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Patterns of Health Care Use among Rural-Urban Medicare Beneficiaries Age 85 and Older, 2010-2017

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BACKGROUND

The number of U.S. residents age 85 and older (85+) is expected to grow substantially in the coming decades, from 6.6 million in 2019 to 14.4 million in 2040.¹ Although the impact of the COVID-19 pandemic on population growth remains to be seen,² rural areas, which have a larger share of residents age 65 and older than urban areas,³ may experience more pronounced growth in the age 85+ population as the baby boom generation ages. Differential health service use by the 85+ age group could lead to increased demand for hospital services,^{4,5} and long-term services and supports (LTSS),⁶ including residential or nursing home care,⁷ compared with those aged 65-84.

Differences in health status between rural and urban older adults may be exacerbated by rural challenges to accessing care, such as hospital closures,⁸ provider shortages,⁹ and longer travel times to providers.¹⁰ Rural socioeconomic disparities may also impact health outcomes. Compared with urban residents, rural older adults have higher rates of poverty,¹² less household wealth,¹² and lower educational attainment.³

The purpose of this study was to examine rural-urban differences in health care use among Medicare beneficiaries age 85+. Understanding these differences, and the socioeconomic characteristics that contribute to them, can have important implications for Medicare policies aimed at serving the age 85+ population.

APPROACH

Study Aims

This study used nationally representative survey and administrative claims data to examine whether and how rural and urban Medicare beneficiaries age 85+ differ in terms of their 1) socioeconomic and health characteristics that may inform health care use; and 2) trends in health care use, including use of inpatient and emergency department (ED) care; outpatient and prescription services; specialists and dentists; and home health and durable medical equipment.

Data

Our data sources were the Medicare Current Beneficiary Survey (MCBS) 2010-13 Cost and Use and 2015-17 Cost Supplement Files (MCBS data are not available for 2014; 2017 data were the latest available at the time of the study). The MCBS, a rotating panel survey of a nationally representative sample of the Medicare population, combines survey data collected from beneficiaries with Medicare claims and administrative data from the Centers for Medicare & Medicaid Services. Beneficiaries were included in the analyses if they were continuously enrolled in Medicare for 10 months or more in any

Key Findings

- As baby-boomers age and become eligible for Medicare, the percentage of the Medicare population age 85+ has been declining in both rural and urban areas, ranging from 15% in 2011 to 12% in 2017.
- The percentage of the age 85+ population living in the community (versus facilities) did not differ by rural and urban residence and increased from 85% to 88% over the 2010-17 study period.
- Among community-dwelling beneficiaries age 85+, over years 2010-17, enrollment in fee-for-service (FFS) Medicare has steadily declined from 84% to 74% in rural, and 70% to 60% in urban, while enrollment in Medicare Advantage plans correspondingly increased.
- Among Medicare FFS community-dwelling beneficiaries age 85+:
 - The rate (percentage) and frequency with which rural and urban FFS beneficiaries were visiting primary care providers (PCPs) was similar over most years.
 - Rural FFS beneficiaries were using proportionately more outpatient services (excluding visits to PCPs) than urban FFS beneficiaries, but significantly fewer specialized and dental services.
 - While the percent of urban FFS beneficiaries using the emergency department (ED) was near 30% in most years, rural FFS beneficiaries' use of the ED increased from 27% to 43% in 2010-17.

given year and enrolled in both Medicare Parts A and B.

Variables

We examined rural-urban differences in socioeconomic status (age, race, educational attainment, marital status, household income), health status (self-reported health status, number of chronic conditions, functional status, and smoking history), and enrollment in Medicare Advantage (MA) and fee-for-service (FFS) plans. Measures of functional ability included the basic activities of daily living (ADLs), i.e., feeding, dressing, bathing, and walking; and the instrumental activities of daily living (IADLs), i.e., cooking, cleaning, transportation laundry, and managing finances. While IADLs are essential to living independently, deficits in ADLs may indicate the need for home healthcare or nursing home placement.

We used Medicare FFS claims data to examine the following measures of health care use: inpatient hospitalizations; emergency department (ED) visits; outpatient, primary, and specialty care; prescription medications; home health, and durable medical equipment. Primary care included visits to medical doctors, general and family practitioners, internal medicine, geriatricians, naturopaths, osteopaths, physician assistants, and nurse practitioners, as well as visits to Federally Qualified Health Centers and Rural Health Clinics. We classified outpatient hospitalizations and ambulatory surgeries as outpatient visits. Visits to specialists included non-primary care providers such as cardiology, gastroenterology, surgery, optometry, and podiatry. We used Rural-Urban Commuting Area codes to assess differences in patterns of health service use across rural and urban areas.

