

Characteristics, Utilization, and Concentration of Outpatient Care for Dual-Eligible Medicare Beneficiaries

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More than 12 million adults in the United States are dual-eligible beneficiaries (“duals”) who qualify for health insurance under both the Medicare and Medicaid programs.¹ As a growing proportion of the Medicare population, duals typically have more chronic conditions, more mental health needs, and higher rates of mortality.²⁻⁵ For these reasons, duals have become the focus of a growing number of state and federal policy initiatives designed to improve outcomes and reduce costs.⁶ Prior work on duals has focused on their disproportionate use of inpatient, postacute, and long-term care relative to non-dual-eligible beneficiaries (“nonduals”).⁷⁻¹² However, comparatively little is known about their use of outpatient care.

Outpatient care may be particularly critical for duals, who often have multiple, advanced chronic conditions and could meaningfully benefit from high-quality primary and subspecialty care. Although prior work on outpatient care for duals has focused on whether its receipt is associated with reduced inpatient utilization or expenditures,^{13,14} less is known about their specific outpatient utilization patterns, such as the frequency and type of visits they receive. Understanding patterns of outpatient primary and subspecialty care use among duals may be critical to improving outcomes among this clinically complex and costly patient population.

Beyond the extent to which duals receive outpatient care, little is also known about the types of physicians and practices that serve them. Health care delivery for certain structurally marginalized populations has been shown to be concentrated in a variety of different settings, including physicians' offices, hospitals, and postacute care facilities.¹⁵⁻¹⁷ Concentration of care in these settings has had important implications for quality, value-based payment models, and structural inequity.¹⁸⁻²¹ If the large majority of care for duals is provided by few physicians and practices, then policies designed to improve their access or outcomes, such as payment increases for primary care services,²² may primarily affect a small group of providers. This may also be the case for equity-based payment policies currently being proposed,²³ as duals are more likely to identify as racial and ethnic minorities.²⁴ However, whether outpatient care has been historically concentrated for duals in this way is

ABSTRACT

OBJECTIVES: To characterize the (1) distribution of outpatient care for dual-eligible Medicare beneficiaries (“duals”) and (2) intensity of outpatient care utilization of duals vs non-dual-eligible beneficiaries (“nonduals”).

STUDY DESIGN: Using data preceding the introduction of several outpatient alternative payment models, as well as Medicaid expansion, we evaluated the distribution of outpatient care across physician practices using a Lorenz curve and compared utilization of different outpatient services between duals and nonduals.

METHODS: We defined practices that did (high dual) and did not (low dual and no dual) account for the large majority of visits based on the Lorenz curve and then performed descriptive statistics between these groups of practices. Practice-level outcomes included patient demographics, practice characteristics, and county measures of structural disadvantage and population health. Patient-level outcomes included number of outpatient visits and unique outpatient physicians, primary vs subspecialty care visits, and expenditures.

RESULTS: Nearly 80% of outpatient visits for duals were provided by 35% of practices. Compared with low-dual and no-dual practices, high-dual practices served more patients (1117.6 patients per high-dual practice vs 683.8 patients per low-dual practice and 447.5 patients per no-dual practice; $P < .001$) with more comorbidities (3.9 mean total Elixhauser comorbidities among patients served by high-dual practices vs 3.6 among low-dual practices and 3.3 among no-dual practices; $P < .001$). With regard to utilization, duals had 2 fewer outpatient visits per year compared with nonduals (13.3 vs 15.2; $P < .001$), with particularly fewer subspecialty care visits (6.5 vs 7.9; $P < .001$) despite having more comorbidities (3.5 vs 2.7; $P < .001$).

CONCLUSIONS: Outpatient care for duals was concentrated among a small number of practices. Despite having more chronic conditions, duals had fewer outpatient visits. Duals and the practices that serve them may benefit from targeted policies to promote access and improve outcomes.

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unknown. Insights about care concentration and utilization patterns among duals could inform ongoing policies and investments designed to ensure that duals can access outpatient care in ways that promote disease management and potentially avoid downstream complications.

To fill these research gaps, we conducted a national, cross-sectional study by examining 3 questions. First, in the era prior to value-based payment, how was outpatient care for duals distributed across physician practices? Second, what are the characteristics of practices that may disproportionately care for them? Third, how did the intensity of outpatient care utilization differ between duals and nonduals?

METHODS

Data

We defined 3 main variables: (1) dual-eligible Medicare patients, (2) outpatient visits, and (3) physician practices providing outpatient visits. For primary analyses, we used a 5% random sample of Medicare Part B claims from 2013. We chose this year because it preceded the introduction of a variety of value-based and alternative payment models for outpatient practices and therefore captured the distribution of care before policies may have led to differences in patient sorting.²⁵ This year also precedes the enactment of Medicaid expansion under the Affordable Care Act, which improved insurance coverage for many adults living with disability²⁶ and may have influenced their care-seeking behaviors. The Affordable Care Act also introduced a variety of other policies targeting the care of duals.²⁷ For these reasons, we chose 2013 because we considered it to represent a “steady state” of care delivery for duals.

Using the Medicare Beneficiary Summary File, we included patients who were fully enrolled in both Medicare Part A and Part B from 2012 to 2013 and not enrolled in a Medicare Advantage plan for more than 1 month over this period. We categorized patients as “dual eligible” if they were enrolled for at least 1 month in any state’s Medicaid program in 2013. Details on sample creation are available in [eAppendix Figure 1](#) (eAppendix available at [ajmc.com](#)). We used the 2013 Carrier file to identify outpatient visits, including evaluation and management (E&M) and non-E&M visits. The Carrier file can include physician visits occurring in the hospital or emergency department. Because the focus of this study was on outpatient care, we excluded these types of visits using the place-of-service code that is assigned to individual claims.

To define physician practices, we used physician-level or practice-level National Provider Identification (NPI) numbers associated with each claim. We excluded NPIs that had denied claims or did not have any outpatient claims in 2013. We also excluded NPIs that could not be linked to physician or practice characteristics available in Physician Compare and the Medicare Data on Provider Practice and Subspecialty (MD-PPAS) databases,

TAKEAWAY POINTS

Dual-eligible beneficiaries (“duals”) have more chronic conditions, more mental health needs, and higher mortality compared with non-dual-eligible beneficiaries (“nonduals”). Prior work on duals has focused on their increased utilization of inpatient and long-term care, but little is known about their use of outpatient care and the physician practices that serve them. We find that the large majority of outpatient visits for duals is concentrated among a small number of physician practices. Despite having more chronic conditions, duals have fewer outpatient visits than nonduals, with particularly fewer subspecialty care visits. Duals, and the outpatient practices that disproportionately serve them, may benefit from targeted policies to promote access and improve outcomes.

as well as NPIs that corresponded to nurse practitioners, other nonphysicians, or unknown provider types. Finally, we excluded NPIs that provided care to fewer than 10 patients according to the Carrier file. Additional details are available in [eAppendix Figure 2](#). From Physician Compare and MD-PPAS, we obtained the number of physicians in a practice, number of patients served by a physician or practice, and whether the physician or practice had single-specialty or multispecialty capabilities.

For patient-level characteristics and utilization patterns, we used the Medicare Beneficiary Summary File to obtain information on age, gender, race, ethnicity, geography, and disability status. Race and ethnicity were included as part of this study on the basis of prior literature indicating that duals are more often of Black race and Hispanic ethnicity compared with nonduals¹ and that these populations experience disproportionate barriers to accessing outpatient care.^{28–30} Each claim was also associated with a variable for the site of care receipt and the expenditures associated with the claim. We then calculated the number of Elixhauser comorbidities³¹ using Part B claims and Medicare Provider and Analysis Review files from the previous year (2012) to extract all linked diagnosis codes for each patient.

Finally, we collected a variety of socioeconomic characteristics linked to the county of residence for an individual patient (identified in claims by patient-level zip code after using publicly available cross-walks for linkage). We collapsed these characteristics to summarize at the level of the practice at which patients received care. From the American Community Survey,³² we obtained 2013 county-level poverty rates and median household income. From the Area Health Resources Files,³³ we obtained county-level racial demographics, percentage of non-English-speaking persons, and the percentage of the population enrolled in the Supplemental Nutrition Assistance Program. From County Health Rankings,³⁴ we collected county-level rates of obesity and tobacco use, as well as rates of self-reported poor physical health (age-adjusted mean number of physically unhealthy days in the past 30 days) and mental health (age-adjusted mean number of mentally unhealthy days in the past 30 days).

