

## Taking a Disease Management Approach to Migraine

Based on a presentation by William Parham III, MD

### **Presentation Summary**

Migraine, like many other common and costly chronic diseases, may be amenable to the disease management model of healthcare delivery. The disease management approach has improved clinical and economic outcomes in conditions such as asthma, diabetes, congestive heart failure, and arthritis. The critical elements needed for a successful migraine disease management program are: 1) identification of highest-acuity patients,

2) extensive patient education, and 3) implementation of clear evidence-based guidelines for the diagnosis and management of patients. Transition from the current emergency-driven system of severe migraine treatment will require additional training and incentives for primary providers, specialists, and nurses. Both pharmacologic and non-pharmacologic treatments may play a role in attaining the best outcomes in carefully selected patients.

**I**n attempting to close the gap between migraine treatment opportunities and actual practice, we would benefit from first asking ourselves what we have learned in the management of other chronic illnesses in managed care. In fact, much of our current knowledge has emerged in the context of recently developed disease management programs. Reviewing the lessons learned in these programs aimed at a variety of illnesses may help us in developing a

model for better management and improved outcomes with migraine.

By defining disease management as an integrated model for managing chronic care and by examining results achieved using this model in one specific chronic disease asthma—we can then decide whether this model might be applied to migraine.

### **Need for a Different Approach**

Migraine is a chronic illness that can be debilitating, as well as difficult

and expensive to treat. These observations have long been appreciated by managed care physicians and administrators. What has only more recently emerged is a growing discomfort with how this high-impact disease is currently managed. There is now a sense that primary care physicians, even if they possess the knowledge for effective care, may lack the time or incentive to perform the thorough evaluation and establish the rapport required for effective headache management. In addition, the patterns of referral from primary care physicians to headache specialists seem to be increasingly arbitrary.

Overall, then, there is a growing consensus that primary care may not be the best model for achieving optimal migraine outcomes. The underlying reason for this mismatch between primary care and migraine care is that primary care is designed mainly for management of multiple acute illnesses. As such, it relies on quick history-taking, on short visits for diagnosis, and on appointments for laboratory tests and imaging studies. This type of triage approach and high patient flow also typically leads to extremely brief sessions of patient education. When education does occur, it tends to be cursory, didactic, and with few materials provided for the patient to take home, to think about, and to generate questions for a follow-up visit. Indeed, follow-up visits in the primary care setting tend to be episodic and patient-initiated.

Patients with chronic illnesses do not fare well in this standard primary care approach. Optimal care for these patients with lifelong conditions usually requires regular contact with providers that is planned, rather than built upon acute episodes of care. As shown in Table 1, the distance between the typical primary care environment and the ideal chronic care setting is substantial. This is why the ambulatory services provided to patients with chronic diseases like

migraine may need to be rethought and reorganized.

### The Disease Management Model

Disease management is a multidisciplinary ambulatory care process explicitly designed and coordinated to improve the health of selected populations with chronic illnesses. This management approach has two primary objectives. First, disease management attempts to identify subpopulations afflicted with a specific illness or a higher risk of developing complications of that illness. And second, it intervenes proactively with well-coordinated multidisciplinary services that measurably improve important outcomes. These outcomes might include clinical status, functional status, quality of life, satisfaction with care, and aggregate costs.

The whole disease management process is predicated on the ability of the health plan to use outcomes research to define the range of outcomes achievable by alternative interventions. Once the possible outcomes are defined, outcomes management is then employed to define the optimal outcomes and achieve these in actual practice settings.

Not all chronic illnesses lend themselves to a disease management approach. In fact, most managed care plans now engage in disease management programs for only about 5 to 10

**Table 1.** Optimal Care for Chronic Illness<sup>1</sup>

<ul style="list-style-type: none"> <li>■ Planned, regular interaction with caregivers</li> <li>■ Focus on prevention of exacerbations and complications</li> <li>■ Systematic assessments with attention to treatment guidelines</li> <li>■ Support for patient's role as self-manager</li> <li>■ Links with relevant information systems</li> <li>■ Continued follow-up initiated by the medical practice</li> </ul>
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major chronic illnesses. Prime examples include asthma, insulin-dependent diabetes mellitus, and congestive heart failure. What makes these three diseases amenable to the disease management approach? The key common characteristic is that they are all chronic illnesses complicated by acute exacerbations, requiring therapy that involves expensive emergency room (ER) or inpatient management. Further, these exacerbations are all largely or partly preventable by proactive, intensive, and well-coordinated ambulatory service.

The attributes of chronic illnesses that lend themselves to disease management approaches can be codified into three main questions (Table 2). These questions must be answered "yes" before a chronic disease can be deemed amenable to a disease management approach. Examining one chronic illness that passes this suitability test for disease management will provide us with a standard against which any proposed migraine disease management program can be compared.

