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Distributional Analysis of Variation in Medicare Advantage Participation Within and Between Metropolitan, Micropolitan, and Noncore Counties

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Purpose/Background

Enrollment in Medicare Advantage (MA) has steadily increased over the last two decades, and as of 2022, nearly half (45.7 percent) of all Medicare recipients were in an MA plan.[1] From 2006 to 2022, all of the growth in Medicare enrollment has accrued to MA plans, with traditional Medicare enrollment declining three percent.[2] Since 2016, growth in MA enrollment has been higher in nonmetropolitan counties than in metropolitan counties, though overall participation remains higher in metropolitan areas.[1] Previous studies have not examined differences in enrollment and plan offerings within metropolitan counties, or within more rural counties. If MA choices are to be equitable both within and across geography, an understanding of factors influencing the number of choices and enrollment preferences will be necessary for developing policy parameters that facilitate market activity. The purpose of this brief is to identify patterns and trends in MA participation (penetration rates, number of plans, and enrollment), both within and across metropolitan and nonmetropolitan counties.

Key Findings

- From 2017 through 2022, growth (measured as percent increase) in the number of MA plans and MA enrollment rates was higher in noncore and micropolitan counties than in metropolitan counties, but metropolitan enrollment rates remained higher than nonmetropolitan enrollment rates. The median number of MA plans in metropolitan counties is higher than that in micropolitan counties which is higher than the median number of plans in noncore counties.
- Within each rural-urban classification, percent growth in MA penetration rates, plans, and enrollment has been highest in counties with the lowest participation rates in 2017.
- Population size is closely tied to higher participation rates both within and across geographic classifications, with the important caveat that micropolitan and noncore counties with higher MA participation exceed rates that population only would suggest.

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Methods/Data

Data for MA enrollment and penetration rates for 2017-2022 were downloaded from the Centers for Medicare & Medicaid Services.[3] 'Enrollment' refers to the number of Medicare beneficiaries that have chosen to enroll in an MA plan, whereas 'penetration' refers to the percentage of eligible Medicare beneficiaries that have enrolled in an MA plan. These two measures, along with the number of available MA plans, are all referred to as measures of 'participation'. Urban Influence Code (UIC) data from 2013 was used to separate counties into metropolitan (UIC: 1,2), micropolitan (UIC: 3,5,8), and noncore (UIC:4,6,7,9-12). The final dataset contained information on 3,136 counties (or equivalents[*]). County-level estimates on population, income, and various measures of insurance status for 2016-2020 were obtained from the American Community Survey[4] and appended to the MA data.

Of the 3,136 counties included in the analysis, 1,166 were metropolitan counties, 641 were micropolitan counties, and 1,329 were noncore counties. Within each geographic category, counties were further separated into quintiles using the 2020 MA penetration rate (MA enrollees divided by eligible beneficiaries) as the ordering variable. For example, the 20 percent of metropolitan counties with the lowest penetration rates comprise the first quintile for the metropolitan category, the next 20 percent comprise the second quintile, etc. The resulting quintiles allow for a more detailed investigation into how plans, enrollment, and penetration rates have changed across counties within and between each geographic category.

Overall Trends

Figure 1 shows trends in the number of plans and enrollees for each rural-urban category from 2017-2022. The median number of plans (represented by the bars) grew significantly across all categories. For micropolitan and noncore counties, the median number of plans increased by more than 200 percent, while the median number of plans in metropolitan counties increased by 150 percent. In absolute terms, however, the gap in median number of plans between metropolitan counties (31) and micropolitan (23) and noncore (18) counties actually grew, highlighting the lower baseline for the nonmetropolitan categories. The median number of enrollees (represented by the lines) increased the most in micropolitan counties from 2017 to 2022 (+90 percent). Enrollment growth was slightly more gradual across other geographies, with the number of median enrollees increasing by 74 percent in metropolitan counties and 80 percent in noncore counties. Given the similar growth rates, the gaps in median number of enrollees grew between metropolitan and nonmetropolitan counties as well as between micropolitan and noncore counties. In analyses not shown, we evaluated MA growth between 2017 and 2022 across the four primary census regions. Growth in plans, enrollment, and penetration rates were higher over that time in the West and South regions. Those regions were starting from much lower levels of MA participation, however, and absolute gaps in plans and enrollment still increased over 2017 to 2022 when comparing the West and South regions to the Northeast region.