Analysis

We conducted bivariate analyses to compare rural-urban differences in patterns of health service use (i.e., the percentage of beneficiaries experiencing a health care event, and the number of events for those using services). To account for the MCBS' complex survey design, all results were weighted using Stata/SE v15.1. We considered p-values <0.05 to be statistically significant.

FINDINGS

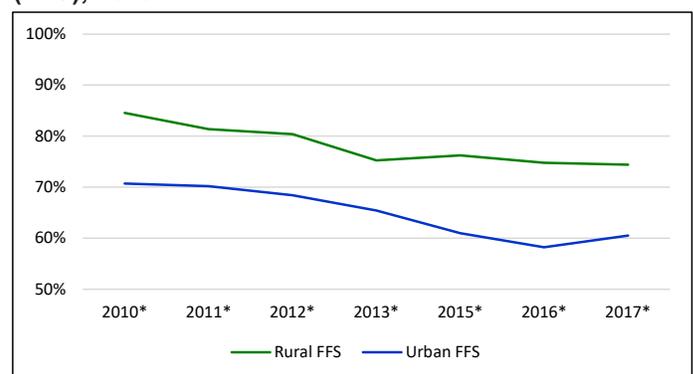
The age 85+ population comprised approximately 14-15% of the older adult population (age 65 and older) in 2011 and, as aging baby boomers became eligible for Medicare, the proportion of the Medicare population age 85+ has steadily declined to approximately 12% in 2017 (not shown). Over the eight-year time period, the percent of the older

adult population age 85+ was similar in rural and urban areas with the exception of rural areas having significantly lower rates of age 85+ populations in 2013 (12.5% rural, 14.1% urban) and in 2015 (11.7% rural, 13.5% urban) (not shown). The percentage of the age 85+ population living in the community (versus facilities) did not differ by rural-urban residence and increased from 85% to 88% over years 2010-17 (not shown).

Due to the limited sample size of facility dwelling beneficiaries in the MCBS, the remaining sections of this brief focus on the community-dwelling population. While the vast majority of the community-dwelling age 85+ population were enrolled in FFS plans, both rural and urban areas experienced steady declines in FFS enrollment over years 2010-17: from 85% to 74% in rural, and 71% to 60% in urban (Figure 1). Alternatively, enrollment in MA plans steadily increased in both rural and urban areas over years 2010-17. Throughout the study's timeframe, urban beneficiaries were more likely to be enrolled in MA plans than rural beneficiaries.

Next, we focus our analyses on the trends in health service use and rely on Medicare FFS claims. Socioeconomic differences between rural and urban FFS beneficiaries age 85+ included education, geographic location, and income. Specifically, in both 2010 and 2017, a larger percentage of rural community-dwelling FFS Medicare beneficiaries age 85+ had less than a high school education, lived in the South or Midwest, and had incomes less than \$25K (Table 1). Although rural and urban FFS beneficiaries had similar health (general health, chronic conditions) and functional outcomes (ADLs, and IADLs) across the study years, the percentage of both rural and urban beneficiaries with five or more chronic conditions as well as rural and urban beneficiaries with two or more IADLs declined from 2010 to 2017.

Figure 1. Percentage of the 85+ Community-Dwelling Medicare Population Enrolled in Fee-for-Service (FFS), 2010-17



* Rural-urban differences were significant at the 0.01 level

Table 1. Socioeconomic and Health Status Characteristics of Community-Dwelling, Fee-for-Service (FFS) Medicare Beneficiaries Age 85+, 2010-17

	2010		p-value	2017		p-value
	Rural	Urban		Rural	Urban	
Sample (n)	260	683		265	648	
Age (average years)	88.7	88.4	0.13	88.8	89.2	0.26
Male (%)	32.8	34.7	0.53	35.7	39.9	0.23
White, non-Hispanic (%)	96	88.9	0.02	91.4	86.6	0.12
BIPOC, non-Hispanic (%)	3.3	9.3		7.6	11.2	
Hispanic, any race (%)	0.7	1.9		1	2.2	
Less than high school (HS) (%)	33.8	21.5	0.001	28.1	17	0.001
HS graduate, some college (%)	51.8	58.2		56	51.6	
College graduate (%)	14.4	20.3		15.9	31.4	
Married (%)	29.3	31.4	0.53	29	33.9	0.28
Northeast (%)	13.9	25.3	0.000	10.9	25.3	0.11
South (%)	40.2	35.4		41.9	34.6	
Midwest (%)	36.8	21.7		31.7	22.9	
Pacific (%)	9.1	17.6		15.4	17.2	
Income < \$25K (%)	65.2	54.1	0.002	56	37.8	0.000
Income ≥ \$25K (%)	34.8	45.9		44	62.2	
Dual eligible (full year, 10+ months)	9.3	7.5	0.43	8	7.9	0.94
Any supplemental health insurance coverage ^a	39.2	39.9	0.88	42.4	42.6	0.95
Excellent/very good/good health (%)	81.7	78.9	0.4	81.4	82.1	0.84
Any chronic condition (CC) (%)	98.3	97	0.25	96	92.7	0.16
Average # CCs	4.7	4.7	0.97	4.2	4.1	0.62
0 CCs (%)	1.7	3	0.28	4	7.3	0.21
1-4 CCs (%)	52	47.1		54.6	56.1	
5 or more CCs (%)	46.4	49.9		41.3	36.6	
Average # ADLs	1.2	1.1	0.27	1.1	1.1	0.75
No ADL limitation (%)	48.7	50.6	0.66	54.7	57	0.7
1 ADL limitation (%)	21.7	23.3		20.3	17.7	
≥ 2 ADL limitations (%)	29.5	26.1		25	25.3	
Average # IADLs	1.8	1.5	0.09	1.4	1.4	0.8
No IADL limitation (%)	38	43.1	0.45	43.7	47.3	0.35
1 IADL limitation (%)	24.3	20.7		27.4	22.5	
≥ 2 IADL limitations (%)	37.7	36.2		28.9	30.3	