**The Asthma Model**

Asthma displays the classic characteristics of the chronic disease ripe for the prevention-oriented disease man-

agement strategy. The lung disorder is very common, affecting about 12% of all Americans, one third of whom are children. Acute exacerbations are expensive, as indicated by 1992 statistics showing approximately \$1.9 billion of the \$6.2 billion total spent on asthma therapy going toward ER visits and hospitalizations. Each year, the disease generates over 2 million pediatrician visits and causes about 3 million restricted activity days—a major source of productivity loss.<sup>1</sup>

Fortunately, asthma is also a disease for which appropriate ambulatory therapy can also make rare events out of exacerbations acute enough to require ER treatment or hospitalization. Based on the creation of such ambulatory programs, several health plans have now implemented successful disease management programs for asthma.

The major components of current asthma programs such as those in place at Kaiser, Harvard Community Health Plan, and Aetna US Healthcare revolve around patient and physician education. One of the core elements always involves a clinical professional, usually a nurse specialist or a physician, taking one-on-one time to help the asthmatic better understand the basis of the illness and how to recognize triggers of acute attacks. Detailed discussions of what an attack feels like (eg, "breathing under water") or what to avoid (eg, cockroaches, certain environments) empower the patient and provide the groundwork for an understanding of prevention techniques. This initial education also stresses the general notion that therapy must be continued even when symptoms are not present.

The more technical component of patient education for asthma involves training on the proper use of nebulizers and metered-dose inhalers—the mainstays of therapy. In terms of performance training, the nurse or physician will also teach the patient how to recognize an impending attack by

**Table 2.** Is This Chronic Illness Ready for Disease Management?

<ol style="list-style-type: none"> <li>1. Can interventions be designed to reduce a population's need for services and simultaneously improve outcomes such as functional status and quality of life?</li> <li>2. Can this demand be reduced by proactively providing more intensive ambulatory services that reduce the need for relatively more expensive institutional services?</li> <li>3. Do the incremental savings from reduced institutional services exceed the incremental costs of the more intensive ambulatory and/or pharmaceutical services required to achieve this reduction?</li> </ol>
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using the peak flow meter every day. In many cases, these principles of prevention are reinforced with newsletters or patient support group meetings.

Most asthma disease management programs also attempt to refresh and reinforce physician knowledge on assessment and management through tutorials, incentives, or involvement in guideline development. Such education has proved valuable in raising awareness of effective therapy; for example, it's helped overcome physician reluctance to offering inhaled steroids.

The asthma program at Aetna US Healthcare provides an instructive example of disease management in action. The program first identifies enrollees aged 1 to 17 who in the previous year required excessive pharmaceuticals or at least one hospitalization, 2 ER visits, or 6 urgent center visits. Nurse practitioners worked with these asthmatics to develop personal treatment plans that emphasized intensifying therapy when the peak flow meter detected declining airflow. Physicians, meanwhile, were offered financial incentives to attend continuing medical education seminars on asthma and to equip their offices for exacerbation treatment.

Does this program actually improve health outcomes or reduce costs? A recent study of the Aetna US Healthcare program says that it does. Study results showed remarkable reductions in hospital admissions (-56%), hospital days (-73%), ER visits (-48%), fee-for-service costs for specialists (-48%), per-member per-month costs due to ER (-\$270) and hospitalization (-\$32).<sup>2</sup> Overall patient satisfaction and functional status also improved.

The key components of success in this Aetna US Healthcare program are: 1) the direct individualized patient instructions provided by a nurse practitioner, 2) the training that enabled patients to recognize

presymptomatic worsening and immediately initiate therapy, and 3) the physician commitment to re-education and active participation in patient management.

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tion will remain the same. Similarly positive results for disease management programs in diabetes mellitus and heart failure support identical conclusions.

### **Will It Work for Migraine?**

The disease management paradigm may also work for migraine. Several facts seem to support this statement. First, the disease has a very high incidence throughout managed care populations, and the direct and indirect costs associated with management of this disease already consume considerable resources. Given that a large proportion of migraine sufferers who never consult doctors about their migraines report high levels of disability—and that 40% who have discussed their headaches with doctors are never diagnosed—the opportunities for improving headache diagnosis and doctor-patient communication about migraine are tremendous.<sup>3</sup> Second, there is considerable room for improvement in migraine therapy—

indeed, the very purpose of this conference and publication is to foster such improvement. In other words, in applying the questions listed in Table 2 to migraine, the early answers seem to be "yes" in each category. Of course, larger studies documenting the clinical or economic value of a migraine disease management approach have not yet been published.

