

# Breaking the Mold on Migraine Management



**Mohannad (Ned) Kusti, MD**  
Corporate Medical Director,  
Optimal Workplace &  
Environmental Wellness  
Corporation



**Preeti Gadhoke, PhD**  
Medical Outcomes &  
Science Liaison,  
AbbVie



**Lesli Marasco**  
Vice President, Global  
Benefits and Well-Being,  
AbbVie




**David Hines**  
Executive Director of  
Employee Benefits,  
Metro Nashville Public  
Schools

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**Preeti Gadhoke, PhD**  
Medical Outcomes & Science Liaison,  
AbbVie



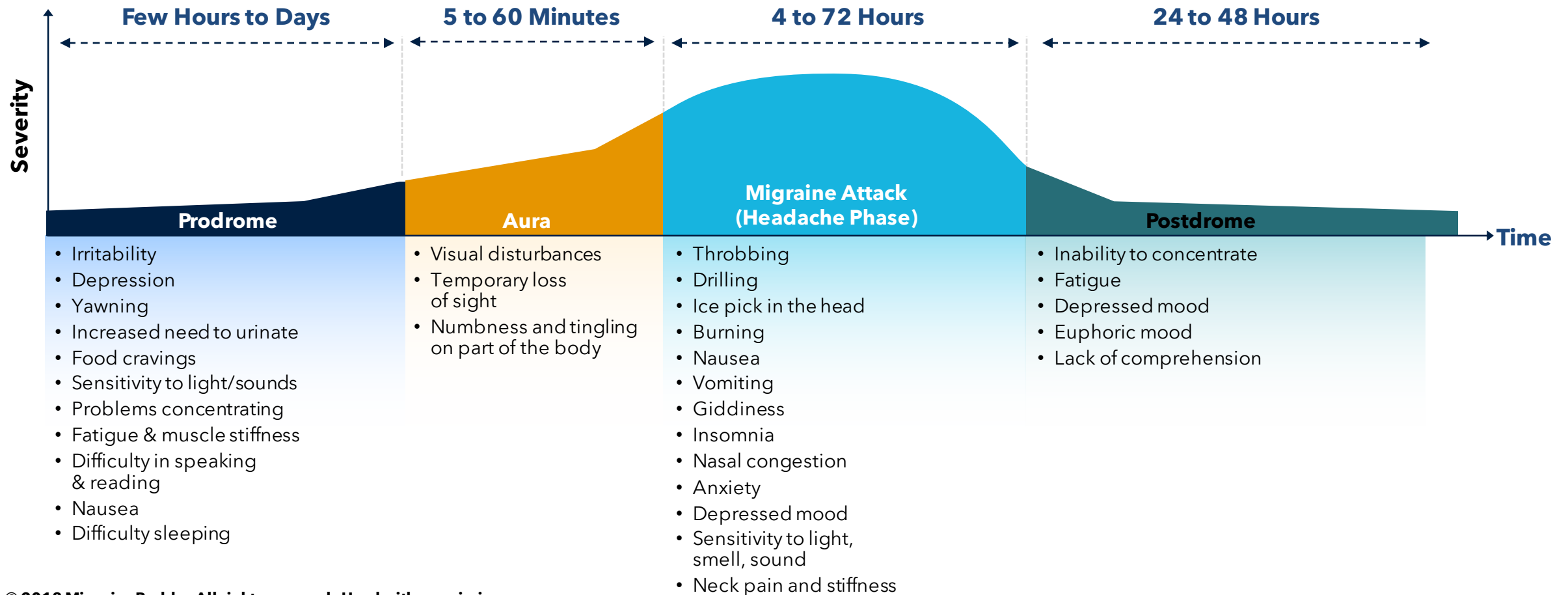


# Understanding the Social Determinants, Health Disparities, and Impact of Migraine Disease on Workplace Productivity in the U.S.

National Alliance of Healthcare Purchasers  
Coalition Annual Forum | 2023  
Preety Gadhoke, PhD, MPH  
US Medical Affairs | Value & Access

# Definition of Migraine

**Migraine is a complex, chronic disease with recurrent attacks that are often incapacitating and characterized by headache pain and neurologic and autonomic symptoms<sup>1,2</sup>**

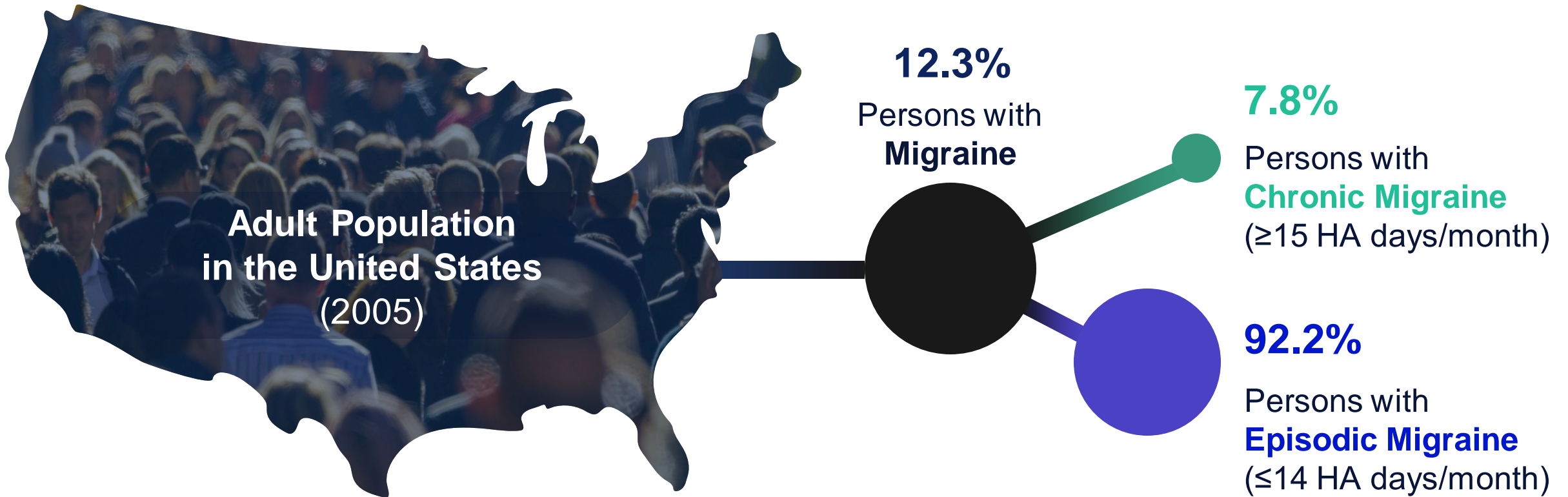


© 2018 Migraine Buddy. All rights reserved. Used with permission.

1. Pietrobon D, et al. *Annu Rev Physiol.* 2013;75:365-391. 2. <http://www.migrainebuddy.com/migrainesymptoms-the-stages-of-a-migraine/> Accessed January 27, 2021.

# Epidemiology of Migraine 1.2

Chronic migraine was confirmed as the preferred term in June 2004 by the Headache Classification Committee of the IHS in ICHD-2



1. Buse DC, et al. *Headache*. 2012;52:1456-1470. 2. Data on File. Allergan, Inc.

# Leading Causes of Years Lived With Disability

## 2016 GBD study

### Top 10 causes of years lived with disability<sup>1</sup>

1. Low back pain
- 2. Migraine**
3. Age-related hearing loss
4. Iron-deficiency anemia
5. Major depression
6. Neck pain
7. Other musculoskeletal disorders
8. Diabetes
9. Anxiety disorders
10. Falls



**Affects 1.04 billion people globally<sup>1</sup>**



**1<sup>st</sup> cause of years lived with disability in those <50 years of age<sup>2</sup>**



**14.3% increase in years lived with disability 2006-2016<sup>1</sup>**

GBD = Global Burden of Disease.

Years lived with disability were calculated for 328 causes in 195 territories from 1990 to 2016. Years lived with disability were estimated as the product of prevalence and a disability weight for all mutually exclusive sequelae, corrected for comorbidity and aggregated to cause level.

1. GBD 2016 Disease and Injury Incidence and Prevalence Collaborators. *Lancet*. 2017;390:1211-59. 2. Steiner TJ, et al. *J Headache Pain*. 2018;19:17. <https://doi.org/10.1186/s10194-018-0846-2>



# The Impact of Migraine

● Quality of life ● Families and relationships ● Migraine-related disability



**Reduced quality of life<sup>1\*</sup>**



**Life would be better without headaches<sup>2†</sup>**



**Negatively impacts personal relationships<sup>2†</sup>**



**64% Affected private life<sup>3‡</sup>**



**37% Stress in spousal relationship<sup>4†</sup>**



**~50% Reduced family activities<sup>4†</sup>**



**70% Affected professional life<sup>3‡</sup>**



**8.9 More lost workdays vs those without migraine<sup>5§</sup>**



**43% Moderate/severe disability with anxiety<sup>6†¶</sup>**



**52% Moderate/severe disability with depression<sup>6†¶</sup>**

\*Based on data from a systematic literature review. †Based on data from CaMEO, a prospective, longitudinal, Web-based survey. ‡Based on data from a large, global, online survey. §Based on data from a retrospective, observational cohort study.

¶61% increased risk of moderate/severe disability with depression and anxiety.

1. Lanteri-Minet M, et al. *Cephalalgia*. 2011;31:837-50. 2. Buse DC, et al. *Headache*. 2019;59:1286-99. 3. Martelletti P, et al. *J Headache and Pain*. 2018;19:115. doi: 10.1186/s10194-018-0946-z. 4. Buse DC, et al. *Mayo Clin Proc*. 2016;91:596-611. 5. Bonafede M, et al. *Headache*. 2018;58:700-14. 6. Lipton RB, et al. *Headache*. 2020;60:1683-96.

