American Hospital Association (AHA), SEDD, SASD |
| **Home Health Outcome and Assessment Information Set (OASIS)**  ***CMS*** | Administrative | Encounter/ claim | Yes | No | Formal Health-care Sector Costs,  Non-Health-care Sector Costs | Formal Health-care Sector Costs:  Paid/reimbursed amount  Non-Health-care Sector Costs: Home production and leisure time | Social context, Economic context, Education, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Urban-rural status, Income or income status | Other Centers for Medicare & Medicaid Services (CMS) data |
| **National (Nationwide) Inpatient Sample (HCUP-NIS)**  ***AHRQ*** | Administrative | Encounter/ claim | Yes | No | Formal Health-care Sector Costs | Formal Health-care Sector Costs: (Approximation of) paid/ reimbursed amount† | Social context, Economic context, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Income or income status, Urban-rural status | None since 2012 |
| **National Health Interview Survey (NHIS)**  ***CDC*** | Survey | Individual | Yes | Yes | Formal Health-care Sector Costs,  Non-Health-care Sector Costs | Formal Health-care Sector Costs: OOP health care costs  Non-Health-care Sector Costs: Absenteeism, home production and leisure time, inability to work, productivity | Social context, Economic context, Education, Physical Infrastructure, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, LGBTQ+, Disability status, Urban-rural status, Income or income status | National Immunization Provider Record Check Study (NIPRCS), National Death Index (NDI), Social Security Administration (SSA), U.S. Department of Housing and Urban Development (HUD), Medicare, Medicaid, MEPS, NHANES |
| **United States Renal Data System (USRDS)**  ***NIH*** | Administrative | Individual | Yes | No | Formal Health-care Sector Costs | Formal Health-care Sector Costs: Paid/ reimbursed amount, OOP health care costs | Social context, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Urban-rural status, | The United Network for Organ Sharing (UNOS), CMS |
| **Kids’ Inpatient Database (HCUP-KID)**  ***AHRQ*** | Administrative | Encounter/ claim | Yes | No | Formal Health-care Sector Costs | Formal Health-care Sector Costs: (Approximation of) paid/ reimbursed amount† | Social context, Economic context, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Income or income status, Urban-rural status | None since 2012 |
| **Nationwide Readmissions Database (HCUP-NRD)**  ***AHRQ*** | Administrative | Encounter/ claim | Yes | No | Formal Health-care Sector Costs | Formal Health-care Sector Costs: (Approximation of) paid/ reimbursed amount† | Social context, Economic context, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Income or income status, Urban-rural status | None (observations are linked within the dataset) |
| **Nationwide Ambulatory Surgery Sample (HCUP-NASS)**  ***AHRQ*** | Administrative | Encounter/ claim | Yes | No | Formal Health-care Sector Costs | Formal Health-care Sector Costs: (Approximation of) paid/ reimbursed amount† | Social context, Economic context, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Income or income status, Urban-rural status | None |
| **State Ambulatory Surgery and Services Databases (HCUP-SASD)**  ***AHRQ*** | Administrative | Encounter/ claim | No | No | Formal Health-care Sector Costs | Formal Health-care Sector Costs: (Approximation of) paid/ reimbursed amount† | Social context, Economic context, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity (some states), Income or income status, Urban-rural status | SEDD, SID, AHA |
| **Nationwide Emergency Department Sample (HCUP-NEDS)**  ***AHRQ*** | Administrative | Encounter/ claim | Yes | No | Formal Health-care Sector Costs | Formal Health-care Sector Costs: (Approximation of) paid/ reimbursed amount† | Social context, Economic context, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Income or income status, Urban-rural status | None |
| **State Emergency Department Databases (HCUP-SEDD)**  ***AHRQ*** | Administrative | Encounter/ claim | No | No | Formal Health-care Sector Costs | Formal Health-care Sector Costs: (Approximation of) paid/ reimbursed amount† | Social context, Economic context, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Urban-rural status | SASD, SID, AHA |
| **Medicare Health Outcomes Survey (MHOS)**  ***CMS*** | Survey | Individual | Yes | Yes | Informal Health-care Sector Costs,  Non-Health-care Sector Costs | Informal Health-care Sector Costs: Unpaid caregiver time  Non-Health-care Sector Costs: Home production and leisure time, productivity | Social context, Economic context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Disability status, Income or income status | Surveillance, Epidemiology, and End Results (SEER) |
