

Table 7. Summary of Studies Comparing Utilization

Study	Study Population	Data Time Period	Data Source	Metrics and Analysis	Main Findings	Methodological Notes
Studies Examining Service Use at End of Life						
MedPAC 2014b	Medicare beneficiaries using hospice benefits in 2012.	2012	Medicare denominator file, Medicare beneficiary database, and the 100% hospice claims standard analytic file.	Primary hospice diagnosis, percentage of decedents using hospice, average length of stay in hospice (over lifetime), and percentage discharged live from hospice (first used in 2010, followed to 2012).	HMO enrollees were more likely to use the Medicare hospice benefit than were those in TM. Primary hospice diagnoses were relatively similar, but cancer slightly more likely in HMOs, and dementia and other neurological diagnoses more likely in TM, perhaps explaining why long hospice stays are less likely in HMOs than TM. Rates of live discharges were similar for HMOs and TM.	This study provides the most recent national data on use of the Medicare hospice benefit across HMOs and TM, but its design is descriptive. There are no tests of statistical significance nor adjustment for locale or patient mix (other than the comparison of diagnoses).
Stevenson et al. 2013	Medicare beneficiaries ages 65+ in HMOs or TM continuously enrolled in Medicare Parts A and B in the calendar year of their death.	2003-2009	Individual-level HEDIS data on service utilization submitted annually to CMS, Medicare beneficiary summary file on date of death and hospice use, CMS Medicare claims data for a 20% sample of TM beneficiaries.	Hospice utilization and payments. Utilization of services in calendar year of death. This includes overall annual rates of use of medical and surgical hospitalizations and days, ambulatory visits, ambulatory surgery procedures, and emergency room visits. HEDIS specifications applied to TM claims data. TM sample excludes long-stay nursing home residents and those with end-stage renal disease. TM sample reweighted to match HMO distribution by age, sex, race, and geography.	HMO enrollees who died were more likely to use the hospice benefit at the end of life, though to a lesser extent in 2009 than 2003. Relative to TM, HMO enrollees who died in 2009 used fewer inpatient and emergency room services but had higher rates of surgical admissions and somewhat higher rates of outpatient physician visits.	This is a national study that adjusts for beneficiary location and demographics, but not for health conditions and patient preferences that might jointly influence choice of health plan and end of life care. While the researchers suggest that the findings indicate MA plans may do a better job managing care at the end of life, it could not assess the appropriateness of services used at the end of life or control for medical conditions and patient preferences. The hospice benefit is carved out of the MA benefit package, with TM responsible for most Medicare costs. This changes HMO financial incentives.
Studies Examining Procedure Use						
Matlock et al. 2013	Medicare beneficiaries ages 65+ in MA and TM across 32 hospital referral regions in 12 states.	2003-2007	MA data are from the Virtual Data Warehouse maintained by participants in the Cardiovascular Research Network consortium (CVRN), a 15-member consortium with NIH support. Thirteen of 15 members participated. TM sample is from the Medicare enrollment database and associated inpatient, outpatient, and physician claims.	Rates of coronary angiography, percutaneous coronary intervention (PCI), and coronary artery bypass graft (CABG) surgery. HMO/TM comparisons were age, sex, race, and income-adjusted procedure rates.	Rates of angiography and PCI are lower in MA than TM but rates are similar for CABG. The difference in the first two sets of rates is driven by differences in non-urgent vs. urgent care. Rates vary geographically within each sector, though area rates for MA and TM do not necessarily vary consistently.	The health plans participating in this study are older, established HMO plans that generally use integrated networks. The fact that the study distinguishes urgent from non-urgent procedures and includes both inpatient and outpatient procedures enhances the ability to use its findings as a metric for quality. However, the study includes only limited adjustments for plan selection though it shows that adjusting MA rates for additional cardiac risk factors did not change the findings.

