ABSTRACT

Despite great progress in the diagnosis and management of migraine and other headache disorders, a significant gap between available treatment and the level of care currently received by migraineurs remains. Many migraineurs do not consult physicians for their headache. Both undertreatment and the overuse of acute therapies are common; as a result, many headache sufferers are not very satisfied with their current migraine management strategies. Neurologists and primary care physicians can take a proactive approach to bridging this gap through systematic practice improvement. Much can be learned from the structured care given at specialty headache centers and in clinical trials, which offer standardized treatment protocols, measures of outcomes, patient follow-up, and use of nonphysician staff to increase the cost effectiveness of comprehensive treatment. This article reviews the formal elements of practice improvement and discusses 2 examples of programs that neurologists can immediately implement using simple and specific measurable changes in their practice: the Quintessentials™ program from the American Academy of Neurology and a headache program developed by Kaiser Permanente in California. By measuring the benefits of intervention, we can justify our treatment approaches to various healthcare resource decision makers.

burden of disease provides the rationale for improving treatment and focusing on the areas most in need of those efforts.

Despite these developments, a gap remains between the remarkable scientific and health policy progress and actual treatment delivery. There are many missed opportunities in migraine management. Most migraine sufferers have not seen a doctor for a headache in the past year, yet migraineurs have more office visits than other headache sufferers; the untreated or undertreated are therefore a major portion of the headache-patient population.1,2,10,11 Most migraine sufferers treat their headaches with over-the-counter medications to the exclusion of prescription drugs, and only 29% of migraine sufferers are very satisfied with the usual acute treatment.1,2,10-12

How can the practicing neurologist take advantage of the advances and bridge the gap of missed opportunities for their migraine patients?

BARRIERS TO CARE

Improving treatment delivery requires identifying barriers to care. There are general health issues, which also apply to headache, as well as headache-specific issues. Most neurologists see headache patients after an unsatisfactory primary care consultation. Primary care is designed to treat acute illnesses, whereas migraine is a chronic disorder with episodic manifestations.13 Primary care has been criticized because the information for managing chronic diseases is often lacking, focus on healthcare planning (ie, education, follow-up) is limited, and assessment of outcomes is informal or inconsistent at best.13 These barriers are inherent in the medical delivery system and are not unique to migraine and headache.

Regarding headache in particular, it is not a high-priority condition for some primary care clinicians. Training in diagnosis and management is lacking, and diagnosis is complicated by multiple headache disorders with subtle differences in presentation but significant differences in treatment approaches. Also, there are no objective, confirmatory diagnostic tests.

THE DISEASE-MANAGEMENT APPROACH

Disease management was first defined several years ago as an integrated multidisciplinary approach to managing all aspects of medical care (ie, prevention, diagnosis, and treatment) for specific conditions.13 Disease management was designed to produce desired clinical outcomes in a cost-effective manner. For headache, this type of approach can offer many benefits, given the gaps in care at the primary care level and the potential for optimized care by neurologists.14 Wagner and colleagues defined disease management programs in 7 steps:

1. DEFINE THE FRAME OF REFERENCE

Defining the frame of reference involves identifying the target population, defining the eligibility criteria, and developing case-finding strategies. For the practicing neurologist, the target population is the migraineurs in a practice. However, a health plan medical director may want to target members of a specific health plan; a benefit manager for an employer may want to target employees at a particular work site. The eligibility criteria provide the cut-off point for inclusion in the disease-management program. For example, the criteria could be as simple as requiring a migraine diagnosis, or more complex, such as degree of disability (eg, patients who miss the most days of work) or patterns of drug use (eg, patients who use the most triptans). A case-finding strategy for an individual practitioner is relatively straightforward because medical records are readily available.

On a larger scale, we have initiated a study within the Henry Ford Health System to research ways of using medical claims, pharmacy data, and demographic data to further identify migraine sufferers most in need of care. Using phone interviews of 10 000 health plan members, we are developing strategies to use medical and pharmacy claims data to accurately identify people with migraine for intervention.

