

Migraine Management— A Regional Perspective



Insights into migraine care and treatment among
commercially insured patients in the St. Louis region

CHALLENGE

Migraine is considered the second most disabling disease in the world. Migraine may be a leading cause of overall impaired work productivity.^{1,2}



According to the American Migraine Foundation, migraine impacts more than **37 million Americans**. The American Migraine Prevalence and Prevention (AMPP) study found that **43% of women** and **18% of men** will experience migraine at some point in their lives.^{2,3}



Based on a migraine and mental health survey, **77%** (N=1,100) of individuals with migraine **worry about the stigma** of migraine and mental health and are **hesitant to discuss the issue** with their healthcare providers (HCPs).⁴



A 2018 observational, web-based survey (OVERCOME) of adults with and without migraine in the US found that **only 61%** of those with migraine **self-reported** a medical diagnosis of migraine (n=21,143).⁵

A retrospective, observational database study of the economic burden of migraine from January 2008 to June 2013 found migraine patients had total annual direct plus indirect costs that were \$8,924 (2014 USD) higher than those without migraine. Mean annual direct all-cause healthcare costs were \$11,010 (SD=\$19,663) for migraine (n=71,742) vs \$4,436 (SD=\$13,801) without migraine (n=71,742). Total mean annual indirect costs were \$11,294 for migraine (n=84,245) vs \$8,945 without migraine (n=144,734).⁶

Migraine can be associated with financial burden and healthcare resource utilization costs related to loss of productivity and migraine severity.⁷⁻⁹

CHALLENGE

The American Headache Society (AHS) considers the following treatments effective or probably effective for preventive and acute treatment:⁸

Preventive Treatment – Medications with evidence of efficacy in migraine prevention^a

Established efficacy ^b		Probably effective ^c	
Oral	Parenteral	Oral	Parenteral
<ul style="list-style-type: none"> • Candesartan • Divalproex sodium • Frovatriptan^f • Metoprolol • Propranolol • Timolol • Topiramate • Valproate sodium 	<ul style="list-style-type: none"> • Eptinezumab • Erenumab • Fremanezumab • Galcanezumab • OnabotulinumtoxinA^d 	<ul style="list-style-type: none"> • Amitriptyline • Atenolol • Lisinopril • Memantine • Nadolol • Venlafaxine 	<ul style="list-style-type: none"> • OnabotulinumtoxinA + CGRP mAb^{d,e}

^aThe decision to prescribe preventive therapy in women who are pregnant or of childbearing potential should be based on the needs of individual patients and available safety data.

^bTwo or more Class I trials based on American Academy of Neurology evidence classification.

^cOne Class I or 2 Class II trials based on American Academy of Neurology evidence classification.

^dPrevention of chronic migraine.

^eOne Class IV trial based on American Academy of Neurology evidence classification.

^fShort-term prevention of menstrual-related migraine; evaluated and rejected by the FDA for this indication.

Acute Treatment – Acute treatments with evidence of efficacy in migraine

Established efficacy ^a		Probably effective	
Migraine-specific	Nonspecific	Migraine-specific	Nonspecific
<ul style="list-style-type: none"> • Triptans • Ergotamine derivatives • Gepants • Lasmiditan 	<ul style="list-style-type: none"> • NSAIDs: aspirin, celecoxib oral solution, diclofenac, ibuprofen, naproxen • Combination analgesic: acetaminophen + aspirin + caffeine 	<ul style="list-style-type: none"> • Ergotamine • Other forms of dihydroergotamine 	<ul style="list-style-type: none"> • NSAIDs: flurbiprofen, ketoprofen, IV and IM ketorolac • IV magnesium^b • Isometheptene-containing compounds • Antiemetics: chlorpromazine, droperidol, metoclopramide, prochlorperazine, promethazine

^aConsider neuromodulatory devices in patients who prefer nondrug treatments or in whom drug treatment is ineffective, intolerable, or contraindicated.

^bIn migraine with aura.

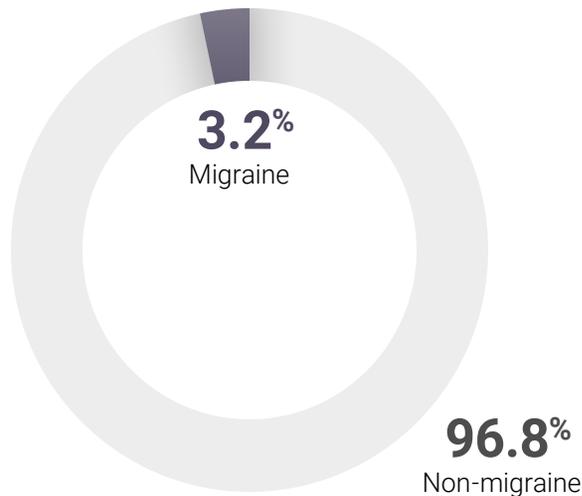


According to the AMPP study, inadequate response to acute treatment is reported by at least 56% of patients with migraine in the United States (N=8,233).¹⁰

AbbVie’s partnership with the Midwest Health Initiative in the St. Louis region¹¹

The purpose of this study was to gain insight into migraine diagnosis, treatment, and care patterns and assess market trends in a large metropolitan area of a commercially insured population aged 18-64 from 2018 to 2021. The migraine population was derived by filtering members in the claims database who had a primary–quaternary International Classification of Diseases (ICD) diagnosis code for migraines in each given year.