# Days

## Work productivity and healthcare utilization/costs in people with migraine vs those without migraine



### Work Productivity *Previous 7 days*



**5.5%**

Higher absenteeism



**18.5%**

Higher presenteeism

### Healthcare Resource Utilization *Previous 6 months*



**3.2**

More HCP visits



**0.2**

More ED visits

### Annual Costs *Per respondent*



**\$2,597**

Higher  
absenteeism costs



**\$6,409**

Higher presenteeism  
costs

**\$18,187**

Higher total all-cause  
direct and indirect  
costs



**\$6,337**

Higher HCP visit  
costs



**\$784**

Higher ED visit costs

Absenteeism = work missed because of one's health in the previous 7 days. Presenteeism = impairment or reduced productivity experienced while at work in the previous 7 days because of one's health.  
ED = emergency department; HCP = healthcare professional.  
Buse DC, et al. *J Manag Care Spec Pharm.* 2020;1-10. doi:10.18553/jmcp.2020.20100



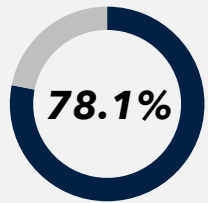
# Migraine Disability and Burden

■ Episodic Migraine ■ Chronic Migraine

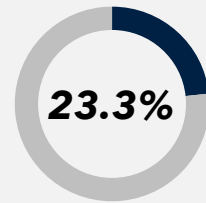
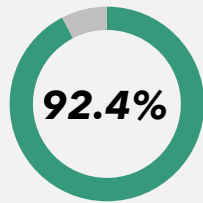
**Number Headache Days (last 3 months)<sup>1</sup>**



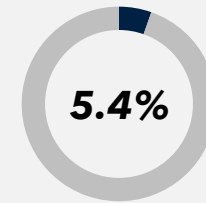
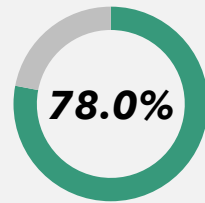
**Headache Duration (without medication)<sup>2\*</sup>**



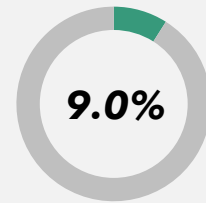
**Experience Severe Pain<sup>2\*</sup>**



**MIDAS Grade IV (≥ 21)<sup>2\*</sup>**



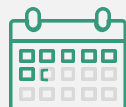
**Visit ER/Hospital Each Year<sup>2\*</sup>**



**Missed Work/School Every 3 Months<sup>1</sup>**



2.3 days



5.3 days

**All-Cause Annual Direct Costs, Mean Per Patient<sup>3\*†</sup>**

\$13,951



\$19,324#



<sup>†</sup>Data are from a retrospective claims analysis using Truven MarketScan Commercial Claims and Encounters Database from 2012-2014 that evaluated direct healthcare costs for persons with EM and CM; 12-month post-index direct healthcare costs (total, medical, and pharmacy) were compared between CM and EM cohorts using a generalized linear model to estimate adjusted costs controlling for differences in patient characteristics. #p < 0.0001 vs. EM.

1. Bigal ME, et al. Headache. 2003;43(4):336-342 2. Blumenfeld AM, et al. Cephalalgia. 2011;31(3):301-315. 3. Marcus SC, et al. Poster presented at: AMCP 2018; April 23-26, 2018; Boston, MA.

\*Study funded by Allergan.

# The Complex Social Ecology of Managing Migraine Disease



## Individual

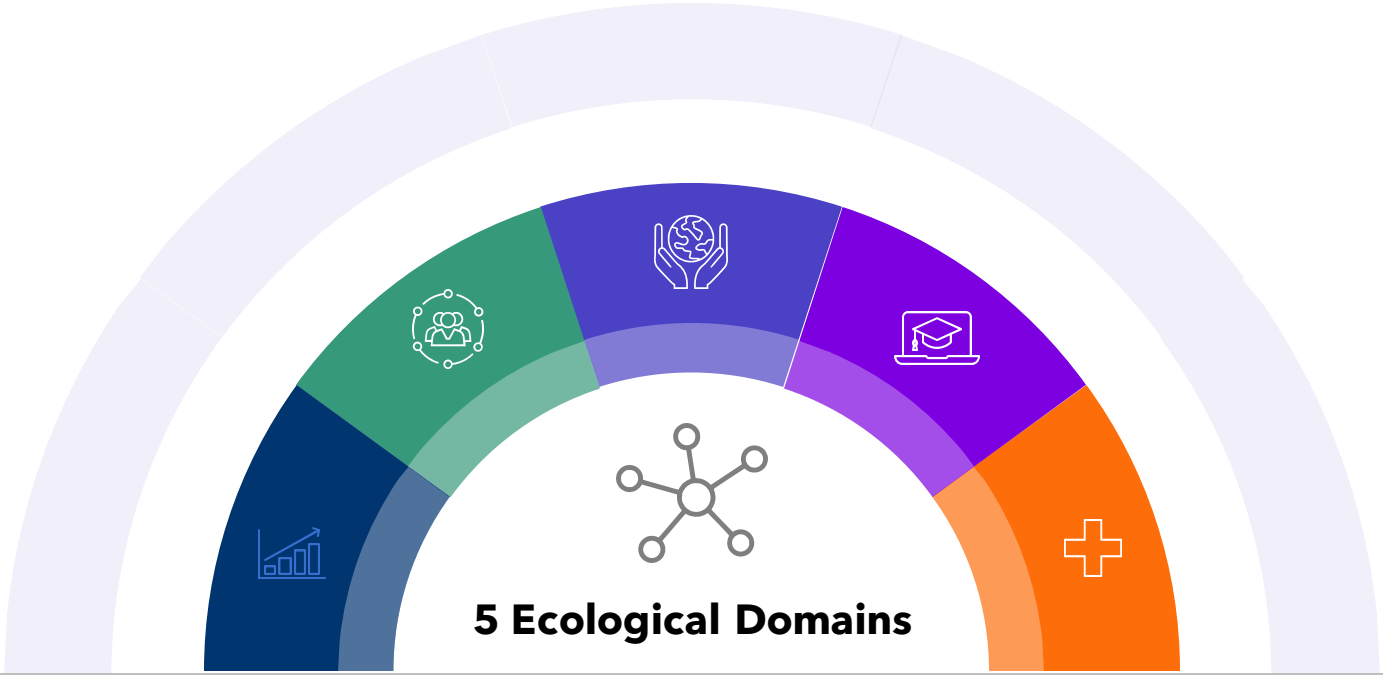
- Age
- Gender (Female)
- Race/Ethnicity
- Marital Status
- Family History
- Income
- Health Insurance
- Smoking
- Mental Health
- Co-Morbidities
- Medication Overuse

Rosignoli, C., Ornello, R., Onofri, A. et al. Applying a biopsychosocial model to migraine: rationale and clinical implications. *J Headache Pain* **23**, 100 (2022). <https://doi.org/10.1186/s10194-022-01471-3>. National Headache Foundation. WorkMigraine program. <https://headaches.org/>. Rizzoli P. (2022). Health disparities and headache treatment. <https://www.health.harvard.edu/blog/health-disparities-and-headache-treatment-202202152685#:~:text=Racial%20biases%20play%20a%20strong,migraine%20compared%20to%20white%20patients> Lui JZ, Young NP, Ebbert JO, Rosedahl JK, Philpot LM. (2020). Loneliness and migraine self-management: A cross-sectional assessment. *J Prim Care Community Health*. 2020 Jan-Dec; 11: 2150132720924874. doi: [10.1177/2150132720924874](https://doi.org/10.1177/2150132720924874). Tietjen GE, Khubchandani J, Ghosh S, Bhattacharjee S, Kleinfelder J. (2012). Headache symptoms and indoor environmental parameters: Results from the EPA BASE study. *Ann Indian Acad Neurol*. 2012 Aug; 15(Suppl 1): S95-S99. doi: [10.4103/0972-2327.100029](https://doi.org/10.4103/0972-2327.100029). American Migraine Foundation. (2021). Racial disparities in migraine and headache care. <https://americanmigrainefoundation.org/resource-library/racial-disparities-in-migraine-care/>. Coalition for Headache & Migraine Patients. Migraine At School. <https://www.migraineatschool.org/>. Scher AI et al. *Headache*. 2008;48:16-25. Ashina S et al. *J Headache Pain*. 2012;13:615-624. Lipton RB et al. *Neurology*. 2015;84:688-695. Bigal ME et al. *Curr Neurol Neurosci Rep*. 2011;11:139-148.

# How Employers Can Influence Social Determinants of Health



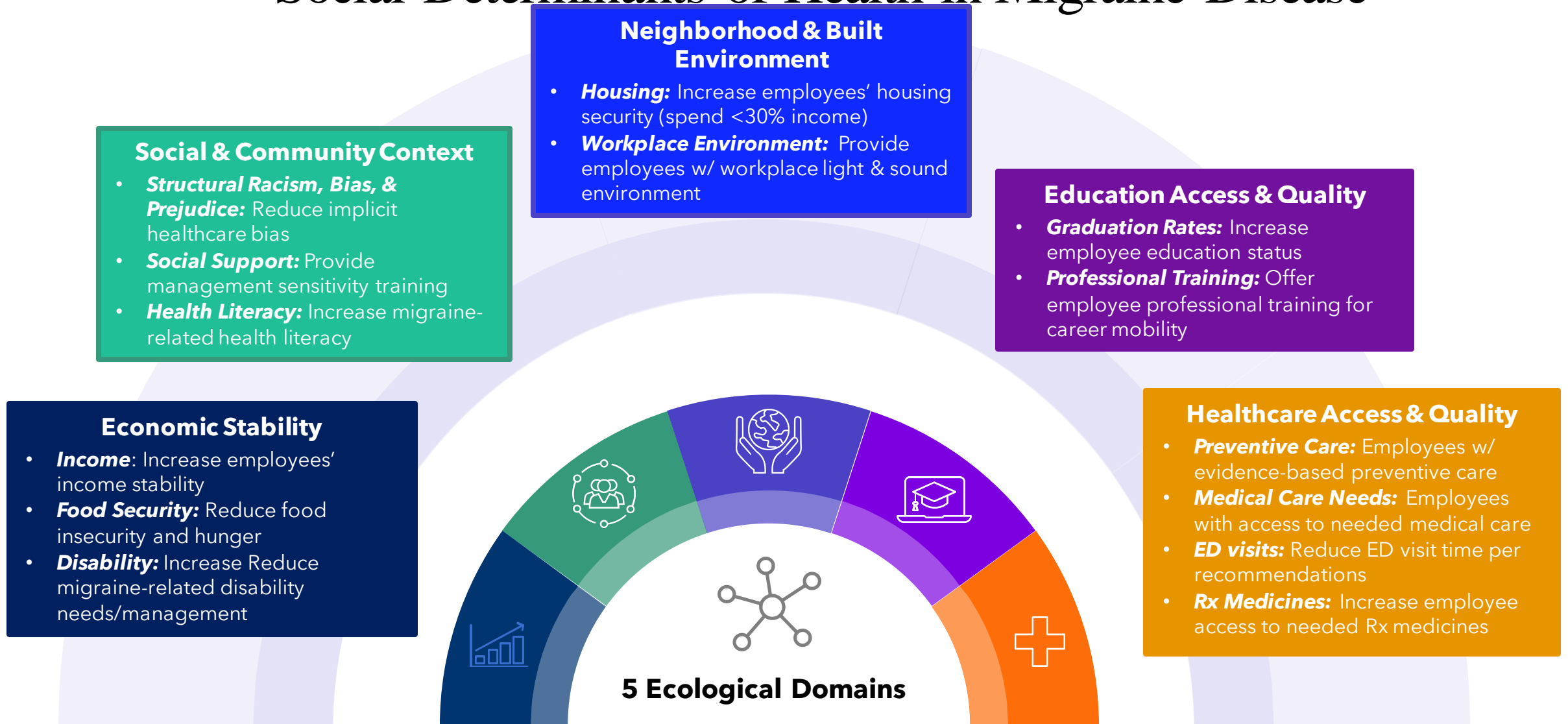
# Employees' Social Determinants of Health (SDOH)