2. DETERMINE THE OUTCOMES

When the target population is identified, the outcomes need to be defined. Outcomes are, by definition, value judgements because they are based on the “stakeholder” (eg, patient, physician, family member, or employer). From the patient’s perspective, controlling pain is an important outcome (ie, objective: optimizing patient satisfaction and/or health-related quality of life). Minimizing disability time at work might be of interest to employers (ie, objective: cost effectiveness). Minimizing disability time in other domains (eg, family, social, and leisure activities) may be of interest to other stakeholders. Successful programs will identify all rele-
vant stakeholders and design outcomes that balance these competing needs and priorities.

Identify Critical Influence Points

Guidelines are often useful for identifying critical influence points—points of care that most affect outcomes. For headache, one of the critical influence points is an accurate, confident diagnosis. This is achieved through diagnostic tools, self-administered questionnaires for the patients, and headache diaries. Headache diaries are one of the many useful techniques for engaging patients in self-management, which is a critical influence point. Patient self-management involves the patient and the medical team collaborating to define the problem, the goals, and the plan. Other support tools include groups, tapes, and books on headache, which can target specific knowledge and behaviors and increase self-efficacy (ie, the belief that one can get better). Self-management also requires regular, predictable follow-up by the care team and written treatment plans such that the patient is a partner in their care.

Engaging physicians in practice improvement is also a critical influence point (a concrete example is discussed later). Treatment guidelines are an important part of developing plans for healthcare improvement. Treatment guidelines should be evidence based, yet tailored to individual delivery systems. A useful treatment guideline has to specify what needs to be done, for which patients, at what intervals, and by whom.

Measure the Influence Points

The field of quality measurement defines the triad of influence points as structure, process, and outcome, which can also be applied to healthcare delivery. Structure refers to the systems in place to deliver the care (eg, if all headache sufferers needed magnetic resonance imaging [MRI], the structure would be the resources to perform MRIs on 80 million Americans). An example of process of care for headache might be that every patient with headache receives a disability assessment, and every patient with frequent headache is offered a preventive medication. An example of an outcome measure is determining health-related quality of life or cost of care for patients with particular levels of disability.

Measuring influence points for headache treatment is relatively straightforward. Structure, such as neuroimaging procedures, can be tracked and measured through claims data and medical record review. Processes of patient self-management can be measured/tracked with interviews and self-administered questionnaires; treatment sequence can be tracked using pharmacy databases and medical record review. Outcomes, such as health-related quality of life or disability, are measures that require patient-centered data collection through in-person or phone interviews, Web-based or self-administered questionnaires, patient diaries, and the Migraine Disability Assessment Scale scoring system.

Manage the Influence Points

To develop strategies for managing influence in a primary care or neurology practice setting, much can be learned from care delivery in specialized headache chronic care centers as well as intervention and outcomes studies. Both use explicit protocols or plans for provision of care, with systematic assessment of medication selection and compliance, attention to behavioral issues with patients and self-management, and attention to comorbidities. Another critical component in cost-effective care is that many headache centers and clinical studies delegate key functions to nonphysician practitioners, a method that often includes telephone follow-up. Two useful models are the Hypertension Detection and Follow-Up Program and the Diabetes Control and Complications Trial. Two headache-specific models are discussed in detail below.

Measure the Impact/Assess and Revise the Program

These are the most critical phases in effecting optimal care. They distill the benefits from the first 5 phases and put those phases into practice for further refinement. The 2 examples discussed below provide a clear model for disease-management programs addressing 7 phases.
Disease management involves deciding on which patients to focus, what criteria can be used as outcome measures, which strategies are needed to improve those outcomes, and objective ways to measure progress, rather than the patient saying, “I’m feeling better.”

**Successful Headache Programs**

**AAN Quintessentials**

The Migraine Headache Quintessentials Program was developed by the American Academy of Neurology (AAN) and is currently available on the AAN Web site (www.aan.com/professionals/patient/quintessentials.cfm) or in print format. This program is appropriate for primary care physicians as well as neurologists, and incorporates many of the previously discussed elements in a straightforward way that can be implemented immediately.

