

Per Capita Medicare Inflation in the Last Decade: Unit Cost Increases Offset by Reduced Utilization

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Dartmouth College has determined that analyses of publicly available data are not considered to be human subjects research (CPHS00028121).

Among the commercially insured, per capita medical expenditure growth has been fueled by unit price inflation. Though attenuated by reduced per capita utilization (2011–2017),¹ unit price inflation has driven overall inflation, being substantially higher for hospital than for physician services (2007–2014).² While per capita health care spending growth has been higher for the commercially insured than for those insured by Medicare,³ evaluation of the relative contributions of utilization and unit price inflation to overall per capita Medicare fee-for-service expenditure inflation has not been conducted. We sought to complete such an analysis.

METHODS

From the Centers for Medicare and Medicaid Services (CMS), we obtained 2007–2017 public use files for Medicare fee-for-service beneficiaries aged less than 65 years old (< 65) and 65 years old and older (65+). Those data included the number of fully enrolled Medicare Parts A & B beneficiaries and standardized care expenditures (that eliminate expenditures for graduate medical education and disproportionate share, locality pay differences, and alternative payment model differentials) disaggregated into 18 service categories.⁴

For each service category, we obtained the number of beneficiaries who used each service and per-beneficiary service-specific utilization rates (for longitudinal services (e.g., inpatient care categories, home health care, and hospice), including the number of days of service use). We estimated the total number of service-specific “events” (e.g., procedures or dialysis visits) for single-use services and service-specific

“episodes” for longitudinal services by multiplying the per-beneficiary number of events or episodes by the number of beneficiaries. We divided those numbers by the service-specific number of users to generate annual per-user service-specific utilization estimates. We calculated the proportionate contribution of each service category to total per capita costs, and we calculated the overall compound annual inflation rate (CAIR) for each service category over the time period examined. Finally, we calculated the relative contributions to overall service-specific CAIRs of the proportion of beneficiaries using the service and the following component contributors: for single-use services, the number of events per service-user and the estimated unit cost per event; for longitudinal services, the number of episodes per service-user, the number of days per episode, and the estimated unit cost per episode day.

RESULTS

For both age groups, per capita costs of care shifted from inpatient, long-term care, home health, procedures, imaging, and durable medical equipment (DME) to inpatient rehabilitation, outpatient hospital, federally qualified health center or rural health center (FQHC/RHC), and ambulatory surgical center care (Table 1). Proportions of both populations using FQHC/RHCs and procedures grew; proportions of the 65+ population using most longitudinal services fell. The annual per-user event number decreased for most longitudinal care services, imaging, DME, and testing but increased for outpatient hospital care, outpatient dialysis, and procedures. Among longitudinal care episodes, the number of days per episode fell while the estimated standardized unit cost per episode day increased.

Increases in every CAIR-contributing component caused overall outpatient hospital, FQHC/RHC, and ambulatory surgical center care CAIRs to be the highest (Fig. 1). Longitudinal services’ CAIRs were fueled by higher estimated costs per day but offset by fewer days per episode and a smaller proportion of 65+ beneficiaries using those services. Dialysis, imaging, and DME CAIRs were offset by lower costs per event; per-beneficiary DME CAIRs were further deflated by decreases in the per-user event number and the proportion of the population obtaining services.

