# As It Grows, Medicare Advantage Is Enrolling More Low-Income and Medically Complex Beneficiaries

**Virtual ISPOR 2020**
Christie Teigland, PhD; Zulkarnain Pulungan, PhD

**Avalere Health** | An Inovalon Company, 1201 New York Ave NW, Washington, DC 20005
T 202.207.1300 | www.avalere.com

For more information, contact **Christie Teigland, PhD** at **cteigland@avalere.com**

## Background

- Enrollment in Medicare Advantage (MA) plans has grown significantly in the last 2 decades, from 4.6 million in 2003 to 18.5 million in 2017, representing 33% of the Medicare population.[1] Over the same period, government payments to these private plans increased to more than $200 billion per year.[2]
- Despite the increasing role of MA, there is little known about the composition, health care utilization, and spending patterns of enrollees.[3] To our knowledge, this is the first study to profile the MA population and evaluate recent trends in their health care utilization, spending and quality.

## Objective

To describe demographic, socioeconomic, and clinical characteristics of Medicare beneficiaries enrolled in MA as well as their health care utilization, spending, and quality of care.

## Methods

- A retrospective observational study was used to analyze a sample of 2,002,062 beneficiaries who were enrolled in MA plans in 2012 and 1,813,937 beneficiaries enrolled in MA plans in 2015.
- Beneficiaries were required to be continuously enrolled in the same MA health plan with medical and pharmacy benefit coverage for the 12-month reporting period from January 1, 2012, to December 31, 2012, or January 1, 2015, to December 31, 2015 (with no more than a 30-day gap in enrollment).
- Descriptive statistics were generated separately for 2012 and 2015 to evaluate differences in demographic, socioeconomic, clinical, utilization, spending, and quality measures between the 2 years.

## Results

- Between 2012 and 2015, the MA population grew younger and included greater proportions of racial and ethnic minorities (Table 1). The proportion of enrollees under age 65 increased, indicating more people had qualified for Medicare because of disability. The proportion of MA beneficiaries enrolled in both Medicare and Medicaid (also known as "dual eligible") increased by about 39%, and the proportion enrolled in a Special Needs Plan (SNP) for dually eligible beneficiaries more than doubled.
- There were also more low-income beneficiaries with the proportion living in a neighborhood with median incomes below $30,000 increasing by 35% (Table 2). Those living in a neighborhood where 20% or more of the households lived below the federal poverty level increased by 29%, and the proportion living in neighborhoods where fewer than 20% of residents have a college degree increased by 20%.
- While the prevalence of chronic conditions was similar in 2015 and 2017, a greater proportion of beneficiaries had more complex medical needs (Table 3). There was a 12% increase in the number of beneficiaries with 8 or more chronic conditions. We also used the Charlson Comorbidity Index (CCI) to evaluate the severity of illness in the MA population.[7] The average CCI score was higher in 2015, indicating more people with a high number of comorbidities.
- Utilization of healthcare services also increased significantly from 2012 to 2015 (Table 4). Hospitalization rates were stable, but lengths of hospital stays increased. Use of observation stays increased by 43% and emergency department visits increased by 23%.
- Overall spending was 13% higher in 2015, largely due to higher spending on inpatient stays (25% higher) and prescription drugs (38% higher) (Table 4).
- Performance on several measures of health care quality improved (Table 5). MA beneficiaries had slightly lower hospital readmission rates, and potentially avoidable hospitalizations were 15% lower, mostly because of a 26% decline in avoidable acute hospitalizations.
- There was a slight increase in rates of breast cancer screenings, while use of high-risk medications declined significantly from 11.2% to 6.6%. However, adherence to 3 important medications declined slightly (Table 5).