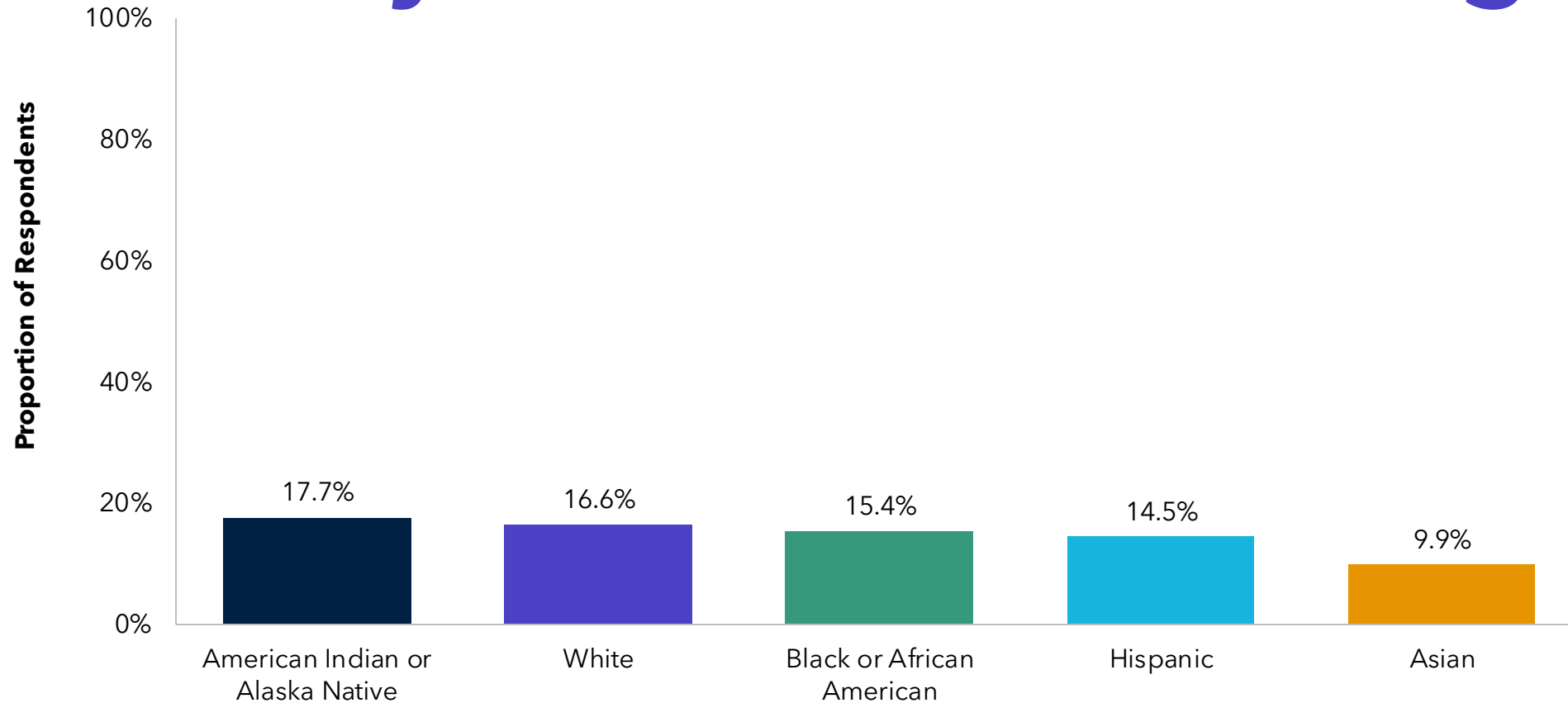
**5 Ecological Domains**



# How Employers Can Influence the Five Domains of Social Determinants of Health in Migraine Disease



# Severe Headache in Adults 2006-2015 by Racial or Ethnic Subgroup<sup>1\*</sup>

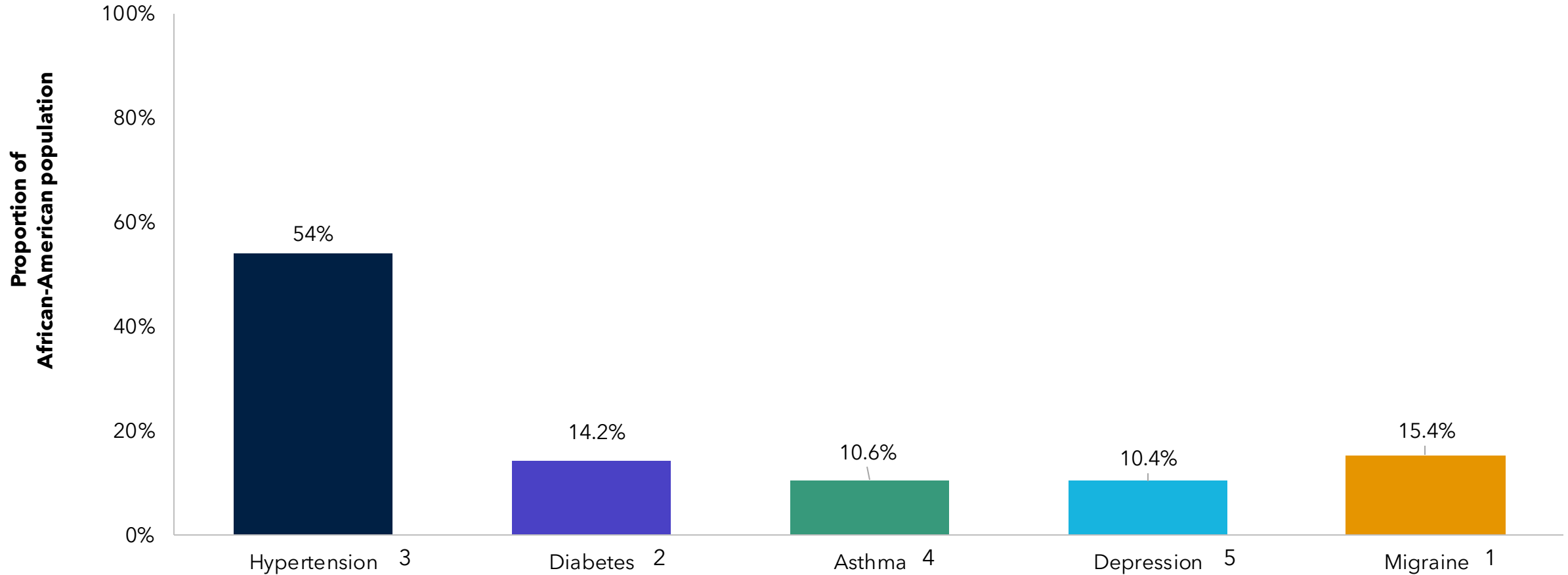


In 2020, the Black or African American population was 46.9 million<sup>2</sup>.

\* NCHS, National Health Interview Survey, 2015 and previous years. 2015 (N=41,493); 2014 (N=44,552); 2013 (N=41,335); 2012 (N=42,366); 2011 (N=39,509); 2010 (N=34,329); 2009 (N=33,856); 2008 (N=28,790); 2007 (N=29,266); 2006 (N= 29,204)

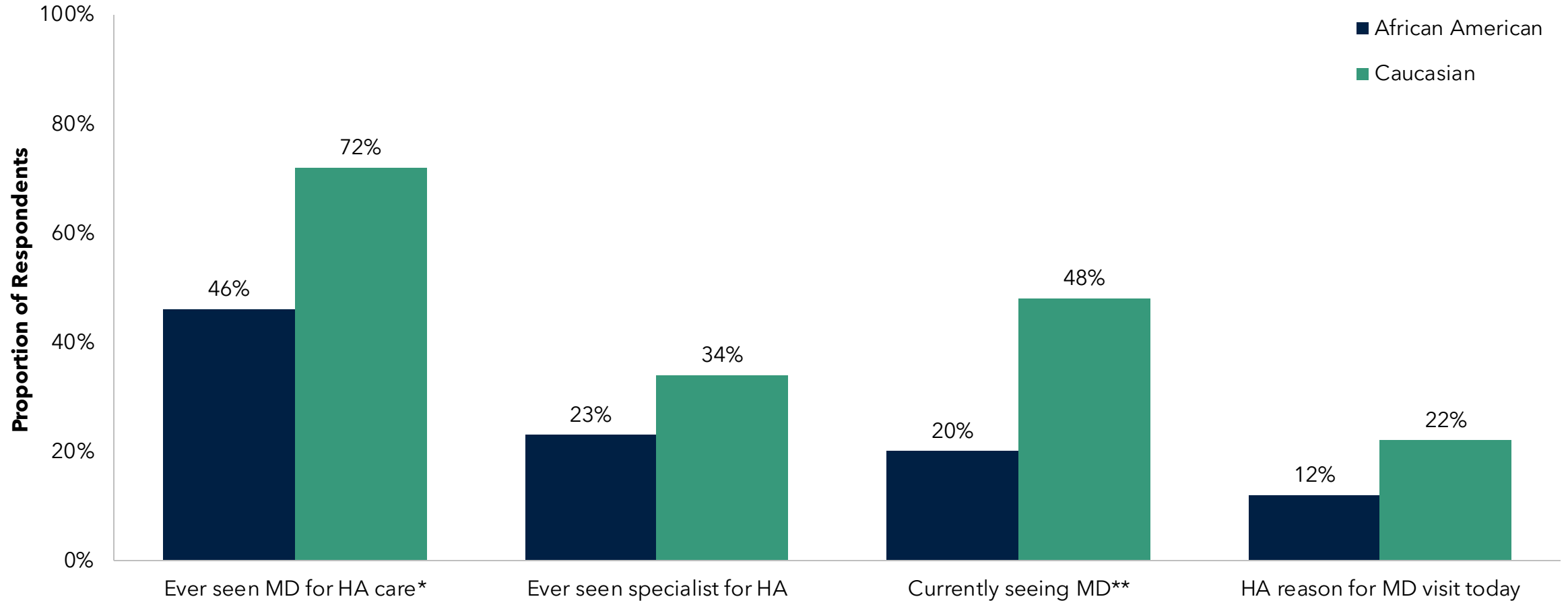
1. Burch R et al. *Headache*. 2018;58(4):496-505. 2. Census website: <https://www.census.gov/library/stories/2021/08/improved-race-ethnicity-measures-reveal-united-states-population-much-more-multiracial.html#:~:text=In%202020%2C%20the%20Black%20or.million%20and%2012.6%25%20in%202010> Accessed 6-14-22