Notes: BIPOC = Black, Indigenous, and People of Color; ADL = Activities of Daily Living; IADL = Independent Activities of Daily Living
Blue/green highlighted text refers to significant increases/decreases, respectively over time within rural and/or urban areas.

^aSupplemental insurance includes private Medigap policies that beneficiaries purchased to cover services not covered by traditional FFS Medicare policies.

Health Care Use Trends

Inpatient and Emergency Department Visits.

Hospitalization rates and the number of hospitalizations among rural and urban FFS beneficiaries were similar for most years. Hospitalization rates ranged from 17-26% and for those who were hospitalized, the annual number of hospitalizations ranged from 1.4-1.9 (Figure 2). Rural-urban differences in the percentage of beneficiaries who visited the ED were higher in all years, with significant differences in 2011, 2012, and 2017. The percentage of rural beneficiaries who visited the ED increased from 27% in 2010 to 43% in 2017, while the percentage of urban beneficiaries who used ED services was near 30% in most study years. For those who used ED services, the

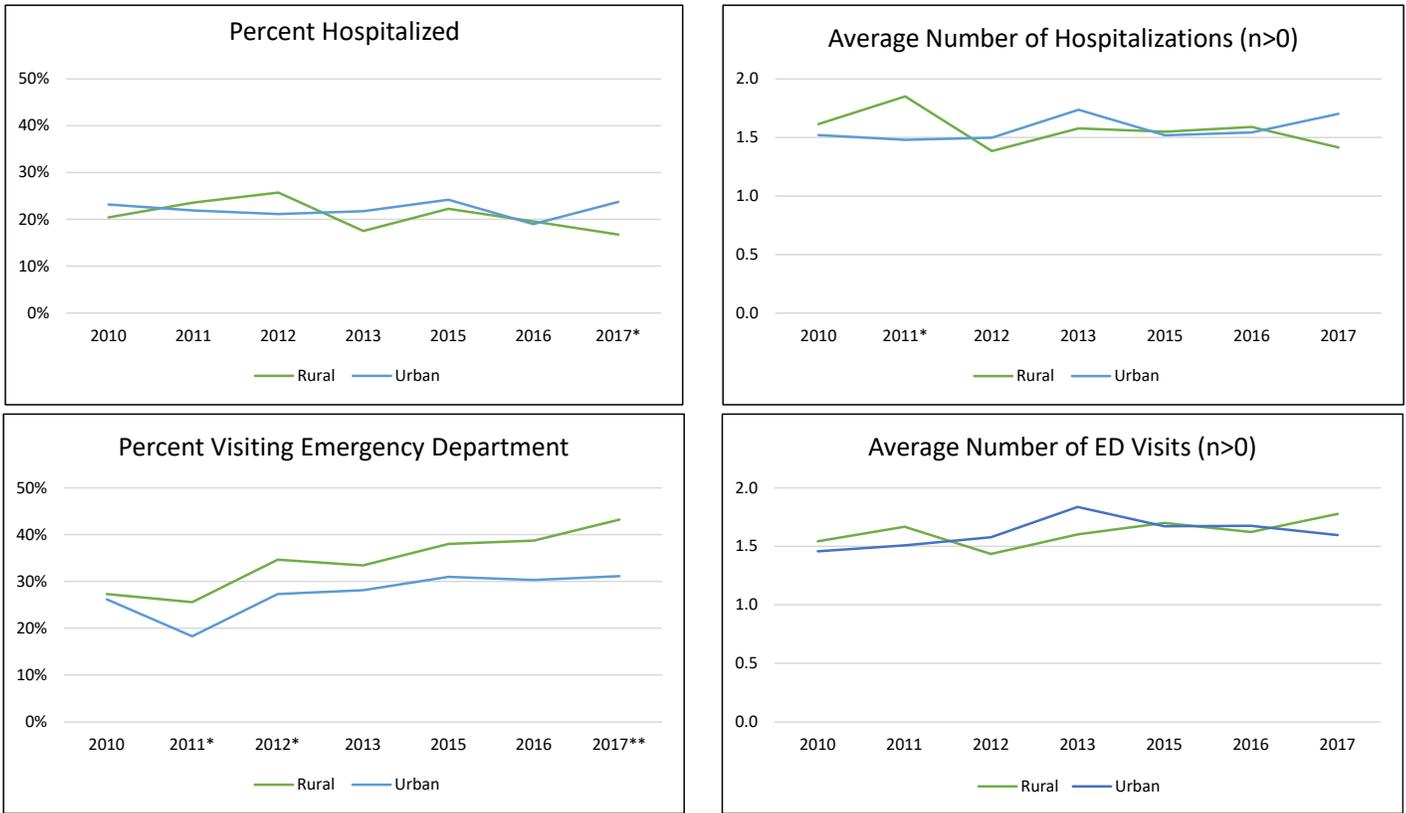
number of visits were similar for rural and urban beneficiaries and ranged from 1.4-1.8 times/year.