| **Behavioral Risk Factor Surveillance System (BRFSS)**  ***CDC*** | Survey | Individual | Yes | Yes | Informal Health-care Sector Costs,  Non-Health-care Sector Costs | Informal Health-care Sector Costs: Unpaid caregiver time  Non-Health-care Sector Costs: Home production and leisure time | Social context, Economic context, Physical Infrastructure, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Income or income status, Urban-rural status | None |
| **Current Population Survey (CPS)**  ***U.S. Census Bureau*** | Survey | Individual | Yes | Yes | Informal Health-care Sector Costs,  Non-Health-care Sector Costs | Informal Health-care Sector Costs: Unpaid caregiver time  Non-Health-care Sector Costs: Absenteeism, ability to work | Social context, Economic context, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Disability status, Income or income status | None |
| **Panel Study of Income Dynamics (PSID)**  ***University of Michigan*** | Survey | Individual | Yes | Yes | Informal Health-care Sector Costs,  Non-Health-care Sector Costs | Informal Health-care Sector Costs: Unpaid caregiver time  Non-Health-care Sector Costs: Absenteeism, home production & leisure time | Social context, Economic context, Education, Physical Infrastructure, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Religious affiliation, Disability Status, Urban-rural status, Income or income status | Medicare, National Center for Education Statistics (NCES), HUD, NDI |
| **National Longitudinal Survey of Youth (NLSY)**  ***BLS*** | Survey | Individual | Yes | Yes | Non-Health-care Sector Costs | Non-Health-care Sector Costs: Productivity | Social context, Economic context, Education, Physical Infrastructure | Age and sex available? Yes  Other available characteristics based on the EO: Religious affiliation, Disability status, Urban-rural status, Income or income status | None |
| **American Time Use Survey (ATUS)**  ***BLS*** | Survey | Individual | Yes | Yes | Informal Health-care Sector Costs,  Non-Health-care Sector Costs | Informal Health-care Sector Costs: Unpaid caregiver time  Non-Health-care Sector Costs:  Inability to work | Social context, Economic context, Education, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Disability status, Urban-rural status, Income or income status | CPS |
| **National Health and Nutrition Examination Survey (NHANES)**  ***CDC*** | Survey | Individual | Yes | Yes | Non-Health-care Sector Costs | Non-Health-care Sector Costs: Special food, Home production and leisure time | Social context, Economic context, Education, Physical Infrastructure, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Disability status, Urban-rural status, Income or income status | Medicare, Medicaid, HUD, NDI, SSA |
| **National (Hospital) Ambulatory Medical Care Surveys (NHAMCS, NAMCS)**  ***CDC*** | Survey | Encounter/ claim | Yes | Yes | Formal Health-care Sector Costs | Formal Health-care Sector Costs:  Paid/ reimbursed amount | Social context, Economic context, Education, Physical Infrastructure, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Urban-rural status | Medicare enrollment and claims data, Social Security Benefit History Data, Dual Energy X-Ray Absorptiometry (DXA) Multiple Imputation Data Files from 1999–2004, NDI Mortality Data, MEPS |
| **Medicare Current Beneficiary Survey (MCBS)**  ***CMS*** | Survey | Individual | Yes | Yes | Formal Health-care Sector Costs,  Informal Health-care Sector Costs | Formal Health-care Sector Costs: OOP health care costs  Informal Health-care Sector Costs: Transportation, patient time | Social context, Economic context, Education, Physical Infrastructure, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Disability Status, Urban-rural status, Income or income status | Medicare claims, Cost & Use, Access to Care, & Cost modules |
| **Treatment Episode Data Set (TEDS)**  ***SAMHSA*** | Administrative | Encounter/ claim | Yes | Yes | Non-Health-care Sector Costs | Non-Health-care Sector Costs: Inability to work | Social context, Economic context, Education, Physical Infrastructure, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Disability status, Urban-rural status | Unknown |