Analyses

Practice level. The goal of this analysis was to understand whether outpatient care for duals, as a population, was concentrated

among few physicians and practices. To evaluate the distribution of outpatient visits for duals across physician practices, we used a Lorenz curve. Lorenz curves are a commonly used method from economics to visually depict patterns of inequality.^{35,36} To create the curve, we calculated the number of claims associated with care for duals under each NPI. On the x-axis, we ranked NPIs according to the number of visits provided to duals and plotted them across ventiles. Each ventile corresponds to 20% of the distribution of NPIs. On the y-axis, we plotted the cumulative percentage of outpatient visits for duals in the entire sample. A perfect 45-degree diagonal on a Lorenz curve corresponded to a perfectly equal distribution of outpatient care for duals across all practices. Concavity in the Lorenz curve reflected inequality in the distribution of dual-eligible visits among practices. We then calculated the Gini coefficient for this curve to quantify the degree of inequality in the distribution (1 reflects complete inequality in the distribution of care across practices, 0 reflects perfect equality).³⁷ Visually, the value of the Gini coefficient corresponded to the difference between the area below the 45-degree diagonal and the area below the Lorenz curve.

Based on the distribution depicted by the curve, we evaluated the number of visits provided by practices at different percentiles in the distribution, and we categorized practices as “high dual” vs “low dual” and “no dual.” NPIs responsible for the large majority of outpatient visits for duals (80%) were categorized as high-dual practices, and NPIs responsible for the minority of visits (20%) were low-dual practices. No-dual practices had no outpatient visits for duals. We then compared patient-, practice-, and community-level characteristics among these groups using analysis of variance (ANOVA) tests for continuous comparisons and χ^2 tests for categorical comparisons.

To evaluate characteristics of patients served by practices, we compared the mean number of patients per practice and percentage of patients who were duals. We also compared mean age, gender, race, ethnicity, and number of comorbidities. For practice-level characteristics, we compared practice size, gender distribution of physicians, rural location, primary vs subspecialty care practice type, and practice scope (solo practitioner, multipractitioner primary care practices, multipractitioner practices with single-specialty focus, or multipractitioner practices with multispecialty focus). For county-level characteristics, which were defined by the county assigned to the NPI, we compared measures of the percentage of population living below the poverty line, median household income, unemployment rate, percentage of non-English-speaking adults, and percentage of adults enrolled in the Supplemental Nutritional Assistance Program. We also compared the percentage of population self-reporting poor mental and physical health, as well as mean county rates of obesity and tobacco use.

Patient level. Next, we compared outpatient utilization of services between duals and nonduals. We first compared patient characteristics (age, gender, race, ethnicity, geography, disability status, and comorbidities). We then calculated the number of total outpatient visits during the year and stratified them by

primary vs subspecialty care defined by categories in MD-PPAS. We provide details on the physicians included under each subspecialty (eAppendix Table 1). We then compared visits between duals and nonduals across subspecialty care subtypes, sites of care receipt, and the total number of unique physicians seen in a year. Lastly, we compared monthly and annual outpatient expenditures. As above, ANOVA tests were performed for continuous comparisons, and χ^2 tests were performed for categorical comparisons.

Sensitivity Analyses

We performed 3 sensitivity analyses to evaluate the robustness of our findings. First, instead of ranking practices by the total number of visits for duals, we created a Lorenz curve ranking practices by the percentage of visits from duals. This approach centers the analysis on physicians and practices and evaluates a distinct question from our primary analysis (that is, whether certain practices “specialize” in caring for duals). Second, given state-level differences in Medicaid coverage policies³⁸ and high rates of churn among Medicaid patients,³⁹ both of which can influence the ability by which patients can maintain dual-eligible status, we repeated all analyses after classifying patients as duals only if they had continuous dual status for all 12 months in the study period. Third, duals with a history of inpatient utilization may differ from those without in terms of their comorbidities, ability to establish and maintain outpatient care, and expenditures. To evaluate whether outpatient care utilization patterns differed for duals based on inpatient utilization history, we conducted another sensitivity analysis in which we repeated all analyses using a 20% sample of Part B claims among Medicare patients with a history of hospitalization.

Statistical significance was determined at $P < .05$. Analyses were performed using SAS version 9.4 (SAS Institute). This study was approved by the institutional review board at the Perelman School of Medicine, University of Pennsylvania.

RESULTS

Sample Characteristics

The sample of patients included 318,966 duals and 1,270,742 nonduals (eAppendix Table 2). Duals were more likely to be younger (mean age, 64.9 vs 75.2 years), women (61.3% vs 57.5%), of Black race (19.6% vs 7.0%), and of Hispanic ethnicity (6.2% vs 0.8%) compared with nonduals. Duals were also more likely to have a reported disability (44.5% vs 8.7%). On average, duals had more comorbidities than nonduals (3.5 vs 2.7), with higher prevalence of diabetes (32.8% vs 24.3%), chronic lung disease (25.3% vs 17.2%), and psychiatric disease (20.1% vs 5.6%).

Concentration of Care for Duals

Approximately 13.7% of practices had no outpatient visits with duals in 2013 (Figure). Nearly 50% of outpatient visits for duals were provided by 12.4% of practices, with 80.0% of visits provided by 35.1% of practices (eAppendix Table 3). This distribution

corresponded to a Gini coefficient of 0.61. A lesser degree of concentration was evident when practices were ranked by the fraction of dual visits instead of the total number of dual visits per practice (80% of dual visits provided by 55% of practices) (eAppendix Figure 3).

Patient-, Practice-, and County-Level Characteristics Between High- and Low-Dual Practices

There were 78,027 practices that provided the large majority of outpatient care to duals (80% of all visits, classified as high-dual practices) and 113,393 practices that provided a minority of care (20% of visits, classified as low-dual practices). There were 30,576 practices that provided no outpatient visits for duals.

High-dual practices cared for more patients on average (1117.6 patients per high-dual practice vs 683.8 patients per low-dual practice and 447.5 patients per no-dual practice; $P < .001$) (Table 1), who tended to have more comorbidities (3.9 mean total Elixhauser comorbidities vs 3.6 and 3.3, respectively; $P < .001$). High-dual practices also cared for a higher percentage of Black (11.5% vs 7.6% and 3.9%; $P < .001$) and Hispanic (2.6% vs 1.0% and 0.5%; $P < .001$) patients. Physicians in high-dual practices were less often women (16.4% vs 20.3% and 24.7%; $P < .001$).

High-dual practices were also more likely to serve patients from communities with higher percentages of population living below the poverty line (12.2% at high-dual practices vs 10.5% at low-dual practices and 10.2% at no-dual practices; $P < .001$) (Table 1), lower median income (\$51,590 vs \$56,163 and \$59,677, respectively; $P < .001$), and higher rates of unemployment (10.2% vs 9.6% and 9.5%; $P < .001$). Patients served by high-dual practices were more likely to live in areas with worse self-reported physical health (3.7 days of self-reported poor physical health in the past month vs 3.5 days and 3.3 days; $P < .001$) and higher rates of obesity (28.5% vs 27.6% and 26.4%; $P < .001$) and tobacco use (18.6% vs 18.0% and 17.0%; $P < .001$).

Outpatient Utilization of Duals Compared With Nonduals

On average, duals had 13.3 annual outpatient visits compared with 15.2 visits among nonduals ($P < .001$) (Table 2). This difference was more pronounced in subspecialty care visits (6.5 vs 7.9 visits per year, respectively; $P < .001$) compared with primary care visits (3.6 vs 3.7 visits per year; $P < .001$). The subspecialty care differences were evident across both medical (2.4 vs 3.3 visits; $P < .001$) and surgical (1.7 vs 2.5 visits; $P < .001$) subspecialties, although duals did have more visits with psychiatric subspecialists compared with nonduals (0.5 vs 0.1 visits; $P < .001$). On average, duals saw

5.4 unique outpatient physicians per year compared with 6.4 among nonduals ($P < .001$). Duals were less likely to receive outpatient care in office-based settings (10.2% vs 12.5%; $P < .001$) and slightly more likely to receive outpatient care in hospital-based settings (2.8% vs 2.5%; $P < .001$). They also had lower monthly (\$112 vs \$142; $P < .001$) and annual (\$1349 vs \$1705; $P < .001$) outpatient expenditures compared with nonduals.