Primary Care, Outpatient and Prescription Services.

Rural and urban FFS beneficiaries were similarly likely to visit a primary care provider (PCP) in most years (Figure 3). The percentage of urban beneficiaries visiting a PCP was steady across the study period (86-89%), while the percentage of rural beneficiaries visiting a PCP was somewhat more variable (78-93%). Among those who visited a PCP, rural beneficiaries had significantly fewer visits in 2010 and 2011 than urban beneficiaries, but visits were comparable between the groups from 2012 on.

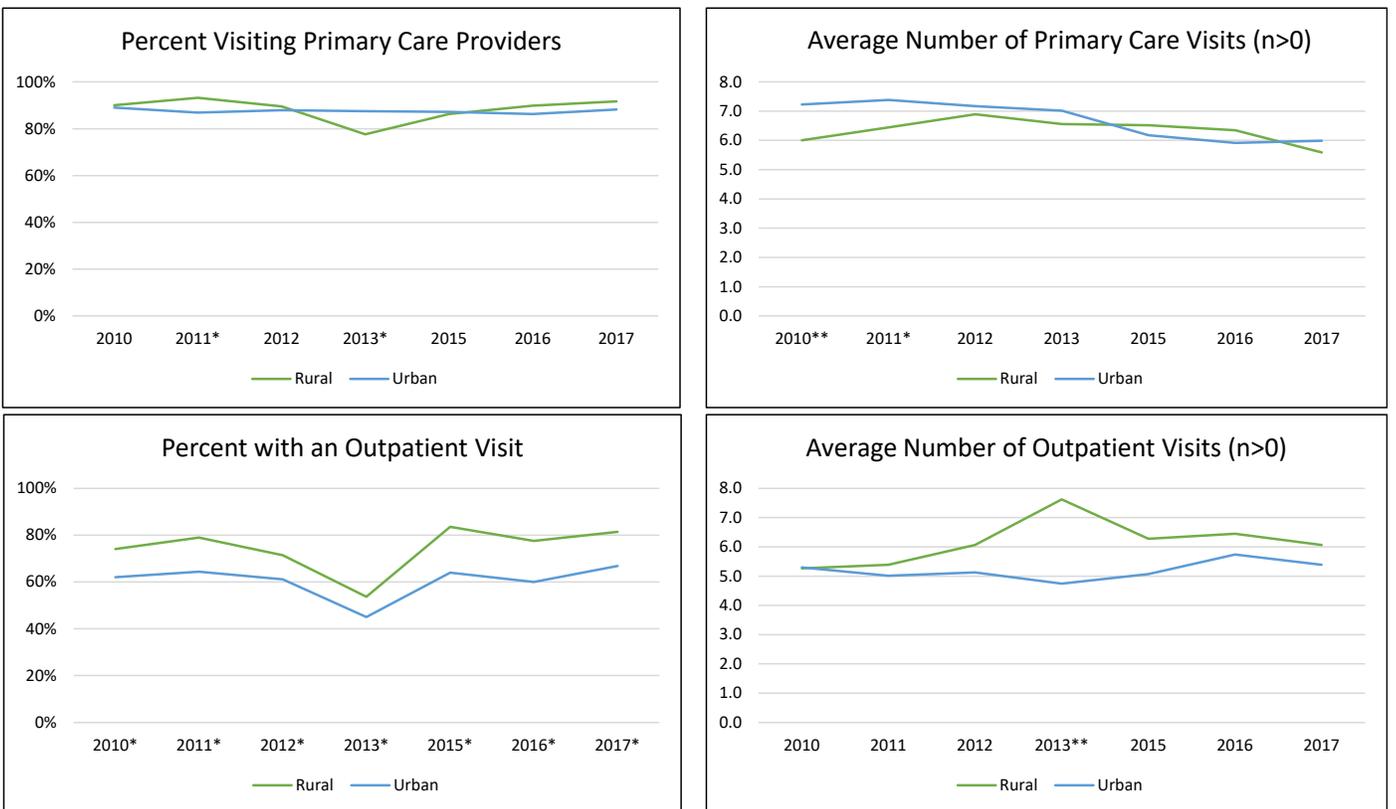
In addition to primary care, rural beneficiaries were significantly more likely to receive outpatient

