

# Characterizing Social Determinants of Health of the Population Receiving Pneumococcal Vaccine in a Nationwide Network in the United States

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## BACKGROUND

- The Centers for Disease Control (CDC) recommends pneumococcal vaccination for older adults. [1]
- Uptake of routinely recommended vaccines among US adults remains low and socially vulnerable populations experience barriers, which may limit their access to vaccination. [2-4]
- Access to retail pharmacies may support community-based immunizations for socially vulnerable populations.

## OBJECTIVE

- This study describes the social vulnerability characteristics of patients receiving pneumococcal vaccination at a national pharmacy network.

## METHODS

- Pneumococcal vaccination records were identified from a national retail pharmacy immunization database from April 2021 to December 2024.
- CDC Social Vulnerability Index (SVI) [5] is a score ranging from 0 to 1. The SVI is comprised of 4 constituent themes (Socioeconomic Status, Household Characteristics, Racial & Ethnic Minority Status, Housing Type/Transportation) and 16 factors. Higher values correspond to higher vulnerability.
- SVI was linked to the immunization database by zip code of patient's residence.
- Tests were summarized by quintiles of overall SVI and its 4 constituent themes and 16 factors. The first and fifth quintiles indicate least and most vulnerable communities, respectively.

## RESULTS

- 2,327,917 patients 50 years and older received pneumococcal vaccinations at retail pharmacy locations from April 2021 through December 2024.
- Study population characterization: 19.2% of patients were 50-64 years old, 80.8% were 65 years or older, and 56.0% were female.
- The 4th and 5th quintiles together accounted for 64.7% of the pneumococcal vaccination population, demonstrating greater social vulnerability than would be expected in the general population.
- The strongest drivers of social vulnerability within the combined 4th and 5th quintiles were:
  - 63% Socioeconomic Status - Housing Cost Burden;
  - 75% Racial & Ethnic Minority Status;
  - Nearly 82% Limited English Language Proficiency; and
  - 85% Housing Type - Multi-Unit Structures.

**Table 1. Quintiles of Social Vulnerability Indices**

SVI Category	SVI Quintiles				
	<0.2	≥0.2 - <0.4	≥0.4 - <0.6	≥0.6 - <0.8	≥0.8 - 1
<b>Socioeconomic Status</b>	2.5	11.7	21.1	26.2	38.5
Below 150% Poverty	14.2	19.4	18.2	19.6	28.5
Unemployed	24.3	25	20	18.1	12.6
Housing Cost Burden	2	19.7	32.9	30.4	14.9
No High School Diploma	3.7	12.9	19.8	27.8	35.7
No Health Insurance	18.2	24.3	20.2	18.1	19.2
<b>Household Characteristics</b>	14.1	21.9	22	23.8	18.3
Ages 65 & Older	2.7	10.9	27.1	32.6	26.7
Ages 17 & Younger	25	28.1	22.2	15.7	8.9
Civilian with a Disability	10.5	22.1	26.7	24.2	16.4
Single-Parent Households	29.8	31.5	20.3	13.5	4.9
English Language Proficiency	1.3	12.7	25.8	32.4	27.7
<b>Racial &amp; Ethnic Minority Status</b>	3.7	0	14.6	31.4	50.2
Housing Type/Transportation	1.5	6.7	16.9	30.1	44.8
Multi-Unit Structures	1.5	5.5	19.7	32.4	41
Mobile Homes	4.4	0	10.3	27.4	57.9
Crowding	35.6	33	17.1	8.8	5.6
No Vehicle	3.4	12.4	25.6	25.9	32.6
Group Quarters	3.1	20.2	26.2	26.7	23.8
	7.5	0	33.5	37.5	21.5

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## CONCLUSIONS

- A high percentage of the population receiving pneumococcal vaccination at a national retail pharmacy network came from vulnerable communities.
- Community-based immunizations may help address the structural and social barriers to healthcare access that are associated with known inequities in these vulnerable populations.

## REFERENCES

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