**Table 1: Beneficiary Characteristics**

| Beneficiary Characteristic | 2012 | 2015 |
|---|---|---|
| Number of Beneficiaries (denominator) | 2,002,062 | 1,813,937 |
| Age (mean) | (72.0) | (71.1) |
| 0–54 | 6.4% | 7.9% |
| 55–64 | 7.8% | 9.9% |
| 65–69 | 23.0% | 22.7% |
| 70–74 | 23.2% | 22.6% |
| 75–79 | 17.2% | 15.8% |
| 80–84 | 12.3% | 11.2% |
| 85+ | 10.3% | 10.0% |
| Gender | | |
| Female | 57.3% | 57.4% |
| Male | 42.7% | 42.6% |
| Race/Ethnicity (N known) | 45.3% | 56.6% |
| White | 76.2% | 71.0% |
| Black or African American | 15.5% | 16.9% |
| Asian | 1.3% | 2.3% |
| Hispanic or Latino | 4.9% | 5.5% |
| Other race | 2.2% | 4.2% |
| Rural/Urban area type (N known) | 93.4% | 94.2% |
| Urban | 78.3% | 77.0% |
| Suburban | 14.1% | 14.7% |
| Rural town, large | 4.5% | 5.0% |
| Rural town, small/isolated | 3.1% | 3.3% |
| Dual status (N known) | 32.0% | 40.7% |
| Non-dual eligible | 81.3% | 74.2% |
| Partial benefit | 10.9% | 7.9% |
| Full benefit | 7.8% | 18.0% |
| Plan type | | |
| PPO | 32.7% | 22.7% |
| HMO | 61.9% | 71.7% |
| HMO-POS | 5.4% | 5.3% |
| Other | 0.0% | 0.4% |
| Special Needs Plan (SNP) (N known) | 32.0% | 39.5% |
| Non-SNP | 92.2% | 81.6% |
| D-SNP | 7.7% | 17.3% |
| C-SNP or I-SNP | 0.1% | 1.1% |
| Original reason for entitlement (N known) | 42.7% | 52.8% |
| Age | 60.3% | 58.7% |
| Disability | 39.7% | 41.3% |
| End-stage renal disease and/or disability | 0.0% | 0.0% |

**Table 2: Medicare Advantage Beneficiary Socioeconomic Characteristics, 2012 and 2015**

| Beneficiary Characteristic | 2012 | 2015 |
|---|---|---|
| Number of Beneficiaries (denominator) | 2,002,062 | 1,813,937 |
| Number with socioeconomic data (denominator) | 1,869,884 | 1,709,146 |
| Median household income | | |
| <$30,000 | 20.2% | 27.2% |
| $30,000–$49,999 | 26.6% | 26.6% |
| $50,000–$74,999 | 29.2% | 24.5% |
| $75,000+ | 24.0% | 21.7% |
| Percent of households in neighborhoods with 0%–19% or 20%–100% of residents living in poverty | | |
| 0%–19% | 76.5% | 69.7% |
| 20%–100% | 23.5% | 30.3% |
| Percent of households in neighborhoods with 0%–19% or 20%–100% of residents with bachelor's degree or higher | | |
| 0%–19% | 36.8% | 44.3% |
| 20%–100% | 63.2% | 55.7% |

**Table 3: Medicare Advantage Beneficiary Clinical Characteristics, 2012 and 2015**

| Beneficiary Characteristic | 2012 | 2015 |
|---|---|---|
| Number of Beneficiaries (denominator) | 2,002,062 | 1,813,937 |
| Number of Chronic Conditions | | |
| Mean | 4.5 | 4.7 |
| 0 | 9.7% | 8.0% |
| 1–3 | 29.3% | 29.7% |
| 4–7 | 46.1% | 45.6% |
| 8+ | 14.9% | 16.7% |
| Charlson Comorbidity Index | | |
| Mean | 1.9 | 2.1 |
| 0 | 36.5% | 33.9% |
| 1–3 | 44.6% | 44.2% |
| 4+ | 18.9% | 21.9% |
| Top 10 Chronic Conditions | | |
| Hypertension | 68% | 70% |
| Hyperlipidemia | 64% | 64% |
| Arthritis and other inflammatory tissue disease | 32% | 34% |
| Eye disease | 35% | 33% |
| Diabetes | 30% | 33% |
| Lung disease | 21% | 23% |
| Hematological disease | 21% | 22% |
| Acute myocardial infarction/ Ischemic heart disease | 23% | 21% |
| Psychiatric disease | 15% | 19% |
| Thyroid disease | 19% | 19% |

