

# Incidence, Prevalence, and Mortality of Pulmonary Sarcoidosis with Parenchymal Involvement in the US

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## Introduction

- The epidemiology of pulmonary sarcoidosis in the US was previously reported based on 2010-2013 data (Baughman 2016) but has not been updated recently

## Objective

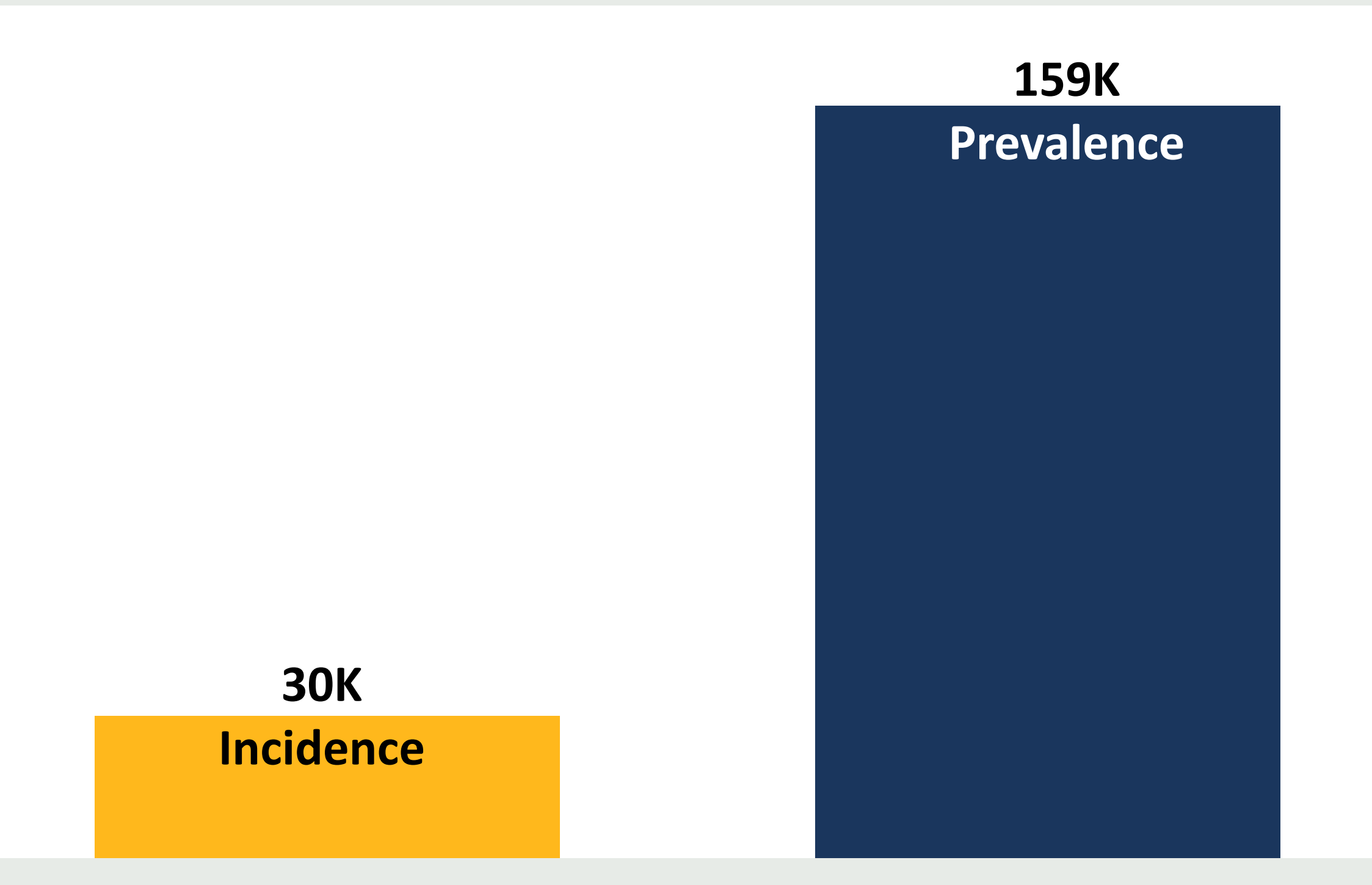
- To assess **incidence, prevalence, mortality, and hospitalization** rates of **pulmonary sarcoidosis patients with parenchymal involvement in the United States**