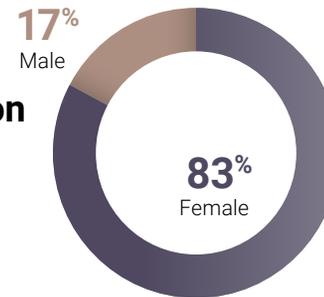
The Midwest Health Initiative (MHI) population showed a migraine diagnosis prevalence of only **3.2%** from 2018 to 2021.*



Number of People in the MHI Population With and Without Migraine According to ICD Claims Codes

	2018	2019	2020	2021
Migraine	17,937	18,382	17,936	18,978
Non-Migraine	583,453	564,860	549,456	538,182

Gender Distribution of Migraine Population



The average age of the MHI population was **41 years**.[†]

According to the 2015 National Health Interview Survey, the overall prevalence of migraine or severe headache was ~15%.¹²

*Prevalence was determined by dividing the migraine population by the community population and averaging across all years.

†Both those with and those without a migraine had an average age of 41 years.

Key results and findings from the MHI case study¹¹

Anxiety and depression are more prevalent among individuals with migraine

Prevalence of Anxiety and Depression in MHI Migraine Population*

Anxiety	Prevalence	Depression	Prevalence
Migraine	36.9%	Migraine	26.7%
Non-Migraine	9.8%	Non-Migraine	6.9%

Although only **3.2%** of individuals were **diagnosed with migraine** in this population, their **percent of total healthcare utilization ranged from 6.1% to 6.7%** and their **cost PMPM was almost double** of the non-migraine population.

The economic impact of migraine is high for members, plan sponsors, and payers

Total Cost of Care by Migraine Population[†]

	2018	2019	2020	2021
Cost Per Member Per Month (PMPM) by Migraine Population	\$808	\$880	\$846	\$950
Cost PMPM by Non-Migraine Population	\$409	\$442	\$428	\$453



With the majority of individuals hesitant to speak with their HCPs about their headaches, patients may require comprehensive education and support^{4,7}

Recommendations may include:

- Adequate trial length of 3-6 months for preventive medications before benefits are assessed
- Use of disease assessments such as the Migraine Screening Questionnaire, Migraine Disability Assessment (MIDAS), Headache Impact Test (HIT-6), and Migraine-Specific Quality of Life Questionnaire version 2.1
- Individualized patient education about dose adjustments, treatment expectations, side effects, and adverse events

In order to optimize care, networks should provide adequate access to migraine-treating specialists and a comprehensive pharmacy plan design for migraine medications.

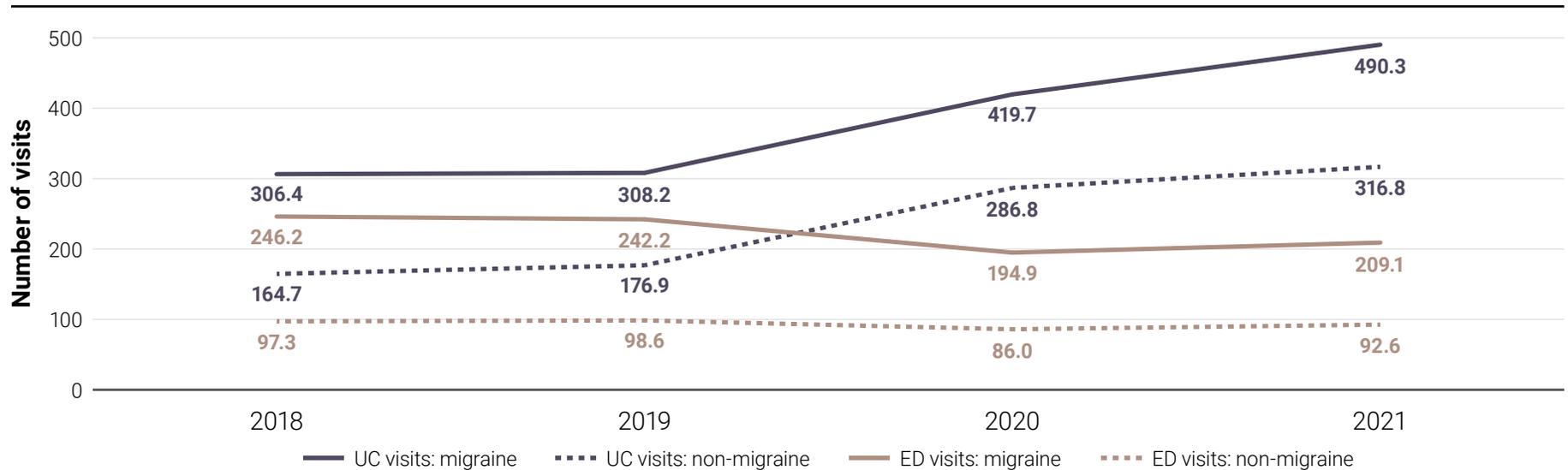
*In order to analyze the prevalence of other diagnoses among the migraine and non-migraine populations, MHI pulled data from each set with a separate subset filter to include ICD diagnoses for depression, anxiety, and sleep disorders. All three other diagnoses were pulled from the migraine and non-migraine subsets independent from one another, so the figures represent the percent of each population that contains a given diagnosis.