**Table 4: Medicare Advantage Beneficiary Utilization and Spending, 2012 and 2015**

| Beneficiary Characteristic | 2012 | 2015 | Ratio |
|---|---|---|---|
| Number of Beneficiaries (denominator) | 2,002,062 | 1,813,937 | |
| Utilization per 1,000 members | | | |
| Hospitalizations | 212 | 217 | 1.02 |
| Average length of stay | 9 | 11 | 1.22 |
| Emergency department visits | 385 | 475 | 1.23 |
| Observation visits | 81 | 116 | 1.43 |
| Outpatient visits | 9,971 | 10,082 | 1.01 |
| Number of drug fills | 31,553 | 31,146 | .99 |
| Average spending per beneficiary per year | | | |
| Total | $9,799 | $11,116 | 1.13 |
| Inpatient | $1,973 | $2,470 | 1.25 |
| Outpatient | $2,104 | $2,458 | 1.17 |
| Physician services and tests | $3,539 | $3,358 | .95 |
| Durable medical equipment | $308 | $309 | 1 |
| Outpatient prescription drugs (Part D) | $1,468 | $2,022 | 1.38 |
| Post-acute care (skilled nursing facility) | $408 | $498 | 1.20 |

**Table 5. Medicare Advantage Plan Performance on Selected Quality Measures, 2012 and 2015**

| Beneficiary Characteristic | 2012 | 2015 | Ratio |
|---|---|---|---|
| Number | 2,002,062 | 1,813,937 | |
| Quality performance measure | | | |
| Rheumatoid arthritis management (ART) | 73.5% | 71.3% | .97 |
| Breast cancer screening (BCS) | 63.7% | 67.2% | 1.05 |
| Potentially avoidable hospitalizations (HPC)–chronic | 15.4 | 13.6 | .88 |
| Potentially avoidable hospitalizations (HPC)–acute | 4.6 | 3.4 | .74 |
| Potentially avoidable hospitalizations (HPC)–total | 20.0 | 17.0 | .85 |
| 30-day all-cause readmissions | 9.8 | 9.4 | .96 |
| High-risk medications (HRM) | 11.2% | 6.6% | .59 |
| Medication adherence–cholesterol | 76.5% | 74.6% | .98 |
| Medication adherence–diabetes | 80.7% | 78.5% | .97 |
| Medication adherence–hypertension | 79.6% | 77.1% | .97 |

## Discussion

- We found major changes in the MA population from 2012 to 2015. Beneficiaries were younger and more likely to be disabled. There were more racial/ethnic minorities and more people with low incomes and other social risks that could make them high cost, high need patients.
- While the prevalence of chronic conditions was relatively stable, beneficiaries became more medically complex. The use of observation stays and emergency department visits increased substantially, and average length of hospital stays also increased indicating those who were admitted were sicker on average.
- Overall spending was 13% higher, largely because of increased spending on prescription drugs. Spending on hospital stays also increased by 25%, consistent with longer lengths of stay, and spending on skilled nursing increased by 20%.
- Performance on several quality measures improved, including lower rates of avoidable hospitalizations and readmissions, but adherence to medications to treat cholesterol, diabetes, and hypertension declined.
- MA plans will need to develop targeted interventions to address beneficiaries' social risks, avoid medical complications that result in emergency room use and preventable hospital stays, and increase medication adherence.
- Plans also need to reduce spending on post-acute care, for example by expanding use of services provided in beneficiaries' homes.