## Methods

- Patients with **pulmonary sarcoidosis with parenchymal involvement** were identified in **claims databases** using **ICD-10 diagnosis code for sarcoidosis of the lung without (D86.0) or with (D86.2) lymph involvement**
  - Medicare 5% Standard Analytic File (SAF)
  - MarketScan Commercial Claims and Encounters
- Epidemiology analyses were age- and payer-adjusted to the US population using data from claims, US Census, and Kaiser Family Foundation**
  - For each patient, their first claim in 2022 with a lung sarcoidosis diagnosis was defined as the index claim
  - The **incident subset** of all prevalent patients were defined as those **without a lung sarcoidosis diagnosis for at least 2 years prior to index**
  - Patients with one or more claims with a lung sarcoidosis in the 2 years prior to index (in addition to the index claim) were considered non-incident
- Longitudinal analyses** of hospitalization and mortality were conducted among **patients identified from July 2019 to June 2020 with 3 years of continuous enrollment post-index (n=1,813)**
  - Disease-related hospitalizations** were identified via lung sarcoidosis diagnosis (D86.0 or D86.2) on **inpatient hospital** facility claims
  - All-cause mortality** was assessed in Medicare patients over 65 years of age and **compared to age-, sex-, and race-adjusted general US population** mortality rates using the one proportion z-test

