# Characterization of Economic Burden in Individuals With Narcolepsy or Idiopathic Hypersomnia at Higher Risk of Sodium-Associated Negative Clinical Outcomes in the United States

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## Introduction

- Narcolepsy and idiopathic hypersomnia are rare neurological sleep disorders, characterized by excessive daytime sleepiness<sup>1</sup>
- Individuals with narcolepsy or idiopathic hypersomnia frequently have comorbidities that may confer a higher risk for sodium-associated negative clinical outcomes (NCOs)<sup>2,3</sup>

## **Objective**

 To quantify healthcare resource utilization (HCRU) and healthcare costs for individuals with narcolepsy or idiopathic hypersomnia at higher risk of sodium-associated NCOs

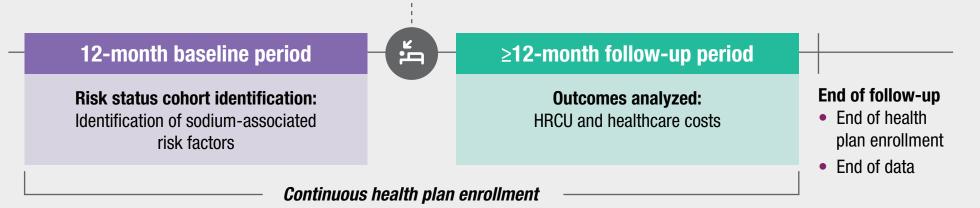
## Methods

#### Study design and data source

 Retrospective cohort study using Komodo Research Data (01/01/2016— 01/31/2024), an administrative US claims database (Figure 1)

#### Figure 1. Study Design

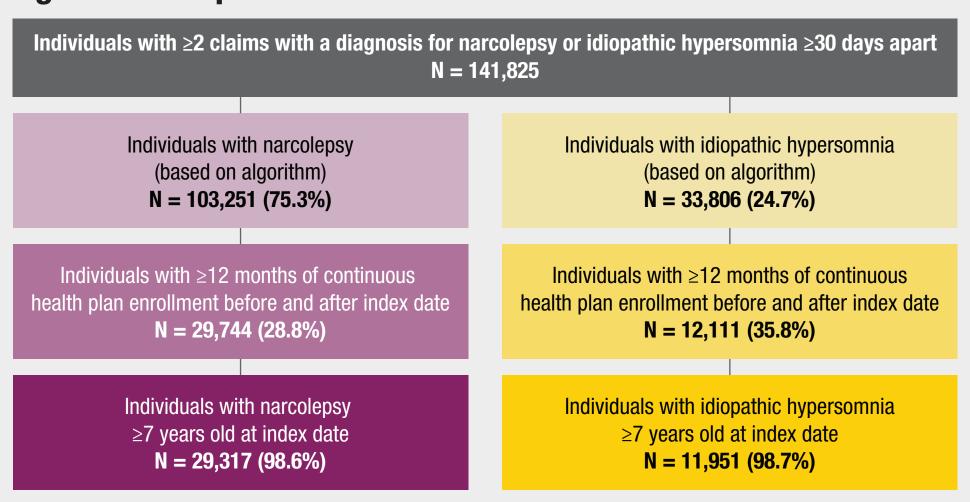
Index date: First-observed diagnosis of



#### Study population

 Individuals aged ≥7 years with narcolepsy or idiopathic hypersomnia were identified separately using a mutually exclusive algorithm based on real-world coding practices (**Figure 2**)