# Other Chronic Diseases in African American Adults



1. Burch R, et al. *Headache*. 2018;58(4):496-505. 2. Cowie C, et al. *Diabetes in America*. 2018. 3. CDC website: [https://www.cdc.gov/bloodpressure/aa\\_sourcebook.htm](https://www.cdc.gov/bloodpressure/aa_sourcebook.htm) Accessed 3-19-22  
4. CDC website: <https://www.cdc.gov/asthma/nhis/2020/table4-1.htm> Accessed 6-14-22. 5. Bailey RK, et al. Racial and ethnic differences in depression: current perspectives. *Neuropsychiatry Dis Treat*. 2019;15:603-609. Published 2019 Feb 22. doi:10.2147/NDT.S128584

# Utilized the Health-care System for Headache Care



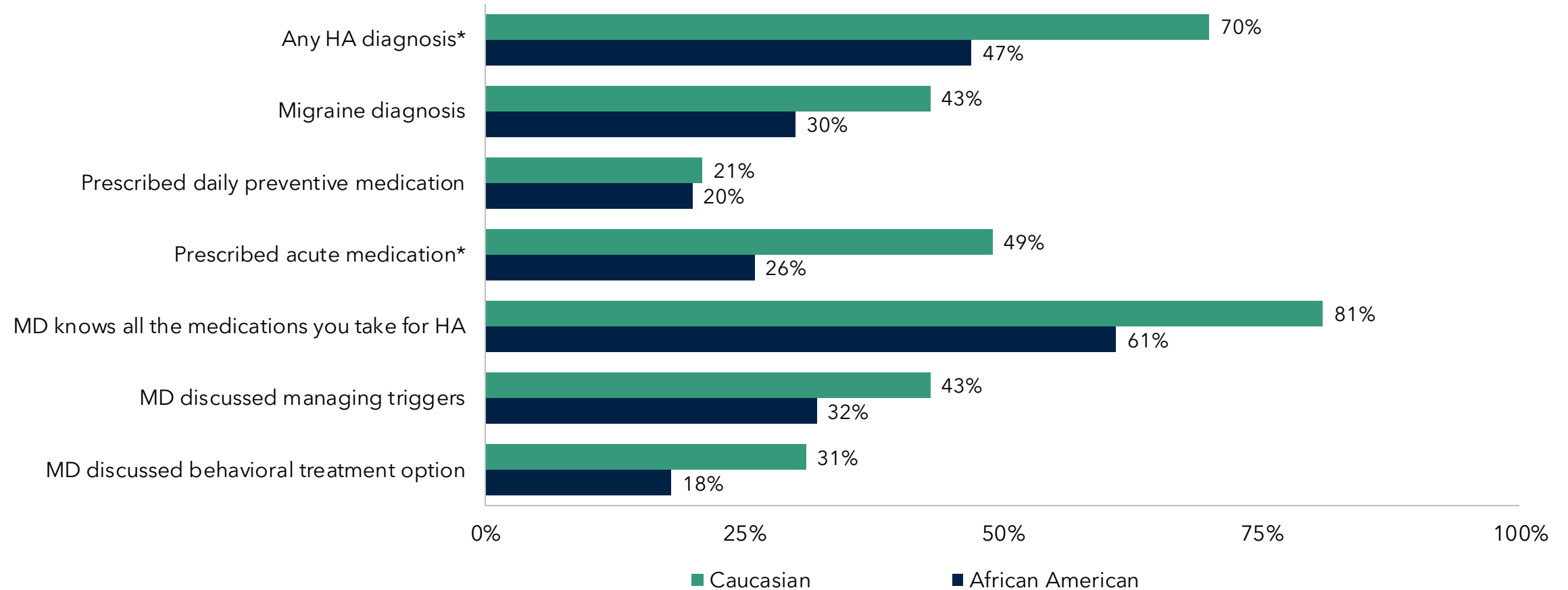
Percentage of individuals who have utilized the health-care system for headache care (n = 131). Percentages are those responding "Yes" to the question.

\* $P < .01$ ; \*\* $P < .001$ . HA = headache.

1. Nicholson RA, et al. *Headache*. 2006;46(5):754-765.



# Received Treatment for Headache Care



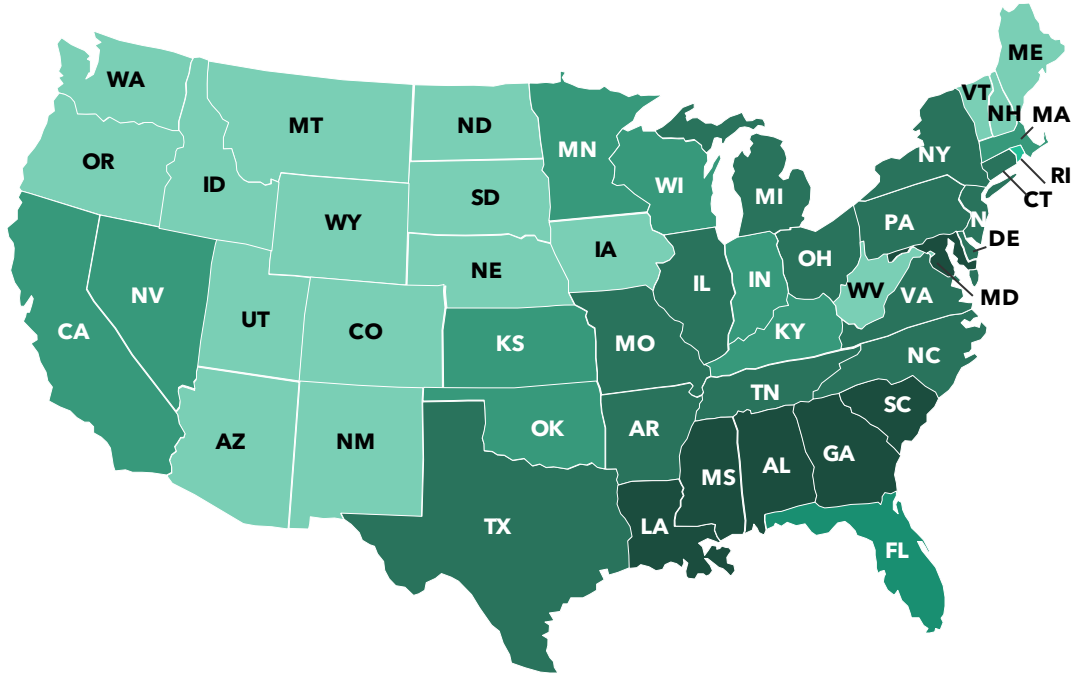
Percentage of individuals who have been diagnosed with headache and received treatment for headache care (n = 131). Percentages are those responding "Yes" to the question.

\*P < .01, HA = headache.

1. Nicholson RA, et al. *Headache*. 2006;46(5):754-765.

# Populations and Health Professional Shortage Areas (HPSA)

## Black or African American Population Distribution

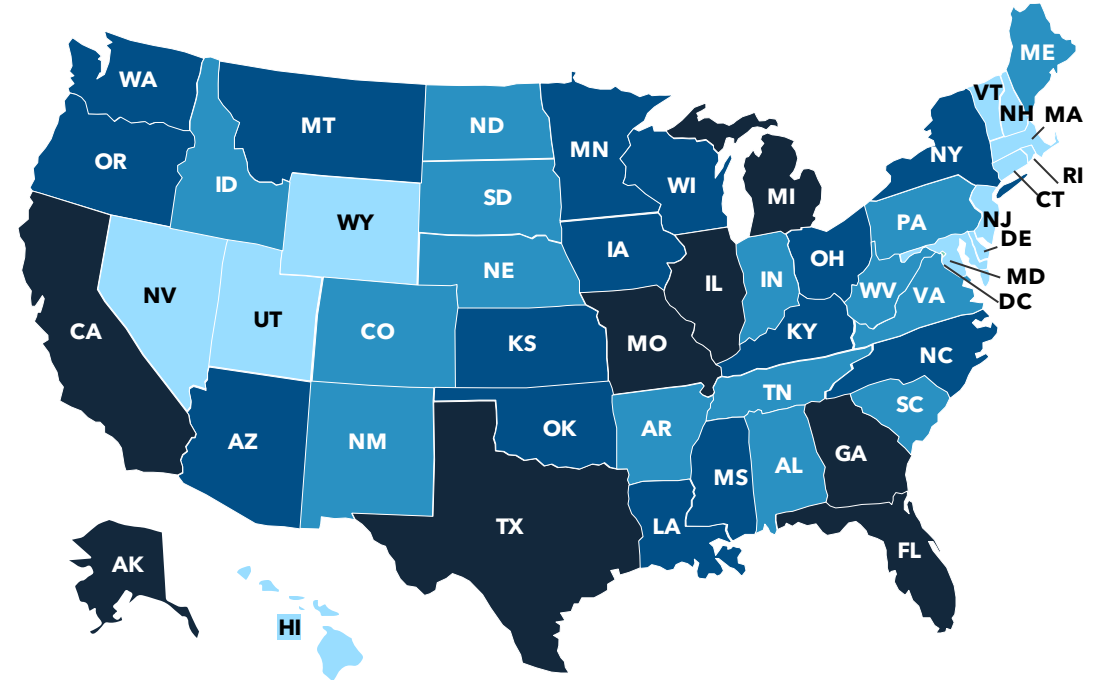


25.0% or more
  10.0 to 24.9%
  5.0 to 9.9%
  Less than 5.0%

U.S. percent = 12.4

<https://mtgis-portal.geo.census.gov/arcgis/apps/MapSeries/index.html?appid=2566121a73de463995ed2b2fd7ff6eb7>  
 Update as of 6/22