Figure 2. Inpatient and Emergency Department Use by FFS Medicare Beneficiaries Age 85+, 2010-17



**/* Rural-urban differences were significant at the 0.01/0.05 levels, respectively.

Figure 3. Primary Care and Outpatient Service Use^a by FFS Medicare Beneficiaries Age 85+, 2010-17



**/* Rural-urban differences were significant at the 0.01/0.05 levels, respectively.

^a Outpatient services include outpatient hospitalizations and ambulatory surgeries.

services (ranging from 54-84%) than their urban counterparts (ranging from 45-67%). With the exception of 2013, for those who received outpatient services, the volume of visits was similar for rural and urban beneficiaries (approximately 5-6 visits/year) across all years. Finally, the vast majority of both rural and urban beneficiaries received prescription drugs over the study time period (92-99%) (not shown).

Specialists and Dentists. Compared with urban beneficiaries, rural beneficiaries were significantly less likely to visit specialists in all years (Figure 4). Rural beneficiaries who did see a specialist had significantly fewer visits (ranging from 2.1-3.4 visits/year) than urban beneficiaries (ranging from 3.4-4.6 visits/year) across all years except 2015.

Similarly, rural beneficiaries were significantly less likely to see a dentist (ranging from 30-45%) than urban beneficiaries (ranging from 49-54%) across most (four out of seven) years. In addition, those who did see a dentist came in significantly less often (ranging from 2.1-2.4 visits/year) than urban beneficiaries (ranging from 2.5-2.8 visits/year) in all years except 2011 and 2016. The majority of dental care (80-82%) reported was paid for out-of-pocket.

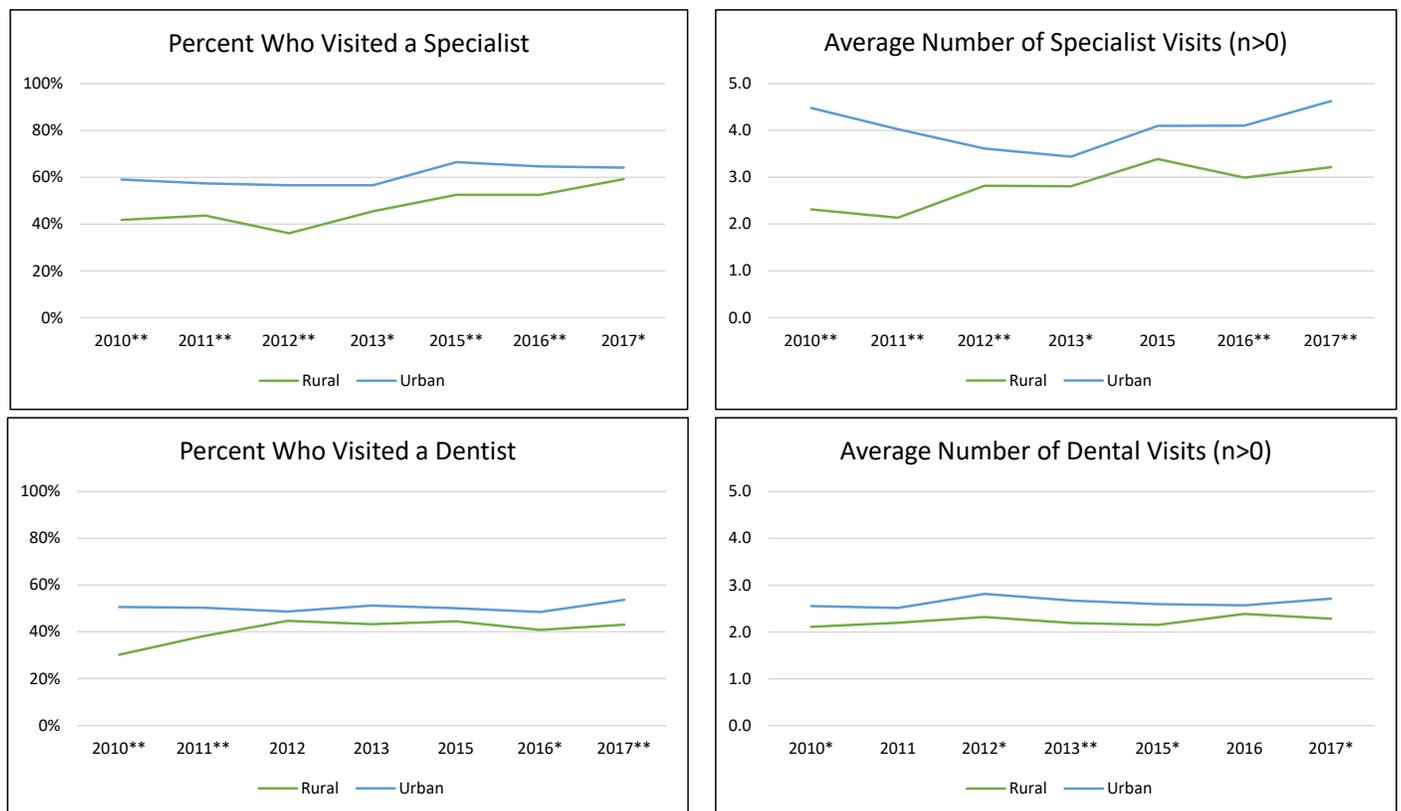
Other Services. Over years 2010-17, the percentage of beneficiaries receiving home health services ranged from 13-21% and did not significantly differ across rural and urban beneficiaries except in 2017 (Figure 5). Rural beneficiaries were significantly more likely to receive durable medical equipment (DME) than urban beneficiaries in 2016 and 2017. Overall, 29-40% of rural beneficiaries and 28-34% of urban beneficiaries received DME. While rural areas experienced an upward trend in the use of DME, urban areas experienced a downward trend.

