



**ICER OPEN COMMENT PERIOD ON:
ACUTE TREATMENTS FOR MIGRAINE: DRAFT EVIDENCE REPORT**

Submitted electronically to publiccomments@icer-review.org

December 6th, 2019

Steven D. Pearson, MD, President
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Two Liberty Square, Ninth Floor
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Dear Dr. Pearson,

The American Headache Society (AHS) and the American Migraine Foundation (AMF) appreciate the opportunity to comment on ICER's Acute Treatments for Migraine: Draft Evidence Report.

For 60 plus years, the American Headache Society has been and continues to be the leading professional society of health care providers dedicated to the study and treatment of migraine, headache, and face pain. With over 1400 members and associates, the Society's education, research, and advancement programs engage medical professionals throughout their careers, from the world's most sought after thought leaders to those at the beginning of their professional work in headache medicine. As the largest professional headache society of health care providers in the United States, and holding the distinction of CME credit provider with commendation from ACCME, AHS uses its strengths to design and deliver programs that teach, train and advance the field, whether designed to train professionals on the latest diagnostic methods, supporting and promoting the latest in headache research or educating on the newest of migraine and headache therapies, the Society is committed to advancing the expertise of its members and the field of headache. Working alongside the American Headache Society, the American Migraine Foundation advocates for, supports, educates, and engages the 37 million Americans who suffer the debilitating effects of migraine and other headache diseases. Founded by AHS in 2010, the AMF strives to mobilize a community for patient support and advocacy, as well as drive and support impactful research that translates into treatment advances.

The Society and the Foundation commend ICER's engagement with the various stakeholders from the migraine community and the ongoing communication between ICER and AMF throughout this process. The AMF represented by its Board Chairman and Executive Director provided feedback via teleconference on July 2nd, where we discussed current treatments in migraine and their effectiveness. After reviewing the full Draft Background and Scope and the current Draft Evidence Report, we would like to use this open comment period to emphasize the importance of the following:

AHS Consensus Statement

In response to its members' requests, the American Headache Society issued a consensus statement on integrating new migraine treatments into clinical practice in late 2018. This statement reviewed the indications for and goals of preventive and acute pharmacotherapy for patients with migraine. These guidelines were informed by input from patients and patient advocates, as well as expert clinicians and researchers in the field of headache medicine in both the United States and the European Union. The statement outlined the indications for initiating, continuing, combining, and

switching preventive and acute therapies for migraine. Its intended audience is for headache specialists, primary care providers, and other health care providers treating patients with migraine. The 18-page document not only addresses the goals of therapy but also outlines numerous patient factors that providers should take into consideration, such as comorbid and coexistent diseases. It is the Society's goal that the position statement informs clinical decision-making and guides health care providers on the appropriate integration of new and emerging treatments for the acute and preventive treatment of migraine. ICER's Draft Evidence Report suggests that adverse cardiovascular events are extremely rare in clinical practice based on observational studies. However, post-marketing surveillance studies demonstrate a substantially increased risk of serious adverse events with the use of triptans. In one study evaluating the United States Food and Drug Administration (FDA) Adverse Events Reporting System database, among 2,131,688 post-marketing reports of serious adverse events, 7808 concerned triptans. The study found several reports of serious and unexpected vascular events associated with triptan use (for example: ischaemic cerebrovascular events, aneurysms, artery dissections, and pregnancy-related vascular events). This raises concerns about triptan use in patients with risk factors for vascular disorders and during pregnancy. As such, The American Headache Society and the American Migraine Foundation encourages ICER to continue to reference the AHS Consensus Statement during this review process and all available data for adverse cardiovascular events.

Patient Population

ICER's Draft Evidence Report broadly addresses the unmet need of the patient population that would benefit from the new acute treatments early in the report; however, that focus is lost as the historical triptan data is analyzed. As stated in the ICER Draft Evidence Report, there are nonspecific and specific treatments for acute migraine attacks. The Society and the Foundation believe ICER's Draft Evidence Report falls short in appropriate acknowledgment that although the currently available acute medications are effective for some patients, they are ineffective, poorly tolerated, and/or contraindicated in many other patients. In addition, triptans remain contraindicated in patients with established cardiovascular disease (CV) and any suggestion that "decades of use" has in any way changed this contraindication or relaxed patient or clinicians' concerns of the the potential for serious adverse CV events is misleading and not in the best interest of patients.

Further, ICER's Draft Evidence Report de-emphasizes the potential for triptans to cause medication overuse headache (MOH). Further, triptans are used by only 15% of the US population, and over 95% of individuals with migraine in the US have at least one unmet acute treatment need. Due to these unmet needs, triptans have high discontinuation rates ranging from 55-82%. Discontinuation secondary to inefficacy ranges from 26-40% of patients, and discontinuation secondary to side effects ranges from 17-23%. Also, a large US administrative claims dataset from 2001 to 2005 demonstrated that 54% of new triptan users did not refill their index triptan, and 67% of this subgroup switched to a non-triptan migraine medication at the time of first refill. Moreover, switching among triptans is very low, ranging between 9% and 14%. More commonly, triptan users who switched therapies turned to a different medication class such as NSAIDs, opioids, and barbiturates. In a recent study involving a commercially insured population in the US, 51% of patients starting a triptan do not refill their initial triptan over 12 months of follow-up, and 44% do not refill that index prescription over 24 months of follow-up (Lipton RB et al. Submitted for publication). In keeping with previous studies, switching between triptans was uncommon, with only 9.4% of patients receiving a second triptan over 12 months and 14.0% receiving a second triptan over 24 months. Use of other medications for acute treatment of migraine, such as opioids and NSAIDs, was high in the 12-month and 24-month periods among patients with and without a refill of their index triptan. The low rate of switching between triptans and high rates of opioid use in real-world practice suggests insufficient response or tolerability issues with the current standard of care. Triptan medications and NSAIDs are not recommended for those with a history of cardiovascular disease, and triptans are contraindicated for those with a history of cardiovascular and/or cerebrovascular disease. ICER's Draft Evidence Report fails to recognize that this vulnerable patient population, for whom NSAIDs and triptans are contraindicated, who may benefit from new acute treatments that do not constrict blood vessels. In addition, ICER's Draft Evidence Reports fails to identify that migraine is an independent risk factor for cardiovascular and cerebrovascular disease including ischemic stroke, transient ischemic attacks, ischemic heart disease, and myocardial infarction, as well as increased morbidity and mortality due to these events/diseases. In fact, Migraine with aura is associated with a 20% increased risk of all-cause mortality (*BMJ Open* 2018;8:e02049).

Additionally, over 2 million people in the US have migraine and a history of greater than or equal to 1 cardiovascular event/disease that may limit the use of triptans. The unmet need in this vulnerable population results in pain, disability, and high individual, family, societal, and economic burden. This population of patients may remain disability and having to rely on medications such as opioids, butalbital-containing, and caffeine-containing medications. Opioids, butalbital and caffeine-containing medications contribute to medication overuse headache (MOH), suboptimal acute

treatment of migraine, and development of disease progression with functional and structural brain alterations. In addition, the US is in an opioid epidemic. We must reduce the use of opioid medications to save lives. New effective acute treatment options may be opioid-sparing medications. These options should be maximized, and access barriers should be lowered.

Finally, medication overuse headache (MOH) is a global epidemic that affects at least 1% of the population. It is among the 20 most disabling medical conditions according to the World Health Organization. All acute medications, as indicated in the ICER Draft Evidence Report, have the potential to and have been associated with MOH. The *gepants*, in particular, may represent the first acute migraine treatment that may not only be devoid of risk for MOH, but may actually reduce the risk of MOH. Indeed, in a recent study evaluating the efficacy of *atogepant* for migraine prevention, up to 60% of patients experienced a greater than 50% reduction in mean monthly migraine days when dosed daily or twice daily. This is not surprising given its unique mechanism of action (antagonist) compared to other acute treatments such as triptans and ergots (agonists). In addition, *erenumab* a CGRP receptor-targeted monoclonal antibody that targets the same receptor as gepants, has been shown to be an effective preventive treatment in patients with chronic migraine who overuse acute medications. Finally, CGRP has been shown in experimental studies to play an integral role in the pathophysiology of MOH. Therefore, blocking the CGRP pathway with *gepants* may prevent the development of or reverse MOH.

Indirect Costs and Societal Burden of Migraine.

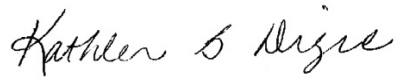
AHS and AMF are dialed-in to the current framework and identify it as one that may not adequately address the immense indirect costs and societal burden of migraine. Most of the direct costs due to migraine are incurred by public and commercial payors. Direct medical costs for individuals with migraine are significantly higher overall (40%) compared with matched non-migraine patients, both overall and within specific cost categories, such as emergency department (ED) visits (28%), inpatient (36%) and outpatient (45%) visits, and pharmacy expenses (36%). Indirect costs have been shown in previous studies to be substantial. In fact, migraine is unique in that a large majority of its economic burden is attributed to costs that are directly attributed to indirect costs. This translates to a significant burden on employers, as indirect costs are primarily calculated as absenteeism and presenteeism. Approximately 113 million workdays are lost annually in the United States due to absenteeism from individuals with migraine. The cost of this to employers exceeds \$13 billion each year. Moreover, individuals with migraine are 2.5 and 2.4 times more likely to have a short-term and long-term disability claim, respectively, with an average cost of \$26,543 per claim, compared with non-migraine individuals. In addition, more than half of those impacted by migraine state that their work or school productivity is reduced by at least 50%. In addition, because 10% of children and adolescents experience migraine and some develop chronic migraine, clinical experience suggests there is a significant impact on career choices and wage growth among those that are the most disabled.

Lack of Long-Term Data Undervalues New Migraine Treatments.

AHS and AMF are of the opinion that the new acute treatments under review should not be viewed in isolation. The new therapeutic agents, while being used for acute therapy, will also play an important role for patients who are triptan non-responders, cannot tolerate triptans, or, and have contraindications to their use. As such, there are two distinct migraine patient populations that are considered for acute treatment: the first group: patients that are evaluated as safe to use triptan treatments and are either naïve to their use or have found them to be effective and well tolerated; and second: patients for whom triptans are contraindicated, poorly tolerated, or ineffective. The American Headache Society and the American Migraine Foundation encourages that any cost-effectiveness assessment of new therapies for the acute treatment of migraine must separate these two patient populations and conduct two separate cost-effectiveness assessments.

Thank you for the opportunity to provide public comments regarding ICERs Draft Evidence Report on Acute Treatments for Migraine. If you have questions, please contact Dr. Kathleen Digre at Kathleen.digre@hsc.utah.edu, David Dodick at Dodick.David@mayo.edu, or Amaal Starling at Starling.Amaal@mayo.edu or Lawrence C. Newman at Lawrence.Newman@nyulangone.org.

On behalf of the American Headache Society and the American Migraine Foundation,



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References

The American Headache Society Position Statement On Integrating New Migraine Treatments Into Clinical Practice (*Headache* 2019; 59:1-18)

Giuseppe Roberto, Carlo Piccinni, Roberto D'Alessandro and Elisabetta Poluzzi. **Triptans and serious adverse vascular events: Data mining of the FDA Adverse Event Reporting System database.** *Cephalalgia* 2014;34:5-13

Alam, A., Munjal, S., Reed, M., et al **Triptan use and discontinuation in a representative sample of persons with migraine: Results from Migraine in America Symptoms and Treatment (MAST) study.** *Postgrad Med*, 2018; 130, 1-91

Katić J, Rajagopalan S, Ho T, Chen Y, and Hu H. **Triptan persistency among newly initiated users in a pharmacy claims database.** *Cephalalgia*. 2011;31(4):488–500

Lipton RB, Munjal S, Alam A, Buse DC, Fanning KM⁵, Reed ML, Schwedt TJ, Dodick DW. **Migraine in America Symptoms and Treatment (MAST) Study: Baseline Study Methods, Treatment Patterns, and Gender Differences.** *Headache*. 2018 Oct;58(9):1408-1426. doi: 10.1111/head.13407. Epub 2018 Oct 20.

Mahmoud AN, Mentias A, Elgendy AY, Qazi A, Barakat AF, Saad M et al (2018) **Migraine and the risk of cardiovascular and cerebrovascular events: a meta-analysis of 16 cohort studies including 1 152 407 subjects.** *BMJ Open* 8:e020498;

Becker C, Brobert GP, Almqvist PM, Johansson S, Jick SS, Meier CR (2007) **Migraine and the risk of stroke, TIA, or death in the UK (CME).** *Headache* 47:1374–1384

Buse DC, Reed ML, Fanning KM, Kurth T, Lipton RB (2017) **Cardiovascular events, conditions, and procedures among people with episodic migraine in the US population: results from the American Migraine Prevalence and Prevention (AMPP) study.** *Headache* 57:31–44

Peter J. Goadsby, David W. Dodick, Joel M. Trugman, et al **Orally Administered Atogepant Was Efficacious, Safe, and Tolerable for the Prevention of Migraine: Results From a Phase 2b/3 Study (S17.001)** April 09, 2019; 92 (15 Supplement) MAY 6, 2019

Milena De Felice, PhD, Michael H. Ossipov, PhD, Ruizhong Wang, PhD et al **Triptan-Induced Latent Sensitization A Possible Basis for Medication Overuse Headache,** *Ann Neurol*. 2010 March ; 67(3): 325–337. doi:10.1002/ana.21897

Bonafede M, Sapra S, Shah N, Tepper S, Cappell K, Desai P **Direct and Indirect Healthcare Resource Utilization and Costs Among Migraine Patients in the United States.** *Headache*. 2018 May; 58(5): 700-714.)

December 6, 2019

Allergan comments on ICER's Draft Evidence Report: "Acute Treatments for Migraine"

On behalf of Allergan plc, the manufacturer of ubrogepant, we submit this letter in response to the ICER's Draft Evidence Report (DER). Our aim is to provide important considerations that we strongly believe should be incorporated into the Evidence Report.

Summary of key recommendations, in order of importance:

1. Use clinical trial efficacy observations beyond 2 hours in the cost effectiveness analysis (CEA)
2. Use triptan insufficient responder (TIR) data in the CEA base case to evaluate ubrogepant in Population 1. Use modified intent-to-treat (mITT) data for Population 2
3. Implement treatment discontinuation effects into the CEA as described in the DER
4. Include indirect costs in the CEA base case to fully account for the economic burden of migraine
5. Include additional studies cited in Xu 2016 and include AEs related to treatment from rimegepant's Study 302 in the network meta-analysis to be consistent with the PICOTS (Populations, Interventions, Comparators, Outcomes, Timing, and Settings) criteria set by ICER
6. Adjust for the increased placebo response rate over time reflected in triptan and emerging treatment trials in the network meta-analyses
7. Include adverse event costs in the CEA
8. Use the same assumption for drug prices across emerging treatments in the CEA
9. Clarify how the equal value of life years gained (evLYG) was calculated and the discrepancy between the evLYG and quality-adjusted life year (QALY) outcomes given the lack of mortality effects in the model

Recommendation 1: Use clinical trial efficacy observations beyond 2 hours in the CEA

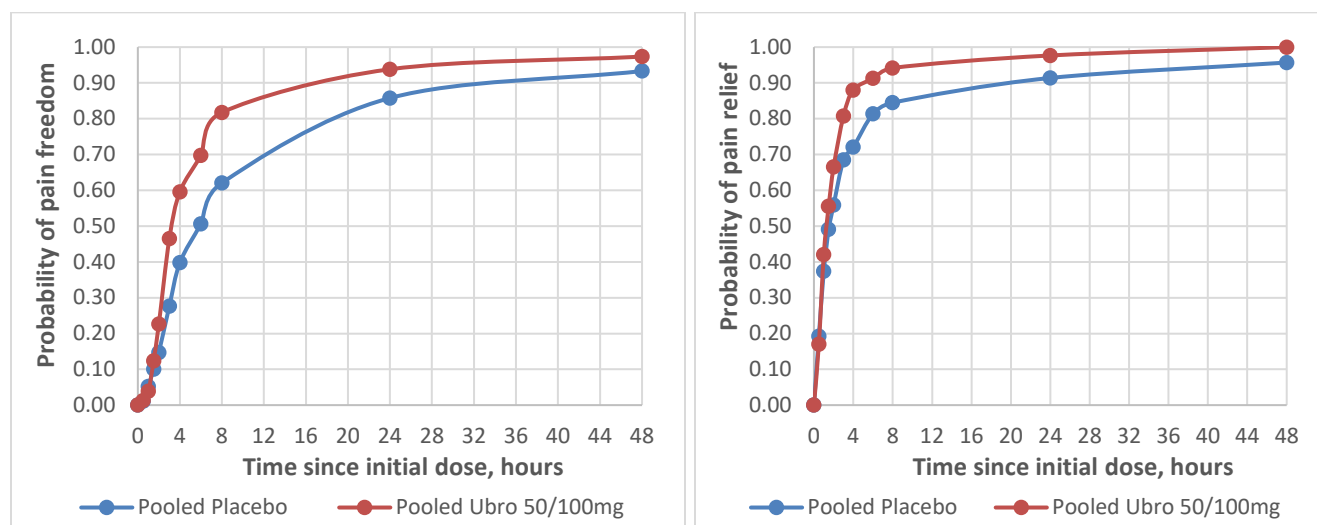
The ACHIEVE clinical trials for ubrogepant were explicitly designed to measure benefit of treatment at and beyond 2 hours.^{1,2} The current ICER model does not fully utilize clinical trial efficacy observations beyond 2 hours even though this data makes an important difference in key outcomes for this ICER review. Page 62 of the DER states that "patients who did not respond at 2 hours were similarly assumed to achieve response at 8 hours and 24 hours as per the placebo response from Dodick et al. 2019³." Table 4.3 on page 63 of the DER presents "assumed" differences in response rates for ubrogepant versus usual care of 3.5% (57.5% vs. 54.0%) for pain freedom (PF) at 8 hours, and 3.1% (89.4% vs. 86.3%) for pain relief (PR) at 8 hours. However, these assumptions are very different from observed ubrogepant trial data. First, Dodick et al. 2019³ reports statistically significant differences between ubrogepant 50 mg and placebo at 8 hours for PF of 18% (68% vs. 50%) and for PR of 10% (92% vs. 82%), respectively ($p < 0.05$ for both comparisons). Second, Kaplan-Meier (KM) time-to-event analyses of the pooled ACHIEVE trials (censoring for rescue medication or optional study medication second dose in the mITT population) demonstrate increased separation between ubrogepant and placebo from 2 to 8 hours after the initial dose,^{1,2,4} which is illustrated in Figure 1 below. Similar trends were observed with uncensored KM time-to-event analyses of the pooled ACHIEVE trials.⁴

The model inputs in Table 4.3 of the DER fail to account for above defined differences in the efficacy gain beyond 2 hours for PR and PF as observed in the ACHIEVE trials and significantly underestimate the benefits of acute treatments for migraine patients. Allergan estimates that using the treatment efficacy inputs in Table 4.3 of the DER, versus the now published KM estimates, underestimates the incremental effectiveness of ubrogepant by more than 50%.

The KM data for time to PF are included in the primary publications of ACHIEVE I and ACHIEVE II and are core to the data package for ubrogepant trials^{1,2}. Using the censored KM data represents a robust way to minimize confounding due to greater rates of rescue medication use in the placebo group observed in the ACHIEVE trials. Additionally, they provide a way to compare benefit beyond 2 hours across emerging treatments. As noted in Allergan's comments to ICER on the Model Analysis Plan, the placebo arms in the clinical trials of emerging treatments are not comparable due to differences in timing and use of rescue, allowable rescue medications, and optional second dose. Hence, Allergan recommends using censored KM data for time to PF and PR for ICER's Population 2.

Allergan acknowledges ICER's efforts to create a model that is sufficiently simple and yet sophisticated enough to permit a comparable assessment across emerging treatments. However, the simplified assumptions underestimate the value of emerging products for the acute treatment of migraine. Allergan recommends that ICER revise the treatment efficacy inputs for ubrogepant to use the censored KM data to account for the benefits beyond 2 hours demonstrated in the ACHIEVE trials for Population 2.

Figure 1. Censored Kaplan-Meier time to pain freedom and pain relief for the modified intent-to-treat population in pooled studies ACHIEVE I and ACHIEVE II^{1,2,4}



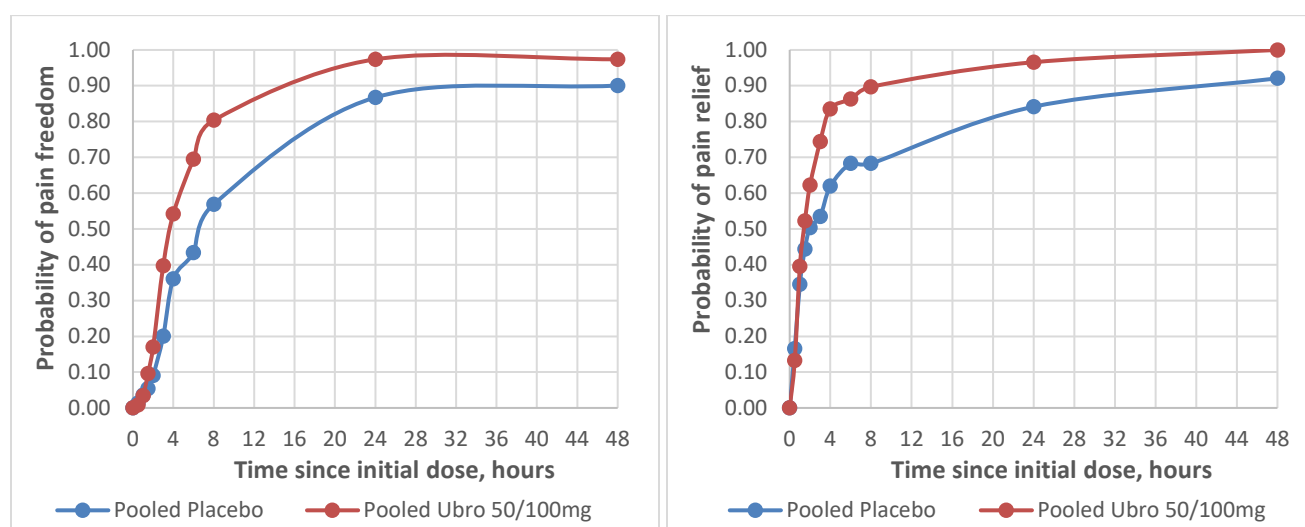
Recommendation 2: Use TIR data in the CEA base case to evaluate ubrogepant in Population 1. Use mITT data for Population 2

The ACHIEVE trials included an *a priori* defined, stratified-randomized subgroup by TIR status with a definition identical to that defined by ICER for Population 1. Therefore, this subgroup is most clinically relevant for ICER's Population 1. As noted in Allergan's comments to ICER on the Model Analysis Plan, TIR in ACHIEVE trials is defined as a patient who met any of the following criteria:

- currently using a triptan or had used a triptan in the past 6 months, and on the occasions that a triptan dose was taken, had not achieved pain freedom (no headache pain) at 2 hours post-dose on more than half of those occasions
- no longer used a triptan due to lack of efficacy
- no longer used a triptan due to side effects
- never used a triptan due to warnings, precautions, or contraindications^{5,6}

Due to the alignment of the TIR definition with the definition of ICER's Population 1 and the randomization of patients by historical triptan response, the TIR results provide specific and robust evidence of ubrogepant's efficacy in this patient population (see Figure 2). Using the TIR subgroup analyses for this sub-population also addresses one of the primary concerns raised by voting panel members in ICER's 2018 review of preventive treatments for migraine regarding the generalizability of the trial results to the target population.⁵ As stated in Recommendation 1, censored KM analyses provide a robust approach to capture the benefit beyond 2 hours. Allergan recommends that for ICER's Population 2 base case, mITT efficacy endpoints and censored KM data should be used. Allergan further recommends using the TIR results (i.e., efficacy endpoints and censored KM data) from the ACHIEVE trials as the base case for Population 1. For comparability across emerging treatment ICER could also consider TIR based on insufficient efficacy available across the emerging treatments

Figure 2. Censored Kaplan-Meier time to pain freedom and pain relief for the triptan insufficient responders in pooled studies ACHIEVE I and ACHIEVE II⁴



Recommendation 3: Implement treatment discontinuation effects into the CEA as described in the DER

Contrary to the model description on page 64 of the DER, the ICER model does not include any effect of discontinuation due to lack of efficacy. Not including treatment discontinuation effects underestimates the value to patients who continue treatment. ICER acknowledges this on page 61 of the DER stating “Assuming patients would continue treatment, even when it wasn’t effective, would bias the analysis against lasmiditan, rimegepant, and ubrogepant, when compared to usual care.” Allergan recommends that ICER implement treatment discontinuation effects into the CEA as described in the DER.

Recommendation 4: Include indirect costs in the CEA base case to fully account for the economic burden of migraine

In ICER's 2018 review of preventive treatments of migraine⁷ as well as ICER's current review of acute treatments, patients and patient advocacy groups (such as the American Headache Society, the Alliance for the Adoption of Innovations in Medicine, and the Headache and Migraine Policy Forum) have urged ICER to consider indirect costs in the CEA base case to fully account for the substantial impact of lost

productivity due to migraine. Migraine is a condition that affects working age adults. The highest prevalence in the United States is among adults aged 35-45 years⁸ and 69% of those with migraine are covered by commercial insurance.⁹ Due to high indirect costs associated with lost productivity experienced with migraine, it is a disease that is highly relevant to payers and employers. Despite strong opinions from these advocacy groups and ICER's recognition in the DER of the economic burden of migraine associated with lost productivity, the CEA considers indirect costs only as a scenario. Of note, indirect costs were included in the 2014 ICER Migraine review base case analysis. Inclusion of indirect costs in the base case analysis is not only essential in order to ensure consistency across migraine reviews conducted by ICER but also to more accurately evaluate cost-effectiveness in the migraine population. Allergan recommends that ICER include indirect costs in the base case analysis to fully account for economic burden of migraine.

Recommendation 5: Include additional studies cited in Xu 2016 and include AEs related to treatment from rimegepant's Study 302 in the network meta-analysis to be consistent with the PICOTS criteria set by ICER

Two triptan trials, Kolodny 2004¹⁰ and Pini 1995,¹¹ were included in Xu 2016¹², but excluded in ICER's evaluation of comparative clinical effectiveness. Both Kolodny 2004 and Pini 1995 enrolled adults with at least a six-month history of migraine with or without aura as defined by the International Headache Society (IHS) criteria for migraine (1988).¹³ The efficacy data from these trials cannot be included in the NMA since Kolodny 2004 did not report data for the placebo arm and Pini 1995 reported efficacy data at 4 hours only. However, these studies meet the PICOTS criteria set by ICER and safety data are reported for patients who treated a moderate or severe migraine attack. Hence, these two trials should be included in ICER's evaluation of potential harms; exclusion of these creates inconsistency in the inclusion/exclusion criteria set in ICER's assessment of comparative clinical effectiveness. Additionally, data related to treatment-emergent AEs (TEAEs; labeled as AEs related to treatment in the source data) for rimegepant Study 302 were listed as "not reported" in Table D7 of the DER, but are publicly available in presentations made at the 2018 Migraine Trust International Symposium (MTIS)¹⁴ and the 2018 meeting of the American Headache Society (AHS).¹⁵

Allergan recommends that ICER include the safety data in Kolodny 2004, Pini 1995, and the Study 302 data from the two rimegepant presentations in their evaluation of comparative clinical effectiveness. Raw data are provided in Table A1 of the appendix.

Recommendation 6: Adjust for the increased placebo response rate over time reflected in triptan and emerging treatment trials in the network meta-analyses

Any comparative effectiveness analysis that includes emerging and existing treatments should account for historical changes in the placebo response over time in the migraine category. In ICER's comparative effectiveness analysis, the average placebo response rates prior to 2014 were 9.6% for PF at 2 hours and 28.7% for PR at 2 hours. In the phase 3 trials for the new therapies placebo response rates were 14.2% for PF at 2 hours and 45.6% for PR at 2 hours, increases of 48% and 59%, respectively. Possible explanations for the increasing placebo response over the last twenty years include increase in general awareness about migraine as a disease state, higher patient expectations of treatment response due to medical advancements leading to availability of treatments, the evolution of endpoints of clinical trials for acute treatment of migraine, and changes in the perception and stigma associated with migraine.

This change in placebo response over time represents a treatment effect modifier that biases the results of the NMA in favor of treatments with a lower placebo response in the source trials. Such a case was recently demonstrated in a multiple treatment comparison for psoriasis.¹⁶ Models adjusting for cross-trial heterogeneity led to different interpretations of findings than those based on the unadjusted model.

Allergan acknowledges ICER's efforts to keep the comparative effectiveness analysis simple and focused by limiting the comparators to two triptans and utilizing a recent systematic review and network meta-analysis as its primary source. However, such a focused approach introduces systematic bias that unnecessarily restricts robust and credible assessments; this approach makes it more likely that adjusted models will not be able to identify the effect modifiers or may erroneously identify interactions, which are not associated with the dramatic increase seen in the placebo response over time. Allergan recommends that ICER use adjusted models for their primary analyses to account for the differences in populations evident by the change in placebo response over time. Publication year is a possible proxy for those differences, which should be considered when addressing the challenges inherent in an NMA of acute treatments for migraine. ICER should also acknowledge the limitations of their comparative efficacy analysis in the Evidence Report to ensure readers accurately interpret the NMA results.

Recommendation 7: Include adverse event costs in the CEA

An earlier cost effectiveness analysis of opioids for the treatment of non-cancer pain estimated that 8% of patients experiencing fatigue or dizziness will require treatment based on a Delphi panel of 9 practicing physicians experienced in pain control.¹⁷ Similarly, in the 2018 ICER review of preventive treatments for migraine, ICER assumed that each AE incurred a physician office visit.⁷ Using this assumption and the ICER assumption of a level 2 physician office visit (HCPCS code 99212) from the 2019 Center for Medicare & Medicaid Services physician fee schedule,¹ \$45.77 × 8% amounts to \$3.66 per episode of dizziness and fatigue. Allergan recommends that the costs of adverse events associated with each treatment be incorporated into the economic analysis to fully account for the impact of adverse events since there are differences in safety profile of the emerging acute treatments for migraine as well as the triptans.

Recommendation 8: Use the same assumption for drug prices across emerging treatments in the CEA

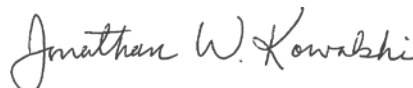
ICER's assumption of different prices for emerging treatments in the absence of publicly available price information impacts cost-effectiveness ratios and probabilistic sensitivity analysis (PSA) in the DER. Differing pricing assumptions used by ICER cause artificial differences in the PSA, unreliably favoring the product with an arbitrary lower price assumption. Allergan recommends that ICER use the same drug prices across all three emerging treatments until more than one price becomes known.

Recommendation 9: Please clarify how the evLYG was calculated and the discrepancy between the evLYG and QALY outcomes given the lack of mortality effects in the model

The evLYG and QALYs gained should be equal if the evaluated intervention does not affect the length of life, as in this case. We request ICER to clarify the definition, particularly to specify how evLYG and QALYs are different if an evaluated intervention does not affect the length of life.



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Jonathan W. Kowalski, PharmD, MS, Vice President, Allergan

References

1. Lipton RB, Dodick DW, Ailani J, Lu K, Finnegan M, Szegedi A, Trugman JM. Effect of Ubrogapant vs Placebo on Pain and the Most Bothersome Associated Symptom in the Acute Treatment of Migraine: The ACHIEVE II Randomized Clinical Trial. *JAMA*. 2019;322(19):1887-98.
2. Dodick DW, Lipton RB, Ailani J, Lu K, Finnegan M, Trugman JM, Szegedi A. Ubrogapant for Acute Migraine Treatment [in press]. *New England Journal of Medicine*.
3. Dodick DW, Goadsby, P.J., Lu, K., Jakate, A., Szegedi, A., Trugman, J.M. Ubrogapant Achieves Early Pain Relief for the Acute Treatment of Migraine. Presented at the Annual Meeting of the American Headache Society (AHS); 2019; Philadelphia, PA
4. Allergan data on file.
5. Allergan Pharmaceuticals International. Data on File. Clinical Study Report UBR-MD-01 (ACHIEVE I). A Phase 3, Multicenter, Randomized, Double-Blind, Placebo-Controlled Single Attack Study to Evaluate the Efficacy, Safety, and Tolerability of Oral Ubrogapant in the Acute Treatment of Migraine.; 2018.
6. Allergan Pharmaceuticals International. Data on File. Clinical Study Report UBR-MD-02 (ACHIEVE II). A Phase 3, Multicenter, Randomized, Double-Blind, Placebo-Controlled Single Attack Study to Evaluate the Efficacy, Safety, and Tolerability of Oral Ubrogapant in the Acute Treatment of Migraine.; 2018
7. Institute for Clinical and Economic Review. Calcitonin Gene-Related Peptide (CGRP) Inhibitors as Preventive Treatments for Patients with Episodic or Chronic Migraine: Effectiveness and Value. Final Evidence Report. Boston MA: Institute for Clinical and Economic Review; 2018. <https://icer-review.org/material/cgrp-final-report/>.
8. World Health Organization (WHO). <http://www.who.int/en/news-room/fact-sheets/detail/headache-disorders>. Accessed 17 July 2018.
9. Symphony Health, PHAST®, January 2017 – June 2018.
10. Kolodny A, Polis A, Battisti WP, Johnson-Pratt L, Skobieranda F. Comparison of Rizatriptan 5 mg and 10 mg Tablets and Sumatriptan 25 mg and 50 mg Tablets. *Cephalalgia*. 2004;24(7):540-546.
11. Pini LA, Sternieri E, Fabbri L, Zerbini O, Bamfi F, Oral Sumatriptan Italian Study Group 3. High Efficacy and Low Frequency of Headache Recurrence After Oral Sumatriptan. *Journal of International Medical Research*. 1995 Mar;23(2):96-105. doi:10.1177/030006059502300202
12. Xu H, Han W, Wang J, Li M. Network Meta-Analysis of Migraine Disorder Treatment by NSAIDs and Triptans. *J Headache Pain*. 2016;17(1):113.
13. Headache Classification Committee of the IHS. Classification and Diagnostic Criteria for Headache Disorders, Cranial Neuralgias and Facial Pain. *Cephalalgia* 1988;8(suppl 7):1-96.
14. Lipton RB, Coric V, Stock EG, Stock DA, Morris BA, McCormack TJ, Frost M, Gentile K, Jensen CM, Dubowchik GM, Conway CM, Croop R, Goadsby PJ. Rimegepant 75 mg, an Oral Calcitonin Gene-Related Peptide Antagonist, for the Acute Treatment of Migraine: Two Phase 3, Double-Blind, Randomized, Placebo-Controlled Trials. Poster presented at the: the 17th Migraine Trust International Symposium; September 7, 2018; London. Available at https://www.biohavenpharma.com/sites/default/files/documents/Rimegepant-Phase-3-Studies-301-302_MTIS-2018-Digital-Poster-Presentation.pdf
15. Lipton RB, Coric V, Stock EG, Stock D, Morris BA, McCormack TJ, Frost M, Gentile K, Jensen CM, Dubowchik GM, Conway CM, Croop R. Rimegepant 75 mg, an Oral Calcitonin Gene-Related Peptide Antagonist, for the Acute Treatment of Migraine: Two Phase 3, Double-Blind, Randomized,

Placebo-Controlled Trials. Presented at the: 60th Annual Scientific Meeting of the American Headache Society; June 30, 2018; San Francisco, CA. Available at

https://www.biohavenpharma.com/sites/default/files/documents/Rimegepant-Phase-3-Study-302_AHS-2018-Late-Breaking-Platform-Presentation-1.pdf

16. Cameron C, Hutton B, Druchok C, McElligott S, Nair S, Schubert A, Situ A, Varu A, Villacorta R. Importance of Assessing and Adjusting for Cross-Study Heterogeneity in Network Meta-Analysis: A Case Study of Psoriasis. *Journal of Comparative Effectiveness Research*. 2018;7(11):1037-51.
17. Frei A, Andersen S, Hole P, Jensen NH. A One Year Health Economic Model Comparing Transdermal Fentanyl with Sustained-Release Morphine in the Treatment of Chronic Noncancer Pain. *J Pain Palliat Care Pharmacother*. 2003;17(2):5-26.
18. Centers for Medicare & Medicaid Services (CMS). Physician Fee Schedule Search. <https://www.cms.gov/apps/physician-fee-schedule/search/search-results.aspx?Y=0&T=0&HT=0&CT=0&H1=99212&M=5>. Accessed 18 November 2019.

Appendix

Table A1. Safety data in Kolodny 2004, Pini 1995, and Study 302

Trial	Arms	Any AE			TEAEs			Nausea			Dizziness			Somnolence		
		n	N	%	n	N	%	n	N	%	n	N	%	n	N	%
Kolodny 2004	Sumatriptan 50 mg	142	287	49.5	110	287	38.3	19	287	6.6	30	287	10.5	18	287	6.3
	Placebo	102	288	35.4	61	288	21.2	12	288	4.2	13	288	4.5	13	288	4.5
Pini 1995	Sumatriptan 100 mg	NR			18	151	12	5	151	3	NR			NR		
	Placebo				6	87	7	1	87	1						
Study 302	Rimegepant	93	543*	17.1	10	543*	1.8	10	543*	1.8	NR			NR		
	Placebo	77	543*	14.2	3	543*	0.6	6	543*	1.1						

Abbreviations: NR, not reported.

* N values are reported number of patients evaluated for safety

Subject: Public Comment on ICER Review of Acute Medicines for Migraine
Name: Amanda Ingrassia

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 14 years. I experience a migraine attack every single day of the month. When I have a migraine attack, I feel horrible. My body and mind are in absolute anguish. I burned myself once as a child. I know the searing pain of fire. I am not exaggerating when I say the pain is like being on fire. But no amount of cold water helps. It stabs, pulses, burns, and crushes. I often lose awareness of anything around me, only aware of the pain. I become anxious and depressed. I retch and vomit. I cover my eyes with masks and blankets. I use ear plugs and noise cancelling headphones. I stay as still as I can for hours on end, the slightest movement causes all of the pain and symptoms to flare even higher.

Migraine has a major and negative impact on my life. I lost the job I loved because I could no longer work in an office or drive myself to meetings. I have lost friends because they do not understand that I want to be social, but the pain is unpredictable and impossible to “fight through” to keep plans. I have missed parts of family weddings. I have missed vacations and activities. I am unable to keep my own home clean or predictably cook for myself. I am forced to live with family who takes care of me like one would an elderly relative.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine do not work very well. Over the course of my life I have tried over 30 different treatments for my migraine. While some have helped curb the pain or symptoms, none have stopped them. While chasing a symptom free day, I have endured side effects that include vertigo, altered taste (everything tastes like fish now), numbness, pins and needles, a dystonic reaction (which was similar to a full body seizure that lasted for hours while I was still conscious), loss of sensation, vomiting, nausea, headache (ironically), changes in vision, fear, pain, and anxiety.

I am able to use triptans, but they have never stopped my attacks, only temporarily reduced the severity. I am allergic to many of them. I cannot use DHE due to the overwhelming negative side effects that are not manageable even in a hospital setting.

Migraine is an expensive disease to have, I spend over \$12,000 each year to try and manage my migraine attacks. This does not even include the increased cost of dietary changes, travel to and from appointments, items to manage symptoms (such as ice packs, softer light bulbs, black out curtains, etc) or the increased financial burden my family bears because I live with them.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I want to be more active in my community. I want to support myself and have the same

opportunities as those around me. But I desperately need new and affordable treatments to do this. These new acute treatments may be life changing for me. I respectfully ask you to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Amanda Ingrassia

Editor in Chief, *My Chronic Brain*



**ICER OPEN COMMENT PERIOD ON:
ACUTE TREATMENTS FOR MIGRAINE: DRAFT EVIDENCE REPORT**

Submitted electronically to publiccomments@icer-review.org

December 6th, 2019

Steven D. Pearson, MD, President
Institute for Clinical and Economic Review
Two Liberty Square, Ninth Floor
Boston, MA 02109

Dear Dr. Pearson,

On behalf of the American Migraine Foundation, we would like to submit the following name for attendance and speaker comments on January 23, 2020 in Rosemont, Illinois.

**Nim Lalvani, MPH
Executive Director
The American Migraine Foundation
E: nlalvani@talley.com
Ph: +1.856.423.7222 Ext 244**

In addition to serving as the Executive Director of the American Migraine Foundation, Ms.Lalvani is also a person living with migraine.

Thank you,

Nim Lalvani

Nim Lalvani, MPH
Executive Director
The American Migraine Foundation

Michelle Poulin

Senior Program and Event Coordinator

Institute for Clinical and Economic ReviewHi Amy,

Thank you for submitting public comments! In accordance with our Public Comment Guidelines, can you please submit these as a Word document?

Thank you!
Michelle

Michelle Poulin

Senior Program and Event Coordinator

Institute for Clinical and Economic Review

Two Liberty Square, 9th Floor

Boston, MA 02109

mpoulin@icer-review.org

[617-528-4013](tel:617-528-4013) x7033

www.icer-review.org

From: Amy Inskeep <asinskeep@gmail.com>

Sent: [Wednesday, December 4, 2019 7:49 AM](#)

To: PublicComments <publiccomments@icer-review.org>

Subject: Public comment on ICER review of acute medicines for migraines

Name: Amy Sue Inskeep

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 40 years. I experience an average of 10 to 16 headache days per month. When I have a migraine attack, I have severe headache, nausea, vomiting, vertigo, can't see well, noise and smells cause great pain. I am unable to work or even do simple tasks at home due to movement causes me to vomit.

Migraine has a major and negative impact on my life. I'm a nurse and have lost jobs due to migraines and now can only work limited hours. I miss out on family outings and events. It's very difficult to plan anything because I never know when a migraine might occur.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried at least 40 different treatments for my migraine both traditional and non traditional. Some work for a while while others cause too severe side effects to continue. I used to tolerate Triptans but now they all cause severe chest pain and Drs will not prescribe them to me to to risk. I have used Botox as well but it also is now ineffective. I've tried DHE and multiple others with no success. I recently tried Aimovig only to develop severe diarrhea which lasted for months causing me to homebound and almost get hospitalized.

Migraine is an expensive disease to have, I spend several hundred if not thousand of dollars each year to try and manage my disease

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Amy S Inskeep RN BSN

Sent from my iPhone

Amy Inskeep

I can do all things through Christ who strengthens me Philippians [4:13](#)

Two Liberty Square, 9th Floor

Boston, MA 02109

mpoulin@icer-review.org

[617-528-4013](tel:617-528-4013) x7033

www.icer-review.org

From: Amy Inskeep <asinskeep@gmail.com>

Sent: [Wednesday, December 4, 2019 7:49 AM](#)

To: PublicComments <publiccomments@icer-review.org>

Subject: Public comment on ICER review of acute medicines for migraines

Name: Amy Sue Inskeep

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 40years. I experience an average of 10 to 16 headache days per month. When I have a migraine attack, I have severe headache,nausea,vomiting,vertigo, can't see well, noise and smells cause great pain. I am unable to work or even do simple tasks at home due to movement causes me to vomit.

Migraine has a major and negative impact on my life. I'm a nurse and have lost jobs due to migraines and now can only work limited hours. I miss out on family outings and events. It's very difficult to plan anything because I never know when a migraine might occur.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried at least 40 different treatments for my migraine both traditional and non traditional. Some work for a while while others cause too severe side effects to continue. I used to tolerate Triptans but now they all cause severe chest pain and Drs will not prescribe them to me to to risk. I have used Botox as well but it also is now ineffective. I've tried DHE and multiple others with no success. I recently tried Aimovig only to develop severe diarrhea which lasted for months causing me to homebound and almost get hospitalized.

Migraine is an expensive disease to have, I spend several hundred if not thousand of dollars each year to try and manage my disease

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Amy S Inskeep RN BSN

Sent from my iPhone

Amy Inskeep

I can do all things through Christ who strengthens me Philippians [4:13](#)

Subject: Public Comment on ICER Review of Acute Medicines for Migraine
Recipient: Institute for Clinical and Economic Review

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with Chronic Migraine, the impact this disease has in my life, and the desperate need for access to new and different medicine options.

I have had migraine disease for 25 years. However, for the past 4 years I have been diagnosed with Chronic Intractable Migraine. The criteria for being considered chronic is 15 or more migraine attacks per month. Intractable indicates that it is persistent and very difficult to treat. When I became chronic with Migraine it turned on the disease in my brain and it never turns off. I experience Migraine every single day. In my case I am never free of symptoms, they just vary in severity and intensity.

It is very important for me to explain that Migraine is not just headache symptoms. The head pain can be very severe, at time excruciating. Very rarely do I ever experience a moment with no head pain or pressure. However, it is all the other symptoms that come along with this disease that make it highly disabling. I have almost constant sensitivity to light, sound, movement, dizziness, lightheadedness, extreme fatigue/weakness, nausea, digestive issues, strong head pressure, neck pain, shoulder pain, blurry vision, shadows in my vision, tinnitus, severe cognitive issues (brain fog), and verbal issue making communication difficult. Most of these symptoms I live with EVERY Day. Somedays I cannot even lift my body out of bed without my husband's assistance.

You may ask yourself, "*how could this all be Migraine?*" I did the same when I first became chronic. I had no idea it could cause such a brutal assault to my body. The first year I was seen by 5 different Neurologists, I went through extensive testing including a CT scan, 3 MRI's, 2 Lumbar Punctures, Vestibular testing and extensive blood work. That same year I had to visit the ER 5 different times for excruciating head pain, a severe vertigo attack, weakness and low blood pressure. Each time my symptoms were all attributed to Migraine Disease. To make matters worse the first year I had just started with a new employer, therefore I did not yet have medical benefits. That first year cost upwards of \$22,000 in medical care.

The first year trying to find medical professionals that had an understanding of Migraine Disease and working towards ruling out other conditions was expensive, very hard on my family, and life changing for me. I was informed that I had extensive White Matter Lesions on my brain (ie. White Matter Disease). These lesions are due to damage Migraine has done to my brain. By not being able to control the attacks it will continue to cause damage. Which the long term effects are not yet clear.

The impact of living with this life stealing disease is substantial. I am basically house bond, I have not been able to drive for 3 years (due to vision, dizziness, and lightheadedness). I am unable to keep up on household maintenance, excel in my career, I miss out on multiply family events and holidays, or travel. Along with the huge financial burden it places on my family.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the past 4 years I have tried 18 different medications and treatments for my migraine. Each come with a variety of different side effects that many times worsen my condition.

I have tried a total of 5 different acute medications, mostly different types of Triptans that I am extremely intolerant of their side effects. Triptans cause an intense increase in my head pain along with chest and throat tightness, weakness, stomach cramping, and severe sickness that places me in bed for at least 4 hours. I've tried multiple types of triptans and experience the same awful side effects every time.

Migraine is an expensive disease to have, I spend appx. \$24,000 each year to try and manage this disease including Botox treatments (32 injections in the head and neck) every 3 months, doctors visits, medical testing, medications, and over-the-counter comfort devises and treatments.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help manage this disease and avoid the pain and disability I experience daily due to Migraine Disease. I ask you to respect my pain, illness, lack of quality of life and to fairly assess these new medicines so that I can be a healthier and more productive person.

Any access to new acute treatments could greatly improve my quality of life.

Sincerely,

Andrea Wixson

December 4, 2019
Institute for Clinical and Economic Review
Two Liberty Square, Ninth Floor
Boston, MA 02109

Subject: PUBLIC COMMENT FOR REVIEW OF ACUTE MIGRAINE MEDICINES

Dear Governance and Advisory Board members and members of the Independence Voting Committee,

I am writing to ensure that the Institute for Clinical and Economic Review (ICER) fully understands what it means for a person to live with chronic migraine, the impact this disease personally has in my life, and the desperate need for access to new, alternative therapies.

I developed migraine disease 27 years ago. It has since progressed into chronic migraine. I experience symptoms every minute of the day and night with no reprieve. My pain level fluctuates from 5-9 on a 10 point scale. It is not just a headache. I experience over 20 symptoms, including fatigue, vertigo, ringing in my ear, nausea, cognitive impairment, neck pain, and extreme sensitivity to light, sounds, smells, and tastes. It is hard for me to complete even the most basic of daily tasks.

Migraine has a major and negative impact on my life. Due to migraine, I've lost the ability to work and have had to go on disability. Almost everything that used to bring me joy now brings me pain. It feels like I'm in a migraine prison! Leaving my house, which has been modified to meet my migraine needs, presents exposure to the many triggers that make my symptoms even worse. It is hard to be around others who, unintentionally, trigger my migraine with their use of perfumes or scented laundry detergents. There is little I can eat from a restaurant or friends' houses because I have so many food triggers, as well. I'm constantly fatigued and have to fight pain and irritability all the time. My relationships with family, friends, and my dating life have all been greatly impacted due to migraine. I've missed out on celebrating holidays and their festivities with family and friends; I've spent the 4th of July, Halloween, Thanksgiving, and Christmas alone in agony.

There is no cure for migraine and it is a very challenging disease to treat effectively. I have been fortunate to see highly qualified headache specialists and I've tried over 140 different treatments for migraine. The wide range of preventative interventions I've used have not been able to bring my pain level down more than one point, on the 1-10 pain scale, or reduce the number of days that I experience symptoms. Most of the medications I've tried have side effects that make my condition even worse, including depression, scary dreams, cognitive impairment, dizziness, extreme fatigue, gastrointestinal problems, and even suicidal thoughts.

Acute medications, like DHE and most triptans, increase my symptoms instead of aborting them. During severe migraine attacks, I take a combination of Rizatriptan, a muscle relaxant, and an anti-inflammatory medication. This rescue treatment takes an agonizing 2.5 hours before my

symptoms are only narrowly reduced and I am still incapacitated. Twenty-four hours later, the extreme symptoms return. This is due to my high susceptibility to rebound headache, a condition where the pain relievers actually trigger subsequent pain. In the end, I'm often left worse off than I was before taking medication. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have. Many of my treatments have not been covered by my insurance and others have high co-pays. While I currently spend \$4000 a year in efforts to manage my migraine disease, in the past, the expenses have been greater. In a single month, I spent over \$1900 to manage my pain and other migraine symptoms.

I am so excited about new acute migraine medications. The hope that one of these new medications will reduce my symptoms is all that gets me through my challenging pain days. I ask you to respect my pain by fairly assessing these new medicines so that individuals like me can have medically necessary and timely access to them and can live healthier, more productive lives.

Sincerely,

Angelica Heidi Brehm
U.S. Pain Foundation Volunteer Advocate

December 2, 2019

ICER Submission

Re: PUBLIC COMMENT FOR REVIEW OF ACUTE MIGRAINE MEDICINES

Submitted by Ann R.

Dear ICER,

I am writing to you to explain the complicated, painful, isolated life I live with chronic migraine. This disease has impacted my life in ways I never dreamed possible and my life is far different from many other migraineurs because of my unusual auras.

My migraines started at age 9 after a fall from a platform, landing on the back of my head. This was the summer of 1963. Back then they gave me baby aspirin. Luckily I only experienced 2- 3 migraines a year that would last for 2-3 days for the first 15 years of my life. But after being rear-ended in multiple car accidents, my migraines slowly increased to 3-4 per month. But by 2010, my migraines were daily and the measly 9 pills per month that the insurance companies allowed were used only on my worse migraines. The rest of the days I had to take nausea meds and Fiorcet, but I still managed to work. My migraines are triggered by perfumes, exhaust fumes, chemicals, Febreze, all plug-ins and candles. It's like having red hot poker's stabbing me in my eyes every time I smell some fragrance, immediately followed by intense nausea. To make everything even more challenging, I also experience strange episodes where I can't communicate and curl up into a little ball until it passes (10-20 minutes). The migraine will occur afterwards. This is sometimes followed by syncope and I stay out for about 30-45 minutes. I also have moderate Todd's Syndrome which most doctors don't know about and the stigma that comes with it is unbelievable if you try to explain it to anyone. As my migraines progressed over the decades, I also developed visual auras that wipe out my vision completely in a matter of seconds, lasting for up to 15 minutes. Heaven help me if any of these unusual aura attacks occur while I am driving!

I have also developed a super-hyper sense of smell. I react to everyone's hair products, underarm deodorants, and hand creams from a distance. I can smell clothes detergents from 25-30 feet away! The end result was I lost my job of 22+ years because I could not be around the people I worked with anymore. Now, I cannot go out in public...at all. Any trip to a store, restaurant, post office, doctor's office, or even going to my headache doctor, is an almost guaranteed migraine. I have no life. I even get a migraine when walking my dog if neighbors are drying their clothes with scented dryer sheets, or if a car drives by using those new car plug ins. Finding products that are scent free is also a challenge because even unscented Bounce dryer sheets have a fragrance to me. Therefore, I buy them a month early and open the box to sit outside in the garage to air out.

Does this paint a picture for you? I have NO life except inside my protected home. Add in barometric pressure migraines and you have a pretty miserable isolated life of pain.

I've tried every med available: all OTC migraine meds, Darvocet, Fiorcet, Botox, all triptans, shots in my head, neck, and eyebrows, acupuncture, acupressure, chiropractors, massage, cognitive behavioral therapy, psychotherapy, mindful meditation, you name it. The insurance companies fight me every time I try to refill my Relpax because they want me on Immitrex since it's cheaper. But Immitrex put me into shock one day, causing me to freeze for almost 8 hours, unable to move, but still in excruciating pain. Since then, I was told to stay away from Immitrex because it put me into some sort of shock. Unfortunately, Relpax is starting to give me similar symptoms of feeling like I have the flu. Sore all over, unable to do anything but lie there for 3 days. Needless to say, I only take it when my migraines pass level 8 because I hate feeling sick for so long. Instead, I try to fight migraines the old way with heat and ice and mindful meditation. If I can't control it with that, then I add T-Relief and CBD oil. If that doesn't work, I move onto Promethazine, ½ Oxycodone, and Tizanidine. It doesn't stop the acute migraines, but it keeps minor migraines under control to where I can tolerate the pain. Relpax is my last resort and used usually because I got a severe migraine from a perfume when I had to see my doctors.

Currently I am on beta blockers which have lowered my severe (levels 7-9) migraines down from 21 per month to only 9-10 migraines per month which I am happy about (although I still have daily headaches level 5 which I tolerate without any meds). Unfortunately, beta blockers also give me low blood pressure and caused me to pass out and fracture my back in two places. Which in turn resulted in minor back surgery, and now they are talking about another surgery due to pinched nerve on my sciatic nerves. So a med that helps my migraine has caused permanent bad back pain. Go figure. But I had to take the beta blockers because that was another insurance company hoop that I needed to jump through in order to get approved for the new medications.