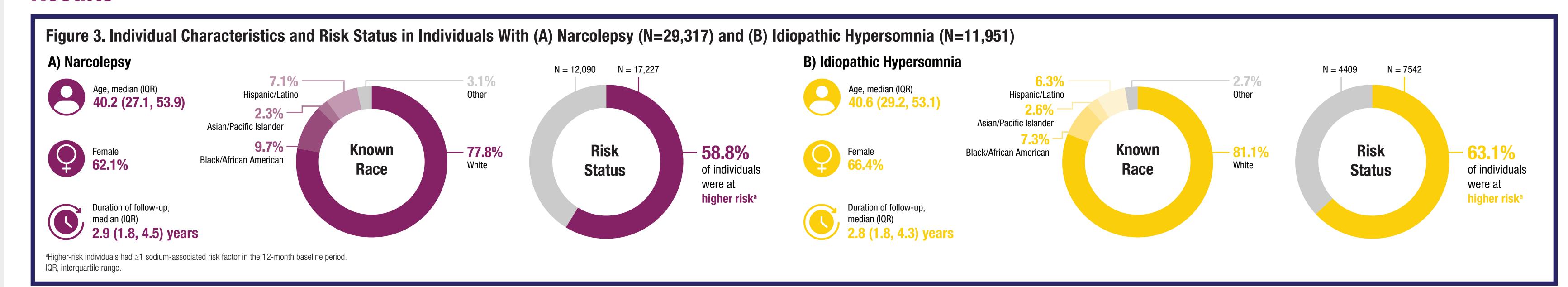
#### Figure 2. Sample Selection



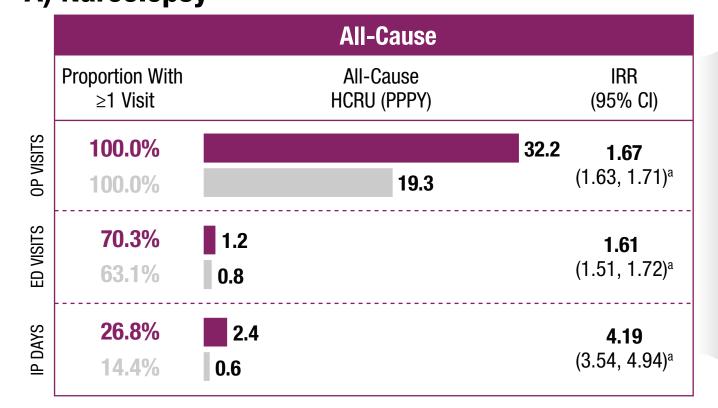
### Measures, outcomes, and statistical analyses

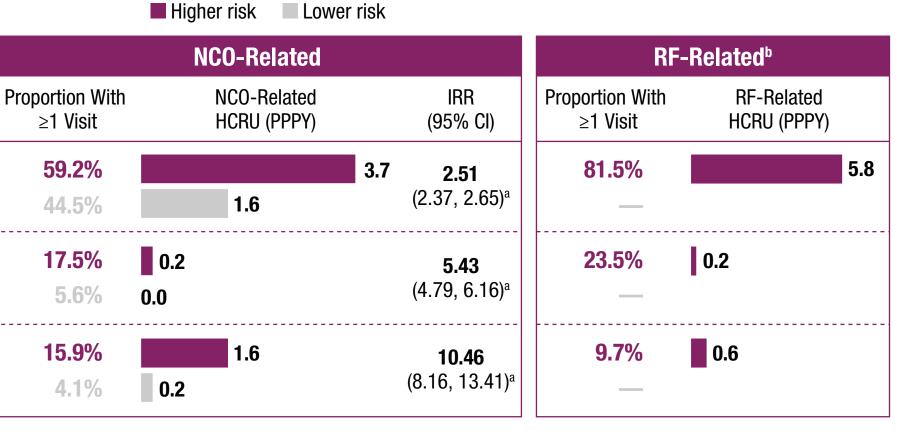
- Sodium-associated risk factors were defined through literature review/ clinical expert discussion, and included cardiovascular, cardiometabolic, and renal conditions; liver cirrhosis; and sleep apnea
- Higher-risk: Individuals with ≥1 risk factor in the 12-month baseline period
- Lower-risk: Individuals with no risk factors in the 12-month baseline period
- Sodium-associated NCOs were the cardiovascular, cardiometabolic, and renal conditions occurring following risk factor identification
- Annualized all-cause HCRU and costs (2024 USD) over the ≥12-month post-index period (including the index date) were reported per-patient-peryear and compared between risk groups using log link generalized linear models with negative binomial and gamma distributions, respectively
- Analyses were also stratified by NCO-related and risk factor-related HCRU and costs
- P values have not been adjusted for multiple comparisons
- Supplemental materials are available through the QR code on the bottom right corner of this poster