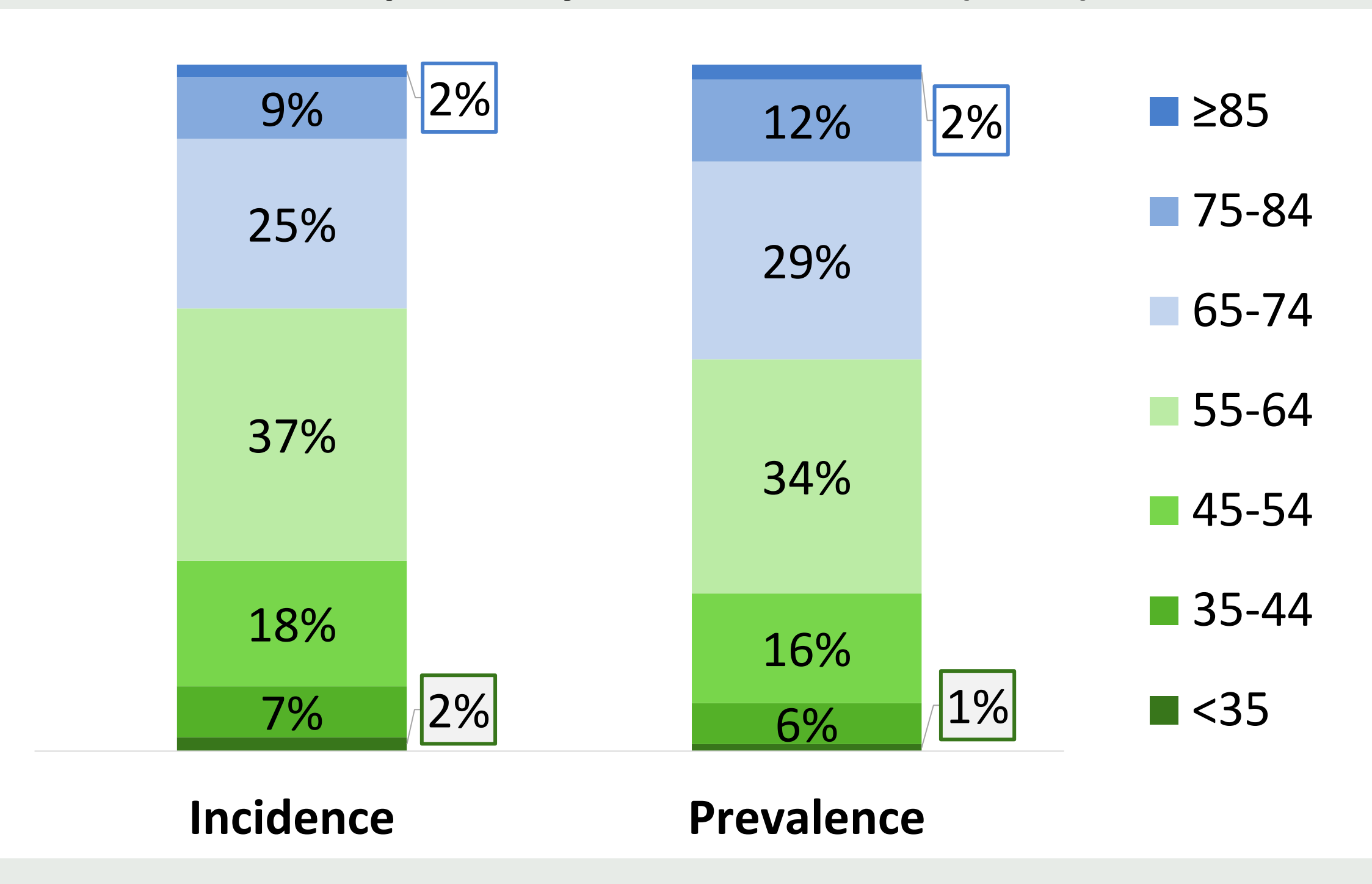
## Results

**Figure 1: US incidence and prevalence of pulmonary sarcoidosis with parenchymal involvement (2022)**



- US age-adjusted incidence and prevalence** of pulmonary sarcoidosis with parenchymal involvement were **30,000 (9.0 per 100,000)** and **158,900 (47.7 per 100,000)**, respectively (Figure 1)
- Age-adjusted demographics were **57% female among incident patients** and **59% among all prevalent patients**