But even if I am approved to try the new meds, now I can't afford them since I live on \$1,492.00 per month disability payments. And in spite of the fact I saved half my salary while I was working, my doctor bills ate up most of my money. My out-of-pocket doctor bills usually run around \$5,000.00 per year. I seriously hope I will die in 15 years before my money runs out.

To say migraine has impacted my life is an understatement. I have no life now because I can't go anywhere. But yet, believe it or not, I manage to stay positive. I look for joy where I can...my dog's expression in anticipation of a treat, the colors of flowers, the paintings my father painted before he passed, a hot cup of cinnamon tea...there is joy everywhere if you look for it, even on a cold rainy winter day you can enjoy the shape of the tree trunks and branches. So I focus on joy as much as possible. I call them my joy shots.

Please make new meds available to everyone; not just the rich, and not just the super poor. I never seem to qualify for financial help for some reason because I am middle ground. So think of everyone, please.

Thank you for listening,

Ann R.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine Name:

Anna Williams

Dear ICER, I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines. I have had migraine disease for 34 years of my 44 years of life. I experience an average of 20 headache days per month.

When I have a migraine attack, I sometimes have visual aura and nausea. I always have photophobia and phonophobia. My head pain usually ranges from 5-7 on a pain scale but is constant for many hours. After many years of having migraines alone, I developed Cluster Headaches (which sometimes respond to many of the same treatments as migraines) and Trigeminal Neuralgia which also has many things in common. However, having all 3 is beyond a balancing act, with one trigger another. My cluster headaches rank 8-10 on a pain scale, while my TN lasts for hours between a 4-7 pain scale.

Migraine has a major and negative impact on my life. I am a single mom of two children and it affects us as family. I try to muddle through and push through, but I lose the quality of life and enjoying my time with them and instead find myself forcing a smile and trying to survive so that I don't have to cancel. It's hard on me emotionally. It's hard for them to see me get irritable and not feel like doing something with them. It's hard to just take them to school and fix dinner sometimes. The bigger things that are hard is trying to plan a vacation when a migraine (or other headache disorder) can strike at any minute and I have nothing to provide relief. It's hard to plan activities because I don't know how I will be affected on that day.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried countless different treatments for my migraine. Many of the "basic" preventatives have debilitating side effects that are so severe I cannot take them. I cannot take (I have taken and failed) all the anti-depressants, anti-epileptic, "nerve pain" medications such as Lyrica and they all cause worsening depression and suicidal ideation among other severe side effects. I took Triptans and had mixed relief with them. Sometimes they would work, most of the time not, because I'd wait till too late to take it because unless I had an aura I didn't know it was "a bad one". However, in 2017, I had severe chest pain with Sumatriptan, accidentally took it a 2nd time and it happened again. Since this is a severe reaction because it lasted for hours, I will not take Triptans ever again. I am currently on Aimovig and getting 50% relief of migraines, cluster headaches & Trigeminal Neuralgia.

However, I still have migraine and cluster headache attacks and need something to stop the acute attack. I desperately need access to new types of acute treatments. Since I am unable to take Triptans now, I really need help with acute treatments. Migraine is an expensive disease to have, I spend money each year to try and manage my migraine attacks. I am on disability and have that as my only income. I have to pay co-pays of \$40 to see my neurologist. I have co-pays that range

from \$3-\$9 for each prescription. Plus, ice packs, heating pads, vitamins, OTC to help me sleep, and any other thing I think may provide me a small amount of relief!

When I have a migraine, it's NOT just a headache. It affects my quality of sleep, my emotional health, my physical health, it is all encompassing. If I can have better options to stop my migraine, I feel I can take strides in improving my overall health. My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,
ICAnna Williams

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Anne L

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 23 years. I experience an average of 31 headache days per month. That is every day of every month, all year long. 365 days of pain. When I get a severe migraine attack, it feels like a hot fire poker stabbing one side of my head and my eye. That side of my head pulsates with pain; feeling almost like it will break through my skin and rupture my skull. When I have a migraine attack, I feel alone and isolated—from my friends and family and the world around me. After a severe migraine attack (of which I have 10-15 each month), I feel completely wiped out and exhausted for at least a day or two afterwards.

Migraine has a major and negative impact on my life. I am currently working 30 hours a week, and am unable to work more, due to my health. I would give anything to be able to work 40 hours a week, or even more! On at least 6 workdays in a given month, my productivity is decreased by at least 50%, due to severe pain.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine do not work very well. Over the course of my life, I have tried more than 20 different treatments for my migraine. I have discontinued some of the medications because the side effects are unbearable; extreme fatigue to the point of not being able to get out of bed, mood changes, cognitive impairments. I have discontinued other medications simply because they are not effective and overly expensive.

(describe how ineffective these treatments have been/are and side affects you have experienced).

Migraine is an extremely expensive disease to have; I spend at least \$8,000 in a normal year to try to manage my migraine attacks. Medications, doctor's

visits, copays, injections, urgent care/emergency room visits, complementary medicine not covered by insurance etc.

My diagnosis of chronic migraine has a huge, negative impact on my quality of life and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person. These medications will help many people be able to lead a more active life and contribute more to the workforce and to society. Thank you in advance for taking my request seriously.

Sincerely,

Anne L.

Chronic Migraine Awareness Inc.
American Migraine Foundation volunteer

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: April B

Dear ICER,

I'm writing to share my experience as a sufferer of chronic migraine, and to emphasize the importance of access to new medicines for this condition.

I've had migraines since I was a teenager, and chronic migraine for 8 years. I'm a healthy, fit 27-year-old woman, but have yet to find a lifestyle change or medication that has brought me relief from the headaches.

I've tried upwards of 15 different preventative medications for migraine, alone and in various combinations, to no avail. At my worst, I was experiencing 20-25 headaches a month. Currently, my monthly number hovers around 15. The migraine attacks are completely disabling when they occur; it so often feels like an insurmountable hurdle exists between me and the possibility of living a normal life.

I'm desperately hoping for the release of a groundbreaking medicine that will change this reality for me. I've tried every one available to me with little success; I have to believe that a new one will eventually come down the pike. When it does, it is imperative that this medication be affordable. In a given year, I spend somewhere between \$2,000 and \$4,000 managing this disease. I don't even want to do the math on what that becomes over the course of a lifetime.

Respectfully, I ask that you evaluate any migraine medications with people like me in mind. I can only imagine the liberation that an effective medicine could offer. With these new drugs, I hope to experience that freedom.

Sincerely,

April B

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has on one's life, and the desperate need for access to new and different medicines.

I have had migraine disease for 45 years. I currently average 8 attacks a month, recently down from an average of 13 migraine attacks per month over the last 4 decades.

That's a total of over 10 years of my life, day and night, spent in bed, with head pounding and stomach retching.

Migraines range in intensity from perhaps pain level 2 on a 1-10 scale to a full 10. I've had 3 children and I can affirm that the pain of childbirth is nothing compared to a full pounding migraine, which is relentless and can last for days. This pain is so severe that even if I fall asleep I dream of being drilled or shot through the head. The slightest movement causes immediate vomiting and the retching can be violent enough to trigger stomach bleeding.

I spend hours wishing for a sip of water but am unable to move to reach the glass without incurring another retching attack. The slightest disturbance, be it noise, light, movement or smell, or someone looking in to check on me likewise results in shockwaves of extreme throbbing pain and vomiting.

Even the lower intensity migraines are disabling. Whilst the pain is not always as severe, the malaise, a feeling of having been poisoned, affects the whole body. Noise and movement are intolerable, smells sickening and thinking muddled.

Migraine has a major and negative impact on my life. Because it is invisible it is apt to be doubted. Family members become irritated and employers impatient. Whilst a broken limb or fever may result in sympathy and understanding, a migraine is regarded with suspicion and the default reaction is blame. You're either shamming, you're neurotic or culpable in some other way for your 'headache'. You should take a pill and carry on.

Reluctantly, for these reasons, I had to give up a job I enjoyed. I no longer work.

Normal activities other people take for granted risk triggering migraines. For me these include travelling, especially on a sunny day, anything that involves exposure to sun through glass or flickering light, changes in sleep routine (a lie in, a late night), high altitudes, eating out, alcohol, anything that causes a sudden change in blood sugar or the water balance, such as getting hungry or thirsty or fruit or sugar on an empty stomach; jolts, noise and many more. Yet by character I love travelling, new foods and new experiences.

Comorbidities are common with migraine. The brain becomes oversensitised to pain and aches and pains proliferate. This is not neurosis. It is a physiological effect.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried many different treatments for migraine.

- Migril (ergotamine and caffeine together with an anti-emetic) has generally been the most reliable acute treatment for me. However, it takes over 5 hours to begin to reduce pain, it was unavailable for some years and is likely to be withdrawn due to risky side effects. Because ergotamine is a vaso-constrictor overuse could result in gangrene and loss of limbs. It's unsuitable for anyone with circulatory issues.
- Cafergot and other formulas involving ergotamine are no longer available.
- I tried a beta blocker many years ago but my blood pressure fell so sharply I was advised to stop immediately and never to try again.
- The first triptan I tried worked like a miracle, resolving the headache in minutes but the migraine returned redoubled the next day. At that point nothing worked. This has been the pattern with triptans since. Sometimes they work, sometimes not at all, sometimes they make me feel sick all day. But the migraine most often returns next day and is then unshiftable.
- Topiramates have produced endless headache whenever I've tried them. The headache takes a month or so to resolve after stopping.
- Calcium channel blockers have not reduced frequency or intensity of headaches.
- Amitriptylene does not help the migraines but makes me sleepy and dull.
- A combination of magnesium, Vitamin B12 and Vitamin D was advised by a migraine clinic and helped marginally for a while but after a few weeks magnesium started triggering migraines.
- Herbal remedies including feverfew and anti-inflammatories have failed to help.
- Acupuncture has failed to make any impact and practitioners have been unable to reduce pain even if present upon presentation.
- Acute oral treatments (ibuprofen, aspirin, Naproxen, acetaminophen, etc), preceded by a proton pump inhibitor, sometimes help, sometimes make no dent on the pain, other times just increase nausea.
- Opioids rarely help. When an extreme migraine was triggered by an appendectomy and hospital stay, nurses and doctors could think of no acute remedy other than oral liquid morphine. This was immediately vomited. If they reach the blood stream they may reduce pain by one or two degrees (1-10 scale) temporarily or may just cause nausea.
- Tens machines and light masks have not helped.
- In desperation I've recently returned to beta blockers. A dose of 60 mg has reduced the number of days lost per month to an average of 8 but at the cost of brain fog and loss of impetus. My character has changed. Everything is too much trouble. On well days I was previously normally highly motivated and active. A further result is that since taking the beta blocker, acute medicines no longer work.

I should make it clear I have an excellent diet, active lifestyle, do not smoke or drink and have never fallen into overuse of medicines.

I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend some hundreds of dollars each year to try and manage my migraine attacks, excluding insurance. The last two years, for example, I've spent over USD 2330 p.a.) This includes medicines, acupuncture, mouthguards, visits to clinics, diagnostic tests, purchase of new technology (light mask, Tens machine, Cefaly, PainGone pen), herbal remedies, anti-inflammatories, acute medicines, vitamins and minerals and subscriptions.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to assess fairly these new medicines so that I can be a healthier and more productive person.

Sincerely,

Beth J

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Date: December 5, 2019

Dear ICER,

I have been trying to write this for over a week, but I have chronic migraine. In fact, I have daily migraine symptoms and the past few months have been in a really bad period of migraine attacks. This will not be my best effort. Nothing I have produced since my migraine attacks became chronic about four years ago has been my best effort. However, advocating for effective abortive treatments is obviously a priority to me and I hope this testimony helps you understand why.

My story begins over twenty years ago while I was still in high school. I experienced frequent headaches and was eventually diagnosed with episodic migraine. For about 25 years, I managed my migraine disease with a couple of preventives and a triptan to take for acute attacks. That was until about four years ago. I was finishing my dissertation and working nearly full time in a high-stress job. My sleep and mental health suffered. This triggered more frequent headaches. More of those headaches ended up as full-blown migraine attacks. My headache specialist and I could not get them under control. Before I knew it, I had a new diagnosis: chronic migraine. In the span of a year, I finished my PhD, but exhausted my FMLA and short-term disability leave options at work and had to resign. Remaining in Boston was financially unfeasible. I moved back to my hometown in Vermont to be nearer to family who could help me manage my new life with chronic, daily migraine attacks.

I have not had a symptom-free day in over three years. My primary symptoms are daily head pain and light sensitivity. I don't always have a full-blown migraine, but several times a week my symptoms transform into one. On these days, my pain spikes, I become nauseous, and often have other gastrointestinal symptoms. I experience sensitivity to scents and sounds. I also become more cognitively impaired: my thinking slows, I have trouble concentrating, and I experience brain fog. Any movement can exacerbate the pain. I most often spend these days in bed.

When I moved back to Vermont, I established care with the local headache clinic. I immersed myself in the migraine research. I have consulted with regionally recognized experts for second opinions. With the exception of only a few treatments, I have exhausted all available preventive and acute medicines, tried devices (neuromodulators and neurostimulators), and made numerous lifestyle changes, with very little improvement in quality of life. I am quite literally waiting for science to catch up.

My life has changed so much in the past three years that almost anything I did before chronic migraine, I can no longer do. I won't be able to name them all here, but I will provide a few examples.

- **I am significantly underemployed.** It is immensely frustrating to have spent eight years completing my PhD only to leave my career soon after. I work from home very minimally in

a contracted position as a researcher with a migraine non-profit organization. This offers flexibility, accommodations, and allows me to use my skills, but I cannot work in a traditional setting in an amount to support myself.

- **I very rarely travel.** My world is very small. The physical process of travel – flying or long car rides – are triggers and can expose me to additional triggers. Simply sleeping in a bed that is too firm or too soft can be a trigger.
- **I cannot eat the same foods I used to eat.** My diet has been restricted to avoid common and not-so-common migraine triggers. This makes eating outside the home, travel, and socializing incredibly difficult.
- **I can't exercise or get outside as much.** Sun, heat, wind, and overexertion are all triggers for my migraine attacks.
- **I rarely attend concerts, the theater, or sporting events.** I frequented these types of events when I lived in Boston, now they are impossible without triggering a full-blown migraine attack because of lights and sounds. If I choose to take part in such an event, I will require multiple days of recovery.
- **I don't drive myself** further than 30 minutes from home for fear of a migraine attack becoming so bad that I can't safely drive myself home. Living in rural Vermont, this limits my ability to socialize and get to appointments.

I now live with my 72 year old mother who frequently drives me to appointments, takes me on errands, cooks for me on my worst days, and assists me with household chores. She has become my caregiver. This was not a role she ever intended to take on nor should have had to, but she does without complaint.

When I told you that I was waiting for science to catch up, this was not an exaggeration. Much of what I have written so far, I also included in my testimony when ICER reviewed data on erenumab and other large-molecule, preventive CGRPs. Since that time, I have tried two of the three available preventive CGRPs. I am a non-responder. Before those were approved, I tried Botox, devices, and numerous other oral preventives. I made and continue to make lifestyle changes. Nothing has made a significant improvement in my migraine attacks.

I have also tried almost every available acute medication. When my attacks were episodic, I had a triptan that worked for over twenty years. That triptan, and every other, lost effectiveness when my migraine attacks became chronic. I've tried DHE – subcutaneously, intra-nasally, and intravenously. It doesn't work for me. I have also tried numerous NSAIDs.

I currently use indomethacin as an acute treatment with prochlorperazine. Neither drug works unless I take it at bedtime and get a full night sleep. Even then, it's about a 50-50 chance it will work and I am lucky to get two low-pain days before the pain spikes again. Both of these drugs have side effects. Indomethacin wreaks havoc on my stomach. Prochlorperazine has caused muscle spasms and restless leg.

I had access to an external neurostimulator that worked - about 30% of the time - to abort a migraine attack on the rare occasion I caught it early enough. However, when I became eligible for Medicare in July of 2019, I lost access to that device. Medicare doesn't cover devices, I'm

not allowed under Medicare rules to receive copay assistance, and I can't afford the nearly \$600 out-of-pocket cost per month.

So let me reiterate: I do not have a reliable acute medication that I can take at the first sign of a spike in my migraine symptoms and that will relieve my symptoms within a few hours. I am not in rebound. I do not overuse acute medications. I take my current acute treatments, at most, twice a week at bedtime and hope to have one or two low-pain days after. Every other day, I suffer through untreated. If I wake up in pain or it begins to spike mid-day, that day is a loss. If I took my acute meds too recently, I do not take them again, sometimes for several days.

Depending on the outcome measure, the data on lasmiditan and ubrogepant is on par with triptans.ⁱ Your own report concludes this. Yet, much like ICER's argument that the preventive CGRPs were not an improvement over previous treatments, the draft report on these new acute treatments seems to argue that they are only recommend in those for whom other treatments (triptans) do not work or cannot be prescribed due to contraindications. Some predictors of migraine chronification are attack frequency and ineffective acute medication.ⁱⁱ Those things are related. One will have more attacks if they have an ineffective acute treatment.

Migraine has also faced enormous stigma and the effects of this have been a lack of research, funding, and dearth of targeted treatments.ⁱⁱⁱ Your recommendations will influence policy. While your conclusions are fine from a financial standpoint, migraine patients deserve options. For the first time, multiple acute treatments *designed for migraine* will be available. Selecting which one to use should be at the discretion of a doctor and patient, not down to insurers and financial calculations. What works for one person may not work for another. Now that they are becoming available, please consider your role. Do not create further barriers to these drugs.

I'll close by saying this. Migraine might not be a deadly disease per se, but make no mistake: it has serious impacts on people. Chronic migraine is disabling. To live with it day in and day out affects one's mental health. Access to effective treatments could be the difference between life and death for some of us. At minimum, access is the difference between merely surviving and having some function. Right now, there are many nights I go to sleep praying I just don't wake up because I'm exhausted from living with poorly treated chronic migraine. I may be one of the few for whom you decide these drugs are appropriate, but it should not come to this level of desperation or frustration to get access.

Thank you for your attention to this matter.

Sincerely,
Beth Morton, PhD

Contractor, Survey & Scientific Research, Coalition For Headache And Migraine Patients
Research Advisor, HeadsUP Migraine

ⁱ Loo, L. S., Plato, B. M., Turner, I. M., Case, M. G., Raskin, J., Dowsett, S. A., & Kregge, J. H. (2019). Effect of a rescue or recurrence dose of lasmiditan on efficacy and safety in the acute treatment of migraine: findings from the phase 3 trials (SAMURAI and SPARTAN). *BMC neurology*, 19(1), 191.

ⁱⁱ Xu, J., Kong, F., & Buse, D. C. (2019). Predictors of episodic migraine transformation to chronic migraine: A systematic review and meta-analysis of observational cohort studies. *Cephalalgia*, 0333102419883355.

May, A., & Schulte, L. H. (2016). Chronic migraine: risk factors, mechanisms and treatment. *Nature Reviews Neurology*, 12(8), 455.

ⁱⁱⁱ <https://www.usatoday.com/story/news/nation/2013/05/16/researcher-unlocking-mysteries-migraines/2165363/>

Biohaven - ICER Draft Evidence Review Response Document

Summary: Biohaven appreciates the opportunity to provide an in-depth response to the November 7, 2019 release of the Draft Evidence Review (DER) for Acute Migraine. Further, ICER had graciously provided Biohaven read access to the Cost Effectiveness Model, which has greatly facilitated our response. Commentary with regard to components of the DER, specifically the Network Meta-Analysis (NMA), The Cost Effectiveness Analysis (CEA), and the Budget Impact Analysis are provided below.

Biohaven's concerns with regard to the review pertains to four main issues:

1. The review constitutes comparison of 14 to 28 year old studies to modern trials (i.e., of the new agents) without regard for the wealth of high-quality, real-world studies and systematic reviews on triptan cycling, lack of efficacy, discontinuations, risk for medication overuse headache (MOH) and other sequelae attributable to triptans in the decades since their approval. Biohaven maintains that this restriction is unnecessary. It is perfectly acceptable, and there is ample precedent for structuring the NMA and CEA model to permit inputs from systematic literature reviews or well-designed real-world effectiveness studies.
2. Health state utilities and resultant quality-adjusted life year (QALY) estimation assigned to each treatment are premised upon severity levels derived from 2 hour pain relief/pain response endpoints. This assignment of severity levels (eg mild/moderate/severe) based upon response data seems arbitrary and could greatly impact the utility increments across agents. The ICER approach ignores data from more recent systematic literature reviews and real world studies that show high rates of suboptimal efficacy and lack of tolerability for triptans. This approach is reflected in the final QALY results, with mean annual utility of each treatment arm suggesting: a) there is no meaningful difference in the utility of a patient treated with either a triptan or a new agent *vs. treated with usual care*, and: b) that the health state utility of a migraine patient on any of these treatments is effectively similar to that of the US general population. In recent publications health state utilities associated with severe migraine approach 0.5 and are based on the frequency of monthly migraine days (MMDs).^{1,2} These reports cite MMDs as the strongest determinants of health state utilities.
3. ICER continues to argue that the available large-sample, long-term data (e.g., Biohaven's BHV-3000-201 studying approximately 1,800 patients for 12 months to reflect real world experience with rimegepant) are unreliable and biased. It is inappropriate to ignore the design features of such studies that include a well-defined baseline period providing precise estimates of *pre-treatment* migraine frequency (and other measures), covariate-adjusted change from baseline metrics (wherein each patient serves as their own control) and the important real world data that comes from following the utilization of approximately 1,800 patients for 12 months. These long-term, large sample studies provide assurance that the newer agents in fact differ from triptans in terms of both tolerability and safety. Further, it is inconsistent for ICER to leverage the long-term GLADIATOR study to apply a single discontinuation rate to all treatments, and not make use of other outcomes (eg MMD change) from the long-term studies. And as stated previously, MMD changes can be mapped to Health State Utilities. Biohaven has spent considerable resources to study one of the largest cohorts of migraine patients followed

for up to one year and respectfully ask that this information be included in the ICER analysis as it highly relevant to patients, clinicians and payers.

4. The selection and modeling of the comparators in the CEA and BIA does not align with ICER's own review of the clinical management of migraine and acute treatments.
 - a. For instance, ICER recognizes that patients who are not adequately managed on triptans often turn to anti-emetics, barbiturates, and opioids, which have limited benefit, acute side effects, and important risks associated with long-term use including medication overuse headache (MOH) and opioid addiction. However, consideration of the severe consequences of these agents are excluded from ICER's CEA and BIA, despite the choice of a long-term horizon that would allow for their modeling.
 - b. No attempt is made at costing the components of usual care (both the base case of the CEA and the only analysis presented in the BIA model: no medication-costs of usual care). Considering the lack of difference in QALYs between treatment arms, the CEA thus largely reverts to a medication cost comparison, so the omission of these costs is of large consequence in the analysis. This is reflected in CEA sensitivity analyses in which modeling even a modest \$10 increase in cost of usual care significantly affects results.
 - c. Further, despite ICER's use of RED BOOK WAC data that reflect the significantly higher costs of non-oral triptans, and the real-world evidence indicating that non-oral triptans comprise significant share, and that triptans often require multiple doses per attack, ICER fails to model any of these dimensions of triptan use in costing. The omission of all of these aspects of the current acute management of migraine must be clearly justified to allow for providers and payers to reconcile how ICER's modeling approach differs from real-world practice.

More specific comments and concerns are detailed in the sections that follow.

Network Meta-Analysis

1. **Adjustment for study-level placebo effects.** The ICER network meta-analyses for all efficacy and safety endpoints fail to account for temporal trends in placebo response due to improvements in migraine care. Biohaven maintains that the inordinate length of time between publications of the triptan studies and the new interventions will bias the NMA. Adjustment for the study level placebo effect (i.e., as a covariate to the NMA model) impacts the difference in efficacy between triptans and the newer agents. **Biohaven recommends placebo adjustment for all triptan trials included as a covariate in the NMA. Biohaven also recommends inclusion of more recent trials and high quality real world comparative effectiveness studies.**
2. **Bias from pooling drug doses.** For our NMA, we separated all drug doses, in contrast to ICER's method which pooled doses for each drug. Pooling doses can affect the choice of NMA model (i.e., between lower sample size fixed- versus larger sample size random-effects) as well as decrease the observed dose dependent variability of effect which can influence whether an effect estimate is deemed significant or not. **Recommendation:**

Biohaven recommends that individual drug doses reported for each trial be used in the NMA.

3. **Biohaven requests special consideration of the unique active comparator trial (see Appendix I) comparing sumatriptan versus rimegepant (multiple doses).** This study is the only available active comparator trial of the new agents versus sumatriptan, and demonstrates *comparable efficacy* on sustained pain freedom at 2-24 and 2-48 hours, and sustained pain relief at 2 and 24 hours. (Marcus et al, Cephalagia, 2014, 34(2) 114-125)

Cost Effectiveness Analysis (CEA)

Omission of relevant comparators, treatment costs, and treatment consequences

As described on pp. 67-68 of the DER, in modeling drug costs, ICER considers only the cost of generic, oral triptans, (i.e. excluding other non-oral formulations) and does not consider any drug costs pertaining to usual care. No mention is made of the significant bias inherent in these choices. Branded triptans, including oral and other routes of administration (e.g., subcutaneous, nasal spray, injected), are available to patients and make up meaningful shares of triptan use in the US (2). RED BOOK, WAC data for triptans illustrates that non-oral-administration triptans cost substantially more than generic orals. Patients who are not adequately managed on triptans often take other acute, non-specific medications including anti-emetics, barbiturates, ergots, prescription NSAIDs, and opioids.³ No meaningful attempt is made to cost either these therapies or assess their potentially severe consequences in the modeling. **Biohaven considers it imperative that ICER model costs of “usual care”, and consequences of same, in light of ICER’s recognition of the use of various non-migraine specific agents and their serious associated health risks. It is also recommended that ICER consider the full spectrum of triptans costs (e.g. non-oral formulations) that are more representative of those used in real-world practice.**

1. **Underestimation of costs of productivity loss.** The ICER model also underestimates costs of lost productivity. In a retrospective observational study (4), mean annualized costs were significantly higher for patients with migraines vs. those without, including direct costs (\$13,032 vs \$3,234), indirect costs due to workplace absenteeism (\$4,104 vs \$3,531), indirect costs due to short-term disability (\$1,131 vs \$52), societal costs due to workplace absenteeism (\$16,043 vs \$6,938) and societal costs due to short-term disability (\$14,278 vs \$3,182).⁴ A US retrospective analysis of migraine patients found differences in medical costs by treatment status when adjusted for several comorbidities. Mean costs for patients who did not use opioids were \$8,888 compared to \$15,210 for high users of opioids (7+ claims). Mean costs for patients who did not use triptans were \$10,753 compared to \$11,517 for high users of triptans.⁵ **Biohaven recommends that ICER inform modeling of reductions in costs of lost productivity on data that Biohaven have previously provided, to better reflect the value of newer agents from the societal perspective.**
2. **Use of a single rate of discontinuation due to lack of effectiveness for all therapies**
ICER assumes the same discontinuation rate due to lack of effectiveness for all treatments, derived solely from the lasmiditan long-term safety study.
ICER’s assumption that the same share of triptan patients discontinue due to lack of effectiveness as lasmiditan (21.8%) is not justified. Ample evidence from the literature

demonstrates that a much larger share of triptan users discontinue rapidly after their first prescription. In a retrospective claims-data analysis, for example, Marcus et al. (2019) report that 50.8% did not refill their index triptan over the 12-month post-index period and 43.6% did not refill it over the 24-month period.⁶ The majority of the new triptan users (56.4%) had a quantity of ≤ 4 pills on their first fill. While such data may not derive from a controlled trial, cost-effectiveness analysis is intended to capture effectiveness in the real world.⁷⁻⁹ **Biohaven recommends that ICER utilize drug specific discontinuation rates reported from rimegepant, ubrogepant, lasmiditan long-term safety trials, and from recent systematic literature reviews and real-world effectiveness studies of triptans.**

3. **Translation of response rates to severity distributions.** In order to apply health state utilities (HSUs) which are used to derive QALYs, and which vary across migraine severity levels (none/ mild/ moderate/ severe) (see Table 4.7 of the DER), ICER’s modeling requires that “pain relief” and “pain free” statistics from clinical studies be linked to severity. This approach seems arbitrary. In addition, it is likely that patients who remain on therapy and who do not require rescue medications out to 48 hours are more likely to transition from the severe to mild health state versus the severe to moderate health state. The literature suggests that the high discontinuation rates and lack of sustained response for triptans would lead to a lower percentage of patients transitioning from the severe to mild health state. A consequence of this methodology is that ICER models response estimates for triptans greatly exceeding those reported from (as example) a 133 trial meta-analysis(11). **Biohaven recommends that ICER use observed response rates from trials, systematic reviews and high quality real world studies for all treatments. Biohaven further recommends that as an alternative to HSU estimation based on modeled severity, that ICER derive HSUs based on frequency of monthly migraine days, cited^{10,11} as the strongest determinant of HSUs, and a clear indicator of migraine severity.**
4. **Deviation of modeled response distributions from published evidence** ICER appears to have modeled loss of response from observed response at 2 hours, then applied the same assumptions across treatments to derive estimated responses at 8/24/48 hours (p. 62 of the DER). Biohaven maintains that ICER’s methodology for translating response rates to severity levels (as ICER reflects in Table 4.3 of the DER) leads to counterintuitive increases in response for the triptans that are not consistent with the literature, as shown in the table below:

ICER modeled response	2 hours Pain freedom	2 hours Pain relief	24 hours Pain Freedom	24 hours Pain Relief
Eletriptan	44%	72%	80% ▲	95.6% ▲
Sumatriptan	34%	63%	76.5% ▲	94.2% ▲

Improvements associated with triptans modeled by ICER dramatically exceed those reported by Cameron et al. at both 2 and 24-hours.¹² Cameron et al. show that pain freedom and relief both fall in frequency from 2hr to 24hrs

Cameron et al (2015)	2 hours Pain freedom	2 hours Pain relief	24 hours Pain Freedom	24 hours Pain Relief
Eletriptan	39.2%	60.4%	32.9% ▼	47.3% ▼
Sumatriptan	27.7%	49.7%	22.8% ▼	33.1% ▼

Further, Cameron et al. report that use of rescue medication occurs ~21% of the time on eletriptan and ~34% of the time on sumatriptan, and ICER fails to account for any use of rescue medication. Results from the recent OVERCOME study report that the majority of patients on oral triptans report poor or very poor efficacy of their current treatment, the proportion being as high for patients on their 1st (52.1%) as on their 2nd (55.8%) or later oral triptan.¹³ The use of non-preferred treatments (i.e., opioids 29.6%, barbiturates 16.9%) and care sought at emergency rooms (66.1%) highlight the substantial unmet needs in the eligible population.¹⁴ Thus, ICER overestimates triptan benefit and underestimates benefit of the newer therapies with loss of response modeling. **Biohaven maintains that ICER should not model loss of response beyond 2 hours for any of the therapies, including triptans, but should utilize placebo adjusted observed data at 8/24/48 hours from Phase III trials of the new agents and more recent systematic literature reviews and real world studies for the triptans.**

- Omission of time-varying effects despite modeling of a long-term horizon.** ICER employs a Markov health-state transition model with a time horizon of 2 years and cycle lengths of 48 hours, to model short-term utility and cost impacts of a single migraine attack, *as well as potential long-term effects*. ICER recognizes that this deviates from previous evaluations (p. 79 of the DER) An evaluation that considers all available real-world evidence would require a long-term horizon to account for phenomena such as discontinuation (and resulting greater mean effectiveness in those remaining on treatment), the reduction in monthly migraine days (MMD), and consequent reduced risk of MOH. **Given that a long-term horizon is modeled, Biohaven recommends that time-varying phenomena, including the following, be comprehensively modeled based on available real-world evidence:** a) Differences in discontinuation across treatments (derived from the literature, rather than one rate applied to all therapies); b) Differences in use of rescue doses across treatment (again based on therapy-specific dosing), and resulting costs and outcomes; c) Value for money reflecting continued use of treatment in predominantly treatment-responsive patients d) Costs of “usual care”, including the significant share of patients who use(d) opioids following failure of triptans, or progress to chronic migraine/MOH as a result of lack of management e) Reduction in MMDs over time derived from the long term safety studies.

Budget Impact Analysis

As described on p. 86 of the DER, ICER uses the same model as used for the CEA in the budget-impact analysis (BIA). Consequently, several of Biohaven’s recommendations cited above remain relevant, and if adopted in ICER’s analysis, would reflect the value that rimegepant may have in terms of total costs (i.e., budget) of management of migraine patients. These recommendations, as well as others, are detailed below.

- Omission of rescue medication and pill burden.** With regard to the budget impact, the ICER model fails to consider the beneficial economic impact of lower pill burden for rimegepant which provides efficacy through 48 hr. with a single dose¹⁵ as compared to 3-to-4 pills needed for ubrogepant¹⁶ or triptans¹⁷ to achieve 48 hours of benefit. Allergan

has presented publicly their one-year, long-term safety study of 50 mg and 100 mg ubrogepant (Study UBR-MD-04) in which “21,454 migraine attacks were treated with 31,968 doses of ubrogepant”, which suggests 1.5 doses per attack treated. A recent publication further stated that 37% of patients required a redose with ubrogepant.^{18,19} **Biohaven recommends that the ICER model should be updated to more accurately reflect the pill burden associated with each therapy.**

In conclusion, Biohaven welcomes the opportunity to work closely with ICER to derive a revised evidence review that better reflects all or some of the methodologic enhancements that are recommended above. Biohaven maintains that these modifications would provide a more balanced and fairer assessment of the new agents relative to existing care, and would facilitate and clarify comparisons between the newer agents in NMA, CEA, and BIA models.

References

1. Lipton RB, Brennan A, Palmer S, et al. Estimating the clinical effectiveness and value-based price range of erenumab for the prevention of migraine in patients with prior treatment failures: a US societal perspective. *J Med Econ*. 2018 Jul;21(7):666-675. doi: 10.1080/13696998.2018.1457533. Epub 2018 Apr 3.
2. Doane MJ, Gupta S, Vo P, et al. Associations between headache-free days and patient-reported outcomes among migraine patients: a cross-sectional analysis of survey data in Europe. *Pain Ther*. 2019 Dec;8(2):203-216.
3. Alam A, Munjal S, Reed M, et al. Triptan use and discontinuation in a representative sample of persons with migraine: results from Migraine in America Symptoms and Treatment (MAST) study (P4.10-019). *Neurology*. Apr. 2019;92(Suppl 15):P4.10-019.
4. Gilligan AM, Foster SA, Sainski-Nguyen A, Sedgley R, Smith D, Morrow P. Direct and indirect costs among United States commercially insured employees with migraine. *J Occup and Environ Med*. 2018;60(12):1120-1127.
5. Silberstein SD, Lee L, Gandhi K, et al. Health care resource utilization and migraine disability along the migraine continuum among patients treated for migraine. *Headache*. 2018;58(10):1579-1592.
6. Marcus SC, Shewale AR, Silberstein SD, et al. Triptan discontinuation and treatment patterns among migraine patients initiating triptan treatment in a US commercially insured population. *Neurology*. 2019;92(Suppl 15):S59.003.
7. Campbell JD, McQueen RB, Briggs A. The "e" in cost-effectiveness analyses. A case study of omalizumab efficacy and effectiveness for cost-effectiveness analysis evidence. *Annals of the American Thoracic Society*. 2014;11(Suppl 2):S105-11.
8. Ramsey SD, Willke RJ, Glick H, et al. Cost-effectiveness analysis alongside clinical trials II—an ISPOR good research practices task force report. *Value in Health*. 2015;18(2):161-72.
9. Guidelines for the economic evaluation of health technologies: Canada. 4th ed. Ottawa: CADTH; March 2017.
10. Lipton RB, Brennan A, Palmer S, et al. Estimating the clinical effectiveness and value-based price range of erenumab for the prevention of migraine in patients with prior treatment failures: a US societal perspective. *J Med Econ*. 2018 Jul;21(7):666-675. doi:10.1080/13696998.2018.1457533. Epub 2018 Apr 3
11. Doane MJ, Gupta S, Vo P, Laflamme AK, Fang J. Associations Between Headache-Free Days and Patient-Reported Outcomes Among Migraine Patients: A Cross-Sectional Analysis of Survey Data in Europe. *Pain Ther*. 2019 Dec;8(2):203-216. doi:10.1007/s40122-019-0133-1. Epub 2019 Jul 26.
12. Cameron C, Kelly S, Hsieh SC, et al. Triptans in the acute treatment of migraine: a systematic review and network meta-analysis. *Headache*. 2015;55(Suppl 4):221-35.
13. Reed ML, Araujo AB, Nicholson RA, et al. Symptom patterns, disability, and physician visits among a US sample of people with migraine: results of the OVERCOME study. Poster presented at: American Headache Society; Philadelphia, PA; July 11-14, 2019.

14. Ashina S, Foster SA, Nicholson RA, et al. Opioid use among people with migraine: results of the OVERCOME study. Poster presented at: American Headache Society; Philadelphia, PA; July 11-14, 2019.
15. Croop R, Ivans A, Stock D, et al. A Phase 1 study to evaluate the bioequivalence of oral tablet and orally dissolving tablet formulations of rimegepant in healthy adult subjects under fasting conditions. *Headache*. 2018;58(8):1303-4.
16. Allergan Press Release 10.17.2018, “Allergan announces completion of two positive safety studies for ubrogepant-an oral CGRP receptor antagonist for the acute treatment of migraine”.
17. Ferrari MD, Goadsby PJ, Roon KI, Lipton RB. Triptans (serotonin, 5-HT_{1B/1D} agonists) in migraine: detailed results and methods of a meta-analysis of 53 trials. *Cephalalgia*. 2002;22(8):633-58.
18. Lipton RB, Dodick DW, Ailani J, et al. Effect of ubrogepant vs placebo on pain and the most bothersome associated symptom in the acute treatment of migraine: the ACHIEVE II randomized clinical trial. *JAMA*. 2019;322(19):1887–1898.
19. Dodick DW, Lipton RB, Ailain J, et al. Ubrogepant for the treatment of migraine. *N Engl J Med*. 2019;381(23):2230-2241.

APPENDIX I – SUMMARY OF EFFICACY FINDINGS – ACTIVE COMPARATOR STUDY OF RIMEGEPANT VERSUS SUMATRIPTAN*

Summary of efficacy for key secondary and exploratory endpoints.

			BMS 927711 10 mg <i>n</i> = 71	BMS 927711 25 mg <i>n</i> = 61	BMS 927711 75 mg <i>n</i> = 86	BMS 927711 150 mg <i>n</i> = 85	BMS 927711 300 mg <i>n</i> = 111	BMS 927711 600 mg <i>n</i> = 82
Patients, <i>n</i> (%)	Placebo <i>n</i> = 203	Sumatriptan <i>n</i> = 100						
Sustained pain freedom (2–24 hours post-dose)	15 (7.4)	26 (26.0)	9 (12.7)	10 (16.4)	24 (27.9)	24 (28.2)	29 (26.1)	17 (20.7)
<i>p</i> value		<0.001	0.19	0.031	<0.001	<0.001	<0.001	0.002
Sustained pain freedom (2–48 hrs post-dose)	15 (7.4)	26 (26)	8 (11.3)	9 (14.8)	24 (27.9)	24 (28.2)	29 (26.1)	17 (20.7)
<i>p</i> value		<0.001	0.33	0.074	<0.001	<0.001	<0.001	0.002
Pain relief (2hrs post-dose)	104 (51.2)	72 (72)	42 (59.2)	37 (60.7)	62 (72.1)	52 (61.2)	84 (75.5)	64 (78.0)
<i>p</i> value		<0.001	0.21	0.16	<0.001	0.058	<0.001	<0.001
Sustained pain relief (2–24 hrs post-dose)	86 (42.4)	63 (63)	38 (53.5)	33 (54.1)	60 (69.8)	51 (60.0)	83 (74.8)	58 (70.7)
<i>p</i> value		<0.001	0.097	0.094	<0.001	0.004	<0.001	<0.001

Bold: statistical significance over placebo treatment. *n*: number of treated patients.

*Marcus et al, Cephalagia, 2014, 34(2) 114-125

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 42 years and since the age of 10. I experience headache EVERY day of my life. My pain level varies, but a more severe attack will typically be an eight on a ten-point pain scale. For perspective, an eight is severe enough to make you unable to function at work, or at home. The attack is not limited to head pain, but rather attacks many of the senses and includes sensitivity to light, sound, movement and smell.

Migraine has a major and negative impact on my life. I wake up in pain every day, but have to push through the best I can. I never feel like I can give 100% to anything, which affects my relationships and my career.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine do not work very well. Over the course of my life, I have tried countless different treatments for my migraine. I have a list of over 60 medications that I have taken for prevention and treatment. I frequently experience side effects such as drowsiness, nausea, dizziness, but worse than that, most medication is ineffective.

I am currently on four preventative medications and several different abortive medications. One of my preventative's retail cost is over \$15,000 a month! I am fortunate to have insurance coverage, but quantities are often restricted to the point that I cannot get enough medication for effective treatment. I desperately need access to new and affordable types of treatments.

My quality of life is very negatively impacted by migraine and I plea for access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a

migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Calisa Norman

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with chronic migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 13 years. I experience an average of 17 headache days per month. When I have a migraine attack, I feel helplessness, heartache, and sense of being lost.

Migraine has a major and negative impact on my life. I'm now on disability due to migraine. I can't work full time. The migraines started when my son was 4 months old. He's now 13. He doesn't know what it's like to have a normal, healthy mom.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried over 10 different treatments for my migraine. I'm allergic to Fiorcet. Botox failed me. Tried several different triptans. They either didn't work from the beginning or I grew intolerant to them. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend thousands of dollars each year to try and manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Catrina Groves

11/27/2019

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: CHRISTIE VICKERS, AGE 45, MOUNT JULIET, TN USA

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to Live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines (AND PROCEDURES).

I have had migraine disease for OVER 30 YEARS. I experience an average of 12-15 MIGRAINE/headache days per month. When I have a migraine attack, I feel FATIGUED, NAUSEATED, BOTH CHILLY AND HOT, OFF-BALANCED, I HAVE MEMORY LOSS, APHASIA (LOSS OF WORDS), ANXIETY, HEAD PAIN, BODY ACHES, EYE PAIN, VISION LOSS AND VISION CHANGE. ALSO, PHOTOPHOBIA (LIGHTS BOTHER ME), PHONOPHOBIA (NOISE BOTHERS ME), ALLODYNIA (EXTREME PAIN RESPONSE FROM THINGS THAT SHOULDN'T CAUSE PAIN SUCH AS CLOTHING, LIGHT TOUCH, ETC) AND OSMOPHOBIA (SMELLS BOTHER ME AND I SMELL STRANGE OR SMELLS THAT ARE NOT THERE).

I EXPERIENCE DAILY HEADACHES AS WELL. I EXPERIENCE POST MIGRAINE SYMPTOMS THAT LAST 2-3 DAYS AFTERWARDS CONSISTING OF EXTREME FATIGUE, MEMORY LOSS, NAUSEA.

Migraine has a major and negative impact on my life. I HAVE LOST EXCESSIVE DAYS FROM WORK DUE TO MIGRAINE AND THE CONCURRENT SYMPTOMS CAUSING VERBAL AND WRITTEN WARNINGS EVEN WITH FMLA IN PLACE. MY PERSONAL LIFE WITH MY FAMILY SUFFERS GREATLY AS I AM UNABLE TO PLAN OUTINGS, VACATIONS, ETC AS I NEVER KNOW WHEN A MIGRAINE MAY STRIKE. THIS ALSO AFFECTS MY RELATIONSHIP WITH MY HUSBAND. I TAKE DAILY MIGRAINE MEDICATION THAT CAUSES SOME OF THESE SAME SYMPTOMS AS WELL. HOWEVER, IF I DO NOT TAKE THEM, I WOULD HAVE MORE MIGRAINES.

I AM IN CONSTANT FEAR OF A MIGRAINE/ HEADACHE. HAVE TO CONSTANTLY READ FOOD LABELS FOR TRIGGERS SUCH AS NITRATES, NITRITES, MSG, ANY FOOD DYES, PRESERVATIVES, DAIRY, WHEAT, CAFFEINE, SMOKED FOODS, CHOCOLATE, REALLY MY LIST IS ENDLESS. I HAVE TO MAKE SURE THAT MY FOOD IS FRESH AS OPPOSED TO HAVING PRESERVATIVES. I HAVE TO LIMIT MY SURROUNDINGS AS IN CROWDS, PUBLIC PLACES, AMBIENT TEMPERATURE.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life have tried OVER 10 MEDICATIONS THAT I CAN NAME IN ADDITION TO PHYSICAL THERAPY, BIOFEEDBACK, HOT AND COLD THERAPY, MASSAGE, TALK THERAPY, NECK AND BACK TRACTION, ACUPUNCTURE, CEFALY UNIT, YOGA, ESSENTIAL OILS, MIGRAINE HYPNOTHERAPY, SO, SEVERAL different treatments for my migraine. MOST ALL MEDICATIONS THAT I HAVE EVER TAKEN CAUSE NEGATIVE SIDE EFFECTS SUCH AS HEADACHES, CHEST PAIN, WEIGHT GAIN, ACNE, APHASIA AND ANGER ISSUES. I AM UNABLE TO TOLERATE TYPE OF THERAPY THAT INVOLVES TOUCH AS I AM VERY SENSITIVE. I AM UNABLE TO TOLERATE-MASSAGE BECAUSE IT CAUSES SEVERE MUSCLE PAIN. OTHER THERAPIES THAT I HAVE TRIED HAVE SIMPLY NEVER GIVEN ME THE EFFECTIVE OUTCOME AS I EXPECTED. PHYSICAL THERAPY, BIOFEEDBACK, ACUPUNCTURE, TALK THERAPY ALL REQUIRE ME TO BE IN A PRIVATE SETTINGS OR OFFICE 2-4 TIMES WEEKLY. I ALREADY MISS TOO MUCH WORK DUE TO HAVING MIGRAINES, THIS MAKES IT IMPOSSIBLE TO MAKE APPOINTMENTS THAT FREQUENTLY DURING THE WEEK AND THESE PRIVATE OFFICES DO NOT MAKE HOUSE CALLS NOR DO THEY HAVE LATE HOURS OR WEEKENDS.

THE CEFALY UNIT AND ESSENTIAL OILS CAN ONLY BE USED AT HOME. THERE IS JUST NOTHING CONVENIENT EXCEPT FOR MEDICATION MANAGEMENT AND SURGICAL OPTIONS FOR MIGRAINES AS SEVERE AS MINE.

I desperately need access to new types of acute treatments AND SURGICAL OPTIONS SUCH AS NERVE DECOMPRESSION.

Migraine is an expensive disease to have, I spend ~\$1620 (include ALL medical, medicine, treatment costs related to your migraine), insurance for my family is \$6600 each year to try and manage my migraine attacks. THIS DOES NOT INCLUDE MISSED DAYS FROM WORK FOR WHICH I DO NOT GET PAID FOR. NOT TO MENTION WALK IN CLINIC VISITS FOR PAIN MEDICATION (TORADOL) AND STEROID INJECTIONS OR EMERGENCY FLUID IV HYDRATION.

THESE VISITS ARE \$50 PER VISIT PLUS MEDICAL SUPPLIES, TESTING AND MEDICATIONS USED.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines AND SURGICAL OPTIONS SUCH AS NERVE DECOMPRESSION that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new OPTIONS AS NOTATED so that I can be a healthier and more productive person.

Sincerely,

CHRISTIE VICKERS

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Christine D.

Date: December 5, 2019

Dear ICER,

I am writing with regard to new acute migraine medications. I want to make sure you understand the impact the disease has on my life and the potential impact that new medication could have.

I have had migraine disease for approximately 14 years. Currently, I experience 8-12 migraine and headache days per month. Some of these days mean that I am in excruciating pain and I can only close my eyes and lie down. Sometimes the pain is less severe and I can continue to do everyday tasks, but with difficulty. Migraines always give me a throbbing pain in my head, severe nausea, and sensitivity to light. I have difficulty focusing and thinking clearly even if I have a minor migraine.

Migraine causes me to call out of work or leave work early/come in late 1-2 times every 3 months. While I try to still work when I have a migraine, I am often far less productive because I can't think clearly and looking at the computer screen is difficult. I usually have at least 4-5 low productivity work days per month because of migraine. Because I try to push through work, my migraines persist and it means I often skip doing household chores, cooking, exercising, and social activities to rest and recover, usually at least 5 days each month. I have lost many full weekends to trying to recover a migraine.

Over the course of having migraine, I have tried taking over-the-counter drugs like Excedrin Migraine and aspirin. I have tried zolmitriptan and sumatriptan, but both of these drugs have given me severe side effects and were not effective at relieving my migraines. I have recently been prescribed rizatriptan. I have only taken it once so far but it did not give me relief.

I'm afraid that triptans largely will not be effective for me and I am eager to try new treatments, however, I worry about the cost. Triptans have largely been affordable for me although they have not been that effective. I am worried that if I do not find a treatment that works and I can afford, my migraines will transform to chronic migraine and have an even greater impact on my life. Please give these new medications a fair assessment so I can live a more productive and healthier life.

Sincerely,

Christine D.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Dan H.

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for nearly 6 years. I experience an average of 30-31 headache days per month. Given I have daily non-remitting migraine attacks, I feel non-stop acute pain. It is accompanied by tingling, numbness, blurred vision, loss of concentration, etc. It is not just a bad headache.

Migraine has a major and negative impact on my life. I haven't been able to work for over 5 years. I am not able to plan for things like I would have in the past. You can only do what you can do in a given day. Routine daily chores are now a constant struggle. I cannot have any expectations for the day. In the beginning, it was very hard for family members to understand how this feels and how it impacts my daily life and emotional wellbeing. It is still difficult for the general population to understand that "migraine" does not equal just a "really bad headache."

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried 50 different treatments for my migraine. These treatments have been ineffective as none of these treatments have been successful in breaking the migraine cycle or have relieved symptoms including pain. The side effects of these treatments have been significant; including but not limited to increased pain, tingling in limbs, chest pain, shortness of breath, inability to drive and loss of concentration just to name a few.

I have tried triptans and they have been ineffective. The triptans make my chest feel tight, so it is extremely dangerous for me to take them. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend thousands of dollars each year to try and manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a

migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Dan H.

12/4/2019

Subject: Public Comment in ICER Review of Acute Medicines for Migraine

Name: Dana B

Dear ICER,

Often times people don't understand other people's diseases because they are invisible like migraine or an immune disorder and such. I go to bed each night with a migraine with knowing that I will have to deal with it again tomorrow. I desperately need access to new and different medicines so that I can keep my hope alive. I don't like to take medicine but at this point I understand it is part of my being.

I have had migraine disease for 37 years. They started a month after I got married. (As I have been educated about migraine disease I realize that I had abdominal migraine as a child.) Imagine being a newlywed and having to deal with this pain. I had also just started a new job. My migraines make me feel nausea, pain, weakness and aura.

My migraines have changed as I have got older. I thought they would lessen but they are more. I have not had a pain free day for years. I am a fighter. I will not give up. It is very hard to see it impact my life. I haven't worked for 6 years. I miss many events because of migraine. My family is very supportive but I know its very hard when Grandma doesn't show for the play or dance performance.

My heart really aches for my sweet husband. He is my hero. He is there for me at all times. I cry often because he didn't ask for this life. He didn't ask to spend all this money. But as he holds me in his arms he reminds me that we are a team and that we will work through it together.

I have tried just about every drug available and have not had success. I have tried so many that its ridiculous. If something has promise and my doctors have faith in it then I am there 100%. I hate taking drugs. My mouth is always so dry and my sleep patterns are interrupted.

We have really good insurance but even so we spend several thousand a year on nerve blocks, pain meds, medicine and so on. We are willing to do this in hopes that someday something will click....magic!!!

I have a wonderful family that I am so proud of. I do sometimes mourn what my life could have been...just better. Possibly helping troubled youth, service, having my own business. Those things all had to be put on a shelf and will never be taken down. I understand my migraine life and all I ask of you is to try to do they same. I want the life that I have left to be filled with joy. To be filled with goodness with my husband and family. To be able to enjoy time by myself without being in the fetal position because of my migraine disease.

Thank you for your time,

Dana B

CHAMP

Hope for Migraine

Chronic Migraine Awareness

Migraine Nation

Retreat Migraine

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for twelve years. I experience an average of ten headache days per month. When I have a migraine attack, I feel incapacitated, uncertain, and scared.

Migraine has a major and negative impact on my life: hindering my ability to function in ordinary activities in my own home, with family and friends, and at work.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried three different treatments for my migraine. While said treatments have, at times, decreased my number of headache days per month, they ultimately fail to adequately fight my migraine disease.

I desperately need access to new types of acute treatments.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Daniel K.

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 3 years. I experience an average of 20 headache days per month. When I have a migraine attack, I feel light sensitive and physically weak. My stamina is impacted as well as cognitive function. I am unable to multitask or to pursue high-level thinking, so I have had to spend time and energy devising strategies that can help me break down complex tasks into simpler ones that can be completed over the course of hours or days.

Migraine has a major and negative impact on my life. I cannot be spontaneous. I cannot visit friends and family members who live more than 20 minutes' drive away from me without strenuous preparation. I am mostly housebound on a daily basis. I have encountered harassment and school-related obstacles because of my inability to keep up with "normal" students. I have had to reduce my hours at work from an average of 20 hours a week to 3. My 4.0 GPA has been compromised due to my migraines.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried 4 different treatments for my migraine. Triptans give me severe nausea. I have found no change in symptoms or migraine frequency with Propranolol. NSAIDs reduce my symptoms at high dosages, but they are unsafe to use at the frequency that is necessary to maintain a normal lifestyle. Steroid treatment with Dexamethasone gave me a slew of unpleasant side-effects without resolving a single migraine symptom. Even the Topiramate dosage that I take on a daily basis does only so much in terms of reducing the severity of the migraines I currently experience. At my current level of medical support, my migraine treatment is insufficient. **I desperately need access to new types of acute treatments.**

Migraine is an expensive disease to have, I spend \$5,300 each year to try and manage my migraine attacks

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

DeAnne L.