DISCUSSION/CONCLUSIONS

Although the percentage of older adults (age 65+) remains higher in rural areas of the US,³ we found that adults over age 85—the “oldest old”—make up a similar proportion of the Medicare population in rural and urban areas. This is consistent with demographic trends showing that adults age 85+ make up a slightly larger share of the total population in urban versus rural areas.³

Study findings regarding the residential and insurance status of adults age 85+ align with industry trends. Aging baby boomers are becoming eligible for Medicare, thus accounting for a growing share of the Medicare population (and a declining

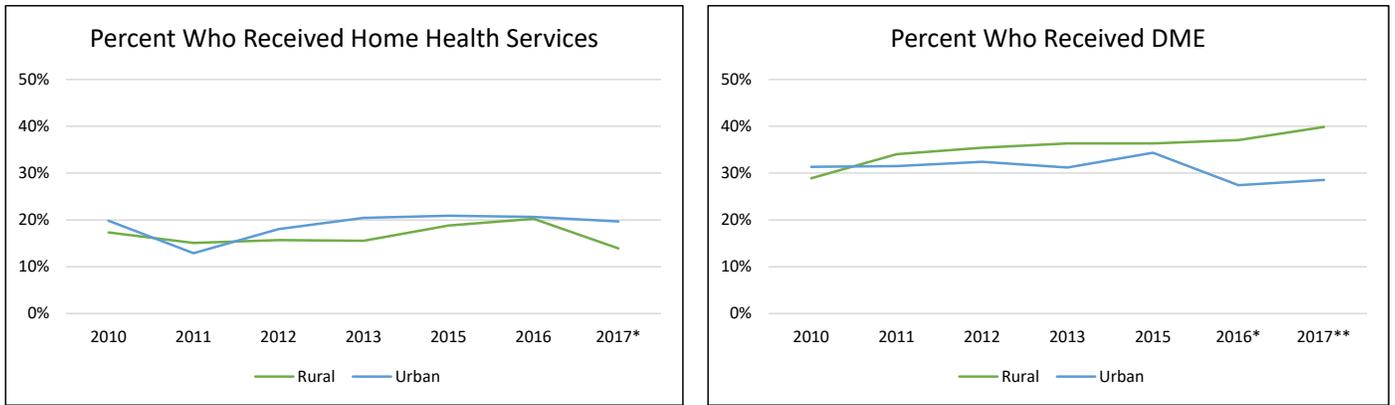
Figure 4. Specialist and Dental Service Use by FFS Medicare Beneficiaries Age 85+, 2010-17



**/* Rural-urban differences were significant at the 0.01/0.05 levels, respectively.

a Dental care is self-reported in the Medicare Current Beneficiary Survey.

