

# Prevalence of Acromegaly in the United States: A Claims-Based Analysis

SUN 543

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## BACKGROUND

- Acromegaly results from excessive growth hormone production, leading to multisystem-associated morbidities, and increased mortality.<sup>1</sup>
- The current prevalence estimate of acromegaly is often quoted at 60 cases per million per year from a literature review, which derived its data from studies of non-US populations dating as far back as 1926.<sup>2</sup>
- Recent population-based studies in European countries suggest that the actual prevalence of acromegaly could be substantially higher.<sup>3-5</sup>

## OBJECTIVE

- The objective of this study was to estimate the prevalence of acromegaly, overall and stratified by age and gender, in the US.

## METHODS

### Study Design and Data Source

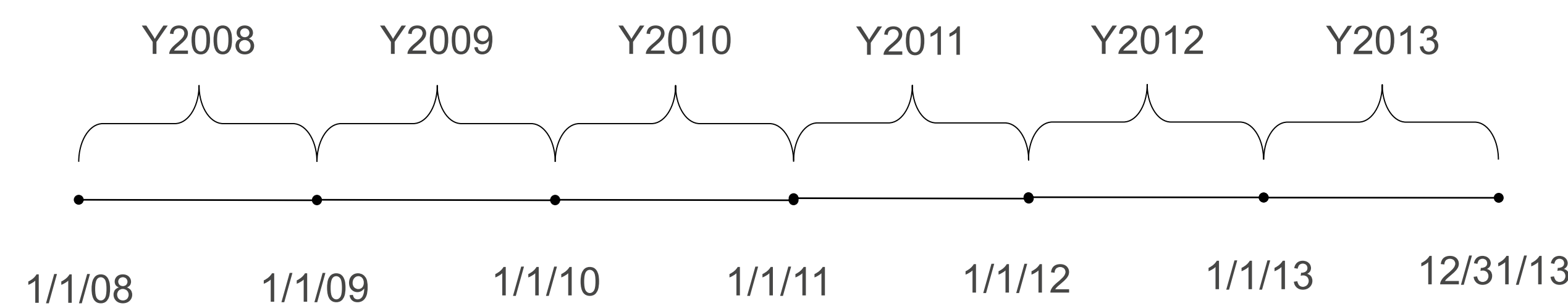
- A retrospective cohort study of acromegaly patients (<65 years old) using two HIPAA-compliant commercial health insurance claims databases from 1/1/2008-12/31/2013: Truven Health MarketScan® Commercial Claims and Encounters Database and IMS Health PharMetrics.

### Study Population and Study Timeframe

- Patients enrolled in 2013 and had ≥2 claim with acromegaly (ICD-9-CM: 253.0), or one claim with acromegaly and one claim for pituitary tumor (ICD-9-CM: 237.0x), pituitary surgery (hypophysectomy), or cranial stereotactic radiosurgery any time 2008-2013.

### Study Cohorts

- Main analysis cohort:** Patients were continuously enrolled for the entire calendar year (2008, 2009, 2010, 2011, 2012 or 2013).
- Sensitivity analysis cohort:** Patients had no requirement for continuous enrollment.



### Prevalence Measures

- Main analysis:**  
(No. of acromegaly patients in this cohort) ÷ (No. of all continuously enrolled that year)
- Sensitivity analysis:**  
(No. of acromegaly patients in this cohort) ÷ (No. of all continuously enrolled as of June that year)

### Analysis

- Analysis were performed using SAS® version 9.4 (SAS Institute, Cary, NC).