NCSC Member

Art Student (K)oalition Member

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had chronic migraine disease for the last 17 years. Chronic migraine is defined as migraine pain that lasts for 15 or more pain days per month. I experience an average of 28 headache days per month. When I have a migraine attack, my levels of pain vary. Up to 3 days a week I retreat to my dark bedroom to escape my worst symptoms. My head feels a level of pain that is equal to what I experienced when I had natural childbirth. However, giving birth was easier, as the pain did not last nearly as long and there were some medicines that would give me a break when the pain became unbearable. Another way to explain the pain is that my head feels like something inside it is about to explode. Both of these feelings are accompanied by light sensitivity, sound sensitivity, nausea and vomiting. My sense of smell is heightened so the smell of food makes me feel ill. Most of these nights I cannot even sit with my family for dinner. Through my bedroom floor I can hear my husband and children talking and laughing but I cannot be there. My world is completely shut down. My sense of temperature is “off” also. In the 80 plus degree days of summer, I can be found feeling cold wrapped in layers of blankets, or throwing off all my blankets as I feel overheated in the middle of the winter. My husband and I cannot even share the bed on my worst nights because the tiniest bit of movement is unbearable. Remember these symptoms are not for an hour, this is for DAYS. At these times, I don’t have any medicines that will change this picture. On other days of the week, I have a headache that just grinds me down all day. I look like I am functioning because I am on my feet, a smile pasted on my face for the world to see but the pain has my attention much of the day, as I push through to try to take care of my family, work or get household chores accomplished. I cannot nearly finish the amount of things I can easily organize and execute on my rare pain-free days.

Migraine has had a major and negative impact on my life. When I got married and chose to have 2 beautiful children I did not picture how I would make it through these years with chronic migraine because that person did not exist yet. Around the time my youngest child was 15 months old my chronic migraine life began. It has turned the world I thought I would have with my family upside down. Nothing I have done in these years has been spontaneous. While trying to outrun pain, combat pain, recover from pain or anticipate pain returning again, my entire family has been taken hostage to migraine also. Everything in our world has been scheduled. From the simplest tasks of laundry, meals and errands to the more complex life moments of playdates (that involve watching other people’s children), carpools, kids’ sporting events, day trips or family vacations, none of these have been done without thought and planning. From my early 30s until now, I have never had the pleasure of having a “just cause I feel like it kind-of-day” because my migraine looms and I don’t have time to waste to make sure life stays on track for my family’s sake. While my children, now college-age, look back at their younger lives they remember having had a loving mom and dad that have always been there for them; in these times I think we managed to do alright by them. But as I look back at the family photos that reflect smiles and times of laughter for them, my own memories are clouded by the shadow and sadness of migraine. With each picture I look back at I remember how much pain I was fighting through to be there on the other side of that camera, to be a part of that moment. When this

started, doctors told me they would help me find an answer so I could live a more normal life again. But days stretched into months and then into years, and now I have lost my children's whole childhoods. I cannot ever get those years back. I cannot be that softer, more easy going mom I planned to be because that time has gone by. I am extremely blessed that my husband, has stood by me through all this, while his life has been uprooted as well. He has had to pick up whatever I have been unable to accomplish to give our family a full life every step of the way. When his work day out of the house has ended, at home it has just begun. From cooking a meal, helping with homework, or getting kids to bed alone he has done it many a night. And if that is not exhausting enough, he has had to deal with me as well. Whether that be accompanying me to a new doctor's appointment, bringing me fluids as I lay in the dark vomiting, or helping me through a melt-down moment (of which there have been many) he has been there. Just another fun day in his life, in this world of a spouse with chronic pain. While family life has been where most of my energy has gone, I have managed to work a part-time job through all of this. And while this has been just enough to make me feel like I have been positively contributing to society through my children's younger years, now that they are older migraine laughs at me because I am trapped. As I said, my children have now left our home during the school year, but I cannot commit any more hours to a job, never mind a career, because nothing in my migraine world has changed. The pain can shut me down whenever and wherever it wants leaving me trapped with no options as to how I can ever expand beyond the role I have right now. And our social world is small too. It has not grown or expanded through the years because with all of the inflexibility that migraine has rendered on our existence, this area has wilted like a flower that has no sunlight and water. The loneliness migraine has brought to my world pierces me like a knife. Years of pain that cause me to retreat to darkness, has meant missing opportunities we had to socialize and build friendships. So if you were to pass me on the street, you would never realize any of this because I put on my face-the-world face but this is what life is like behind the doors of my home.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried at least 35 different preventive medications, multiple triptans and other abortive medicines, multiple different vitamins and a few alternative therapies for my migraine. These medicines or alternative options have either been ineffective or marginally effective in treating my migraine. In exchange for minimal benefit, I have had many side effects including palpitations, sleepiness, sleeplessness, dizziness, anxiety, dry mouth, constipation, nausea and vomiting. I have also tried DHE in the past but did not find it very effective. In addition, I experienced a stroke 1 ½ years ago so I can no longer use DHE because of its vasoconstrictive effects. At this point in time, my doctor allows me to use a triptan in limited quantities, again due to the medicine's vasoconstrictive properties that may increase my risk of stroking again. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend \$8,000 each year to try and manage my migraine attacks. In addition, my insurance probably pays about three times this amount toward the cost of my healthcare each year because of migraine.

Unfortunately, I am not alone in this. Nearly 1 in 4 U.S. households includes someone with migraine. And more than 4 million adults experience chronic daily migraine. In the Global

Burden of Disease Study by the World Health Organization, updated in 2013, migraine was found to be the sixth highest cause worldwide of years lost due to disability.

As I hope you can clearly see now, the quality of my life is severely impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person. This is the person I long to be again.

Sincerely,

Deborah B
Hope for Migraine: CGRP & Emerging Treatments-Moderator
Chronic Migraine Awareness, Inc
Coalition for Headache and Migraine Patients

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Deborah Melamed, Ph.D.

Date: Dec. 2, 2019

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

For 20 years, my partner has had a terrible neurological condition known as Chronic Migraine Disease. She has a headache most days of the year, but despite all the pain and sickness, she manages to work, help her psychotherapy patients, teach her graduate students, and fulfill family and social obligations at the best level she can.

Living with Chronic Migraine has a major and negative impact on both of our lives.

Migraine is a very challenging disease - there is no cure and many of the medicines used for people with migraine don't work very well. My partner has tried over 35 medicines over the course of the past 20 years; most didn't help at all.

My partner's quality of life is very negatively impacted by migraine and we both demand access to new acute medicines that can help to stop attacks, and avoid the pain and disability that she and so many others experience during a migraine. Thank you in advance.

Sincerely,

Deborah Melamed, Ph.D.

December 4, 2019

Institute for Clinical and Economic Review

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Dear ICER:

I am writing to encourage your support for access to new innovative treatments for people with migraine headache pain. My daughter has one of the most compelling cases demonstrating the need for new medications, and I would like to briefly share her story with you to demonstrate the justification for these new acute pain treatments.

In her junior year of college at a highly regarded academic school, she was majoring in Pre-Med studies with an “A” average and playing varsity tennis. During a competition she experienced what has been described as a “Thunderclap” headache of intense pain that has led to a condition of daily chronic migraine. The migraine pain in the upper range of a 10-point scale has been present 24 hours a day everyday of her life for over three years.

She has been seen at several leading medical centers specializing in migraine pain. She has tried various triptans, two DHE treatment regimens, Ketamine infusion therapy and a Lidocaine injection therapy in a hospital ICU. Each of the medications was ineffective and had very negative side effects. These side effects include increased pain, nausea, confusion, fatigue, hair loss and other autoimmune issues. Steroids have been required three times to break just the side effects of these treatments. Being bed ridden has led to further complications including Postural Orthostatic Tachycardia Syndrome or POTS. This is a condition that affects regulation of circulation making it difficult to stand without dizziness and adding further fatigue.

Current preventative medications including Topamax, Botox and the new CGRP treatment do not control her pain to a level where she can lead a normal life. Her daily pain is still intolerably high and she requires significant support for normal life activities. For example, most days she is unable to shop for groceries, maintain her apartment or have any social interaction because of the pain level and lack of energy.

The cost of these treatments and medicines has run well over \$100,000 over the past three years. However the far greater cost is the damage to a young woman’s life who had so much promise and whose future is now severely compromised by this disease. The promise of new innovative

medicines that may in the future stop, or materially reduce, acute migraine pain is one of the things that keeps her fighting to get better.

I strongly encourage ICER and the insurance industry to support access to new innovative migraine treatments.

Sincerely.

Donald F.

Public Comment on ICER Review of Acute Medicines for Migraine

Donna K

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with Migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had Migraine disease my whole life. My first attack was at age 6 and I was episodic until my mid-thirties. At that point in my life, my migraines increased to a rate of more than 15 migraines a month, classifying me as Chronic. No longer was Migraine a small and manageable part of my life – it began taking over my life. No longer could a day (or even an hour) pass without me having to think about my disorder. As I write to you now, I have an ice pack strapped around my head to control the migraine and symptoms. I will need to change it soon; I have 15 ice packs in my freezer and some days that is not enough. Currently, I experience an average of approximately 29 headache days per month, with an average of 18 migraine events per month. When I have a migraine attack, my physical capabilities range from highly inconvenienced to disabled to completely incapacitated. The symptoms I have (in varying degrees) are light sensitivity, nausea, vertigo, irritability, disabling lethargy, inability to concentrate, aphasia, and throbbing head pain.

Migraine has a major and negative impact on my life. Becoming Chronic since about 2007, I have been forced to leave my career and the job I love as a Registered Nurse because of the frequency, erratic, and intense nature of Migraine. I can no longer exercise like I once loved to, as cardio and being outside can trigger my migraine. I can no longer clean my house. And worst of all, I can no longer be the “present” mother and wife to my four children and husband of 25 years. My youngest daughter is 16 now and doesn’t remember a time she didn’t have to look for me in my bed when she’d come home from school. Can you imagine how devastating this is for someone only in their 40’s and who once lived like a *normal* person with *normal* energy levels and abilities? Finally, this year I have been approved for and recognized as having a disability that makes me no longer able to work. I am disabled, and it just completely sucks. I don’t want to be controlled by Migraine; I want so badly to actually *live*.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don’t work very well. Over the course of my Chronic Migraine decade plus, I have trialed preventative treatments: 19 medications, 8 supplements/herbs, 11 medical treatments, and 6 fields of specialists. Some of these treatments or medications have helped a little, some have helped for a short period of time

and then stopped working, and some have led to serious and horrible side effects. Some of the worst adverse reactions I've had are weight gain, difficulty breathing, numbness of my face, mouth and throat, suicidal ideations, cognitive and behavioral changes, and increased migraines.

At present, I am on Botox for chronic migraine and welcome 40+ injections every 3 months in my head, temples, neck, jaw and shoulders. Botox helps reduce the intensity and duration of my migraines, but it "wears off" well before I am due my next injections – insurance will not allow the injections more frequently. I am also on 2 oral medications and 5 supplements for migraine prevention which help a very small amount. I was able to trial 2 of the brand new CGRP medications before my insurance proclaimed that I could not be on both CGRP AND Botox – I had to choose one or the other. This is simply an insurance decision – NOT a medical one, as Neurologists and the drug manufacturers report both CGRP AND Botox are safe when used together. I wonder if insurance would deny a diabetic 2 types of insulin that their endocrinologist prescribed? *No, you can only choose one or the other.* Absurd! My insurance also allows me 9 triptan medications a month for migraine attacks. Directions are to take the triptan at the first sign of migraine. And repeat, if needed in 2 hours, not to exceed 3 tablets in 24 hours. Well, if Chronic Migraine is defined as 15 or more migraines a month, how does the triptan/insurance math work out? Moment of truth: it does NOT. As a Chronic Migraineur, you have to determine which migraine gets triptan treatment and which does not or cannot. The fact is, Chronic Migraineurs are left to suffer terribly with no adequate treatment. I often wonder if we are treated worse than animals?

If I am to have any kind of normal, productive *life*, it is obvious I require new or better treatment or even more of the treatment and medication available but withheld or denied to us.

Chronic Migraine is an expensive disease. I have lost the ability to work and provide for myself and my family. I spend hundreds a month and thousands a year to maintain existing medications and treatments, and trial new treatments, medications, medical devices, and products to try and manage this disorder. My migraines cost at least 6-10 thousand dollars a year... and I still deal with pain and disabling symptoms nearly every single day of my life.

It's pretty obvious that my quality of life is very negatively impacted by Migraine, and I need access to new acute medicines that can help stop migraines and avoid the pain and disability I experience. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive human being.

Sincerely,

Donna Kobayashi

Austin, TX

Eileen Brewer
December 4, 2019
Eileenbunny@gmail.com

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 39 years. I experience an average of 30 headache days per month. When I have a migraine attack, I feel nauseous, vomit, get confused, dizzy, have hallucinations, and experience intense, sometime debilitating pain.

Migraine has a major and negative impact on my life. In 2005, my husband and I decided that I would stop working due the challenges of living with migraine disease. I was missing work and found it difficult to maintain a regular schedule. Since then I have given birth to two amazing children. If you ask either of them they will tell you that they wish they had a normal life with a healthy mother. They wish I could take them to the park on nice days and play with them. Often I am not well enough to do so. They are happy and provided for, but I could be giving them more. I could be contributing to the household and society more as well.

My daughter started getting migraine attacks at age 4, and possibly earlier, we just didn't know it. She is very concerned that she will become like me. She is incredibly gifted and has goals and a bright future if this disease does not steal that from her.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried at least 70 different treatments for my migraine. Some of those treatments included side effects like forgetting where I was or my children's names. Other side effects I've experienced include nausea and vomiting, low blood pressure, different kinds of hallucinations, hair loss, Reynaud's Syndrome (low blood flow to extremities), low potassium, constipation, dizziness, headache, drowsiness, weight loss, weight gain, changes in the taste of things, difficulty concentrating, and coordination problems.

Some treatments are simply not in my budget and are not covered by my insurance. In addition to medications I have also tried diet changes, exercise, biofeedback, massage, acupuncture, and more. So far nothing has helped.

The two types of acute medications recommended for treating an individual attack are triptans and DHE. I eagerly tried sumatriptan when it first hit the market in the 90s. I had a severe adverse reaction to it including severe tachycardia, shortness of breath, and my headache got much, much worse. Over the years I have tried various triptans again as new ones have hit the market or because my doctor wanted to rule them out again. I have always had the same reaction

to the medications. DHE has not helped in years either. It used to work if I treated an attack when it was starting, but it no longer helps and I often wake with a migraine attack already in progress anyway. For acute treatment I've tried opiates and NSAIDS as well. Nothing helps and they actually seem to make things worse. For now, I do nothing to treat my attacks and it is no way to live. Some days I feel frantic for relief from the pain and other symptoms, but there is nowhere to turn. I am trapped with this. **I desperately need access to new types of acute treatments.**

My quality of life is very negatively impacted by migraine and I am literally begging for access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person. I do the best I can every day, but I could do so much better if I were healthier.

Sincerely,

Eileen Brewer

Director of Special Events – Coalition for Headache and Migraine Patients
Patient Leadership Council – National Headache Foundation
Director of Migraine Community Groups – Miles for Migraine
Vice President – Clusterbusters
Moderator – Move Against Migraine



Eli Lilly and Company
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December 6, 2019

RE: Lilly Response to ICER's Acute Treatment of Migraine Draft Evidence Report

Eli Lilly and Company welcomes this opportunity to comment on ICER's draft evidence report. The assumptions and methods used in the report differ from accepted medical and statistical practice in ways that may introduce bias in the results. This is of great concern, since erroneous findings may promote barriers to patient access, limiting patients' opportunity to benefit from innovative treatment options for migraine like lasmiditan.

Lilly would like to highlight 5 areas of particular concern: 1) The scenario comparing lasmiditan to triptans as a first-line alternative in patients whose attacks do not adequately respond to non-prescription medications is inappropriate and counter to the usage practices envisioned in the American Headache Society (AHS) consensus statement; 2) Inclusion of triptans in the network meta-analysis (NMA), especially without adjustment for variances in placebo rates, likely biased the comparisons, both for novel acute agents to triptans and among the emerging novel acute agents themselves; 3) It is not clear whether ICER fully accounted for differences in how end-points were defined in the included studies for the various comparators and what impact any differences may have had; 4) Limiting sustained pain-freedom results to only 24 hours rather than 48 hours may have diminished the cost-effectiveness; 5) The discussion of the long-term, open-label study of lasmiditan fails to note that actual usage is far below the levels used in the model.

1) Comparison of lasmiditan to triptans contradicts established clinical guidelines for migraine treatment.

Counter to the AHS Consensus statement (AHS, 2019), ICER has included a scenario in which lasmiditan is considered for use in all patients with migraine who require a prescription medication. Comparisons are based on direct competition with generically available oral triptans. Oral triptans are recognized as an appropriate first step for patients requiring prescription

medication for migraine based on their established efficacy and low price. Innovative new medications like lasmiditan, however, offer much-needed options for the subset of migraine patients who are contraindicated to triptans or have failed to respond or tolerate a triptan. In the current landscape, these patients are left to seek relief via non-preferred options like barbiturates and opioids, or continued use of various triptans, despite the therapeutic limitations in these patients. Despite recommendations against their use, analyses of commonly prescribed acute treatments for migraine show that approximately 10% of patients are prescribed opioids (Bigal, 2009; Buse, 2012; Casucci, 2013; Holland, 2013). With opioid use being a significant public health concern, there is a need for additional treatment options to address the specific needs of patients suffering from migraine. Furthermore, opioids have been shown to reduce responsiveness to other migraine acute treatments, including triptans (Friedman, 2017).

Post-hoc analyses of the phase 3 studies have indicated that lasmiditan has efficacy in the relevant subsets. In the SAMURAI trial, which had 40.9% of participants with at least 2 cardiovascular risk factors, significantly more patients taking lasmiditan were free from headache pain and their most bothersome migraine symptoms at 2 hours after dosing relative to placebo (Kuca, 2018). There were no differences in efficacy or cardiovascular safety related treatment-emergent adverse events based on the presence or absence of cardiovascular risk factors in a pooled analysis of SAMURAI and SPARTAN (Shapiro, 2019). As demonstrated in another pooled analysis of SAMURAI and SPARTAN trials, patients' response to lasmiditan does not appear to be affected by prior triptan use or response to triptans (Knievel, 2019).

Lilly requests that triptan comparators be removed from the final report and that all analyses based on the population of patients with attacks that do not adequately respond to non-prescription medications be removed from the final report.

2) The NMA results are biased toward triptans because there was no adjustment for placebo response over time.

The NMA performed by ICER is flawed by the inclusion of triptans. The included studies for triptans go back more than 25 years in history. The NMA is based on the false assumption that placebo has remained a consistent comparator over these years and that, therefore, placebo response can be used to align responses among the novel acute medications and triptans. The failure to use accepted statistical methods to help mitigate the bias of changing placebo rates

compounds the problem. Care should always be taken in the construction of an NMA to include placebo adjustment across studies (Dias, 2013). The placebo group across studies is a heterogeneous population due to multiple factors, including, but not limited to, route of administration, patient medical comorbidities, concomitant use of preventive medication, history of triptan non-response, migraine headache days per month, differences in dose timing, differences in second dose or rescue medication use, and differences in statistical methods for analyzing primary and secondary endpoints. Additionally, changes in scientific thinking and patient access to information over the last 25 years may have also contributed to changing perceptions of the likelihood of success. All these factors may systematically change the underlying placebo rates that are supported by the finding of increasing placebo response rates over time.

Again, these issues would be eliminated should ICER remove comparisons to triptans from the final report altogether. Short of that action, Lilly requests that ICER repeat the NMA using placebo adjustment across the studies.

3) It is unclear whether there were any differences in how endpoints were defined across studies and whether these differences impacted the results.

ICER correctly notes that, “Due to differences in the design of the trials related to the use of rescue medication (e.g., open-label second dose vs. randomized; NSAID vs. usual acute migraine treatment),” no quantitative comparison was made. ICER fails to note, however, that these differences in trial design impacted other endpoints that were quantitatively compared such as sustained pain freedom. Accurate comparisons cannot be made unless the same definitions are used for all comparators. The lasmiditan studies used rigorous methods in which patients with missing data or those who received rescue medication, whether study drug or placebo, were considered to have failed the sustained pain freedom endpoint (Kuca, 2018; Goadsby, 2019; Doty, 2019). It is not clear from publicly available literature on the comparators that the same rigorous methods were applied. Note also that the design of the lasmiditan studies may have encouraged more use of rescue medication thereby lowering the sustained response rates relative to the other comparators. The lasmiditan studies included randomized, blinded access to rescue study medication (either placebo or a second dose of lasmiditan) to explicitly test whether rescue dosing is effective. The studies did not show evidence that lasmiditan differed from placebo when used

in this manner (Loo, 2019); however, the presence of readily available rescue medication may have increased the likelihood of rescue dosing and, thus decreased the number of patients who were considered sustained pain free.

Lilly requests that ICER explicitly note in the final report whether the rigorous definitions for lasmiditan were followed for the included results for other comparators and what impact any differences might have on the resulting comparisons.

4) Data on sustained pain freedom through 48 hours were not included.

Despite availability of data on sustained pain freedom to 48 hours for lasmiditan (Doty, 2019), ICER changed course from its initial protocol to include only data on sustained pain freedom to 24 hours. This runs counter to accepted medical understanding which considers migraine a complex neurological disease, characterized by recurring attacks of moderate to severe head pain, lasting from 4 to 72 hours (Headache Classification Committee, 2018). Consideration of effectiveness out to 48 hours, rather than 24 hours, could affect a reduction in cost per quality-adjusted life-years (QALY), approaching roughly half of what is stated in the draft report.

Lilly requests that ICER revise the analyses taking into consideration publicly available data out to 48 hours.

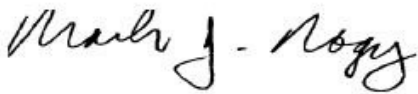
5) Long-term data for lasmiditan demonstrate much lower usage than what was assumed in ICER's analysis.

ICER focuses on only 1 aspect of the long-term, open-label continuation study of lasmiditan: whether or not the GLADIATOR study provides sufficient evidence of a reduction in headache episodes (Brandes, 2019). Other important aspects of the interpretation of GLADIATOR are omitted. In particular, GLADIATOR suggests continued efficacy of lasmiditan over multiple episodes with lower usage of lasmiditan than what ICER incorporated into its model. While the required baseline number of migraine attacks per month required for entry was 3 to 8 attacks per month, the average number of lasmiditan-treated attacks in GLADIATOR over the course of 1 year of follow-up was fewer than 2 per month.

Lilly requests that ICER revise the budget impact assessment to reflect available data on actual usage.

In summary, Lilly is concerned that deficiencies in the draft evidence report will cast an inappropriate and negative light on emerging novel acute treatments for migraine that may hinder appropriate patient access to innovative options like lasmiditan. It has been more than two decades since the approval of a new class of acute treatment for migraine. Through innovations such as lasmiditan and the other new medicines which are able to address the acute treatment of migraine, we are one step closer to meeting the needs of those living with migraine and advancing the possibility of completely eliminating migraine pain.

Sincerely,

A handwritten signature in black ink, reading "Mark J. Nagy". The signature is written in a cursive, flowing style.

Mark J. Nagy
Vice President, Global Patient Outcomes & Real World Evidence
Eli Lilly and Company
317-276-4921

mnagy@lilly.com

REFERENCES

- American Headache Society (AHS). The American Headache Society position statement on integrating new migraine treatments into clinical practice. *Headache*. 2019 Jan;59(1):1-18.
- Bigal ME, Lipton RB. Overuse of acute migraine medications and migraine chronification. *Curr Pain Headache Rep*. 2009 Aug;13(4):301-7.
- Brandes JL, Klise S, Krege JH, et al. Interim results of a prospective, randomized, open-label, Phase 3 study of the long-term safety and efficacy of lasmiditan for acute treatment of migraine (the GLADIATOR study). *Cephalalgia*. 2019 Oct;39(11):1343-1357.
- Buse DC, Pearlman SH, Reed ML, et al. Opioid use and dependence among persons with migraine: results of the American Migraine Prevalence and Prevention (AMPP) Study. *Headache*. 2012;52(1):18-36.
- Casucci G, Cevoli S. Controversies in migraine treatment: opioids should be avoided. *Neurol Sci*. 2013 May;34 Suppl 1:S124-S128.
- Dias S, Sutton AJ, Welton NJ, Ades AE. Evidence synthesis for decision making 3: heterogeneity–subgroups, meta-regression, bias, and bias-adjustment. *Med Decis Making*. 2013 Jul;33(5):618-640.
- Doty EG, Krege JH, Jin L, Raskin J, Halker Singh RB, Kalidas K. Sustained responses to lasmiditan: Results from post-hoc analyses of two Phase 3 randomized clinical trials for acute treatment of migraine. *Cephalalgia*. 2019 Oct;39(12):1569-1576.
- Friedman BW. Managing migraine. *Ann Emerg Med*. 2017;69(2):202-207.
- Goadsby PJ, Wietecha LA, Dennehy EB, et al. Phase 3 randomized, placebo-controlled, double-blind study of lasmiditan for acute treatment of migraine. *Brain*. 2019 Jul 1;142(7):1894-1904.
- Headache Classification Committee of the International Headache Society. The International Classification of Headache Disorders, 3rd ed. *Cephalalgia*. 2018;38(1):1-211.
- Holland S, Fanning KM, Serrano D, et al. Rates and reasons for discontinuation of triptans and opioids in episodic migraine: results from the American Migraine Prevalence and Prevention (AMPP) study. *J Neurol Sci*. 2013;326:10-17.
- Kniesel K, Buchanan AS, Lombard L, et al. Lasmiditan for the acute treatment of migraine: subgroup analyses by prior response to triptans [epub ahead of print]. *Cephalalgia*. 2019 Nov 19: doi: 0333102419889350.
- Kuca B, Silberstein S, Wietecha L, Berg P, et al. Lasmiditan is an effective acute treatment for migraine. *Neurology*. 2018;91(24):e2222-e2232.

Loo LS, Plato BM, Turner IM, et al. Effect of a rescue or recurrence dose of lasmiditan on efficacy and safety in the acute treatment of migraine: findings from the phase 3 trials (SAMURAI and SPARTAN). *BMC Neurol.* 2019 Aug 13;19(1):191.

Shapiro RE, Hochstetler HM, Dennehy EB, et al. Lasmiditan for acute treatment of migraine in patients with cardiovascular risk factors: post-hoc analysis of pooled results from 2 randomized, double-blind, placebo-controlled, phase 3 trials. *J Headache Pain.* 2019 Aug 29;20(1):90.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Elizabeth F.

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for several years, and chronic migraine since January. I experience an average of 30 headache days per month. When I have a migraine attack, I feel like a pencil is trying to escape through my eyebrow, I have severe noise sensitivity, as well as some light and odor sensitivity, and my ability to do anything cognitively demanding drops significantly.

Migraine has a major and negative impact on my life. I am a graduate student, and I have had to ask for an extension on my degree progress, because I am unable to work many days during the month. I have to limit the amount of time I visit my family, because travel is extremely difficult on my body.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried a few different treatments for my migraine. Topiramate and Amitriptyline both gave me side effects that made me even less functional than when I wasn't taking them; topiramate made me feel like I was constantly drugged and sedated, Amitriptyline made me so tired that I was completely non-functional until noon every day. I take Samaritan and Aleve on days when my pain is most severe, but with a limit of 9 and 14 days per month I can take them, respectively, there are many days that I am in pain and have no effective treatment. I recently received a Botox treatment, and have not yet experienced relief, and may need to wait 9 months (3 courses of treatment) to know whether it will be effective or not.

Migraine is an expensive disease to have, I spend my entire insurance premium of approximately \$3000 each year to try and manage my migraine attacks, and have bought many many things from Amazon or health stores, such as ice packs, vitamins, essential oils, and massaging devices, because I am so desperate for pain relief.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Elizabeth F.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: M Elizabeth R

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease probably since I was 20 or 21...in the mid 60s. In those days no one talked about or mentioned migraine per se. I was put on strong pain killers for many years as well as birth control pills which seemed to help. It wasn't until 1983 while we were living in HI that I had a terrible "headache" and went to the local clinic. There I saw a general practitioner who had had maybe 4 headaches in his life. He wasn't sure but thought I probably had migraines. He sent me to see a neurologist. Triptans had just come out and I was put on the injectable Imitrex. It was a game changer. I experienced an average of 7 – 15 headache days per month. The Imitrex helped a great deal to abort them but I still had roughly the same number...sometimes more sometimes less. When I have a migraine attack, I often feel very tired to begin with, sometimes the malaise comes first, sometimes the head pain. Nausea is almost always there. I feel depressed, guilty, especially when I was still working, very emotional where I can cry when someone just looks or says something even a relatively benign look or word. I also often feel very cold and just can't get warm. I'm sure it will never go away and I usually just curl up on the sofa with a soft blanket and vegetate. Sometimes I can sleep well. Other times I toss and turn.

Migraine has always played a major and negative impact on my life. Before I retired I would usually go to work, take my meds, by then I was on Axert, try to chill at my desk, tell everyone to leave me alone, then just do my work. The irony is that I really thought I had a handle on the whole thing, but after the migraine and its prodromal and postdromal effects...usually 5 – 7 days...I would wonder how I dared drive and even did the quality work I expected of myself. There have been many family or business events...my husband was a submarine officer and we had certain obligations depending on what his job was...that I couldn't attend. Or if I attended I was clueless of what happened at the event.

Migraine is a very challenging disease to treat effectively probably partly because many people refused to acknowledge the seriousness of it. For many years I believed I could control it by ignoring it. (At 75 I now accept that that will never happen.) Many well-meaning friends would tell me not to be so stressed. That was not my major trigger. And often migrainers get the attack after a major event or even on the weekends after just having a normal work week. Interestingly my biggest trigger has always been scents: perfumes, body lotions, candles, after shaves, etc.) Our world has become totally oriented to "smelling good" while those of us who have scent as a

major trigger are blamed for being self-centered, making things up, complainers, etc. Sometimes, because our whole being is affected by this syndrome, the guilt would be very strong. "Why can't I control this?" "What did I do this time to initiate it?" "Am I getting enough sleep or sleeping too much?" "Am I not staying hydrated enough?" I think the guilt is a huge part of many sufferers...so much so that I believe it is a part of the syndrome. There is no cure and many of the medicines used for people with migraine don't work very well.

Over the course of my life I have tried many drugs I can't remember that were primarily for pain. They would just knock me out but when I awoke all the symptoms were still there. I've been on Depakote, other beta and calcium channel blockers, several different anti-depressants and just about every triptan that's out there. I've tried acupuncture and seen pain management docs who tried PRP, nerve blocks, and several other procedures whose names escape me at the moment. Some helped relieve the pain or actually made it go away for awhile, but then it would be back. I even went off all medications, including aspirin and vitamins. I wanted to die for about a week. Then I started feeling better and I actually went almost 3 months with no pain. Then it began again. Though I tried to ignore it or not treat it I couldn't. Reading reviews from some patients who had attended major headache clinics where they received the hospitals own 'cocktail', they still ended up with the migraines returning. I try to get massages regularly. Right now I am taking Emgality monthly, which I think does help, and Axert when I have an attack. Occasionally I'll just take Excedrin migraine if it doesn't appear to be a full blown attack. I also take Vitamin B2, Magnesium, gabapentin and cymbalta regularly. I take Phenergan or Zofran for the nausea and skelaxin for some of the neck and head pain. Over the course of the last 30 - 40 years I have been in the ER about 1/2 dozen times. I was always pretty sure it was just a variant of my usual migraine, but the pain would be so severe and sometimes different that I was concerned that I was having a stroke.

With the advent of triptans in the 80s and as more and more research on migraines has occurred, the syndrome is finally acknowledge as a true disease and a frustrating one for physicians and patients alike. I had always hoped that as I got older they would go away, but that hasn't happened. My last attack began Thanksgiving night. I took an Axert when I went to bed but I woke up with the pain recurring along with the nausea and malaise. Friday and Saturday have been pretty much lost and most of yesterday as well. When I have a major attack I'm usually out of it for 3 days and then feel a little strange for another 2. My memory has gotten worse for just simple things and yet if I go for a week or more without an attack the memory issues dissipate.

In addition I have begun occasionally getting slightly different attacks with eye droopiness, runny nostril and pain in ear...only on one side. My neurologist prescribed indomethacin. It works but I don't feel 'right' after using it. Many of my migraine symptoms get slightly worse and I get jittery. Thankfully, so far, these attacks are less frequent than the 'regular' migraine.

Migraine is an expensive disease to have. I count my blessings because I have always had insurance, such as BC/BS as well as Tricare. Now that I am retired I have Medicare and Tricare for life. In 2020 I will be paying about \$463.00/month for Medicare. Tricare for life was paid for by my husband's 30 years of service. Many other sufferers Don't have the necessary wherewithal to pay for their meds or insurance, but the insurance discussion is for another day. I do pay a co-pay of \$52.00 for 12 pills of Axert. Some treatments over the years have cost me

\$700.00 out of pocket because insurance wouldn't pay for it. There is the cost of loss of productivity for people who are working and those who need to care for family while in excruciating pain. I am no economist nor statistician but I've seen data on the annual cost of migraine disease and its treatments to try and manage migraine attacks. It's extremely expensive and often not very effective. It's wonderful that finally more and more drugs are coming on the market. These drugs need to be available for all who suffer from this debilitating disease.

My quality of life as well as the lives of many friends and family is very negatively impacted by migraine and I demand access to new acute medicines as well as preventative drug that can help all of us sufferers stop attacks and avoid the pain and disability I and others experience during a migraine. If an acute drug can kill the migraine within 2 hours with no lingering side effects that would be nirvana. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

M Elizabeth Rogers MT (ASCP), BS

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Elizabeth S.

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for six years. I experience non-stop migraines every single day for the last ten months. I've unfortunately been living my life in extreme chronic pain. I also experience fatigue, throbbing sensations, dizziness, confusion, light and noise sensitivity. Some days I have no option but just to lay in a dark quiet room with ear plugs and an ice pack because the pain is so unbearable. Could you imagine living your life like that?

Migraine has a **major** and negative impact on my life. I have been diagnosed with **migraine, optic migraine, and a rare form of migraine called hemiplegic migraine**. The hemiplegic migraine leaves me with stroke-like symptoms. I see a flash of light, and one side of my body experiences complete paralysis. I can't walk, cook, bathe, or pretty much do anything for myself. The hemiplegic migraine also causes confusion, memory loss, weakness, numbness, tingling sensation, and I am unable to communicate. My hemiplegic migraine symptoms take over a month to start to recover, my paralysis last at least three weeks, and the weakness and memory loss has yet to subside. I feel like a complete burden to my family. I was a healthy, abled body gymnast for over 14 years who loved to do yoga and now I spend weeks bedridden due to my intractable migraines.

As you may know, migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried many different treatments for my migraine. I have tried everything from acupuncture, cupping, ice packs, heat therapy, essential oils, massage therapy, physical therapy, vitamins, antidepressants (for migraine treatment), anti-seizure medication (for migraine treatment), you name it, I've tried it. These treatments have been ineffective for my daily migraines and the prescribed medications have caused many different side effects which I had to stop the drug (increased heart rate, shallow breathing, insomnia, etc). I've always eaten healthy (I've been a vegetarian most of my life) but I also changed my diet and do not eat or drink any foods that trigger migraines.

As a person who has hemiplegic migraines it is highly controversial to use triptans due to the vasoconstrictive properties (and the concerns for stroke). I also have a bleeding disorder called Von Willebrand disease which makes it even harder for me to find access for the right migraine medications. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, this year alone I have spent well over \$12,000 out of my own pocket to try and manage my migraine attacks including 4 emergency room visits,

urgent care visits, 4 MRIs (including thoracic and cervical imaging), CT scans, radiology readings, neurology consultations, medications, acupuncture, physical therapy, and massage.

I want you to know that I am in my twenties, my life has completely changed because of my migraines. My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person. As you can see, I'm doing the best I can to do my part in preventing migraines (diet restrictions, different therapies, different medications, etc.) and I hope that you take my letter into consideration. It's not just a headache for me. I hope one day I can live pain free. I hope one day I can feel like myself again.

Sincerely,

Elizabeth S.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Evelyn Durmaz

Dear ICER,

I am writing to explain how migraine is affecting my life and why I am constantly working and trying to find new and better ways to deal with it.

I have had migraine disease for 20 years. Every month I have an average of 8-12 headache days when migraine pain makes it difficult to keep commitments and follow through with plans. On 1-2 days per month I am forced to stay in bed in a dark room, and cancel all plans and activities. On these days because of the pain even preparing very simple meals becomes very difficult.

Migraine has a major and negative impact on my life. I would like to travel, but I find that any time I try to go on a trip, dealing with migraine becomes a major factor, sometimes causing me to lie in the hotel room or the back seat of the car for hours while my friends and family are out and about exploring. My coworkers, friends and family have had to adjust and adapt to my unpredictable and limiting migraine attacks.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work well. Over the course of my life I have tried over 12 different treatments for my migraine. While triptan drugs are the current best treatments, I have had to stop taking them due to side effects. My neurologist would no longer see me after I turned 65 and went on Medicare. I wasn't successful in getting seen by another local neurology group. Currently with the help of my general practitioner I am trying to deal with migraine attacks using biofeedback and Cefaly, an external trigeminal stimulation device. But these treatments are not anywhere near enough to get me back to normal functioning.

Therefore I am hoping to be able to try one of the **new ditan or gepant drugs** which will soon be approved. Of course, it will be necessary for my insurance to pay some of the cost. I can't afford the sky high price of a new medication on my own.

My quality of life is very negatively impacted by migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Evelyn Durmaz

Gaelle Gourgues

Malden, MA ~ gourguesg@yahoo.com ~ www.linkedin.com/in/ggourgues

Monday, December 2, 2019

Dear ICER,

I started experiencing migraine on a frequent basis 5 years ago but was not diagnosed until August 2018. My weekends or nights after work were spent in bed or on a couch wearing dark sunglasses in a dark room with extreme exhaustion, head pain, nausea, light sensitivity and sometimes dizziness. I woke up with migraine every day and it lasted all day. I felt dazed and my brain was foggy. I remembered some morning in December 2018 and January 2019, when I just felt that I could not face my responsibilities with those kind of relentless debilitating symptoms. I just wanted to remain in bed.

The most frightening symptoms of migraine in my case are: 1) the slow mental processing; 2) forgetting what I was supposed to be doing in the time it took me to move from one room to another in my apartment; 3) the inability to comprehend statements someone is making while in conversation with me when I understand each of the words that are being spoken (aphasia). It did not dawn on me that something was seriously wrong until I casually mentioned these frequent head pains and other symptoms to my Primary Care Physician. She told me I needed to immediately see a Neurologist who specialized in migraine.

I made an appointment with the Neurologist for August 9, 2018. The day before I was supposed to see the Neurologist, I ended up in the emergency room with a migraine that I could not bear and that prevented me from doing anything that day. I was given the "cocktail" for migraine. The ER doctor called the Neurologist I was about to see the next day to ask if she wanted scans of my head done to rule out any tumor or other structural issues that would have prompted such migraine intensity. The scans were normal.

My migraine usually lasted all day and had various intensity throughout the day. I have migraine 20 to 21 days out of one month. In September 2018, I finally had to give up on exercising, social commitments and recreational events. I also gave up cooking for myself. I buy meals pre-made from one of those online food subscription companies. I just didn't have additional physical energy and the mental stretch after working all day and week to make sure I have a roof over my head. My whole concentration and mental capacity I directed toward keeping my job. So, I made the choice to eliminate all other activities.

My first Neurologist prescribed what she called traditional migraine treatments such as Topamax, Gabapentin and triptans. Topamax made my mental processing slower than the migraine, I felt depressed and the right side of my face would go numb. Gabapentin put me in bed for 3 days because I was completely devoid of energy. Triptans of any sort just dulled the migraine symptoms and didn't eliminate it. Then I stopped responding to triptans all together. After I failed all of those treatment because of their debilitating side effects, she referred me out to a Neurologist that was part of a larger institution and part of a pain center at Tufts Medical Center in Boston.

The second Neurologist at Tufts Medical Center started me on Aimovig in Jan 2019 but that did not work well for me. She gave me a form to daily record my migraine and its intensity. After 4 months, she judged that I was still having too many migraine incidents in a month. She switched me to Ajovy in May 2019. After 3 months of taking the injection, on the 4th month the migraine frequency and intensity started decreasing and continue to do so.

In November 2019, I am happy to report that I only suffered 4 migraine during that month!!! Unbelievable and I never thought this could happen. On the 4 days I had the migraine, I took indomethacin. That does always work at eliminating the migraine or decreasing the intensity. It cost me under \$10 for 30 pills. I am also on Zofran for the acute nausea I experience and it is also under \$10 for 9 pills. I have to judge how bad my nausea before deciding to take the medication, since I can only refill this medication every 30 days. I also wear special glasses for light sensitivity to protect my eyes and prevent triggering a migraine or worsening one in progress. Those cost me ~\$210. I am waiting for the release of the new acute treatments to see if one of them will work better at aborting the migraine on the few days they occur in a month.

Moving forward, I worry about my insurance denying me Ajovy or any of the new acute meds that will be released on the market. I currently don't deal with the insurance directly only because Tufts Medical Center has a specialty pharmacy that fill those type of treatments and deal with all the issues that may arise with the insurance. **THIS IS A BLESSING!** I don't pay any money out of pocket for Ajovy at this point. But I am worried about future exorbitant out-of-pocket cost.

I am dependent on this medication to have a normal life that would include resuming cooking, exercising, social activities, improved and faster mental processing, less forgetfulness, understanding full statements being spoken, etc. I am calling on you to empathize with the terrible impact this disease has on our lives and to support access to these medications and recommend that the insurance companies continue to provide the funds for patient to obtain those new treatments.

Sincerely,

Gaelle Gourgues

Advocacy Letter

I have suffered with migraine since 7th grade. Starting in 2002 I would get only one migraine a month. Starting in my early 20's I developed chronic migraine. I suffered from 20 migraines/month while completing my undergraduate degree. I worked with countless doctors, clinicians, university officials, family and friends to get me through this incredibly difficult time.

I was finally pointed in the direction of a life-changing neurologist in New York City. He changed my life. I was prescribed medications that allowed me to function normally. I started taking daily medication to relieve my migraines and always tried new rescue medications when the occasional migraine broke through. I graduated only one semester late and landed a full-time job almost immediately.

The importance of a rescue medication that works and is affordable is absolutely life-changing. It saves a tremendous amount of pain, allows you to function normally and keeps you out of the emergency room. Migraine sufferers who do not have proper access to this medication end up in the hospital, outpatient centers and disabled.

Oftentimes, myself included, individuals, suffer from terrible side effects from these rescue medications. While they help when absolutely necessary they can make you feel like you are in a fog, cause sleepiness and fatigue, and even bizarre side effects. To have new and affordable treatment is crucial for migraine sufferers around the globe. The importance of this medication is truly life-changing and keeps people out of the emergency room - the worst place for a migraine sufferer.

Please understand the importance of these life-changing medications. As someone who has suffered greatly at only 28-years old, I hope you are aware of how many people suffer.

Thank you,

Genevieve Strycharz
New Jersey



Global Healthy Living Foundation
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Upper Nyack, New York 10960 USA
+1 845 348 0400
+1 845 340 0210 fax
www.ghlf.org

December 6, 2019

SUBMITTED VIA EMAIL

Steven Pearson, MD
President, Institute for Clinical and Economic Review
Boston, MA 02109 USA
Email: publiccomments@icer-review.org

RE: Draft evidence report on acute treatments for migraine

Dear Dr. Pearson,

On behalf of the [Global Healthy Living Foundation](http://www.ghlf.org) (GHLF) we thank ICER for providing us with the opportunity to provide comments on the most recent draft evidence report on acute treatments for migraine. As you know, GHLF is a 20-year-old non-profit patient organization reaching millions of chronically ill patients and their caregivers across the country through social media, community events, and online support and education. Our ArthritisPower registry of more than 24,000 patient participants was developed as part of the National Patient-Centered Clinical Research Network (PCORnet) with data capture mapped to the PCORnet Common Data Model. GHLF works to improve the quality of life for patients living with chronic disease by making sure their voices are heard and advocating for improved access to care at the local and federal level. Our patients live with chronic conditions including arthritis, psoriasis, gastrointestinal disease, osteoporosis, cardiovascular disease, and migraine.

Many of our concerns were addressed in the letter being submitted by the Headache And Migraine Policy Forum and we won't repeat them here. As a cosigner of that letter we encourage you to carefully read and address the concerns presented.

As we have stated in the past, we continue to emphasize the danger of ICER's approach to defining and determining the value of treatment and clinical efficacy by using Quality Adjusted Life Years (QALY). This methodology (or more accurately, mythology) disadvantages patients with chronic and long-term diseases and creates a system that devalues their lives.

Migraine patients can fluctuate from being episodic and chronic. Various triggers (environmental, biological) can cause increases in frequency and intensity of migraine attacks. Some call migraine disease a thief because they never know which day, week or month will be stolen from them due to migraine. Migraine patients are not homogenous and the impact of this disease can include presenteeism, lost work, missing major life events, anxiety, depression, and for some long term disability.

On a personal note, one of the cosigners of this letter, Joseph Coe, 34, GHLF's Director of Education and Digital Strategy, is a person living with episodic migraine. He has tried multiple therapies (prevention and rescue) and migraine still negatively impacts his personal and professional life. Office accommodations have been made to reduce his exposure to environmental triggers. He is fortunate because as an employer, GHLF makes it possible for him to work comfortably and productively with medication available. Unfortunately many migraine patients don't have the same employment luxury and not all drugs work for all people. This is why innovative treatments are needed so urgently. He is not unique. Please listen and

take guidance from the migraine patient community. Re-read section 1.4 “Insights Gained from Discussions with Patients and Patient Groups” found within your draft scoping document. Understand how your review might harm an already vulnerable, in pain, and stigmatized patient community, and don’t let this happen.

New treatments provide hope for patients like Joe who, as a younger person with migraine, doesn’t know what the future holds. Knowing that there are new acute treatments reduces the stress of an already hard to treat disease.

Thank you for the opportunity to comment on this proposed draft evidence report.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Louis Tharp'.

Louis Tharp
Executive Director, Global Healthy Living Foundation

A handwritten signature in blue ink, appearing to read 'Joseph M. Coe'.

Joseph M. Coe, MPA
Director, Education and Digital Strategy, Global Healthy Living Foundation



December 3, 2019

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Gillean Dean

Dear ICER:

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

My migraines started when I was 15. They have worsened as I have gotten older, now 49. I suffer from intractable chronic migraine without aura, intractable episodic cluster headache and intractable chronic paroxysmal hemicrania. Having chronic migraines means I never really feel good – I have ‘less bad’ days, which I welcome, but I am always in pain. As far as the pain scale, I don’t even really know anymore. I am rarely less than a 7, usually at an 8 and frequently at 9 or even 10. The pain is intense, debilitating, exhausting, demoralizing, and sometimes makes me wonder the safety of my sanity. I am acutely sensitive to sound, smells, light and rapid or repetitive movement. Blinking lights or someone clicking a pen are the worst.

The emotional toll of migraines is vast. I have almost totally withdrawn from everything. I have not been able to work for over a year; my husband is an overworked saint, financially supporting us both. I go nowhere socially and only leave the house to grocery shop, knowing I will come home exhausted with my head pounding. My friends don’t bother to invite me anywhere, knowing I am not likely to accept – and if I do accept, there is a great chance I will have to escape early. Anxiety and depression, especially depression, are a heavy burden. Hard to escape when there seems to be no hope for relief.

I have tried over 36 different treatments over the last 35 years that ranged from hope-inspiring, terrifying, extremely debilitating, and life-threatening. While I may have experienced relief from medications, the side effects were often unbearable. So, I was prescribed an additional medication to counter these side effects. And an additional medication to counteract side effects from that medication....and so on. At best, most of them caused severe nausea, fairly easily counteracted. The more severe side effects involved memory loss, extreme hair loss, loss of peripheral vision, severe muscle spasms and seizures. I don’t respond to triptans, so acute medications are my only option to relieve pain. And these can only be used in moderation: first, health insurance will only cover so many and second, the risk of rebound headaches is very real. It is a personal and emotional battle to decide when the pain is bad enough to warrant taking my precious acute medicine. Or when I need to just suck it up and suffer. ***I desperately need access to new types of acute treatments.***

Migraine is an expensive disease. The financial toll is constant. The out of pocket costs for prescriptions, treatments, doctor’s visits, specialist visits, emergency room visits, ambulance trips and the health insurance (which I don’t dare to go without) would add up to over \$100,000. Imagine if I had put that into a 401k instead? Currently I spend over \$10,000 per year on these expenses.

I need ICER to appropriately value my pain and suffering I go through due to migraines and take very seriously how this impacts my quality of life. ICER and insurance companies need to get it together and allow me to have AFFORDABLE access to new acute medicines so I can have hope and take back my life.

Sincerely,

Gilleen Dean

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 20 years. I experience an average of 2-5 headache days per month. When I have a migraine attack, I feel incapable of going about my life... I can't work or take care of chores, or really anything at all. It's incredibly disabling.

This past year, I was diagnosed with breast cancer at age 35. I have spent over \$10,000 in medical bills for treatment. Next year, I expect even more bills. On top of it all, my migraines haven't gotten any better, and now I live with two expensive chronic health conditions.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried countless different treatments for my migraine, all with terrible side effects, and then only expecting some help for a short time, before I have to try another.

I've been using triptans throughout my entire time with migraine, which only helps with some of the symptoms (primarily pain) but doesn't help with the other debilitating symptoms my attacks bring. I desperately need access to new types of acute treatments.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my experience and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Hannah Esper



headsUPmigrane

Subject: PUBLIC COMMENT ON ICER REVIEW OF ACUTE MEDICINES FOR MIGRAINE

Name: Nita Ghei, Ph.D., J.D.

THE URGENT NEED FOR RESCUE MEDICATIONS FOR MIGRAINE

Migraine is a disease with no cure. Patients and their physicians face numerous challenges in what all too often becomes a long, exhausting, and expensive search from relief from pain, and other symptoms of the disease. And it *is* a progressive, chronic, neurological disease affecting millions of Americans. The effectiveness of medication in the relief of symptoms is highly idiosyncratic, and there is desperate need for access to new and different medicines at a price that affordable to patients.

I have tried multiple triptans, and DHE, with little effect. At present, the only rescue medication that works is Percocet, which is problematic for several reasons. CGRP medicines for acute attacks are urgently needed for patients like me, and for those suffering from hemiplegic migraine.

1. MIGRAINE IS MORE THAN HEADACHES.

Migraine is more than headaches; photophobia, phonophobia, allodynia, and nausea are some of the facets of the disease. It is now considered a disease of the whole nervous system.ⁱ Chronic migraine is closer to continuous migraine than episodic attacks, and needs both prophylactic and rescue medication.

It is worth noting that triptans are not effective in treating hemiplegic migraine, which is a particularly disabling form of the disease.ⁱⁱ Further, triptans, while effective, are not 100 % effective. None of the triptans exceeded 85% effectiveness, and many were below that.ⁱⁱⁱ That means that there is a significant number of migraine patients who are non-responsive to triptans, and need other options. New medications are also urgently needed for patients who suffer from hemiplegic migraine. Each untreated migraine hastens the progression of the disease. If the CGRP medications can help, a high price that would prevent access by patients, would be a myopic perspective, as later treatment would be far more expensive.

2. THE COST OF MIGRAINE

Migraine is one of the most widely prevalent illnesses, with 14% of American adults reporting; women of child bearing age seem to have the highest rates, with almost one in four women reporting a migraine in three months.^{iv}

Migraine is expensive for both patients and society. Using disability adjusted life years, migraine ranks seventh in the world. However, for ages 15-49, that is, for people in the prime years for acquiring education, skills, and for people in their prime working years, migraine ranks *third*.^v Women in this age cohort experience migraine about a rate of three time more than men. This has substantial implications not only for their own well-being, but also for that of their children.

The direct costs of migraine are the medical costs, including co-pays and urgent care, or emergency room visits (often, from dehydration). For those of us who use opioids, for lack of a more effective medication, the misapplication of the CDC's 2016 Guidelines has also resulted in ancillary costs such as state mandated urine analysis, even though such screens have no medical value for a migraine patient. Indirect costs include lost days at work, and similar lost productivity. In 2016, prior to the promulgation of the CDC's Guidelines, the annual direct and indirect costs of migraine to the US economy were estimated at \$36 billion.^{vi} Migraine patients spent \$6575 in direct medical costs more than people without migraine in that year. There is no reason to assume that number has decreased.

3. MY EXPERIENCE AS A MIGRAINE PATIENT

I was diagnosed with migraine, finally, as an adult, even though I have been suffering with migraine since I was in elementary school. After many years of being dismissed, having a diagnosis was a relief. This did not happen until I was in graduate school. Unfortunately, the diagnosis was the start of a long roller coaster ride.

After a brief period of limited success on Imitrex, no rescue medication worked consistently. The number of headaches escalated to the point I had chronic daily headache, and about 15-20 migraine days a month. A migraine feels like a chisel being stabbed in my eye; acute nausea – which can be triggered by any smell; photophobia, and phonophobia. Sometimes, I have visual distortions which make it unsafe to drive. I am a single parent, with two children, and a full time job, which I need to keep – both for the income, and for the health insurance.

About 18 years ago, I used IV DHE to successfully break the headache cycle. A second attempt about eight years failed. Intranasal DHE is completely ineffective as a rescue medication. I have tried all the triptans on the market, and they have not helped with my migraines at all.

At present, my rescue medication is Percocet, which is problematic in its potential for causing rebound headache. Getting Percocet prescriptions is also extremely burdensome. It requires a monthly visit to my doctor, which requires time off from work. The prescription has to be presented in person, which requires even more time off. I also constantly worry about new regulations that will make access to Percocet harder, while dealing with pharmacists and others who try to shame me for using it for analgesia.

4. THE EFFECT OF MIGRAINE ON MY QUALITY OF LIFE

Migraine is expensive, financially and emotionally. I spend at least \$4000 a year, not counting health insurance premiums, to manage my migraine attacks. This includes medication, and treatment but not incidentals that help stop me from over-exerting myself and triggering migraine attacks.

The disease has a multitude of negative effects on my life. Despite prophylactic medication, and Percocet, there are at least four days a month I am completely non-functional, and several days I complete tasks while suffering substantial pain.