## HPSA Distribution

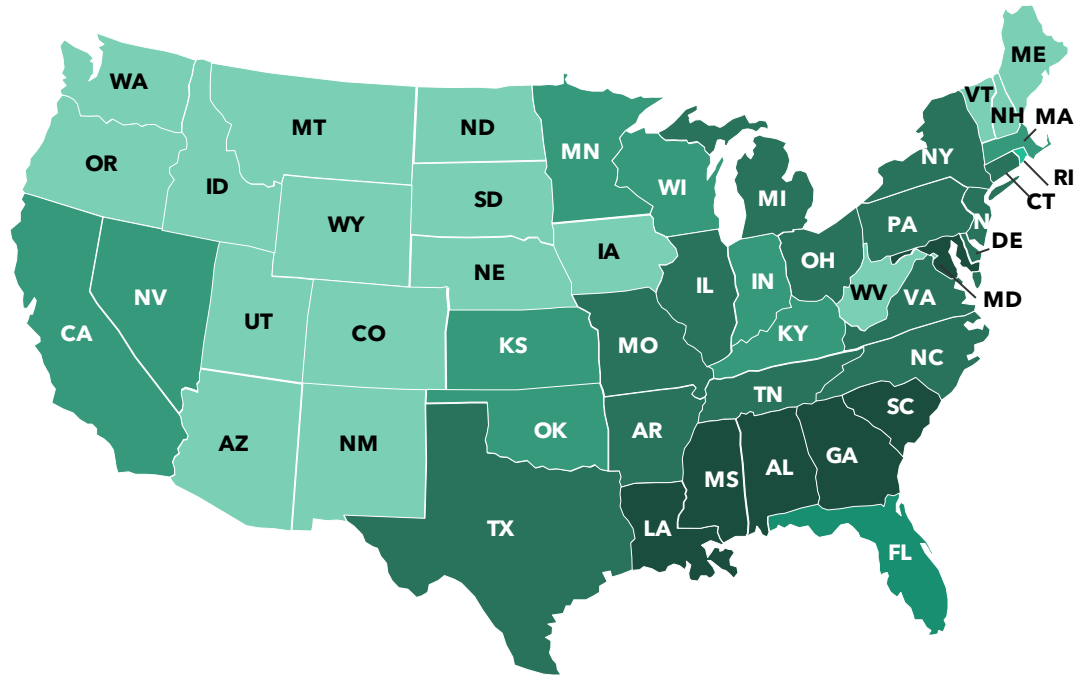


11-76
  80-148
  151-244
  247-662

<https://www.kff.org/other/state-indicator/primary-care-health-professional-shortage-areas-hpsas/?activeTab=map&currentTimeframe=0&selectedDistributions=total-primary-care-hpsa-designations&sortModel=%7B%22collId%22:%22Location%22,%22sort%22:%22asc%22%7D>  
 Update as of 09/30/22

# Population and US Neurologists

## Black or African American Population Distribution

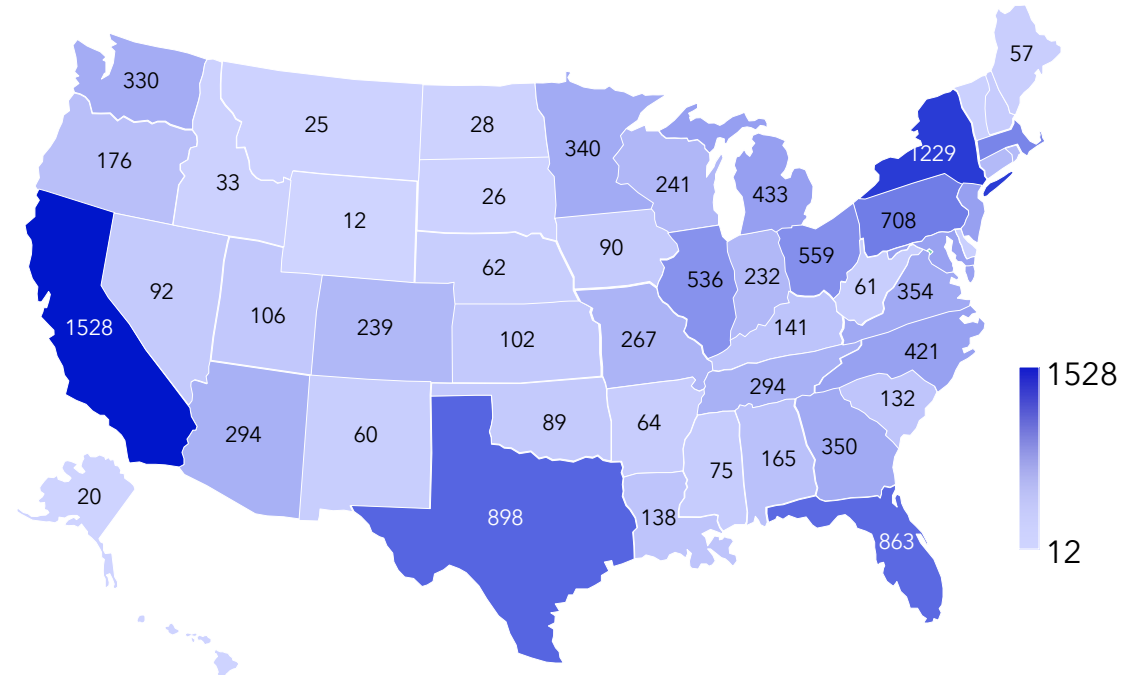


25.0% or more
  10.0 to 24.9%
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<https://mtgis-portal.geo.census.gov/arcgis/apps/MapSeries/index.html?appid=2566121a73de463995ed2b2fd7ff6eb7>  
 Update as of 6/22

## Map of US Neurologists: Only 2.8% are Black or African American (2019)

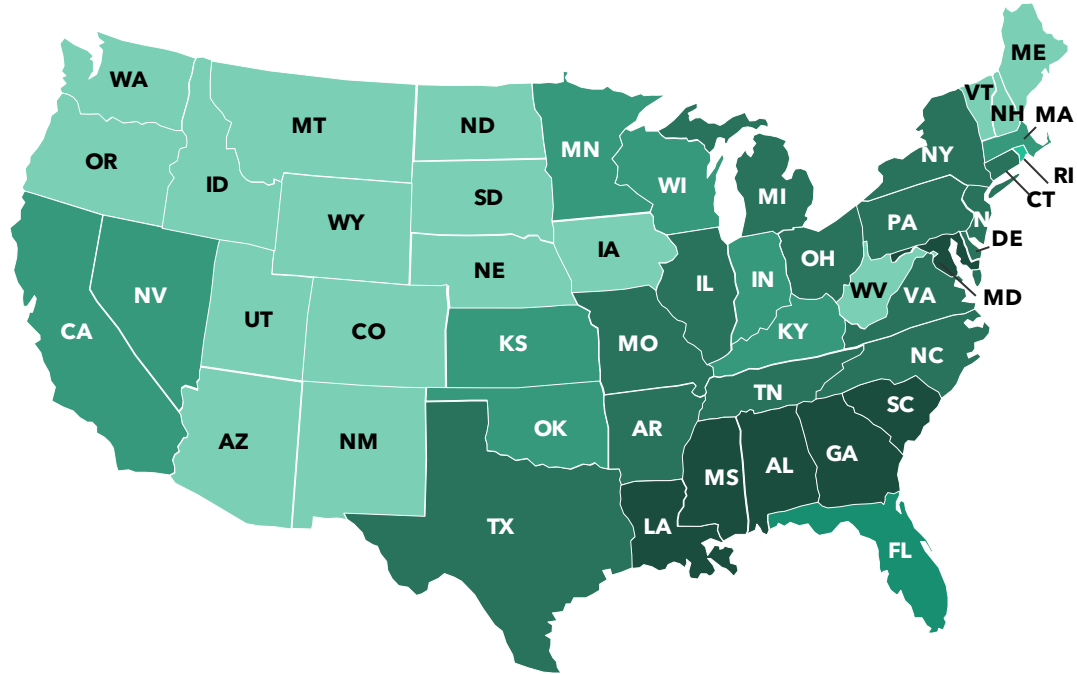


Note: Data from Member Profile and Data Warehouse as of December 31, 2019. The United States includes the 50 US states plus Washington, DC. Not shown: CT=216, DC=88, DE=47, HI=55, MA=645, MD=417, NH=74, NJ=425, RI=61, and VT=38

AAN 2020 Insights Report: <https://www.aan.com/siteassets/home-page/conferences-and-community/member-engagement/learn-about-aan-committees/board-planning/2020-insights-report.pdf> Accessed 3/20/22