[†]From 2018 to 2021, an average of 18,308 individuals received migraine diagnoses and an average of 558,988 individuals did not receive migraine diagnoses. PMPM represents the total cost of medical and pharmacy care, per medical member per month, of each population set, using standardized pricing.

RESULTS

The MHI migraine population utilized more acute care services than the non-migraine population from 2018 to 2021

Facility Utilization Within the MHI Population per 1,000^{11*}



Migraine members' outpatient care costs were higher than those of non-migraine members

Average Spend Within the MHI Population^{11†}

	Average Facility Inpatient Spend Per Person		Average Facility Outpatient Spend Per Person	
	Member's Responsibility	Plan Sponsor's Responsibility	Member's Responsibility	Plan Sponsor's Responsibility
Migraine	\$1,137	\$25,513	\$573	\$4,679
Non-Migraine	\$1,387	\$25,443	\$460	\$3,471



Plan sponsors should review their annual healthcare utilization to uncover spend and trend in migraine-related care.

ED=emergency department; UC=urgent care.

*UC and ED utilization were determined by calculating the total number of UC/ED visits among each population set and dividing by the respective population for each set, represented as visits per 1,000. The population without migraine was much larger than the population with migraine, with an average of 558,988 vs 18,308.

†Cost sharing (or member's responsibility) is defined as the average total of coinsurance, copayment, coordination of benefits, and deductible allowed. The allowed amount (or plan sponsor's responsibility) is the negotiated rate for healthcare services allowed by a health plan. MHI reports healthcare cost information using a "Standardized Price" approximation, which is meant to represent the approximate allowed amount cost of healthcare services without revealing the true amount allowed by health plans.

RESULTS

Within the MHI population, the type of provider *used most frequently* for migraine care remained the same from 2018 to 2021¹¹

Provider Type Ranked*

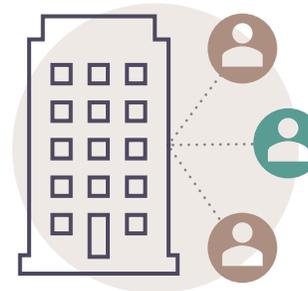
- 1 Primary Care
- 2 Neurology
- 3 Critical Care/Hospitalist
- 4 ED and Urgent Care
- 5 Optometry/Ophthalmology



Data are similar within the general population. A 2018 observational, web-based survey (OVERCOME) of adults with and without migraine in the US (N=21,143) found that the proportion with at least one lifetime medical consultation for migraine had:⁵

- 70.3% of consultations with primary care providers
- 28.1% of consultations with neurologists
- 15.6% of consultations with a headache specialist

Individuals with migraine may require specialist referral; however, they can benefit from a comprehensive care and treatment program that includes access to migraine-treating primary care providers.



87% of the migraine cohort and **61.5%** of the non-migraine cohort of patients can be attributed to a primary care physician within the last 6 months to any medical group, including all major medical groups, independents, and small hospital systems.

Primary care providers can identify and manage migraine patients, expedite the differential diagnosis process, and call attention to any atypical features or red flags that can raise concerns for secondary headaches.



Plan sponsors can recommend the routine use of migraine-treating primary care providers to potentially improve the management of migraine care, reduce utilization, and reduce total cost of care.

*Calculated by totaling the utilization of attributed provider specialty types on claims for migraine care among the migraine population.