This has a flow on effect not only on my work, but also my family, and my volunteer activities in the community. I have to be careful about what I can commit to with respect to volunteering at my children's schools, and activities. Sometimes, it means my children are taking care of me, instead of the other way around. I have had to cancel my volunteer shift at a local assisted living facility more than once because of migraine that could not be treated.

Travel is hard, so I rarely attend conferences, which limits professional growth. Similarly, because fluorescent lights are a migraine trigger, and blue light blocking glasses only do so much, I have had to turn down opportunities for professional advancement because of the limits of the rescue medication I have currently.

My migraine affects my children adversely, not just me. Better rescue medication would improve not just my life, but that of my children, and what I can give back to my community.

5. THE ROLE OF OPIOIDS

Migraine is among the top four reasons for Emergency Room visits, and opioids are administered about 35% about the time.^{vii} Opioids are largely disfavored as a long term treatment for migraine. For many of us, currently, there is no other option. Consequently we balance on the tightrope of pain relief and rebound headaches. With neither triptans nor DHE providing relief, opioids are the last resort, one that has been increasingly difficult to access.

Even though the population of non-medical users is almost entirely distinct from pain patients,^{viii} current policies have resulted in a situation where primary care doctors are extremely reluctant to provide *any* medical care to patients with pain, including migraine.^{ix} Access to another class of drugs, like CGRP, which do not have the stigma and the thicket of regulations that surround opioids, would be enormously beneficial to patients. Removing opioids from the equation would give patients access to care, not just for migraine, but also for primary care. This is particularly important in view of the comorbidities of migraine. In the long run, the result will be better health, and cost savings.

Access to new acute medicines that can help the many tens of thousands of people like me to stop attacks and avoid the pain and disability experienced during a migraine. Each migraine halted helps slow the progression of the disease. Each migraine halted lowers cost for the patient, the insurer, and the economy in the long run. Each migraine halted lowers the cost to American

families, both financial and emotional. Please respect our pain. Assess these new medicines fairly so that I, and all the other Americans in my position, can be healthier and more productive. That way, we all win.

Sincerely,

NitaGhei/s/

Nita Ghei, Ph.D., J.D.

Director of Research

headsUPmigraine

703-408-8796

nitaghei@gmail.com

ⁱ Lipton, R.B. and Bigal, M.E. (2005), “Migraine: epidemiology, impact, and risk factors for progression.” *Headache: The Journal of Head and Face Pain*, 45(s1). https://www.researchgate.net/profile/Richard_Lipton/publication/7904268_Migraine_Epidemiology_Impact_and_Risk_Factors_for_Progression/links/5a382e3daca272a6ec1e80fa/Migraine-Epidemiology-Impact-and-Risk-Factors-for-Progression.pdf

ⁱⁱ Cortelli, Pietro, Gianni Allais and Chiara Benedetto (2017), “Overview of Triptans in the Treatment of Acute Migraine.” *Headache: The Journal of Head and Face*. <https://pdfs.semanticscholar.org/5eff/99354aff2fefb4b9946e55272c534a30f935.pdf>

ⁱⁱⁱ Cortelli, Pietro, Gianni Allais and Chiara Benedetto (2017), “Overview of Triptans in the Treatment of Acute Migraine.” *Headache: The Journal of Head and Face*. <https://pdfs.semanticscholar.org/5eff/99354aff2fefb4b9946e55272c534a30f935.pdf>

^{iv} Burch, Rebecca, Stephen Loder, Elizabeth Loder and Todd A. Smitherman (2015), “The Prevalence and Burden of Migraine and Severe Headache in the United States: Updated Statistics From Government Health Surveillance Studies.” *Headache: The Journal of Head and Face*. <https://headachejournal.onlinelibrary.wiley.com/doi/abs/10.1111/head.12482>

^v Cortelli, Pietro, Gianni Allais and Chiara Benedetto (2017), “Overview of Triptans in the Treatment of Acute Migraine.” *Headache: The Journal of Head and Face*. <https://pdfs.semanticscholar.org/5eff/99354aff2fefb4b9946e55272c534a30f935.pdf>

^{vi} Bonafede M, Sapra S, Shah N, Tepper S, Cappell K, Desai P. (2018), “Direct and indirect healthcare resource utilization and costs among migraine patients in the United States.” *Headache*

vii Burch, Rebecca, Stephen Loder, Elizabeth Loder and Todd A. Smitherman (2015), “The Prevalence and Burden of Migraine and Severe Headache in the United States: Updated Statistics From Government Health Surveillance Studies.” *Headache: The Journal of Head and Face*. <https://headachejournal.onlinelibrary.wiley.com/doi/abs/10.1111/head.12482>

viii Jeffrey A Singer, Jacob Z Sullum, and Michael E Schatman (2019), “Today’s nonmedical opioid users are not yesterday’s patients; implications of data indicating stable rates of nonmedical use and pain reliever use disorder.” *Journal of Pain Research*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6369835/>

ix Lagisetty, Pooja A., Nathaniel Healy, Claire Garpestad, Mary Jannausch, Renuka Tipirneni, Amy S. B. Bohnert (2019), “Access to Primary Care Clinics for Patients With Chronic Pain Receiving Opioids.” *Journal of the American Medical Association*. (40 percent of primary physicians do not wish to take on patients with pain) <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2737896>

Name: Heather D

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 23 years. I experience an average of 30/31 headache days per month. I have a migraine every single day. When I have a migraine attack, I feel overwhelmed and incapacitated by pain, nausea, aching, dizziness, just to name a few of the symptoms.

Migraine has a major and negative impact on my life. I have a Bachelor's Degree in Accounting and had an amazing job with the State, and I had to quit my job and go on Social Security Disability because I could barely function. I missed so much work due to migraines that they threatened to fire me if I did not "get over" my disease. I had no control over that. That was in 2012. I also had 2 young children, and migraine took away so much of my time with my kids and enjoyment of my kids. It was hard to even get them a snack because I was in so much pain. Migraine took away my ability to leave the house, and that took away my friends and community.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life, I have tried over 50 different treatments for my migraine. I can no longer take triptans because they do not work, and they actually make me feel worse because they add side effects to my already terrible pain. I tried migraine surgery, which left my nerves forever damaged and cost me \$9,000. Many medications I have tried have made me sick to my stomach, and I already struggle to maintain 100 lbs. I have also had serotonin syndrome as a result of migraine abortives and preventatives. I have had very high heart rate issues due to other medications I have tried.

As I stated, I cannot take triptans. They cause additional problems and do not help the migraine at all. They are among the medications that have caused a very high heart rate and are a danger to my heart. I was unable to take DHE due to the risk of heart issues and the way I have responded to other meds heart-wise. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend over \$20,000 each year to try and manage my migraine attacks.

My quality of life is very negatively impacted by migraine, and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely, Heather D.

PUBLIC COMMENT FOR ICER REVIEW OF ACUTE MIGRAINE MEDICINES

Henry W.

Dear ICER,

I'm writing to let you know what its like to live with chronic migraine and to show you how it has impacted my life, my productivity as a scientist, and to show how desperate I am to have access to new medications as they become available.

I've lived with headaches and migraines all of my adult life. I'm a guy so I don't fit the norm on this disease. Since 2012, I've had migraines almost every day. On a good day, abortive medication (a triptan) works well and I can mostly function, albeit tired and not thinking very straight. On a bad day, I am unable to do much of anything and my head is screaming agony but I can't scream because that would hurt too much. The migraines and perhaps the drugs I have to use, steal my memory and make the world fuzzy. The migraines cause nausea, sometimes cold sweats, often feelings of being very cold.

I was once a man who loved adventure, loved travel, lived for being outdoors. Now, I am mostly trapped at home. I was once a researcher who ran large research projects, wrote books, gave lectures and tours. Now, through the good grace of my employer, I am still working part time but what took me a month before takes me a year now.

I have used (or could not use due to a contradicted medical condition) almost all available medications used for migraine either off-label or not. None of the prophylactic treatments work for me. I can't use nsaids. Botox, Cephaly, TMS, acupuncture, nerve injections – I've tried them all with no luck. The triptans work (with side effects) but cannot be taken as often as I have headaches. I've tried 2 of the CGRP blockers with negative results. I've spent thousands and thousands of dollars on medication and doctor visits. I've lost most of my work income. I am lucky to have an understanding family but it is a stress on us all. My lost productivity is a negative for the company and nonprofit I work for. I used to be a respected scientist in my field. Now I am a hollow shell of who I once was.

Please consider what migraine can do to people's lives, how it affects those around them, how it means lost productivity for society. Please allow access to new medications. Please consider the extreme pain of a migraine attack. You have the ability to provide hope for people like me. Thank you for your consideration.

Sincerely,
Henry W.



December 6, 2019

Submitted electronically to: publiccomments@icer-review.org

Steven D. Pearson, MD, President
Institute for Clinical and Economic Review
Two Liberty Square, Ninth Floor
Boston, MA 02109

Dear Dr. Pearson:

The Headache and Migraine Policy Forum (HMPF) values the opportunity to comment on the Institute for Clinical and Economic Review's (ICER) Draft Evidence Report (DER) on acute treatments for migraine. HMPF is a group of diverse stakeholders who work to advance public policies and practices that promote accelerated innovation and access to treatments for headache and migraine patients. A recent study shows that migraine disease is the second leading cause of all global disability and neurological burden. In the U.S., approximately 47 million Americans experience migraine attacks, with about 3 million experiencing migraine attacks 15 or more days per month.¹ Without question there exists an urgent need for improved migraine therapeutics.

We appreciate ICER's intent to seek multi-stakeholder input as part of its process to assess the value and effectiveness of different migraine therapies. HMPF previously submitted correspondence to ICER in response to the Draft Scoping Document² and understand that Midwest CEPAC Voting Panel members may not have access to these comments unless requested; we encourage them to be made available for review during the meeting.

While we agree with ICER that "compared with usual care in patients for whom triptans are not effective, not tolerated, or are contraindicated, these new acute treatments for migraine provide utility gains," HMPF remains concerned that the current DER quantitative model does not adequately assess the true cost of migraine disease and neglects to consider the full potential benefits of these new therapies. Therefore, we respectfully request that ICER amend the DER to address the following:

METHODOLOGY

Use of QALY Leads to Insufficient Consideration of the Patient Definition of Value.

As expressed in previous reviews, HMPF does not support the use of QALY as a methodology for a value assessment that is meaningful to patients. For persons with migraine and other chronic and disabling

¹ Global, regional, and national incidence, prevalence, and years lived with disability for 328 diseases and injuries for 195 countries, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016, *Lancet* 2017 Sep 16; 390(10100): 1211–1259

² HMPF letter to ICER in response to Draft Scoping Document, July 19, 2019.

diseases there is a delicate balance between quality and quantity of life. The use of QALY has also been found to be discriminatory against people with disabilities by the U.S. Department of Health and Human Services.³ Since we know that migraine patients are more than twice as likely to be disabled compared to those without migraine,⁴ QALYs result in lower ICER valuations for regenerative or life-enhancing therapies. We emphasize that any therapy that improves outcomes for the migraine patient population that is contraindicated from or poorly responds to existing therapies has tremendous value to this community. It is important to understand that migraine is not a homogenous disease that all patients experience similarly. People living with migraine disease have different symptoms, severities, limitations and responses to treatments. The migraine experience of individual patients often varies over time. This is why it is essential that migraine patients and their doctors have access to the full range of treatment options to find and use the care that best manages their specific migraine disease.

For individuals living with migraine disease, the return on investment from more time with loved ones, a higher quality of life, and increased productivity in both work and home life has great worth. HMPF respectfully requests that ICER utilize a more patient-centered approach that assigns value to endpoints that represent shorter, incremental gains that may be more meaningful to patients.

QUANTITATIVE MODEL FAILURES

ICER Improperly Compares Decades-Old Triptan Data to Modern Studies in an Inappropriate “Apples-to-Oranges” Approach.

The DER improperly utilizes 25-year old triptan studies and compares them to modern clinical trial studies, fatally anchoring the review on a placebo response that has changed over time.⁵ Therefore ICER’s cost effectiveness model is a highly flawed “apples to oranges” comparison. If ICER insists on continuing to compare 25-year old studies with modern ones, we request that the model include an adjustment for the increased placebo response rate that has been documented over a very similar timeframe.

The DER Does Not Accurately Model the Targeted Patient Population Or Consider Discontinuation Rates That Will Occur in the Real World, Which Skews Both the Efficacy and Cost Analysis.

ICER states: “given the availability of triptans for acute treatment of migraine, we also sought to compare these interventions to triptans for patients who do not adequately respond to non-prescription medications and are eligible to use triptans.”⁶ ICER’s quantitative model does not take into account modern discontinuation rates because the clinical trial model for triptans unfairly skews an idealized adherence rate. Instead, the DER models a migraine patient population that does not exist. The novel acute therapies under review are primarily for patients who have been failed by triptans, yet ICER’s fundamental analysis relies upon the fallacious idea that patients will have a choice between a triptan or novel acute therapy.

³ Sullivan, Louis W. M.D. Secy. of Health and Human Services, Washington, (Aug. 13, 1992). Oregon Health Plan is Unfair to the Disabled, *New York Times*. Retrieved at <http://www.nytimes.com/1992/09/01/opinion/1-oregon-health-plan-is-unfair-to-the-disabled-659492.html>

⁴ Steiner, Tim, et.al, Headache Disorders Are Third Cause of Disability Worldwide, *J Headache Pain*. 2015; 16: 58. Retrieved at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4480232/>; Also: http://www.pipcpatients.org/uploads/1/2/9/0/12902828/pipc_white_paper_-_measuring_value_in_medicine_-_uses_and_misuses_of_the_qaly.pdf

⁵ Tuttle AH¹, Tohyama S, Ramsay T, Kimmelman J, Schweinhardt P, Bennett GJ, Mogil. Increasing placebo responses over time in U.S. clinical trials of neuropathic pain. *Pain*. 2015 Dec;156(12):2616-26. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/26307858>

⁶ DER p. 51.

The reality is that for most patients who are appropriate for these new medicines, the alternatives would *instead* be either a more costly preventive therapy, taking opioids, or simply not effectively managing one's disease (thereby risking chronification, pain and/or disability).

In fact, the DER contradicts the American Headache Society consensus statement last year on integrating new migraine treatments into clinical practice,⁷ stating that the target population for these novel acute therapies is those who would be contraindicated or triptan intolerant. Yet ICER insists on including within this broad group any migraine patient who needs a prescription therapy, regardless of the likelihood that the patients for whom they are intended have likely failed multiple triptans already. ICER's primary comparison of these new therapies with a generic drug like a triptan is misguided and harmful to patients. Many physicians are hesitant to prescribe triptans due to concerns about cardiovascular risks, and instead often prescribe non guideline recommended opioids. Access to these new acute therapies is vital so that clinicians can make better treatment choices.

ICER Refuses to Properly Consider That Novel Acute Therapies, Unlike Triptans, Have Been Shown to Decrease the Frequency and Severity of Migraine Attacks.

The DER states that ICER "did not perform a systematic review specifically to address [...the issue of whether the novel acute therapies, when used over time, could decrease the frequency and severity of migraine attacks...] even where the results of stakeholder studies reported a decreasing frequency of migraine attacks over time."⁸ ICER's interpretation of the evidence disregards those patients with a high frequency of attacks at baseline who experience decreases in attacks. Many migraine patients experience cascading attacks; that is, once they begin additional attacks occur in sequence. Open label, long term studies by the developers of these novel acute therapies shows there is a preventive benefit. This benefit is a high value to patients and we call on ICER to include it in your analysis.⁹

The DER Underestimates the Full Benefit of Novel Acute Therapies by Stopping Response at Two Hours (Assigning Responsibility to the Inevitable Differences in Trial Design).

The primary outcomes in the DER do not fully reflect the potential benefits of these new therapies. The DER describes an approach whereby ICER, in an effort to compare data among all three therapies under review, cuts short patient response data at two hours, even where clinical benefits are shown in some trial data beyond that time period, simply because of inevitable differences in trial design. For those patients who do not respond at two hours, ICER assumes the efficacy of those patients to be that of placebo, even where some patients are achieving pain freedom at 2.5 hours or 3 hours (or longer). Cutting short the data in an effort to compare therapies results in confirmation bias and erroneous conclusions without a complete accounting of the full benefit of these innovative therapies. ICER completely discounts the fact that migraine is a spectrum disease, where sometimes an attack or event is 72 hours or longer.

UNADDRESSED QUALITATIVE CONCERNS

The DER Unfairly Discounts the Indirect Costs and Societal Burden of Migraine Disease.

We are encouraged that the ICER value framework includes both quantitative and qualitative comparisons across treatments to ensure that the full range of benefits and harms - including those not typically captured in the clinical evidence such as innovation, public health effects, reduction in disparities, and unmet medical needs – but remain concerned that the framework does not adequately address the immense indirect costs and societal burden of migraine disease.

⁷ Digre, Kathleen, Jnl. of Headache, Dec. 10, 2018. Available at: <https://doi.org/10.1111/head.13456>

⁸ ICER 2019 Draft Evidence Report, p. 44.

⁹ Data submissions from companies with products under review.

The DER states: “We also sought evidence on the key measures of clinical benefit including disability, health-related quality of life, employment-related outcomes, and other patient reported outcomes. We found data on disability and patient reported global impression of change but did not find any data on the other outcomes.” This is inaccurate. Studies have been previously presented to ICER showing that direct costs are far exceeded by indirect costs to employers including missed work and presenteeism (loss of productivity)¹⁰; *the loss of productivity can be up to 70% of the total costs of migraine, a staggering number.*¹¹ This is further exacerbated by the fact that migraine prevalence occurs during the most productive work years (ages 30-49)¹² for many female patients already experiencing a wage gap.

ICER’s Refusal to Acknowledge Possible Mortality Effects Has An Undeniable Impact On Value Outcomes.

The costs of treating migraine increase sharply with the number of co-morbid chronic conditions.¹³ While medical costs for treating chronic migraine were estimated at \$5.4 billion in the United States in 2015, total costs associated with migraine and co-morbid conditions *exceeded \$40 billion.*¹⁴ Migraine patients are known to be co-morbid with anxiety and depression - conditions that have led many patients to suicide. ICER states, “Therapies for migraine have not demonstrated differences in mortality, nor has a mechanism for differential survival with the current treatments been proposed. *Given the relatively young age of the population being evaluated and associated low mortality rate*, mortality was not included in the model.” The migraine community reminds ICER that suicide prevalence in our community is much higher than in the general population, with age having *zero* correlation to mortality. Not including mortality data related to co-morbidities that increase rates of suicide has an undeniable impact on the qualitative model.

In fact, data presented on co-morbidities related to migraine disease should have a substantial impact give a new sub-analysis on the link between migraine and suicide. A recent large population, long-term international study showed higher risks observed among patients with migraine than in the general population.¹⁵ Nearly 88% of those with chronic migraine had *at least one* co-morbid condition that had an impact on health care costs associated with the disease, including mental disorders (37%) and mood disorders (27%).¹⁶

In the largest national study designed to examine the association between migraine and suicidal behaviors and the impact of co-morbid mood (depression, anxiety) and stress (PTSD) disorders on this association among a nationally representative sample of adult inpatients from 2007 to 2012,¹⁷ researchers found that hospitalizations with migraine had statistically significantly increased odds of suicidal behaviors (OR: 2.69; 95%CI: 2.55-2.86; Table 2). After adjusting for confounders, people with migraine had a *2.07-fold increased odds of suicidal behaviors* (95%CI: 1.96-2.19; Table 2).¹⁸

¹⁰ Id. at 32.

¹¹ Hazard E, Munakata J, Bigal ME, Rupnow MF, Lipton RB. The burden of migraine in the United States: current and emerging perspectives on disease management and economic analysis. *Value Health*. 2009;12(1):55-64.

¹² World Health Organization Fact Sheet, “Headache Disorders” Updated April 2016. Available at: <http://www.who.int/mediacentre/factsheets/fs277/en/>

¹³ Id. at 10, Table 5.

¹⁴ Id.

¹⁵ Migraine and Risk of Cardiovascular Diseases: Danish Population Based Matched Cohort Study, *BMJ* 2018;360:k96, Jan. 31, 2018.

¹⁶ Thorpe KE; The Headache and Migraine Policy Forum, Prevalence, health care spending and comorbidities associated with chronic migraine patients. <https://www.headachemigraineforum.org/resources/2017/2/10/b00ahzk73jowqoziwanfm5zckmqd7c>. Published February 13, 2017. Accessed Mar. 15, 2018.

¹⁷ Friedman, L. E., Zhong, Q.-Y., Gelaye, B., Williams, M. A. and Peterlin, B. L. (2018), Association Between Migraine and Suicidal Behaviors: A Nationwide Study in the USA. *Headache: The Journal of Head and Face Pain*, 58: 371–380.

¹⁸ Id. at Table 2. Association Between Migraine and Suicidal Behaviors by Psychiatric Disorder Status (N = 156,172,826)

Depression, anxiety and, in the case of veterans, post-traumatic stress disorder, are common co-morbidities for patients with migraine. The final evidence report should therefore reflect that new acute therapies will improve these co-morbid conditions.

Increased Non-Opioid Therapies Would Directly Impact the Value Outcome.

ICER states, “because of limitations of existing therapies, there are many individuals in whom no effective, reliable treatment is available. It is hoped that having more treatments for migraine can reduce the use of opioids and thus the risk for opioid misuse. Data on this are not yet available.” This is misleading. The HHS Pain Task Force makes a direct correlation between additional treatment options and the reduction of opioid use. The Task Force also calls for more research that will ultimately bring more and novel therapies to patients: “As novel and proven treatment options emerge to improve acute pain and specific chronic pain conditions, they should be rapidly incorporated.”¹⁹

ICER’s previous migraine assessment of Botox in 2014 included significant attention paid to opioid use and the costs associated with long-term use of opioids as rescue therapies²⁰. ICER’s previous CGRP DER mentions costs associated with side effects from interventional therapies and acknowledges that “therapies that reduce the number of migraines and acute medication use may also reduce opioid dependence in this population.”²¹ The ICER model must be updated to account for benefit / cost reduction of reduced exposure to opioids.

CONCLUSION

HMPF appreciates that ICER encourages stakeholders to provide input on potential other benefits and contextual considerations in their public comment submissions but remains concerned that many of these issues do not carry the same weight as its quantitative model analysis. There is an urgent need for improved migraine therapeutics. Unnecessary suffering and lives will be lost if access barriers are placed in front of migraine patients. ICER has an important role in ensuring payers understand the full value of these therapies.

Thank you for the opportunity to provide input during this process. If you have questions, please contact Lindsay Videnieks, Executive Director of The Headache and Migraine Policy Forum, at (202) 299-4310 or Lindsay@headachemigraineforum.org.

Alliance for Patient Access
Association of Migraine Disorders
CGRP & Migraine Community
Coalition For Headache And Migraine Patients (CHAMP)
The Daily Migraine
Danielle Byron Henry Migraine Foundation
Global Healthy Living Foundation
Golden Graine
Health Union / Migraine.com
Hope for Migraine Community
MigraineAgain.com

¹⁹ HHS Pain Task Force, Sec. 3.4.4 p. 66, Available at: <https://www.hhs.gov/sites/default/files/pmtf-final-report-2019-05-23.pdf>

²⁰ *Controversies in Migraine Management: A Technology Assessment*, ICER Final Report, Aug. 2014. Retrieved at: https://icer-review.org/wp-content/uploads/2016/01/CTAF_Migraine_Final_Report_081914-2.pdf

²¹ ICER 2018 CGRP Review, Draft Evidence Report p. 83.

The Migraine Diva
Migraine World Summit
Miles for Migraine
National Headache Foundation
SoldierStrong ACCESS
U.S. Pain Foundation
World Health Education Foundation



**Institute for
Patient Access**

December 4, 2019

Submitted electronically to: publiccomments@icer-review.org

Steven D. Pearson, MD, President
Institute for Clinical and Economic Review
Two Liberty Square, Ninth Floor
Boston, MA 02109

Re: Comments on ICER's Draft Evidence Report: Acute Treatment for Migraine

Dear Dr. Pearson:

On behalf of the Institute for Patient Access, I thank you for the opportunity to provide input regarding ICER's "Draft Evidence Report: Acute Treatment for Migraine."

About the Institute for Patient Access

The Institute for Patient Access (IfPA) is a physician-led policy research organization dedicated to maintaining the primacy of the physician-patient relationship in the provision of quality health care. To further that mission, IfPA produces educational materials and programming designed to promote informed discussion about patient access to approved therapies and appropriate clinical care. IfPA was established in 2012 by the leadership of the Alliance for Patient Access, a national network of physicians committed to shaping a patient-centered health care system. IfPA is a 501(c)(3) public charity nonprofit organization.

IfPA Comments on ICER's Draft Evidence Report

The draft evidence report encompasses three medicines designed to provide "acute treatment" for migraine patients – ubrogepant, rimegepant and lasmiditan. There were two populations of interest for this evaluation:

- Patients whose acute migraine episodes have not responded well to non-prescription medications; and,
- Patients whose acute migraine episodes have not responded well to non-prescription medications and for whom triptans have not been effective, are not well tolerated, or are contraindicated.

Further, the analysis evaluated patients who were 18 years of age and older, and whose migraine symptoms were not chronic (fewer than 15 headache days per month).

The report suffers from three deficiencies that have a material impact on the estimated value of the medicines. These deficiencies include:

- Failure to incorporate the benefits of reduced comorbidities that better migraine management enables;
- Methodological errors that undermine the evaluation results; and
- Inappropriate or overly restrictive assumptions regarding the medicines' efficacy.

Failure to Incorporate the Benefits of Reduced Comorbidities

Section 1.4 of the report, “Insights Gained from Discussions with Patients and Patient Groups,” documents the devastating impact of migraine attacks, including the connection between migraine and higher risks for other illnesses. These other illnesses include stroke, coronary heart disease, hypertension, depression, anxiety, epilepsy and asthma.¹ These comorbid conditions create additional health care and economic costs that are linked to migraine.

More effective migraine treatments help patients better manage these comorbid conditions. In fact, effective treatment of migraine early on, when patients' pain is at a lower intensity, yields significant health benefits and is an important predictor of improved outcomes.² The additional benefits will include better patient health outcomes, reduced economic costs on patients and their caregivers, and lower overall health care costs.

Consequently, ubrogepant, rimegepant and lasmiditan will provide value by lowering the costs associated with comorbid conditions in addition to the value of reducing the direct costs associated with migraine. While acknowledging that these comorbidities exist, the report does not attempt to estimate the value of potentially reducing these comorbidities.

Since the report does not quantify the benefits of reduced comorbidities, the results, by definition, underestimate the benefits patients receive from these treatments. Unless the report corrects this error and accounts for the full benefits of effective migraine treatment, ICER's analysis will be an unreliable guide for valuating the medicines.

Methodological Errors

On page 23, the report states that ICER “conducted network meta-analyses (NMAs) for each outcome of interest.” According to page 24 of the report, however, ICER identified “only one head-to-head trial of one of the interventions versus a comparator of interest (rimegepant vs sumatriptan).”

Using an NMA analysis when only one head-to-head study has been identified is methodologically problematic. According to a 2019 study in the *Journal of Clinical Epidemiology*, network meta-analyses improved the precision of results only when at least two head-to-head studies are available. The precision of the results actually worsened when only one head-to-head study was available.³ Citing from the study's abstract:

¹ Wang SJ, Chen PK, and Fuh JL (2010) “Comorbidities of Migraine” *Frontiers in Neurology* 1:16 August 23; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3008936/>.

² Valade D (2009) “Early treatment of acute migraine: New evidence of benefits” *Cephalalgia*, December 1; <https://journals.sagepub.com/doi/abs/10.1177/03331024090290S304>.

³ Lin L, Xing A, Kofler MJ, and Murad MH (2019) “Borrowing of strength from indirect evidence in 40 network meta-analyses” *Journal of Clinical Epidemiology*, Feb; 106; 41-49; <https://www.ncbi.nlm.nih.gov/pubmed/30342086>.

Although NMAs have the potential to provide more precise results than those only based on direct evidence, the incremental gain may reliably occur only when at least two head-to-head studies are available, and treatments are well connected. Researchers should routinely report and compare the results from both network and pairwise meta-analyses.

Further, as outlined in Temple University's guide to network meta-analyses, NMAs are an evolving method that is subject to strict limitations.⁴ It does not appear that the cost-effectiveness evaluation accounted for these limitations to ensure that the results are strengthened, not weakened, by the use of the NMA methodology.

Another concern is that the report compares modern studies for ubrogepant, rimegepant, and lasmiditan to triptan clinical studies that were conducted one-to-two decades ago. It is possible that material differences have arisen over time that make the comparison of studies from today to studies conducted up to two decades ago inappropriate. Consequently, the report needs to justify why it is appropriate to compare studies that were conducted up to two decades apart. Without such a justification, there are serious concerns regarding the accuracy of the results.

Questionable Assumptions That Create a Lower-Value Bias

Ubrogepant, rimegepant and lasmiditan are novel treatments, and as a result, the clinical data regarding these medicines are limited. The desire to perform cost-effectiveness analyses prior to a medicine's availability to patients is understandable – it allows ICER to suggest a price for the medicine before patients and insurance companies must pay for the medicine. But this timing introduces an unacceptable level of uncertainty into the report and necessitates ICER to make questionable assumptions that introduce unknown errors.

Overly Restrictive Pain Relief Assumptions

As documented on page 23 of the report, “the primary efficacy endpoint in all trials was freedom from pain at two hours after treatment.” This narrow definition of efficacy is problematic.

For instance, two phase-III clinical trials for rimegepant administered as a 75 mg oral dose found that 19.2% and 19.6% of patients achieved freedom from pain by two hours, (compared to 14.2% and 12% for the placebo group). But, importantly, the percentage of patients who were pain free increased over time; 66% of patients were pain free by eight hours compared to 47% for the placebo group.⁵ This increase in the number of patients helped at eight hours means that limiting the benefits to a two-hour period has likely resulted in an undervalued estimate of the benefit of these medicines to patients with migraine.

Another troubling assumption regarding pain arises because the report classifies pain into three levels: mild, moderate and severe. It is commonly understood that helping patients with migraine experience requires a much more sophisticated understanding of the type of pains they are experiencing. As just one example, patients living with migraine aura often experience the

⁴ <https://guides.temple.edu/c.php?g=78618&p=4156609>.

⁵ Thien Phu D, Song G, Messoud (2019) “Therapeutic novelties in migraine: new drugs, new hope?” *The Journal of Headache and Pain*, 20 April 17; <https://thejournalofheadacheandpain.biomedcentral.com/articles/10.1186/s10194-019-0974-3>.

sensitivity to light and sound differently. These differences must be considered in order to effectively control a patient's migraine attack. It is not possible to account for these differences, however, when a clinical effectiveness model oversimplifies a patient's pain experience into a linear "mild-moderate-severe" categorization.

Ignoring the Potential Benefits of Migraine Prevention

According to page 44 of the report, ICER "do[es] not feel that current evidence supports a conclusion that treatment with lasmiditan, rimegepant or ubrogepant decreases migraine frequency over time." However, this assumption is based on the limitations of current studies, not based on a finding that these medicines have no impact on migraine frequency.

In fact, there is growing evidence that the "gepant" class may have benefits with respect to migraine prevention. For example, atogepant, "an oral small-molecule migraine drug...showed safety and efficacy for preventing migraine headaches in a phase 2/3, dose-ranging trial with 825 evaluable patients."⁶ The benefits for patients from a medicine that can prevent migraine headaches are potentially substantial, and it is troubling to assume that this benefit does not exist when the latest medical evidence indicates that the gepant drug class may actually provide these benefits. Further, this represents another instance where the report's assumptions bias the results toward a finding that the medicines have less value.

A Narrow Definition of Value

In Section 4.2, the methods section, the report states that the base case analysis was based only on direct U.S. health care costs. Patients living with migraine face many other costs, however. The annual quantifiable indirect economic costs alone, mostly from lost productivity and missed work, have been estimated at \$2,350 per patient. Further, these costs do not include the value of being in less pain, or the value gained by having a greater ability to participate in more personally fulfilling activities. The assumption that these meaningful benefits are not worth including is another instance where the report's assumptions undervalue the benefits to migraine patients from a more effective treatment.

The Report's Assumed Utility Scores

The chosen utility/disutility measures are important assumptions that attempt to quantify how much patients value an effective treatment and meaningfully impact the results. Page 65 of the report states that "disutilities of -0.5 were assumed for those patients who were hospitalized or required an ED visit. Hospitalizations were assumed to last for 2 days, ED visits for 1 day. We did not include a disutility score for patients suffering from nausea and/or vomiting, photophobia, or phonophobia due to lack of data."

As this quote indicates, the report's chosen elasticities are predicated on several questionable assumptions that bias the results toward undervaluing the medicines. First, the assumptions of what to include in the utility/disutility scores are essential. Since the report "did not include a disutility score for patients suffering from nausea and/or vomiting, photophobia, or

⁶ Zoler ML (2019) "Atogepant shows safety, efficacy for migraine prevention" *MDEdge: Neurology* July 25; <https://www.mdedge.com/neurology/article/205295/headache-migraine/atogepant-shows-safety-efficacy-migraine-prevention>.

phonophobia”, the benefits from treatments that reduce these conditions are, by definition, ignored in the report.

Second, the assumed utility values were based on a small number of studies. With such a small number of studies used to justify these crucial assumptions, it is highly questionable that the chosen values accurately represent the utility/disutility of the average patient living with migraine.

Finally, it is not possible for one average utility score to be applicable to all individual patients, even if it were representative of the population as a whole. Therefore, the value findings from the report are not representative of how much any individual patient will value a more effective treatment.

Conclusion

Migraine is a disabling condition for far too many Americans. Effective migraine control can meaningfully improve the quality of life for patients living with this disease, and can also provide offsetting health care savings. It is imperative that the any cost-effectiveness evaluation accounts for the full benefits enabled by medicines that offer effective migraine control.

Yet the methodology employed by the draft evidence report undervalues the benefits of a more effective migraine treatment, commits methodological errors and relies on questionable assumptions. ICER should consider comprehensive changes to its approach and methodology before finalizing the study. Without these changes, the report’s findings cannot be relied upon as an accurate assessment of the medicines’ value.

Thank you for the opportunity to provide comments on these important issues. Please contact us should you have any questions, or would like us to provide further comments, at 202-499-4114.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Kennedy", followed by a vertical line.

Brian Kennedy
Executive Director

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Jaime M. Sanders

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 39 years. I experience an average of 15-20 headache days per month. When I have a migraine attack, I feel intense stabbing and throbbing pain, as if a spike is being driven through my left eyeball through to the back of my skull. Beyond the pain is the nausea, lightheadedness, dizziness, memory loss, brain fog, confusion, and inability to concentrate, think or speak clearly.

Migraine has a major and negative impact on my life. I am unable to work due to the severity and disability of migraine. My life is completely altered as I have to constantly track and monitor triggers, medications, multiple doctors and appointments, and several comorbid pain and mental health conditions.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried dozens of different treatments for my migraine. Most have proven to be ineffective or caused severe or intolerable side effects.

I am unable to use sumatriptan as it causes anaphylactic shock. The other triptans are ineffective and cause increased nausea. In the past I have administered DHE injections at home but could not tolerate the nausea. I can only receive it through infusion which requires a 2-3 day hospital stay. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend \$5,000 each year to try and manage my migraine attacks (include ALL medical, insurance, medicine, treatment costs related to your migraine).

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Jaime M. Sanders

The Migraine Diva – Blog and Patient Opinion Leader
Coalition for Headache and Migraine Patients
Headache and Migraine Policy Forum

Society for Women's Health Research Interdisciplinary Migraine Network
National Headache Foundation Patient Leadership Council

ICER Open Comment Period on Acute Migraine Therapies

12/06/2019

Jamie Valendy, ChronicMigraineWarrior@gmail.com

Briefly describe your disease experience, including your diagnosis, treatments you've used, etc. Be as specific as you feel comfortable with.

I do not recall when my first migraine attack was, but I know now that they began during childhood. I was diagnosed with migraine with aura at age 16. The treatments I used included Imitrex, Excedrin, caffeine, and/or a dark, quiet room. I was able to function and manage the moderately severe migraine attacks with the tools I had.

The migraine attacks became chronic and debilitating, following an auto accident in my early 20s; and they have remained that way for the past 11 years. I have been unable to work since my accident. I was unable to complete my graduate degree. My life came to a complete halt, and I have had to slowly learn a new way of living within the limitations of a disease I cannot adequately manage.

I have tried over 40 acute medications, over 40 preventive medications (including supplements), and various rescue medications in emergency settings. Some of these medications have simply been ineffective, while some have also had unacceptable or dangerous side effects (some of the most severe including tooth decay to the point I needed two crowns, syncope, medication induced amnesia).

I had a neurostimulator implanted. It was a long and painful recovery and did not provide the relief I experienced during the trial period, so I had it explanted after four years.

I have used a single-pulse transcranial magnetic stimulation device for both preventive and acute treatment of chronic migraine. I have used this device for several years because it offers some degree of relief; however, it is not adequate.

Migraine is not just a headache. It is a full-body attack. Other symptoms that I experience include:

- Allodynia (sensitivity to touch)
- Aphasia (trouble finding words)
- Dizziness and/or trouble balancing
- Fatigue
- Impaired cognitive dysfunction
- Irritability
- Nausea and/or poor appetite
- Phonophobia (sensitivity to sound)
- Photophobia (sensitivity to light)
- Visual disturbance

How do the disease / condition and the available treatments affect your day-to-day life?

Chronic migraine does not let you ever forget that it is there. Even if the pain and other symptoms are under control in this moment, it could quickly change the next moment. It is a

difficult balance to be alert to the signs the body gives that a migraine attack is coming without being overly attuned to the point of not living life.

I experience varying degrees of functioning each day. The pain is always there, but the intensity and associated symptoms vary. Even on a low pain day, the other symptoms may be just as debilitating as a high pain day.

I spend most of my time in my house. Whenever I do leave the house, I have to plan the outing out carefully and make sure that I have the tools that I may need (food, water, medication, sunglasses). When I enter any setting, I immediately take note of noise, lighting, restroom, exits.

I rarely feel comfortable going out alone. I never know when or exactly how a migraine attack will hit. Several of my symptoms (and acute medications) make it unsafe to drive. When a migraine attack starts, I can become disoriented and overwhelmed by my surroundings, so I need someone to help get me out of that environment.

The acute medications that I have available to treat a migraine attack make me drowsy. There are times that I cannot keep my eyes open, and I am bed-bound for the majority of the day. I need assistance with even basic needs, such as getting food.

What impact does the disease have on family or caregivers?

Migraine impacts the entire family, and chronic migraine is even more intrusive. My husband is my caretaker, and has been for the past 10 years. I hate that he has to be in that position, especially when we are only in our mid-30s. He takes off work to take me to doctor appointments. He has taken on more household responsibilities that I cannot always complete. He helps me in so many ways that I cannot even express. He makes living with this disease more bearable.

My family and friends are as understanding as they can be of this disease. They do their best to accommodate me, whether they offer or I ask. They invite me to participate in activities, knowing that I may not be able to attend or participate much depending on my pain levels that day. Some of my relationships have drastically changed and/or ended because of the chronic and debilitating nature of the disease.

What else should ICER know about living with the disease or condition (e.g., impact on your ability to work, exercise, care for family, etc)?

I have been unable to work, since my migraines became chronic. I was approved for private long-term disability and Social Security Disability Income, which has helped relieve some of the financial burden of having a chronic, debilitating disease. The disability income allows us to pay for the medical treatment I need to try to manage my health conditions.

I am not able to exercise consistently. I have been very intentional to try to get out and walk more, when able. But, that sometimes is just a 5 minute walk. My head pain increases, when my heart rate increases. Even yoga can be difficult because there are a lot of positions that increase my head pain.

We do not have children. One reason is that with the level that my migraines are currently at, I believe I would be unable to fully care for a child or at least be the kind of mother I would want to be. I know that my husband would fill in the gaps as much as possible, but that is an additional weight to add (he is already the sole breadwinner and my caretaker). I also worry that I would pass migraine disease on to my child.

What outcomes are most important to patients? For example, is the top priority improved quality of life, longer survival, or relief of a specific symptom?

Quality of life is top priority. There is currently no cure for migraine. Having treatment options that reduce the severity and/or frequency of migraine attacks would be life-changing.

I had to completely re-examine my life, when my migraines became chronic. I was suddenly forced to stop working at age 23. No one anticipates that. I pushed hard and even tried to go back to school (graduate school), but it was to the detriment of my health. I was left unable to work in any capacity, participate in hobbies that I loved, and even go to church. Many of the attributes I valued in myself (including dependability) were suddenly flipped upside down.

I have fought to make the most of the life I have now, to learn to live well with the limitations I have. Quality of life is key.

Are there new / emerging treatments that the patient community is anticipating? What are the benefits or disadvantages of the new treatments (e.g., more or fewer side effects, convenience, effectiveness, etc)? Do you think the benefits will outweigh side effects or risks?

The lack of medications specifically developed for migraine disease is unacceptable. The patient community has had to trial and error with medications that were developed for other diseases. This often involves horrible side effects and inadequate relief.

Both the personal and societal burden of the disease indicate that there is a dire need for better treatments to prevent and manage this disease.

CGRP medications comprise the first class of drugs ever developed specifically for the prevention of migraine disease. As such, the entire headache community has been watching trials closely with great anticipation. Now that three of the CGRP medications are on the market, the headache community has flocked to try them, despite there being no long-term studies on the impact of blocking CGRP in the body.

The gepants (e.g., rimegepant, ebrogepant) and ditans (e.g., lasmiditan) medications that are currently in clinical trials are the first acute treatments developed specifically for the acute treatment of migraine disease, since the triptans. This is an exciting prospect, as triptans are contraindicated for patients with heart conditions and simply ineffective for some patients.

These new classes of medications offer hope for people living with headache disorders that do not currently have an acute treatment option. Those that have additional conditions, specifically heart-related, are unable to use triptan medications. For those that are able to take triptans, they may prove to be ineffective, leaving little option left for treating the debilitating disease.

The main disadvantage of new treatments is the uncertainty of access. Some doctors may not feel comfortable prescribing them right away. Most insurance companies will likely resist any level of coverage by excluding the classes of medication altogether, requiring patients and doctors to jump through hoops, and/or providing inadequate coverage levels making it too expensive for patients to access. All of this, even after the medications have been approved by the FDA.

Do patients have trouble getting insurance coverage for treatment? Do costs affect patients' choice of treatment, or their ability to access treatment?

I know a lot of patients that have had difficulty getting coverage or access to treatments. There are several reasons for this.

- Insurance coverage: medications are often limited or excluded.
- Financial burden: treatments are often very expensive. This is exacerbated by the reality that many patients are unable to work and may or may not be receiving disability income.

I have submitted several appeals to my insurance company: to increase the amount of acute migraine medication (specifically, triptans) covered per month, to cover a migraine medication that was unknowingly excluded by my plan, and to cover FDA-approved treatments like Botox. These treatments are both expensive and limited (or even excluded altogether) by insurance. Triptans are the only medications that have been developed specifically to treat migraine acutely, but insurance companies are making access to these treatments difficult, inadequate, or impossible.

Insurance coverage for devices, including the SpringTMS device, is limited or non-existent. This device has helped my migraines, but insurance will not cover it. It is very expensive to have to pay for fully out of pocket.

I work closely with my healthcare professional team. The treatments that we discuss and decide to use are considered to be best for me. It should not be up to an insurance company to limit the number of pills covered (at least not to the strict amount they do). As a patient, I should not have to prove that I have exhausted all other treatment options.

Insurance coverage should take into consideration that a more expensive treatment option may very well reduce the need for expensive emergency room and hospital visits, doctor appointments, and additional medications. An adequate prevention regimen means that the disease is better managed, and maintaining is more cost-effective than paying for continued trial and error of treatments and for emergency care. Long-term, a more expensive but effective treatment option saves insurance money.

Please share any other information that you think is important for us to know from a patient perspective.

Gepants and ditan medications present an opportunity for adequate treatment to a lot of people living with migraine disease. The headache community has suffered a long time without medications developed specifically for migraine. It would be a shame if such an effective treatment was inaccessible to patients because of cost.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Jane Litwin Taylor

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 41 years. The last 12 years I've lived with chronic migraine (15+ days per month with migraine pain/symptoms) I experience headache pain and migraine symptoms daily. When I have a severe migraine attack, which is several times a week, I am completely debilitated, unable to perform even simple tasks like taking care of my hygiene and/or nourishment.

Migraine has a major and negative impact on my life. Because of chronic migraine and several co morbidities (Fibromyalgia, CFS, MCS), I am unable to work, having had to resign my position of 20 years as the office manager for the Clerical labor union at UMass/Amherst. One of the most debilitating symptoms of chronic migraine disease is impaired cognitive function which was a major factor in having to resign from my job. Once a highly articulate and very organized professional, I now struggle to just take care of the basics at home. I have extreme difficulty reading and doing other tasks that require cognitive skill.

I subsequently have struggled financially to survive on SSDI which has added to the burden of the disease itself. Because of living in an intractable state of migraine, I am unable to participate in many activities I once could, such as going to concerts, restaurants, traveling, hiking and biking, and many other meaningful and life fulfilling activities. All of these expose me to overstimulation, triggering my permanent state of photophobia, phonophobia and heightened sensitivity to fragrances, all symptoms of migraine disease.

Chronic Migraine disease has had a deleterious effect on my social life and family relationships. Most of my friends have not been able to remain supportive because of how disabled I am and due to the very real and prevalent stigma about migraine disease that is pervasive. I have few friends left and little support which has a major impact on my mental health. Having chronic migraine disease has also impacted my marriage. While my spouse is supportive and loving, he is under a great deal of financial pressure and often has to miss work to take me to medical appts or help me with tasks I cannot do. Migraine has also greatly impacted the quality of our life and relationship, since most of the fun life sustaining activities we used to do together are not possible with my level of disability.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried more than 75 different treatments for my migraine, both pharmaceutical and alternative. Most treatments I've tried gave me little to no relief of my migraine symptoms and the few that

have helped only did give partial relief which eventually petered out, leaving me to attempt yet another treatment. I've also experienced serious and intolerable side effects from many medications tried. Some of the severe medication side effects I've experienced are suicidal thoughts (Topamax), permanent facial pain (Botox), severe diarrhea (Emgality), extreme weight gain, exacerbation of Fibromyalgia pain/symptoms, lowered immunity and many more.

Of the 7 Triptans available, all but one have given me severe and intolerable side effects and/or were ineffective. My current triptan is only partially effective and not reliably and I experience often debilitating side effects.

I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I have wiped out my entire savings trying treatment after treatment, for over a decade attempting to manage my migraine disease. I am now trying to live on a poverty level income and have no financial ability to try any treatment that isn't fully covered by my insurance, Medicare and MassHealth.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and to at least alleviate some of the pain and disability I experience due to migraine disease. I ask you to respect my pain and to fairly assess these new medicines so that I can gain some of my health and productivity back.

Sincerely,

Jane Litwin Taylor
Wendell, Massachusetts

Admin/Founder of BrainWreck Rebels
US Pain Foundation Representative
Artist, Cascading Wood Designs

There is a vile hideous monster invading my head. I am 63, He has been living in my head since I was 19. He hides inside the recesses of my brain, but when he appears the wrath of hell and every demon laughing in their depravity comes out to play. The monster attacks and thrashes my skull. I feel as if my head is viciously and violently thrown and savagely beaten onto concrete. Over and over. It never stops. The monster is winning, thrashing his tentacles joyously into every damn crevice of my skull. The pain is unbearable as my skull is pounded and ripped apart splitting and bursting into millions of pieces. Tears start flowing but the monster just laughs. “Ah, you are not tortured enough” he says. The pain must continue. Let the nausea, dizziness and vomiting begin he commands!! So I stumble to the bathroom and vomit my insides out. 5 hours pass. 10 hours pass. 24 hours pass and I am writhing in the fetal position praying to the porcelain god. OH God, please let this stop, I beg. I look up and there is light pouring inside the bathroom. No, go away. I need dark. Cold, cool. Darkness. Usually, I love the warm sun. I love heat. But not today. Today I want cold. I want frigidity. But The monster bathes in the sun and light. Sun and light, music, any sort of noise or quick movements are my mortal enemies today. And the pounding continues.

I take a moist towel and microwave it for 2.5 minutes. It is burning to the touch. I flinch because it is scalds my fingers, but I don’t care. I wrap it around my forehead praying the monster will shrivel up and die. Sometimes the burn is so intense, it redirects the monster. Not heat but burn. The monster has been invading my body for over 40 years. I know the difference. Then I take an ice pack and alternate with the towel. The stinging cold feels like it is burning too. Towel ice pack. Towel ice pack. I do this for hours hoping the medicine I took to banish the monster will finally kick in. I’ve been on epileptic medicine for this insidious monster, heart attack meds, over 20 different meds. I take zomig. It worked for years but I am slowly building up a tolerance even to that. However:

Slowly, ever so slowly, my head is no longer thrashing. I still feel nauseous and dizzy but the pounding is diminishing. I can open my eyes and look at light. The demon is shrinking, his tail no longer coiled around the temple above my eyes. After a while, the demon disappears. I feel exhausted. Wiped out. But I can move. I can smile. I am whole again. Till the next time...

What did I just describe? A psychotic breakdown? A loss of reality or mental illness? No. None of that. The monster is a migraine headache.

Janine Garner

Long Island, NY

To The Institute for Clinical and Economic Review:

Migraine is a debilitating neurobiological disease. It is estimated that 36 to 40 million people in the US have migraine — approximately 12% to 14% of the population — affecting one in four families. Migraine is more prevalent in females, and disables people during the prime of their lives. It is under-diagnosed, invisible, and stigmatized by friends, family, physicians, employers, and teachers. According to the World Health Organization, it is one of the leading causes of years lived with disability, and has been estimated to have an annual financial burden in the United States of \$27 billion.

Historically, acute treatment of migraine attacks has utilized the ergots or the triptan medications as the only truly migraine specific classes of agents for acute migraine treatment. Unfortunately, these medications are not suitable for all patients with migraine. They are contraindicated in patients with Raynaud's disease, coronary artery disease, history of stroke or transient ischemic attack, or other vascular disease because this class of medications leads to vasoconstriction through action at the 5-hydroxytryptamine 1B. Additionally, FDA labelling warns against using this type of medication in patients with hemiplegic or basilar migraine. Because of these limitations there are a significant number of people with migraine who do not have access to a migraine specific acute therapy. There are also some patients who are nonresponders to triptans and ergots.

The small molecule gepant class, as represented by ubrogepant and rimegepant offers opportunity for patients who either do not have access to a migraine specific acute treatment, or for those who need additional treatment options. Lasmiditan (a 5HT1F agonist) is another acute option that provides opportunity for patients who cannot use triptans. All three of these agents work by unique mechanisms that specifically target migraine and may be used by patients who cannot use other acute treatment or have need for additional treatment due to lack of adequate response to currently available options.

The ability to acutely treat migraine is of importance in limiting days of work or other activities lost to migraine and provides the opportunity for our patients to lead more functional, fulfilling lives. Effective acute treatments also have the added benefit of decreasing patient visits to more expensive care settings such as emergency rooms and urgent care centers.

With respect to this and other comments entered on behalf of the millions of Americans with migraine, I ask your support to help expand access to these treatments for migraine. These novel pharmaceutical therapies give the opportunity to reduce patient disability and both direct and indirect healthcare costs.

Sincerely,

Jared Pomeroy MD, MPH, FAHS
Medical Director of the Headache Center

Spectrum Health Medical Group
Grand Rapids, MI

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 12 years. I experience an average of 10 headache days per month. When I have a migraine attack, I feel a lot of pain, nausea, I have symptoms that mimic a stroke, light sensitivity, sound sensitivity etc.

Migraine has a major and negative impact on my life. I miss time with my toddler, and family activities. I was laid off on my job, impacting us financially.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried 10 different treatments for my migraine attacks and continue to suffer..

Migraine is an expensive disease to have, I spend thousands each year to try and manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Jeannette

November 30, 2019

Institute for Clinical and Economic Review
Two Liberty Square, Ninth Floor,
Boston, MA 02109

Dear ICER,

I am writing to ensure that you understand what it means for a person to live with Chronic Migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines and therapies.

I have had migraine disease for roughly twenty years since I was in my late teens. I experience an average of 20+ headache days per month. When I have a migraine attack, my life stops: I am effectively bedridden, sequestered in my room with blackout curtains and a weighted pillow over my eyes. The pain is so intense that I hope for sleep, because so many of my medications are ineffective. I also deal with nausea, severe photophobia, allodynia, sensitivity to sound and constant temperature changes. My attacks can last from hours, to days, to months.

Migraine has a major and negative impact on my life. A few years ago I had to give up the career I had spent many years working so hard to cultivate, with it went a part of my identity. I was forced to go on disability and move in with family members because I could no longer take care of myself. My social life is virtually non-existent as well. Migraine has impacted every corner of my life.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have countless different treatments for my migraine. I have tried nerve blocks. DHE infusions, Depakote infusions, Magnesium—none of which have proven effective. In the triptan category I have gone through multiple kinds, but having used them for more than twenty years, those that did have some effectiveness have lost their efficacy as my Migraine attacks have grown stronger. I have been on multiple preventatives including the two I remain on and am still

averaging twenty-five or more headache days a month. **Overall I have tried more than 30 types of medications, procedures, infusions and devices and none has succeeded in controlling my pain.**

I am very thankful that the new CGRP medications were approved in 2018, but due to other health conditions, my doctor was hesitant to put me on them until there was a year patient data. Now that this information exists, I still face multiple insurance barriers due to the high cost of obtaining this medication. So, I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend thousands of dollars out of pocket each year to try and manage my Migraine attacks.

My quality of has deteriorated due to Migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine and for days following an attack. I ask you to respect my pain and to fairly assess these new medicines so that I can rebuild my life.

Sincerely,

Jennifer Heater

Director of Resources and Advocacy, My Chronic Brain Magazine

Volunteer, Chronic Migraine Association

Advocate, US Pain Foundation

December 6, 2019

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with Migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraines since I was a child, nearly 5 decades ago. At this point, I experience migraine usually 6 days a week, about 25 days a month. I have chronic migraines with no relief that lasts all day. My attacks consist of very severe pain, not only in my head but jaw, neck and back, but there are also symptoms that can be worse. I have neurological events that without notice will cause me to lose consciousness and leave me with no memory of the event or what happens before or after. I have severe vertigo and dizziness that causes me to lay on the floor until the room stops spinning and I am no longer nauseous and have the ability to balance again enough to walk. I have trouble communicating, finding simple words, made even harder with the brain fog that keeps me from thinking clearly.

