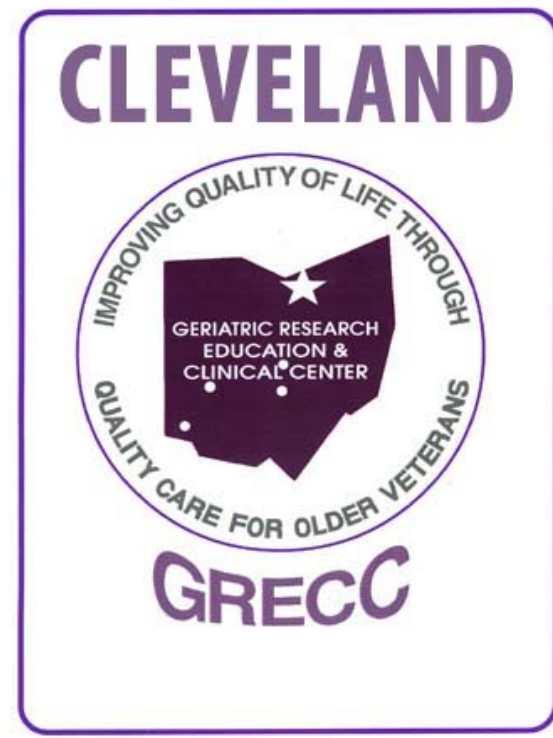


# Incidence of Community Acquired Pneumonia by Age & Comorbid Conditions in the Veterans Health Administration



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## Background

- Community acquired pneumonia (CAP) remains a major cause of morbidity and mortality in adults.
- Risk factors for CAP are often grouped into moderate- (e.g., diabetes mellitus, chronic liver, lung, or heart disease) and high-risk (e.g., immunosuppressive) conditions
- The designation of having a moderate- or high-risk condition influences preventative strategies, notably pneumococcal vaccination

## Objective

- To assess the incidence of CAP among people with > 1 moderate risk condition

## Methods

- We used the national Veterans Health Administration (VHA) databases merged with claims summaries from the Centers for Medicare and Medicaid Services to identify patients (≥18 years old) receiving clinical care in the VHA without clinical Medicare claims in 2016-2017
- Inclusion criteria for CAP cases:
  - diagnostic code for pneumonia
  - chest X-ray or chest CT within 14 days
  - antibiotics within 7 days of an outpatient diagnosis of pneumonia or within 2 days of hospitalization
- Exclusion criteria for CAP cases:
  - healthcare exposure or immunosuppressive medications or antibiotics in the prior 90 days

**Table 1. Incidence of Community Acquired Pneumonia, Stratified by Age**

Age	# CAP Cases	Patient Years	CAP cases /100K person years (95% CI)
18-34	1,296	912,628	142 (134-150)
35-49	2,947	1,431,371	206 (199-213)
50-64	11,271	2,485,670	453 (445-462)
65-74	13,399	2,127,881	630 (619-640)
75-84	5,300	671,048	790 (769-811)
85+	3,201	302,533	1058 (1022-1095)

