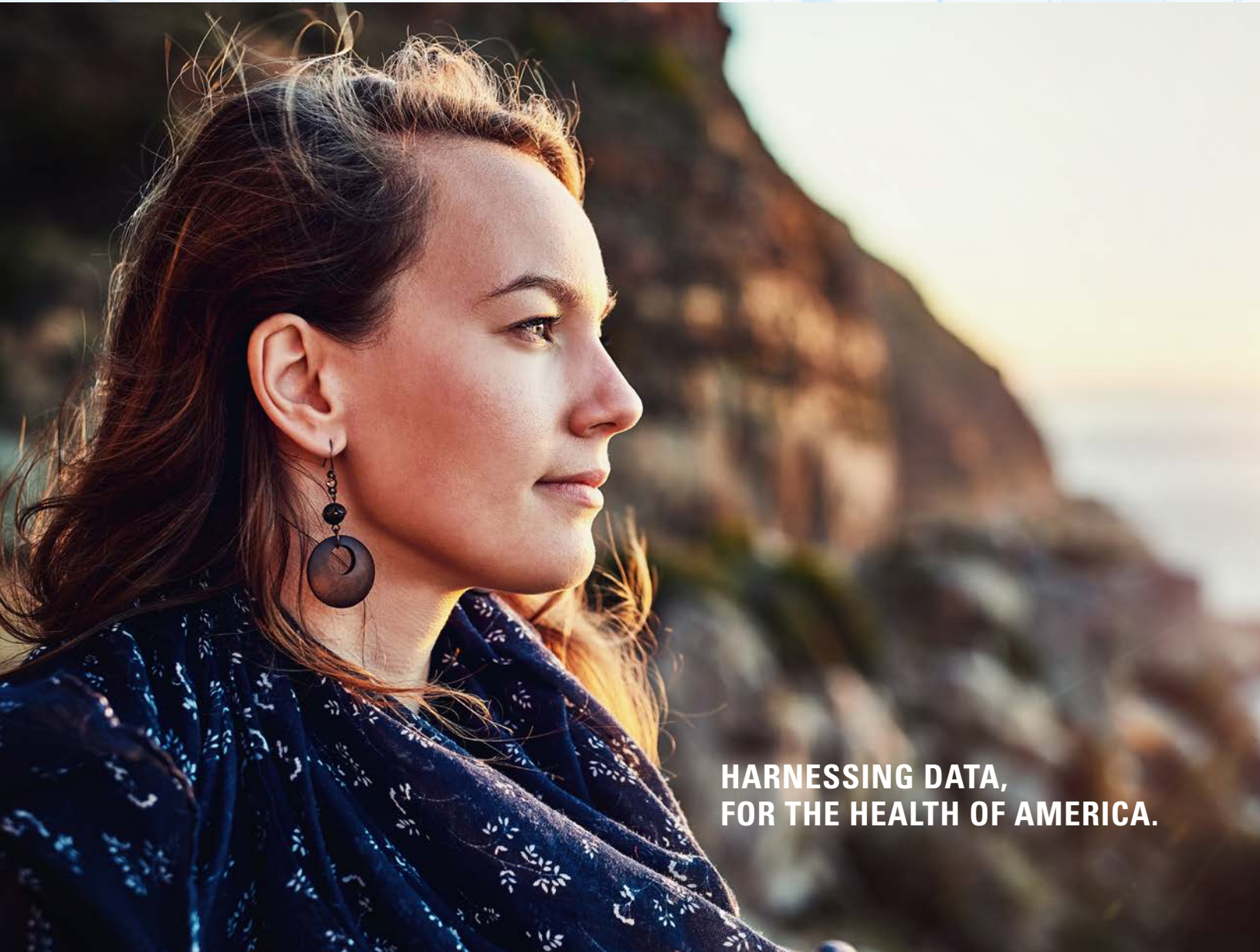


THE HEALTH IMPACT OF MULTIPLE SCLEROSIS

October 8, 2019



**HARNESSING DATA,
FOR THE HEALTH OF AMERICA.**

Multiple sclerosis (MS) is a disease of the central nervous system that disrupts the body's ability to send neurological signals within and between the brain and other parts of the body. These disrupted nerve signals affect each person differently, causing varied symptoms of MS for each person, often including progressive physical and cognitive decline.¹

In 2017, this autoimmune condition affected more than 520,000 commercially insured Americans.² As measured by the [Blue Cross Blue Shield \(BCBS\) Health Index](#),SM about one-half of people with MS also suffer from musculoskeletal conditions such as neck and back pain, as well as other health conditions.³

With more than half a million people living with MS, it is crucial to better understand the impact of this condition on the health, wellness and quality of life of Americans.