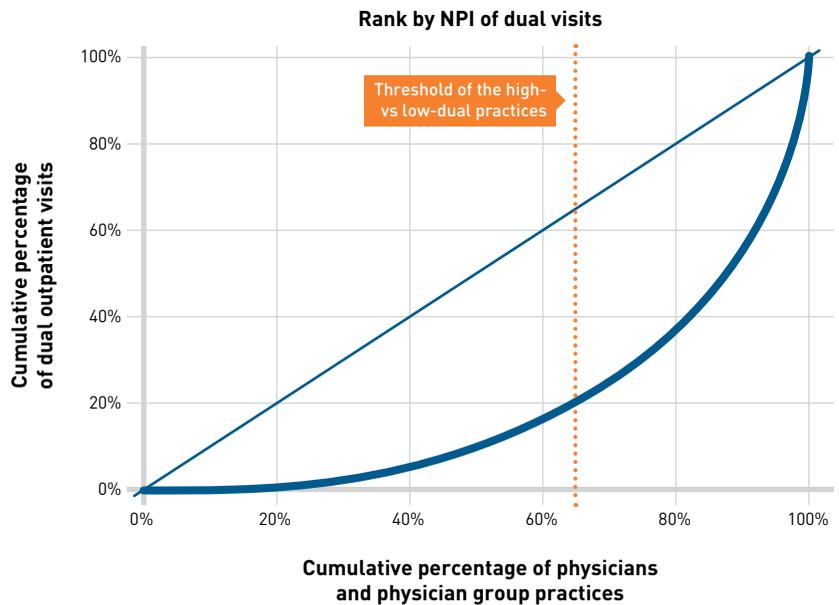
Sensitivity Analyses

In analyses of duals based on 12-month continuous dual status, we found similar patterns between duals and nonduals in patient characteristics (eAppendix Table 4), concentration of care (eAppendix Figure 4), characteristics of high-dual practices (eAppendix Table 5), and outpatient utilization differences (eAppendix Table 6). Sensitivity analyses using a 20% sample of Medicare patients with a history of hospitalization also demonstrated similar results (eAppendix Figure 5 and eAppendix Tables 7-9).

DISCUSSION

In this national study, we found that outpatient care for duals was concentrated among a small number of physician practices. These

FIGURE. Lorenz Curve for the Distribution of Dual Visits Across Physician Practices*



NPI, National Provider Identifier.

*Physician and physician group practices are ranked on the x-axis according to their position in the distribution of the number of visits provided to dual-eligible beneficiaries. The vertical line intersects the x-axis at a value of 65%, reflecting the percentage of physicians and practices that provide 20% of dual outpatient visits. Practices to the right of this vertical line are categorized as high-dual practices, whereas those to the left are categorized as low-dual practices. The difference between the area under the 45-degree diagonal (which simulates a perfectly equal distribution of outpatient care for duals across all practices) and the Lorenz curve corresponds to a Gini coefficient of 0.61.

TABLE 1. Characteristics of High- vs Low- and No-Dual Practices

		No-dual practices n = 30,576	Low-dual practices n = 113,393	High-dual practices n = 78,027	P
Patient-level characteristics					
Number of patients served, mean		447.5	683.8	1117.6	<.001
Duals served, % (min %, max %)		0 (0, 0)	13.6 (0, 90.0)	29.7 (0, 100)	<.001
Age in years, mean		76.2	74.0	72.4	<.001
Gender, %	Female	61.2	60.9	61.4	<.001
Race, %	White	93.1	88.6	81.3	<.001
	Black	3.9	7.6	11.5	<.001
	Other	3.0	3.8	7.2	<.001
Ethnicity, %	Hispanic	0.5	1.0	2.6	<.001
	Other	99.5	99.0	97.4	<.001
Total comorbidities, mean		3.3	3.6	3.9	<.001
Practice-level characteristics					
Number of physicians, %	1	20.7	11.2	17.0	<.001
	2-5	18.3	13.3	15.7	
	6-15	13.4	13.7	14.5	
	16-50	12.5	16.3	16.7	
	>50	35.1	45.4	36.1	
Physician gender,* %	Woman	24.7	20.3	16.4	<.001
Rural, %		1.6	2.4	5.0	<.001
Specialty, %	Primary care	40.7	24.3	31.5	<.001
	Specialty	59.3	75.7	68.5	
Scope, %	Solo	20.7	11.2	17.0	<.001
	Multisize, single specialty	18.3	16.5	18.9	
	Multisize, multispecialty	61.0	72.3	64.2	
County-level characteristics					
Population living below poverty line, %		10.2	10.5	12.2	<.001
Median household income, \$		59,677	56,163	51,590	<.001
Unemployment rate, %		9.5	9.6	10.2	<.001
Non-English-speaking adult population, %		4.1	3.1	3.5	<.001
SNAP recipient population, %		12.8	14.2	16.2	<.001
Self-reported poor physical health days/month		3.3	3.5	3.7	<.001
Self-reported poor mental health days/month		3.3	3.4	3.5	<.001
Obesity, %		26.4	27.6	28.5	<.001
Tobacco use, %		17.0	18.0	18.6	<.001

Dual, dual-eligible beneficiary who qualifies for health insurance under both the Medicare and Medicaid programs; min, minimum; max, maximum; SNAP, Supplemental Nutrition Assistance Program.

*Gender is self-reported by individual physicians.

practices served a comparatively larger number of patients who had multiple chronic conditions and lived in communities with higher levels of poverty and structural disadvantage. We also found that duals had fewer outpatient visits than nonduals despite having more chronic conditions. These differences were largely driven by fewer subspecialty care visits among duals.

initiatives toward practices that disproportionately serve high-cost, high-need populations.⁴⁵

Despite duals having more chronic medical and psychiatric conditions, our findings reflect lower levels of outpatient subspecialty care utilization among them. On one hand, seeing fewer specialists might be consistent with less fragmentation and more coordinated

Concentration of care for structurally marginalized populations has been shown in other health care settings, such as hospitals and postacute care facilities.^{16,17} This study confirms a high level of concentration of care in the outpatient setting on the basis of services delivered,¹⁵ and to our knowledge, it is the first to highlight this level of concentration for duals. The patient-level consequences of these patterns are, as of yet, unknown. Prior work has shown that health care facilities that disproportionately serve low-income patients perform less well on quality measures due to a host of clinical, financial, and socioeconomic factors.^{40,41} Given these trade-offs, future research is needed to better characterize the potential gains and losses that may result from concentrated delivery of outpatient care.

Our identification of high-dual practices serves as one way to conceptualize an outpatient safety net of clinicians and organizations that could benefit from tailored payment and policy approaches. Evidence from the Merit-Based Incentive Program (MIPS), a program designed to promote high-value outpatient care, has suggested that practices caring for duals and practices located in communities with more social risk factors experienced disproportionate financial penalties relative to other practices.^{18,19,42} This finding is consistent with other value-based payment programs that have also resulted in uneven penalties incurred by safety-net institutions.^{40,41} If policy makers can identify high-dual practices, this may allow them to account for the unique complexity and social risk of their patients. For instance, high-dual practices may benefit from stratified comparisons on quality with other high-dual practices,⁴³ potentially mitigating some of the unintended consequences of value-based payment programs in the safety net. In innovative models of care delivery, identifying high-dual practices could facilitate the targeting of resources set aside to improve care for patients with multiple chronic conditions⁴⁴ or the tailoring of comprehensive primary care

care for patients if a primary care physician is centrally managing a patient’s chronic conditions; on the other hand, seeing fewer specialists might be problematic for duals who would otherwise benefit from specialty services that cannot be provided in the primary care setting. Indeed, limited access to specialty care remains a challenge for low-income patients.²⁸ For duals, Medicare is often the primary payer for outpatient care, with Medicaid serving as wraparound coverage for coinsurance. States vary in the generosity of Medicaid coverage and, consequently, in the composition of their dual-eligible populations.⁴⁶ As a result, insurance and cost sharing may be drivers of limited access in some states but not others.^{47,48} Outside of insurance, other social risk factors such as high community rates of poverty or lower levels of social support are associated with reduced access to subspecialty care among Medicare patients.⁴⁹ Duals may not live close to practices⁵⁰ or may have limited options for transportation.⁵¹ Referrals and networks between primary care and subspecialty physicians may also be racially patterned for Medicare patients.⁵² Decomposing the factors driving these access disparities for duals will be critically important to improving their care.

Improving access to subspecialty care is important because it is associated with better management of chronic conditions and outcomes⁵³ and could serve to reduce downstream utilization and costly inpatient and postacute care among duals. Although lower levels of outpatient utilization drove lower outpatient expenditures for duals compared with nonduals, their total health care expenditures remained higher.¹⁴ Practices serving duals may benefit from adopting a variety of different strategies that have been shown to improve access to subspecialty care for low-income populations, including the use of electronic consultations, referral coordinators, and provision of on-site specialty care.^{54,55} Leveraging these strategies, particularly among practices that disproportionately serve duals, could mitigate some of these disparities.