I get heightened sensitivity to sound, smell, taste and light. This keeps my family from cooking, and my diet bland. I experience sensitivity to my scalp making brushing my hair and wearing it in a ponytail or braid uncomfortable, and during severe attacks, even my eyelashes hurt. I have no warning or aura, so I live in fear of when the next migraine will hit. This causes depression and anxiety.

Because of migraine, I am permanently, federally disabled and have been since my twenties. I was unable to continue my masters degree or follow my career as a data analyst. I struggled as a mother of two. I am completely reliant on my wonderful, supportive husband. I cannot do housework because of my sensitivity to smells, and the immense exhaustion migraine causes. It is even impossible some days to even take a shower. I feel less productive losing most of my ability to focus on my past hobbies, reading, quilting and sewing, which I used to do extensively.

I rarely see my family and friends, including traveling to see my daughter and her family in Wisconsin. I missed the birth of my first granddaughter. I am unable to participate in my church or service activities. I no longer drive and because of my blackouts and fast moving migraine attacks, I use a handicap parking permit. I am unable to go on a walk by myself because of my anxiety of a migraine starting. In many ways, I've become a prisoner in my own house.

My other health issues are tightly related to my overall migraine health. Because of them, my over all allergies are more severe. This includes my allergies to dairy and soy and my gluten intolerance. This costs me hundreds of dollars a month in specialized food because of the prevalence of soy, dairy and gluten in our food and my inability to cook.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Very few of them were even developed to treat migraine. Over the course of my life, I have tried countless medications and

groups of medications to treat migraine. In the past 6 years alone, I've tried over 5 specific preventatives plus Botox and over 10 just for my symptoms dealing with my vertigo and other non-pain symptoms. To stop a migraine, I have tried everything from trigger-point injections from my neurologist to 15 other medications. Some of these are only available in the medical clinic or hospital so I avoid them unless desperate but still with very little or no relief.

None of these medications have provided relief. Some have offered minor relief for 2-3 hours (taking 9 pain to 7 pain on a 10 point scale), but my migraines are at least 12 hours long and I am limited to 2 or 3 doses a day, 4 to 6, sometimes 8 hours total and only 3 days a week. I have had side effects from nausea to drowsiness, dizziness to weight gain. I have had a gastric bypass because of some preventative medications I took early on known now for excessive weight gain.

Triptans and DHE that have been developed and cleared by the FDA and my insurance company, with very tight and unrealistic restrictions, are the only medicines to stop migraines. These have not been effective for me. I have tried 7 triptans and DHE as pills, nasal sprays and injections in the effort to find one that will work for me with absolutely no success. They are not options for me anymore.

Migraine is an expensive disease to have. I have spent \$10,4243.79 this year alone. And I am very lucky having medical insurance through my husband and Medicare, but not for drug coverage. Next year is going to be more expensive because my insurance and drug company benefits are changing, significantly. This does not include the hundreds of hours my husband spends away from work coming with me to dr appointments that has emptied his leave and puts undo stress on his workload. He acts as my advocate, memory and chauffeur.

My quality of life, and that of my family, is extremely negatively impacted by migraine and I demand access to new acute medications that can help me to stop attacks and avoid the pain and disability I experience during an attack. This may seem like a work of fiction, but this horror story is my life. I ask you to respect my pain and disability and fairly assess the new medicines so I can be a healthier and more productive person. So I can be the whole person I deserve to be.

Sincerely,

Jennifer W Billings

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for over 25 years. I experience an average of 3-4 headache days per month. When I have a migraine attack, I feel completely debilitated as I become nauseous and crippled with pain.

Migraine has a major and negative impact on my life. I am unable to be productive at work or home as I need to immediately seek a dark quiet place to lie down for hours and sometimes days to recover.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried several different treatments for my migraine that oftentimes provide little to no relief.

Migraine is an expensive disease to have, I spend countless hours and money each year to try and manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Jennifer Lilly

December 3, 2019

Steven Pearson, MD
Institute for Clinical and Economic Review
Two Liberty Square, Ninth Floor
Boston, MA 02109

RE: Comments on the Draft Evidence Report: "Migraine Treatment: Effectiveness and Value"

Dear Dr. Pearson,

I am Neurologist in the Jan and Tom Lewis Migraine Treatment Program and an Assistant Professor in the Department of Neurology at Barrow Neurological Institute. My expertise includes the diagnosis and treatment of migraine and other headache disorders. I earned both my Master of Science degree in quality improvement and patient safety as well as my medical degree from the University of Toronto in Canada, where I also completed my Neurology Residency. I completed a headache fellowship at Mayo Clinic in Scottsdale, Arizona. My practice is exclusively in headache medicine with a 20% research component.

I am submitting this letter in response to the request for comments on the ICER Draft Evidence Report on Acute Treatments for Migraine dated November 7, 2019. Please see my comments below to advocate for optimal access for patients with migraine.

Disability & Impact

Migraine is the second leading cause of years lived with a disability worldwide at 45.1million YLD as assessed by the Global Burden of Disease study in 2016.{, 2017 #203} Migraine is underdiagnosed, undertreated, and these new migraine-specific treatment options highlight migraine and give us more options. Every day I sit with patients in my office who have lost jobs, time with family and friends, and other important life events due to migraine. It can be an isolating disease, and it is often stigmatized. Having treatment options to give patients back control of their lives is vital to their health, mental health, and quality of life.

New Medications

It is an exciting time in Headache Medicine with new preventive and acute treatments options becoming available. However, daily I am faced with what is the best options for my individual patient versus what they can afford to have covered by insurance. This issue prevents a truly patient-centered approach where I chose an option not as optimal for my patients so they can "fail" it to get what they need or just choose the lesser options because they best option is too expensive. Clinical evidence is a cornerstone of medicine, but it is based on optimal populations.

When sitting with an individual patients, all of their unique characteristics are taken into account. What may seem lower evidence by RCTs, may in fact be the best option for that patient. Giving providers that control over helping chose the best options for their patients should be ubiquitous and not controlled by insurers.

Considerations for this report

- 1) Agree with Allergan that opioid use should be a low-value service that is reduced
- 2) On page 20, the NICE recommendations on CGRP mAbs are discussed. Recommend removing since they do not recommend erenumab as firstline which does not support patient access here in the US, and this report is about acute treatment not preventive.
- 3) Now available instead of just conference data: Lipton RB, Dodick DW, Ailani J, et al. Effect of Ubrogapant vs Placebo on Pain and the Most Bothersome Associated Symptom in the Acute Treatment of Migraine: The ACHIEVE II Randomized Clinical Trial. JAMA. 2019;322(19):1887–1898. doi:10.1001/jama.2019.16711
- 4) Page 42-44 discusses reduction in migraine days per month, which was felt to be not supported by the evidence. The prevention trials for rimegepant and atogepant are not discussed here, which would be supportive of this line of thinking for at least the gepants. This line of thinking is also important since they likely do lead to medication overuse headache (MOH) like analgesia, triptans, etc. This important issue should be highlighted as in patients with MOH, these may be the best firstline acute treatment to choose. Given this important point, the difference between ditans and gepants needs to be further highlighted.
- 5) Given that triptan response does not seem to predict gepant or ditan response, consider recommending that triptan ineffectiveness or contraindication NOT be required by insurance for coverage (in discussing Prior Use of Triptans).
- 6) Consider recommending that preventive medication use should not be a requirement for prescribing ditans or gepants (in discussing Patients Receiving Migraine Preventive Medications) since it does not seem to predict response and patients with low frequency but severe attacks may not need a preventive medication.
- 7) The evidence ratings do not appear that favorable, and may not support easy access for patients with insurers. They do not clearly highlight important issues like having an option for patients with true contraindication to triptans, who now will have migraine-specific medication as an option. Also the 2 population descriptions are not sufficiently clear. Populations should differentiate between contraindication to triptans, non-effective triptans, and response to triptans. None of the studies or discussions touched on comparison to non-prescription medications but this terminology is included in the population descriptions. The current descriptions are misleading and insurance companies reading these may be less likely to insure without multiple triptans and non-prescription medication failures.

Table 3.18 makes it much clearer what the populations are actually comparing. Recommend rewording to clearly indicate the population 1 is for those have not or cannot take triptans, and hence compares to placebo. Population 2 is for those who triptans were ineffective or not tolerated (i.e. sumatriptan and eletriptan comparison) while noting that studies did not show that response to triptans predicted response to gepants or ditans.

- 8) For cost analysis, again need to consider cost in the specific group with contraindication or intolerance to triptans more definitively since they are a population with particular needs not currently addressed by available therapies. This issue is currently only briefly described in conclusion.
- 9) Another issue not addressed is that chronic migraine is not evaluated in the RCTs for practical reasons, but that these options should be made available for both episodic and chronic migraine.

Thank you for your considerations. I am happy to comment further at my email contact below.



Jennifer Robblee, M.D., M.Sc., FRCPC
Assistant Professor of Neurology
Headache Program, Jan & Tom Lewis Migraine Treatment Program

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Public Comment for Review of Acute Migraine Medicines

Jennifer Ross

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 45 years. I experience an average of 30 headache days per month. When I have a migraine attack, I feel; nauseated (particularly with movement), severe head pain, depressed/anxious, intense stiffness in my neck, sensitivity to noise/light/smells, fatigue, with impaired cognition, problems focusing, difficulty retrieving words, and sometimes dizzy.

Migraine has a major and negative impact on my life. I rarely make plans (because I often have to break them). I cannot work anymore due to the frequency and disabling nature of my migraine attacks. (I had worked for 16 years in the same worksite as a professional before I was not able to continue). I have to medicate and lie down in a dark room the moment I realize an attack is coming, so that I can catch it before it escalates into such pain that can't be managed, except by IV medication in an Emergency Room. I cannot always walk my dog, spend time with my partner or friends, or make meals. I can no longer enjoy music, movie theaters, many restaurants or shopping due to migraine triggers such as extreme sensitivity to light/noise/smells even when I have a break in my migraine cycles. I am on a special diet to avoid foods that trigger migraine attacks. I have to get my groceries delivered to me due to the dizziness I get in grocery stores. I rarely travel, and if I do/can, I have to take a train or someone else needs to drive me. I also have to bring heating pads, a pillow, medication, supplements, and food with me.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried 84 different treatments for my migraine. The majority of them have been ineffective (after a 3 month trial), some have been effective for a while and then became ineffective after a time, some were impossible to continue due to side effects like brainfog, severe weight gain, cold intolerance, severe constipation, etc. Most of the medications were not even created to treat migraine disease, they've just been prescribed because they happen to help reduce symptoms for some with

migraine disease. The medications I am taking now even cause constipation and hair loss, but they are slightly effective and that's better than nothing.

Zomig (a triptan) used to be effective for me for about 5 years, but then became ineffective after that. All other triptans (created to abort migraine attacks) make my neck incredibly tight and are ineffective now. DHE also has the same side effect for me and is ineffective as an abortive. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend \$10,000 each year to try to manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Jennifer Ross

Migraine Inspired Art

December 3, 2019

Institute for Clinical and Economic Review (ICER)
publiccomments@icer-review.org

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Jenny McPherson

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for over 40 years. They started around age 8, but became chronic in my 20s. I experience an average of 10 headache days per month. When I have a migraine attack, I feel severe head pain, extreme fatigue (although I can't sleep from the pain), and sensitivity to light.

Migraine has a major and negative impact on my life. I can't do the things normal people do. I have to watch what I eat and drink, I almost never drink alcohol, I cannot exercise, and taking trips is very hard on my body. I have to be careful of how I sit, stand, sleep (too much or too little is a problem), exposure to too much light (either indoors or out—I even cover the little LED lights inside my car AND I wish the new headlights would be banned. They are terribly bright!), and how much medicine I am taking. **I have anxiety and depression from dealing with this disease EVERY. SINGLE. DAY. WITH NO END IN SIGHT.**

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried over 20 different treatments for my migraine. Antidepressants and Anti-seizure medications caused too many side effects. Naturopaths, Chiropractors, Massage Therapy, Psychotherapy, ENT, Physical Therapy, and more. I have had balloon sinuplasty, migraine surgery, and next week I am having breast reduction surgery, in the hope that the reduced weight will ease the strain on my neck. Next year I will be having my uterus taken out, in the hope that if I am no longer physically menstruating, that the migraines will ease up a bit. I was on Fioricet for a long time, only to find out that they can cause Rebound Headache. I take Amerge with Naproxen now as needed, as well as getting Botox every 3 months. The Naproxen is very hard on my stomach. I still have days where I cannot take the meds (due to rebound) so I have to "tough it out." Even the most recent CGRP drugs worked well at first, but then stopped working after about 1 year.

Migraine is an expensive disease to have, I spend tens of thousands of dollars over the past 20+ years to try and manage my migraine attacks. My insurance is high deductible so I have to pay out of pocket for my first 2 Botox treatments each year, which totals about \$3,000. Insurance didn't cover my migraine surgery enough, so I ended up paying about \$10,000 out of pocket, after fighting the insurance company. The price of prescriptions is so high, that to take maybe ½ a bottle, only to have too many side effects and stop is a tremendous waste of money.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

I would also like to add to please find a treatment that does not cause Rebound Headaches. My husband takes a lot of Advil for aches and pains related to sports, but never gets Rebound Headaches.

Sincerely,

Jenny McPherson

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

I am a registered nurse and a certified health education specialist. I have a bachelor's degree in school health education and a master's degree in public health. I also have migraine disease. I felt as if I found my niche as an adjunct professor in the health sciences, a job I enjoyed from 1998 to 2003. I began working on a PhD in education in 1999 at the age of 44 to pursue my dream of becoming a professor at Michigan State's new College of Public Health. I set a goal to complete the PhD before the age of 50.

Personal History with Migraine

I had my first migraine attack in 1987 at the age of 33. The closer I got to menopause, the more frequent my attacks became. Beginning in 2002, my attacks were so frequent and intense that I began taking an FDA-approved preventive – propranolol – to abate the attacks. The propranolol worked well for reducing the frequency and intensity of my attacks, but for the 3 years I was on it, I experienced significant side effects. In addition to Raynauds' disease, I became inert. I lost any and all motivation to complete my dissertation research or to complete anything that was previously meaningful in my life. It wasn't until I began getting off-label injections of Onabotulinum Toxin-A and got off the propranolol that I commenced work on my dissertation. The Botox worked well. I was in remission as long as I got the injections every 3 months. Unfortunately, my migraine grace period was short-lived. After using Botox for about 18 months, it quit working quite abruptly in 2006, just as I defended my dissertation research proposal to my committee. I had completed all my course work with a 3.9 GPA and needed only to do the research to get my PhD. And then I became chronic. I had a migraine attack nearly every day for 10 years.

I worked around my migraine attacks when I could. It was a Herculean task, because most days, I only had a few hours that I felt up to doing anything at all. It took me six months to analyze my data, mostly because of the cognitive effects of the migraine disease and the side effects from the long list of drugs I had been prescribed. In all, I have taken over 60 different preventive, abortive, and rescue drugs for my migraines. I found myself walking that fine line between suffering the intolerable effects of my disease vs. the intolerable side effects of the medicines. Nothing seemed to work, including dihydroergotamine nor any of the drugs from the triptan class. In addition, I discovered through CT of the heart and brain that I have miniscule blood vessels in those organs. Drugs that constrict my already small blood vessels are contraindicated. I also have significant hypertension, and these drugs seemed to exacerbate this.

It took a long time to do my dissertation research. My short-term memory loss was so acute I could not remember what I had written on the previous page. Not surprisingly, I was unable to defend the research, and decided to cash in my credits for a master's degree in education in 2009. I felt as if I earned the PhD but did not receive it.

A PhD is not the only thing that migraine disease has taken from me. I've lost countless days, many friends, participation in social events, and time with family. This disease has affected me financially as well. I spend hundreds of dollars every month for drug co-pays and treatments. I have tremendous experience and education yet am only able to work part-time. We have a mortgage that we felt confident we could afford before I became chronic, yet have struggled at

times to make ends meet. I feel like a burden. My memories of the past 13 years are like Swiss cheese: full of holes. I struggle to find a sense of purpose as I struggle with this disease.

How Migraine Disease Has Impacted My Life

If you've never had a migraine attack -- or don't have a loved one with migraine disease -- this is what life is like.

You feel:

- Unreliable because you never know when the next attack will put you in bed for up to three day;
- Like a burden, because you are not the wife and partner you used to be;
- You've lost a sense of meaning and purpose in life;
- Like a zombie because the disease and the side effects of the medicines often have significant cognitive effects. I felt as if I went from hero to zero in the course of a few months;
- As though your entire life revolves around your disease; planning for an unpredictable but inevitable attack that comes at the worst possible time;
- Trapped and alone.

For me, the migraine attack is more than blinding, excruciating, throbbing, searing-hot pain in my head. It is also:

- Photophobia
 - I cannot bear strobe lights. It feels like someone is stabbing me in the eyes. Driving at night is difficult when approaching vehicles have their bright lights on.
- Osmophobia
 - Any fragrance or stinky smelly odor is a trigger. Cigarette smoke or its remnants on clothing make me physically sick.
- Phantosmia
 - Sometimes I smell things that aren't there. It usually smells like a combination of cigarette smoke and burning rubber or an electrical fire.
- Auras
 - I see beautiful colors when I close my eyes; oranges, reds, blues, and greens. It looks like aurora borealis or as if I was in a drone atop an exploding volcano. It would be cool if it wasn't the harbinger of something dreadful.
 - Having aura increases my propensity for having a stroke in the future; so does having atrial fibrillation, which happens each time I vomit during a migraine attack.
- Aphasia, or the inability to speak
 - For a teacher like myself, this is awful if an attack happens while at work.
- Nausea and vomiting
 - For the last two years, each time I vomit with a migraine, my heart goes into atrial fibrillation, a potentially deadly heart arrhythmia treated with. The only medicine I can take to treat an attack is a prescription NSAID pill or shot that is contraindicated for use with anticoagulants as it potentiates the possibility of bleeding to death.
- Cognitive problems
 - I once forgot how to make a five-point star and how to tie my shoes. I have no facility for numbers while in an attack.
- Extreme fatigue

- I am talking about the bone-tired, can't-get-out-of-bed kind of fatigue. Simple tasks become impossible.
- Visual disturbances
 - Blurred vision including the Inability to focus on text and double vision
- Phonophobia
 - Even the slightest noise is amplified. I can't go to a movie, a sporting event, or a play without ear plugs. Sometimes I have to leave events to avoid getting a migraine.
- Dizziness
 - I sometimes have to call for a ride because I am too dizzy to drive home.

There are several phases to a migraine attack. (Sometimes) Aura, prodrome, headache phase, postdrome, and the interictal phase. Each phase has its own symptoms. My prodrome phase may include excessive yawning, nocturia, irritability, tinnitus, and a weird feeling in my scalp sort of like my skin is on inside out and my hair hurts. I have difficulty understanding both written and spoken words. I may also have insomnia.

Postdrome makes me feel hung over. I have fatigue and a vague head pain sort of like my brain was bruised and is trying to recover. I may also feel manic or euphoric, or terrifically depressed.

My interictal phase is trying to recover and resume some sense of normalcy. I continue to have photophobia, phonophobia and osmophobia throughout. I never get a break from that. My interictal exposure to light, sound, or odors will almost certainly trigger another attack, and the cycle repeats itself. I struggle not to do too much, but to maintain some homeostasis with my diet, sleep, and exercise. My whole life revolves around preventing the next attack.

DITANS and GEPANTS: A New Drug Classifications Being Reviewed By ICER

These new drugs will be helpful for people like me who cannot take triptans, DHE, or Non-Steroidal Anti-Inflammatory Drugs (NSAIDs). There are only a handful of treatments currently available that were created specifically to target the migraine syndrome. I cannot use triptans or DHE to abort a migraine attack because they are not effective and exacerbate my hypertension. I have miniscule blood vessels in my heart and brain and cannot risk the vasoconstriction that comes with triptan use. I take an anticoagulant when I am in a-fib, but cannot take NSAIDs and anticoagulants together, so I cannot take an NSAID for a migraine attack until well after my heart rate converts back to a normal rhythm or I risk bleeding to death. I am at high risk for stroke for three reasons: migraine with aura, miniscule blood vessels in my brain, and a-fib.

QALYs, the measurement used by ICER to determine the economic value of a drug, cannot measure the effect this disease has on a person and their lives. Please consider my story before making a decision. Migraine has taken so much from me. I deserve better. Ditans will provide a way for me to abort an attack and improve my quality of life.

Jill D., RN

Certified Health Education Specialist

Board member of Alliance for Headache Disorders Advocacy, National Headache Foundation and Coalition for Headache and Migraine Patients

Volunteer for Headache on the Hill, Miles for Migraine and Retreat Migraine

Joann R.

Dear ICER,

Imagine if you will the following occurs: you're 13 years old and just got your menses. Soon after you start having debilitating migraines that change your life completely. Your symptoms are inexplicable and yet cyclical. They torture you day and night. You struggle with school trying to get your studies done and hope for the best. Things are torturous with one symptom after another – pain, body aches, sensitivity to light and noise, nausea, irritability, etc.

Year after year passes and still no relief. People don't understand. They call you over-emotional, a hypochondriac, and various other things because they do not understand. Life as you had hoped is not turning out that way.

Now imagine you're 31 with three young children and a demanding job. Your migraines are relentless causing you times that you need complete darkness and no sound. This makes family life stressful and work unbearable. Doctor after doctor tries medication after medication to help you with the migraines. One by one the medications fail you. Insurance allows only 9 pills of triptans per month. One pill does not touch the pain so you need a second one two hours later. Nine pills can't come close to covering your pains especially when triptans are so ineffective. You are no longer able to hold a full-time job. Your friends don't understand why you bail on them time and time again. You lose friends because you were unable to be reliable and to participate in social events. The years continue and you're still at a loss for what to do. You manage to get in to see a neurologist who specializes in migraines. He tries new medicines, new treatments, new theories on you. Still the migraines are relentless and unpredictable and torturous.

Now you have grandkids and they don't understand why you have to wear sunglasses inside. They don't understand why you miss their birthday party because you can't stand the noise. They don't understand that sometimes you can't stand any movement or to be touched. Depression becomes part of the equation because you were isolated and without help or hope or understanding. Your diagnosis changes now to the chronic version of intractable migraines without aura. They are daily and they last for days. You're unable to eat. You're unable to sleep. You're unable to function. New medications come out, new treatments come out but your insurance is reluctant to cover them and if they do cover them, the co-pays and deductibles are so huge you can't afford them. You can't afford to be well. When you stopped working and went on disability your salary was reduced to 67% of what you were bringing home. Social Security rarely has raises but the cost of living is skyrocketing. You hope some of the new treatments that are coming out will be able to stabilize you and return you to a life that's enjoyable. You plead with your insurance company to authorize new treatment. You feel guilty when the medical bills arrive saying you owe thousands of dollars and knowing you don't have the income to be able to be treated. Imagine the guilt, the sadness, the pain of all of this on you for over 40 years. Still you try to keep some semblance of hope in your life. You try to do anything that the doctor suggests that might be helpful. New specialists and new theories pop up all the time and yet aren't covered by your insurance. They don't pay for seeing specialists when you have chronic illnesses that last for years. They don't pay for treatment after treatment. They don't pay if you need multiple treatments at the same time.

I'd like to imagine a world where treatment for the things I need every day is available, where costs are affordable. I don't ask for things to be free. I don't ask that things be even fair. I only

ask that we have a chance at some normalcy, at some better quality of life. In 2020 I understand that new things will be available to help me and others like me who have suffered so long and so much. I hope that there will be pressure on our insurance companies to help cover these treatments. I pay for top-tier insurance coverage through my husband's employer and in the last two years have accumulated over \$5000 worth of medical bills. Additionally I have suffered debilitating symptoms 75 of the last 77 days. Two days out of almost 3 months have I been able to socialize, to get anything accomplished. Can you imagine such a life? Would you want such a life? Please if there's anything you can do to help people like me, please do so. Thank you for your time.

Sincerely,

Joann R.

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease since I was 10 years old. I experience an average of 15-20 headache days per month. When I have a migraine attack, I cannot function. I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

Migraine has a major and negative impact on my life, and as a result I can only attend school part-time, online. I am unable to work full-time.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried 25 different treatments for my migraine however all have caused side-effects or do not work at all.

Triptan medications do not work for me, and DHE causes severe side-effects. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend thousands each year to try and manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop my attacks and avoid the pain and disability I experience during a migraine, and help improve every day cognitive function & quality of life.

I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,
Julia Kessel

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Date: December 2, 2019

Name: Julie P.

Dear ICER,

Thank you for the opportunity to share my experience with migraine and point out the desperate need for access to new and different migraine medications.

I have struggled with chronic migraine since my mid-thirties. Over the years (I am now 50) my migraine attacks have worsened, in terms of both frequency and intensity. There is no cure for migraine, and many of the medications used for people with migraine are marginally effective and have bad side effects.

Before taking Aimovig (a relatively new migraine preventive drug), I had one to two migraine attacks every week, each lasting one or two days. The abortive medications I used (rizatriptan with methylprednisolone, tizanidine, and ondansetron) generally eased the pain to a certain degree but not enough for me to go about life normally (I could not comfortably leave the house, drive, be physically active, or interact much with others). I am fortunate that my employer allows me to work from home; otherwise I would likely have trouble holding a job.

Also prior to Aimovig, I tried many other drugs and treatments over the years, none of which helped to prevent or reduce my migraines:

- In 2016 I tried the antidepressant Zoloft. I stopped after two weeks due to intolerable side effects (insomnia, intense anxiety).
- In 2017–2018 I tried Topamax (an anticonvulsant developed for epilepsy) for 7 months. It did not help with my migraines, and the side effects (mental slowing and fatigue) made it difficult to do my job.
- I tried two different hormone therapies as a possible migraine preventive (Aprovel for 6 months starting in July 2012 and Prometrium for 7.5 months starting in November 2013).
- In 2017 I tried a temporomandibular joint stabilization therapy for 6 months. All treatment costs (around \$6,000) were out of pocket.
- I have tried alternative therapies including chiropractic (2003 to 2010) and acupuncture (not covered by insurance, 2004 to 2018).
- I have made substantial changes in my diet.

I did not meet my health insurer's eligibility criteria for coverage of Aimovig, as my insurer's step therapy protocol required that I first fail at least three medications from at least two drug

categories after a trial of at least 12 weeks each (the only therapy the insurer counted was Topamax). Attempting to meet that criteria would mean gambling my general health on drugs that were not developed specifically for migraine, that may not help me at all, and that carry a range of potential—and sometimes debilitating—side effects.

After going through a lengthy appeals process, my insurer finally agreed to cover Aimovig, and I have been fortunate to be able to get it through the manufacturer's assistance programs.

During my time on Aimovig (approximately a year), my average number of migraine headache days per month has decreased to 4, from a pre-Aimovig average of 8 (for 2017–2018, according to the headache diary I keep for my neurologist). Side effects have been minimal and tolerable. With Aimovig my headaches have been shorter in duration, less painful, and treatable with over-the-counter medication (ibuprofen).

Fewer migraine days thanks to Aimovig has meant fewer cancelled plans and more interaction with friends and family. It has meant fewer days spent in inside, in bed and more days feeling well enough to exercise and be physically active. Less intense migraines mean I need less prescription medication.

Unfortunately, Aimovig's subsidy programs are limited, so with my high-deductible health insurance plan—if my insurer continues to cover Aimovig—I will eventually have to pay the full cost of the medication (about \$580 per month) until I reach my \$6,500 annual deductible. That cost is a deterrent for me, especially when added to the monthly premiums for my plan. I will be forced to find another option, such as trying another similar medication with manufacturer subsidies (with no guarantee of how that medication will work for me) or discontinuing this type of medication altogether and running the risk of returning to my previous pattern of migraine (losing roughly 10 days a month to the disease and subsequently any gain in quality of life I have experienced with Aimovig).

I am just one person living with migraine and fighting to get the medication I need—but I am one of many. Over 38 million people in the U.S. suffer from migraines, and some studies show that this number is closer to 50 million. Some studies estimate that 12% of U.S. adults are living with migraine.*

I would ask that ICER please recognize how debilitating migraine can be, and how negatively it impacts the lives of migraine sufferers like me. I call on ICER and insurance companies to support people living with migraine in affordably accessing new acute migraine medicines so they can live healthier and fuller lives.

Thank you.

Julie P.

*Burch R, Rizzoli P, Loder E. "The prevalence and impact of migraine and severe headache in the United States: Figures and trends from government health studies." *Headache: The Journal of Head and Face Pain*. Apr 2018; 58(4), 496-505.

Migraine Facts. Migraine Research Foundation. <https://migraineresearchfoundation.org/about-migraine/migraine-facts/>.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Julie T.

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for over four decades. I was not diagnosed, however, until I was 29 years old; no doctor was familiar enough with migraine disease to know what I had was something other than “just a bad headache.” And even when I was finally diagnosed, there were no medications to treat migraine, just to treat generic pain. Fortunately, we are learning enough about the disease that there are new medications available for some people. But they don’t work or are not appropriate for everyone.

Migraine has a major and negative impact on my life. When I was diagnosed with migraine I had less than 14 attacks per month. Later I became chronic, meaning I experienced over 14 attacks each month; that is almost half of my life spent with migraine attacks. A typical attack would last 72 hours. And before the headache pain, I experience transient aphasia (where I temporarily lose my ability to speak or process language), mood swings, and other symptoms such as increased clumsiness, ongoing watering of one eye, incessant yawning.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don’t work very well. Over the course of my life I have tried 11 different treatments for my migraine. One medication gave me suicidal thoughts, another involved burning the nerves thought to be responsible for the pain.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Julie T.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Julie Winn

December 3, 2019

Dear ICER,

I am writing to add another voice to help you understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 37 years. For me, this has been a progressive disease. When I first began experiencing migraine they occurred 2 or 3 times a year. I now have 10-15 migraine days a month. When I have a migraine attack, I feel overwhelmed and frustrated because migraine takes away so much of my life.

Migraine has a major negative impact on my life. I have been lucky that my husband has always been well employed. I haven't had a full time job for the last 20 years due to being undependable. You never know when a headache will hit or how severe it will be. Employers have been kind and sympathetic. I have never been let go or even talked to about frequent sick days. I simply choose to leave my employment because I can't truly contribute if I am unreliable. To me the biggest loss is my family time. It is heartbreaking to know my husband has to leave the room because every noise is painful. So often I have to leave family gatherings because the sound of my children, and now my grandchildren laughing is excruciating. How do you think it affects those around me knowing that laughing, or playing or even talking too loud is painful for me? It doesn't just affect me, it affects everyone around me.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Regular over the counter medications used for normal pain usually take about 20ish minutes to start working. Migraine medications, at least for me, take 1 to 2 hours to be effective. And sometimes they just don't work at all. In the years I have been dealing with migraine I have tried probably 10 – 12 different medications acupuncture, body piercings, massage, yoga, sauna treatments, jaw realignment, restrictive diets, and I can't even remember how many doctors I have seen. Obviously none of these things have helped long term, or I wouldn't be at 10- 15 migraine days a month now. Every medication has side effects. The most serious side effect for me was caused by Topomax which gave me kidney stones. These lasted for 6 months and caused permanent damage to one kidney before I tied the kidney stones to the Topomax and changed to yet another medication. Triptans are the standard now, but as with all medication, your body gets used to it and it becomes less effective. You get used to one, it slowly becomes less effective, therefore you have more severe migraine until you switch to another and follow the same pattern again and again.

I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have. I spent over \$5100 out of pocket this last calendar year on migraine related dr. visits and medications. This is not including any insurance costs.

The different alternative methods I have tried in the past have been very expensive. The jaw realignment alone was over \$6000. We are now retired, so our income has been significantly reduced.

My quality of life is very negatively impacted by migraine and I plead with you to make available new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I thank you for listening to my migraine story and ask to be able to assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Julie Winn

Katie M. Golden

December 6, 2019

RE: Public Comment on ICER Review of Acute Medicines for Migraine

To Whom It May Concern:

I was the youngest vice president of community bank specializing in commercial real estate financing. Before the age of 30, I was making six figures.

In January of 2011, I had a migraine attack that has never stopped. For the past eight years, I experience varying levels of pain 24 hours a day, 365 days a year. I have not had a pain free moment. Two years after being diagnosed with chronic, intractable migraine, I had to stop working in a career that I truly loved and for a company that was incredibly supportive of my illness. I also was in my second year of grad school at Georgetown University. The migraine thief took all of that away from me.

In stark contrast, now my average medical costs are over \$100,000 per year. That is inclusive of my annual out-of-pocket costs of approximately \$15,000, or \$1250 per month, which equates to \$41 per day. Having migraine disease, a hereditary, neurobiological disease, costs me \$41 a day.

Payers, pharmacy benefit managers and insurance companies have a long history of putting up arbitrary access barriers to deny patients treatments that their health care provider deemed the best treatment. If a patient is prescribed one of these new acute medications, after receiving FDA approval, their doctor did so knowing their medical history. Yet insurance companies see claims as numbers and not as actual human beings who are suffering needlessly because of the business decisions that are made behind closed doors.

I understand ICER's economic review of new medications has to include quantifiable measurements such as the use of QALYs, *but how do you measure a life?*

How do you measure Melissa Dwyer's life? At 22 years old, she had been turned away by world class healthcare facilities. Her friends had basically abandoned her. She had to drop out of college and spent years in bed. She had no hope. On June 7, 2013 she took her own life because she could not imagine living one more day with migraine.

How do you measure her life?

In our country, there is an opioid crisis and there is a pain crisis. You can't address one without addressing the other. Many migraine patients currently use opioids because they have simply run out of options. I have previously used opioids for pain management of chronic migraine and done so responsibly. But I have also lost a close friend due to opioid epidemic. The ICER model

fails to take into account that the use of new acute treatments could decrease the use of opioids in our population. The life of my friend wasn't even considered in this process.

If there are treatment options available that would potentially improve someone's quality of life, then insurance companies have an ethical obligation to value my life the same as it would a patient with any disease that is debilitating and has life-altering consequences.

If I could have ONE day without a migraine, that would be life-changing to me.

Our disease is stigmatized and we are forced to prove how incredibly debilitating our disease is. Today is no different.

We have to plea our case for responsible access to these potentially life-changing medications. Convince entities that say they are "patient-centric" that WE are worthy of having access to these drugs. We deserve better.

If you haven't noticed, migraine patients are hopeful, vocal and ready to break the stigma of our disease. As Lin Manuel-Miranda wrote in the musical Hamilton, "This is not a moment. It's a movement."

Sincerely,

Katie M. Golden

Professional Patient

Director of Patient Relations for CHAMP

Editor of the INvisible Project magazine: Migraine editions

Migraine Advocacy Liaison for the U.S. Pain Foundation

Staff Writer for Migraine.com

December 1, 2019

Re: PUBLIC COMMENT FOR REVIEW OF ACUTE MIGRAINE MEDICINES

Dear ICER,

I am writing to bring you awareness of what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for over 15 years. I currently experience an average of 9 headache days per month, although there have been months in the past where I had up to 26 migraine days. My migraines come with significant brain freeze or “fog”, making thinking and processing mental tasks very difficult at times. My vision becomes very susceptible to light sensitivity as well as blurriness, making tasks such as driving and reading almost impossible. On top of that any “scrolling” of computer, vision scanning or physical movement walking down a hall or driving brings on nausea. Each time I have a choice, will this be bad enough that I should take that \$4 dose of Cambia that insurance will only allow 4 per month or “save it” in case a worse headache is tomorrow. Just today I was five minutes from leaving on a four hour drive when a migraine struck and I had to lie down until the medicine took effect and make sure my vision and concentration was restored.

Over the course of my life I have tried over 18 medications and a dozen alternative treatments for my migraine. Yes, I take 3 daily preventive medications. That is why I’m down to “only 9” per month from every day of the month. But there is no cure and many first line abortive medications such as triptans or DHE only blunt the symptoms for a couple of hours and then the migraine will resume and continue, usually for 24 to 72 hours. Several times a year I have a migraine that will last 5 to 10 days and no currently available acute abortive will even make a dent in the symptoms. Migraine is a very challenging disease to treat effectively. Many of the medicines used for people with migraine don’t work very well.

I’m one of the lucky ones, I’m in sales management and can flex my hours when needed or sneak in a half hour break in the dark, or sit in my car after a sales call while meds kick in. My coworkers on the production floor aren’t so lucky, they have to use sick time or worse, run vomit and return to the line under bright florescent lights in agony. And they can’t afford the extra

alternative treatments I use such as neck physical therapy or massages. My social life comes last and often after the abortive meds wear off and I get home from work I have to cancel exercise or a dinner and go to bed. I can't waste even the semi-effective abortive medications, I have to save them for work.

Migraine is an expensive disease to have, I spend over \$5,000 each year to try and manage my migraine attacks. I have a continuous battle with insurance over preauthorizations, requests to try alternatives, restrictions on amounts and more. With the level of disability I incur had I not the salary and funds to do this I would have had to file for disability assistance.

As you see, my quality of life is very negatively impacted by migraine. At one time for several years I estimated that I lost about 75% of my life to migraine. Now with better preventives I am better but still lose 30% of my life to migraine. Because of this daily war I fight with so limited medical choices I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person, so that all of us that suffer migraines can be more productive citizens and not burdens to society.

Sincerely,

Karen Van Berkel
Migraine sufferer

5188 Towne Centre Dr
St Louis, MO 63128
314-623-0626

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: (Kenny M.)

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 30 years. I experience an average of 20 headache days per month. When I have a migraine attack, I feel like crawling under a rock. They are debilitating! My head pounds severely, I get nauseated and sometimes vomit; laying down makes it feel worse at times.

Migraine has a major and negative impact on my life. I feel the most for my family because it ruins family plans. I cannot make any plans for fear of having to cancel because I have a migraine. I miss days from work and fear that I may lose my job because of the time missed. It feels very depressing.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried many medications to prevent and treat my migraines; too many to count. I have experienced weight gain and weight loss, hair loss, moodiness, irritability all because of the side effects of all the preventive medications I have tried. I feel like a guinea pig!

I don't have trouble with taking triptans, but after taking them for a long time, their effective seems to wear off or they just don't work as well anymore to provide me with relief. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend thousands each year to try and manage my migraine attacks from visits to the ER, to trying different preventive and even over-the-counter medications all with no relief, paying for medications out of pocket because my insurance only allows a certain amount of pills per month and it simply isn't enough. This is a disease that I would not wish on anyone.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Kenny McNeil

Migraine World Summit

Date: December 3, 2019

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Robert P. Fabish, P.E.

Dear ICER:

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has on my life, and the desperate need for access to new and different medicines.

Migraine disease began for me in high school; it has been debilitating for the past 30 years. I experience an average of 10-12 headache days per month. When I have a migraine attack, I cannot work, drive, or interact because of the pain and because my thinking slows to a crawl.

Migraine has had a major negative impact on my life. At best, and only by using a significant amount of anti-migraine medications, I can survive by bookending days in the real-world with days recovering at home, often in bed. Both my professional life and my personal life have been severely curtailed. I am reduced mostly to electronic communications with occasional face-to-face meetings.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried approximately 50 different treatments for my migraine, most of which had no positive effect but did have negative side effects like weight gain, excessive sleeping, and cognitive impairment.

No anti-migraine drug works well enough for me such that I can lead a normal life. However, I am lucky that triptans are effective enough for me that I can survive part-time in the real world (see above). Note that if I take a triptan drug more often than twice per week, I risk my body becoming used to the drug such that the drug no longer works. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have. To try and manage my migraine attacks I spend approximately \$500 each year on partially effective (see above) migraine "rescue medication" alone (the list price for such drugs is greater than \$2000 per year), none of which is paid for by medical insurance because the drugs that work the best are not covered by insurance. Including all medical, insurance, medicine, and treatment costs related to my migraines, the total is approximately \$5000 per year. If nothing changes, the cost of lost opportunity to my professional career and business will be \$5 million over my lifetime. The loss in my personal life is priceless.

As you can see, my quality of life is very negatively impacted by migraine. I therefore respectfully demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly

assess these new medicines so that I can be a healthier and more productive person, and reclaim my life.

Sincerely,
Robert P. Fabish, P.E.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

From: Kimberly J. Zanotti

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for decades but was formally diagnosed in 2010. I experience an average of 20-25 headache days per month. When I have a migraine attack, it completely debilitates me. I struggle to think and often times it takes every ounce of energy I have just to get dressed for work, let alone have a productive day there if I'm able to make it in.

Migraine has a major and negative impact on my life. Not only do I suffer from debilitating headache pain but I have the cognitive brain fog that goes along with an attack. This brain fog comes on me even before the headache pain and it also lasts well after the headache pain has subsided. Migraine has impacted my quality of life with my children and husband and there have been countless times when I have had to bow out of a particular get together with my family or friends due to a migraine attack.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Compounding my personal migraine situation I had an ischemic stroke in March of 2011 so the triptans that are typically prescribed to migraineurs I am not able to take as they are contraindicated. Needless to say, it has made it extraordinarily difficult for my migraine specialist(s) to prescribe me medication that I can effectively and safely take notwithstanding their efficacy or not. In trying out various migraine abortives there was one in which I had a severe allergic reaction and another abortive medication which negatively impacted on the efficacy of a migraine preventive I had been on which had been effective for several years up to that point. Most recently I have been receiving botox injections (I recently had my 4th round) and my migraine attacks have diminished as a result but I still require additional migraine abortive options.

Migraine is an expensive disease to have, I spend several thousands of dollars each year to try and manage my migraine attacks if I include the amount of

money for the doctor, the cost of the medication (my Botox co-pay is \$350 every 12 weeks alone).

The bottom line is that my quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Thanking you in advance,

Kimberly Zanotti

December 3, 2019

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Kimberly Ann Morgan

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 12 years. I experience an average of 25 headache days per month, and migraine 3 times per week. So 3 times a week I have to cancel all plans. When I have a migraine attack, I feel pain in my forehead, achy joints, nausea, foggy brain, severe fatigue, depressed, irritable, and defeated.

Migraine has a major and negative impact on my life. In 2012, I had to leave my position of senior manager at Accenture in the management consulting department. I loved my job, my co-workers and the clients. For three years I grieved the loss of my sharp mind and intellect, which made me good at my job.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried 40 different pharmaceutical medications, 24 over the counter and supplements. Also massage and acupuncture plus lifestyle changes including Pilates, cardio, mindfulness, regular sleep and eating patterns, trigger avoidance, daily sunshine/SAD lighting. There is no magic pill for migraine. Currently, I have 4 daily preventative medications, 5 vitamin/mineral supplements, and 4 medication to treat the migraine symptoms, including Frovatriptan and the recently approved Ajovy, which is a CGRP inhibitor.

Migraine is an expensive disease to have, I spend over \$16,000 each year to try and manage my migraine attacks. The CGRP inhibitor Ajovy, which was approved by the FDA in 2018 is NOT covered by any Part D plans for Pierce County in Washington State. The cost is \$681 per month, or \$8,172 per year. This medication has been wildly successful for me, by reducing the intensity of each migraine. I can't imagine having this medication working so well, and not being able to afford it.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Kimberly A Morgan

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Kristen Estep

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 36 years. I experience an average of 20 headache days per month. When I have a migraine attack, I feel like my head is going to explode and it also comes with severe nausea and vomiting, vertigo, aphasia, allodynia, blinding aura, neck pain, sensitivity to light, sound and smell.

Migraine has a major and negative impact on my life. Since my migraine disease turned chronic three and a half years ago I have gone from a person everyone could depend on to a very unreliable person in my work and home life. I have had extinguished my FMLA and am under corrective action at work due to my migraine. I am typically only able to work 1 – 2 days per week. I am unable to keep up with my responsibilities at home either. When you can't lift your head off of your pillow, due to the stabbing pain, it is impossible to work or maintain a household.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried approximately 8 different treatments for my migraine. The first medication my neurologist tried was Topamax which is a preventative; this gave me a pounding, irregular heartrate and extreme vomiting. I also tried 3 – 4 Triptans; these medications either didn't work or gave me adverse side effects such as vomiting, worsening head pain, extreme weight loss and worsening of my RLS. I also have High Blood Pressure, so I should not be taking Triptans. I reserve the only one that semi works for extremely bad migraine attacks. I also have side effects from that one like throat tightness and feeling extremely heavy to where I can't get out of bed. We have also tried Ajovy, which seemed to help but my insurance didn't cover it and the trial period ran out and I can't afford to pay out of pocket for it. I was then switched to Aimovig, which insurance does cover, but due to side effects (itching, eczema and hair loss) I have stopped taking that also. I receive Botox every 12 weeks, which helps some.

I desperately need access to new types of acute treatments. As stated above I have High Blood Pressure and should not be taking Triptans because of the risk to my heart and risk of stroke. I need to be able to have access to a medication that is both effective and safe for me. The new medications that are going to be coming out this year are for people like me.

There needs to be access from our insurance companies to receive these new medications affordably.

Migraine is an expensive disease to have, I spend \$6000 each year to try and manage my migraine attacks. I work for a hospital system and carry my insurance through them, but still my personal costs are extraordinary.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Kristen Estep

Chronic Migraine Awareness Blog Manager

CMAware ARMS Volunteer



ICER OPEN COMMENT PERIOD ON CGRP INHIITOR FOR MIGRAINE

When I was 43, I had a complete hysterectomy. The operation relieved me of the symptoms of stage 4 endometriosis and a soccer ball sized tumor that encased my ovaries and caused me daily abdominal pain, but I woke up with a 'headache' that I just could not shake. The only pain relievers I was given for the surgical pain was alternating Tylenol and Advil. I was not bothered by the pain from surgery, but more by the nagging head pain that just did not go away. My doctor told me this should subside when they started me on hormones six weeks after surgery. Eight weeks after my surgery, I experienced a blinding headache – this was like nothing I had ever experienced in my life. This was accompanied by uncontrollable vomiting that occurred if I moved even an inch. My body ached from being frozen in place for hours. I had not thrown up since I was a child...I was sure something had to be terribly wrong.

The severe attacks grew more frequent and longer, the persistent headache that occurred between the violent attacks became more disabling. The first year after my surgery, my husband and I tried to continue as usual. I put on a brave face at work and kept a diary of these attacks trying to find some answers. I was also on a hormone rollercoaster while my gynecologist tried to determine if that was the issue. Finally, I met with my first neurologist who, after all the tests I was sure would reveal a brain tumor, diagnosed me with 'garden variety migraine'. On the doctor's recommendation, I started Topamax and learned that I would need to do my own research and was on to neurologist #2. The first neurologist had to be mistaken – I was intermittently losing my hearing, smelling acrid and oily smells that didn't exist and vomiting until I was so dehydrated I couldn't move. This was not 'garden variety' anything.

The first year was terrible because of not knowing what was going on and thinking that maybe each ensuing attack was the one that was going to kill me, but I had hope that I just needed to find out what was 'wrong'. I was obsessed with tracking the dates of the terrible attacks – what I had eaten, what hormone adjustments had been made, what my bowel movement looked like. I tried everything not to have it happen again or at least predict what my day would look like. I was able to give myself Imitrex injections and became proficient at vomiting while driving. Once the vomiting started, it wouldn't stop, so I just had to get home and it would take days to feel like myself again. Every time I flew, I would steal the sick bags to carry with me in my daily life.

Neurologist #2 was fascinated and started me on riboflavin, CoQ10 and magnesium. The best thing he did for me was give me permission to go to the ER. He said if I was taking everything in my prescription arsenal and not getting an ounce of relief and getting dehydrated to the point of fainting, I should go to the ER. I now was a regular at the ER every 6-8 weeks. I took a blanket, ear plugs, sunglasses. They knew me and I knew my morphine 'cocktail'. He also told me to stop making jokes and trying to put people at ease about my pain levels. They were clearly worse than I let on.

A year and a half after my surgery, I couldn't keep up the façade any longer. At work, I present my ideas to groups of developers, brokers, architects and engineers for a living. I was having

trouble finding the words I needed in simple conversations and told my office that I needed to take a break. The cost of the ER co-pays (\$500 per trip) and battling with insurance about 'enhanced coverage' for these frequent visits was taking up my free time. I was receiving bills that were for much higher than the copay. I frequently left the office and ran to an acupuncture clinic (\$100 every 10 days which was not covered by insurance) in the hopes that I could get some momentary relief to get me through an important morning or afternoon. I was buying every device I could find on Amazon that promised any kind of relief and I would lay under my desk at work for just a few moments of calm before attempting to continue with my day. I would unknowingly press the sides of my head with my palms to dull the pain enough to allow a coherent sentence out. I told my director I needed 3 months off and I knew it would be without pay and my health insurance would have to be paid out of pocket. I just had to see if my lifestyle was part of the problem. She told me an absence like this would not go unnoticed in the industry and would affect my reputation. I did not have a choice.

I was a shadow of my former self. I cried...a lot. I'm not a crier, but this was just so desperate. I told my husband that I just didn't think I was going to get through this. I'm not this person – I can get through anything. I've always been everyone else's rock. My husband promised me that we could move anywhere and be anything that would make me happy. It all sounded like too much. So I slept and ate clean and walked outside and did yoga 2-3 times a day and ordered a stack of books on migraine. I read and highlighted while my head pounded. I had already given up alcohol and coffee and rock music and travelling and going to see live music. I was someone I hated...I was a creepy self-help person. I got massages and acupuncture and drank apple/pear/celery juice. I found online communities of people suffering the way I was suffering and worse. I would tell my story and by now it sounded like one of their stories...and their stories sounded terrible. People felt bad for me and that annoyed me. I'm not one for pity so I kept pushing for an answer.

I took my husband to my next neurologist appointment and we both realized neurologist #2 didn't have anything else to offer me. It was 30 minutes of me asking questions and him asking, "Have you tried medication X", "How about medication Y?" and listing side effects. I needed something more. One of my books mentioned that I should be seeing a 'headache specialist' not just a neurologist. That seemed like a great idea. I was now armed with much more information and my binder had many more questions after my research. Of course, it would take 3 months to get an appointment which would be 8 weeks after I was back at work, but what could I do?

One embarrassing side note to highlight my desperation during this time. I read an article in a magazine about women in New York and San Francisco going to see shaman to drive out evil spirits and heal them of all kinds of ailments. I was still wondering how a perfectly healthy person could have had a surgery and turned into a walking pharmacy in constant debilitating pain. I now know that I probably had experienced a few migraines in my youth and written them off as a hangover and that I was over-using Excedrin before I had my surgery. Anyway, I had moved from NYC to Phoenix years ago so I looked up my local shaman. It's not an admission I'm proud of and thankfully shamans are quite expensive and use drums in their process which I could not imagine lying still through.

I went back to work at 30 hours a week with a very flexible schedule. My boss just wanted any 30 hours from any location. I live 10 minutes from the office, so I'm able to come home and decompress a bit at lunch. All the hard work of juicing and yoga were soon dismantled and the first week my pain levels were almost unbearable. The difference was that I now had 3.5 days to recover before the next week and they didn't even suggest late nights or weekend work.

Neurologist #3 the headache specialist was different from the beginning. The information packet was probably 100 pages of questions, the waiting room was dimly lit and very soothing. I took my husband with the hopes that I would be given a nerve block or one of the other magic bullets I read about. I explained about two years and various doses of Topomax that I kept with even though it made me doopey (my husband says I went from Type A to like living with a college student) and the Trokendi I had tried that I thought gave me a terrible migraine (I now know to give meds a longer trial). I told him about the massive doses of riboflavin that I thought did nothing, but I didn't want to stop in case they did something and the magnesium that I took every night that I thought had reduced the morning migraines. I showed him that I had documented that that CoQ10 had made me so sick to my stomach and gave me vertigo (even though everyone said that was not a thing). I listed my Sumatriptans, Rizatriptans and how neurologist #1 told me to do a shot of Cambia before I gave myself a shot in the leg with Sumatriptan. I asked what I was supposed to do with the other 21 days a month when I only got 7 doses of a Triptan and I worried about rebound. The only other thing they gave me was Indomethacin and that worked as well as Tylenol. I told him that for the most part none of these seemed to put a dent in these except for the trips to the ER for morphine and steroids – and I really didn't want to put opioids in my body and the \$500 co-pays were killing me. Not to mention the expense of this disease – holistic approaches that insurance does not cover (massage, acupuncture, supplements), prescriptions (even my high deductible is typically met by September), ER visits, unpaid leave.

Neurologist #3 explained that I needed better preventative medications and while I could certainly continue with my juices, I needed more medications in my arsenal. After having so many side effects for the last few years, I pushed back. He insisted I try it his way at first. I left with Amitriptyline, increased Topomax, Cambia, Dihydroergotamine, Rizatriptan, Fiorcet and an explanation for how many each could be taken a week and what could not be taken within what timeframe of which. Neurologist #3 was also going to try to get me approved for Botox. He said it was a long shot since during my 2-1/2 years of hell I had not tried enough 'steps', but we optimistically booked the procedure.

The Amitriptyline soon took the dark thoughts away and loosened some of the crawly tense feelings that had built up in my shoulders, neck and skull. Of course, I recently read that I have a 30% increased risk of dementia from being on Amitriptyline. The Dihydroergotamine was strong enough to keep me out of the ER. That medication was also not something that is sustainable since I have a family history of heart disease and stroke. I try not to take the Fiorcet since I would not be able to take the Ergot if the migraine got worse – same for the Triptans. I have never found them to be terribly helpful anyway. Cambia was my go to for 2-3 times a week. My insurance company threatens to cut me off of it on a regular basis and suggests Advil or some other asinine 'step' medication. Neurologist #3 is not perfect, but he is responsive and has been able to keep me approved for Cambia.

I was approved for Botox in 2016 and it made an improvement to the quality of my life. As long as I am very careful and watch my sleep, my diet, take my preventative medications my daily pain levels are reduced. Botox is not without its side effects. The first 8 weeks after the injections my eyelids droop to the point that my nephews tease about not needing a Snapchat filter...but I past the point of vanity in the name of relief a while ago. It is not cheap. Before my deductible is met, the cost is \$300. By about September, I've always met my deductible.

I also tried working with a TMJ specialist (insert cash register noise here). My dentist had a thought that perhaps my jaw had been damaged during my surgery which was triggering my migraines. I've had injections to my jaw joint, day and night splints (\$750 each) and adhered to a diet of soft food. This doctor added Meloxicam and Tizanidine to my daily repertoire. I kept that up for about a year.