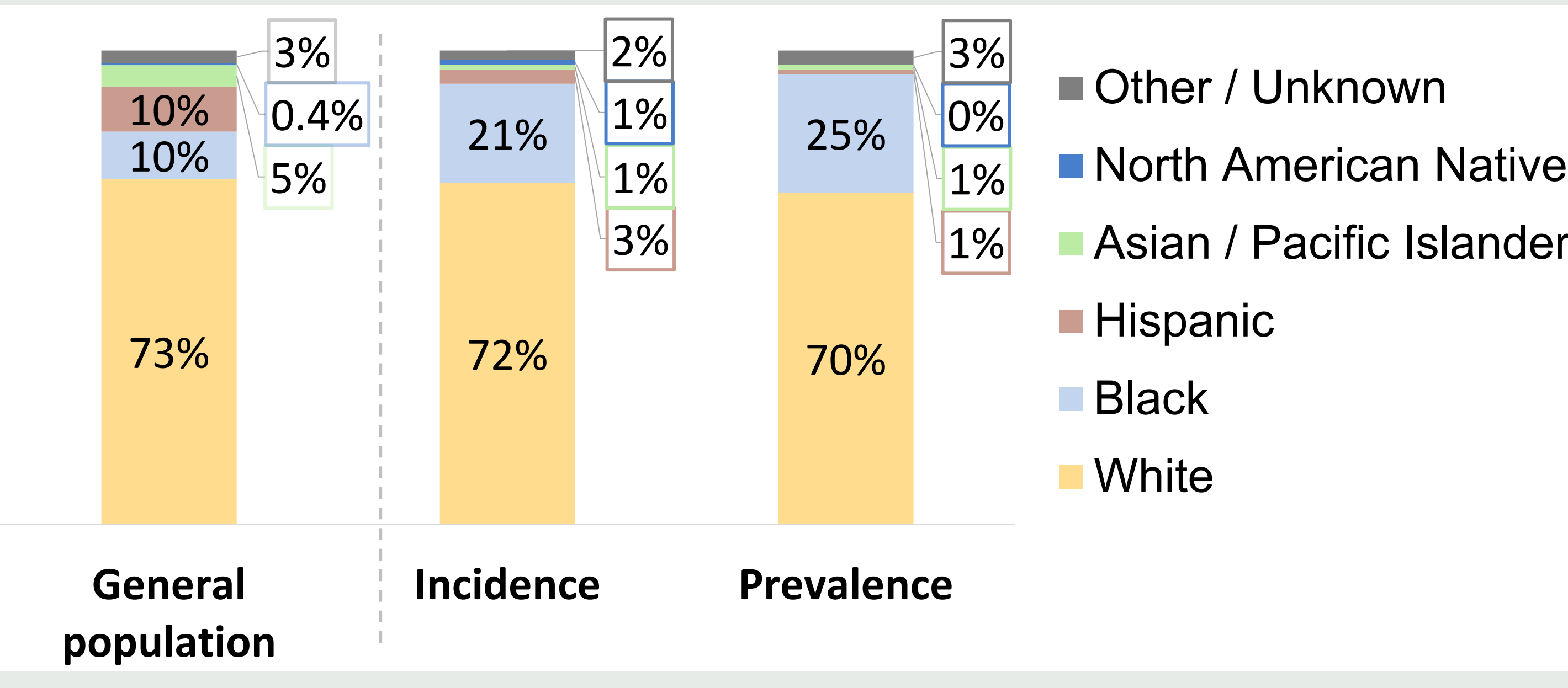
**Figure 2: US age distribution of pulmonary sarcoidosis with parenchymal involvement (2022)**



- The **average age of incident and prevalent patients was 60 and 62 years old**, respectively (Figure 2)