RESULTS

While telehealth appointments increased among the MHI migraine population, primary and specialty care utilization declined overall from 2018 to 2021

Healthcare Encounter Utilization per 1,000 in the MHI Population¹¹

		2018	2019	2020	2021
 Primary Care Visits	Migraine	693	695	695	688
	Non-Migraine	409	410	383	384
 Specialty	Migraine	654	644	624	618
	Non-Migraine	423	424	383	427
 Telehealth Appointments	Migraine	0.00006	0.0002	355	309
	Non-Migraine	0.07	0.14	112	98



Opportunity to provide telehealth services during the COVID-19 pandemic may have increased access to care and provided greater convenience and flexibility to schedule visits.



Medical benefit plans can include coverage of telehealth visits for both routine and urgent care assessments of migraine, which may ensure timely access to care and prevent overutilization of acute care services.

RESULTS

Newer agents are being used more frequently in the care of migraine

Preventive Medications Used by MHI Migraine Population^{11*}

		Total Scripts	Costs
CGRP mAbs	2018	421	\$260,084
	2019	3,867	\$2,438,469
	2020	5,897	\$3,675,830
	2021	6,225	\$4,138,989
Oral CGRP Antagonists	2020	198	\$163,437
	2021	1,040	\$930,003
Triptans [†]	2018	1,502	\$283,215
	2019	1,505	\$243,710
	2020	1,325	\$218,711
	2021	1,243	\$154,656

Preventive Treatment Goal⁷

The AHS definition of treatment success for preventive treatment includes a 50% reduction in the frequency of headache or migraine days.

Acute Medications Used by MHI Migraine Population¹¹

		Total Scripts	Costs
CGRP Antagonist	2020	666	\$508,589
	2021	1,705	\$1,350,180
Ergot	2018	95	\$82,789
	2019	123	\$119,769
	2020	66	\$55,531
	2021	48	\$34,517
Serotonin 5HT-1F Agonists	2018	5	\$4,189
	2020	218	\$175,347
	2021	1,050	\$944,376
Triptans	2018	20,720	\$1,816,494
	2019	19,075	\$1,519,217
	2020	17,383	\$1,271,963
	2021	17,158	\$1,245,638

Acute Treatment Goal⁷

The AHS definition of treatment success for acute treatment includes rapid and consistent freedom from pain and associated symptoms, without recurrence.



Pharmacy benefit plans should align with treatment protocols and include the latest advances in migraine treatment.

AWP=average wholesale price; WAC=wholesale acquisition cost.

*Price is reflective of the amount due by patient and insurance combined. Due to contractual obligations, standardized proxy price has been implemented as prices of wholesale acquisition cost (WAC) or average wholesale price (AWP) cannot be disclosed.

†Guideline recommended for menstrual-associated migraine prevention.

There was a decrease in opioid use among the MHI migraine population from 2018 to 2021

Opioid Medications Used by the Migraine Population^{11*}

Year	Total Scripts	Total Rx Days' Supply	Distinct Person Count	Total Cost (Allowed)
2018	13,003	210,997	3,218	\$598,861
2019	11,053	172,622	2,960	\$464,317
2020	9,336	144,659	2,500	\$374,432
2021	9,205	137,420	2,491	\$352,898



Importance of limiting opioids within the migraine population¹³

Although guidelines do not recommend opioids for treating migraine, except under limited circumstances, a substantial proportion of individuals use opioids for acute treatment of migraine.

In the American Migraine Prevalence and Prevention study, approximately 30% of community-residing respondents reported opioid use for migraine.

In the ED, 59% of visits for migraine involved opioid administration or prescription.

Despite the potential for short-term benefits, opioids are associated with only modest initial efficacy, increased risk of chronicification, and potential for misuse, abuse, and dependence.



Adequately treating patients with migraine through preventive and acute therapies may help reduce the suboptimal use of opioids in the migraine population.



Pharmacy benefit plans should align with treatment protocols in order to reduce opioid use in the migraine population.

*Opioid prescription claims for all causes of the migraine having population. Opioid prescription utilization data represent the total prescriptions, Rx days' supply, distinct person count, and total allowed (Std. Price) of all prescription drug claims indicating the therapeutic class of "Analgesics – Opioid," prescribed for any cause, for the migraine population for each given year. As the data represent the total utilization, for any cause, of the migraine populations for each year, note that a portion of these prescriptions is likely to be unrelated to migraines.

Steps to raise awareness and improve the long-term care for individuals with migraine

STEP 1



Review your annual utilization data and consider data approaches for earlier identification of patients with headache syndromes/conditions and migraine, to include both preventive and acute migraine therapies, to understand the burden of migraine and improve access to appropriate care.

- Consult with your healthcare plan advisors to strategize how best to improve care.

STEP 2



Review your provider network and pharmacy benefit coverage to ensure your members have timely access to migraine specialists, telehealth services, and/or a migraine-treating primary care provider and the latest advances in migraine treatment.

STEP 3



Reduce the use of opioids for members with migraine through improved benefit plan coverage.

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