Quintile Analysis

Tables 1a through 1c provide detailed information on the changes in penetration rates, plans, and enrollment at the quintile level for each geographic category from 2017 to

[*] "Equivalents" refer to places that are comparable to counties but called different names. These include boroughs, parishes, independent cities, and the District of Columbia.

2022. All reported values in these tables reflect the median value at the county level within each quintile.

Within each geographic category, counties with higher population have higher MA penetration rates, more plans, and higher enrollment. This relationship was nearly universal, with the exception of the noncore category, in which the fourth quintile median population was slightly higher than the fifth quintile median population. In comparing across geographic categories, population also clearly played a considerable role. However, we did uncover some instances where population does not appear to be the only influence. As an example, in the top (fifth) quintile, penetration rates in 2022 across metropolitan, micropolitan, and noncore counties were within 8 percentage points of each other, despite differences in median population of more than 100,000.

In terms of changes between 2017 and 2022, MA participation grew in nearly all counties. MA penetration rates increased within each quintile for metropolitan, micropolitan, and noncore counties. Growth rates were highest for the counties in the lowest quintiles (those with the lowest penetration rates). This was true across all geographic categories. As an example, in noncore counties, penetration rates in the first quintile grew more than 400 percent from 2017 to 2022 (from 1% to nearly 6%), while penetration rates grew by about 60 percent in the fifth quintile of noncore counties. However, growth rates can be very misleading depending on starting points as evidence by the 1% penetration rate starting point in the lowest noncore quintile. While growth rates were highest in the first quintile for noncore counties versus metropolitan and micropolitan counties, the absolute gap in penetration rates between noncore counties and micropolitan and metropolitan counties increased between 2017 and 2022. Moreover, in the case of penetration rates, the differences within each geographic category across quintiles were much larger than differences between categories at the same relative ranking or quintile. For example, there was a 50-percentage point difference in penetration rates between the top and bottom quintile in noncore counties, despite median population differing by only 11,000.

Growth in the median number of plans at the county level was also consistent for each geographic category between 2017 and 2022. The number of available plans at least doubled in nearly every quintile. For the lowest quintiles, plans tripled. However, within each geographic category, the gap between top quintile and bottom quintile also increased between 2017 and 2022. Though growth rates were higher in the lower quintiles, the increases were not enough to close the gap in number of plans available. The gap in median number of plans also grew comparing the counties with the lowest MA participation rates across categories.

Enrollment in MA plans grew in all three geographic categories, with the highest rate of growth in the quintiles with the lowest MA penetration rates. In comparing growth in quintiles across categories, noncore enrollment growth was slightly higher than micropolitan growth, which was in turn slightly higher than metropolitan growth. While penetration rates and number of plans were similar for the highest quintiles across geographic categories, enrollment was much higher in the fifth quintile of metropolitan counties. The enrollment gap between the first and fifth quintile within metropolitan counties was also notable. This median enrollment difference of more than 16,000 between the highest metropolitan quintile and the lowest quintile corresponds to a population difference of more than 100,000. In the top quintile of the micropolitan classification, median population was reasonably close to the median population in the bottom quintile of the metropolitan region (~45k vs. ~53k). Median enrollment, in

contrast, was more than double in those micropolitan counties, suggesting factors beyond population play a role in those counties. Similarly, median enrollment in the highest quintile of the noncore category was very close to the median enrollment in the bottom quintile of the metropolitan category, despite the noncore counties having less than one-third of the metropolitan population in the bottom quintile counties.