## Limitations

- While the Medicare Advantage plan data in MORE² represents approximately 25% of the national MA market and enrolled individuals have similar demographic and clinical characteristics as the national MA population overall, there is a possibility the study cohort drawn from MORE² may not be entirely representative of the national MA population (e.g., we required 12 months of enrollment with both medical and pharmacy coverage).
- There is also always a chance of measurement error when using claims data because of miscoding.
- Finally, while we identified the presence of chronic conditions using ICD-10 diagnosis codes from medical claims, the likelihood of a condition being recorded on claims is higher for patients who seek care more often.

## Acknowledgments

This study was sponsored by a grant from the Commonwealth Fund.

## References

1. Henry J. Kaiser Family Foundation, "Medicare Advantage Enrollees as a Percent of Total Medicare Population," Timeframe: 2018; and Bruce E. Landon et al., "Analysis of Medicare Advantage HMOs Compared with Traditional Medicare Shows Lower Use of Many Services During 2003–09," Health Affairs 31, no. 12 (Dec. 2012): 2609–17.
2. Niall Brennan, Charles Ornstein, and Austin B. Frakt, "Time to Release Medicare Advantage Claims Data," JAMA 319, no. 10 (2018): 975–76.
3. Medicare Payment Advisory Commission, "Chapter 13: Status Report on the Medicare Advantage Program," in Report to the Congress (MedPAC, 2017), 345–79.
4. Accounting for Social Risk Factors in Medicare Payment: Identifying Social Risk Factors (National Academies Press, 2016).
5. Martha Hostetter and Sarah Klein, "CHRONIC Care Act Prompts Some Medicare Advantage Plans to Incorporate Social Services," Transforming Care, Commonwealth Fund, Jan. 9, 2020.
6. Accounting for Social, 2016; Office of the Assistant Secretary for Planning and Evaluation, Report to Congress: Social Risk Factors and Performance Under Medicare's Value-Based Purchasing Programs (U.S. Department of Health and Human Services, Dec. 2016); Accounting for Social, 2016; Inovalon, An Investigation of Medicare Advantage Dual-Eligible Member-Level Performance on CMS Five-Star Quality Measures (Inovalon, Mar. 2018); Center for Medicare, "Examining the Potential Effects of Socioeconomic Factors on Star Ratings," Centers for Medicare and Medicaid Services, Sept. 8, 2015; and National Quality Forum, Risk Adjustment for Socioeconomic Status or Other Sociodemographic Factors (NQF, Aug. 15, 2014).
7. Richard A. Deyo, Daniel C. Cherkin, and Marcia A. Ciol, "Adapting a Clinical Comorbidity Index for Use with ICD-9-CM Administrative Databases," Journal of Clinical Epidemiology 45, no. 6 (1992): 613–19. The CCI classifies 17 comorbid conditions using ICD-9-CM/ICD-10-CM codes to provide a weighted score of disease severity that accounts for both the number and severity of comorbid conditions as they relate to risk of mortality, with a higher score indicating higher burden of illness. CCI scores range from 0 (the patient had none of the comorbid conditions) to 29 (patient had all 17 chronic conditions at highest level).
8. Jose F. Figueroa et al., "Concentration of Potentially Preventable Spending Among High-Cost Medicare Subpopulations," Annals of Internal Medicine, published online Oct. 17, 2017.
9. See the Better Care Playbook, https://www.bettercareplaybook.org/.
10. Acxiom Corporation, ZIP+4 InfoBase® Geo Files: Demographic, Financial and Property, Sept. 2015 release; Market Indices; ACS, Feb. 2016 release.
11. Karen E. Joynt et al., "Segmenting High-Cost Medicare Patients into Potentially Actionable Cohorts," Healthcare 5, no. 1–2 (Mar. 2017): 62–67.
12. Centers for Medicare and Medicaid Services, Chronic Conditions Among Medicare Beneficiaries: A Methodological Overview (CMS, Mar. 2019).

**Visit us online at www.avalere.com**
**@AvalereHealth**