In the summer of 2018 I was one of the first people to get Aimovig when it received its FDA approval. People asked me whether I was concerned about what side effects could be discovered down the road and I laughed. Just a couple months before starting Aimovig I had to fly to San Francisco to receive an award for one of my projects. Suffice it to say, with the change in my routine I ended up discreetly vomiting into one of my always-at-the-ready bags in front of co-workers and a tour bus in Union Square. My co-workers were more disturbed at how efficient I was than what I had done. I then had to white knuckle the plane trip home with ear plugs and my eyes closed praying that I wouldn't continue throwing up. So no, I wasn't worried about the side effects. I was not getting any better on my current path.

Aimovig has been a game changer for me. It's not perfect, but the severity of my migraines has decreased and I have actually been able to string together some completely pain free days. Access to the medication was challenging at first with coolers shipped to my office and then coordinating through a specialty pharmacy and finally working with my local pharmacy. There is also the issue of insurance codes and manufacturer discount codes, but it is all worth it. My office is on its third insurance provider in as many years, so there are always hoops to jump through with access.

I still cannot work more than 30 hours a week which prevents me from advancing or changing firms. I tried taking on more challenging projects and immediately my health deteriorated again. Luckily, I'm very good at my job and valued at my firm so they are understanding of my situation...but I do wonder what is said in the industry behind my back. I try not to let my clients know and make myself available on email when I am not in the office. I'm very tired at the end of the week and only occasionally socialize. I was always the one who planned our recreational travel and I don't think we've gone farther than a road trip to San Diego. A weekend away requires a gallon-sized bag of pill bottles, powders, planning for water and ice and whatever 'migraine voodoo' I'm trying. It just doesn't even sound like fun. My husband recently turned down a career change for twice the salary since it would involve moving every few years with some of the destinations being overseas. A few years ago, this would have been our dream, but I just couldn't imagine starting over with a new team of healthcare providers every few years.

I am well enough to focus on helping and educating others so that they do not have the long road I did. We did the Miles for Migraine fundraising walks the last two years. In the last few years, my husband and I have been the top fundraisers in Phoenix. I listen and take notes through the Migraine World Summit every year and encourage those around me with episodic migraine to seek help so that we are all counted. I'm sure I drive my doctors crazy with questions and 'theories'. I've experimented with making a turmeric and coconut oil gummy squares in an effort relieve inflammation. My personal goal now is to lower the amount of medication. I actually wake up at night in a panic and tell my husband that I've forgotten to take something and will have a migraine – and it's just a dream. I set my pill bottles where I'll remember to take them. Four bottles on the nightstand, two by where I charge my phone, one plus magnesium by where I eat dinner and the rest are in the giant days of the week separator for the morning. Any doctor I see receives a print out of my prescription list since it is far too long to list off or fill in on a form. The pharmacists know me by name since I'm always in picking up prescriptions. I also frequently call the pharmacy because I will have taken Ergotamine and forgotten that I had something still in my system and am afraid that I will end up like Elvis. I read somewhere that he accidentally overdosed on migraine medication which ended up testing like hardcore drugs. Wouldn't that be a fitting end to this adventure?

CGRP has been a beacon of hope for our suffering community as we have watched the clinical trials and now FDA approval. Even our typically dry doctors became a bit giddy with the possibilities of actually helping their patients that, until now they have only been able to medicate. As a part of the patient community, we continue to fight for access. This year my office changed insurance providers yet again and that provided has decided that I can not receive both Botox and Aimovig. I have searched for every loophole and worked with my neurologist for a solution. Even if the Aimovig is paid for by the manufacturer, insurance will still deny Botox. Without insurance Botox is \$6000 a year for just the vials, not including the 4 appointments for the shots. I'm starting my first month without Botox and am terrified...of course, I can't get upset because that will give me a migraine! My husband recently changed jobs to a national firm in the hopes of better health insurance (we had previously been working in the same office). The national firm had the health insurance options of an HSA or an HRA, so there is no chance of me going on his insurance – it would bankrupt us. I've had the opportunity to start my own business several times, but need to stay within traditional health insurance because of my migraines. I can't be worried about being dropped, going through approvals or settle for a high deductible catastrophic plan. It is so frustrating...I'd be healthier working on my own, but can't because of my health insurance. I don't want to be disabled, but I've applied (and been rejected) for disability coverage in the hopes of receiving more consistent health care coverage. In the meantime, I'm going to double up my Aimovig and keep fighting for a pain free life that most people take for granted.

Dear ICER

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life and the desperate need for access to new and different medicines.

I started to experience migraine symptoms prior to the age of 10. I would wake up with a stiff and sore neck and had to be taken to the doctor, my doctor at the time was a D.O. and he would place heating pads on my back and neck and perform chiropractic relief on my back and neck just to make me feel better. I was diagnosed shortly after my 10th birthday with migraine. I had trouble sleeping my entire sophomore year due to migraines. I was not put on any medication until I was 16. I missed up to 20 days of high school my Junior and senior years. I started suffering from frequent attacks after I graduated from high school and they started to become debilitating. During nursing school I was willing to try anything to get rid of my migraines. I had clinicals that I couldn't miss, but I did miss the max amount of time allowed during nursing school due to my migraines.

I started working in the summer of 2001 as an RN and my migraines were a little less severe than when I was in school, but still ever present. The best time I ever had was during my pregnancy in 2003. I have never felt better. As soon as I had my daughter my migraines attacked again.

Throughout my 20's I suffered through migraines and only took off as many days as I could. At my work I was only allowed to call off 3 days in a calendar year, so I always did call off that amount of time. I was on and off elavil, I was on and off Prozac. I was on and off Maxalt (that made me feel like I had stroke symptoms in my jaw) I tried nasal sprays, Injections, melts, pills..etc anything that was out there I tried. I was worked up for MS due to side effects of Topamax. I was scared to death to think I had another life time disease.

Around 2013 my migraines became worse, a daily occurrence with no relief. I would have done anything for relief. I was nearly ready to give up my entire family for help. I was ready to drug seek, but I didn't , luckily I never reached that point. I would try to go to go, barely able to make it, come home try to sleep through the pain, asking my 11 year old daughter to please wake me prior to my husband coming home, so it looked like I was trying to function for them. It was the worst period of time for me. I ended up having to take a leave of absence from work to try to get better. I was off for a month.

I had an MRI of my brain done and a complete work up done. My neurologist at the time "found nothing." I did find a neurologist in Pittsburgh for a second opinion. As soon as he looked at my MRI, he diagnosed me with a Chiari Malformation. I was relieved. Finally there was a reason.

I also have a daughter who at 3 was diagnosed with migraines at 3 years old, she is now 16. She has been on and off Elavil. Currently she is on Topamax. She takes Maxalt to relive migraines.

This has taken a huge toll on our family. Not only is there myself I have to take of, but my daughter. This is a large burden on my husband who feels like someone is always sick in our family. The stress is tremendous. When I was going through my latest diagnosis, my husband and I nearly divorced, but it ended up making us stronger.

The financial cost is also a huge burden. This year alone, and yes I am including my daughter prescriptions, I have spent over \$1200. That is just in prescription costs alone. If you were to add in the doctor visits and gas to get to our doctors (both my daughter and I see a specialist that is about 75 miles away one way) then our costs add up even more.

My symptoms at times have ranged from stroke like symptoms, to vision problems, blurriness, dizziness, nausea, vomiting, neck pain, neck stiffness, hair sensitivities, ear pain, ear ringing, sensitives to light, sound and smells, ... just to name a few.

As you can tell my quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Kristin Garanich

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Patient Name: Larissa H

Migraine has been part of my life for 13 years now. I started getting attacks while I was in college. I was first diagnosed by my primary doctor but I now see a neurologist. I was having severe pain, nausea, and sensitivity to light. At first, I only had episodic migraine with maybe 5 migraine days a month. I got progressively worse, with attacks occurring almost daily. I tried numerous preventatives with fairly serious side effects such as uncontrollable anger, depression, fainting, memory loss, and weight gain.

I started getting worse while I was in grad school. I struggled with my classes due to being absent and having no energy for my research thesis. I felt tired all of the time from the toll the attacks were taking on my body. I tried Topamax my first year of grad school. The brain fog made my work so much more difficult. I also struggled with depression and suicidal ideation. I wondered if there was a point to getting an education if I wouldn't be able to work a full-time job. I wondered if there was a point to life at all. I did eventually get an entry level job after graduation but without benefits. Anytime I was sick, I had to take unpaid time off. I often worked while in pain and several times, my life was in danger because of the choices I was making to survive.

I know I am one of the lucky ones. My triptans mostly work for me. They cause extreme fatigue and loss of concentration, but they help with the pain. I never found a preventative medication that helped, only running. When I was running 5 miles a day, I could get down to 1-2 attacks a week. The best acute medication I ever took were the triptan patches. They worked so much better for me and had less side effects, until they burned a hole in my skin. Unfortunately, three years ago, I ended up with a serious injury and couldn't run or really exercise. I went back to 20-25 migraine days a month. I had to start seeing a pain psychologist just to keep myself mentally healthy and willing to keep fighting. I tried to get into clinical trials but was rejected since I have serious food allergies. Eventually, the CGRP preventatives came out and gave me hope again. I literally cried when I heard they were being released. I fanaticized about how much better my life could be. How much more productive I could be. I was terrified they wouldn't work for me and I would be stuck like this forever. In the last year, I've tried all three CGRP medications. My insurance company has fought me every step of the way with step therapy requirements and prior authorizations. I've tried every other preventative without success, but my medical records are scattered because I've moved almost every two years, chasing better jobs with accommodations so I can work full-time. I've tried Botox twice. I've tried beta blockers, anti-depressants, Lamictal, Topamax, acupuncture, calcium-channel blockers, etc... Aimovig had serious side effects for me but both Ajovy and Emgality help me get back to being episodic. Maybe getting 10 days of my life back isn't worth \$550/month to my insurance company. It is worth everything to me. My life is worth living again. I have a high deductible plan and spend ~\$2,500/year out of pocket just on co-pays. I spend more on my non-pharmaceutical treatment options like vitamins, tart cherry juice, massage, acupuncture, ceflay, etc... It is very frustrating my illness costs so much but I am willing to spend whatever I can to get better.

Migraine patients need access to new medications. Most of the original medications are happy coincidences for us, not targeted migraine therapy. The other medications come with side effects

and rebound migraines. My triptans work ~95% of the time. I would love to have back-up medications for when they don't work. The 5% of the time they don't work is when I struggle. It puts me in a dark mental place for the attack and days afterwards. There are many people who don't have an acute medication option. I know how fortunate I am. It is still hard. Please help us. We all want the chance to live. An opportunity to be present with our loved ones. To know what it is like to be healthy. To not be the sick person at the office. To not be in pain.

Thank you,
Larissa

Subject: Public Comment on ICER Review on Acute Medicines for Migraines

Name: Laura C. Leira

Dear ICER:

I'm writing this to make sure you are aware of the effects migraines have had on my life and the inability to get appropriate treatment from medication. Those of us who suffer from migraines deserve new and improved medication to help us deal with the pain and suffering we go through because of the migraines.

I am a 51 year old female who has had a hysterectomy when I was 30, I've been suffering from these horrible migraines since I was 20. The past 10 – 15 years they have been getting worse and I have tried all kinds of medication. I am now no longer able to work because I never know how bad the migraines are going to be when I wake up. I went from a couple migraines a month to several a week.

Having migraines has done so much destruction to my life. I can't enjoy time with my family or friends. I can't work or plan anything because I never know how bad I'm going to hurt.

I have now been placed on S.S. Disability but what little I do get in a check I have to spend a lot of it on medication for my migraines because my insurance doesn't cover everything I'm prescribed. Also, what the insurance does cover, it only allows 9 pills of one medication and 28 of the other, which neither is enough. The injections I have to take are not covered at all and that cost about \$200.

I am asking you to please give us access to the new acute medication to help relieve the pain from these horrible migraines.

Thank you for your time.

Sincerely,

Laura C. Leira

PUBLIC COMMENT ON ICER REVIEW OF ACUTE MEDICINES FOR MIGRAINE

Lauren C
12/06/2019

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has on my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 37 yrs, I was diagnosed at age 17. At that time they were episodic, with no pattern. I have always been treatment resistant, with no preventatives or rescue meds that are effective. They became increasingly worse and by age 26, they were severely affecting my quality of life. By age 44, I became Daily Intractable. I experience an average of 31 migraine and headache days per month. When I have a migraine attack, I feel completely desperate and the pain is unbearable. When you are Daily Intractable there is no relief or break from your pain & other symptoms. My migraines cause me to live with constant, light, noise, and smell sensitivities which severely effect to your ability to interact with others & those you live with. I love music, yet I have to keep my house quiet. My husband's cologne would trigger me, so he had to stop wearing, etc.. Even for those that love you, the sensitivities are often hard to comprehend. I also have severe, intermittent nausea, I have to use Zofran & phenegan and alternate. I love to read, but that makes my migraines worse. I live in the dark due to light sensitivity 1, I love to craft, garden, cook, read but it's been impossible the for 15 years to do any of those. Even computer/ phone screen time is an issue, Food triggers are inconsistent & severely effect me. I'm completely alcohol intolerant, so during the early yrs when I was Migraine free, not being able to have a glass of wine with peers was an issue trying to socialize, another stigma. The pain is behind both eyes, my entire head, radiates to my right ear, and even my teeth. I have had numerous dental issues because of referred pain. The hair on my head hurts. I have a genetic liver processing disorder that complicates my ability to process meds and effects their effectiveness & dose required. Therefore I have no preventives, abortive or rescue meds that work. The pain is so relentless and severe I must be lying flat in the dark, sometimes in complete silence. For the past 15 years I have severe, increasing, difficulty with laundry, cleaning, ADL's, driving, cooking, all the basic necessary of dairy living.. I often think of suicide, because at this point, I feel like the family dog being kept alive for everyone else, as I suffer indescribable, relentless pain. I would never act on those thoughts, because I am an RN, not working, but with experience in mental health. Constantly lying down has caused me to have neck problems, there is no position of comfort, and I have "severe muscle wasting". I can't drive, I often don't leave my house for weeks at a time, except to be driven to a drs appointment. This has been my life for the past 15 yrs.. So many vacations, family events, weddings, etc.. missed out on. I have elderly parents that need my help, sometimes I'm so sick I can barely assist them, driving my mother to radiation treatments for 12 weeks 5/week, was dangerous but necessary. I would get there and feel so horrible, the nurses and Dr verbalized their concern for me, as I appeared sicker then some of the patients. It's an extremely hopeless feeling because the ER has treated me so horribly I avoid it at all costs.

I have addressed the impact migraine has had on my life in some ways above. But there are additional issues. During college, I maintained a 4.0, but had to take a semester off and dealing with my migraines was difficult during college. I graduated magna cum laude, with honors. I wanted to go to CRNA school, or become a nurse practitioner, but was unable to, due to the increasing severity of my migraines. I had a migraine at my wedding and on my honeymoon. We put off having children due to all the meds I was trying & fear I wouldn't be able to take care of a family. We did have 2 children in '90 & '92, suffered a miscarriage, some drs speculated my migraines contributed to the miscarriage.. It is interesting to note while breastfeeding and in my 2nd & 3rd trimester, I was Migraine free, it was incredible and I lived a full & productive life, highly functioning. I had severe migraines in my first trimesters. I was a RN for over 25 yrs, and worked in ICU, Oncology, hospice, 7 yrs in a level 1 trauma Er, did conscious sedation & worked in special procedures, GI Lab, med Surg, telemetry, in patient psych in a locked unit at UVA, in UVA's eating disorder program, with addiction patients, & also floated and worked as needed, in every department in an 800 bed hospital. My career was flourishing and I had numerous opportunities for advancement, but my career & educational advancement was severely effected by my migraines. I hide them from my employers, never called in or missed a day of work. I was "working sick" until I was so ill, I was concerned it was a risk to my patients.

Working in the ER, the stigma & the way migraine patients treated became acutely aware to me. I also experienced this in my own life so I hide my migraines from family, friends & more importantly my coworkers. Nurses caught stealing narcotics were treated better then I was when I finally disclosed my deteriorating medical situation. I had all perfect evaluations, letters from drs, supervisors & patient's acknowledging my outstanding care, yet I was denied a medical leave of absence at a hospital I had worked at for 8 yrs.. Social life is almost non existent, I have lost many friends, people have no concept & don't understand. It's the ripple effect & effects my family too. My children grew up with a chronically ill mother who was working part time, maintaining household in every aspect, volunteering at PT, etc, but we never knew when my migraine days would happen & they lasted 7-21 days. By the time they were in middle and High School, I was Daily Intractable treatment resistant, causing me to miss many events and having a tremendous impact on our lives. I had them in therapy off & on their entire lives. It did negatively effect our relationship and that with my spouse, but We were able to navigate that & repair it. I also went to therapy on & off my entire life. I described my life like a rat on a wheel, or treading water. Everyone missed their children when they went to college. I wanted them out of our home and free from my disease, because at that point it was extremely difficult to function, but I did my best. When they went to college I spent the following 7 yrs home bound except for drs appointments or my parents needs. I could elaborate further but it's so complex. At this point my career is non existent, my marriage is strained, our finances are extremely strained, I fear for how I can financially support my aging parents needs as well, but my husband loves me & I love him, my family & children want me back at my highly functioning self.

Financially, this burden has had a huge negative impact on my entire family. My children have college loans because I couldn't work, and we were going through over 5,000\$, a month for hrs trying all kinds of experimental treatments or paying insurance and for my copay's, going out of town to specialists, charging credit cards for drs that were self pay, over 500,000\$, that's a conservative estimate, & excludes my lost wages.

Migraine has had a major and negative impact on every aspect of my life.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried 120 different preventatives, abortives, and rescue meds, over 40 different procedures with a pain specialist. Acupuncture for 3 years, 3 different acupuncturists, thousands of dollars of supplements & herbs, integrative holistic drs, , naturopathic medicine, numerous chiropractors for years, myofascial release massage, 3 times a week, for 2 yrs at 240\$ per appointment. Psychological therapy, if I could drive, and forms sentences, on and off for yrs for myself and my family at 145\$-185\$ / a session. Craniosacral massage, reiki, energy healing, medical intuitive, yoga, a 3,000\$ retreat for chronic pain, 2 weeks of IV ketamine , out patient. Sphenoid ganglion blocks. I also did extensive nutritional counseling & testing, including Leap, & histamine elimination diets, this also impact ps your ability to socialize.

I was always researching and going to my drs with The latest treatments because of my nursing background. I had a horrible week long out patient experience at John Hopkins after I had used their concierge service to navigate & set up the appointment. I was supposed to have a week long evaluation with numerous specialists and evaluations, and be seen by the head of the department, instead I got a new fellow, who was let go 3 months later. He told me "I needed to lower my expectations & I would have migraines every day for the rest of my life". I was off all my meds. For 3 months as requested, yet the head of the Headache department wouldn't work me in, as I advocated for myself. Yet the man next to me, told me he was stoned on pain meds, & had taken a helicopter there, because of a cancellation & he was seeing the dr I had been denied access too, I could talk about this for 5 pages.

Er experiences could be 5 pages too, I rarely go, but my records have been falsified, I have been told I can have one dose of pain meds and that's it, I am constantly asked why I am there, accused of drug seeking, denied narcotics at all. My case is unusual because I need to be in a medical setting to get narcotics, I need to be premeded with 3 medications IV, and my pain treated aggressively due to my genetic processing disorder, all documented. Also documented I am not a drug seeker and have no tolerance. I have numerous drug allergies and I have dealt with all the typical side effects from neurontin, topamax, antidepressants, but took them and other meds for yrs desperate for relief. Also did 10 yrs no meds only herbs, and also did both, integrative holistic for 37 yrs.. worst side effects drug induced Lupus for over a yrs from 2 weeks on Inderal, Reglan: dystonia, compazine akathisia for 3 days, Drs missed all of these extreme reactions, but being a nurse , I recognized all of these. I had to go to 2 hospital get the correct diagnosis for the Lupus but I had verified with manufacturer and watch program with FDA and my lab results supported it, when I finally had a Dr willing to listen. At that point I could barely walk, they thought I had a pulmonary embolism. I also took all 3 new CGRPS medications for 9 mo, no relief. I gained 50 pds, went from 8 yrs at 110 pds to 168 in 9 months. Buying new clothes is expensive, & I d feel well enough to do it, I also had severe joint pain, could barely go up stairs, my abdomen is severely bloated and distended, more so then when I was pregnant. My feet hurt and throb constantly, my shoes don't fit, hair loss, new onset hypertension, anxiety & depression, severe fatigue, sleep disturbances, muscle cramps & spasms, achy flu like symptoms for months, No relief form my migraines. I also started fighting in 2010 with insurance, my drs and the ER to give me IV magnesium for my migraines, it did help, gave me a month of relief, if I got it every month. Insurance denied, Er denied, now it's a standard of care in many states but not in Ga.. Therefore I remained daily intractable and basically homebound for yrs, when the IV magnesium could have been life changing.

I desperately need access to new types of acute treatments. Triptans & , in patient DHE, are ineffective for me, I have tried them all multiple times, and multiple triptans, also nasal spray ketamine, oxytocin nasal spray, ketamine troches, these were all compounded expensive and ineffective.

I think the situational depression, anxiety, & pain insomnia I experience is significant, Every time a treatment I have fought for and possibly paid a lot of money for fails, it's unbearable and effect both myself and my family intensely.

Migraine is an expensive disease to have, I spend 60,000 to 100,000\$ each year to try and manage my migraine attacks. This includes ALL medical, insurance, medicine, treatment costs related to my migraine treatment. This has often been money we did not have. We have a second mortgage on our home, my kids have huge college loans because we used that money for me.

Migraine has an extremely negative impact on my quality of life and I demand access to new acute medicines that can help to stop attacks and reduce the pain and disability of this disease on my life. I ask you to value and respect my pain, and to fairly assess these new medicines so that I can be a healthier and more productive person.

N 1) I think it's extremely important that insurance companies don't force younger patients to try out dated drugs to work their way up to new drugs that are migraine specific

. 2) New drugs & treatments should be affordable & accessible to all, even those on Medicare

. 3) many conditions require multiple medications and treatments to manage them optimally.

Why are migraine patients being forced to pick 1 medication, for example insurance denies Botox if you are on a CGRP, a CGRP that they may have denied and you are getting via 700\$/month. As an RN I do find this extremely limiting and unique to migraine patients.

4) standards of care for ER treatment must be established. I have been to an ER approximately 7 times in 37 yrs.. My dr sent me, yet I am treated terribly, so terribly my husband refuses to go with me, I have diagnosed PTSD from medical neglect and all the trauma incurred. ERs are refusing to give any narcotics in Atlanta if you are a migraine patient. Sometimes severe doses of a narcotic, along with magnesium and other drugs could break a cyclical for me and help me, yet I am denied access to care. No one compliments me and considers all the hrs of herbs and holistic treatments I have done and sacrificed yrs of my life to avoid pain meds..

Sincerely,

Lauren C.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Laurie S

I am a 57-year-old with chronic migraine for 40 years. On an average week, I would miss three days of my life, my kids lives, and my family's lives. During a migraine day, I experienced severe pain on one side of my head and sensitivity to light, noise, and smells. I needed to be in a dark, quite space for 3 days at a time. This loss happens 3-4 times a month. When I was in my 20;s, I tried to complete college while working. I could not finish because of the impact of having migraine headaches. I worked hard as a manager of a business but would not be promoted because of migraine headaches.

I missed many family events or attended them with pain, throwing up, and was miserable. I have been prescribed over 100 different drugs including beta blockers, anti-depressants, pain meds, triptans, and others. I was willing to try anything that would give me my life back. One year my mom asked what I wanted for Christmas and I said, "a new head." All of this experimentation has taken a toll on my health today.

While there are great strides in new medications, insurance companies don't want to give chronic migraine suffers these choices because of costs to them. I didn't ask for this condition and tried everything I could not to contribute to this condition by eating healthy and timely, sleeping on a schedule, and not drinking alcohol. The cost of chronic migraine is not just lost time with family and friends but a financial strain on families. Lost worked, doctor co-pays, prescription co-pays all add up to thousands of dollars a year.

I cannot understand why my insurance would deny chronic migraine suffers the chance to get their life back and be pain free. Why are they holding people hostage because of money? What has happened to humanity that money is more important than helping a person with a chronic condition. Chronic migraine suffers are real people with families, careers, and hope for the future.

Insurance companies must give access to acute migraine medications. Be the solution to a better life for us.

Thank you,
Laurie

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Leona N.

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 20 years. I experience an average of 15 headache days per month. When I have a migraine attack, I feel helpless and discouraged. They range from low grade and irritating pain to excruciating pain where it hurts to move or even open my eyes. I can't focus or think clearly and don't want to do anything at all.

Migraine has a major and negative impact on my life. When I experience severe migraine I miss out on my life. I am unable to enjoy or participate in the things that I love to do with my family and friends--depending on the severity. My ability to do my work is either greatly reduced or comes to a complete stop.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried 30 plus different treatments for my migraine ranging from prescription medication, naturopathic remedies, homeopathic remedies and other alternative treatments. Most of them have offered little to no relief and a few that may have helped often came with side effects that were as bad as if not worse than my migraine. The side effects have often worsened my depression and anxiety, caused allergic reactions, night sweats, muscle spasms, vertigo, dizziness, abdominal pain, nausea, extreme itching, mouth blisters, extreme fatigue, mental fog, confusion, irritability and many others.

I have tried most classes of triptans and DHE and found that I am unable to use them as I am extremely sensitive to them and the side effects are unbearable. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend over \$10,000 each year to try and manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Leona N.

Subject: Public Comment On ICER Review of Acute Medication for Migraine

Name: Lesley Broff

December 2, 2019

Dear ICER,

I am writing to you to insure that you fully understand what it means for a person to live with migraine, the impact it has on daily life, and the desperate need to new access to different medications.

I was diagnosed with migraines in 2013, after years of seeing multiple doctors unable to diagnose me. I have more days with migraines than not, and probably an average of 15 a month, even on maintenance medication. My migraine experiences are not the most typical, but are very hard to live and especially to work with. I experience dizziness (migraine vertigo) very frequently, nausea most days, vision changes and limited field of vision at times.

I have undergone many forms of treatment from the typical medications – most which caused arrhythmia or very low blood pressure and resulted in ER visits. I have tried Botox to no benefit. I am currently on Aimovig injection after trying the Ajovy to limited success. I pay extra for Axon Optics glasses, which are not covered by insurance, but they give some benefit to my light sensitivity. I take imitrex at a low dose for migraines that get too intolerable, in addition to daily clonazepam and benedryl for the vertigo, but have to be careful with using it as the full dose gives me arrhythmia. Knowing that it affects my heart, makes me try to avoid taking it, but there are times I have no choice, as I need to get through the day at work, or need to make the car ride home. When I have migraine attacks, I feel like a black hole is collapsing on my brain. I feel like I am literally dying. Yet, in order to have health insurance and live a decent life, I cannot just miss work, so I often work feeling sick. I feel isolated in my pain, and try to show as little of the effect on others as I can, to do my job effectively.

I pretty much have no life outside of work, because it takes every bit of my energy just to get through work with my migraines. I have to be careful at night because headlights and other lights at night are very painful to me. I cannot watch movies, and am even limited in how much TV I can watch as the movement makes me dizzy. I cut short family dinners, as I often don't feel well enough to stay out long, and keep a very controlled diet and need to drink fluids constantly to fight off the migraines. I don't have energy to hang out socially with friends, I read and sleep in the majority of my free time. I have to avoid events that are outside, as the sunlight bothers me too much, and the heat makes me dizzy. I don't take vacations because I save my paid time off from work for the days my migraines are so debilitating I need to take a sick day. When I go to events for work, I bring my own food to avoid food triggers to my migraines. I do all I can on my own to limit triggers, avoiding caffeine, alcohol, tracking the weather, and limiting stresses.

Many of the medications for migraines were not targeted for migraines and are not tolerated by myself and many others with the condition. I cannot even count the number of medications I have tried over the past 6 years. More than 30. A couple gave me allergic reactions right away, most left me with unsustainably low blood pressure, a few gave me arrhythmia, and a couple gave me horrible stomach pain that my doctor made me stop right away. I have consulted with at least 5 neurologists, did vestibular therapy, and had a consult with a special eye doctor in attempts to help over this period of time.

I take at least 10 vitamins that I pay for out of pocket, at a cost of at least \$200 a month. I have needed to go to the ER many times, often as a result of bad reactions to medications, or due to not having a treatment for a migraine and needing fluids and anti-nausea medications.

My quality of life is negatively affected by migraine and I demand access to new acute medicines to help stop attacks and end the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly access these new medications so that I can be a healthier and more productive person.

Sincerely,

Lesley Broff, LSW

Name: Lyn O.

Dear ICER,

The purpose of this letter is to ensure that you have full understanding of what it is like for a person living with migraine disease, what impact it has on my life, and especially the desperate need for access to new and different medicines.

I have lived with migraine disease for 47 years. I experience severe migraines an average of 10 days per month. It was 23 days a month until I had migraine surgery, which involved decompression of nerves in my head and neck, which has left me with numbness in those areas. Even on days I don't have a migraine, I experience a low-grade headache. I am never completely free from pain. A migraine attack is totally debilitating for me and can last from a couple of hours to several days. I cannot do anything except lie very still in a dark, quiet room with a pillow over my head. It causes me to be nauseated and to vomit, something that is excruciating while having a migraine attack. I am unable to think clearly, to speak clearly, to eat, to work, or to take care of my family. Migraine has been a source of stress for my entire family and my social life is affected because *no one* except a fellow migraineur can possibly understand migraine. I am a RN by profession but had to retire from my job in my 30's due to migraines.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried 25 different preventative medications, none of which worked and all of which had terrible side effects. I am now trying CGRP injections. I have tried chiropracted treatments, acupuncture, physical therapy, medical massage, nerve decompression surgery, Botox for migraine, supplements, special diets, all of which were extremely expensive and only minimally effective. Some of these things helped for a while but migraine disease has a way of working around them and causing these treatments to become ineffective.

I have found some relief with triptans during an attack (it is not for prevention), but due to vasoconstriction my doctor is saying that now that I am in my 60's I may not be able to continue to take them safely due to hypertension that I also have. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have; currently I spend \$4,800 a year for Botox treatments, \$6,000 a year for Aimovig injections, \$360 a year for Imitrex (a triptan for acute attacks), and \$14,00 a year for supplements (Butterbur, magnesium, and vitamin B2). I also have the expense of over the counter pain medication, a migraine diet that excludes all my food triggers and forces me to eat more expensive foods, a headache specialist with \$150 visits every 3-4 months as well as my internists visits. Because of my migraine disease and the fact that my husband is self-employed our insurance deductible is very high and covers very little.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Lyn O.

Lynn Morris
6136 Heath Ridge Ct. Apt C
Charlotte, NC 28210

December 6, 2019

Via Email: publiccomments@icer-review.org
Institute for Clinical & Economic Review
2 Liberty Square, 9th Floor
Boston, MA 02109

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 36 years. Before CGRP medications, I experience an average of 30 headache days per month. I didn't remember what it was like not to have a migraine until I started that medication. After finally getting insurance coverage to get CGRP medications, I averaged 20 days per month but my migraines still get intractable for months at a time. When I added in Acupuncture, it stopped an intractable phase of 4 months and now with Acupuncture and CGRP medications combined with behavior modifications, I average 14 headache days per month.

When I get an attack, I feel my skull is crushing inwards from incredible pressure. It varies where my pain is located. It can be a sharp knife in my right eye and a wave of nausea but then the pressure starts behind my skull. The pressure builds so much I cannot wear my glasses because they feel so heavy. The pressure continues to build and wrap around my skull like a boa constrictor. My brainstem feels like it is going to burst and I wonder how in the world my skull stays intact. At this point there is nothing I can do and the attack takes over. All I can do is laydown. I cannot think straight or even have a conversation. The truck continues to roll back and forth over my skull for at least 3 days. If I am lucky it will lessen to a reasonable level so I can force feed myself and shower. I might get 24 hours before I feel it again. Perhaps some abortive medication will help if I catch early but if I am in an intractable state, those medication do not work and then I am looking at months of pain and I get desperate.

Migraine has a major and negative impact on my life. I lost my career as a paralegal because it is too demanding of a job. I tried part time work and again, I am not a reliable employee because when my migraines fall into an intractable phase, I can not work let alone think. I sold my 4 bedroom house because I could not take care of it anymore and now I live in a 1 bedroom apartment. I moved from Florida to North Carolina to see if climate change would help because the heat in Florida held me captive in my home. I could not move with my husband because his job is in Florida. This alone has caused tremendous strain on our relationship not to mention the cost of my medical expenses.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried at 50 different treatments and or procedures for my migraine. The side effects from ranged from groggy, hair loss, stomach issues, concentration problems, agitation, insomnia and more. I had pain injections, steroids, a neurostimulator implant, I was hospitalized 4 times for DHE treatments which were in the end all ineffective. I do use triptans for abortive medications but its effectiveness is hit or miss. Triptans must be taken with anti-nausea medication and they always make me tired and I need to function. **I desperately need access to new types of acute treatments.**

Migraine is an expensive disease to have, I spend an average of \$10,000 each year to try and manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Lynn Morris

Patient Advocate

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Lynn Ward

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 55+ years. I experience an average of 25 to 30 headache days per month. When I have a migraine attack, I feel as though the back of my head has been struck by a 2x4. The pain can be excruciating and I am often unable to carry on my daily life.

Migraine has a major and negative impact on my life. It keeps me from enjoying the things I used to love like playing with and reading to my grandchildren. When I have a headache, it just plain hurts. It becomes very difficult to concentrate and leaves me very fatigued.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have traveled to 5 different pain or headache clinics, tried many different medications and other treatments including injections, biofeedback, stimulation devices, botox, hypnosis, ketamine pain infusions ...none have had a positive effect on my condition. Side effects were often as bad as the pain and just added to my discomfort. Triptans have been some help to me but after taking them for almost 30 years, the helpful effect has decreased greatly.

I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have. I have spent hundreds to thousands of dollars each year to manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Lynn Ward

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Maeve Melaniff

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had Chronic Migraine and Chronic Daily Headache for 6 years. I experience a headache or migraine every day. When I have a migraine attack, I feel severe bilateral pain in my temples, pain and pressure around my eyes, sensitivity to light, sound, and smells, as well as difficulty sleeping, fatigue, nausea and occasional vomiting, back and neck pain, difficulty concentrating, and confusion.

Migraine has a major and negative impact on my life. I am currently a college student and struggle going to class, getting assignments done on time, and interacting with my peers. I have limited interactions with friends and cannot join clubs or volunteer because of the fatigue I experience participating in classes. I experience depression and anxiety in response to social isolation and fear of never-ending pain. My family has struggled in the past to get me to doctors' appointments and during hospital stays as well as the financial burden of a chronic illness.

Migraine, especially chronic migraine, is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried 49 different treatments for my migraine, including preventative, acute and alternative treatments as well as Botox and other injections. Most had side effects like increased fatigue, low blood pressure and syncope, worsening headache, dizziness, sedation, vertigo, palpitations, night sweats, body aches, severe decreased cognitive function, vomiting, constipation, diarrhea, increased anxiety, insomnia, and allergic reaction.

I have used both triptans and DHE (intranasally and inpatient infusions) and have found little to no acute relief. Triptans are ineffective and cause chest pain, body aches, and extreme fatigue. DHE is minimally effective intranasally, and intravenously has been completely ineffective. DHE also causes nausea, vomiting, and any comfort it provides lasts less than 4 hours till a migraine returns. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend approximately \$7,000 each year to try and manage my migraine attacks between insurance costs and out of pocket expenses. My insurance company have spent approximately \$9,000 this year to cover the costs of physician visits, medication administration, and testing alone.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a

migraine. I am 21 years old and have had difficulty participating in and enjoying my life. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Maeve Melaniff

Migraine Impact Statement

Let me start at the beginning. When I was very young, my appendix ruptured (age 3), I broke my tibia (age 6) and I was hit by a car and spent 3 months in a full body cast (age 8). I have since been in the operating room 28 times for multiple bowel obstructions, bowel resections and breast cancer. I have had a benign meningioma brain tumor that was resected and upon reoccurrence, had halo holes drilled into my head for gamma knife surgery. I share all of this because I want you to understand that **I know pain** deeply. I have experienced some of the worst kinds of pain known to mankind!

I am 67. I experienced my first migraine attack at age 17 and was lucky enough to be diagnosed immediately. At first I was very episodic, only occasionally experiencing migraine until age 27. Back in 1969, we had almost no abortive or preventive medications. By age 30, I was a single parent and was spending many days in dark rooms in horrific pain. I was fortunate to live near one of the top headache specialists in the US, Dr. Seymour Diamond, who recently passed away. He prescribed preventive and abortive medication and I went on to have a very successful and lucrative business career. In fact, I became the top salesperson in the data communication industry in the country. I was earning close to \$250,000/year.

By age 47, I had to leave this career due to fact that the stress of my job caused my migraines to become chronic. In episodic migraine disease, you have 15 migraine attacks or less in one month. That number is horrible. Imagine having 15 seizures a month! By age 47, I progressed to the chronic migraine category. By definition, the term “chronic migraine” means 15 or more migraine attacks per month. At this point, I was so chronically sick that the corporation I worked for put me on short term disability and referred me to the Rehabilitation Institute of Chicago for their chronic pain program. It was there that I learned about all of the lifestyle changes I would have to make in order to be as high functioning as possible. They recommended changing careers.

Over the last 50 years, I’ve been treated by the top headache and migraine specialists in the country. I am fortunate to have had great cutting edge care. However, let me repeat: I’ve had this disease for 50 years! Half a century. A lifetime of suffering. A lifetime of pain, the kind of pain where your teeth hurt because your head hurts. A kind of pain that makes the pain events in the first paragraph pale in comparison. At times I have been diagnosed with chronic intractable migraine, meaning more than 20 migraines a month where medications hardly work at all.

I am too old to remember every preventive or abortive medication I have been on. I am sure I have tried multiple medications in every medication category known to treat migraine disease. Sometimes I got temporary relief, most times the side effects were intolerable. I’ve lived through so many “this is it---this is the one---this is the new breakthrough” migraine medication moments. First there were beta blockers, then calcium channel blockers, then Prozac (the SSRI miracle drug), then triptans (which work for me), then Topamax (where I lost IQ points daily), then Botox (maybe I get a 30% improvement), then CGRPs. I waited with bated breath for the CGRPs to be approved. I went on Aimovig immediately. The first 12 months on Aimovig were a roller coaster. I went from being a “Super Responder” and experiencing a 75% reduction in

number of migraine attacks per month to having some months where I had no positive results at all. The side effects of Aimovig were intolerable: I lost half of my hair, high blood pressure, fatigue, severe constipation and joint pain. Many people have experienced these mixed results for which there is no rhyme or reason. Which CGRP will work for whom is still a mystery. We will wait years for more information. I am now on Emgality and have had good results and minimal side effects. I am grateful that ICER has worked to ensure that most insurance companies are making these medications affordable. They have been life changing for many, including me. I am grateful for each good day.

What is it like to have a migraine attack? When I was 30, I used to say I felt like I had the “flu”. Here’s the funny thing: I have never actually had the flu! I just feel lousy. A migraine attack is so much more than a “bad headache”. There are a plethora of symptoms that make up migraine and everyone is different. Migraine is a whole body experience! And, there are 3 phases to a migraine attack: prodrome (the period before an attack), the attack itself which can last from 24-72 hours, and the postdrome (the period after the attack) which can last a day or two. You do the math; if an attack with all its phases can last 3 or more days, how can I have 20 attacks in a month? The answer: the migraine attacks overlap with one another. My symptoms are fatigue as either a prodrome and postdrome, brain fog where I can’t think or be productive, sometimes I have difficulty with word retrieval, runny nose, tinnitus constantly, headache pain which can vary from a pain level of 4-9 (level 10 requires an ER visit), nausea, neck pain, sweats, blurred vision, hypersensitivity to light, sound and touch, frequent urination, and blood pressure changes. Medication management, rest, pacing myself, meditation, yoga and sleep are my tool kit “go to” strategies. Though I used to love to work out and exercise is recommended, all things that elevate my heart rate will trigger a migraine.

What causes my migraine disease? Once I was with a group of top headache specialists and asked this question. Bad genes was the answer I got! Both my father and paternal grandmother had migraine disease. However, the better answer is that we don’t know all of the factors that make the migraine brain hypersensitive to stimuli. We need more research. 37 million people in the US suffer from migraine. It is the third leading cause of disability in the US and the second leading cause of disability worldwide according to the World Health Organization. The research dollars spent on developing new medications and finding the causes for migraine are less than 1% of NIH’s budget. The research dollars spent in proportion to the disease related disability dollars is highly disproportionate!! We must work to change that. Stigma of viewing migraine disease as “just a headache” and being attributed to female issues and weakness has prevented migraine from being seen as a cluster of neurological symptoms for which we need a cure and/or more effective medications. I never felt any stigma with any of my other medical issues---only migraine.

What has been the financial impact on my family? I was earning over \$250,000 when I had to leave my job due to disability. I have barely been able to earn 10% of that for the past 20 years. We have depleted our life savings and I fear for how I will make ends meet when my husband retires. He is a construction worker, I was the primary source of income.

What has been the psychological impact on me? I graduated from NYU magna cum laude. I have my Masters in Social Work. Though I have been able to re-invent myself with rewarding part time careers, I have lived with the constant anxiety of needing to have a Plan B for every day of my life. What if....I have a migraine attack tomorrow when I'm supposed to be at an important meeting. What if....I get sick when I travel? I have been a high achiever all of my life. Clearly I have weathered a lot of adversity. But nothing compares to the constant uncertainty of not being able to rely on my body and my self. This has stolen my confidence! I am often asked to be a presenter and speaker. What if...next March I am not able to travel to Brown University to lecture to neurologists? What if...I have to take my migraine medication in the morning and cannot drive all day. As a social worker, I have lots of cognitive and behavioral strategies to combat anxiety and uncertainty. Using those strategies daily to battle through relentless pain, fatigue and nausea is life draining and depleting.

How has migraine disease affected my family? My husband is my rock and my soulmate. He has been so kind to me. He will often stay home from work to drive me to a work event and then sit in the car so I do not have to drive home. He stayed home from work when I was too ill to care for my children or unable to drive them places because I simply couldn't drive. Often I take something out for dinner and am unable to cook as my migraine attacks occur more frequently in the late afternoon. My siblings live in other states and have no clue how I suffer day to day.

I have spent 50 years powering through pain so I can function. I have always been a very self aware, open and honest person. But I quickly learned that as I put my makeup on each day, I had to hide behind the pain. I had to look good and present well, so I didn't lose my key accounts. I learned not to be vulnerable or I would not be successful as a special education advocate. One day, 10 years into this career, I forced myself to be honest with a very wealthy, and entitled, long term client. I had to tell her I could not attend a 7:30 am school staffing as getting up that early was a clear migraine trigger. She shamed me and chastised me. No one knows how often I pull down the blackout shades in my bedroom to try to rest and cope with pain. This disease has robbed me of my authenticity. I cope in silence!

This disease has robbed me of a high power career, robbed me of a decent income so I am constantly in fear of running out of money, has cost me untold dollars in medical care, robbed me of countless days of leaving my house, chipped away at my self esteem and self confidence, leaves me angry that my golden years will be spent in chronic pain, and that in my lifetime there will not be a cure. Now my daughter and granddaughter have migraine disease. Yes, I feel cheated.

Reluctantly at age 60 I applied for Social Security Disability. I swallowed my pride. I hated labelling myself as "disabled". I should have done it at age 47. The stigma was too great.

Breast cancer, bowel obstructions, several more abdominal surgeries, being hit by a car, broken bones and 2 brain tumor surgeries were nothing compared to the chronic nature of the constant pain and how I feel physically with migraine disease daily and all the concomitant symptoms. I hope that ICER will continue to make any and all possible treatments affordable and available to all who have migraine disease. Layering medications help me, Botox and CGRP and SSRI and

occasionally pain medication. I am devoting the rest of my life to being an active migraine advocate. In the chat rooms today, many people are saying they are too sick to write a letter like this with so much detail. Their brain cannot string together all these factors of their disease. So, I write this letter on behalf of the 37 million who can't find their voices anymore!

While we don't understand a lot about the etiology of this disease, we do know that a medication that works for one person is one person less who's life is ruined, one person more who can breathe pain free, one person less who has to struggle with "What if...." We need new medications, and more are in the pipeline. I know I will continue to try new things if they are affordable and accessible. I have hope of a more pain free life! In the Jewish religion, it is said that "one who saves one person, it is as if they saved the whole world." ICER has the power to save the world one person at a time.

Respectfully submitted,

Margot Andersen, MSW

2758 Charlie Ct

Glenview, IL 60026

847-525-1710

creatingresilience@gmail.com

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Mary Ellen Glackin

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 33years. I have experienced an average of 20 or more headache days per month. When I have a migraine attack, I feel isolated and alone. A migraine attack can last for days. During an attack I am sensitive to light and sound. I often suffer nausea, vertigo and vomiting.

Migraine has a major and negative impact on my work and family life. I have missed many family events (almost every Christmas day) to migraine attacks. I owned a small business, a custom spiritwear company, that I had to shutter because of my inability to complete orders in a timely fashion.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried many different treatments for my migraine. Many of the drugs were ineffective, or caused side effects so pronounced that I would reluctantly use them. Battling the pain of a migraine would be compounded by extreme vertigo, or bleeding at the site of an injection. Sometimes the taste of a nasal spray would settle into my mouth and the metally taste would make me nauseous.

I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend \$6000 each year to try and manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Mary Ellen Glackin

member National Headache Foundation, Patient Leadership Council, patient advocate

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Melea N.

Dear ICER,

I am writing to ensure you fully understand what it means for a person to live with migraine, the impact it has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 10 years. Over time it has changed from Classic Migraine with Aura to also now include Migraine without Aura and Vestibular migraine. For me, they are a chronic condition that impacts me daily. I experience up to 20 days per month where I am impacted by migraine. When I have a migraine attack, I feel debilitating pain as well as vertigo, nausea, motion sickness, sensitivity to sound, smells, motion, and light. The most difficult and impactful symptoms are the mental health impacts heightened during attacks but which also occur in between attacks, which include depression, anxiety, hopelessness, isolation, and a feeling that people don't understand or believe my disease.

Migraine has a major and negative impact on my life. Migraine is unpredictable and so I live in constant worry that a migraine will occur at the most inopportune time, which inevitably seems to be the case. I am continuously anxious that I may need to cancel on a friend, miss a vacation or flight, or an appointment that has cancellation fees. I experienced extreme anxiety leading up to my wedding day, that the entire day and cost of the wedding would be a complete waste if I were to be so unlucky as to get a migraine on my wedding day. At work, I pride myself on being reliable and employers expect it, but I am forced to take many sick days a year to recover from migraine. In my attempt to be reliable, most days I work with migraine, but my efficiency level is 50% at best on those days. At home, my husband and family and friends feel the brunt of the condition as I push through work, and instead cancel time with family, friends, and work at home instead.

Migraine has been an extremely challenging disease to treat for me. Over the course of my life I have tried 20+ different acute treatments for my migraine, with no success. Frustratingly, I have tried every Triptan, many prescription NSAIDS, and every combination of OTC drug, none of which reduce my symptoms during an attack. The only thing I am able to do is go to bed and sleep for 3 to 6 hours with the remaining day spent at home in a quiet, low light, low movement environment. I spend the following 3 days feeling down, depressed, extremely low energy, extremely motion sensitive and nauseous with brain fog. When my attacks are close together, and occurring regularly, it can take weeks of being migraine free before I feel like "myself" again. **I desperately need access to new types of acute treatments. I spend inordinate amounts of time researching and hoping for an acute treatment that will be effective for me.**

Migraine is an expensive disease to have, I spend thousands of dollars each year to try and manage my migraine attacks through therapy, mindfulness and self-care, medications, vitamins, Doctor and specialist appointments, and tests and procedures to rule out other causes. Not to mention the enormous cost to myself and society through reduced productivity at work and at home, sick days, cancellation of events I miss, and reduced enjoyment of life.

My quality of life is very negatively impacted by my migraines and that there is no effective acute treatment for me and I demand access to new acute medicines that may help me stop attacks and avoid the pain and disability I experience from migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Melea

Note: I would prefer only my First Name and Last initial are shared publicly. Thank you.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Meredith P.

December 05, 2019

To Whom It May Concern at the Institute for Clinical and Economic Review,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact that this disease has in and on my life, and the desperate need for access to new and different medicines.

I have had migraine disease for at least seven years now. I do not know when the first time I experienced a migraine attack was. What I do know is that I have been tracking my migraines in the Migraine Buddy mobile application since March 27, 2016. With this app, I can tell you that I have had at least 149 individual attacks between that date and today, with 158 attack days. This means that I sometimes have migraine attacks that span across two dates, and that I experience a minimum average of 3-4 migraine attacks per month. Unfortunately, these statistics do not cover all of the migraines that I have had; sometimes I'm not feeling well enough to bother entering my migraine in the application.

I have heard that ICER likes numbers, so here are some other statistics for you based on my personal entries into Migraine Buddy: My current average pain level is 3.9 out of 10. My average migraine attack duration is 7 hours and 36 minutes. My last (recorded) migraine kept me suffering for 21 hours and 30 minutes. My migraines occur 62% of the time on weekdays, and 38% of the time on weekends. The time frames for my migraine attacks are 65.1% between the hours of 6:00 AM to 12:00 PM, 14.8% between 12:00 PM to 6:00 PM, 12.1% between 6:00 PM to 12:00 AM, and 8.1% between 12:00 AM to 6:00 AM. Being a young woman, I also track my menstrual periods to see if this affects the frequency of my migraines as it seems to be a common question doctors ask; 30% of my migraines occur during menstruation and 15% are premenstrual, but 55% of my migraines are unrelated to my cycles. What this means is that my hormones are likely not causing my migraine attacks.

When I first started experiencing migraine attacks, it would present itself as a headache at a pain level of 5/10 or above with severe nausea, causing me to vomit multiple times in a day, whether I had eaten or not. I would get these migraines most often on Saturdays and at first thought that they might be tension headaches caused by the stress of the work week catching up with me. I eventually learned otherwise. These early migraines were the worst. After working for eight hours a day for five days, one of my only two days to relax was instead me lying in bed trying – and mostly failing – or sitting in the bathroom with my hands clenched around a trash can, suffering miserably. The next day was often me sleeping in or sitting around feeling

exhausted, with sore muscles around my ribs and my stomach. I had no social life, no time to do errands, and no relaxation. Then it was back to work. By some stroke of luck, those horrible weekly migraines eventually started to go away. (None of the migraines from this timeframe were ever tracked in the Migraine Buddy application as they occurred before I started using the app, and as such are not reflected in any of my statistics.)

When I have a migraine attack, I can have any variety of symptoms. A migraine might make me drowsy or even fatigued. I might be dizzy or light-headed, experiencing migraine-associated vertigo, or may even be confused or disoriented, or my brain may wander. I might feel like I'm going to collapse or pass out. These symptoms mean that I move slowly (and sometimes stumble when I walk), take longer to process information, and forget things shortly after hearing or doing them. I sometimes still have nausea and/or vomiting with my migraines; if I have these things, it's also highly likely that I'll have sensitivity to smell, even mild pleasant smells that normally wouldn't bother me. A whiff of soap on my hands after washing them could be enough to make me gag. My most frequent symptom is sensitivity to light, where I shut off as many lights around me as I can, dim my screen to almost black, and sometimes wear sunglasses indoors even after turning off all the ambient light – I even do this at work. Some of the other symptoms I experience are sensitivity to noise, a feeling of pressure in my head like a giant is squeezing my skull with its strong hands, a feeling of heaviness like my head will fall off of my neck, and eyes crossing on their own. I also experience a postdrome “migraine hangover” where I feel tired or confused after the headache. This is my body trying its best to recover from “fighting” the pain. The migraine isn't “gone” when the headache and the symptoms are gone.

The top three symptoms that I experience with a migraine, according to my Migraine Buddy entries, are neck pain, sensitivity to light and nausea. My migraines usually begin at the top/front of the head (around the forehead) on both sides – this happens for greater than 50% of my migraines. One of my main triggers for migraine is weather. There is nothing I can do to avoid barometric pressure or rain, so I am helpless and hopeless when it comes to pre-planning for an attack.

I do not have any warning that I am going to have a migraine attack. I have no aura before my migraines and no prodrome or “pre-headache” phase. The only warning that I might get, if any, is a mild headache with no other symptoms. While treating a standard headache with over the counter medication will often get rid of or relieve some of the pain, it will not help prevent a migraine (for me) if the headache is a precursor to one. The lack of warning makes it impossible to pre-treat the migraine, making it too late to do anything except experience yet another migraine attack.

Occasionally, I'll have migraines with aura – which I believe are called visual migraines if there is no pain involved; although for me there usually is. These types of migraines may cause me to have blurred vision. I may see lights flickering in the corners of my vision, or have a shadow in my vision. These symptoms are especially concerning for me. Despite my age, I am at

risk of having a retinal tear due to my poor vision; I've even had holes in my retina in the past. Flickering lights and dark curtains are symptoms of having your retina detach from the rest of your eye, so when I experience these symptoms along with a severe headache, I know it's probably just a migraine with aura – but it's still troubling to have that worry that something worse is happening. One of the times that these symptoms occurred, the headache eventually went away with various medicines, but the visual symptoms did not; I had to have an emergency visit with an ophthalmologist to have my eyes and retinas examined to confirm that it was only a migraine.

“Only a migraine.” Words that nobody should ever hear. Words that nobody should ever speak. Words that nobody should ever think. Sure, a migraine isn't cancer. It isn't a death sentence. But a migraine is a disease. It causes pain. It causes suffering. It affects quality of life.

Possibly the worst symptoms to come from migraines are anxiety, depressed mood, feeling moody and easily upset, having no “spoons,” or having no energy. Not only do these symptoms come along with migraines sometimes, but they also come after the migraine stops. Staying indoors and doing nothing but suffering makes a person feel like they've wasted the whole day away and like they're worthless. There is nothing a migraine sufferer can do about it, but the guilt and shame is there anyway.

Migraine disease has a major and negative impact on my life. As you can see from my statistics above, I experience migraines on weekdays 62% of the time, and 65% of my migraines occur between the hours of 6:00 AM – 12:00 PM. The start of my migraines, or at least the time that I first notice that I'm having one, is usually upon waking up or while I'm already at work. Of the times that I call out sick from work, migraines are 9 out of 10 times the cause of me staying home. Other times, I go in with my migraine and suffer, hoping that I won't get the nausea or vomiting along with it. If I've developed a migraine while at work, I just try to power through it, or I go home sick. Unfortunately, migraines do impact my work performance, as evidenced by some of my symptoms above – confusion, slow thinking, forgetfulness, slow moving, wearing sunglasses in the dark, etc. It does not look professional and I don't get as much done as I ordinarily would if I had been feeling better. Also, I work in a school setting. With the children around, it can get loud. The noise is overwhelming and increases the pain.