The first step of a migraine disease management program would be to identify members with the disease. This would be possible through medical or pharmacy claims data or, alternatively, through employer reporting of individuals who miss work frequently or do not function well because of migraine. To identify individuals with poorly controlled migraine, records could be scanned for indicia such as multiple ER visits, multiple radiological procedures, and visits to a variety of specialists. Interestingly, in this context of comparing asthma and migraine, one review of 16,755 walk-in emergency department visits found 323 (1.9%) related to migraine and 159 (1.0%) related to asthma. Fifty-four (35.5%) of the migraine patients and 7 (4.6%) of the asthma patients had more than a single ER visit during the 5-month study period.<sup>4</sup>

The next step is patient education. This would focus especially on the recognition and avoidance of headache triggers as well as the effective use of pharmacologic agents. These are precisely the topics for which practitioners currently have little time. In a disease management program, however, the physician or nurse can invest the time in these important education tasks for carefully selected patients. Core teaching topics could include the timing of the drug dose in relation to the onset of symptoms, the decision to take a second dose, and precautions on the overuse of medications. Time would also be spent in educating patients on

nonpharmacologic interventions that might be appropriate for reducing the intensity or frequency of migraine attacks.

Finally, since migraine is a disease where effective treatment is still defined in terms of 70% to 80% efficacy, this educational window must also serve as the provider's opportunity to manage expectations regarding prognosis. This important message consists of two parts: no, you don't have to live with this level of pain for the rest of your life, but Yes, you will probably have other headaches in the future.

Clear clinical guidelines will be of critical importance in instituting any migraine disease management program. Each institution will need to define, adopt, or modify guidelines for the diagnosis, management, and referral of patients with headache. The headache document anticipated from the American Academy of Neurology would be an excellent and respected point of departure for such local guideline development.

The final dimension of the program must be practitioner education. Of course, education of family practice and primary care physicians in the appropriate and effective use of the guidelines is central. Neurologists and other migraine specialists can assist managed care physicians in accomplishing this task.

Another level of physician education that needs to occur involves motivation: physicians need to reaffirm that patients with headaches are interesting patients with a chronic illness. Too often we communicate to our headache patients that their complaint is a bother. This message all too often comes through loud and clear. We need to make the commitment, with the patient to long-term and skillful care.

Nurse practitioners and other allied health professionals can also be enlisted as agents to deliver some of this long-term care. Nurses, for

example, can become a valuable resource for patient education, monitoring of compliance, and ongoing assessment. In disease management, nonphysician providers often offer the patient the ongoing contact and sense of connectedness that are critical to the success of the prevention approach.

What are the possible outcomes of such a migraine program? There is no question that clinical status, functional status, and quality of life would improve. Increased member satisfaction with care is also highly probable. A small Veterans Affairs study on the economic impact of a protocol for the management of migraines found significant reductions in total healthcare expenditures.<sup>5</sup> It may be that an increase in direct costs (due to drug or medical care) will offset savings in indirect costs (due to reductions in lost productivity).<sup>6</sup>

It is possible that economic outcomes would also improve as reflected by reduced loss in productivity or perhaps even by reduced numbers of ER visits. This is speculative, however, and provides fertile ground for further research. Since the most severely affected migraineurs account for most of the reduced work performance, targeting these patients may be necessary to reduce work loss among migraineurs substantially and to balance the cost of a migraine management program against the probable returns.<sup>7</sup>

Certainly in managed care programs such as ours, trials involving migraine disease management seem warranted, and outcomes studies tracking these programs will allow us to adjust future investments in these programs appropriately.

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... DISCUSSION HIGHLIGHTS ...

**Dr. Schweitzer:** We should remember that while some disease management

programs improve outcomes and lower costs, others improve outcomes at a higher cost. This leaves society, and third-party payers specifically, with the question of whether or not they want to pay for that. Some will, and some won't.

**Dr. Parham:** Clearly asthma programs save money. I am not sure

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where a migraine program would fall, but I think we have a responsibility to be innovative in creating programs to manage chronic episodes and then present the options to our customers.

**Dr. Lake:** You said that improved economic outcomes may reduce productivity loss and diminish ER use, but as we discussed earlier, reduced productivity loss is not part of the healthcare budget you now operate under.

**Dr. Mondell:** And this means that if employers want a workforce that is reliably productive, they may have to pay a higher premium in purchasing healthcare.

**Dr. Parham:** That is correct, especially when we consider the employer's options when someone does not show up for work. Many employers go to a temporary service agency to replace

that worker who has the migraine, so the question becomes: is that incremental cost of finding and training a temporary worker more or less than the incremental cost of a premium increase that would allow a disease management program? My sense is that it is less expensive to fund migraine disease management than to replace disabled workers with temporary workers.

**Dr. Lake:** It is my understanding that the typical auto company negotiating a health plan will look not at outcomes but the bottom dollar spent on healthcare. So although this model for migraine management is interesting, the people who pay the premiums will need to be educated about any potential savings in reduced productivity loss.

**Dr. Mondell:** We have not made it clear to employers that if they pay \$1 more in premiums that will save a \$1.50 in temporary personnel costs. And, of course, we will need the data before we can make any such case.

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