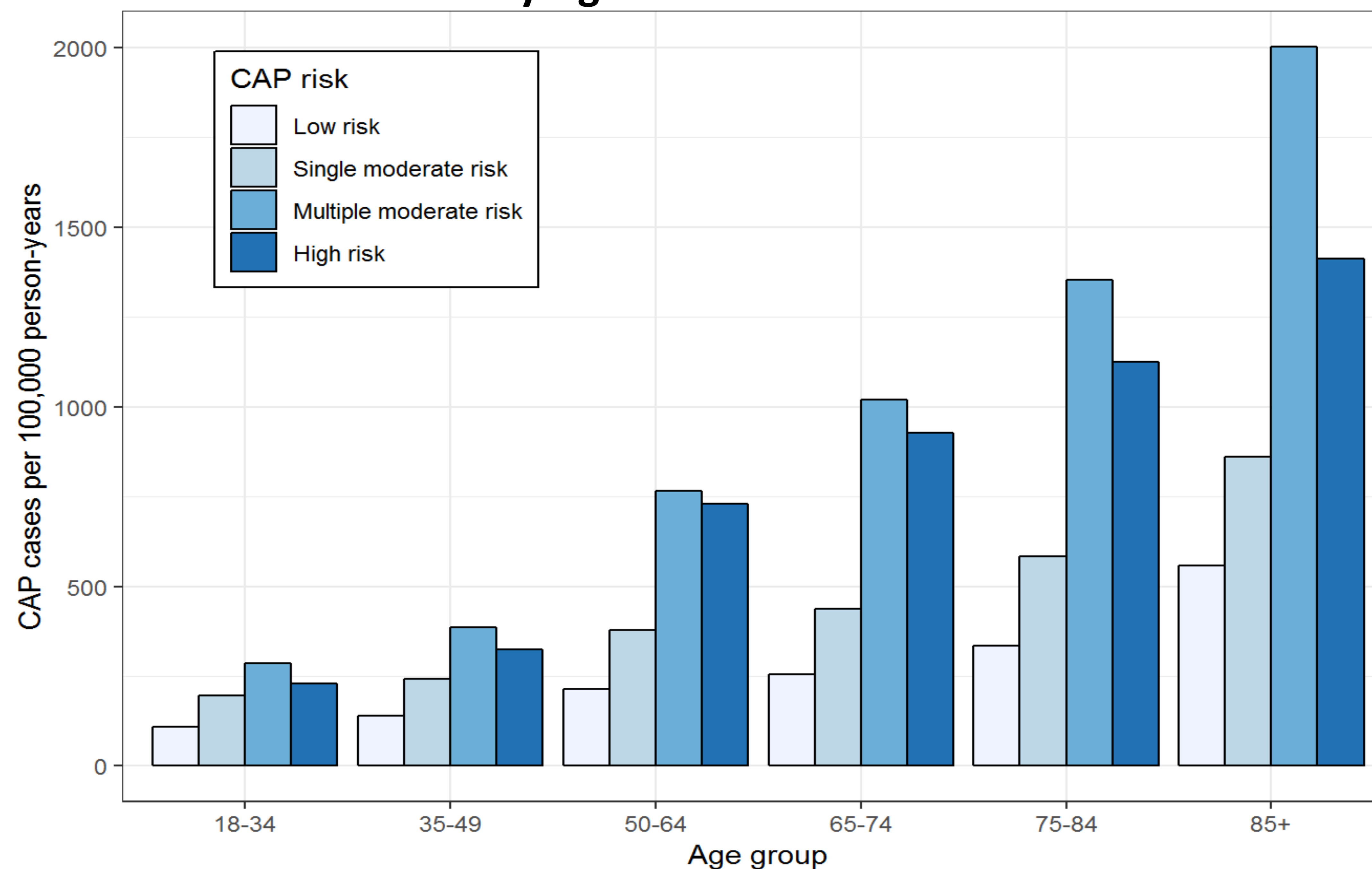
**Table 2. Prevalence of Moderate- and High- Risk Co-morbid Conditions, Stratified by Age**

Age	Number of Moderate-Risk Conditions		≥1 High-Risk Condition(s)
	One	Two or more	
18-34	20 %	6 %	3 %
35-49	26 %	10 %	8 %
50-64	26 %	20 %	16 %
65-74	26 %	19 %	26 %
75-84	23 %	12 %	35 %
85+	19 %	6 %	41 %

## Results

- We identified 37,414 CAP cases in 7.9 million person-years at risk and observed similar annual rates in 2016 and 2017 (471 and 473 cases/100,000 person-years, respectively) (Table 1)
- The prevalence of high-risk conditions and incidence of CAP increased with age
- The prevalence of people with ≥2 moderate-risk condition peaked for ages 50-64 and 65-74 years (Table 2)
- The incidence of CAP among those with ≥2 moderate-risk conditions exceeded that of patients with ≥1 high-risk conditions across all age strata (Figure 1)

**Figure 1. Incidence of Community-Acquired Pneumonia, Stratified by Age & Burden of Risk Factors**



## Conclusions

- Age-adjusted analysis revealed that the greatest burden of CAP occurs in patients with ≥2 moderate-risk conditions, even compared to those with a high-risk condition
- Additional preventative health measures directed at individuals older than 50 years with ≥2 moderate-risk conditions may help to reduce the burden of CAP and limit its morbidity and mortality

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