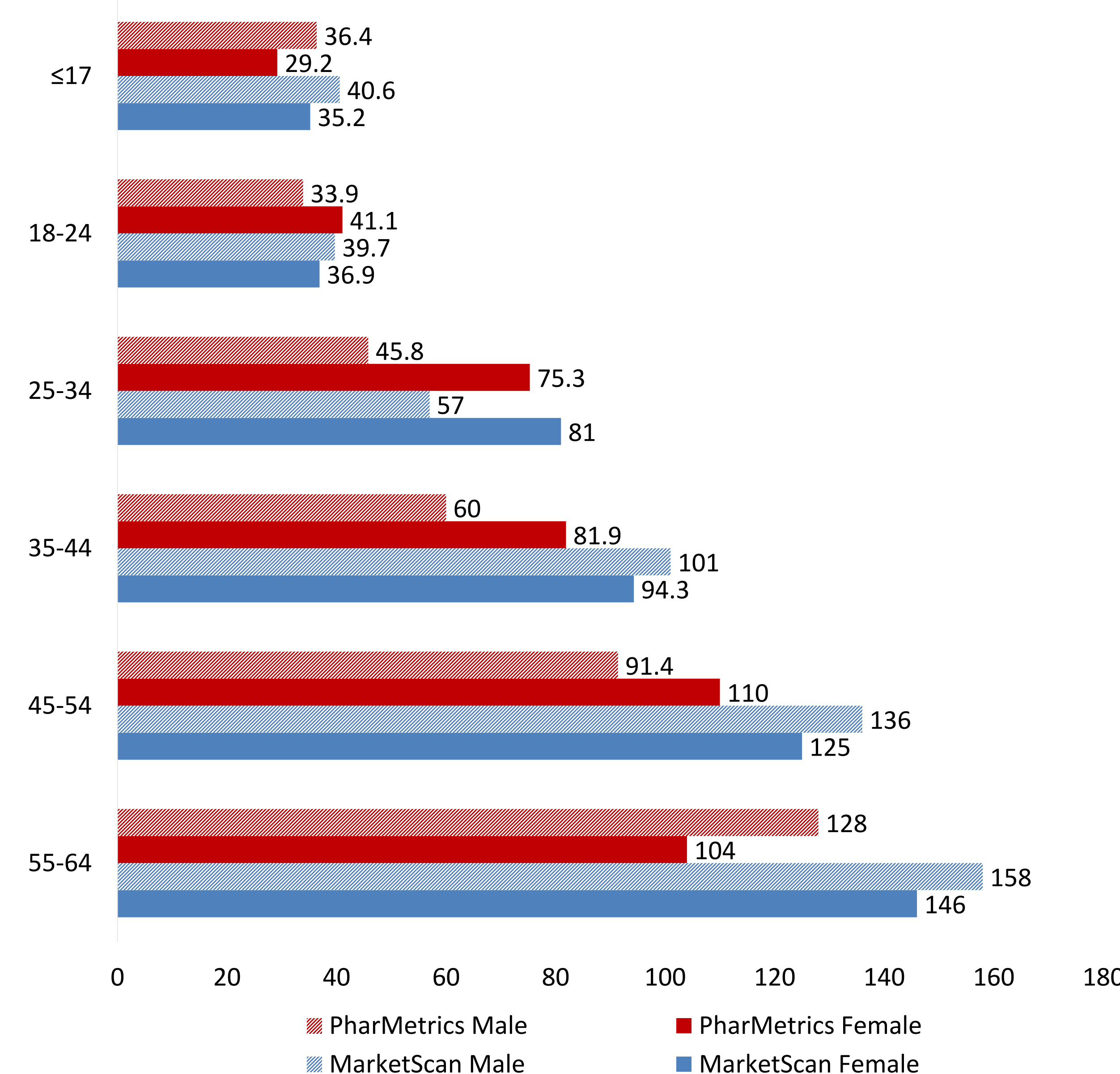
## RESULTS

- There were up to 2581 and 2100 prevalent acromegaly patients in MarketScan and PharMetrics, respectively, in 2013.
- In both databases, there were about 50% females; age distributions were also similar:
  - 10.2-10.3% were ≤17 years old, 4.7-5.9% were 18-24 year old, 10.7-12.7% were 25-34 year old, 16.1-17.3% were 35-44 year old, 26.5-27.5% were 45-54 year old, and 28.6-29.5% were 55-64 year old.
- 2013 prevalence was slightly higher in MarketScan than in PharMetrics.
- In the main analysis, the 2013 prevalence of acromegaly was 87.8 per million per year in the MarketScan database and 71.0 per million per year in PharMetrics.

2013 Prevalence Per Million Per Year (No. of acromegaly patients) / (No. of all continuously enrolled in 2013)					
Gender	Age	MarketScan		PharMetrics	
Female	≤17	35.2	(104/2,951,723)	29.2	(73/2,500,742)
	18-24	36.9	(51/1,382,215)	41.1	(50/1,217,827)
	25-34	81.0	(131/1,616,541)	75.3	(115/1,528,058)
	35-44	94.3	(197/2,089,063)	81.9	(147/1,795,284)
	45-54	125.0	(311/2,483,847)	110.0	(244/2,220,483)
	55-64	146.0	(314/2,144,732)	104.0	(218/2,104,964)
All	87.5	(1,108/12,668,121)	74.5	(847/11,367,358)	
Male	≤17	40.6	(125/3,080,998)	36.4	(95/2,611,843)
	18-24	39.7	(56/1,409,843)	33.9	(43/1,267,143)
	25-34	57.0	(81/1,420,348)	45.8	(67/1,463,120)
	35-44	101.0	(189/1,876,201)	60.0	(102/1,700,032)
	45-54	136.0	(298/2,190,758)	91.4	(189/2,067,345)
	55-64	158.0	(295/1,861,750)	128.0	(247/1,928,269)
All	88.2	(1,044/11,839,898)	67.3	(743/11,037,752)	
All	≤17	38.0	(229/6,032,721)	32.9	(168/5,112,585)
	18-24	38.3	(107/2,792,058)	37.4	(93/2,484,970)
	25-34	69.8	(212/3,036,889)	60.8	(182/2,991,178)
	35-44	97.3	(386/3,965,264)	71.2	(249/3,495,316)
	45-54	130.0	(609/4,674,605)	101.0	(433/4,287,828)
	55-64	152.0	(609/4,006,482)	115.0	(465/4,033,233)
All	87.8	(2,152/24,508,019)	71.0	(1,590/22,405,110)	

- 87.5 per million per year in females versus slightly higher in males (88.2 per million per year) in MarketScan,
- and higher in females (74.5 per million per year) than in males (67.3 per million per year) in PharMetrics.
- 2013 prevalence consistently increased with age:
  - with the highest prevalence in those 55-64 years old (152 per million per year in MarketScan and 115 per million per year in PharMetrics), and
  - lowest in ≤17 year olds (38 per million per year in MarketScan and 32.9 per million per year in PharMetrics).
- In the sensitivity analysis, the 2013 prevalence of acromegaly was 88.8 per million per year in MarketScan and 72.8 per million per year in PharMetrics.

2013 Prevalence Per Million Per Year by Gender and Age (years)



## LIMITATIONS

- Acromegaly patients who have had surgery and are cured may not return for regular care, or if they do return, may not have acromegaly coded. As a result, adequately treated patients are likely to be underrepresented in this analysis, biasing the results toward lower prevalence.
- Other limitations include the inability to identify undiagnosed patients and use of claims without confirmation from medical records or pathology reports to identify cases.
- Results may not be representative of the general acromegaly population since this analysis included only patients with commercial insurance.
- These results are not representative of older patients since this study only examined patients under age 65.

## CONCLUSIONS

- This study indicates that the prevalence of acromegaly may be up to 50% higher than previously reported.
- Disease prevalence increases with age and is slightly higher in females than males.
- These results suggest that there are almost 25,000 diagnosed acromegaly patients in the US.

### References

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