Limitations

This study has limitations. First, this is a cross-sectional, descriptive analysis of Medicare patients from 2013 and may not be generalizable to other years. However, these data precede Medicaid expansion as well as a host of other policies that targeted care for duals, as well as changes in value-based care models and payment; thus, these results provide an important snapshot of the distribution of care prior to these changes and may most closely represent a “steady state” of care for duals nationally. Second, our definition of high-dual practices is distinct from other definitions used to characterize safety-net health care institutions because it is based on absolute levels of care delivered to duals between physicians and practices and not relative measures of care provided for duals relative to nonduals within a practice. Third, we do not explore state-based heterogeneity among duals. However, outpatient practices are subject to national policies that affect duals, such as MIPS, suggesting that understanding the national distribution of outpatient care remains important. Third, we excluded patients

TABLE 2. Outpatient Utilization of Duals vs Nonduals^a

		Nonduals n = 1,270,742	Duals n = 318,966	P
Number of visits, mean (SD)				
Total		15.2 (15.6)	13.3 (15.5)	<.001
Primary care	Total	3.7 (4.5)	3.6 (5.1)	<.001
	E&M	3.1 (3.6)	3.1 (4.4)	<.001
	Non-E&M	0.6 (2.0)	0.5 (1.9)	<.001
Subspecialty care	Total	7.9 (9.9)	6.5 (9.0)	<.001
	E&M	4.6 (5.8)	3.8 (5.6)	<.001
	Non-E&M	3.3 (5.5)	2.7 (4.8)	<.001
Specialty care subtype, mean (SD)				
Medical		3.3 (5.8)	2.4 (4.7)	<.001
Surgical		2.3 (3.6)	1.6 (3.1)	<.001
Hospital-based		2.0 (3.9)	2.0 (3.9)	<.001
Obstetrics-gynecology		0.1 (0.7)	0.1 (0.8)	<.001
Psychiatric		0.1 (1.2)	0.5 (2.4)	<.001
Other		3.6 (7.2)	3.1 (7.6)	<.001
Number of unique physicians, mean (SD)				
Total		6.4 (5.4)	5.4 (5.2)	<.001
Primary care		1.1 (1.0)	1.0 (1.1)	<.001
Specialty		4.0 (4.0)	3.3 (3.7)	<.001
Expenditures in \$, mean (SD)				
Monthly		142 (348)	112 (257)	<.001
Annual		1705 (4176)	1349 (3082)	<.001
Site of care, % (SD)				
Office	Total	12.5 (13.7)	10.2 (13.4)	<.001
	E&M	8.0 (8.3)	7.4 (9.4)	<.001
	Non-E&M	4.4 (8.0)	2.8 (6.7)	<.001
Outpatient hospital	Total	2.5 (4.9)	2.8 (5.5)	<.001
	E&M	0.8 (2.4)	1.1 (3.1)	<.001
	Non-E&M	1.7 (3.4)	1.8 (3.5)	<.001
Other	Total	0.3 (2.0)	0.2 (1.7)	<.001
	E&M	0.2 (1.7)	0.2 (1.1)	<.001
	Non-E&M	0.1 (0.9)	0.1 (1.1)	<.001

Dual, dual-eligible beneficiary who qualifies for health insurance under both the Medicare and Medicaid programs; E&M, evaluation and management.
^aExpenditures reflect spending per beneficiary on outpatient services, defined using place-of-service codes. To capture outpatient care delivery, we excluded claims with place-of-service codes indicating care provided in emergency departments and inpatient settings. “Other” sites of care include assisted living facilities, group homes, mobile units, place of employment, urgent care facilities, independent clinics, public health clinics, and rural health clinics. Claims for federally qualified health centers outside of the Carrier file were not included.

enrolled in Medicare Advantage, whose outpatient utilization patterns may differ from those in our sample. Fourth, given our focus on physicians who are more typically the targets of payment policies, we excluded visits conducted by nurse practitioners, who provide a meaningful amount of care for low-income populations. Nonetheless, our work is consistent with prior work examining duals enrolled in fee-for-service Medicare and provides new data

on an underexamined area of health care utilization. Fifth, we used the place-of-service identifier to identify outpatient visits, but this may not perfectly reflect the site of care delivery. In particular, our study excluded the majority of claims filed in federally qualified health centers (FQHCs) because they are not in the Carrier file. Thus, despite their importance in providing outpatient care for low-income beneficiaries, most FQHC visits were excluded from our analyses. However, given that FQHCs generally provide primary rather than specialty care, the inferences on utilization patterns in our study were likely unaffected by this limitation. Finally, our primary analyses used a 5% sample of Medicare patients and outpatient claims data and may not be broadly generalizable. However, sensitivity analyses using a 20% sample produced similar results.

CONCLUSIONS

We found that outpatient care for duals was concentrated among a small number of physician practices and that duals had fewer outpatient visits compared with nonduals. Duals and the practices that disproportionately serve them may benefit from targeted policies and initiatives designed to improve access and outcomes for this patient population. ■

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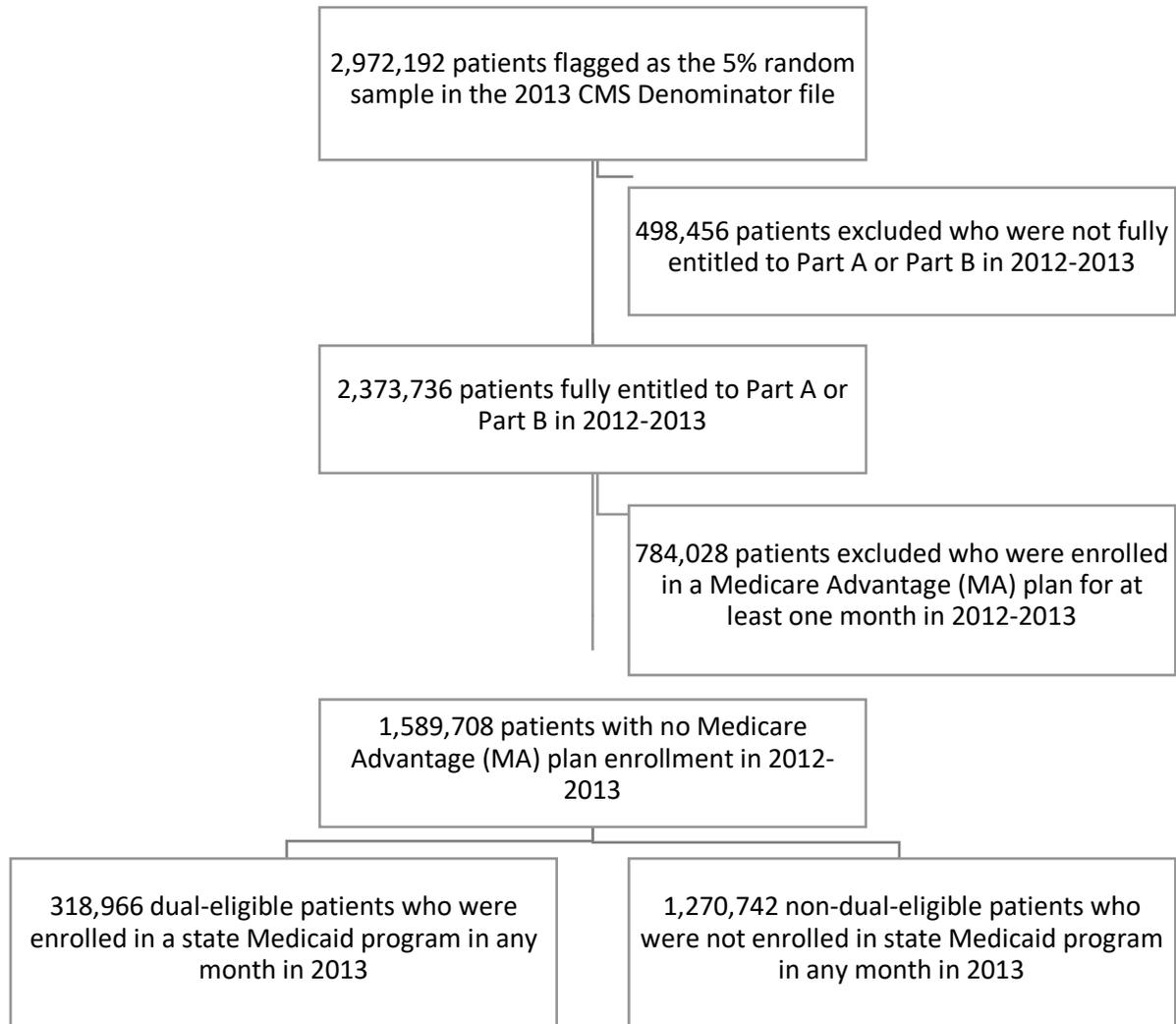
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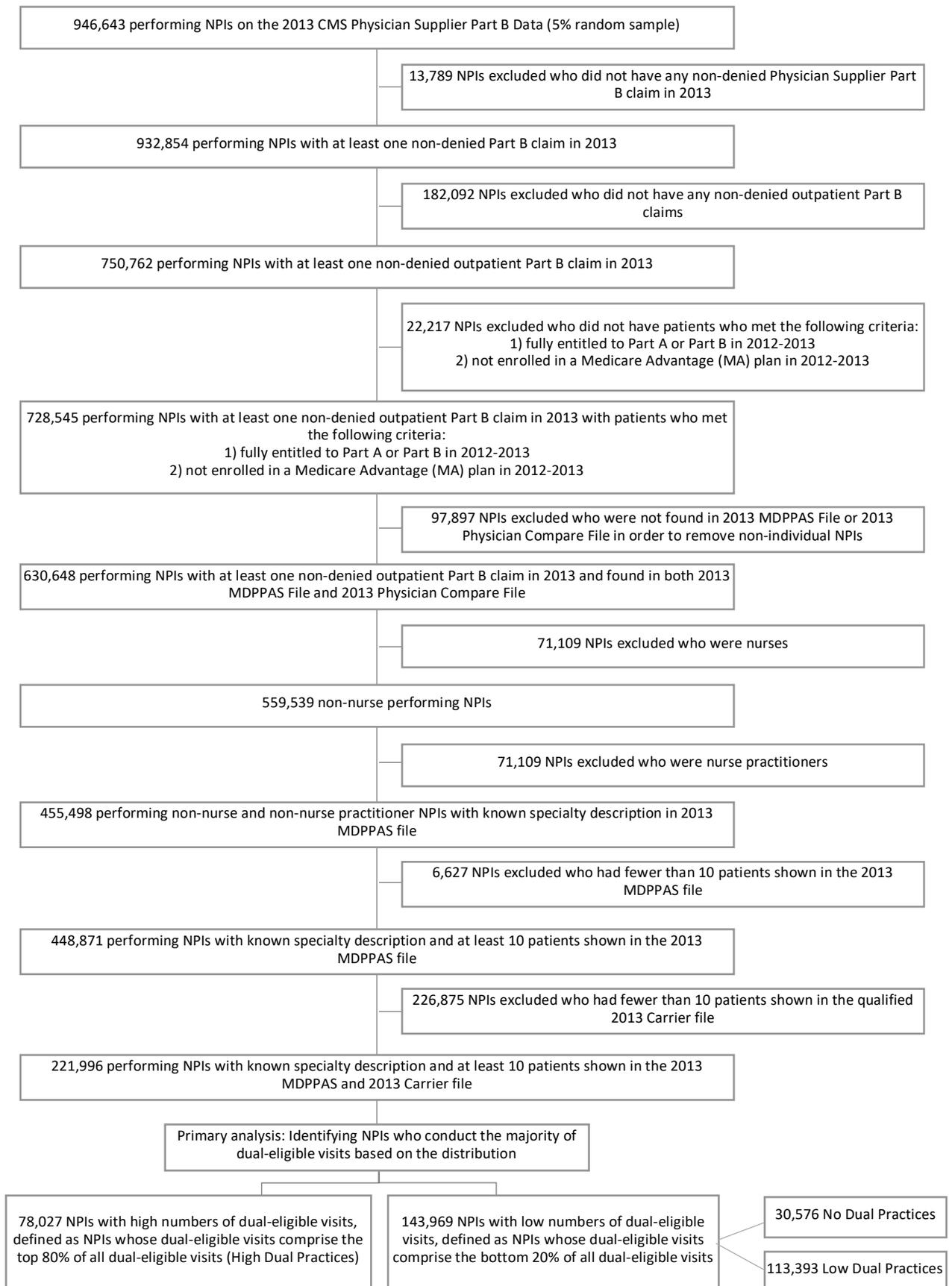
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eAppendix Figure 1: Sample Creation for Patient-Level Analysis