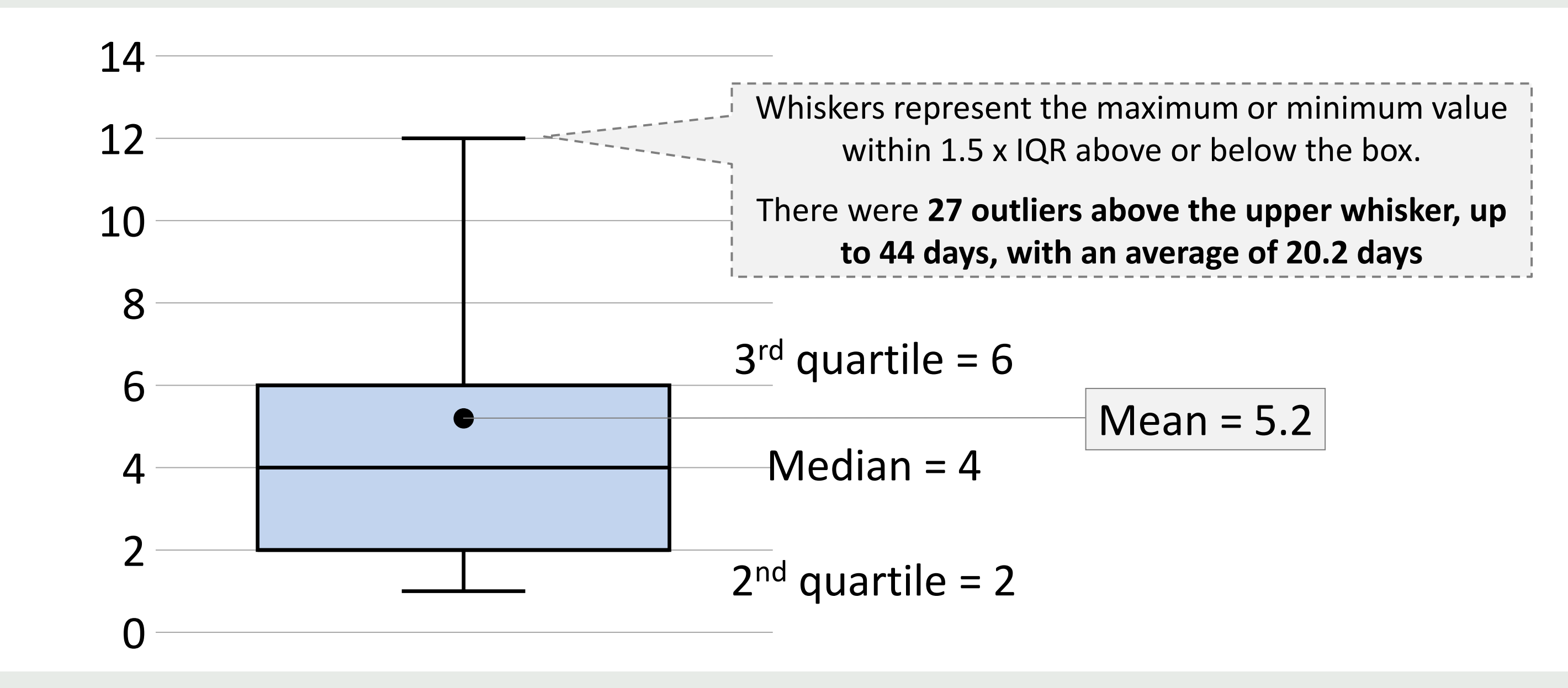
## Results (cont.)

**Figure 3: Racial distribution of Medicare population, general population and pulmonary sarcoidosis patients with parenchymal involvement (2022)**



- There were **more than 2-fold higher proportions of black race among pulmonary sarcoidosis patients with parenchymal involvement (21-25%)** compared to the general US Medicare population (10%) (Figure 3)