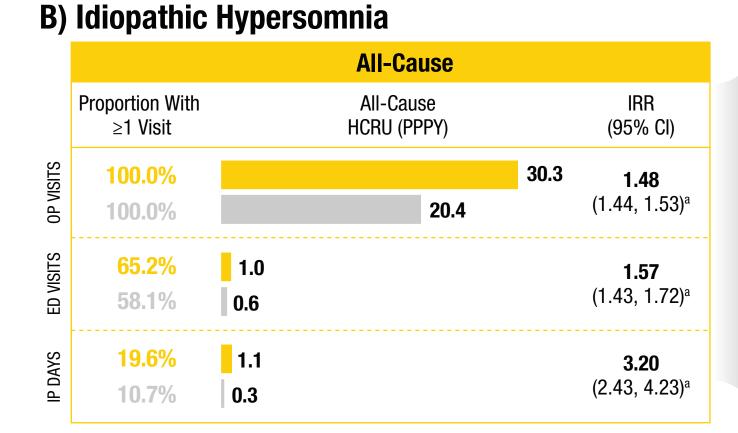
## Results

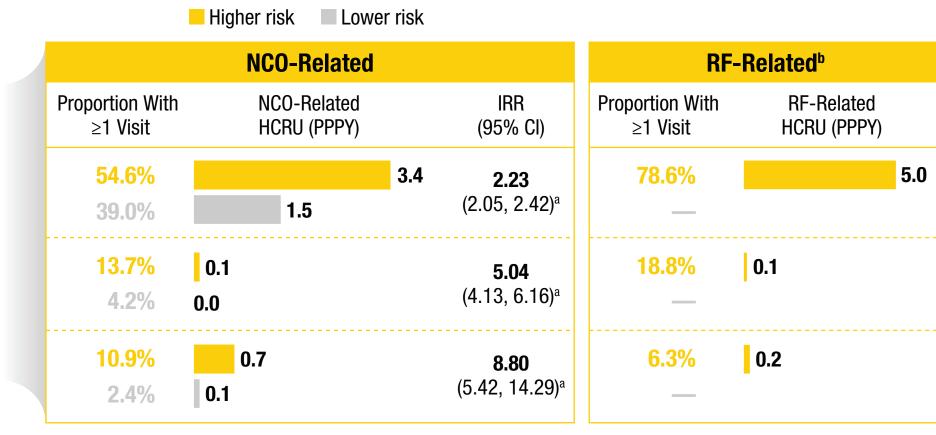










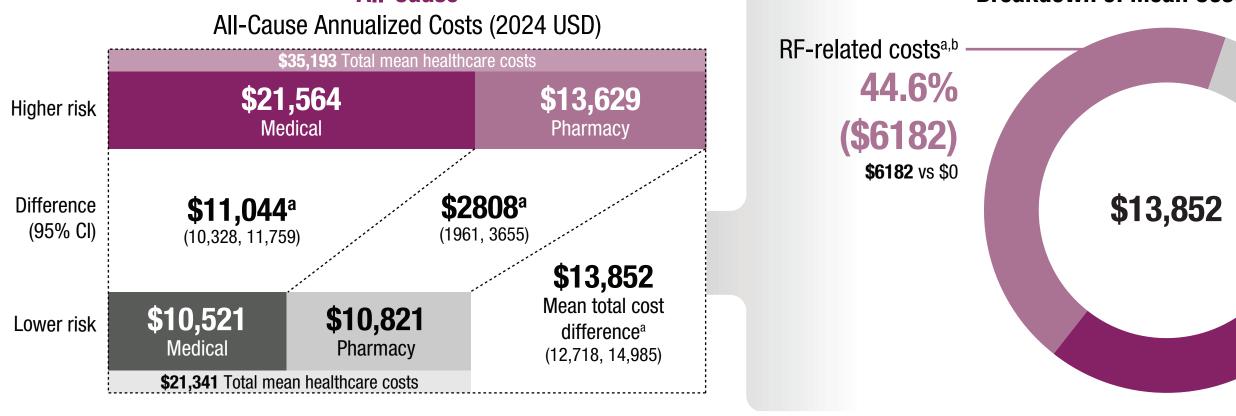


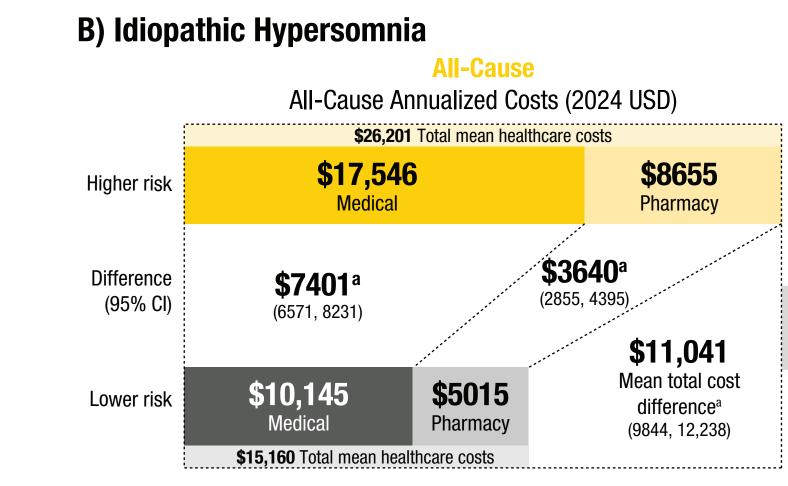
<sup>a</sup>P<0.001. <sup>b</sup>RF-related HCRU was restricted to higher-risk individuals by design