The Headache Quintessentials program is a provider-based initiative, which, if completed fully, is accredited for 10 hours of American Medical Association Category 1 continuing medical education credit. It is also compatible with the Resident Review Committee requirements for teaching residents practice improvement. Several specialties now require resident training programs on practice improvement process.

The Quintessentials program is divided into 4 phases, beginning with a 30-day baseline assessment to measure knowledge, attitudes, and beliefs about headache management (benchmark phase). The test also includes 3 case simulations and the opportunity for the participant to offer their own “headache pearls.”

During the second phase, intervention, the clinician develops and implements a practice improvement plan for 60 days. The score for the baseline assessment identifies areas of knowledge deficit and provides references to guidelines and data on how the user’s knowledge, attitudes, beliefs, and management of specific cases compare with those of a group of peers as well as with the guideline recommendations. Guidance is offered in the form of suggestions of specific and simple measurable changes to improve practice, including diagnosis and classification, disability assessment, depression screening, patient diaries, patient education, and sample treatment plans. Changes can be as simple as a headache diary in every exam room or a headache diary given to every headache patient for a 2-month period; complex changes are also suggested, such as implementing a behavioral management program using the tools available on the Quintessentials Web site.

In the follow-up phase, another knowledge/attitude/belief test is taken along with 3 case simulations that address some of the same issues included in the benchmark assessment. The feedback phase includes a summary evaluation of performance on the test and whether performance improved from baseline, and a summary evaluation of the changes implemented so far. A “headache pearls” component is available in the online version via closed e-mail discussion groups, along with opportunities for discussion with faculty.

**Kaiser Permanente**

Kaiser Permanente in California developed a headache disease management program that was originally used in 2 sites and is now used at 6 sites. First, target patients are identified. These are patients for whom enhanced headache treatment would be most beneficial, they include patients who have an emergency department visit for a headache, patients who are defined as triptan overusers, and patients whose primary care physicians refer them to headache subspecialty management.

The next phase is focused on group education, led either by a healthcare educator, a registered nurse practitioner, or a physician. It provides education on triggers, rebound headache, and diagnosis in a hopeful, optimistic atmosphere. A headache resource manual is also offered to help patients learn about the diagnosis, their disorder, and steps they can take to improve management. A major benefit of the group is that it helps patients to feel understood, not alone, and enhances their sense of self-efficacy. They begin to feel that they have some control over their headaches. Group education is followed by an individual consultation and follow-up as 1 or 2 visits. A specific treatment plan is put into place and the patient is referred back to their primary care physician.

Initial data show several interesting trends in the quality and cost of care after program implementation. After the first 250 patients entered the program (about 6 months), triptan cost increased about 20%, from $29 000 to $34 000. Closer examination revealed that among people who were previously overusing triptans, use decreased. The aggregate increased use of triptans occurred in individuals with disabling headache who had never received triptans before. Conversely, headache-related visits to the...
emergency department decreased by 50%, and overall outpatient visits decreased by 31%. Headache frequency declined in 86% of patients with severe headache 2 or more days per week. Clearly, the initial data indicate that the program was enormously successful, despite the lack of a formal contemporaneous control group.

Both treatment programs fulfill the 7 phases for improving headache management and are examples that many neurologists may evaluate for possible implementation in office practices.

CONCLUSION

The Quintessentials and Kaiser Permanente models are useful examples for practicing neurologists to improve the management of headache in their practice. The American Headache Society Primary Care Migraine Partnership is another short-term initiative with actionable items for primary care physicians and strategies for measuring the benefits of those steps.

Long-term quality indicators for migraine should be part of the managed care quality reporting system (ie, the Health Plan Employer Data and Information Set) to develop systematic solutions for changing the structure of care and the processes and reimbursement for care.

As the previous decade has been one of remarkable progress in migraine management, the first decade of the 21st century will continue to close the gap between available treatment and actual treatment delivery. By engaging in the process of measuring the benefits of intervention, we can justify our treatment approaches to various healthcare resource decision makers.

REFERENCES