Discussion

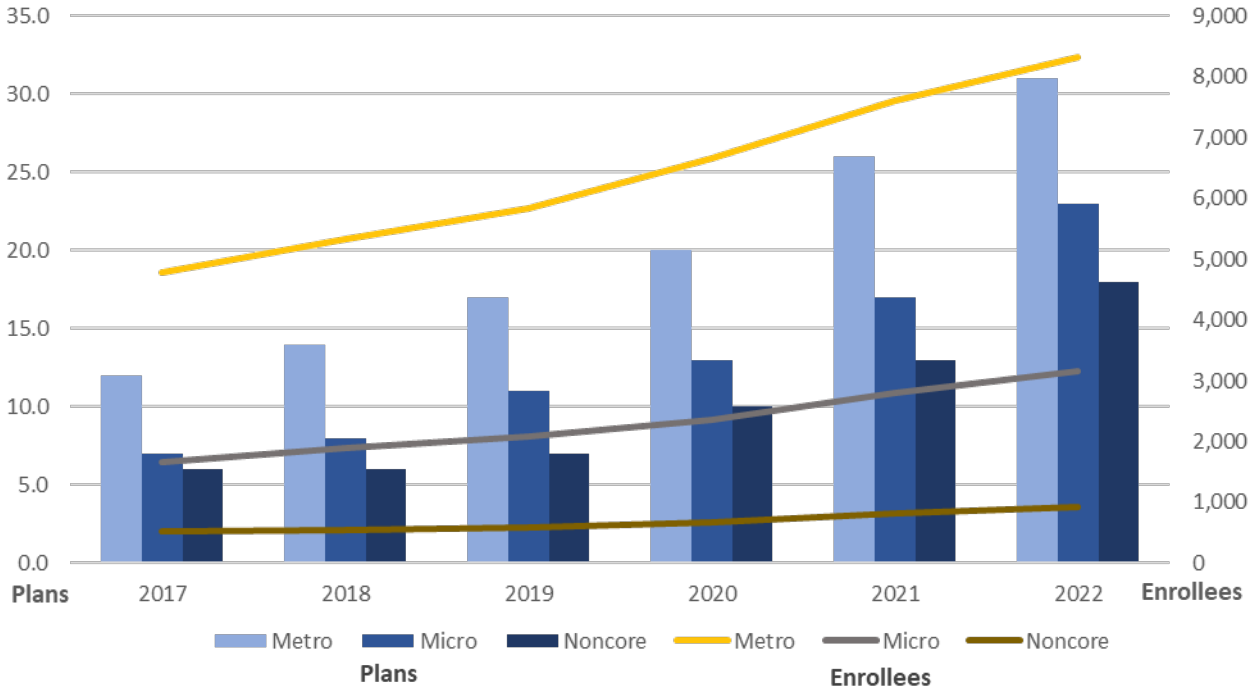
MA plan offerings increased across metropolitan, micropolitan, and noncore counties from 2017 to 2022, with slightly higher growth in the number of plans and enrollment for micropolitan and noncore counties than metropolitan counties.

Splitting each geographic category into quintiles based on MA penetration rates in 2020 allowed a view of changes in growth within categories as well as between categories at similar relative rankings. Overall, the quintile rankings were closely associated with population, with higher penetration rates, plans, and enrollment corresponding to higher population. Within each classification, growth in MA penetration rates, plans, and enrollment was highest among counties in the bottom quintile, though relative positions across geographic categories remain unchanged.

While population size is a compelling factor in explaining both MA penetration rates and plan offerings, especially within each geographic category, it is not the entire story. For example, MA penetration rates and median number of plans are reasonably comparable in the highest-ranking counties across geographic categories, despite stark differences in median county population. Enrollment, however, is much higher in the highest-ranking metropolitan counties compared to micropolitan and noncore counties.

Developing a more nuanced understanding of factors that may help explain such differences as well as understanding the factors driving the overall shift toward MA, is an important future task. The effect of MA plans' proximity to a very large urban areas, advertising markets, and provider networks represent notable areas for exploration. Including turnover and length of enrollment are also important factors to consider in future work.

Figure 1. Median Number of MA Plans and Enrollees by County, 2017-2022



Note: bars correspond to plans; lines correspond to enrollment

Table 1a - Metropolitan Medicare Advantage Growth Summary by Quintile 2017-2022 (All Median Values)**

Quintile	Population	Penetration Rate (2017)	Penetration Rate (2020)	Penetration Rate (2022)	Penetration Rate Growth (2020 vs. 2017)	Penetration Rate Growth (2022 vs. 2020)
1	52,763	13.1%	19.4%	26.8%	47.8%	38.3%
2	94,287	21.5%	28.9%	37.0%	34.4%	28.2%
3	99,122	29.0%	36.7%	44.3%	26.3%	20.8%
4	118,168	37.3%	44.4%	50.9%	19.0%	14.8%
5	156,204	48.8%	54.3%	60.4%	11.2%	11.3%

Quintile	Population	# of Plans (2017)	# of Plans (2020)	# of Plans (2022)	Plan Growth (2020 vs 2017)	Plan Growth (2022 vs 2020)
1	52,763	6	11	20	83.3%	81.8%
2	94,287	10	18	28	80.0%	55.6%
3	99,122	13	19	31	46.2%	63.2%
4	118,168	15	24	36	60.0%	50.0%
5	156,204	20	28	39	40.0%	39.3%