| **National Health and Aging Trends Study (NHATS)**  ***NIH*** | Survey | Individual | Yes | Yesss | Non-Health-care Sector Costs | Non-Health-care Sector Costs: Inability to work | Social context, Economic context, Education, Physical Infrastructure, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Disability status, Urban-rural status, Income or income status | Medicare, National Study of Caregiving (NSOC) |
| **Survey of Income and Program Participation (SIPP)**  ***U.S. Census Bureau*** | Survey | Individual | Yes | Yes | Formal Health-care Sector Costs,  Informal Health-care Sector Costs,  Non-Health-care Sector Costs | Formal Health-care Sector Costs: OOP health care costs, Insurance premium  Informal Health-Care Sector Costs: Transportation,  patient unpaid caregiver time, patient time  Non-Health-care Sector Costs: Absenteeism, home production and leisure time costs | Social context, Economic context, Education, Physical Infrastructure, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Disability status, Urban-rural status, Income or income status | SSA |
| **Consumer Expenditure Survey (CES)**  ***BLS*** | Survey | Individual | Yes | Yes | Formal Health-care Sector Costs | Formal Health-care Sector Costs: Other OOP Medical Expenses, Insurance Premium | Social context, Economic context, Physical Infrastructure, Healthcare Context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Disability status, Urban-rural status, Income or income status | None |
| **National Study of Caregiving (NSOC)**  ***NIH*** | Survey | Individual | Yes | No | Informal Health-care Sector Costs,  Non-Health-care Sector Costs | Informal Health-care Sector Costs: Transportation, unpaid caregiver time, patient time  Non-Health-care Sector costs: Absenteeism, Inability to work, special food, home modifications, housekeeping | Social context, Economic context, Education, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Income or income status | Master Beneficiary Summary Files (MSBF), Medicare, Base A/B/D, Chronic Conditions, Cost & Utilization, Other Chronic or Potentially Disabling Conditions, Part A & B claims, Minimum Data Set, NHATS, OASIS, IRF-PAI, Part D Event, MEDPAR, Encounter files, Medicaid Analytic Extract, Transformed Medicaid Statistical Information System Analytic Files |
| **Health Economics Resource Center Average Cost Datasets (HERC)**  ***U.S. Department of Veterans Affairs*** | Administrative | Encounter/ claim | Yes | No | Formal Health-care Sector Costs | Formal Health-care Sector Costs: (Approximation of) Paid/reimbursed amount, OOP health care costs\*\*\* | Social context | Age and sex available? Unknown  Other available characteristics based on the EO: Unknown | VA's Patient Treatment Files (PTF) |
| **Medicare Claims (Research Identifiable Files (RIF), Chronic Conditions Data Warehouse (CCW), MBSF, MedPAR))**  ***CMS*** | Administrative | Individual (enrollment), encounter/ claim (utilization) | Yes | No | Formal Health-care Sector Costs | Formal Health-care Sector Costs: Paid/reimbursed amount, OOP health care costs | Social context, Economic context, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Disability status | Other CMS data, registries (SEER, USRDS), other National Center for Health Statistics (NCHS) surveys (NHIS, NHANES, Longitudinal Study of Aging (LSOA), NNHS), other surveys (Health and Retirement Survey (HRS), NHATS) |
| **Medicaid Claims (Research Identifiable Files) (RIF, Transformed Medicaid**  **Statistical Information System (T-MSIS)**  **Analytic Files (TAF), Medicaid Analytic Extract (MAX), CCW))**  ***CMS*** | Administrative | Individual (enrollment), encounter/ claim (utilization) | Yes | No | Formal Health-care Sector Costs | Formal Health-care Sector Costs: Paid/reimbursed amount, OOP health care costs | Social context, Economic context, Healthcare context | Age and sex available? Yes  Other available characteristics based on the EO: Race/ethnicity, Disability status, Income or income status | Other CMS data |

\* These are based on AHRQ’s framework (<https://www.ahrq.gov/sdoh/about.html>).

\*\* Other than age and race, the remaining characteristics are identified as priority populations in the *Executive Order (EO) On Advancing Racial Equity and Support for Underserved Communities Through the Federal Government*.

\*\*\* The Health Economics Resource Center (HERC) Average Cost Datasets represent resource costs in the Veterans Health Administration (VHA) system.

† Healthcare Cost & Utilization Project (HCUP) cost-to-charge ratio (CCR) files reflect hospital-level resource costs in the NIS, KID, SID, SEDD, and NEDS. These data are available separately from the core data files and are intended to be combined with charge variables to estimate costs.