

Geographic Disparities in Influenza Vaccination Among Medicaid Beneficiaries: A National Analysis

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BACKGROUND & OBJECTIVES

- Geographic disparities in vaccine access may contribute to preventable disease burden.
- Pharmacies are the most common setting of influenza vaccination among adults [1].
- Substantial racial and ethnic disparities persist in influenza vaccination rates, with Black and Hispanic adults experiencing lower vaccination coverage compared to White adults nationally. [2]
- Pharmacies also serve as an increasingly important access point for influenza vaccination for older and/or low-income adults. [3,4]
- Limited research has examined temporal and rural-urban differences in influenza vaccination rates among Medicaid beneficiaries.
- Our objective is to **quantify geographic and sociodemographic disparities in influenza vaccination rates among Medicaid beneficiaries.**

METHODS

- We analyzed 100% Medicaid Transformed Medicaid Statistical Information System files (98-110 million beneficiaries annually, 2021-2023).
- National Drug Code and claims procedure codes were used to identify influenza vaccines.
- Rural-urban classification used Rural-Urban Commuting Area codes (RUCA 1-9=urban, 10=rural).
- Chi-square tests and odds ratios with 95% confidence intervals quantified disparities in vaccination rates by rural/urban status and sociodemographic characteristics.

Rural Medicaid beneficiaries are significantly less likely to get flu shots compared to urban beneficiaries—and falling further behind.

RESULTS

Figure 1. Medicaid Influenza vaccination trends: Rural vs. Urban

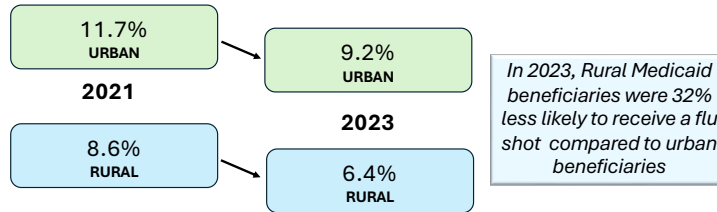


Table 1. Influenza-vaccinated Medicaid beneficiaries, 2023

2023 [^]	Overall		Rural		Urban	
	N	%	N	%	N	%
Total	9,983,712	-	195,981	-	9,787,731	-
Race/Ethnicity						
Black	1,356,773	14	10,981	6	1,345,792	14
White	2,935,732	29	115,591	59	2,820,141	29
Asian	887,137	9	1,438	1	885,699	9
Hispanic	3,134,373	31	30,614	16	3,103,759	32
Other/Unknown	1,669,697	17	37,357	19	1,632,340	17
Sex						
Male	4,306,097	43	81,890	42	4,224,207	43
Female	5,677,475	57	114,086	58	5,563,389	57
Age						
< 18 years	4,955,320	50	85,705	44	4,869,615	50
18-64 years	4,245,498	43	94,274	48	4,151,224	42
≥ 65 years	782,894	8	16,002	8	766,892	8

[^]Totals may not sum to 100% due to missing or suppressed data

Table 2. Rural-Urban Influenza Vaccination Disparities Across All Races

	OR [^]	CI
Rural vs Urban, Total		
2021	0.708	0.705-0.711
2022	0.707	0.704-0.710
2023	0.680	0.676-0.683
Rural vs Urban, Black		
2021	0.824	0.809-0.840
2022	0.927	0.910-0.944
2023	0.940	0.922-0.959
Rural vs Urban, White		
2021	0.780	0.776-0.784
2022	0.782	0.777-0.786
2023	0.783	0.779-0.788
Rural vs Urban, Asian		
2021	0.494	0.469-0.521
2022	0.506	0.481-0.532
2023	0.452	0.428-0.477
Rural vs Urban, Hispanic		
2021	0.845	0.833-0.856
2022	0.739	0.731-0.747
2023	0.687	0.679-0.695

[^] OR <1 indicates lower vaccination odds in rural areas. For example, OR 0.70 means 30% lower odds. OR: Odds Ratio; CI: Confidence Interval

Only Black rural beneficiaries saw improving vaccination access compared to urban beneficiaries – all other groups fell further behind.

RESULTS

- Claims-based influenza vaccination rates averaged 10.6% annually for Medicaid beneficiaries, showing declining trends (2.5% decrease over the study period).
- The majority of Medicaid beneficiaries who received the influenza vaccine reside in urban areas and are female (Table 1).
- Over the 3-year period, rural residence was associated with lower vaccination odds in Medicaid (29-32% lower, OR: 0.680-0.708) (Figure 1).
- Black patients had lower influenza vaccination odds than White patients, though this disparity showed some reduction over time (2021: OR=0.798, ~20% lower odds; 2022: OR=0.878, ~12% lower odds; 2023: OR=0.926, ~7% lower odds).

DISCUSSION & CONCLUSION

- Over three years, claims-based influenza vaccination rates decreased among Medicaid beneficiaries, with rural populations disproportionately affected.
- These findings can inform targeted public health interventions to address vaccination disparities.
- Community pharmacists, as trusted healthcare professionals, can reduce geographic and demographic vaccination barriers through targeted interventions.

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