Quintile	Population	# of Enrollees (2017)	# of Enrollees (2020)	# of Enrollees (2022)	Enrollment Growth (2020 vs 2017)	Enrollment Growth (2022 vs 2020)
1	52,763	1,044	1,578	2,441	51.1%	54.7%
2	94,287	3,443	5,255	6,690	52.6%	27.3%
3	99,122	5,327	7,352	9,486	38.0%	29.0%
4	118,168	7,718	10,367	13,078	34.3%	26.2%
5	156,204	14,189	16,867	18,632	18.9%	10.5%

**Counties ordered into quintiles of 2020 county MA penetration rates within each rural-urban classification; Quintile 1 represents the lowest 20% of counties by penetration rates
Note: All reported values for penetration rates, plans, and enrollment are median values at the county level within each quintile

Table 1b - Micropolitan Medicare Advantage Growth Summary by Quintile 2017-2022 (All Median Values)**

Quintile	Population	Penetration Rate (2017)	Penetration Rate (2020)	Penetration Rate (2022)	Penetration Rate Growth (2020 vs. 2017)	Penetration Rate Growth (2022 vs. 2020)
1	31,994	6.1%	8.8%	14.6%	46.0%	64.9%
2	33,645	14.3%	20.6%	29.5%	43.6%	43.7%
3	40,845	22.2%	30.3%	38.3%	36.5%	26.4%
4	43,727	28.0%	36.9%	45.8%	32.0%	24.0%
5	44,648	38.7%	46.1%	54.7%	19.1%	18.5%

Quintile	Population	# of Plans (2017)	# of Plans (2020)	# of Plans (2022)	Plan Growth (2020 vs 2017)	Plan Growth (2022 vs 2020)
1	31,994	3	5	9	66.7%	80.0%
2	33,645	6	11	17	83.3%	54.5%
3	40,845	9	16	26	77.8%	62.5%
4	43,727	10	16	27	60.0%	68.8%
5	44,648	13	21	32	61.5%	52.4%

Quintile	Population	# of Enrollees (2017)	# of Enrollees (2020)	# of Enrollees (2022)	Enrollment Growth (2020 vs 2017)	Enrollment Growth (2022 vs 2020)
1	31,994	323	524	816	62.2%	55.6%
2	33,645	881	1,368	2,190	55.3%	60.1%
3	40,845	1,817	2,632	3,420	44.9%	29.9%
4	43,727	2,533	3,616	4,636	42.8%	28.2%
5	44,648	3,767	4,706	5,666	24.9%	20.4%

**Counties ordered into quintiles of 2020 county MA penetration rates within each rural-urban classification; Quintile 1 represents the lowest 20% of counties by penetration rate
Note: All reported values for penetration rates, plans, and enrollment are median values at the county level within each quintile

Table 1c - Noncore Medicare Advantage Growth Summary by Quintile 2017-2022 (All Median Values)**

Quintile	Population	Penetration Rate (2017)	Penetration Rate (2020)	Penetration Rate (2022)	Penetration Rate Growth (2020 vs. 2017)	Penetration Rate Growth (2022 vs. 2020)
1	5,445	1.0%	2.1%	5.6%	111.9%	162.4%
2	8,483	9.4%	12.8%	20.6%	36.3%	60.1%
3	12,309	16.9%	23.9%	32.6%	41.3%	36.4%
4	16,632	23.8%	34.2%	41.4%	43.9%	20.9%
5	16,024	32.8%	42.7%	52.3%	30.2%	22.6%

Quintile	Population	# of Plans (2017)	# of Plans (2020)	# of Plans (2022)	Plan Growth (2020 vs 2017)	Plan Growth (2022 vs 2020)
1	5,445	2	3	6	50.0%	100.0%
2	8,483	5	7	13	40.0%	85.7%
3	12,309	7	11	18	57.1%	63.6%
4	16,632	8	14	23	75.0%	64.3%
5	16,024	11	17	28	54.5%	64.7%

Quintile	Population	# of Enrollees (2017)	# of Enrollees (2020)	# of Enrollees (2022)	Enrollment Growth (2020 vs 2017)	Enrollment Growth (2022 vs 2020)
1	5,445	36	49	93	36.1%	89.8%
2	8,483	168	251	431	49.4%	71.7%
3	12,309	514	714	1,052	38.9%	47.4%
4	16,632	945	1,340	1,783	41.8%	33.1%
5	16,024	1,395	1,755	2,143	25.8%	22.1%

**Counties ordered into quintiles of 2020 county MA penetration rates within each rural-urban classification; Quintile 1 represents the lowest 20% of counties by penetration rates
Notes: All reported values for penetration rates, plans, and enrollment are median values at the county level within each quintile

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