In my social life, I often have to cancel plans, making me look flaky and feel guilty – even though I know it is not my fault that I live with migraine disease. If I decide to keep my plans with a migraine, I have to load up on prescription and over the counter medication, wear sunglasses indoors, feel drowsy (sometimes a side effect of the prescription, sometimes a symptom of the migraine, sometimes both), and try to listen to others' conversations while sitting in pain and silence. Again, the noise is often overwhelming. I can't always focus and am more of a zombie than an active participant. In short: it sucks. In both work and personal life, people often don't believe that you have a migraine, or they don't understand how horrible migraines are. They aren't just an ordinary headache. They don't go away with over the counter

medication. It isn't just brain pain. Calling out sick from work or canceling on plans looks bad to many people, so myself and others do our best to work through the pain and the symptoms to show up and be present. A few years ago, I missed a family reunion because I didn't feel well enough to get out of bed, let alone leave the house and travel. It was unfortunate and my family was disappointed – not just that I didn't make it, but disappointed in me. I felt horrible physically, mentally and emotionally.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine do not work very well. Over the course of my life, I have tried several different treatments for migraine – 3 of which were prescription medications. The treatments I've tried include acetaminophen and Tylenol, Tylenol Extra Strength, ibuprofen and Advil, Aleve, Benadryl, Dramamine, Excedrin, Excedrin Migraine, Goody's Extra Strength Powder, Midol Complete, ice packs (I even have something that looks like a neck brace to hold an ice pack to the base of my neck), binaural beats, sumatriptan, rizatriptan, Maxalt-MLT (both generic and name brand), and ondansetron. Some of these were for the pain, some for the nausea/vomiting (the Dramamine and the prescription Ondansetron), and some to try relieving other symptoms.

As per my tracking application's recorded uses of the following medications: I have used Excedrin Migraine 35 times with it being helpful (but not necessarily being the solution to my migraine) 51% of the time. I have used sumatriptan 6 times with it being helpful 50% of the time. I have used rizatriptan 1 time with it being helpful 0% of the time. I have used Maxalt-MLT (name brand) 27 times with it being helpful 41% of the time and somewhat helpful 19% of the time.

I do not remember if I received oral pills/tablets of sumatriptan or rizatriptan first. What I do remember is that this occurred during my first detailed experience above, where I was vomiting from my migraines on a weekly basis. Due to this symptom, I was unable to keep the medication down and it did not help at all. My physician then prescribed me a generic form of Maxalt-MLT (rizatriptan benzoate, but in the form of a tablet that dissolves on your tongue). It seemed to help for a while. Side effects that I experienced from this prescription were a weird feeling of numbness where my head and my neck met, and the feeling of tiredness hours after taking it. The pharmacy eventually stopped carrying that "brand" of generic, and I went through two more generics that did not help my migraines, before I was given Maxalt-MLT name brand. It is unfortunately not always effective. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have. In July 2018, I paid a \$60.00 co-pay at the pharmacy for 9 tablets of Maxalt-MLT 10mg and a \$7.67 co-pay for 12 pills of Ondansetron ODT 4mg. In July 2019, I paid \$60.00 for 9 tablets of Maxalt-MLT 10mg and a \$6.60 co-pay for 12 pills of Ondansetron ODT 4mg. I do not take these every time I feel that I should do to their cost. I try over the counter medication first and suffer with my migraine unless I desperately

need relief. At \$60 for 9 pills, and at an average of 3-4 migraines per month, I would pay \$240-\$320 per year if I took a Maxalt-MLT every single time I had a migraine.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person. Thank you for your time.

Sincerely,

Meredith P.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Katie MacDonald

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 31 years. I have migraine attacks EVERY day. When I have a migraine attack, my whole body is consumed. My body is sore, my muscles are fatigued, I can't concentrate. I have trouble with noises, sounds and smells – it's like all my senses are turned up 100x the normal levels. I often have nausea.

Migraine has a major and negative impact on my life. Due to chronic migraine, I had to leave my building career in leadership for the technology industry. Time off did not heal me. I still live with daily, often debilitating symptoms. Additionally, migraine had negatively impacted my husband. He is left to manage the household and care for me on top of his full time job. He never knows when he leaves work each day what things will look like when we gets home. I may be gone to bed for the night or I may be curled up on the floor. On one of my 'better days', I'm up and about, but those are not predictable times.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried more than 50 different treatments for my migraine. Why so many? Because nothing has worked and/or the side effects have been too much for me to handle.

I desperately need access to new types of acute treatments.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Katie MacDonald

Miles for Migraine, Coalition for Migraine and Headache Patients (CHAMP)



Walks, Races, Education, Community

Our mission is to improve the lives of migraine patients and their families and to ultimately help find a cure.

November 26, 2019

Dear ICER

As of this moment, my middle daughter, Julia, age 28, is sitting in the ER with intractable migraine. She will spend Thanksgiving away from her family in the hospital since she will be admitted as an inpatient today. She recently left her new job due to migraine.

My youngest daughter, Sydney, age 23, is unemployed and has not been able to finish college. Why is this? There is one reason – they do not tolerate or receive efficacious benefit from the current abortive medicines on the market. My ex-husband and I are supporting our 2 daughters and as of now, I do not see an end in sight.

I do not plan to draw out this letter and instead I will point out the obvious – until more treatments become available my 2 daughters will continue to stay unproductive members of society, and I will never be able to retire as I continue to financially support them. I have chronic migraine too, and working full time is a hardship for me. We spend over \$100,000/year supporting our daughters' living and medical expenses. I spend \$1000/month on my own medical expenses – not including my medical insurance premium.

I am angry that this disease has robbed my children and myself the life we deserve. I am requesting that you approve the new class of meds at the January review.

Respectfully,

Shirley Kessel

Executive Director, Miles for Migraine

Board Member, Alliance for Headache Disorders Advocacy

cc: Coalition of Headache and Migraine Patients

Miles for Migraine 2101 Market Street, Suite 2606, Philadelphia, PA 19103 • Ph: 215.880.1150

Shirley@milesformigraine.org • www.milesformigraine.org

Miles for Migraine is a 501(c)(3) non-profit organization • TAX ID# 01-0910-791

Michael Bercun

11073 NE 6 Ave

Miami, FL 33161

12/3/2019

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 60 years, I experience an average of 15 headache days per month. When I have a migraine attack, I feel like the world is caving in on me.

Migraine has a major and negative impact on my life. The pain is debilitating. Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried many different treatments for my migraine without much success and many side effects.

I have used triptans with a little success but with harsh side effects and they are very costly.

Migraine is an expensive disease to have, I spend thousands each year to try and manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Michael Bercun

Name: Nancy B.

Date: 12/5/2019

Subject: PUBLIC COMMENT ON ICER REVIEW OF
ACUTE MEDICINES FOR MIGRAINE

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine the impact this disease has on my life, and the desperate need for access to new and different medicines.

I have had migraine disease since I was a teenager and experience an average 10-14 migraine and headache days per month. When I have a migraine attack, I feel severe and disabling head pain, extreme trouble with word finding, intense light and sound sensitivity, facial numbness, and nausea.

Migraine has a major and negative impact on my life. I am unable to work in my chosen career and I'm on Social Security Disability. Although my children are adults, raising them while living with chronic migraine was very challenging. Many times, my ex-husband and family had to stay home from work and/or miss social activities because I was unable to care for them alone. Due to chronic migraine, my marriage failed, and we divorced. Dealing with divorce due to chronic migraine made life even more unbearable.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried over 75 different treatments for migraine. Many of the medications, which were not developed for migraine, created adverse events. These adverse side effects include extreme nausea, fatigue, dizziness, rashes, depression and suicidal ideation.

I desperately need access to new types of acute treatments. I can only use triptan nasal spray as the pill/tablet form creates "triptan sensation" in which my chest and neck feel tight, I become dizzy and have a general sense of unease.

Migraine is an expensive disease to have, I spend over \$3500 each year to try and manage my migraine attacks.

Migraine has an extremely negative impact on my quality of life, and I demand access to new acute medicines that can help to stop attacks and reduce the pain and disability of this disease on my life. I ask you to value and respect my pain, and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Nancy H. Bonk

Vice President, CMA, Inc.

Moderator/Contributor at Migraine.com

CHAMP Member

Patient Leadership Council – National Headache Foundation

Founder of the Western New York Migraine and Headache Support Group, Buffalo, N.Y.

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for my whole life, it started as a couple migraines a year then by high school one to two a week. After a head injury when I was 19 I have had daily migraines since 6 years ago without a break. I experience an average of 30 headache days per month. I have many types of migraine diagnosis, over the last six years I have had head pain that goes down the neck and around the eye, I have a pressure behind the eye all right sided, nausea, also started throwing up daily very recently and I have a very hard time eating causing me to be underweight. I have daily light, sound and smell sensitivity. I also get times where I get right sided weakness where I have to drag myself on the floor. I get slurred speech, mix up words in sentences I will mix up words like constipation and prostitution or pomegranate and pomeranian and more. I can get dizziness. I get confusion where I don't know the year, where I am, who I am. When the pain gets really bad I can pass out or have seizures. My heart rate also goes really high when the pain gets high, between 135 and 200. I will see flashing lights lose sight in one eye, things will go bigger and smaller or I feel like I am going bigger and smaller. I get super sensitive to touch on my right side, any touch including clothing can cause excruciating pain. I have been diagnosed with confusional, hemiplegic (mimics strokes), post-concussive headaches, abdominal migraines, Alice in Wonderland syndrome Occipital neuralgia temporomandibular joint and sleep apnea.

Migraine has a major and negative impact on my life. In high school I would throw up every morning due to migraines due to migraines before being put on meds. I was taken off the med that helped due to having a very odd adverse reaction, recently the daily throwing up as came back I had to drop out of college due to migraines due to falling behind due to missing a lot for doctors appointments and pain being too bad to get out of bed some days. Also because hemiplegic migraines were too much for the school to handle and was scarring the staff and students. I have lost my job working with mentally disabled elderly that I loved because of my migraine triggers of overstimulation and oranges. Was told that other people (staff and residents) have the right to wear perfume, use exfoliant oils and oranges. I was also missing a lot of work because coworkers, HR and kitchens were purposely exposing me to my triggers also missed a lot due to doctor's appointments. Migraines affect my family life as well I do not get to see them as much as I would like. If I go to the store or do any kind of outing it makes the pain worse. The next day I am bed ridden. I have not been able to go see musicals my favorite activity. Most of the times if I do something overstimulating such as going out to dinner, going to the zoo or a party I end up in the ER to be treated because the at home meds and sleep are not helping, I live in fear. When will the next time my pain will get really bad, when will I lose my right side. I was scared to go to my grandfathers and very close cousins funeral I was scared of my pain getting out of control, forgetting where I was or losing my right side and missing my chance to say goodbye, I was also scared on my wedding day, not because I was making a life changing event, no in fear of my migraine pain getting out of control and needing ER treatment. I missed my own sisters out of state funeral because I know my treatment for my migraines are not well enough controlled for a 5 hour flight. Plus staying in a house with two toddlers. I live in fear every day and for most of the time I do not leave my house. At least twice a week the pain is so bad I can't leave my bed. Being 25 years of age I am not living my life the way I want or the way I should.

I had to stop going to church because its a migraine trigger. I have learned the times stores are not busy. I wear baseball caps and sunglasses everywhere I go. Not because I want to because it helps with the light. I wear ear plugs in places that are loud. I have learned the times that stores and doctors are less busy so there are less people means less noise. I use to be outgoing, very energetic, happy, willing to do anything and leaving free. Now I live in a mask I seem happy and have a smile, but on the inside I'm in so much pain and at a loss on how to help my self, I have so much anger built up inside me that I don't know who to let it out. When it does come out it comes out on the wrong people I fear one day that a migraine is going to be so bad it will be the thing that kills me. I have given up for the most part on doctors. And that is no need for a newly turned just married 25 year old to leave they life.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraines don't work very well. Over the course of my life I have tried at least 30 different treatments for my migraine. None of the meds have helped. I always seem to get very odd side effects weakness, right sided tremors, and seizures to name some. I also can not take a lot of meds due to being allergic to Tylenol and naproxen I go into anaphylactic shock. Some meds my neurologist will not put me on due to being a young female of child bearing age. I can not take triptans due to the hemoplagic migraines and heart problems. Also when I have taken them in past they made me feel like I could not breathe and panicked and they did not help. I can not take DHE due to being on drugs for low blood pressure. I have had three rounds of botox with no relief. I have also had 2 nerve blocks that help for about a week and slowly the pain goes back to my normal leave of about an 8. I desperately need access to new types of acute treatments. I am in the ER at least two to three times a month for IV meds. Most of the time the doctors can not get the pain down and discharge me with very little relief if any, if they get it down it goes back to normal within a couple of hours. I have been to Physical therapy for two rounds for migraines with no help about 12 appointments each round. I have been to 7 neurologists in 4 different cities 3 being headache specialist, and they have all have no idea how to help me. I have had 3 different pain management doctors all have no idea how to move forward. 3 different Primary care doctors. I go two 3 different mental health care givers, one is a pain psychologist, one is dbt to help with the pain. And one psychologist to help find triggers. 2 neuro-ophthalmologists one gives me botox the other I went to to see about losing sight in my eyes at times. I also see a sleep specialist to see if my sleep apnea is contubulating to my daily migraines and to see if the cpap will helped at all. I have had oral surgery to get a tooth removed to see if that helps the pain.a, dentist specialize in temporomandibular joint. I have been to a **gastroenterologist** for the abdominal migraines. I have also been to 3 ENTs.

Migraine is an expensive disease to have, I spend around 399,509.97 or more each year to try and manage my migraine attacks. This includes meds, doctor appointments, ER visits, hospital stays, botox, nerve blocks and physical therapy. I have around 12 doctors just for my Migraines. I have at least 3 doctor appointments a week. I take 7 vitamins out of pocket and take 10 prescription meds daily for migraines. I have 4 as needed meds. But none of the meds I take help with the pain. I have 2 to 3 Er visits a month.

My quality of life is very negatively impacted by migraines and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Nicole Ann Wicklund

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 21 years. I experience an average of 30 headache days per month. I have had a migraine everyday since one woke me up at 4:10 AM out of a sound sleep on December 23, 2015. The pain level of my migraine everyday is 5-7 out of 10, and I still force myself to go to work and do everyday life activities even though I feel miserable and want to cry.

When I have a migraine attack, the type of pain I experience varies from day to day and hour to hour. Sometimes it feels like someone is trying to rip my brain in half with their hands (an intense twisting sensation), or if I took two really good swings at your head with a wood 2x4 then asked you two days later what your head felt like (a constant dull ache that encompasses your entire head), or an ice pick or knife sticking in your temple or top of head (sharp intense pain), or a piece of your skull has been removed and the air is now hitting your brain (sharp, deep constant pain like immediately after a bad paper cut or if you have a bad tooth. . . that sharp intense shooting pain you feel when air hits the tooth's nerve but the pain is inside your head), or like a charlie horse inside your brain (alternating dull and intense pains).

Migraine has a major and negative impact on my life. Migraines make it very difficult to be around any other people! 1) Bright lights (sun, fluorescent lights, TV screen, tablet or phone or computer screens actually hurts my eyes and causes tears, pain, and squinting), 2) sounds (even the soft ticking of the second hand on a clock hanging on a wall across the room sounds like a hammer. I have to take the batteries out of my wall clocks), 3) smells (I can actually TASTE people's perfume, cologne, shampoo, coffee, cigarette smoke, bad breath, diesel exhaust, lotion, their lip balm when they are talking to me. If I cannot move away from these intense smells, I will get nauseous and dizzy), 4) touch (my own clothes aggravate me when I have a migraine-they must be loose fitting and soft). People think I am being rude, stuck up, a bitch or that I am mad at them when I avoid them because of my migraines, intense pain, and exaggerated sense of smell, sound, sight, etc.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried acupuncture, myofascial massage therapy, herbal and vitamin supplements (coQ10, magnesium, PLUS, butterbur, moringa oleifera, oil of oregano, black seed oil, apple cider vinegar, tumeric, amino acid supplement, probiotics, vitamin b2, b6, b12, Sole water), anti-inflammatory diet (no wheat, no corn, no soy and no dairy products), a low tyramine diet, anti-seizure medications (Keppra, Topamax, Zonegran), tri-cyclic antidepressants (Amitriptyline, Nortriptyline, and Amitriptyline again, Imipramine), antihypertensive medication (Propranolol, Norvasc, Verapamil), meditation, Daith ear piercings. I gained 45 pounds with the Amitriptyline 250mg daily that I was on for over a year. I had to take antacids, stool softeners, and a sleep aid to treat the side effects of the tri-cyclic antidepressants and had to have regular blood draws to see if the medication was at a therapeutic level. I have had numerous MRIs to rule out tumors, vascular abnormalities, MS; EEG, blood tests to rule out Lupus, Lyme, H-pylori, Mercury, Celiac and to check TSH, magnesium, ESR, ferritin, iron, methylmalonic acid levels. I just started my first dose of CGRP medication a week ago. I am not a candidate to try Botox because of a history of Guillian Barre syndrome.

None of the preventive medications or supplements or treatments have helped me. After trying Excedrin migraine, phrenilin forte, zomig, imitrex, maxalt 5mg, I found the only rescue medication that usually works is Maxalt 10mg but it takes an hour to start peeling off the layers of pain. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I have spent \$10,000.00+ of dollars trying to treat my migraines over the last 21 years and find some relief from all the pain. Doctor visits are expensive, MRIs are very expensive, blood tests are expensive, twelve tablets of Maxalt were \$499.99 (\$41.67 PER pill!!!!), calling in sick to work is expensive, missing visits and activities with family members are priceless, CGRP injection medication costs \$1381.99.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Pam J., Chronic Migraine Sufferer

Subject: PUBLIC COMMENT FOR REVIEW OF ACUTE MIGRAINE MEDICINES

Name: (Pamela K.)

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have actively been dealing with the consequences of migraine disease for 11 years. I experience an average of 30 headache days per month. Yes, that is correct. I have had a migraine every single day for 11 years.

My life was forever changed when another driver caused a traffic accident. I was cut out of the car. I have been told it's a miracle that I survived and multiple doctors tell me that I have surpassed their expectations beyond words! But every single day is a struggle. And sometimes, due to the immense suffering caused by migraine, I wonder if perhaps it would have been easier to have died in that car accident than deal with the daily, relentless pain and the constant need to try to reduce that pain.

The answer is yes, death would have been easier.

However, I am grateful that I survived.

But when I have a migraine attack, the intensity is almost beyond description. I am totally incapacitated. I feel awful. I'm nauseated. I can't think clearly. I feel confused. I say things I don't mean. I don't feel like myself. I get relief by going into my walk-in closet and closing the door and lying on the floor and crying. The pain and nausea are beyond anything else I've ever experienced. And it is inescapable.

Migraine has a major and negative impact on my life. I'm a woman who wanted children, but I gave up on that dream because I can't handle the stress of caring for a baby when so much energy has to go to my own care. For me, part of migraine includes extreme noise and light sensitivity. I have my groceries delivered or I go to the store wearing a cap, dark shades, and ear plugs. I look like a freak. Does it negatively affect my self-esteem? Yes.

Due to my migraine-related noise and light sensitivity, I can't eat at restaurants or go to movies or even spend time at people's homes with little kids. A screaming child – even one screaming with excitement and joy at seeing me – frays my nerves. It's difficult to walk on nature trails due to barking dogs.

Reading the reality of my situation is so sobering and disturbing that I can't even go into more details for you. Since having daily migraines, I do see a mental health counselor who is exceptional but yet again it's more time and more money being spent on migraines and health instead of something more directly related to JOY.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried over 15 different treatments for my migraine. To be honest, I have tried so many that I have lost count. I have tried a variety of medications, including "black box" medications with incredibly serious side effects. The warning labels say that you **MUST** avoid pregnancy while taking them due to concerns about the baby's survival and serious birth defects. I have tried many holistic/alternative therapies, including acupuncture, medical massage, meditation, yoga, and more. While some treatments have provided some relief, none have provided continual relief. **I have never experienced 100% relief for even 10 minutes.** And some of the side effects, especially when I was allergic to a particular prescription medication, are terrifying.

I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend thousands of dollars each year to try and manage my migraine attacks. My medical expenses related to migraine are a significant percentage of my annual pre-tax income. With insurance, before meeting my deductible, I pay approximately \$1,200 for Botox injections for migraine. Following current common medical protocol, I receive those injections every 12 weeks, or 4 times/year, for a total of \$4,800. I am blessed to have medical insurance that will cover the expenses after the deductible is met.

In addition, I also receive (and pay for) a second type of injection administered every 3-4 weeks, the co-pays that accompany the injections, and the time spent driving and causing wear and tear on my car. Then there are the prescription medicines I take to prevent migraines and to abort (that's the medical word used), or end, them when they're excruciating and I'm unable to function. Finally, there are the lifestyle costs that add up quickly, such as buying pre-made meals because I'm too ill to cook.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

I beg you to consider how these new medicines could change my life – and the lives of others who suffer from chronic migraine -- for the better.

Sincerely,

Pamela K.



December 6, 2019

Steven D. Pearson, MD, MSc, FRCP
President, Institute for Clinical and Economic Review
One State Street, Suite 1050
Boston, MA 02109 USA

RE: Draft Evidence Report “Acute Treatments for Migraines”

Dear Dr. Pearson:

Patients Rising Now advocates on behalf of patients with serious conditions to improve their access to vital treatments and services. For those patients, access is a matter of quality of life and survival. To support improved access, we engage stakeholders to foster realistic, people-centered, solution-oriented discussions to create balanced, truthful, and equitable dialogues.

We appreciate the opportunity to provide our comments on ICER’s November 7th draft evidence report, “Acute Treatments for Migraines.”

As the draft report describes in the first part of the Background Section (1.1), and Insights Gained from Discussions with Patients and Patient Groups Section (1.4), acute migraines are a disease that affects many people (women more than men), and has profound impacts on their lives – including their workplace productivity and non-working activities and capabilities. We would like to commend ICER for reaching out to and engaging with a relatively large number of patient-facing organizations. However, we feel that this draft report illustrates the problems with ICER’s overall process and methodologies because it poorly incorporates such insights into its modeling and assessments, as described below.

In addition, we feel it is important to reiterate some of the points we made in our May 2018 letter to ICER about some preventative treatments for migraines, as those same points apply to acute migraines:

- The biology of migraines is complex and uncertain. Migraines may represent multiple underlying conditions or causes leading to vascular changes and pain. As NINDS states, “There is no absolute cure for migraine since its pathophysiology has yet to be fully understood.”ⁱ That insight has important implications for ICER’s assumptions and modeling. Until there are better diagnostics and more specific therapies, it is critically important that patients and clinicians have ready access to all options for treatment of acute migraines, because it is well known that different patients respond differently to therapeutic alternatives,

and “only 29 percent of U.S. migraine sufferers are very satisfied with their treatments.”ⁱⁱ

- Patient perspectives and clinical presentations extend well beyond pain. Migraine “is generally thought of as a headache problem, but it has become apparent in recent years that many patients suffer symptoms of migraine who do not have severe headaches as a dominant symptom. These patients may have a primary complaint of dizziness, ear pain, ear or head fullness, “sinus” pressure or even fluctuating hearing loss.”ⁱⁱⁱ Unfortunately, because ICER primarily relies upon select clinical trial data to formulate its modeling, conclusions, and recommendations, and because most clinical trials (for FDA approval of migraine treatments) focus on pain measurements and assessments, other “disutility” features of migraines are not incorporated into ICER’s work, even while the draft report notes that “migraine is one of the most common causes of disability worldwide.”^{iv}
- In looking at productivity and patients’ lives in the draft report, ICER did not utilize the references we previously provided from Serrano et al.,^v Landy,^{vi} or Mandelblatt et al.^{vii} While we recognize that ICER relied exclusively on Masseli’s work in this draft report (and data from the American Migraine Prevalence and Prevention study^{viii} for its May 2018 report on chronic migraines), we are concerned that choosing a single data source when others are available for comparison is not scientifically rigorous. Exploring and discussing multiple data sources would provide a more robust assessment, particularly for something as important to people with migraines – and their employers – as productivity-related impairments.

People-Oriented Information and Perspectives:

The findings in the draft report seem to boil down to the following points:

- Migraines are bad and have a significant negative impact on people who have them;
- The triptans and other older medications – both prescription and OTC – work for some people, but for individuals who find them not effective (or cannot use them for other reasons), there is a significant unmet clinical need; and
- The newer medications reviewed in the draft report provide treatment options for people with migraines when other options are ineffective, not tolerated, or not indicated.

Compared to other ICER reports and projects, this draft report seems very clearly outlined by those three points. Given that the older medicines are significantly less expensive, it is the third point above that should be the crucial area of focus. And for those people, the question is simple: Are the newer medicines “worth it”? But that question needs to be asked in a more nuanced way; “worth it” is a relative term depending on the severity of the migraine for each person and their individual situation. For example, “worth it” could be very different for someone with a migraine that would only minimally impact their work productivity based upon the nature of their job, versus the impact a migraine could have on their wedding day. Unfortunately, in ICER’s calculations, the former is important, but the latter is not.

While pain is important, it may not be the most important factor for patients' functioning related to the symptoms of migraine. Migraine is recognized as a very difficult area of pain management for diagnosis and treatment. Therefore, the draft report faces significant challenges in comparing different types of treatment options by analyzing individual trials, or with meta-analyses. In this process, we are once again disappointed that ICER minimizes the importance to patients of improved function and quality of life, and the need for – and value of – new treatment options for people with migraines.

Expanding on the importance of individualization of care to reflect real-world people's nuanced clinical presentations and life-concerns, the goal is to find treatments that work for patients and allow them to function in ways that they need to – which varies from person to person. For example, the impact of treating an acute migraine that occurs during the work week (or work day) could be very different if an acute migraine were to happen during a non-work day. And the consequences for an individual could depend on their work situation. For example, no one would want their surgeon operating on them while in the midst of an acute migraine, nor would they want to be on an inter-city bus when the driver is suffering from an acute migraine.

A related area of patient perspectives is actual costs to patients versus payer, insurance company, or nationally aggregated costs. Unfortunately, ICER clearly states that “the base-case analysis was conducted using a health care sector perspective (i.e., focus on direct medical care costs only).”^{ix} We recognize that understanding the pluralistic system of private and public payers in the US, and how the resulting system of rebates, discounts, and other factors influences patient costs and access, is not a simple analysis. However, ICER should also include estimated actual patient costs, which would be in-line with national policy makers' discussions about value-based benefit design. We strongly believe that value calculations only looking at health financing or delivery are incomplete – they must also reflect real-world value improvements for patients.

Another example of the problems with the draft report is the economic model, which does not include disutility of patients suffering from “nausea and/or vomiting, photophobia, or phonophobia due to lack of data.”^x This is very problematic from a patient-focused perspective. We hope you will correct this in the final report's overall analysis, conclusions and recommendations, because we are concerned that not incorporating such important qualitative factors will lead payers and clinicians to undervalue the benefits of treating acute migraines.

From a technical perspective, we note that ICER states the NMA was done with binary outcomes^{xi} – but people's lives are not binary, except for death. Unfortunately, ICER did not – or could not – dig deeper into non-binary facets of how migraines affect a patient's awareness and cognition, i.e., mental fuzziness. This limitation of ICER's process is derived from its use of mathematical modelling that is based upon a narrow slice of clinical trial data, i.e., pain

reduction or relief. Such a limited analytical perspective doesn't permit anywhere near a complete picture of how migraines affect patients in their overall life any more than watching a patient in a clinical office for 20 minutes reflects that person's overall capabilities, challenges, and limitations during the other 23 hours and 40 minutes of their day – or the multiple days between clinician visits. We continue to urge ICER to include a broader range of people-focused factors into its computational system, since the binary processing in this draft report severely shortchanges the value of patients' lives.

Data Uncertainty

We are a bit confused about some of the data presented in the draft report and the reliability of cross-trial comparisons, given the unavoidable differences in the groups being studied. For example, there seems to be some inconsistency about the comparability of the patient groups in the trials used in the NMA ICER conducted for this draft report. Specifically, while the body of the draft report indicates that people in the trials of eliptriptan had 3-8 migraines per month,^{xii} the data presented in Table D1^{xiii} indicates most of the trials of eliptriptan included people with less than an average of 3 migraines per month. In comparison, Table D1 also indicates that the trials involving the three newer medicines have higher rates of migraines per month. This leads us to be concerned that the population studied for the newer medicines may have had more serious migraine disease (i.e., more migraines per month), which would make cross-trial data analysis fraught with expanded uncertainty that would lead to unreliable conclusions.

An additional foundational complication for how the draft report evaluates value and benefits of treatments for migraines is that the draft report does not consider devices or other interventions^{xiv} in its review or modeling. This is a problem, because in the real world, the treatment of acute migraines is not limited to OTC, triptan, and the three newer prescription medicines.

We also find that ICER's rationalization to justify a conclusion of regression to the mean is both convenient and unconvincing. That is, just because compounds are from different molecular or structural classes does not mean that they also have fully different mechanisms of action. Specific to the medicines involved with treating migraines that are the focus of the draft report, research has shown that they have linked physiological mechanisms of action.^{xv} Therefore, deriving the equivalent of a mathematical transitive association among very different trials to dismiss the possibility of any acute treatment leading to a long-term reduction in the number of migraines per month – and “explaining” that data as simply “regression to the mean”^{xvi} because of significant dropout rates from open extension trials – is dubious, and we find it very concerning. Couldn't some medicines – for some people with specific receptor subtypes or predispositions – yield reduced migraine frequency via changes in receptor sensitivity or up/down regulation? We see ICER's views here as an example of ICER determining what model parameters or “reasoning” best fits their pre-existing beliefs that new medicines are not valuable

and do not increase the length of life – which we note ICER has declared in both written and oral statements.^{xvii xviii} We are very concerned about this ongoing bias.

Conclusions

Patients Rising Now believes that ICER’s draft report on some new therapies for acute migraine inadequately reflects quality of life, personal and work productivity, and the complexity of migraine treatments from patients’ perspectives. Despite ICER engaging with a larger number of patient-connected groups in the process of compiling this draft report than it has in the past, we believe ICER needs to do a much better job of actually incorporating those perspectives into its calculations and conclusions. Specifically, patients’ voices need to be a part of defining and assessing the value of their treatment plans along with the cost of all aspects of their care – including patient’s direct out-of-pocket costs and indirect costs related to their ability to work and live unencumbered by migraine symptoms and complications. Overall, ICER comes up with the wrong answers because it continues to ask the wrong questions.

Given the large unmet need for people with migraine for whom prior treatment options are inadequate or inappropriate, the new treatments offer significant hope. No one expects them to be a panacea for everyone who is seeking better treatments for their migraine – particularly given the uncertainty about the underlying physiological causes of migraine – but we strongly believe that payers and society should not unduly restrict access, coverage, and reimbursement for such people. We are very concerned that ICER’s economically siloed conclusions will lead the gatekeepers at many insurance companies and other payers to reflexively erect such barriers.

We would be much more supportive of analyses constructed to support patients and clinicians across the range of clinical decision making, benefit design, reimbursement policies, and coverage choices or limitation. There is a significant need, which the draft report does not fill, for assessments that encompass real patients’ choices and goals, the spectrum of financial implications for new therapies, and practical options for increasing value for patients within the decision-making process across the pluralistic U.S. health care system. We are concerned that the draft report will only continue to reinforce the status quo rather than support more people-centered operations of health care delivery and insurance design.

Sincerely,



Terry Wilcox
Co-Founder & Executive Director, Patients Rising Now

ⁱ <https://www.ninds.nih.gov/disorders/all-disorders/migraine-information-page>

ⁱⁱ March 2018 BlueBlastSM Newsletter: News Providers Can Use, “Migraine — More Than a Headache”

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- iii March 2018 BlueBlastSM Newsletter: News Providers Can Use, “Migraine — More Than a Headache”
- iv Draft Evidence Report – Acute Treatments for Migraine, p. 9
- v Serrano et al., *Value in Health* (16) 2013, 31-38.
- vi Landy et al., *J Occup Environ Med.* 2011 Jan;53(1):74-81. <https://www.ncbi.nlm.nih.gov/pubmed/21187794>
- vii Mandelblatt et al., *Value in Health*, (20) 2017 185-192
- viii Stewart WF, Wood GC, Razzaghi H, Reed ML, Lipton RB. Work impact of migraine headaches. *J Occup Environ Med.* 2008;50(7):736-745.
- ix Draft Evidence Report – Acute Treatments for Migraine, p. 56
- x Draft Evidence Report – Acute Treatments for Migraine, pp. 65-66
- xi Draft Evidence Report – Acute Treatments for Migraine, p. 23
- xii Draft Evidence Report – Acute Treatments for Migraine, p. 27
- xiii Draft Evidence Report – Acute Treatments for Migraine, pp. 117-118
- xiv Migraine Headache Treatment, <https://www.webmd.com/migraines-headaches/migraine-treatments#2>
- xv Moreno-Ajona, D., et al., “Targeting CGRP and 5-HT1F Receptors for the Acute Therapy of Migraine: A Literature Review,” *Headache*, July 2019;59, pp. 3-19
- xvi Draft Evidence Report – Acute Treatments for Migraine, p. 43
- xvii “ICER’s Value Framework and Patient Feedback: Q&A with Steve Pearson, September 4, 2019, <https://icer-review.org/wp-content/uploads/2019/09/ICER%E2%80%99s-Value-Framework-Patient-Feedback-Webinar-0904196.mp4> [Time code 52.33]
- xviii Pearson, S., “Why the Coming Debate Over the QALY and Disability Will be Different,” *Journal of Law, Medicine & Ethics*, 47 (2019): p. 304

Dear ICER,

I am writing to ensure that you fully understand what it means for this person to live with migraine, the impact this disease has had in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for over 26 years. I experience an average of 30 headache/migraine days per month (every day.) When I have a migraine attack, I feel confused and disoriented; I cannot think straight, my problem solving ability is nearly non-existent even for the simplest of issues, my head feels like I have severe throbbing sinus congestion-like pain and the sensation that I have an ice pick in my eye (severe pain, usually my right eye). My pain level (on a scale of 1-10 with 10 being intolerable) on a daily basis is 6 and often gets as high as 9. I cannot function when I have an attack. These symptoms often are accompanied by nausea and high sensitivity to sound and light. My head gets so much sensitivity to touch that I cannot even wear my glasses much less a hat. The pain comes in throbbing waves.

Migraine has had a major and negative impact on my life. I have been laid off from my last 3 jobs due to my inability to perform when under daily migraine attacks. It's depressing to the point of being suicidal. I began to get migraines while in college and I was barely able to complete my studies to graduate. Many of my exams were turned in blank and had to be retaken, and my GPA suffered. Before the migraines took affect my GPA was 4.0. My quality of life is down the toilet; I often miss or am late to family/friends gatherings and frequently have to leave early. When my mother was dying I could barely attend to her simple needs (feeding, administering medications, etc.).

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines I have been prescribed for my migraines haven't/don't work very well. Over the course of the last 26 years I have tried over 30 different treatments, both preventive and rescues. Some help, many do not. The preventives have left me weak and lackluster with an almost complete loss of sex drive and have caused me extensive G.I. tract upsets and constipation. Some of the preventives are anti-depressants which have made me feel like a zombie, slow and numb, and sometimes they cause their own depression and confusion. The rescue medications cannot be taken sequentially (every day) as they often produce rebound headache and/or migraine of their own making discerning suspected triggers virtually impossible. Some rescues are just not allowed more than a handful per month either by prescription or by insurance limitations. Some are addictive. Some rescues don't work at all. Those that work often have the side effect of being inebriated and drowsy. Driving a car or operating machinery must be avoided. Most rescue medications are administered orally. When I have stomach upset the pills I swallow take 2-3 hours to take effect.

I desperately need access to new types of acute treatments. I have tried triptans and their effectiveness is accompanied by odd flu-like symptoms (body aches, fever/chills, etc); I feel

worse before I get better and the actual migraine diminishing effect can take up to 4 hours. I'm unable to take DHE type medication.

Migraine is an expensive disease to have; I have spent over \$15,000 each year to try and manage my migraine attacks. The related job loss and difficulty obtaining employment has wiped out my retirement savings. It's nearly impossible to win an interview when under the influence of migraine or the rescue medications. I stutter and/or slur my words and just don't give the impression that I'm sober. I forget words/sentences/thoughts I practiced preparing for a job interview or for a report/presentation at work. It's embarrassing and humiliating.

My quality of life is very negatively impacted by migraine; I plea for access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine and the associated aftermath. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Paul W.

December 6, 2019

Dr. Steven D. Pearson
President
Institute for Clinical and Economic Review
Two Liberty Square, Ninth Floor
Boston, MA 02109

Dear Dr. Pearson,

The Partnership to Improve Patient Care (PIPC) appreciates this opportunity to comment on the Institute for Clinical and Economic Review (ICER) study of treatments for Acute Migraine. Migraine is a particularly debilitating disease with huge physical, emotional, and economic costs. Migraine is the sixth most disabling illness in the world and healthcare and lost productivity costs associated with migraine are estimated to be as high as \$36 billion annually in the United States.¹ In addition to this huge physical and financial burden, at this point, there are currently limited effective treatments, so it is important that new treatments are assessed responsibly and with a patient-centered lens.

We would like to echo The Headache & Migraine Policy Forum's comments on the draft scoping document and request you consider renaming the assessment to properly reflect the included content: "Innovative Acute Treatments for Migraine Attacks."

The QALY is Flawed

PIPC would like to reiterate our concern with ICER's use of the QALY. As we have noted in several past comment letters, the QALY is not an appropriate methodology for use in value assessments, particularly where the patient population is very heterogenous, as in migraine. The Headache and Migraine Policy Forum also touches on this heterogeneity in their report noting that the experience of migraine exists on a spectrum more than other chronic disease. It is also important to note that a recent review suggested that generic PROs have been shown to have less reliability and validity than disease-specific PROs in migraine evaluation such as HIT-6, MSQv2.1 and the PPMQ-R.²

The QALY is also widely acknowledged to discriminate against those with disabilities and chronic illnesses. In fact, they have long been precluded from use in public health programs for this very reason. The QALY is not an appropriate metric to use when evaluating treatments for a chronic condition that is the sixth leading cause of disability. Migraine is considered an invisible disability with an impact on quality of life that may not be appreciated by the general population.

¹ The Migraine Resource Foundation. Migraine Facts. Accessed November 19, 2019.

² Haywood KL, Mars TS, Potter R, Patel S, Matharu M, Underwood M. Assessing the impact of headaches and the outcomes of treatment: a systematic review of patient-reported outcome measures (PROMs). *Cephalalgia*. 2018 Jun;38(7):1374-86.

The Draft Evidence Report Makes the Oversimplified Assumption That There are No Mortality Effects in Migraine Treatment.

The ICER Report makes a statement that it assumes there are no mortality effects in migraine treatment. This is a simplistic assumption, as a number of studies have shown people with more severe types of migraine (with aura for example) have higher rates of all-cause mortality in both men and women.³ Studies have also shown higher rates of both suicide and suicidal ideation in migraine patients⁴, and more broadly in patients suffering with conditions that include chronic pain.^{5,6} Considering this research, assuming a therapy that successfully reduces the pain burden for migraine patients will have no effect on mortality does not capture the full picture.

Most studies that look at migraine and mortality differentiate specifically between migraine with aura (strong mortality effect) and migraine without aura (weak),^{7,8} reiterating the importance of the risk of dilution of effect by inadequate diagnosis or subgroups analysis by severity. In all it was estimated on average that people with migraine with aura had mortality rates between 10-20% higher than a matched cohort of people without the condition. In a scenario like this, in which the risk of mortality is higher in a particular disease state, the potential expected impact of successful therapy would be reduced risk. Even if mortality isn't an outcome in trials of migraine therapy, drawing the line between successful treatment and reduced mortality should at least be discussed and not simply assumed as null.

ICER Makes No Attempt to Incorporate Quality of Life Gains from Reduced Anxiety Around Migraine Attacks.

Studies have shown that HRQOL is lower for migraine patients 'between' attacks as well as during attacks as a direct result of the anxiety anticipating an attack.⁹ In one study compared with control subjects, "migraineurs perceived more symptoms and greater emotional distress as well as disturbed contentment, vitality and sleep."¹⁰ Another showed that "Compared with non-

³ Gudmundsson LS, Scher AI, Aspelund T, Eliasson JH, Johannsson M, Thorgeirsson G, Launer L, Gudnason V. Migraine with aura and risk of cardiovascular and all cause mortality in men and women: prospective cohort study. *Bmj*. 2010 Aug 24;341:c3966.

⁴ Breslau N. Migraine, suicidal ideation, and suicide attempts. *Neurology*. 1992 Feb 1;42(2):392-.

⁵ Hassett AL, Aquino JK, Ilgen MA. The risk of suicide mortality in chronic pain patients. *Current pain and headache reports*. 2014 Aug 1;18(8):436.

⁶ Pompili M, Di Cosimo D, Innamorati M, Lester D, Tatarelli R, Martelletti P. Psychiatric comorbidity in patients with chronic daily headache and migraine: a selective overview including personality traits and suicide risk. *The journal of headache and pain*. 2009 Aug;10(4):283.

⁷ Liew G, Wang JJ, Mitchell P. Migraine and coronary heart disease mortality: a prospective cohort study. *Cephalalgia*. 2007 Apr;27(4):368-71.

⁸ Schürks M, Rist PM, Shapiro RE, Kurth T. Migraine and mortality: a systematic review and meta-analysis. *Cephalalgia*. 2011 Sep;31(12):1301-14.

⁹ Wacogne C, Lacoste JP, Guilibert E, Hugues FC, Le Jeune C. Stress, anxiety, depression and migraine. *Cephalalgia*. 2003 Jul;23(6):451-5.

¹⁰ Dahlöf CG, Dimenäs E. Migraine patients experience poorer subjective well-being/quality of life even between attacks. *Cephalalgia*. 1995 Feb;15(1):31-6.

migraineurs and to others with chronic conditions, migraineurs report compromised physical, mental, and social functioning, particularly those with a high frequency of attack.”¹¹

Many patients shared with ICER that this constant anxiety caused them to have lower quality of life even when they were not having a migraine attack. ICER acknowledged this in their “Insights Gained from Discussions with Patients and Patient Groups” section of the report yet made no attempt in the actual model to incorporate the quality of life gains from reduced anxiety that comes from having improved options for episodic treatment. As such the construction of the ICER model, which only includes the estimation of QALY gains ‘within’ each acute attack, will inevitably be an underestimate of the overall effect of any therapy as it excludes those gains that are experienced outside acute attacks.

This highlights our consistent concern that ICER seeks patient input but fails to give it real credence by incorporating it into the actual model.

ICER Continues to Use Third-Party Health Utility Estimates, which Underestimate the Effect of Treatment.

ICER continues to use third-party health utility estimates and apply them to the health states used to construct the QALY estimates rather than using health-related quality of life (HRQOL) data directly from the RCTs themselves to calculate the utilities in its QALY calculations. It has been shown that this over-translation, or categorization, of outcomes into utility sets by health state categories rather than from direct sources underestimates the effects of therapies.¹² Using a translated utility from a third source as a proxy leads to an oversimplification of health states. This limits our full understanding of the effects of any therapies under investigation and can lead to them being shown to be less effective based on faulty data. We encourage ICER to cease using this type of third-party health utility estimate.

We also share the concerns of others that ICER is using clinical studies that are 25 years old and comparing them to more recent studies. Yet, we know today that the placebo response has changed over time. ICER’s model cannot be accurate when ICER’s literature review that underlies the cost effectiveness model relies on this 25 year old data instead of real-world data that better reflects the patient experience.

ICER’s Model has Inherent Flaws

When designing and executing a cost-effectiveness model, it can very quickly become a box-checking exercise: produce a Markov model that is constructed around the main outcome

¹¹ Terwindt GM, Ferrari MD, Tijhuis M, Groenen SM, Picavet HS, Launer LJ. The impact of migraine on quality of life in the general population: the GEM study. *Neurology*. 2000 Sep 12;55(5):624-9.

¹² Altman DG, Royston P. The cost of dichotomising continuous variables. *Bmj*. 2006 May 4;332(7549):1080; Royston P, Altman DG, Sauerbrei W. Dichotomizing continuous predictors in multiple regression: a bad idea. *Statistics in medicine*. 2006;25(1):127-41.

measures; get sources for drug cost, utilities and transitions; chose a timescale; make assumptions where data is missing; etc. This becomes quickly reductive and therefore inaccurate due to its inability to capture the real-world patient experience with the particular disease and the value of treatment.

While there are undoubtedly numerous inputs that are ‘correct’ in the ICER migraine model, it also contains structural flaws. Ultimately, the real test is whether it works, and, in many ways, this model is inconsistent with common sense based on the facts. We know migraine is a condition impacting a group of people who experience unpredictable attacks of severe pain on a minimum of a weekly basis (mean 4.8 attacks per month) which ICER’s states, “*can be a disabling, chronic condition that can impact all aspects of life including personal relationships and ability to work.*” The drugs under consideration are more effective than standard of care by orders of magnitude of 2-5 times (tables 3.3-3.7). The drugs in question are assumed in the model to cost \$70.

Relying on this basic set of facts, it does not meet common sense standards that the model results would find these therapies to not be cost-effective. Nor it is transparent how the aforementioned results were derived because ICER still does not publish its models or make them open source. From what we can surmise, the most significant issues seem to lie in the narrow scope of the model. Our best guess is that the underlying factor leading to this conclusion is based on how quality of life was incorporated or the source of that information. One alternative would have moderate migraine down from 0.79 to 0.53 and severe migraine down from 0.44 down to -0.20.¹³ It is not clear why the chosen source of quality of life data is selected over others, or even that others are not used as part of a sensitivity analysis.

Another factor for this conclusion may be the measure of the impact of reducing migraines and their severity as limited to the length of the individual attacks rather than across the entire period for the patient. This would be an oversimplification of the model that goes too far from the day-to-day reality of the disease for most patients.

We would suggest a thorough review of the construct of the model and a detailed review by migraine patients themselves on how it represents the real patient experience.

Conclusion

ICER continues to overlook outcomes that matter to patients in favor of overly simplistic QALY-based models. We urge ICER to be more thoughtful in its model construction and take seriously the feedback from patients and clinicians who are experts in migraine attacks.

¹³ Stafford MR, Hareendran A, Ng-Mak DS, Insinga RP, Xu R, Stull DE. EQ-5D™-derived utility values for different levels of migraine severity from a UK sample of migraineurs. Health and quality of life outcomes. 2012 Dec;10(1):65



PIPC

Partnership to Improve Patient Care

Sincerely,



Tony Coelho

Chairman, Partnership to Improve Patient Care

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Rae B.

Dear ICER,

I'm writing to help you understand what migraine actually is, in terms of impact on a person's life, and why we're so desperate for new, better medications.

Migraines are not "just bad headaches", as non-migraineurs tend to assume. Migraine is a neurological condition that is usually, but not always, characterized by a bad headache, along with nausea, photophobia (sensitivity to light), phonophobia (sensitivity to sound), difficulty concentrating, and for some people, visual disturbances, aphasia (loss of words), or other stroke-like symptoms. Migraine is a big deal for anyone who suffers from these attacks, and migraines disrupt productivity and social connection across America constantly.

I get migraine headaches fairly frequently, but not as often as other sufferers. Sometimes I can make it through a week with only one migraine day. Two days in a week has been a pretty standard rate for me this year, and if they happen early in the day, I lose that entire day's productivity. In a bad week, I'll have four days of migraines. It's painful, but more than that, it's incredibly frustrating. I'm only now starting to understand that migraine is a chronic illness and I need to treat it as such, which means I can't assume I'll have seven days in a week that I can actually be productive. I have to plan for five days, knowing I can't predict *which* days, and be prepared to cancel the things that happen on the wrong day. It's migraine roulette.

I'm blessed to not have most of the stroke-like symptoms, but a migraine that I'm not able to abort with an acute medication feels like a tiny devil with an icepick is chopping at my brain. Well, not all of them; some feel like I've just hit my head against a wall, except that post-impact feeling lasts for hours, and some feel like a horrid sinus headache, which delays my ability to recognize a migraine and treat it appropriately. The pain of an untreated migraine can be unbearable; I can do little besides cry. I have heard of people sleeping the pain away, but I do not know how someone can sleep through that pain. If I have a bad headache of indeterminate origin, I look at lights to see if I get nauseous from doing so. If I do, it's a migraine, and I take my triptan.

Triptans don't work for everyone. Sumatriptan does work well for me, except that it completely destroys my ability to concentrate and often makes it difficult to even get off the couch, especially if I didn't realize right away that a migraine was coming on and I had to take the drug late. It's wonderful that the pain goes away, but if I can't work (I write and edit and desperately need my attention to detail and my full focus, especially for editing), then it doesn't completely solve the problem. Driving is not a good idea on sumatriptan; I know that according to the FAA's rules, pilots aren't allowed to drink within eight hours of a flight, but must wait 24 hours if they've taken sumatriptan (Imitrex), which should give you an idea of the effect it can have.

Sumatriptan is for acute migraine, but "acute migraine" can mean anything from attacks a few times a year to 14 days per month, as the official definition of chronic migraine is 15 migraine days per month.

Insurance typically will pay for nine sumatriptan pills per month, according to my doctor, and this may well be due to the risk of overuse. A four-migraine week makes me nervous about the risks of overuse, and I don't mean the risks to my internal organs (I'm shortsighted when migraine strikes; everything is about ending the pain *right now*). No, I mean the risk that sumatriptan will become less effective if I take it too often. I mean the risk of rebound headaches, which are headaches that come when a body gets dependent on a drug and then that drug wears off.¹ Then, if I can't take triptans (either for my next few migraines or forever), what will I do? I try not to think about it. Stress triggers migraines, too, after all.

As I'm sure you've read, there's not exactly a "cure" for migraines. A lot of the older preventatives have side effects that are terrible for thinking clearly (and some other scary stuff), so I'm hesitant to even try them. Since I don't meet the requirements for chronic migraine—migraine directly impacts "only" about 28% of my days, not 50%, and the brain fog and exhaustion of the postdrome,² don't count—Botox isn't even an option for me, and it has mixed results regardless. CGRP blockers sound promising, but they're still very new, insurance typically wants to force you through a rigamarole to even allow you to try them (trying and failing two obviously inferior, non-migraine-specific medications is often required first), and for freelancers like me who have either no insurance or very awful insurance, they're cost-prohibitive. (And thank God I am a freelancer and can set my own schedule, as it seems many companies will not tolerate the amount of absences migraine can generate.) I'm trying to manage my migraines with whatever non-drug options I can find, including sleep, diet, and exercise, and I'm trying to work with my neurologist, but it's a slow, imperfect process. Each visit costs something like \$120-\$160 for maybe ten minutes with the doctor, so I'm doing whatever I can to get the most out of each session.

Given that preventatives tend to destroy people's ability to work, be expensive, and be difficult to choose (since every migraineur has different physiology and different reasons for the disease), we absolutely need new acute medications. If I have four migraines in a week, I need to know that the drug I use to stop each attack will still work, and that it won't become less effective just because I had to use it a lot this week. I need to know I won't suffer rebound headaches because my body has come to expect the drug. Ideally, we could have acute medications that won't destroy our ability to think and focus for the rest of the day. Given that 38 to 50 million people in the United States suffer from migraine, and given that 4 million have chronic migraine,³ the sheer amount of hours (personal and productive) lost to migraine pain and brain fog in America is staggering. In fact, if you don't get migraines yourself, you probably have at least one friend or family member who suffers from this disease. When that person has to cancel due to an attack, give them grace; it is *not* "just a headache" and they cannot "just get over it". If triptans or other current acute medications don't work for that person, he or she is probably trying in vain to sleep, occasionally throwing up, pressing his or her

¹<https://migraine.com/topic/detoxing-imitrex-and-otc-medication-rebound-and-medication-overuse-headache/>

²"Postdrome" is the aftermath, sometimes called a "migraine hangover", and it's both awful and generally unrecognized by non-migraineurs. <https://americanmigrainefoundation.org/resource-library/understanding-migraine-the-science-of-migraine-how-to-deal-with-postdrome/>

³<https://migraine.com/migraine-statistics/>

forehead to an ice pack, and praying for any kind of end to come. They'd rather be out with you at the movies, or at your party, or at work, than facing another migraine attack.

I ask you to please respect this pain, both mine and the pain of those like me, and to fairly assess these new medicines, so that we can be healthier, more productive, less utterly isolated people.

Sincerely,

Rae B.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Robert C.

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for over 50 years. I have suffered with this disease since childhood. I experience an average of 7 - 13 headache days per month. When I have a migraine attack, I feel not only very severe pain, but I have great difficulty concentrating, talking, seeing, reading, or doing any other basic life function. My migraines are accompanied by a sensitivity to light, sounds, and sudden movements. I sometimes feel nauseous, light-headed, dizzy, and disoriented. These migraines last from 12 to 24 hours typically.

Migraine has a major and negative impact on my life. Not only does the severe pain restrict my ability to function at work or home, but I have great difficulty communicating with others and I spend much of my time alone, in a dark room, trying to rest. The migraines typically occur at night and therefore I am unable to sleep. Sleep deprivation then leads to other problems including loss of workdays, and social isolation.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried many different treatments for my migraine. I have tried many different types of pain medications, both prescription and over the counter. I was prescribed tranquilizing medications as a child, with little to no relief. I have used many over the counter pain relievers including Ibuprofen, Tylenol, Aspirin, Excedrin Migraine, etc. At best these have dulled the pain of the Migraine, but typically they have other side effects which include stomach upset, diarrhea, constipation, drowsiness, and ringing in the ears. I have also used various minerals and vitamins to help prevent or lessen the migraine severity – Vitamin B-2 (Riboflavin) and Magnesium. These have provided some help, but do not stop the migraines. I have also been prescribed Amitriptyline which I took for over 15 years in an attempt to reduce the frequency and severity of the migraines. I also took some prescription pain medication (Norco) for many years. This reduced the pain slightly, and helped me to get a little sleep, but had some undesirable side effects such as drowsiness, dizziness, and upset stomach.