Figure 5. Use of Home Health and Durable Medical Equipment by FFS Medicare Beneficiaries Age 85+, 2010-17



**/* Rural-urban differences were significant at the 0.01/0.05 levels, respectively.

DME = durable medical equipment

share of the oldest old, age 85+). As newly eligible baby boomers continue to age, however, the age 85+ population will likely account for a larger share of the Medicare population. The relatively recent emphasis on “aging in place,” issues with nursing home capacity, and workforce shortages may be contributing to the observed upward trends in the percentage of both rural and urban residents living in the community (85-88%). The concurrent downward trends in the percentage of beneficiaries living in facilities such as nursing homes also align with initiatives aimed at “re-balancing” the long-term services and supports system away from nursing home care to home and community-based service options.^{13, 14}

Health care reform initiatives continue to emphasize the importance of coordinating care and identifying opportunities for cost savings and have likely contributed to steady enrollment declines in FFS plans and concurrent increases in MA plan enrollment. While the ability of MA plans to realize better health outcomes and lower costs remains unclear,¹⁵ recent trend analyses indicate that MA enrollment has continued to expand with well over a third of rural Medicare beneficiaries enrolled in MA plans in 2021, compared to 45% in urban areas.¹⁶ Rural areas, however, continue to be dominated by the FFS sector, in part, driven by lower population densities and low volume issues that make rural areas a less attractive venue for managed care.^{17, 18}

Despite the fact that rural and urban beneficiaries age 85+ had similar health risk profiles (i.e., the average number of chronic conditions, ADLs, and IADLs were similar), rural beneficiaries outpaced their urban counterparts in terms of the percentage accessing outpatient hospitalizations and ambulatory surgeries. However, the average number of visits to primary care providers – in

both rural and urban areas – has been decreasing over time for this population. In addition to these downward trends in accessing primary care services, rural beneficiaries were not visiting specialists and/or dental providers as frequently as their urban counterparts were. With over a third of FFS Medicare beneficiaries using ED services in 2017, the increasing use of ED services in rural over the study period signals growing problems accessing health care services in other settings. Given that the majority of Medicare beneficiaries lack dental coverage,¹⁹ and that rural areas are experiencing shortages of dentists,²⁰ reduced access to dental care may also be contributing to higher use of the ED in rural. One study documented that the odds of rural adults visiting the ED for non-traumatic dental conditions were 31% higher than urban adults.²¹

Limitations. While these analyses included data covering the eight-year time span of 2010-17, data from 2014 were not released due to the 2015 redesign of the MCBS. The data anomalies that were observed, particularly related to the use of primary care and outpatient services, may be attributable in part to the change in vendors and the subsequent survey redesign occurring in 2013-2015.

POLICY IMPLICATIONS

Several factors may be contributing to higher ED use among rural community-dwelling Medicare beneficiaries age 85+: rural hospital closures, workforce shortages (including a lack of access to specialists and dentists), physician turnover, travel barriers, the limited availability of after-hours and weekend care, lower socioeconomic status/economic resources, and increased social and geographic isolation. With approximately 17% of the age 85+ rural population using inpatient and 43% using ED services in the latter years of their

lives, ensuring that this vulnerable population has access to care such as home health and hospice, and that providers in the FFS sector in particular have appropriate incentives to manage and coordinate care, are important priorities. Understanding the level of acuity associated with these ED visits is an important area in need of further research and may further emphasize the need for better care coordination within this vulnerable population. Finally, the recent increased use of telehealth, particularly during the COVID-19 pandemic, may be a means of improving care coordination and alleviating access barriers and thus, warrants further study.