eAppendix Figure 2: Sample Creation for Practice-Level Analysis



eAppendix Table 1: Defining Categories of Physician Subspecialty Care Subtypes

Broad category in MD-PPAS	Description	Category Assigned in Analysis
Primary care	General Practice	Primary Care
Primary care	Family Practice	Primary care
Primary care	Internal Medicine	Primary care
Primary care	Osteopathic Manipulative Medicine	Primary care
Primary care	Hospice And Palliative Care	Primary care
Primary care	Pediatric Medicine	Primary care
Primary care	Geriatric Medicine	Primary care
Primary care	Preventative Medicine	Primary care
Medical specialty	Allergy/Immunology	Medical specialty
Medical specialty	Cardiovascular Disease (Cardiology)	Medical specialty
Medical specialty	Interventional Cardiology	Medical specialty
Medical specialty	Dermatology	Medical specialty
Medical specialty	Gastroenterology	Medical specialty
Medical specialty	Neurology	Medical specialty
Medical specialty	Cardiac Electrophysiology	Medical specialty
Medical specialty	Pulmonary Disease	Medical specialty
Medical specialty	Nephrology	Medical specialty
Medical specialty	Infectious Disease	Medical specialty
Medical specialty	Endocrinology	Medical specialty
Medical specialty	Rheumatology	Medical specialty
Medical specialty	Addiction Medicine	Medical specialty
Medical specialty	Hematology	Medical specialty
Medical specialty	Hematology/Oncology	Medical specialty
Medical specialty	Medical Oncology	Medical specialty
Medical specialty	Sleep Medicine	Medical specialty
Surgery specialty	General Surgery	Surgery specialty
Surgery specialty	Otolaryngology	Surgery specialty
Surgery specialty	Neurosurgery	Surgery specialty
Surgery specialty	Ophthalmology	Surgery specialty
Surgery specialty	Orthopedic Surgery	Surgery specialty
Surgery specialty	Sports Medicine	Surgery specialty
Surgery specialty	Plastic and Reconstructive Surgery	Surgery specialty
Surgery specialty	Colorectal Surgery	Surgery specialty
Surgery specialty	Thoracic Surgery	Surgery specialty
Surgery specialty	Urology	Surgery specialty
Surgery specialty	Hand Surgery	Surgery specialty
Surgery specialty	Peripheral Vascular Disease	Surgery specialty

Surgery specialty	Vascular Surgery	Surgery specialty
Surgery specialty	Cardiac Surgery	Surgery specialty
Surgery specialty	Surgical Oncology	Surgery specialty
Obstetrics-Gynecology	Obstetrics/Gynecology	Obstetrics-Gynecology
Obstetrics-Gynecology	Gynecological/Oncology	Obstetrics-Gynecology
Hospital based	Anesthesiology	Hospital-based
Hospital based	Interventional Pain Management	Hospital-based
Hospital based	Physical Medicine And Rehabilitation	Hospital-based
Hospital based	Diagnostic Radiology	Hospital-based
Hospital based	Nuclear Medicine	Hospital-based
Hospital based	Pain Management	Hospital-based
Hospital based	Critical Care (Intensivists)	Hospital-based
Hospital based	Radiation Oncology	Hospital-based
Hospital based	Emergency Medicine	Hospital-based
Hospital based	Interventional Radiology	Hospital-based
Hospital based	Pathology	Hospital-based
Psychiatry	Psychiatry	Psychiatry
Psychiatry	Geriatric Psychiatry	Psychiatry
Psychiatry	Neuropsychiatry	Psychiatry
Other	Undefined Physician Type	Other

Source: <https://resdac.org/cms-data/files/md-ppas/data-documentation>

eAppendix Table 2: Sample Characteristics of Duals vs. Non-Duals

		Non-Duals N=1,270,742	Duals N=318,966
Age (mean, SD)		75.2 (10.3)	64.9 (17.5)
Age (%)	<70	31.2	57.8
	70-75	21.5	11.2
	75-80	17.4	10.2
	80-85	14.1	8.8
	85+	15.7	12.0
Gender (%)	Female	57.5	61.3
	Male	42.5	38.7
Race (%)	White	89.2	66.3
	Black	7.0	19.6
	Other	3.9	14.1
Ethnicity (%)	Hispanic	0.8	6.2
	Other	99.2	93.8
Rural (%)		11.4	12.8
Disability (%)		8.7	44.5
Total comorbidities (mean)		2.7	3.5
Comorbidities (%)	Hypertension	64.3	61.5
	Diabetes	24.3	32.8
	Hypothyroidism	19.5	17.9
	Chronic lung disease	17.2	25.3
	Anemia	17.9	24.5
	Psychiatric disease	5.6	20.1

Abbreviations: SD=standard deviation.

Race and ethnicity were classified by the Medicare Beneficiary Summary File.