For the past year I have been taking Ajovy injection on a monthly basis. This is a CCRG Receptor Antagonist. This medication has changed my life! The Migraines have been greatly reduced in frequency and severity. I have only had a few Migraines in the past year. This compares to 3-7 severe Migraines per month for many years. The quality of my life has drastically improved. I sleep a lot more and my sleep is much improved. I have a lot less stress, less pain, and my social life has improved greatly. I am much happier, and my wife frequently tells me how much happier this makes her. She says I am much less irritable and much more relaxed.

Migraine is an expensive disease to have, I spent a great deal of money each year to try and manage my migraine attacks. These expenses include doctor visits, medications, insurance, dietary supplements, and various aids such as hot water bottle, ice packs, compresses, etc. Another big expense is related to the number of workdays I have lost for years due to Migraines.

My quality of life was very negatively impacted by migraine and I demand access to new acute medicines that can help me, and other migraine sufferers, to stop attacks and avoid the pain and disability we experience during a migraine. I ask you to respect our pain and to fairly assess these new medicines so that we can be healthier and be more productive people. Our health and well being is not only at stake, but the communities, families, and organizations we are a part of are in need of the benefits of these new treatments as well.

Sincerely,

A handwritten signature in dark ink, appearing to read "Robert A. Carbo". The signature is fluid and cursive, with the first name "Robert" being the most prominent part.

Robert A. Carbo

Clayton, North Carolina

December 6, 2019

After 64 years of a life devastated by migraines, many failed therapies, and an almost complete loss of hope that a better day would ever come for me, my family, and friends, I've been made aware of a promising new treatment.

I have suffered with migraines for about 64 years, and when I am catapulted into hell with a migraine, I am filled with rage and hopelessness. My children have suffered with me, becoming parentified as they saw me writhe in pain, having to stop playing with them because movement was a trigger. Even now, as adults, they will change their attitude and behavior to one of trepidation and anxiety when they know I have a migraine, especially when they know I have taken an acute medication such as Maxalt because of the personality changes that occur with it.

The pain starts on the side of my left nostril, just below my left eye. It ranges from a tap, warning me of what is to come, all the way to an explosion of unrelenting pain as if an ice pick is slowly being plunged down the length of my face in the middle of the night.

The side effects of the medications, both preventative and acute have proven intolerable, so much so that I often could not continue to work or care for my children as I was either far too groggy all the time, or the medication created a migraine of its own. I was even unsafe as a special education teacher at school because I was so sleepy.

It is my strong belief that my failed marriage was, in large part, due to the intense and frequent suffering with the migraines and the negative personality changes that invariably accompany the medications. Because I had to raise my two children, I could not leave work on disability.

My late mother told me that I'd had headaches since about age two. I recall almost daily headaches throughout elementary, middle, and high school. I was finally diagnosed with migraines at age 22 by a university health center doctor as she prescribed my first of decades worth of Demerol injections at least once or twice each month.

I was diagnosed with chronic migraine in 2013 by my current neurologist. It was then that I started Botox injections per FDA protocol. There was about a 50% reduction in frequency and intensity. That was wonderful. However, the impact of the migraines that occurred even with the Botox, especially when I am due for injections, continues to plague my family, friends, and me.

The preventative medications trialed and failed were:

Nortriptyline, Amitriptyline, Tegretol, Topamax, Gabapentin, Neurontin, Depakote, Lamictal, Zonergan, baclofen, Inderal, Lyrica, I know there are many, many more from over the years, but I cannot recall them just now. I'm sure I will when I press send on this email.

Side effects of preventative medications (including, but not limited to):

- Extreme fatigue,
- lethargy,
- increased depression,

- anxiety
- irritability,
- increased migraines,
- not effective,
- **word-finding**
- **expressive language deficits,**
- **almost dysarthric speech,**
- **poor short-term memory,**
- **inability to work effectively or work at all.**

Those in bold have some level of continuation today. Those were from the Topamax, which I took for about a year, with no positive impact on the migraines. As a speech and language pathologist, the impact of having those deficits while working were indescribable. Of course, the others were terrible, too.

I am so grateful for Aimovig. It was my last hope for any kind of normalcy and relief. With Aimovig, my migraines decreased from 8-12 per month to approximately three per month. What a gift!

The migraines I still get range from 5-10, as measured by a standard pain scale of 1-10. I take medication when the pain is at a 4 or more. The only acute medication that has worked for me has been Maxalt. Even its generic does not work, and the side effects are not tolerable. Because I require the brand name medication, I am at the top tier cost. I also have to obtain prior authorization whenever my part D company is absorbed or sold to another entity, which has occurred three times this year.

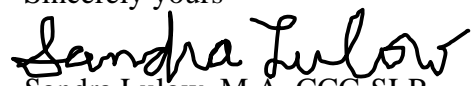
I also use a Sumatriptan injection and nasal spray when the pain is so severe (8-10), as a last-ditch effort, but those do not work, either. I then end up at the emergency room for a morphine drip. Since starting the Aimovig, I have noticed that the migraines I do still get have increased intensity and duration, usually lasting for 2-3 days. I then struggle with the “migraine hangover.” The side effects from Maxalt are fatigue, irritability, increased depression and anxiety and lack of clarity of thought, significant difficulty making decisions and organization. Obviously, it is with great trepidation and forethought that I take that medication. I just have to count those days as lost ones each month. This is unacceptable for my quality of life and for those with whom I interact.

The cost of my migraine care ranges from \$400-\$600 per month.

Because my life continues to be plagued by migraines, however successfully decreased in frequency these days, a more effective acute medication with fewer devastating side effects is imperative.

I greatly appreciate your taking the time to read this letter and hope I have successfully conveyed the terrible quality of life I have had to endure due to this horrific disease. I hope you can hear my plea for you to enable this new acute rescue medication, and any others developed, to be covered by insurance.

Sincerely yours


Sandra Lulow, M.A. CCC-SLP

Speech and Language Pathologist

December 6, 2019

Subject: Public comment on ICER review of acute medicines for migraine

Name: Sarai Jones

Dear ICER

I am writing you to ensure that you fully understand the impact of living with migraine disease, the affects it has on my life and the desperate need for patients to have access to new and different medications to treat the disorder.

I started having migraines 19 years ago after a car accident. I started with periodic symptoms that might attack twice a month to more recently chronic migraine which I've come to find that it's not if I'm going to have a headache today, but how bad is it going to be today. I currently stay in constant low level pain. When I get the higher level pain, which happens an average of 15-20 days per month I also have other debilitating symptoms. I am nauseous, any smell can make it worse. I have little or no balance and coordination. People that don't know what I'm dealing with might think I'm drunk. I cannot concentrate. I have a tingling numbness running down the side of my face, neck and into my shoulder.. I can't be around noise and light as it intensifies the discomfort. I have visual disturbances that make driving impossible.

Migraine has a major and negative impact on my life. I miss a lot of work and have days that I am not fully focused in my work. I miss family events or have to cut my time at them short because I'm getting ill. Many evenings I have had to ask my family to turn off the tv and I've gone to bed early to try to get some relief. Shopping with me is a nightmare. I have to be picky about every soap I use to ensure that I don't inadvertently make myself worse as well as manage my known diet triggers.

Migraine is a very challenging disease to treat effectively as there is no cure and many of the medications used to treat migraine don't work well. Over the course of my experience I have tried 10-12 different acute treatment medications. Some medications are effective for a short while and then stop being effective. Others, such as maxalt and zomig, I had horrible side effects and no true relief from my symptoms. Being shut down by the migraine is bad enough, having a medication get you woozy, shaky, and loopy on top of it is even worse.

Migraine is an expensive disease to have, I spend \$1,000 each year to try and manage my migraine attacks

My quality of life suffers deeply as a result of this disease and I demand access to new acute medications that help stop the attacks and avoid the pain and disability I experience with migraine. I ask that you respect my pain and fairly assess these new medicines so that I can be healthier and more productive in life

Sincerely yours,

Sarai Jones

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I was around 6 years old when I first experienced migraine. I remember running to my granny telling her I ran into the glass door because I hated the thought of my family knowing I was sick. I would go to extreme lengths to fake fine so they wouldn't know. I remember how my head would throb so bad that just moving my head the slightest was excruciating. I felt too sick to move. I remember hiding my head under the cover and just waiting for the pain to lift. During this time my migraines were really triggered by small things. The smell of common food dishes, foods that normally were fine, during a migraine were repulsive. The smell alone would make my head hurt. Along with certain smells, I was also triggered by MSG, weather changes, and stress.

During some of my worst migraine attacks I would feel like I was going to pass out. Along with the presyncope episodes, I also experienced nausea, flushing, fatigue and the pulsating pain. During my pre-teen years things changed. I began to experience different headaches along with the migraines. These headaches were more behind my right eye. I was sensitive to light, my nose would run, and the attacks happened multiple times a day. I would also wake up in the middle of night in pain. It was some of the worst pain I ever experienced. I remember episodes when I was in so much pain that I contemplated going to the ER. There were times I would literally have to sit down in the shower because the pain was so bad, I couldn't stand up.

I have had migraine disease for 20 years. I have officially been diagnosed with migraine w/o intractable and w/o aura. I have recently been under evaluation for Cluster Headache. I experience an average of 15+ headache days per month on a flare up month and 4-5 on a good month. When I have a migraine attack, I feel helpless. The pain stops me in my tracks and demands for me to lie down as still as possible. As much as I would like to fake fine, migraine forces the little will power in me to "push through" to obey and respect that in that moment I am very sick and not doing well.

Migraine has had a major and negative impact on my life. It has shaped so much of my life. Although my migraines and other unspecified headaches are controlled now, for so long they were not. They affected many of my decisions concerning college, work, and hanging out with friends. In the back of my head, I

would wonder if it going to be a “good day” or a “bad day”. I found at times when I was doing well, I had the expectation and fear that the migraines would flare up again and ruin everything. It effected my mental health. I felt as if it was all in my head. I felt misunderstood many days because people didn’t understand how I could have yet another “headache”. They didn’t understand how taking Ibuprofen and Tylenol was not helping me but rather making things worse. The hardest part was trying to get ahead of the migraine struggle. I would research for hours on end, the various ways to get the migraines under control. I spent thousands of dollars devoting both time and money to ensure that I got the best treatment. I have seen 5 specialists in neurology and headache care, and even with some of the best, I only manage to get symptom management. Migraines are multi-faceted and effect multiple areas of one’s life. Symptom management is just a small part of the treatment plan.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don’t work very well. Over the course of my life I have tried 15 different treatments for my migraine ranging from OTC meds, abortives, and preventatives. I have been on 5 different preventatives at varies times in my life, including: Topiramate, Nortriptyline, Periactin, Verapamil, and Aimovig. The abortives that I have been on include: Maxalt, Imitrex, Zomig, Midrin, Ibuprophen 800mg, Indomethacine, and Tizanidine. I have been on as many as 3 preventatives at one time alongside supplements. This past year I had gotten to the point where I was on Nortryptaline, Topiramate, and Verapamil at the same time along with Indomethacin, Maxalt, and Tizanidine for acute treatment. While I was trying out the various treatments for migraine, I experienced a great deal of side effects including: weight loss, loss of appetite, pens and needles, nausea, loss of words, memory loss, fatigue (Topiramate). Nortriptyline and Midrin caused presyncope episodes, low blood pressure, and elevated heart rate. While many of the abortives helped, the relief was often short lived. It wasn’t until the beginning of this year that I was able to gain traction. My new plan consisted of trigger management, Verapamil TID, Aimovig injection, and the Zomig nasal spray. Even with my new treatment plan, the Zomig often makes me feel worse before I feel better.

Migraine is an expensive disease to have, I spend hundreds each year to try and manage my migraine attacks. The expenses range from MRIs and EEGs all the way to Migraine glasses and the cost of seeing specialists.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and

disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Shaquita M. Cornelius

Dear ICER,

11-25-19

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had a neurological disease called migraines for over 30 years but was not diagnosed and treated until about 13 years ago. I never understood why certain sensations would bother me. For example, sunlight, loud noises, smells, weather changes. Food would also trigger and amplify the symptoms of my migraines. Migraines have changed my life. I have experienced the debilitating pain, disabling me to carry out daily activities. In the past 13 years, the occurrences of the disease of neurological migraines has escalated to every other day. I have altered my lifestyle in hopes to decrease symptoms and frequency of migraines. These lifestyle changes include changing my diet, exercise routine, topical creams to possibly slow down a migraine, etc. I've explored many migraine medications, therapy and treatment options including chiropractor, acupuncture, massage therapy, Botox, nerve block, trigger points, and SPG procedure. However, none have worked or helped. The triggers that cause migraines for me are MSG, strong smells, cooked meat, camp fires, clicking sounds, as well as barometric pressure changes.

Migraines have taken everything from me, negatively affecting the quality of my life, nothing seems to help. I try and hide a migraine when I have one. If it is a bad one, no one will see me. I hide away in my bed. It is becoming very hard to go through a day without migraines or the migraine hangover after effects. I try and tell people what it feels like weekly of having this invisible disease. It's like having the flu every week, or like a bad sinus cold every week. I have them in the back of the head, my temples, which have a vice like feeling, also, sinus pressure, nausea, and zaps in the head are a few of the symptoms. The total exhaustion tired drained feeling I get the day before and the day after a painful migraine is also taking my quality of life away.

Once the Migraine appears, I have many different symptoms, neck pain, severe head pain, also sinus pressure, nausea, eyes zigzags in my vision, pain in the temples, foggy feeling, migraine hangover and, I am unable to concentrate. There are many days that I must go in a dark room, ice pack pills, and hide away from the world. Those days no one sees me. This disease takes my life away. I am always trying to hide it and push through the day. There seems to be a lot of silent migraines also, like cold feet, emotional, angry, sinus pressure. You don't have to have pain in the head to have a migraine. Thank goodness for some of my rescue medication it helps me to push through the day. For my family the impact of having migraines they really feel sad for me. There is nothing they can do, and they don't like it. I have had to cancel many functions because of the migraines. The Family at times just don't understand that it is a daily job for me to watch my triggers. They also at times really get sick of hearing about my migraines all the time. I just try not to talk about them sometimes. I wish I didn't have migraines, but they are part of my life. Migraines are a neurological disease. Having migraines is

the most debilitating disease of day to day life. Until someone has had them they will never understand. It is not just painful, but you can still have migraines with no pain, nausea, fatigue, tiredness, foginess, can't think right, can't talk straight, trying to power through the day is a struggle.

Hopefully The new treatment coming on the market this year 2019, Will be affordable. USA has over 37 million people that have the neurological disease called migraines.

When I get my migraine medication there are usually only 6 pills. The insurance won't cover any more. I have more than 6 migraines a month, I have about 14 migraines a month, so I try to pick the worst ones to take the medication. Sometimes my medication are 3 or 4 tier and I can't afford them. It cost over\$ 150.00, a month per medication. Also, my insurance is telling me now that as of 2019 they won't let me have my medication that I have to have generic, but the generic does not work for me.

For all of us who experience migraines, we need to try not to let migraines take our life away. We need to except we have migraines and we can't give up. With the help from the pharmaceuticals and ICER to make the medications affordable to lesson our discomfort. To help us have some quality of life. The most important thing is getting relief and my quality of life back. These painful migraines, pre-migraines, and migraine hangover has taken my life away. Please make it affordable and HELP us!

Thank you for your time

Sharon Rhoades

1475 Center st.

East Aurora, NY, 14052

sirluck@gmail.com

716-481-0185

Subject: Public Comment on ICER Review of Acute Medicines for Migraine
Sherry W

I am writing as the mother of a 21 -year-old. My son was diagnosed with Transformed Chronic Migraine January 2015. He had his first Migraine Headache attack without Aura at age 11. I now know that his “stomach aches” in Grade School and Middle School were Pediatric Migraine. We knew it was possible he would inherit Migraine as his Father has suffered with them since he was a child and his father’s Mother, Grandmother and an Uncle also had Migraine. But we had no idea that Episodic Migraine could transform to Chronic Migraine for years. Both my husband and mother-in-law had times when they were high frequency for months at a time but not years. Until my son was in the 8th grade he was Episodic. Then the Spring of 2013 my son had his first migraine with aura and had almost daily migraines for 3 weeks.

Here is how he described his first migraine with aura for an English Assignment in the 8th grade:

“The first time I got one was during a Math test, I still remember looking at the numbers on the page as my mind began to slow; I forgot how to multiply fractions, I forgot how to add them, I forgot what fraction meant, I couldn’t read the words on my page, I couldn’t read, the symbols on the paper made no sense. The scribbled lines seemed to fade into pitch black, as if someone had dropped a curtain over my eyes. I looked up from my paper scared and confused about what was happening. The black began to lighten, I tilted my head up hoping the fluorescent ceiling lights would clear up the rest of the darkness in my eyes. Looking straight in the lights, bright red spots began to appear moving around my field of vision. I could make out shapes behind the red spots, I made my way to the teacher’s desk only stumbling over one bag. I asked him if I could go to the nurse. The nurse asked me to describe my symptoms. While I was describing the red spots that formed translucent holes in the black, I screamed. It felt as if someone had taken a knife and stabbed me behind my eye. The nurse had me lie down on the bed and just like that another stab. This time tears began to drip down my cheeks. I could hear the nurse calling my mom in the background. Another stab, this time harder than the last, they continued each one more painful than the previous. I started to sob. My vision cleared up but now that I could see the lights, they hurt, it was too bright. The call in the background became louder and louder until every word was the bang of a cymbal in my ear. I closed my eyes and put a pillow over my head. It didn’t protect me. The knife kept stabbing, the light kept blinding and the cymbal kept banging.”

Then in his sophomore year of high school he transformed from episodic to Chronic Migraine. He began experiencing on average 25 migraine headaches per month with the pain level on a 1-10 scale peaking on average at 8-10. He was living his life to the fullest his freshman and sophomore years of high school. He was on the Varsity Fencing Team and he was a nationally ranked Epee Fencer who qualified for the Junior Olympics. He was taking all Advanced Placement classes and making A’s in them. He was active in several clubs at school. He started a club to fight Childhood Hunger and had a great social life. He was planning on Fencing NCAA at a Division 1 school and majoring in Biomedical Engineering. Chronic Migraine hijacked his life on January 8, 2015 in the middle of midterms his Sophomore year. On the 4th day of a migraine with triptans and NSAIDs not touching them we went to the Emergency Room. He was

given an infusion and sent home with a high dose of prophylaxis originally prescribed to Epileptics. The migraine stopped but he became uncoordinated, zombie like and very depressed. We went through many different anti-epileptic drugs for prevention with some slightly reducing the number of migraines but the side effects were intolerable and one medication actually made the migraine frequency and severity worse. We tried all of the triptans: oral, nasal and injection and none of them worked. He was unable to attend school. Here was my 14-year-old scholar athlete spending almost every day in his bed with the lights out, curtains drawn and blanket over his head. My fluent German/English speaker couldn't hold a conversation, process a thought or stand without becoming so nauseous he would vomit

He has only a few symptom free days per month on average 3-6 days. He either has a full-blown migraine attack or Premonitory or Postdrome symptoms most days. His non-headache symptoms include: Cognitive Dysfunction, nausea, vomiting, fatigue, light sensitivity, sound sensitivity, smell sensitivity and aphasia. He hardly leaves the house. It is amazing what he can accomplish in the few hours he is coherent. Botox has reduced the pain but none of the other symptoms. He has tried many epileptic drugs, blood pressure medications, tricyclic anti-depressants, DHE, ergots, triptans, NASIDs, Opioids, steroids and CGRP injections. He has had physical therapy, Active Release Technique with a chiropractor, Mindfulness breathing training, Osteopathic Manipulation, Cranial Sacral treatments, Cognitive Behavioral Therapy, Acupuncture and tried sTMS. Nothing has helped his non-headache pain symptoms that occur almost daily and the acute medications currently available have only reduced the headache pain slightly, he still can't leave the dark room on most days and his headache frequency while slightly reduced is still 19-22 per month.

He completed his Associates Degree in at the Honors College of our community college in Biology and Pre-med graduating Magna Cum Laude. He was lucky that he was in the Honors College that only allows 60 students and the professors got to know him the first 2 months of classes his Freshman year when he was having less attacks. Between his understanding professors and some on-line classes he was able to finish his Associates Degree. He has taken a year off to try and get a better handle on his Chronic Migraine. His plan is to go to medical school but Chronic Migraine is a huge barrier for him to climb over to complete his education. He was a part time Lifeguard for a short time but the migraine attacks made it too difficult to be on the schedule. He went to substituting but they stopped calling him because he had to say no so often due to migraine.

We have spent in addition to insurance premium payments over \$20,000 a year for co-pays, hospitalizations and treatments denied by the insurance company. That's more than \$120,000 since he was diagnosed with Chronic Migraine 6 years ago. Migraineurs desperately need more acute medications covered by insurance so they can live a more productive life without going broke.

Best regards,

Sherry W

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Stacy Bohm

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for more than 25 years. I experience an average of 4-6 headache days per month. When I have a migraine attack, I feel intense pain, nausea and pretty much debilitated where I must lay down in a dark room with ice on my head.

Migraine has a major and negative impact on my life. The pain is so debilitating I am unable to work or function normally. I have missed many special events due to an incapacitating migraine.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried many different treatments for my migraine. The treat don't always work, or they make me tired or cause me to have rebound headaches.

I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend thousands of dollars each year to try and manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Stacy Bohm

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 40 years that began at the age of 7. I experience an average of 6 headache days per month. When I have a migraine attack, I am completely debilitated to the point that I don't care whether I live or die. The pain is horrible and I just lie in bed and get through the pain as best as I can. My vision is impaired and my hearing and sense of smell are super sensitive so that any little noise causes my head to hurt more. My head and neck throb with pain and nothing including massage, heat or ice seem to help.

Migraine has a major and negative impact on my life. I have 2 teens now and they have seen me suffer through the years. I don't even remember how I managed when they were young on the days that I had migraines, and now they are older, they have missed days of school, church, sports games and piano recitals because of my migraines. I don't have extra help from family, so if I can't take them to one of their commitments and they can't bum a ride, they don't go. Of course, I feel terrible about that because we take our commitments seriously and I want them to go into life with that sense of commitment to self, family, others, teams etc... I also need to go back to work but I am so afraid I won't be able to hold down a job due to the fact that on any given day, I could get a migraine. My attacks last about 24 hours, so life has to stop.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried about 5 different treatments for my migraine. Some were not covered by insurance so I would just use the samples the Dr gave me and others, primarily Immitrex, were covered but not as effective for me. I ultimately developed heart issues most likely as a result of using Immitrex over 2 decades so I stopped use of all migraine meds about a year ago. The only thing I take is Naproxen 500mg which doesn't really help much other than to take the edge off. I would like to try Cefaly as a non medicine alternative, however it runs about \$400 and my insurance does not cover it. We are on one income and barely making ends meet, so I cannot buy it.

I am excited to know that there are new treatments becoming available in 2020. One of which is a ditan which I could take since it would not adversely affect my heart. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend about 72 days each year to try and manage my migraine attacks. That is crazy and my family suffers the most including financially and emotionally. I have seen neurologists and headache specialists but there really isn't much they can do. It is amazing that with all the knowledge we have, migraines are still so elusive with regards to understanding causes, prevention and treatment. We really need insurance companies to approve a vast number of migraine medications because each person I know that suffers, seems to respond to different ones. This is NOT a one size fits all category,

especially when you throw in each individual's medical conditions and tolerance to meds.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person. Thank you so much for reading this letter and taking into consideration the serious nature of the decisions you are making that could impact millions of sufferers. You may even have a friend or family member that suffers and I encourage you to speak with them for a greater understanding. Thanks again and have a great day.

Sincerely,
Stephanie Principato

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Stephanie Rockford

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines. I am currently on Botox injections which has been the only medication that has been effective in controlling my migraines. I still have break through migraines due to circumstances beyond my control such as weather patterns and at times sleep deprivation.

I have had migraine disease since I was a child, undiagnosed for 43 years and diagnosed the last 7 years. That is 50 years of my life and I can count on 1 hand the number of years I have felt fully functional and well. I experienced chronic migraines for an average of 28 headache days per month for at least 3 years. I now have an average of 2 to 3 headache days a month except in the Spring. That is when the need for acute medication is important to me. I take the maximum allowed Botox and wait with bated breath for the nonparalytic Botox so that I can have more when the Spring arrives every year! The Spring lasts for about 3 to 4 months. That is 1/4 to 1/3 of the year.

When I have a migraine attack, I feel underachieving, unsocial, temperamental of depression and anger. I have to push myself at work, personal life and feel exhausted with nothing more to give personally or to the community. I have multiple symptoms that have ranged from complete body pain, light and noise sensitivity to hallucinations of 3D objects, movement, noise and loss of partial eyesight. Numbness in multiple spots over my body, constant nausea, impaired speech, impaired cognition and difficulty reading. Extreme facial and eye pain, tinnitus and seizures round out the list. This disease affects the entire digestive system causing even more problems.

Migraine has a major and negative impact on my life. I was unable to work or go to school to further my education for 4 years. I was not able to qualify for disability and went through my entire retirement, money from my house. I had many expensive medical bills for years. My first neurologist would not consider Botox as an alternative to treatment. I spent years taking ineffective medicines before finding a neurologist that would consider using Botox for my migraines. That still meant going through a qualifying series of drugs even though I had already tried many different medications. To further complicate matters, I am allergic to many drugs and inert ingredients found in most medications. I had a number of severe reactions and adverse effects from the medications that I did try for my migraines. They were also ineffective. There is a desperate need for more acute medications for breakthrough migraine and the continued research for solutions to chronic migraine such as the nonparalytic version of Botox.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried over 16 different treatments for my migraine. That is in the last 7 years since my diagnosis. My medication side-effects have ranged from an increase in migraine pain to joint pain, nausea, seizures, urinary incontinence, burning sensation in stomach and joints, rash, bleeding of gums and bleeding from my intestines (red blood in stools), and difficulty in breathing. Triptans do not work for me. Sumatriptan is akin to taking saline in that I have NO effect on my migraine. Relpax caused bleeding gums. I could continue naming triptans and other medications, suffice to say they have not worked and caused more harm than the original migraine.

Migraine is an expensive disease to have, I spent thousands of dollars each year to try and manage my migraine attacks with gold level insurance for several years when my migraines were at their worst. Because of my problems with allergies, I had to pay completely out of my pocket for some medications because they had to be compounded without the normal inert ingredients. My insurance now covers the vast majority of my Botox injections, otherwise that would cost me thousands of dollars every 3 months. I do not have at this time an acute medication to take for breakthrough migraines. Lidocaine blocks do not work for more than several days and my migraines can last up to 2 weeks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Stephanie Rockford

Migraine Foundation
CHAMPS

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and on my family and the desperate need for access to new and different medicines.

I have had migraine disease for over 20 years. I experience an average of 8-10 headache days per month. When I have a migraine attack, I am unable to perform even the easiest of tasks. Migraine is a full body experience. Not just head pain.

Migraine has a major and negative impact on my life. I had to quit a job I really enjoyed and I have not had a pain-free vacation with my family in years. Migraine also caused me to gain weight which brings on totally different issues.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried over a dozen different treatments for my migraine with no relief and major side effects. Currently, triptans work for me about 60% of the time, but cause severe joint pain. I am seeing good results with the CGRP, Emgality, but it is not covered by my insurance. Luckily, I qualify for the savings card. Not sure what will happen when the savings card expires.

I desperately need access to new types of acute treatments, and need for the new CGRP preventatives to be covered by insurance.

Migraine is an expensive disease to have, I spend thousands of dollars each year to try and manage my migraine attacks. This would include insurance, medications, both preventative and abortive, supplements and massage on a regular basis. This does not even include all the trips to the doctor.

My quality of life is very negatively impacted by migraine and I demand access to new acute and preventative medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Susan McManus

Community Support Ambassador with Migraine Again and The Migraine World Summit

Dear ICER:

December 3, 2019

For the first Thanksgiving since the onset of chronic migraines a **decade** ago I did **not** have a **migraine**! It was wonderful!

I receive 34 **Botox** injections every three months and one **Emgality** injection a month. I have emerged from a small, dark world back into the light of healthy life. It feels miraculous. The **Botox** alone was helpful, but the added **Emgality** has been **incredibly effective**. There is hope now for people with chronic migraines, something that has been in short supply.

Below is what I tried over the years. Some of these improved the overall quality of my life, but **none got rid of the migraines as Botox paired with Emgality do**.

- Changed diet
- No caffeine
- Gluten-free
- Butterbur
- CoQ10
- Riboflavin
- Magnesium
- Sunhats
- Sunglasses
- Not traveling
- Acupuncture
- Occipital and forehead injections
- Amitriptyline
- Noritriptyline
- Atenolol
- Propanolol
- Massage
- Chiropractic care
- HRT
- No chocolate
- Dark chocolate at onset
- No alcohol
- A slew of supplements (trace minerals, alkaline water, this and that and this...)
- Hydration
- Dim, quiet rooms
- Lots of sleep
- Cranial/sacral therapy

- Tapping Therapy
- Meditation/Biofeedback
- Flexeril
- Baclofen
- Peppermint oil
- Intra-nasal lidocaine
- Specially formulated Teas
- Ice packs
- Osteopathy
- Stretching
- Balms to rub on the head
- Pressure points
- Binaural music
- Not watching TV nor movies, reading, knitting, looking at a computer, nor going out at night because of bright car lights
- Steam
- Hot packs
- Soaking baths
- Yoga
- CBD
- Walking
- Avoiding stress
- Avoiding fluorescent lights
- Amber lenses
- **Quitting two jobs and becoming unemployed**

Of course, this list does not reveal by itself that **every medication** (besides Emgality) **sent me into a string of migraines when I started them, upped a dose, lowered a dose, stopped them. Each change took two months to see if the drug and/or dose would help. Then if it didn't help, it took two months to get over the medication-related migraines. Emgality was the first drug that worked immediately, did not give me any migraines, continued to increase in efficacy, AND caused no side effects!!**

It does not surprise me that **Emgality** worked since it is the **first class of drugs (CGRP) designed precisely to prevent migraines**. I do not have seizures; I am not depressed, and I already have low blood pressure, so it is no wonder that Atenolol, Amitriptyline, etc. helped very little or not at all, but caused many side effects.

When I called Optima to find out what they covered, I was patched through to a supervisor who got on the phone, and before I said a word, almost shouted, "It is *dangerous* to take **Emgality** and **Botox** together! There is *no* evidence that taking them both reduces migraines! Your neurologist has been *lying* to you!" As I listened to the rant, I thought about how the migraine

life had felt as if I were enduring a Siberian winter, and then with the gift of **Botox** and **Emgality**, it felt as if my neurologist had built a fire and given me a fur coat. It is not hard for me to determine who has my best in mind and who benefits most through obfuscation, or not to put too fine a point on it, lying.

Parenthetically, Optima had to return \$7000.00 to me because they had broken the law by not using enough of my premiums towards medical care.

Thank you for looking into this. I appreciate your time and effort sorting through the many factors.

Blessings and Happy Holidays,

Susan Elizabeth Joffrion Shane *back in the light of life!*

Subject: PUBLIC COMMENT FOR REVIEW OF ACUTE MIGRAINE MEDICINES.

From: Tara Severns

Dear ICER,

I'd like to briefly share with you my migraine story in hopes you may better understand how much migraines cost (and not just in terms of dollars — see [10.1097/JOM.0000000000001450](https://doi.org/10.1097/JOM.0000000000001450) for that), and how desperately important having access to new medications is for people like me.

I've had migraines for 34 years. Ten years ago, my occasional and (mostly) mild attacks transformed; I went from having mild pain several times a month to debilitating pain *every single day*, often accompanied by difficulties with speech and thinking. I became distant from family and friends, and my productivity at work was severely curtailed.

I've spent tens of thousands of dollars seeking answers from a dozen doctors and trying many acute and preventative treatments, including many off-label medications for conditions I don't have — antiepileptics, antidepressants, pain killers, and Botox. Some of these shouldn't have been prescribed because of my heightened risk for strokes due to head trauma and an irregular heartbeat, but there were almost no migraine-specific treatment alternatives. Out of desperation, I also tried many costly, ineffectual “natural” remedies, as well; herbs, vitamins, acupuncture, chiropractic, etc. On these, I was throwing money away for nothing.

Things got better a year ago when migraine-specific preventative medications finally became available to me. Aimovig provided significant relief, with my average daily pain levels dropping from 6 to 3, but it was no cure. I switched to Emgality five months ago and had an even better response. I've begun having several days in a row without any migraine symptoms at all, and the pain level is often less than 3.

I still have three or four debilitating attacks per month that keep me from my family and work. When these strike, I still take a triptan — even though it's contraindicated because of my stroke risk — because it's the only thing that can help me when the pain comes, though it does so only about 40% of the time and then only partially.

New treatments (ditans and gepants) have been developed that should be safer for me. I just need access to them.

Thank you for keeping me and others like me in mind as you carefully review these new medicines. They may hold our only hope in regaining a fully-lived, productive life.

Kind regards,

Tara Severns

December 3, 2019

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Teresa B.

Dear ICER,

I am writing to ensure you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

Migraine is an incurable neurological condition. There are many challenges living with a chronic disease and the most pressing often involves our healthcare system: finding well-trained specialists, determining the most effective and often complicated treatment plan, securing insurance to pay for the hard-fought treatments and working with pharmacies who dispense the medications. I feel like my resume and LinkedIn page should list “Full-Time CEO of Self Advocacy for Medical Treatment” in addition to my paying positions. Countless hours are spent navigating a healthcare system laden with “fine print” and legalese.

As I write this, I am aware how fortunate I am to have health insurance. Unfortunately, healthcare is now a privilege. I am grateful for access to doctors, medication, insurance and alternative treatments. I am also fed up with the cost (our medical insurance costs us more than our mortgage each month) and layers of exhaustive research and advocacy medical care requires.

It took me many years to finally seek out a specialist to figure out my horrible headaches. More years passed until I fully accepted I had an incurable disease. I experienced my first migraine 30 years ago, the summer I celebrated my 18th birthday, and I made my first appointment with a neurologist 14 years later. In my 20s an internist prescribed Caffergot (Caffeine pills) only to cause insomnia and trigger more pain. It was a few years later my OB/GYN, after suffering a miscarriage, referred me to a reputable specialist, who did not take insurance. Each doctor’s visit was \$180-\$200 (in year 2002 money value). I finally had a diagnosis of migraine and a recommendation to start trying medications to abort the pain at the onset of a headache. I ditched the Costco sized bottle of Excedrin and heavy doses of caffeine, the only combination that would take a slight edge off the pain. I loved teaching young children during this time, but I must admit that an untreated migraine attack in a kindergarten classroom is excruciating. I spent years spending thousands of dollars on medications, chiropractors, holistic doctors, acupuncture, supplements, tests not covered by insurance, elimination diets and the list goes on and on. (I continue to combine many alternative treatments to manage my pain and assist my body’s recovery.)

In some ways it was much easier 15-20 years ago to try different medications to manage the pain. My neurologist was able to offer medication samples so I could test for effectiveness. I tried many triptans (an abortive medication) before I found one I tolerated, still causing fatigue and nausea, but reducing the pain. During these years I also started down the road to find a preventive medication. Unfortunately, there were not medications designed specifically to prevent migraine until last year. Medications initially developed to treat Alzheimer's, epilepsy had anecdotal reports of some migraine relief. Each new medication came with a list of side effects and most were not effective. I found an epilepsy medication I tolerated well reducing headache days, but years later I paid the price. I developed kidney stones and unknowingly created a secondary health condition needing treatment and attention...another specialist, more tests, another diet modification and a trip to the emergency room as I passed a kidney stone. I learned the hard way passing a kidney stone is as bad, no worse, than suffering a migraine.

Two more years passed before I found a headache specialist. The first neurologist in my new town stated, "I am not sure what exactly you want me to do for you. You have tried the three classes of drugs to prevent Migraine." I thanked him and never returned. Unfortunately, I'd heard similar statements before. I imagine it is difficult for a doctor to treat a patient with an incurable condition. Guess what? It is even more challenging to be the patient with an incurable condition! I do not expect my doctor to cure me, but I do expect my doctor to stay informed about my condition and work to create a treatment plan, no matter how long it takes or how complicated. This is why finding a headache specialist is crucial. It took me 23 years.

These past two years I experienced the most effective treatment plan to date. We are told that this is the most hopeful time to be a migraine patient. There are more advocacy efforts to reduce the stigma of migraine and get the word out about the disabling toll migraine takes on our population. The American Migraine Foundation states, "Despite the fact that more than one billion people are living with migraine worldwide, it has historically been overlooked as one of the most disabling diseases on the planet." Almost 40 million Americans are impacted by Migraine and it is three times more common in women than men. Additionally, we are in an era when medications are being designed specifically for migraine. In 2018 the FDA approved three preventive migraine medications with more in the pipeline. The combination of these new anti-GRP migraine drugs and Botox has resulted in a 70% reduction in my headache days. Instead of 15 pain days a month I am now between 6-8 days. Not a cure, but progress.

At this point my story seems hopeful. It is, but insurance worries are threatening my current and successful treatment plan. A series of events, including securing a new insurance plan, put my successful treatment plan on hold as I appealed denial decisions. The "migraine brain" is different and sensitive. Any sudden change, especially a carefully prescribed treatment plan, will result in more pain days. After months of applying, appealing, calling, scheduling and worry I have secured approval for my medications and am hoping my reduced headache days return.

This past summer I celebrated my 48th birthday. Time seems to pass at an alarming increasing speed. I am in the best shape of my life. Despite my healthy lifestyle I still experience regular pain. Migraine is part of me. My “migraine brain” has impacted my adult life as much as my profession, accomplishments, relationships and education. Migraine is a big part of my story and I hope sharing it will bring more understanding, awareness, attention, improved treatments, access and progress.

I urge ICER and insurance companies to support me and all people living with migraine to have access to new acute migraine medications so we can live healthier and better lives.

Thank you for reading my story and taking important action to support people living with migraine.

Sincerely,
Teresa B.

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Teri K.

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 12 years. I experience an average of approx. 20 headache days per month. I have chronic migraine. When I have a migraine attack, I feel many different symptoms along with pain. I usually begin with a pinching sensation at the back left or right side of my skull (sides vary) near my occipital nerve. Some pain is experienced as a sharp, stabbing pain. The pain progresses with movement/activity until my whole head throbs. I also experience, nausea, fatigue, sensitivity to light and sound. Some attacks cause my skin to hurt or burn.

Migraine has a major and negative impact on my life. When I can identify a headache escalating, I will take measures to stop it depending on the situation I find myself in at that particular time. If I am at work, I will try taking Excedrin Migraine or ibuprofen to stop the pain. I will also shut off the lights in my office (my window blinds always remain closed). If I am at home, I will rest in bed or a recliner with ice on my head to numb the pain, take medication such as Fioricet (for pain) and prochlorperazine (for nausea) and tizanidine (neck pain). Sometimes I am able to fall asleep and get some relief because medications work less than ½ the time but other times, the pain makes me very restless and I cannot get comfortable. I frequently experience “let down” headaches after I get home from work likely due to stress, cold/hot temps, lighting, etc. I do not plan any activity after work days and frequently spend at least one day per week inactive, recovering from the exhaustion of being in pain.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried many different treatments for my migraine.

Triptan medications do not abort my migraines and sometimes making my head pain worse.

DHE nasal spray did not have any effect. It was like taking nothing.

Tricyclic antidepressants such as nortriptyline made me constipated.

Beta blockers lowered my heart rate such that I was tired all the time and could not function. The same effect with verapamil (calcium channel blocker).

I have tried injectable ketorolac without complete relief. The pain goes away for a little while but then returns when the drug wears off in about 4-6 hours.

I tried injectable sumatriptan and the negative side effects of nausea, flushing, chest pain hit me immediately in addition to the injection site soreness.

Topamax was effective at prevention for a short time (approx. 6 months) then it seemed the headache days crept back up. The predominant side effect I experienced was forgetfulness. I work in the pharmacy field and forgetfulness became a patient safety issue so had to be stopped. The paresthesia in my feet was also annoying.

I have tried SSRI medications for anxiety and pain associated with anticipation of the next migraine.

I have tried acupuncture. If I went to a treatment with a headache, it would be a full blown migraine afterward. If I did not have a headache going in, I would develop one after the treatment.

I have tried occipital nerve blocks with methylprednisolone and lidocaine which offered short term relief (approx. 2 weeks) before the pain returned. Since the nerve blocks were successful, the pain physician felt I was a good candidate for occipital nerve ablation using radio frequency. This pain relief method was successful in decreasing my headache days but lasted only about 4-5 months (I endured this treatment 3 times). Unfortunately, my insurance does not cover this procedure and this physician so I had to pay out of pocket which could not be sustained long term.

Botox has been an effective prophylactic treatment to decrease the number of days/month I spend with headache pain. I have had to increase the dose to 200 units to maintain effectiveness (beyond the 155 units approved for chronic migraine) but the treatment wears off 2-3 weeks prior to my next dose and takes approx. 2 weeks to begin working. This is 4-5 weeks of the 12 week prescribed period that I have minimal relief (because abortives are less than 50% effective).

I try to maintain massage appointments every 2 weeks to relax my overly sensitive central nervous system.

I have tried chiropractic manipulation but get extremely anxious prior to the treatment. My neurologist also does not recommend chiropractic manipulation.

I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend around \$2000 - \$3000 each year out of pocket to try and manage my migraine. I have private insurance that has done a considerable amount to keep that from being higher (this total does not include my health premiums I pay biweekly).

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Teri Kirchner

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Theresa H. Petersen
2337 NW 36th Place
Cape Coral, Fl 33993
Terri.petersen99@gmail.com

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for at least 10 years and recall as a child having frequent disabling headaches. I experience an average of 20 headache days per month. When I have a migraine attack, I feel sad and alone as no one else really understands what I am going through. My Migraines have been diagnosed as Custer Migraines. I am unable to take any of the Triptan medications due to side effects. These painful headaches (usually 7 – 10 on the pain scale) come while I am a sleep and will last from 2 to 5 hours which leave me feeling weak and foggy.

Migraine has a major and negative impact on my life. Feeling tired and foggy so much of the time greatly effect my enthusiasm about life and productivity.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried a variety of different treatments for my migraine. Triptans which worked at first and then stopped and caused stomach discomfort, Tennis unit which did nothing, physical therapy which seemed to work for a while. Excedrin Migraine before bed and keeping water intake up helped for a while but then suddenly became ineffective. I now take Excedrin Migraine if I sense one coming but usually just get up with a painful headache around 2-5 am and put ice on my neck and head while drinking coffee. I avoid alcoholic beverages as they are certain to trigger a migraine.

I take Magnesium, DHEA and vitamin D which seem to help. If I miss a couple of magnesium I notice it triggers more migraines.

I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spent money on covered and non-covered insurance treatments, MRI's, Therapy and medications that end up being recycled each year to try and manage my migraine attacks. I have tried: Melatonin, Indomethacin, Nortriptyline, Dexamethasone, Naratriptan, Propranolol and countless over the counter drugs and supplements.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Theresa H Petersen

Migraine World Summit

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 38 years now. I experience an average of 20 or more headache days per month. When I have a migraine attack, I feel completely drained. The pain causes me to be dizzy, nauseous, I have hot flashes, it impairs my vision and heightens my senses as well. I walk around every day with migraine shades because of the pain from the lights. My migraines have become worse over the years to the point where they are now debilitating.

Migraine has a major and negative impact on my life. Due to me missing so much time from work, my neurologist pulled me completely out of work and I'm now on disability. I had exhausted all of my FMLA and ADA time, so they had no choice but to initially put me on leave. Once we saw that I still wasn't getting any better, my doctor recommended disability and filled out the necessary forms. I'm no longer able to commit to any events as I never know what the severity of my daily pain will be. I now truly have to live day by day as I never know what level of pain I'll be in as it varies throughout the day. It's to the point that I no longer plan family and friend outings. Most days I'm secluded in my house and I only go out when absolutely necessary. I can't leave my house in the daytime without wearing migraine shades as the sun and some artificial lights are an immediate migraine trigger. Any vehicle I drive in must have sunshading on the windows.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life with migraines I have tried several different treatments. From just about all of the abortive medications such as Pamalor, Amitriptyline, and I'm currently on Depakote, Verapamil, Botox, nerve blocks and the newer medications such as Aimovig, and none seem to help much. They will lessen the pain, but not much where I'm able to function properly. I have to take multiple pain medications at once just to get a little relief, and with that comes drowsiness, nausea, vomiting, dizziness, and I'm always extremely tired. I take Imitrex injections, promethazine, prednisone, Norco, and Diclofenac Potassium as my current abortive medications.

I've attempted several times to enter case studies and I've been denied because they feel my condition is too extreme. I've tried every new medication that is available to me, and the ones that are not is due to lack of insurance coverage.

Migraine is an expensive disease to have, in the past I've spent over 7,000 each year to try and manage my migraine attacks. This makes it so hard for us to even try the new medications because they are so expensive and the insurance companies don't want to cover them because they are new.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person. Unfortunately for me, my migraines are genetic, both my parents have them and unfortunately now all three of my children as well. Genetic migraines are harder to treat, which is even more reason for me to gain access to these medications.

Sincerely,

Tonya L. Grey

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Tracey Ivey

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 37 years. I experience an average of 12 headache days or more per month. When I have a migraine attack, I feel nauseous, lethargic and have upset stomach.

Migraine has a major and negative impact on my life. This affects my ability to participate in many social activities as well as my ability to be fully present at work. Many people simply do not understand migraines. So, they may assume that I am faking.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried many different treatments for my migraine. Most of the medications do not treat all symptoms or increase them. Additionally, many doctors are not familiar with the most recent treatments.

Migraine is an expensive disease to have, I spend at least \$2,000 or more each year to try and manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Tracey Ivey

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 25+ years. I experience an average of 10-15 headache days per month. I have multiple types of migraine, which include aura, vestibular, and chronic. I was 19 years old when I had my first attack and honestly believed it had to be an aneurysm the pain was so intense. During a migraine attack, I am extremely sensitive to sound, to light, and to smell. It is not uncommon for me to smell things that aren't there such as smoke. I have had to go to a fragrance-free environment to keep from triggering a migraine. This is incredibly hard in society today. I have comorbidities along with migraine which include depression, anxiety, PTSD, IBSD, Fibromyalgia, and Osteoarthritis. Every day is a struggle.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my migraine journey, I have tried over 20+ treatments for my migraine. These range from antidepressants, opioids, beta blockers, blood pressure medications, NSAIDS, triptans, anticonvulsant, nerve blocks, Botox, acupuncture, etc. The side effects are endless, exhaustion, nausea, weight gain, weight loss, constipation, diarrhea, confusion, inability to focus, lethargy, weakness, and dizziness, and heart palpitations, to name a few. Most of the treatments offered me little to no relief.

Migraine is incredibly expensive. I spend upwards of \$5000 yearly to try to manage my migraine attacks. I really think that number is lower than what is realistic, but I have also cut back a lot on spending since I have had to medically retire due to chronic migraine.

My quality of life is very negatively impacted by migraine and I demand access to new acute medications that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Tracy St. John

Chronic Migraine Awareness, Inc.

Name: Tress L.

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for all of my 53 years. I had severe colic as an infant. (which is now be lived to be abdominal migraines) and cyclical abdominal migraines all through my early child hood which then progresses to more severe headache type of migraines. By the time I was 32 I had to quit working. I was very ill even having stroke like symptoms. It was inferred that my health issues were psychiatric. I remained undiagnosed until 2014 when I was hospitalized again and was finally referred to a migraine specialist who diagnosed me with Chronic Basilar Migraines. I experience an average of 25 headache days per month. When I have a migraine attack, I feel miserable. I often wish that I could get a head transplant or chop my head off.

Migraine has a major and negative impact on my life. Besides the extreme pain there is also the other side effects such a brain fog, balance and speech issues, irritability and extreme exhaustion. My main triggers are light, sounds and odors. I am forced to basically live in a cave. All my windows have black out curtains. My lights and lamps have the lowest wattage bulbs possible. I wear ear plugs almost 24 hours a day even that is not enough at times. If my neighbor is mowing or family members are watching a sports event in another room I have to also wear a noise canceling head set. If I have to go out of the house even on a moderately fair day I have to wear a large brimmed hat and very dark sunglasses. I have found that the only type of glasses that make sunlight and florescent lights bearable is to wear welders shade 14 glasses. Cooking is often very difficult the scents of foods is on ten too much for my already rolling stomach. Not to mention trying to have the energy to prep then cook a meal. This is just of on the ways migraine email effect my family. I also have very limited access to my extended family. Just talking or listening is often excruciating. Telephone calls often trigger my migraines or increase the pain level. I use to be my bedridden Mothers primary care taker however I am no longer able to do that any more. I now only get to see her once a month or so and those visits always cause a migraine because she is extremely deaf and I have to yell to be understood.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried numerous different treatments for my migraine from main stream med like triptans, both and GCRP's including natural remedies. While I have one medication that knocks me out so I sleep through some of the worst of the migraine pain I can't use them very often and sleeping through life in no way to live. While the GCRP I tried worked to reduce my migraines episodes to 15 days a month it only worked for the first 3 months then stopped working.

Migraine is an expensive disease to have, I spend thousands each year to try and manage my migraine attacks at this time I don't have any insurance even though I am considered disabled I did not receive my diagnosis in time to qualify for disability so I have to personally cover treatments unless I can receive charity care for certain visits or treatments.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Tresa Lovejoy

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Virginia Stoops

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 65 years starting at age 12! In spite of all the medicines and treatments, I still have an average of 12 or more headache days per month. When I have a migraine attack, it feels like my head is going to explode. The pressure starts with just a slight pain, but within 15 – 30 minutes it escalates to full blown pain. There is no other pain like a migraine because you know it could go on for hours, or even days with very little relief. Your life just comes to an abrupt stop!

Migraine has a major and negative impact on my life. I do not go anywhere without first making sure I know where the nearest ER is. It is hard to commit to do something at a specific time or date because you don't know how you will feel. You can bluff your way through an hour or so, but after that it is bed, ice pack and a dark room. I remember several times frantically calling a family member or friend to come care for my child as I was barely able to make it to the bathroom or bed. To keep a job you had to make sure you were good enough that your employer would "forgive" your unplanned days off.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried so many different medicines, most of them epileptic oriented and would leave me lethargic and worse off. Or you make it to ER (usually sitting in the waiting room throwing up) and then get relief from a shot that left you painless but so out of it so still had to spend 1-2 days recovering from it only to feel a new migraine coming on. Family members try to understand and be sympathetic, but unless you have experienced an acute headache you just can't know how debilitating it is. I have been lucky in that sumatriptan has worked for me but I can only have 9-12 a month at most and that falls short of the 15-20 headaches that can strike in one month; plus the danger of getting rebound migraines. Not to mention the potential harm to the liver. I have been on Botox for 5 years but it really hasn't limited the number, only the degree of pain (from a 10 to a 7). I have been on Aimovig for 5 months without much improvement.

Migraine is an expensive disease to have as I spend over \$6000 each year to try and manage my migraine attacks (include ALL medical, insurance, medicine, treatment costs related to your migraine). Aimovig alone cost \$181 a month and if I switch to Ajovy it will be \$230/month (my co-pays). All this providing the insurance company will even approve the switch!

My quality of life is greatly impacted by migraine, and access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine is really not too much to expect. It is really a shame that our great country provides medical help only for

the very poor or the very wealthy. As usual, the middle class is left to fend for itself. I plead with you to hear my cry for help and to fairly assess these new medicines so that I can be a better person at a cost that I can afford.

Sincerely,

Virginia Stoops

8346 Southmeadow Circle
Dallas, TX 75231
210-414-7624

Subject: Public Comment on ICER Review of Acute Medicines for Migraine

Name: Wendy Bohmfalk

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease for 20+ years. I experience an average of 5 headache days per month, which is down from about 18 headache days/month. I'm in a bad cycle now where I am having attacks about 10 days/month. When I have a migraine attack, I feel less productive, less happy, less competent, and less giving.

Migraine has a major and negative impact on my life. When my migraine became chronic, I had to quit my job with Accenture consulting, and become a one-income family. I also had to quit my identity as a professional woman. I had to focus so much of my energy on surviving, and trying to get better.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried 35+ different treatments for my migraine, most of which I discontinued due to side effects and/or lack of efficacy. It's a trial and error battle.

I have a migraine attack now, and took OTC meds, and then a Triptan. While the medicine takes the edge off, it leaves me foggy, less able to focus, and still in pain. I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I have spent thousands and thousands of dollars to try and manage my migraine attacks. This includes 2+ neurologist visits per year, 4 Botox treatments per/year, with additional neurologist costs. I pay for 3 oral preventatives, and a new CGRP injectible. I have also tried numerous other therapies including acupuncture, reflexology. Side effects have forced me to see a gastro doctor, and take gastro meds. I've seen a therapist for depression – a comorbidity, and side effect of some medications. I also take numerous vitamins each day.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,

Wendy Bohmfalk

Migraine World Summit

Dear ICER,

I am writing to ensure that you fully understand what it means for a person to live with migraine, the impact this disease has in my life, and the desperate need for access to new and different medicines.

I have had migraine disease since I was five years old. At 35 I began having chronic migraines. I experience an average of 16 headache days per month. While I have a migraine, I'm limited in all basic activities and I often need assistance. It is very difficult for me to do much more than be still in a dark, quiet, scent-free room while suffering severe migraine symptoms.

Migraine has a major and negative impact on my life. I have lost my career of 16 years. I have lost friends and had to stop my hobbies and volunteering. Migraines have impacted every aspect of my life.

Migraine is a very challenging disease to treat effectively. There is no cure and many of the medicines used for people with migraine don't work very well. Over the course of my life I have tried over 20 different treatments for my migraine, including Botox, Occipital nerve blocks, blood pressure meds, antiseizure meds, and more. I have seen five different neurologists. I have been working with the director of the headache clinic at UCSF for years now. We have tried so many treatments, including a five-day hospital stay for DHE infusions. None of these treatments have been effective. A lot of them come with intense side effects. Rizatriptan is the only thing I've found effective in aborting my migraines, but I can only take a limited amount per week or I risk serious health issues.

I desperately need access to new types of acute treatments.

Migraine is an expensive disease to have, I spend at least \$10,000 each year to try and manage my migraine attacks.

My quality of life is very negatively impacted by migraine and I demand access to new acute medicines that can help me to stop attacks and avoid the pain and disability I experience during a migraine. I want to return to the life I lived and begin working again.

I ask you to respect my pain and to fairly assess these new medicines so that I can be a healthier and more productive person.

Sincerely,
Yuri Cárdenas