State/County Level Demographic, Cost, Utilization, and Quality Data
Methods
Data Source: CMS Chronic Conditions Warehouse (see http://ccwdata.org/index.php) which contains 100 percent of Medicare claims for beneficiaries who are enrolled in the fee-for-service (FFS) program as well as enrollment and eligibility data.
Study Population: Medicare beneficiaries that (a) have no months of HMO enrollment and (b) have both Part A and Part B for whatever portion of the year that they are covered by FFS Medicare (i.e., they have no months of A-only or B-only coverage). We do include beneficiaries who died in the year.
Years: 2007-2011
Geographic Variables: States and counties (using FIPS county codes)
HCC Scores: CMS developed a risk-adjustment model that uses HCCs (hierarchical condition categories) to assign risk scores. Those scores estimate how beneficiaries' FFS spending will compare to the overall average for the entire Medicare population. The risk score for the overall average is set at 1.0; beneficiaries with scores greater than that are expected to have above-average spending, and vice versa. Risk scores are based on a beneficiary's age and sex; whether the beneficiary is eligible for Medicaid, first qualified for Medicare on the basis of disability, or lives in an institution (usually a nursing home); and the beneficiary's diagnoses from the previous year. We used total risk scores to adjust spending data at the geographic level. The HCC model was designed for risk adjustment on larger populations, such as the enrollees in an MA plan, and generates more accurate results when used to compare groups of beneficiaries rather than individuals. The HCC model was also not designed to risk adjust spending at the service level and therefore is not applied to service level spending.
Spending Measures: We present actual total Medicare spending, standardized total Medicare spending, and a risk-adjustested, standardized total Medicare spending. We also present both actual spending measures and standardized spending measures for certain major types of Medicare covered services. Spending measures were developed based on the amount Medicare pays for services and do not include beneficiary cost sharing.
Standardization of Spending: We standardize spending to remove geographic differences in payment rates for individual services as a source of variation. To standardize spending, we examined Medicare's various FFS payment systems and identified the factors that lead to different payment rates for the same service. In general, those factors are adjustments that Medicare makes to account for local wages or input prices, and extra payments that Medicare makes to advance other program goals, such as compensating certain hospitals for the cost of training doctors. We then estimated what Medicare would have paid for each claim without those adjustments.
Utilization Measures: We present three different types of utilization measures for certain major types of Medicare covered services: the number of times beneficiaries used a particular service, the number of beneficiaries who used a particular service, and the percentage of beneficiaries who used a particular service.
Readmission Measures: We present two readmission measures: number of readmissions and a readmission rate. Readmissions are defined as admissions that occur within 30 days of the initial discharge and the readmission rates presented are not risk-adjusted.
Emergency Department (ED) Visit Measures: We present two measures of ED utilization: a total count of ED visits and ED visits per 1000 beneficiaries. ED visits include both visits to the ED that result in an admission and visits that do not result in an admission.

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Prevention Quality Indicators (PQI): We present AHRQ PQIs which measure hospital admission rates for ambulatory care sensitive conditions. We limited our analyses to measures that were applicable to the Medicare aged population and measures where the sample size was large enough for analyses at the HRR or state level. We determined that the sample size was too small at the county level to present the PQIs.
Hospital Compare: We present CMS Hospital Compare measures which were developed by CMS and use data from hospitals and Medicare claims to measure processes and outcomes for hospital care for heart attack, heart failure, pneumonia, and surgical care. Hospital Compare measures are not reported at the county level.
Limitations of Maryland Data: The state of Maryland has a unique waiver that exempts it from Medicare's prospective payment systems for inpatient and outpatient care. Maryland instead uses an all-payer rate setting commission to determine its payment rates. Medicare claims for hospitals in other states break out additional payments for indirect medical education (IME) costs and disproportionate share hospital (DSH) adjustments, and we removed those amounts when we standardized payments in those states. However, the claims for Maryland's hospitals do not identify IME or DSH payments. To standardize claims for Maryland's hospitals, we worked with Maryland's Health Services Cost Review Commission to develop a series of year and hospital-specific factors that would back out Maryland's equivalent of IME/DSH spending from the state's hospital payments for both inpatient and outpatient services.