MS IN AMERICA

520,000+ commercially insured Americans were living with MS in 2017

FROM 2014-2017
21,700
NEW DIAGNOSES

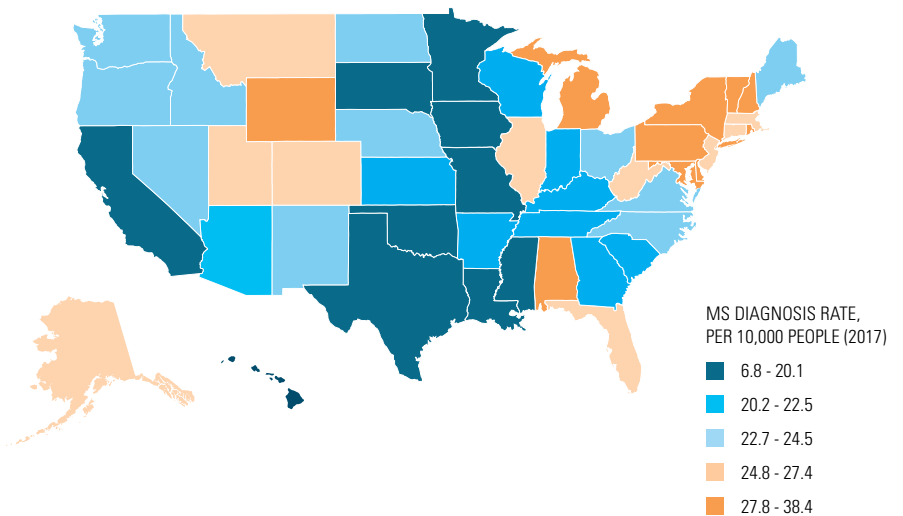
+4%
DIAGNOSIS RATE INCREASE

MORE COMMON IN WOMEN
 **75%**
OF THOSE DIAGNOSED

AVERAGE AGE OF A PERSON WITH MS **47**
YEARS OLD

In 2017, 24 out of 10,000 commercially insured Americans across the country were living with MS. In addition, MS diagnosis rates are higher in the northeast, though wide variation exists across the U.S. MS is a lifelong disease that can present more chronic symptoms as a person ages.

EXHIBIT 1: WHERE PEOPLE ARE LIVING WITH MULTIPLE SCLEROSIS



1. For more information, see: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1069023/> and <https://www.nationalmssociety.org>. Data included in this report are not able to determine additional details among the different types of MS: clinically isolated syndrome, relapsing-remitting MS, secondary progressive MS and primary progressive MS.
2. The estimated diagnosis rate for multiple sclerosis in the BCBS Health Index was extrapolated to the entire 217 million United States commercially insured population (under age 65), which produces an estimate of more than half a million commercially insured people living with the condition.
3. Based on 2017 data from the BCBS Health Index unless otherwise specified. For more information, see: <https://www.bcbs.com/the-health-of-america/health-index>

HEALTH AND WELLNESS OF PEOPLE LIVING WITH MS

Comorbid health conditions are common among people diagnosed with MS, with about half experiencing additional musculoskeletal problems, weakness or a restricted range of motion.