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REFERENCES

- Administration on Aging. *2020 profile of older americans*. Administration on Aging, Administration for Community Living, US Department of Health and Human Services;2021 May. Accessed May 16, 2022. https://acl.gov/sites/default/files/Aging%20and%20Disability%20in%20America/2020ProfileOlderAmericans.Final_.pdf
- Friedman EM, Parker AM. *An early look at the impact of the COVID-19 pandemic on demographic trends*. blog. RAND Corporation. 2021. Updated April 12,. Accessed January 6, 2022. <https://www.rand.org/blog/2021/04/an-early-look-at-the-impact-of-the-covid-19-pandemic.html>
- Smith AS, Trevelyan E. *The older population in rural America: 2012-2016*.2019. ACS-41, American Community Survey Reports. Accessed October 27, 2020. <https://www.census.gov/library/publications/2019/acs/acs-41.html>
- Levant S, Chari K, DeFrances CJ. Hospitalizations for patients aged 85 and over in the United States, 2000-2010. *NCHS Data Brief*. Jan 2015;(182):1-8.
- West LA, Cole S, Goodkind D, He W. 65+ in the United States: 2010. U.S. Census Bureau;2014 June. Current Population Reports P23-212. Accessed January 30, 2019. <https://www.census.gov/content/dam/Census/library/publications/2014/demo/p23-212.pdf>
- Willink A, Kasper J, Skehan M, Wolff J, Mulcahy J, Davis K. *Are older americans getting the long-term services and supports they need?* The Commonwealth Fund;2019 January. Accessed January 30, 2019. https://www.commonwealthfund.org/sites/default/files/2019-01/Willink_are_older_americans_getting_LTSS_ib.pdf
- Harris-Kojetin L, Sengupta M, Lendon J, Rome V, Valverde R, Caffrey C. *Long-term care providers and services users in the United States, 2015-2016*. National Center for Health Statistics;2019. Vital and Health Statistics Series 3, Number 43. Accessed May 16, 2022. https://www.cdc.gov/nchs/data/series/sr_03/sr03_43-508.pdf
- North Carolina Rural Health Research Program. *175 rural hospital closures: January 2005 – present*. Cecil G. Sheps Center for Health Services Research, University of North Carolina. 2020. Accessed October 30, 2020. <https://www.shepscenter.unc.edu/programs-projects/rural-health/rural-hospital-closures/>
- Burrows E, Suh R, Hamann D. *Health care workforce distribution and shortage issues in rural America*. National Rural Health Association;2012. Accessed February 10, 2022.
- Chan L, Hart LG, Goodman DC. Geographic access to health care for rural Medicare beneficiaries. *J Rural Health*. Spring 2006;22(2):140-6. doi: 10.1111/j.1748-0361.2006.00022.x
- Larson EH, Andrilla CHA, Garberson LA, Evans DV. *Geographic access to health care for rural Medicare beneficiaries: A national study*. WAMMI Rural Health Research Center;2021 September. Accessed May 17, 2022. https://familymedicine.uw.edu/rhrc/wp-content/uploads/sites/4/2021/09/RHRC_PBSEP2021_LARSON.pdf
- Tuttle C, Tanem J, Lahr M, Schroeder J, Tuttle M, Henning-Smith C. *Rural-urban differences among older adults*. University of Minnesota Rural Health Research Center;2020 August. Chartbook. Accessed February 3, 2021.
- Silver BC, Grabowski DC, Gozalo PL, Dosa D, Thomas KS. Increasing prevalence of assisted living as a substitute for private-pay long-term nursing care. *Health Serv Res*. Dec 2018;53(6):4906-4920. doi: 10.1111/1475-6773.13021
- Thomas KS, Silver B, Gozalo PL, Dosa D, Grabowski DC, Makinen R, et al. Constructing a measure of private-pay nursing home days. *Med Care*. May 2018;56(5):e26-e31. doi: 10.1097/mlr.0000000000000749
- Medicare Payment Advisory Commission. *The Medicare advantage program: Status report*. In: MedPAC, ed. *March 2021 Report to the Congress: Medicare payment policy*. MEDPAC; 2021:353-403:chap 12.

16. Shrestha M, Ullrich F, Mueller K. *Medicare advantage enrollment update 2021*. RUPRI Center for Rural Health Policy Analysis;2021 September. Brief No. 2021-7. Accessed May 16, 2022. <https://rupri.public-health.uiowa.edu/publications/policybriefs/2021/Medicare%20Advantage%20Enrollment%20Update%202021.pdf>
17. Barker A, Nienstedt L, Kemper L, McBride T, Mueller K. *Comparing rural and urban Medicare advantage beneficiary characteristics*. RUPRI;2019 March. Brief No. 2019-1. Accessed May 17, 2022. <https://rupri.public-health.uiowa.edu/publications/policybriefs/2019/Rural%20and%20Urban%20MA%20Beneficiary%20Characteristics.pdf>
18. Barker AR, McBride TD, Mueller KJ. *Can the market deliver affordable health insurance options in rural areas?* Health Affairs Forefront [blog]. 219. Updated January 9. Accessed May 16, 2022. <https://www.healthaffairs.org/doi/10.1377/forefront.20190104.599904>
19. Freed M, Neuman T, Jacobson G. *Drilling down on dental coverage and costs for Medicare beneficiaries*. Kaiser Family Foundation;2019 March. Issue Brief. Accessed February 10, 2022. <https://www.kff.org/medicare/issue-brief/drilling-down-on-dental-coverage-and-costs-for-medicare-beneficiaries/>
20. Doescher M, Keppel G. *Dentist supply, dental care utilization, and oral health among rural and urban U.S. Residents*. WWAMI Rural Health Research Center;2015 June. Final Report #135. Accessed May 16, 2022. http://depts.washington.edu/uwrhrc/uploads/RHRC_FR135_Doescher.pdf
21. Akinlotan MA, Ferdinand AO. Emergency department visits for nontraumatic dental conditions: A systematic literature review. *J Public Health Dent*. September 2020;80(4):313-326. doi: 10.1111/jphd.12386

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