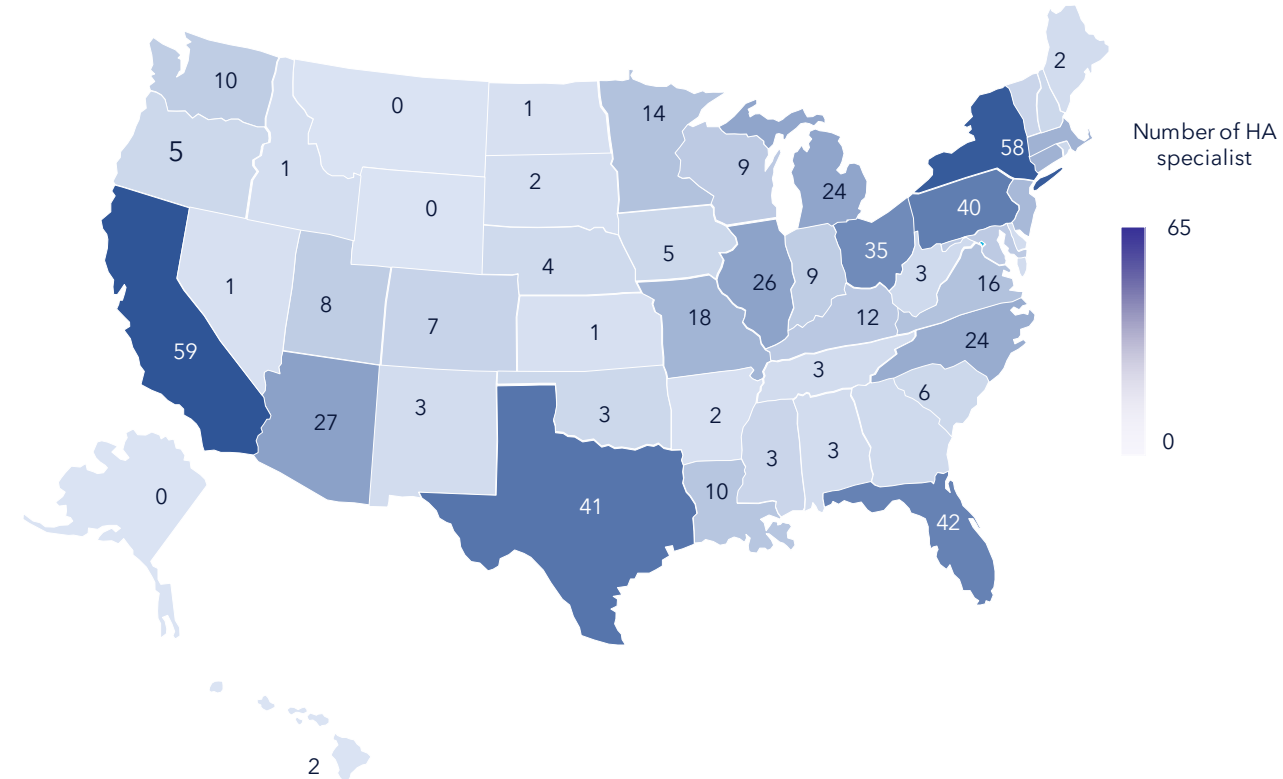
# Population and UCNS Certified Headache Specialists

## Black or African American Population Distribution<sup>1</sup>



2020 Census Demographic Data Map Viewer: <https://mtgis-portal.geo.census.gov/arcgis/apps/MapSeries/index.html?appid=2566121a73de463995ed2b2fd7ff6eb7>. Accessed 6/2022.

## UCNS Certified<sup>2</sup>



RI (2); VT (5); DE (2); DC (0); NH (3); MD (10); CT (18); NJ (18); MA (16); GA (3); 615 headache specialists maintaining United Council for Neurologic Subspecialties certification in the United States. UCNS website: [https://ucns.org/Online/Online/Diplomate\\_Directory.aspx?hkey=f8f00552-f924-4ef6-a9bb-6023b1cd341b](https://ucns.org/Online/Online/Diplomate_Directory.aspx?hkey=f8f00552-f924-4ef6-a9bb-6023b1cd341b). Accessed 6/2022



# African Americans and Headache Diagnostics



African American patients with headache disease report more headache days per month, higher pain intensity, and poorer quality of life than White patients, who are more likely to receive a primary headache diagnosis in headache subspecialty clinics.

African American patients also report more allodynia compared to White patients.<sup>1</sup>



African American men receive the least care for headache diseases and are less likely than White patients to present for ambulatory care for migraine disorders.<sup>1</sup>



African American patients visiting emergency departments (EDs) with headache were **4.8** times less likely than White patients presenting with the same complaint to receive CT to diagnose the etiology of their headache.<sup>1</sup>



Despite more severe disease in tertiary care settings, African American patients are twice as likely to discontinue specialty clinic-based headache treatment than White patients.<sup>1</sup>



Annual healthcare utilization of persons with known neurologic conditions per capita cost:

non-Hispanic White

\$598.98

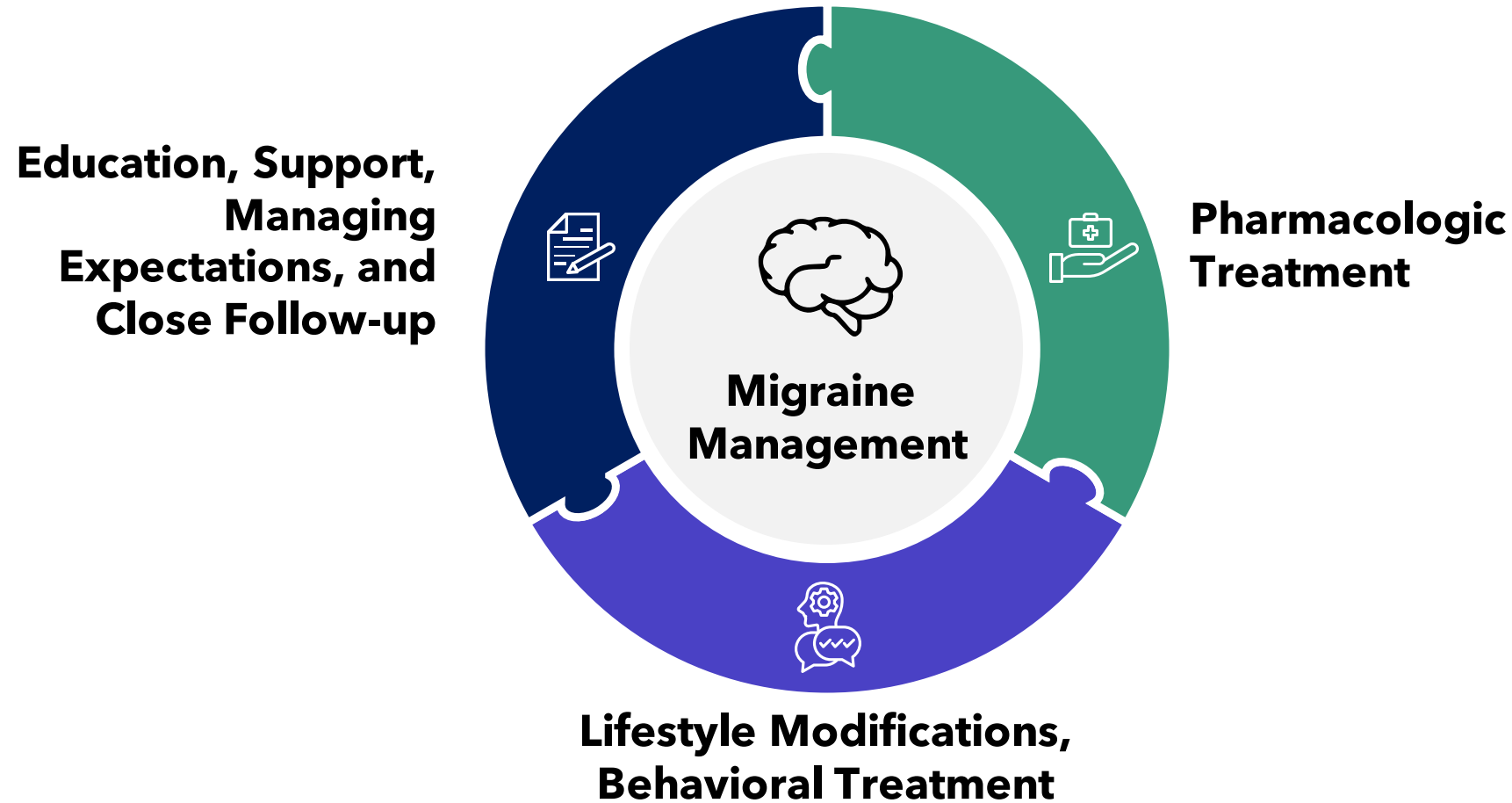
non-Hispanic Black<sup>2</sup>

\$1485.21



1. Kiarashi J, et al. *Neurology*. 2021;97(6):280-289. 2. Saadi A, et al. *Neurology*. 2017;88(24):2268-2275.

# Approach for Migraine Prevention & Management in the Workplace



# Summary



When most severe, migraine attacks rank in highest (Class 7) disability category in WHO analysis of disabilities.<sup>1,2</sup>

Social ecology of migraine-related disparities is complex and impacts quality of life, family & relationships, and migraine-related disability, worker productivity, and healthcare resource utilization.<sup>3-8</sup>

While prevalence rates for migraine are similar between African Americans and Caucasians, African Americans are less likely to receive an appropriate diagnosis or treatment.<sup>9-11</sup>

The distribution of the health professional shortage areas, including shortages of neurologists and headache specialists, tends to overlap with distribution of African American populations in the United States.<sup>12-15</sup>

Despite more severe-disease characteristics, African Americans are more likely to discontinue headache treatment than Caucasians.<sup>16</sup>

A multifaceted approach is necessary to address migraine, including health education, awareness, support and care management; pharmacological therapies, and lifestyle modification.<sup>17</sup>

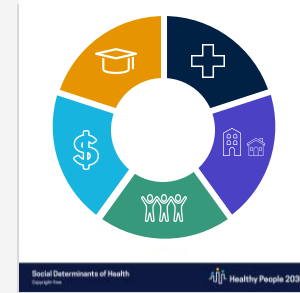
1. Menken M, et al. *Arch Neurol*. 2000;57:418-20. 2. [http://www.who.int/healthinfo/global\\_burden\\_disease/about/en/](http://www.who.int/healthinfo/global_burden_disease/about/en/). Accessed October 2, 2020. 3. Lanteri-Minet M, et al. *Cephalalgia*. 2011;31:837-50. 4. Buse DC, et al. *Headache*. 2019;59:1286-99. 5. Martelletti P, et al. *J Headache and Pain*. 2018;19:115. doi: 10.1186/s10194-018-0946-z. 6. Buse DC, et al. *Mayo Clin Proc*. 2016;91:596-611. 7. Bonafede M, et al. *Headache*. 2018;58:700-14. 8. Lipton RB, et al. *Headache*. 2020;60:1683-96. 9. Kiarashi J, et al. *Neurology*. 2021;97(6):280-289. 10. Burch R, et al. *Headache*. 2018;58(4):496-505. 11. Nicholson RA, et al. *Headache*. 2006;46(5):754-765. 12. 2020 Census Demographic Data Map Viewer: <https://mtgis-portal.geo.census.gov/arcgis/apps/MapSeries/index.html?appid=2566121a73de463995ed2b2fd7ff6eb7>. Accessed 6/2022. 13. AAN 2020 Insights Report: <https://www.aan.com/siteassets/home-page/conferences-and-community/member-engagement/learn-about-aan-committees/board-planning/2020-insights-report.pdf> Accessed 3/20/22. 14. UCNS website: [https://ucns.org/Online/Online/Diplomate\\_Directory.aspx?hkey=f8f00552-f924-4ef6-a9bb-6023b1cd341b](https://ucns.org/Online/Online/Diplomate_Directory.aspx?hkey=f8f00552-f924-4ef6-a9bb-6023b1cd341b). Accessed 6/2022. 15. <https://www.kff.org/other/state-indicator/primary-care-health-professional-shortage-areas-hpsas/?activeTab=map&currentTimeframe=0&selectedDistributions=total-primary-care-hpsa-designations&sortModel=%7B%22collid%22:%22Location%22,%22sort%22:%22asc%22%7D>, Updated as of 09/30/22. 16. Kiarashi J, et al. *Neurology*. 2021;97(6):280-289. 17. Dodick DW et al. *N Engl J Med*. 2006;354:158-165.