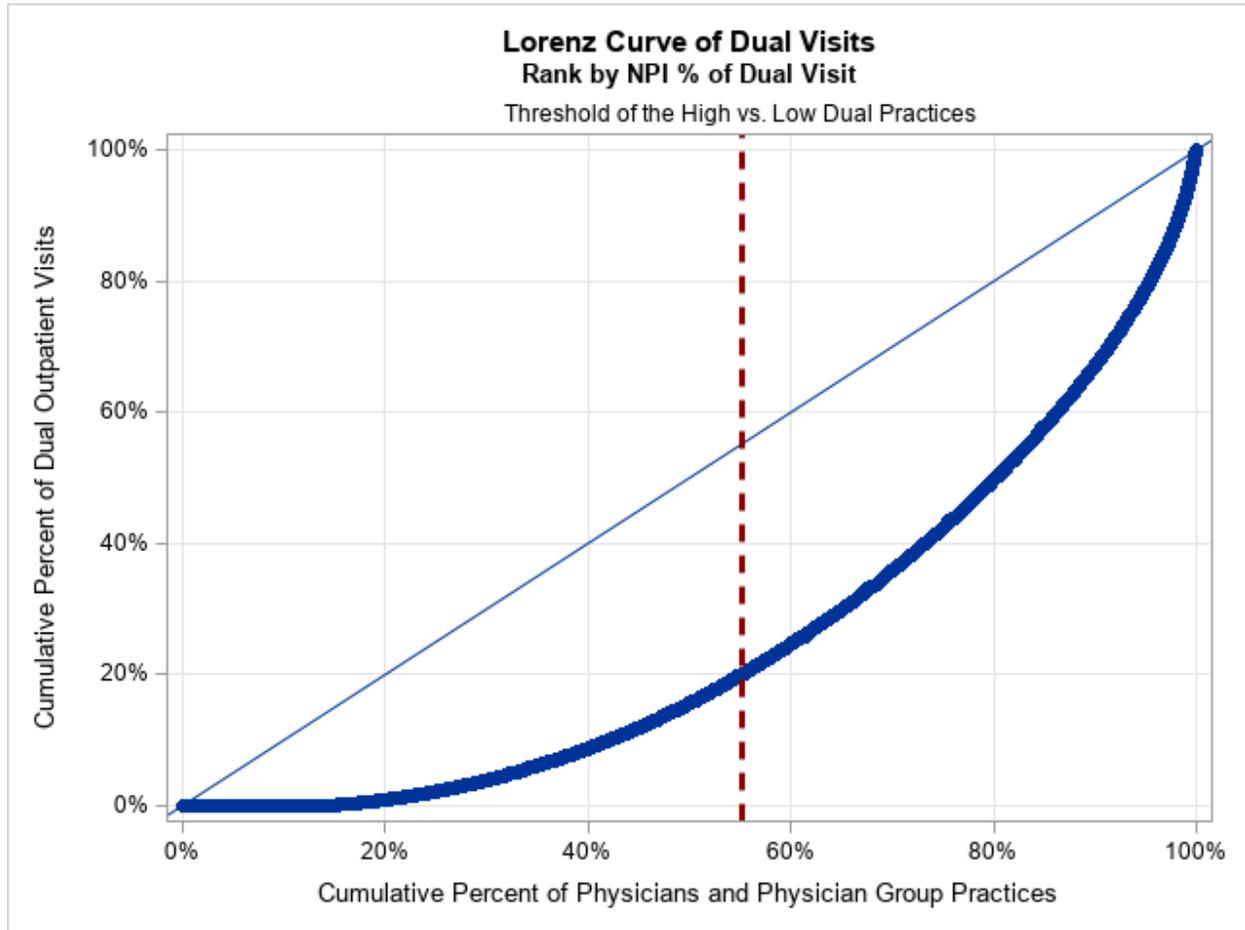
“Other” categories for race include Asian, Hispanic, North American Native, other, or unknown.

“Other” categories for ethnicity include White, Black, Other, Asian, Hispanic, North American Native, other, or unknown.

eAppendix Table 3: Distribution of Dual Visits Across Physician Practices

Percent of Dual Visits Provided	Percent of Practices Providing Visits
10	50.2%
20	64.9%
30	74.7%
40	82.0%
50	87.6%
60	91.9%
70	95.2%
80	97.6%
90	99.2%

eAppendix Figure 3: Lorenz Curve for the Distribution of the Percent of Dual Visits Across Physician Practices



Physician and physician group practices are ranked on the x-axis according to their position in the distribution of the percent of visits provided to duals.

The vertical line intersects the x-axis at a value of 55%, reflecting the percent of physicians and practices that provide 20% of dual outpatient visits. Practices to the right of this vertical line are categorized as “high dual” practices, while those to the left are categorized as “low dual” practices.

The difference between the area under the 45-degree diagonal (which simulates a perfectly equal distribution of outpatient care for duals across all practices) and the Lorenz curve corresponds to a Gini coefficient of 0.61.

eAppendix Table 4: Sample Characteristics of Duals with a Full Year of Dual Status vs. Non-Duals

		Non-Duals N=1,320,415	Duals N=269,293
Age (mean, SD)		75.0 (10.7)	64.1 (17.3)
Age (%)	<70	31.9	59.6
	70-75	21.1	11.4
	75-80	17.2	10.2
	80-85	14.0	8.5
	85+	15.9	10.4
Gender (%)	Female	57.6	61.3
	Male	42.4	38.7
Race (%)	White	88.5	65.4
	Black	7.4	19.8
	Other	4.1	14.8
Ethnicity (%)	Hispanic	1.0	6.4
	Other	99.0	93.6
Rural (%)		11.5	12.7
Disability (%)		9.7	46.2
Total comorbidities (mean, SD)		2.8 (4.3)	3.4 (3.9)
Comorbidities (%)	Hypertension	64.3	60.9
	Diabetes	24.6	32.7
	Hypothyroidism	19.5	17.6
	Chronic lung disease	17.7	24.6
	Anemia	18.5	23.2
	Psychiatric disease	6.2	19.9

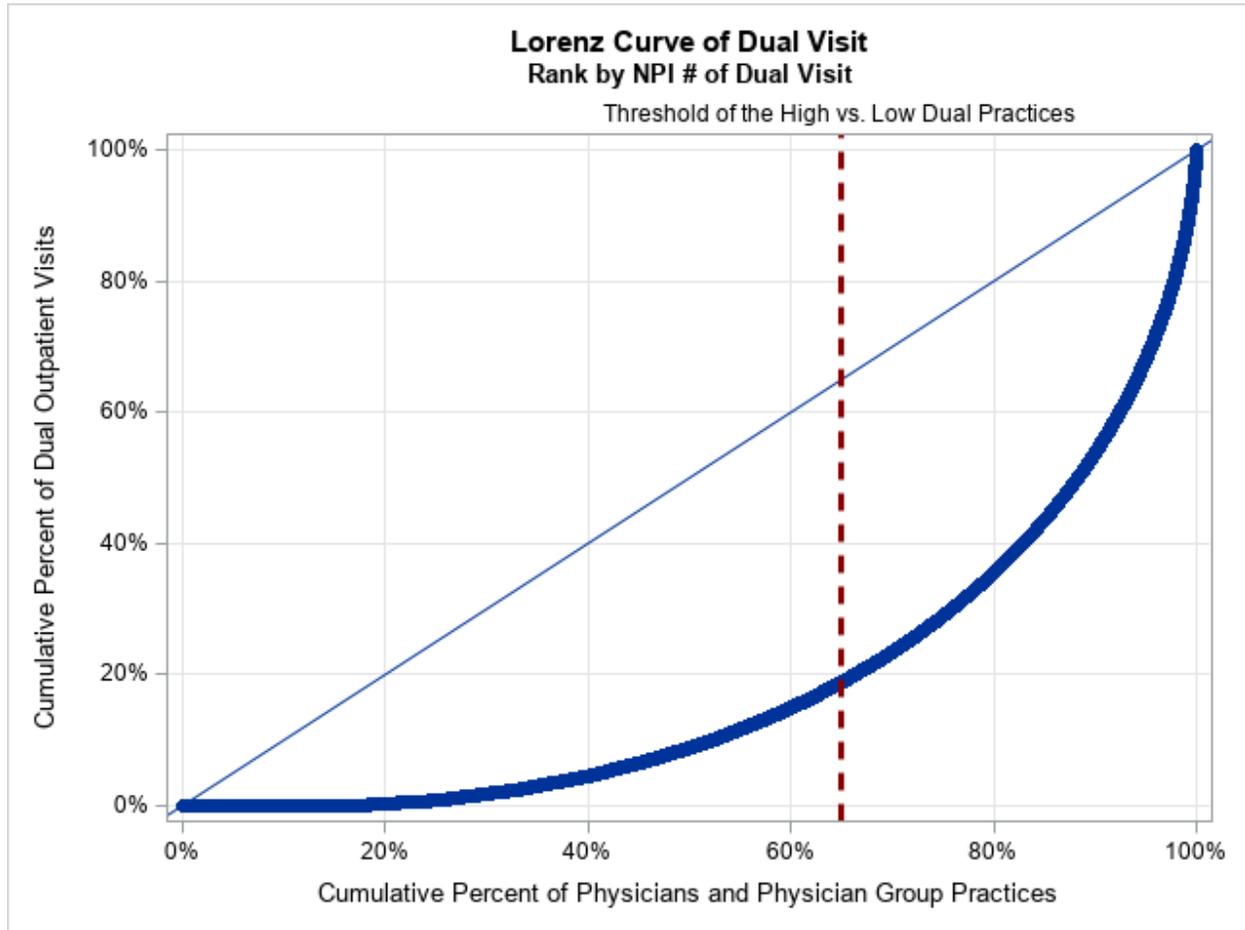
Abbreviations: SD=standard deviation.

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“Other” categories for race include Asian, Hispanic, North American Native, other, or unknown.