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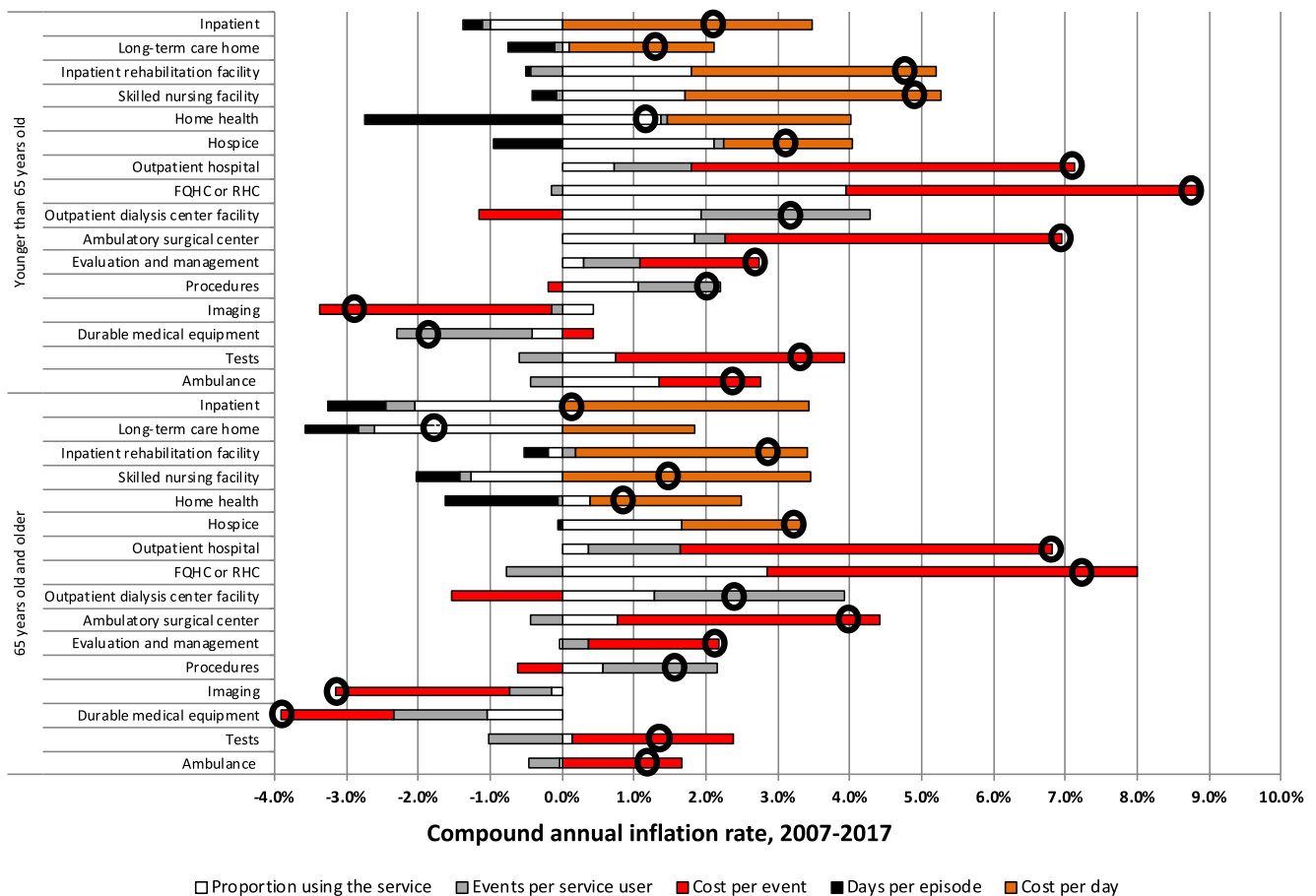


Figure 1 For Medicare fee-for-service enrollees younger than age 65 (top) and 65 years old and older (bottom), compound annual inflation rates for the period 2007–2017 overall for each service (in the black circle) and for each inflation rate component (the proportion of the service population that used the service, the number of events per service, the estimated cost per event (for single-use services), and the number of days per episode and the estimated cost of each episode day (for longitudinal services).

DISCUSSION

We examined per capita utilization, per-service expenditures, and average per-unit cost estimates for a variety of health care services between 2007 and 2017 and found that per capita Medicare fee-for-service expenditures shifted from inpatient to outpatient settings and that per-beneficiary longitudinal care cost inflation was driven by substantial increases in the estimated standardized cost of care per day but mitigated by shorter lengths of service provision and lower per-user service utilization. Dialysis, procedures, and imaging experienced unit cost deflation.

While accountability may have driven care to lower cost settings and reduced waste, we found relatively high unit cost growth in most care services. Although limited by its reliance on administrative data, and an inability to adjust for changing patient needs, these initial findings invite further research examining the effectiveness of efforts to reduce components of per capita Medicare inflation by reducing low-value care provision (reducing service use),⁵ reducing estimated unit costs for longitudinal services (reducing episode costs), or enhancing provider productivity (improving care efficiency).⁶

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