# Back-Up Slides

# People 2030

## Social Determinants of Health (SDOH)

are the conditions in which our environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality of life outcomes and associated risks.



## Healthy People (HP)

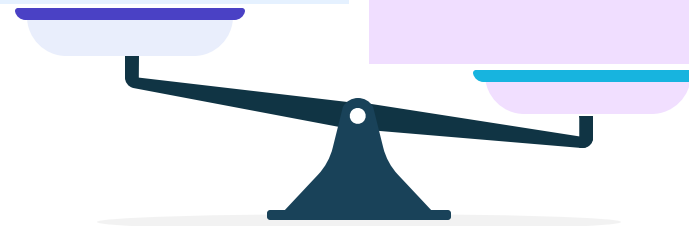
are national data-driven goals and objectives to improve health and well-being of ALL Americans each decade.

## Health Equity

is "attainment of the highest level of health for all people, where everyone has a fair and just opportunity to attain their optimal health regardless of race, ethnicity, disability, sexual orientation, gender identity, socioeconomic status, geography, preferred language, or other factors that affect access to care and health outcomes."

## Health Disparities

are "preventable 'gaps' or differences in the burden of disease, injury, violence, or opportunities to achieve optimal health that are experienced by socially disadvantaged populations."



# Breaking the Mold on Migraine Management



**Lesli Marasco**

Vice President, Global Benefits and Well-Being,  
AbbVie





# AbbVie creates medicines and solutions that put impact first - for patients, communities and our world.

AbbVie was founded  
**January 2, 2013**

From treating 20 conditions across all stages of life in 2013 to more than 75+ conditions 10 years later

Therapeutic Areas:

- Immunology
- Oncology
- Neuroscience
- Eye Care
- Aesthetics
- Other areas

Received over 40 **Great Places to Work** and **Top Employer** rankings globally

Recognized for being a good corporate citizen and for our contributions to society and business performance

**50K+ employees** working in **70+ countries**  
**26K U.S. employees**

abbvie



# Migraine at Work educational program for AbbVie U.S. employers - 3Q2022

**Objective:** To facilitate migraine symptom recognition, increase migraine screening and diagnosis, enhance HCP-patient dialogue about migraine, inform treatment choices

Collaboration between AbbVie HR/Benefits team, AbbVie Migraine Portfolio team and Migraine at Work

## Who is Migraine at Work?

- Project of the World Health Education Foundation with a steering committee of migraine community leaders
- Mission: To give employers & employees **the tools they need** to build healthier, stigma-free and more productive workplaces.

abbvie | MIGRAINE AT WORK

## 12-Week Program Customized with/for AbbVie



### Educational modules

- 4 short, online video modules
- Medically reviewed; fact-checked
- Up-to-date, best practices



### Supportive resources

- Customized FAQs
- Biweekly emails with tips and reminders



### Live Webinar

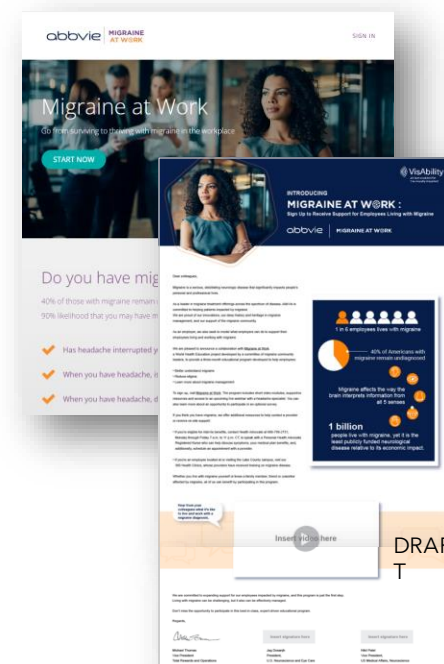
- Board-certified headache specialist with Q&A
- Recording to be available



### Feedback & Evaluation

- Pre- and post-program survey to demonstrate ROI

Included 60 hours of support from a Project Manager toward customization, planning, and execution



abbvie

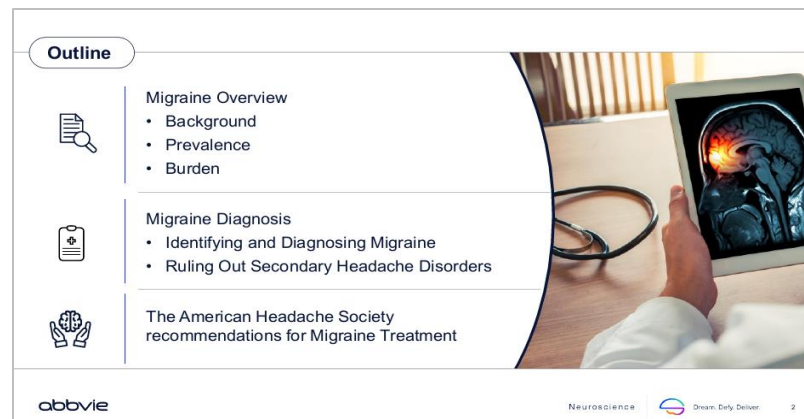
# Promotions and Collaborations

## Promotions

- Launch email communication to all U.S. employees
- Onsite displays
- Employee Resource Group newsletter content
- AbbVie intranet feature
- Champion emails
- Testimonials from employees on impact of migraine on their personal and professional lives

## Other Collaboration

- Employee Relations – accommodation support
- Facilities – quiet spaces available
- Migraine Friendly Workplace Guide and Resources – shared globally for employees
- HR Guide – Creating a Migraine Friendly Workplace
- On-site Clinics– frontline clinicians educated



abbvie



# Breaking the Mold on Migraine Management



**David Hines**

Executive Director of Employee Benefits,  
Metro Nashville Public Schools

# Metro Nashville Public Schools

41st largest district  
*(88,000 students)*

Teacher's health plan  
*(9,200 active and retired teachers)*

Support staff covered by Metro Nashville  
Government  
*(4,000 active employees)*

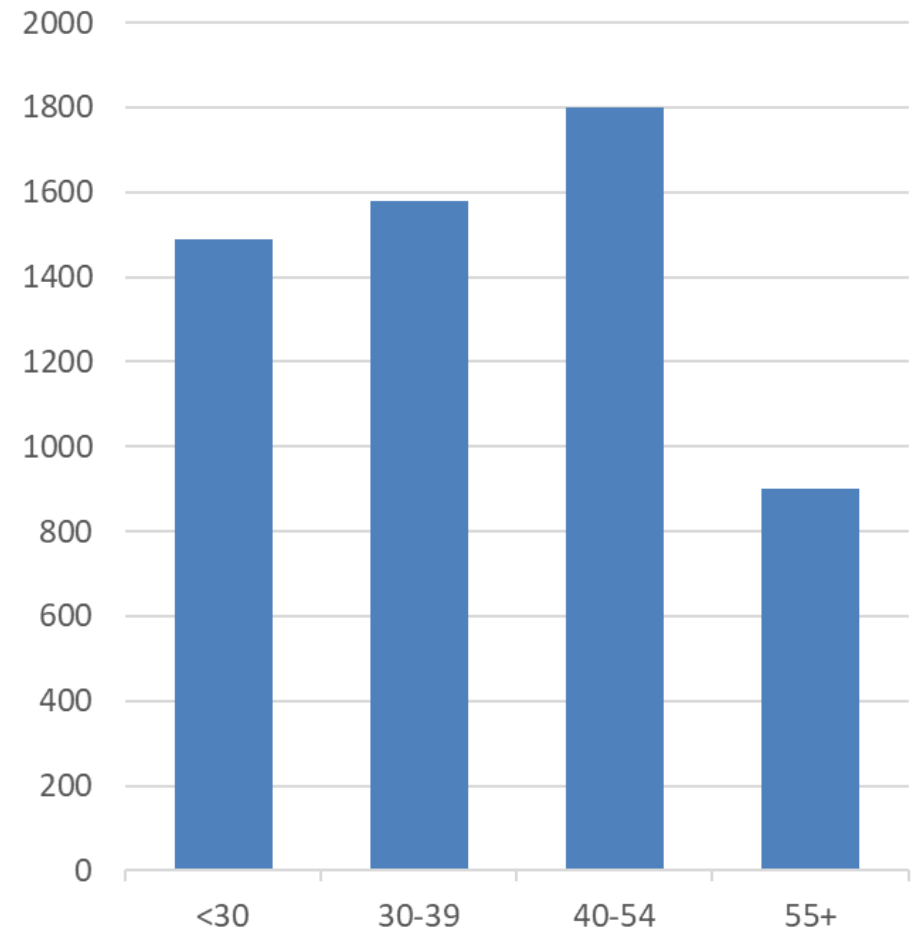
***With a core belief that healthy  
employees are better employees***