“Other” categories for ethnicity include White, Black, Other, Asian, Hispanic, North American Native, other, or unknown.

eAppendix Figure 4: Lorenz Curve for the Distribution of the Number of Dual Visits Among Duals with a Full Year of Dual Status Across Physician Practices



Physician and physician group practices are ranked on the x-axis according to their position in the distribution of the percent of visits provided to duals. Duals are defined as having a full year of dual-eligible status.

The vertical line intersects the x-axis at a value of 66%, reflecting the percent of physicians and practices that provide 20% of dual outpatient visits. Practices to the right of this vertical line are categorized as “high dual” practices, while those to the left are categorized as “low dual” practices.

The difference between the area under the 45-degree diagonal (which simulates a perfectly equal distribution of outpatient care for duals across all practices) and the Lorenz curve corresponds to a Gini coefficient of 0.63.

eAppendix Table 5: Characteristics of High vs. Low Dual Practices for Duals with Full Year of Dual Status

		No Dual Practices N=36,934	Low Dual Practices N=110,279	High Dual Practices N=74,783	p	
Patient-level Characteristics	Total patients served (mean)	461.6	706.8	1,115.6	<0.001	
	Duals served (% min, max)	0 (0, 0)	12.2 (0, 80)	26.9 (0, 100)	<0.001	
	Age (mean)	76.1	73.9	72.3	<0.001	
	Gender (%)	Female	61.0	60.9	61.5	<0.001
	Race (%)	White	92.9	88.3	81.2	<0.001
		Black	4.1	7.8	11.5	<0.001
		Other	3.0	3.9	7.3	<0.001
	Ethnicity (%)	Hispanic	0.5	1.0	2.7	<0.001
Other		99.5	99.0	97.3	<0.001	
Total comorbidities (mean)		3.3	3.6	3.9	<0.001	
Practice-level Characteristics	Size (%)	1	19.9	11.0	17.2	<0.001
		2-5	17.8	13.2	15.9	
		6-15	13.4	13.8	14.5	
		16-50	13.0	16.5	16.7	
		>50	35.9	45.6	35.8	
	Gender (%)	Female	24.0	20.1	16.4	<0.001
	Rural (%)		1.8	2.5	5.0	<0.001
	Specialty	Primary care	39.9	23.7	31.7	<0.001
		Subspecialty	60.1	76.3	68.3	
	Scope	Solo	19.9	11.0	17.2	<0.001
Multi-size, single specialty		17.8	16.6	18.8		
Multi-size, multi-specialty		62.3	72.4	64.0		
Population living below poverty line (%)		10.2	10.6	12.3	<0.001	

County-level Characteristics	Median household income (\$)	59,241	55,958	51,611	<0.001
	Unemployment (%)	9.5	9.6	10.2	<0.001
	Non-English-speaking adult population (%)	4.0	3.1	3.5	<0.001
	SNAP recipient population (%)	12.9	14.3	16.3	<0.001
	Self-reported poor physical health (days/mo)	3.3	3.5	3.7	<0.001
	Self-reported poor mental health (days/mo)	3.3	3.4	3.5	<0.001
	Obesity (%)	26.5	27.7	28.5	<0.001
	Tobacco use (%)	17.1	18.0	18.6	<0.001

Abbreviations: min=minimum; max=maximum; SNAP=Supplemental Nutrition Assistance Program; mo=month

eAppendix Table 6: Outpatient Utilization Patterns of Duals with a Full Year of Dual Status vs. Non-Duals

		Non-Duals N=1,320,415	Duals N=269,293	p	
Number of visits (mean, SD)	Total	15.0 (15.6)	13.9 (15.8)	<0.001	
	Primary care	Total	3.7 (4.5)	3.8 (5.2)	<0.001
		E&M	3.0 (3.6)	3.3 (4.5)	<0.001
		Non-E&M	0.6 (2.0)	0.5 (2.0)	<0.001
	Subspecialty care	Total	7.8 (9.8)	6.8 (9.1)	<0.001
		E&M	4.6 (5.7)	4.0 (5.8)	<0.001
		Non-E&M	3.2 (5.5)	2.7 (4.8)	<0.001
Subspecialty Care Subtype (mean, SD)	Medical	3.3 (5.8)	2.4 (4.8)	<0.001	
	Surgical	2.3 (3.6)	1.7 (3.2)	<0.001	
	Hospital-based	2.0 (3.9)	2.0 (3.8)	<0.001	
	Obstetrics-Gynecology	0.1 (0.7)	0.1 (0.8)	<0.001	
	Psychiatric	0.1 (1.2)	0.5 (2.6)	<0.001	
	Other	3.5 (7.2)	3.3 (7.9)	<0.001	
Number of unique physicians (mean, SD)	Total	6.3 (5.4)	5.6 (5.2)	<0.001	
	Primary care	1.1 (1.0)	1.1 (1.1)	<0.001	
	Subspecialty	4.0 (4.0)	3.3 (3.7)	<0.001	
Expenditures (mean \$, SD)	Monthly	1401 (348)	114 (241)	<0.001	
	Annual	1,689 (4,170)	1,363 (2,886)	<0.001	
Site of care (% , SD)	Office	Total	12.3 (13.6)	10.8 (13.8)	<0.001
		E&M	7.9 (8.3)	7.8 (9.7)	<0.001
		Non-E&M	4.3 (8.0)	3.0 (6.9)	<0.001
	Outpatient hospital	Total	2.6 (4.9)	2.9 (5.5)	<0.001
		E&M	0.8 (2.5)	1.1 (3.2)	<0.001
		Non-E&M	1.7 (3.4)	1.8 (3.5)	<0.001
	Federally qualified health center	Total	0.0 (0.1)	0.0 (0.1)	<0.001
		E&M	0.0 (0.1)	0.0 (0.1)	<0.001
		Non-E&M	0.0 (0.0)	0.0 (0.0)	-
	Other	Total	0.3 (2.1)	0.2 (1.7)	<0.001
		E&M	0.2 (1.8)	0.1 (1.1)	<0.001
		Non-E&M	0.1 (0.9)	0.1 (1.1)	<0.001

Abbreviations: SD=standard deviation; E&M=evaluation and management. Expenditures reflect spending per beneficiary on outpatient services, defined using place-of-service codes. To capture outpatient care delivery, we excluded claims with place-of-service codes indicating care provided in emergency departments and inpatient settings. “Other” sites of care include assisted living facilities, group homes, mobile units, place of employment, urgent care facilities, independent clinics, public health clinics, and rural health clinics.

eAppendix Table 7: Sample Characteristics of Duals vs. Non-Duals using a 20% Sample of Medicare Patients with a History of Hospitalization

		Non-Duals N=1,791,550	Duals N=460,713
Age (mean, SD)		77.1 (9.7)	69.5 (15.2)
Age (%)	<70	23.8	48.8
	70-75	20.3	12.8
	75-80	18.6	12.1
	80-85	16.9	11.1
	85+	20.4	15.3
Gender (%)	Female	55.1	64.2
	Male	44.9	35.8
Race (%)	White	91.4	68.7
	Black	6.0	19.3
	Other	2.6	12.1
Ethnicity (%)	Hispanic	0.6	5.5
	Other	99.4	94.5
Rural (%)		11.8	13.6
Disability (%)		6.8	34.5
Total comorbidities (mean, SD)		4.2 (7.2)	5.7 (8.6)
Comorbidities (%)	Hypertension	79.9	81.9
	Diabetes	32.9	46.0
	Hypothyroidism	25.4	25.1
	Chronic lung disease	29.8	45.2
	Anemia	30.1	40.9
	Electrolyte abnormality	20.0	30.6