Table 7 (continued). Summary of Studies Comparing Utilization

Study	Study Population	Data Time Period	Data Source	Metrics and Analysis	Main Findings	Methodological Notes
Studies Comparing Overall Utilization Rates						
Schneider et al. 2004	Medicare beneficiaries enrolled in 254 health plans (HMOs), comparing for-profit and nonprofit plans.	1997	1998 HEDIS files submitted by health plans; plan characteristics from InterStudy Competitive Edge 8.2 database.	Rates of 12 common high-cost procedures. Comparisons adjusted for socio-demographic mix, other health plan characteristics, and location.	Nonprofit HMOs generally had lower rates of use of high-cost procedures than for-profit HMOs that persisted after adjusting for socio-demographic mix and geography. Model type, region, and plan age were confounded with profit status so the key driver of the difference is not clear.	The data from this study are from 1997 and the study does not include controls for health status nor a TM comparison group.. Because the procedures examined include those with both high and low discretion and no assessment of appropriateness for individual patients, it is not clear how to interpret conclusions from the perspective of quality (versus resource use).
Landon et al. 2012	Medicare beneficiaries ages 65+ in TM and HMOs. PPOs, PFFS, cost plans, and plans with less than 500 enrollees were excluded. TM beneficiaries in long-stay nursing home residents and those with end-stage renal disease excluded.	2003-2009	Individual-level HEDIS data from CMS for HMOs and 20% sample of Medicare TM beneficiaries, Medicare Beneficiary Summary File.	Includes annual rates of medical and surgical hospitalizations, outpatient visits, ambulatory surgery/procedures, emergency room visits, and use rates for 12 surgical procedures. Comparisons used rates matched for demographics and area, with further adjustment based on CAHPS health status data.	In 2009, beneficiaries in HMOs had fewer emergency room visits, inpatient days, and ambulatory procedures than TM (adjusted for health status) but similar outpatient visit rates. Those in HMOs had lower rates of hip and knee replacements but higher rates of femur reductions, a less discretionary procedure. HMO enrollees also had more coronary artery bypass surgeries than in TM but similar rates of PCTA. Results for plans with experience dating to 2003 compared to newer plans were mixed. In 2007, beneficiaries in older plans had lower rates of CABG and PCI than those in newer plans; however, by 2008, no difference existed. Beneficiaries in older plans had higher rates of knee replacements than newer plans (and both types of plans had lower rates compared to TM), while those in newer plans had higher rates of femur fractures than older ones (and both types of plans had higher rates than TM).	National study that adjusts for geography, demographic characteristics, and health status. As quality measures, these and other findings are limited by the absence of available diagnostic data to adjust more fully for patient mix or appropriateness of care. The findings include only HMOs.

Table 7 (continued). Summary of Studies Comparing Utilization

Study	Study Population	Data Time Period	Data Source	Metrics and Analysis	Main Findings	Methodological Notes
Studies Comparing Overall Utilization Rates (continued)						
Mello et al. 2002	Medicare beneficiaries ages 65+ continuously in HMOs and TM in counties with at least one Medicare HMO (ESRD beneficiaries excluded).	1993-1996	Medicare Current Beneficiary Survey (1993-95 Cost and Use File and 1996 Access to Care File), linked with county-level data from the Area Resource File, Medicare Market Penetration File, and Medicare Prepaid Health Plans Monthly Report.	Probability of hospitalization, number of inpatient days for those hospitalized, and use of physician services. Focus of study was on utilization differences that persist after efforts to control for selection, using simultaneous equation modeling and other techniques.	Both rates of hospitalization and total days for those hospitalized were lower in HMOs than TM after adjusting for selection (total days was significant in one analysis but not another). Those in HMOs were more likely to see a physician at least once compared to TM beneficiaries.	The data are from the mid-1990s. The appropriateness of hospital use also was not directly assessed.
Dhanani et al. 2004	Medicare beneficiaries ages 65+ in Parts A and B in California counties with HMOs, who were in HMOs, TM, or switched to HMOs over the time period. HMOs grouped by group/staff and IPAs.	1991-1995	Linked Medicare enrollment data for California beneficiaries with inpatient discharge data for short-stay hospitalizations, from the California Office of Statewide Health Planning and Development (OSHDP).	Total inpatient days per 1,000 person years, with analysis controlled for enrollment history group, health status, sociodemographics, and year. Enrollment history distinguished continually-enrolled HMO patients from two types of switchers (switch and stay, and switch and dis-enroll).	Inpatient rates lower in HMOs. Those switching into HMOs had lower inpatient use after the switch, with group/staff lower than IPAs. Hospital use was lower for continuous enrollees in both HMO types than TM. More than half of the difference was explained by selection, with selection particularly important in IPAs. Reductions in inpatient days were due entirely to reduced length of stay.	The data used by this study is now old (1992-1995). The study focuses on a single state (California, which has a long managed care history and low hospital utilization rates in both sectors). Appropriateness of hospital use also was not directly assessed.

SOURCE: Authors' analysis based on review of published papers.