PEOPLE WITH MS MAY ALSO EXPERIENCE



CHRONIC HEALTH CONDITIONS
such as hypertension and high cholesterol

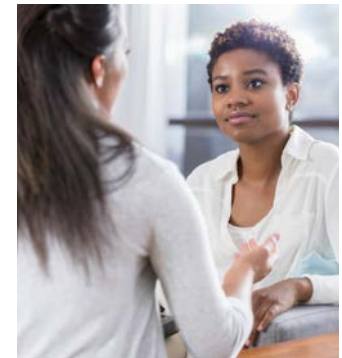
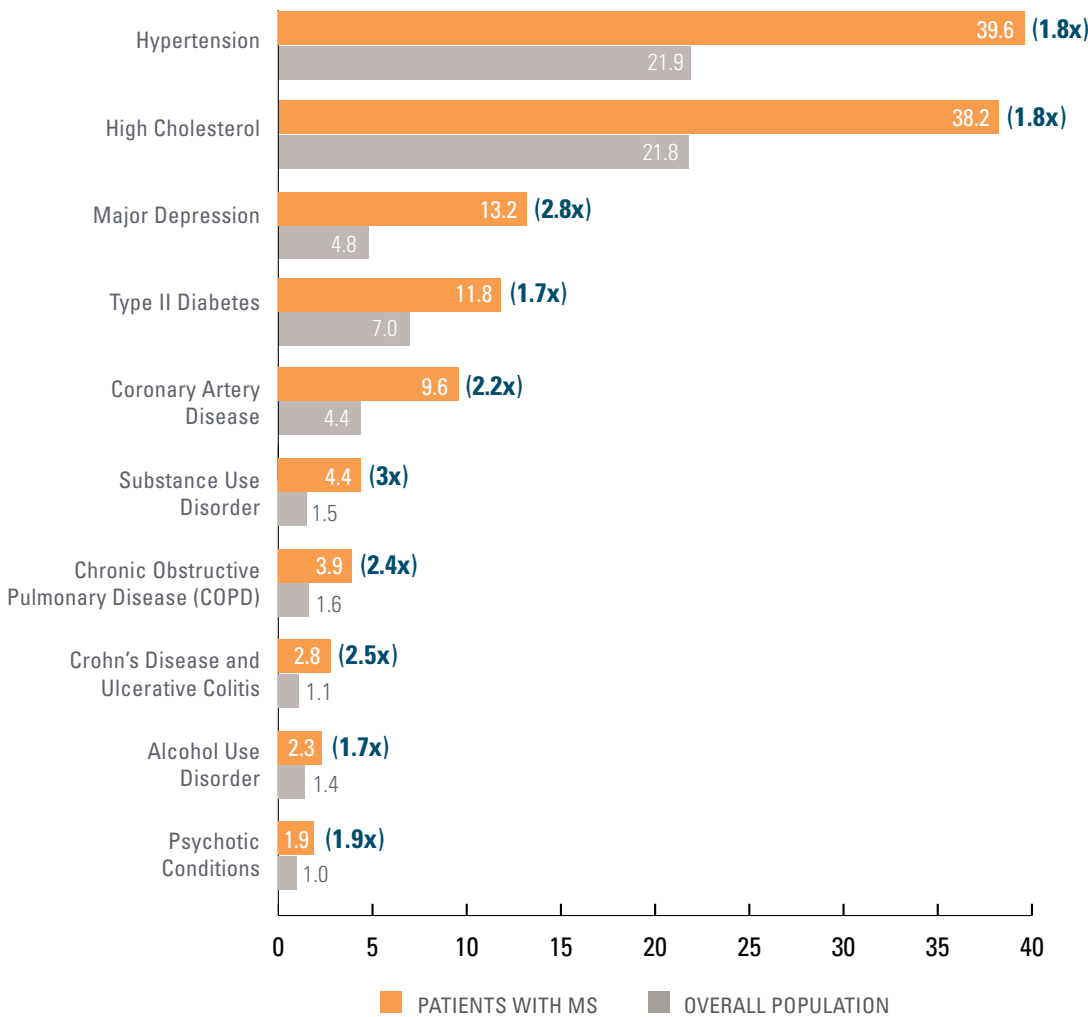
AT 2-3X THE RATES
OF THE OVERALL POPULATION



BEHAVIORAL HEALTH CONDITIONS
like major depression and substance use disorder

AT 3X THE RATES
OF THE OVERALL POPULATION

EXHIBIT 2: TOP HEALTH CONDITIONS IMPACTING PEOPLE WITH MS COMPARED WITH THE OVERALL POPULATION, PER 100 PEOPLE (2017)



People with MS have an average Health Index of 54.6, which means they are living at just 55% of optimal health⁴—leading to 14.8 years of healthy life lost.

4. The BCBS Health Index assigns U.S. populations a score between 0 and 100. A score of '100' represents optimal health—a population's potential lifespan, absent of disability and increased risk of death. The higher the score, the closer a population is to achieving optimal health. The lower the score, the more a population has been adversely impacted by certain health conditions.

CONCLUSION

More than half a million commercially insured Americans were living with multiple sclerosis in 2017, with diagnoses increasing 4% over a three-year timespan. This health condition predominantly affects women, who account for 75% of those diagnosed with MS. The average age of someone living with MS is 47 years old. Many people with MS also experience several additional chronic or behavioral health conditions that can affect daily life, and overall health and wellness. These MS trends indicate a need to continue focusing on the diagnosis, symptom management and treatment for a growing number of Americans.

METHODOLOGY

This is the 27th study of the Blue Cross Blue Shield, The Health of America Report® series, a collaboration between Blue Cross Blue Shield Association and Blue Health Intelligence (BHI), which uses a market-leading claims database to uncover key trends and insights in healthcare affordability and access to care. This study assesses the health impact of multiple sclerosis on Blue Cross Blue Shield commercially insured American members between 2014 and 2017. The study population was identified by utilizing one MS diagnosis code, ICD-9 code (340), in BCBS medical claims.



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