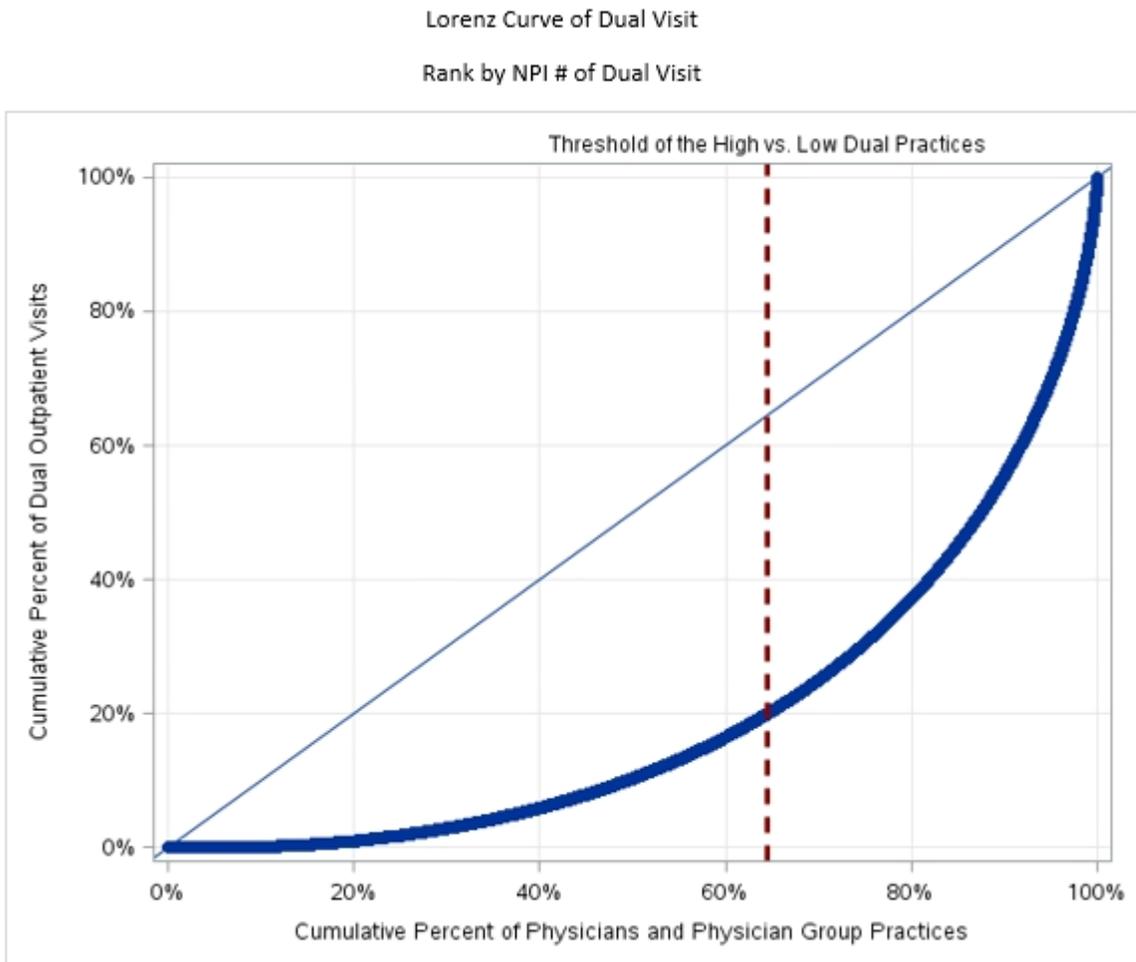
Abbreviations: SD=standard deviation.

Race and ethnicity were classified by the Medicare Beneficiary Summary File.

“Other” categories for race include Asian, Hispanic, North American Native, other, or unknown.

“Other” categories for ethnicity include White, Black, Other, Asian, Hispanic, North American Native, other, or unknown.

eAppendix Figure 5: Lorenz Curve for the Distribution of the Number of Dual Visits Across Physician Practices using a 20% Sample of Medicare Patients with a History of Hospitalization



Physician and physician group practices are ranked on the x-axis according to their position in the distribution of the percent of visits provided to duals using a 20% sample of Medicare patients with a history of hospitalization.

The vertical line intersects the x-axis at a value of 65%, reflecting the percent of physicians and practices that provide 20% of dual outpatient visits. Practices to the right of this vertical line are categorized as “high dual” practices, while those to the left are categorized as “low dual” practices.

The difference between the area under the 45-degree diagonal (which simulates a perfectly equal distribution of outpatient care for duals across all practices) and the Lorenz curve corresponds to a Gini coefficient of 0.61.

eAppendix Table 8: Characteristics of High vs. Low Dual Practices Serving Duals Using a 20% Sample of Medicare Patients with a History of Hospitalization

		No Dual Practices N=26,363	Low Dual Practices N=164,724	High Dual Practices N=104,796	p	
Patient-level Characteristics	Total patients served (mean)	330.7	504.4	1,026.4	<0.001	
	Duals served (% , min, max)	0 (0, 0)	15.8 (0, 100)	29.4 (0, 100)	<0.001	
	Age (mean)	77.1	74.7	73.6	<0.001	
	Gender (%)	Female	58.5	58.2	58.3	<0.001
	Race (%)	White	93.7	88.1	82.0	<0.001
		Black	3.5	8.2	11.6	<0.001
		Other	2.8	3.8	6.5	<0.001
	Ethnicity (%)	Hispanic	0.6	1.1	2.6	<0.001
Other		99.4	98.9	97.4	<0.001	
Total comorbidities (mean)		4.4	5.0	5.3	<0.001	
Practice-level Characteristics	Size (%)	1	23.3	11.7	16.9	<0.001
		2-5	17.8	12.5	15.0	
		6-15	11.7	12.5	14.1	
		16-50	11.2	15.3	16.5	
		>50	36.0	48.1	37.4	
	Gender (%)	Female	28.6	23.2	16.5	<0.001
	Rural (%)		1.5	2.5	4.8	<0.001
	Specialty	Primary care	46.0	27.2	31.3	<0.001
Subspecialty		54.0	72.8	68.7		

	Scope	Solo	23.3	11.7	16.9	<0.001
		Multi-size, single specialty	18.1	14.8	17.6	
		Multi-size, multi-specialty	58.6	73.5	65.5	
County-level Characteristics	Population living below poverty line (%)		10.2	10.6	12.2	<0.001
	Median household income (\$)		60,166	56,265	51,697	<0.001
	Unemployment (%)		9.4	9.6	10.1	<0.001
	Non-English-speaking adult population (%)		4.5	3.2	3.5	<0.001
	SNAP recipient population (%)		12.6	14.3	16.2	<0.001
	Self-reported poor physical health (days/mo)		3.3	3.4	3.7	<0.001
	Self-reported poor mental health (days/mo)		3.3	3.4	3.5	<0.001
	Obesity (%)		26.1	27.5	28.5	<0.001
	Tobacco use (%)		16.7	17.9	18.6	<0.001

Abbreviations: min=minimum; max=maximum; SNAP=Supplemental Nutrition Assistance Program; mo=month.

eAppendix Table 9: Outpatient Utilization Patterns of Duals vs. Non-Duals using a 20% Sample of Medicare Patients with a History of Hospitalization

		Non-Duals N=1,791,550	Duals N=460,713	p	
Number of visits (mean, SD)	Total	19.4 (16.7)	16.5 (16.3)	<0.001	
	Primary care	Total	4.7 (5.1)	4.5 (5.6)	<0.001
		E&M	3.8 (4.1)	3.8 (4.9)	<0.001
		Non-E&M	0.8 (2.4)	0.6 (2.1)	<0.001
	Subspecialty care	Total	10.6 (11.1)	8.7 (10.2)	<0.001
		E&M	6.1 (6.6)	5.0 (6.3)	<0.001
		Non-E&M	4.5 (6.2)	3.7 (5.4)	<0.001
Subspecialty Care Subtype (mean, SD)	Medical	4.7 (6.9)	3.4 (5.7)	<0.001	
	Surgical	3.0 (4.1)	2.1 (3.6)	<0.001	
	Hospital-based	2.6 (4.1)	2.7 (4.3)	<0.001	
	Obstetrics-Gynecology	0.1 (0.7)	0.1 (0.7)	<0.001	
	Psychiatric	0.1 (1.1)	0.3 (1.9)	<0.001	
	Other	4.2 (7.0)	3.3 (6.6)	<0.001	
Number of unique physicians (mean, SD)	Total	8.1 (6.0)	7.0 (5.9)	<0.001	
	Primary care	1.3 (1.1)	1.2 (1.2)	<0.001	
	Subspecialty	5.3 (4.5)	4.4 (4.3)	<0.001	
Expenditures (mean \$, SD)	Monthly	192 (412)	154 (323)	<0.001	
	Annual	2,303 (4,944)	1,853 (3,871)	<0.001	
Site of care (% , SD)	Office	Total	15.6 (14.7)	12.2 (13.8)	<0.001
		E&M	10.1 (9.0)	8.9 (9.6)	<0.001
		Non-E&M	5.5 (8.4)	3.4 (6.6)	<0.001
	Outpatient hospital	Total	3.5 (5.7)	4.0 (6.5)	<0.001
		E&M	1.1 (3.0)	1.4 (3.6)	<0.001
		Non-E&M	2.4 (3.8)	2.5 (4.2)	0.24
	Federally qualified health center	Total	0.0 (0.1)	0.0 (0.2)	<0.001
		E&M	0.0 (0.1)	0.0 (0.2)	<0.001
		Non-E&M	0.0 (0.0)	0.0 (0.0)	-
	Other	Total	0.3 (2.2)	0.3 (1.9)	<0.001
		E&M	0.2 (1.8)	0.2 (1.3)	<0.001
		Non-E&M	0.1 (1.0)	0.1 (1.2)	<0.001

Abbreviations: SD=standard deviation; E&M=evaluation and management. Expenditures reflect spending per beneficiary on outpatient services, defined using place-of-service codes. To capture outpatient care delivery, we excluded claims with place-of-service codes indicating care provided in emergency departments and inpatient settings. “Other” sites of care include assisted living facilities, group homes, mobile units, place of employment, urgent care facilities, independent clinics, public health clinics, and rural health clinics.