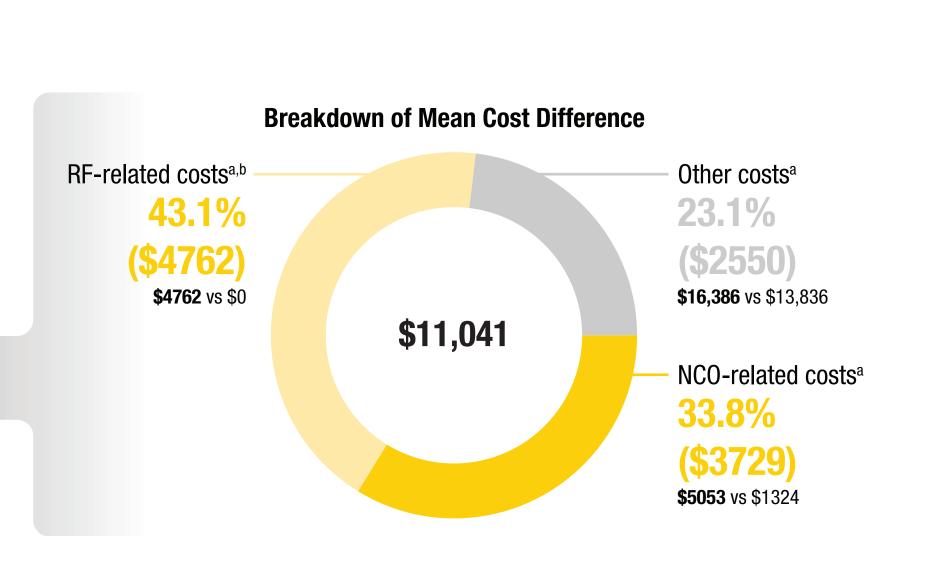
Cl, confidence interval; ED, emergency department; HCRU, healthcare resource utilization; IP, inpatient; IRR, incidence rate ratio; NCO, negative clinical outcome; OP, outpatient; PPPY, per-patient-per-year; RF, risk factor.

• Higher-risk individuals with narcolepsy or idiopathic hypersomnia had higher HCRU across healthcare settings than lower-risk individuals, especially for NCO-related HCRU

#### Figure 5. Annualized Healthcare Costs in Individuals With (A) Narcolepsy and (B) Idiopathic Hypersomnia A) Narcolepsy **Breakdown of Mean Cost Difference All-Cause** All-Cause Annualized Costs (2024 USD) RF-related costsa,b Other costs<sup>a</sup> 19.8%







<sup>a</sup>P<0.001. <sup>b</sup>RF-related HCRU was restricted to higher-risk individuals by design. Cl, confidence interval; HCRU, healthcare resource utilization; NCO, negative clinical outcome; RF, risk factor; USD, United States dollar.

Higher risk individuals with narcolepsy or idiopathic hypersomnia had higher healthcare costs, with ~80% of the difference driven by NCO- and risk factor-related costs

#### Conclusions

- HCRU and healthcare costs are markedly higher among higher-risk versus lower-risk individuals with narcolepsy or idiopathic hypersomnia, across all components, predominantly driven by sodium-associated negative clinical outcomes and risk factors
- This study is subject to common limitations of claims data, including missing data and misclassification due to billing inaccuracies
- Findings emphasize the need for careful risk management to mitigate avoidable HCRU and costs among all individuals with narcolepsy or idiopathic hypersomnia, particularly those at higher risk of negative clinical outcomes

References: 1. American Academy of Sleep Medicine. International Classification of Sleep Med. 2017; 33: 13-18. 3. Drachenberg C, et al. The clinical and humanistic burden of idiopathic hypersomnia in the United States: analysis of the National Health and Wellness Survey [poster 434]. Annual Scientific Meeting of the Associated Professional Sleep Societies. Houston, TX, 2024.

(\$2736)

35.6%

(\$4933)

**\$6672** vs \$1739

**\$22,339** vs \$19,603

NCO-related costs<sup>a</sup>

and supplemental material online. This code is not for promotional purposes.