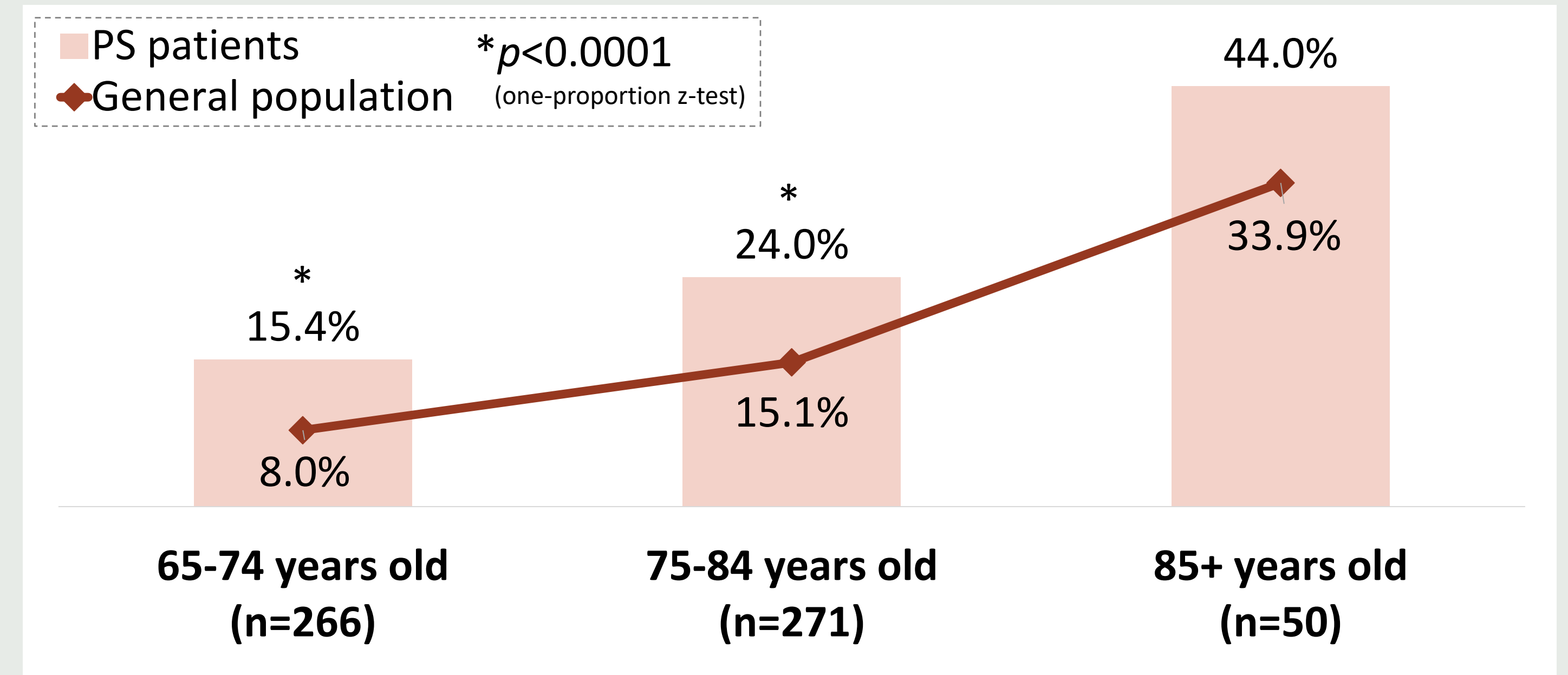
**Figure 4: Average length of stay (days) per disease-related hospitalization across 3-year follow-up period (n=360)**



- The **one-year disease-specific hospitalization rate among non-incident patients was 8%** (n=131 of 1,638)
- Across **all patients** with pulmonary sarcoidosis with parenchymal involvement, the **three-year rate of inpatient hospitalization was 12%** (n=220 of 1,813)
- 1 in 4 hospitalized patients required multiple inpatient stays within 3 years**
  - 1.6 inpatient admissions within 3 years** per hospitalized patient on average
  - The **average length of stay per admission was 5.2 days** (n=360) (Figure 4)

## Results (cont.)

**Figure 5: Three-year mortality in pulmonary sarcoidosis patients with parenchymal involvement versus general US population adjusted for age, sex, and race**



- Among Medicare patients, **three-year mortality rates were significantly higher for pulmonary sarcoidosis patients with parenchymal involvement vs general population with comparable age, sex, and race in the 65-84 year age groups**
  - 65-74 year-olds: relative risk [RR] = 1.92;  $p < 0.0001$**
  - 75-84 year-olds: RR = 1.59;  $p < 0.0001$**
  - 85+ year-olds: RR = 1.30;  $p = 0.13$**

## Conclusions

- There are approximately **158,900 pulmonary sarcoidosis with parenchymal involvement patients in the US**, with **30,000 newly diagnosed patients each year**, supporting previous reports of a **growing population**
- Pulmonary sarcoidosis with parenchymal involvement **disproportionately affects women and black populations**
- Burden among affected patients is high**
  - 1 in 8 patients hospitalized in three years**, leading to **multiple admissions** on average, and requiring **over 5 days per admission on average**
  - Patients over 65 years of age (>40%) face **significantly elevated mortality risks compared to the general population**

## Disclosures

Funding for this work was provided by aTyr Pharma, Inc.  
ES and YY are employees of aTyr. TMY, KM, BK, and MC are employees of Guidehouse Inc., which received funding for this work.