# Prevalence of Headaches/Migraines

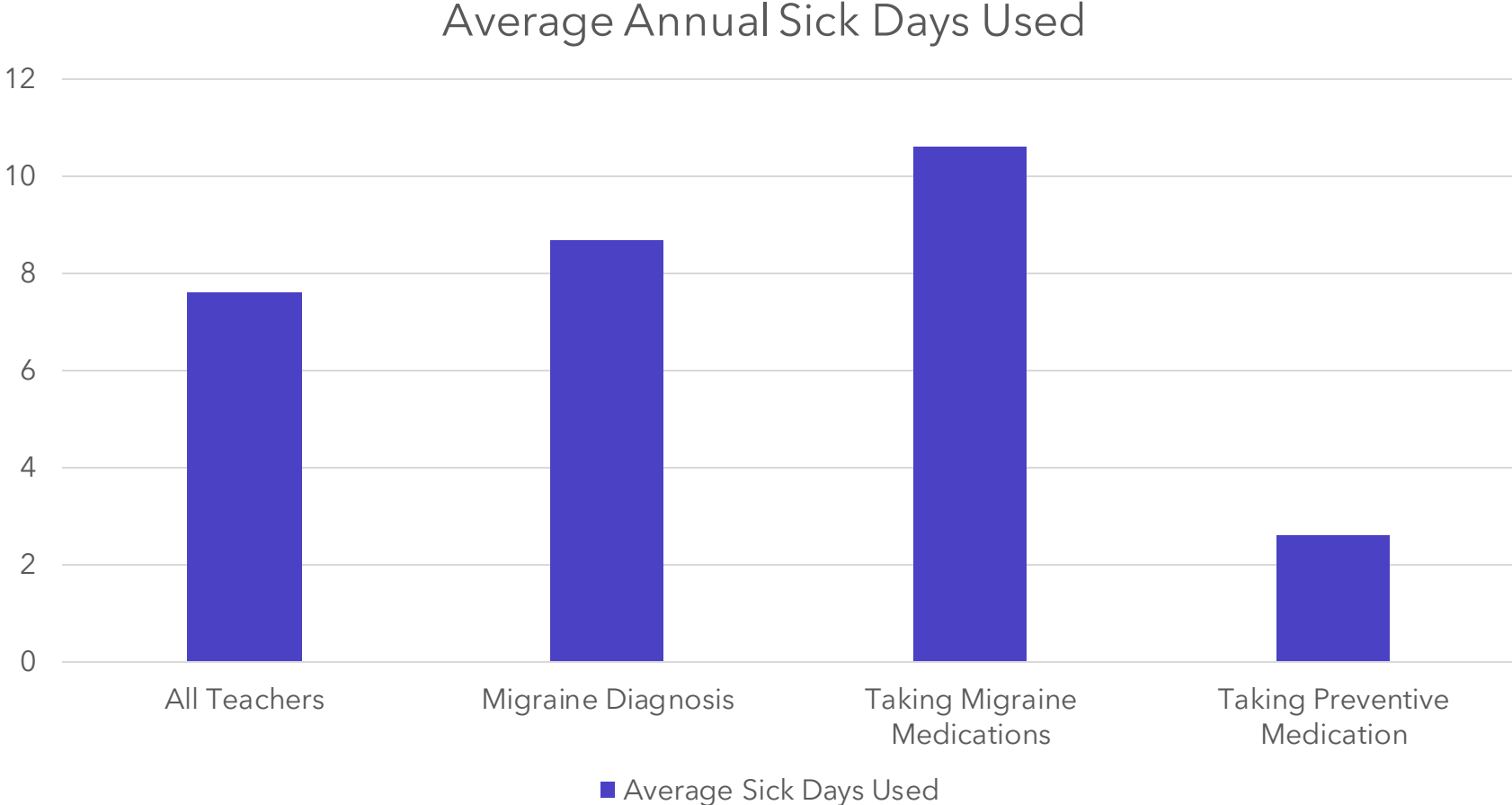
- About 10% of teachers had a medical or pharmacy claim for headaches/migraines.
- When dataset is expanded to include health risk assessment and medical records – 20% of population had an indicator of migraine.
- In line with estimate of 17.1% of women experience migraines
- Why would we exceed national norm?



79% Female, Average age of 40.8

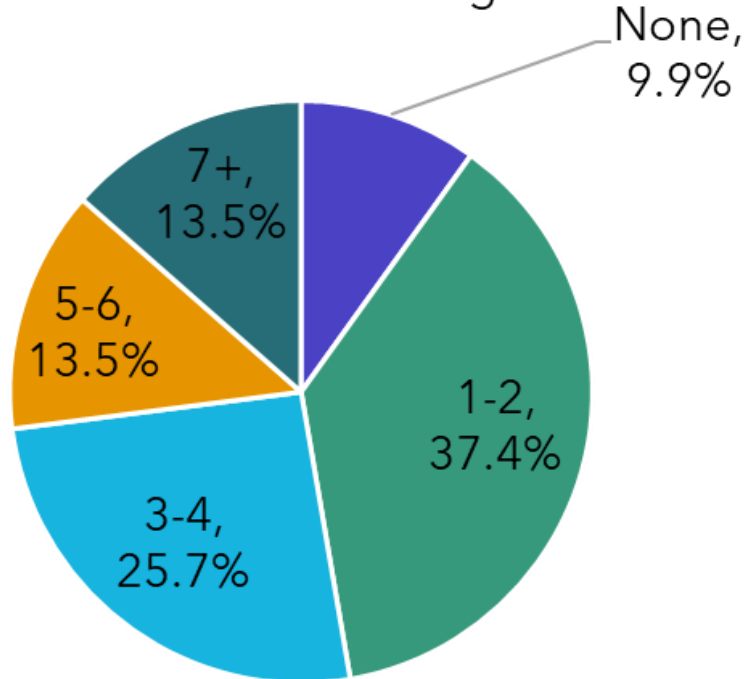
"Migraine most commonly occurs between ages 30 to 49"

# Impact on Attendance

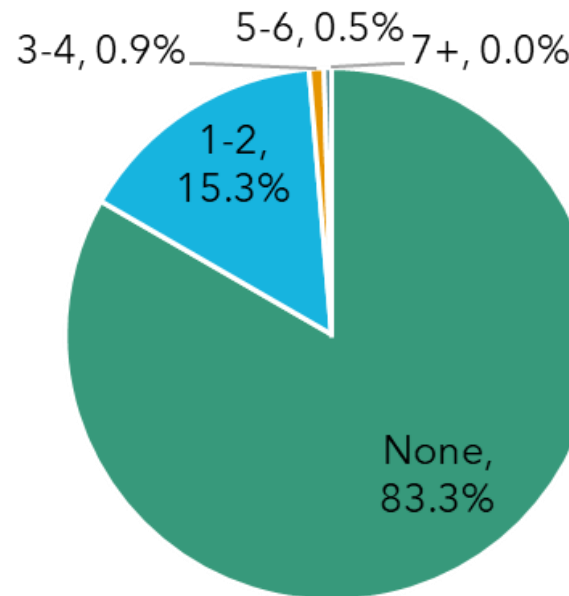


# Working with a Migraine and Missed Days of Work

In Past Four Weeks, How Many Days Did You Work with a Migraine?



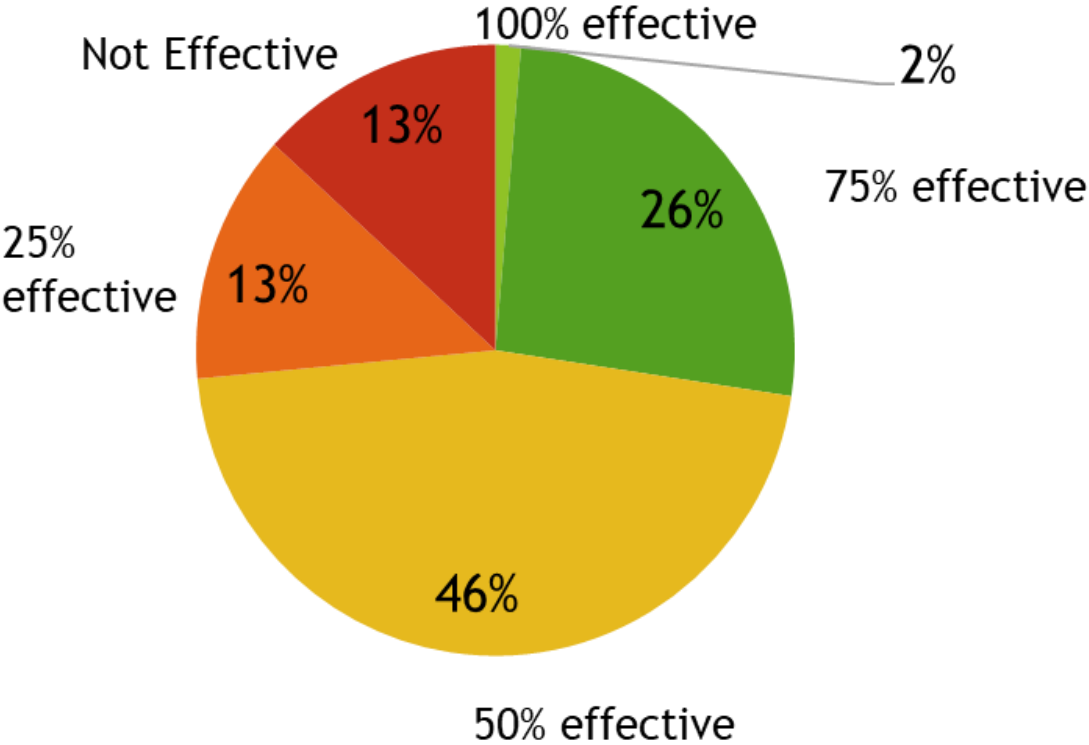
In Past Four Weeks, How Many Days of Work Did You Miss Due to Migraine?



Migraine at Work study group 217 enrollees baseline survey



# Compared with your normal work performance, please estimate how effective you are at your job when you have migraine headache symptoms at work



Migraine at Work study group 217 enrollees baseline survey

# Breaking the Mold on Migraine Management



**Mohannad (Ned) Kusti, MD**  
Corporate Medical Director,  
Optimal Workplace &  
Environmental Wellness  
Corporation



**Preeti Gadhoke, PhD**  
Medical Outcomes &  
Science Liaison,  
AbbVie



**Lesli Marasco**  
Vice President, Global  
Benefits and Well-Being,  
AbbVie



**David Hines**  
Executive Director of  
Employee Benefits,  
Metro Nashville Public  
Schools



# ANNUAL FORUM

# TEMPERATURE RISING

IGNITING CHANGE FOR A NEW ERA

**NOVEMBER 13-15, 2023**

Crystal Gateway Marriott | 1700 Richmond Highway, Arlington, VA



**Evening Reception**  
**5:30 - 6:30**

**#NatAllForum**