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MAKING A HEADACHE PRACTICE WORK: THE ELEMENTS OF DIAGNOSIS AND CODING IN HEADACHE MEDICINE

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INTRODUCTION

One of the barriers to establishing a successful medical practice focused on headache is the daunting challenge posed by the intricate second party medical payment system in the United States. This is due to the complexity of the billing system requiring both (1) strict adherence to evaluation, management, and procedure coding (Current Procedural Terminology [CPT] codes) as well as (2) precise diagnostic coding using an outdated and clinically nonintuitive menu (International Classification of Diseases [ICD]-9 diagnostic codes). In addition, there is the necessity of staying current with the yearly changes in coding regulations. Physicians intending to specialize in headache medicine are often unaware of these challenges during their training and are at best only minimally prepared to work within this reimbursement system. Errors in billing practice can, at the very least, lead to a great deal of missed reimbursement, and, at worst, serious legal ramifications. Of course, billing and reimbursement challenges are a fact of life for practitioners in all fields of medicine. However, in headache medicine, there are unique difficulties, particularly with the ICD-9 diagnostic system, which resembles our current headache diagnostic schema only slightly.

In this article, we will attempt to summarize most of the important coding and billing issues, with the needs in mind of residents and fellows contemplating a career in headache medicine. This is only an introduction to coding and billing practice, so we have added a list of useful resources (Further Reading) including the American Headache Society's "Coding Corner" section of their website written by one of the authors (SB).

What Do We Need in Order to Bill for Our Service?—Reimbursement to physicians and other providers of service to patients with headache disorders can only occur if *both* (1) CPT codes for evaluation and management (E&M) and procedures, and (2) ICD diagnostic codes are assigned. These are required for billing Medicare, state medical insurance, and virtually all private medical insurance payers. The only exception is for patients paying "out of pocket" but even these patients will generally need this information in order to submit their own claims.

Failing to submit CPT or ICD information for a clinical encounter will simply result in nonreimbursement. Submission of "incorrect" codes may lead to charges of "healthcare abuse" or fraud, even if the error was inadvertent or unintentional. Healthcare fraud is defined as "deception or misrepresentation that could result in an unauthorized payment." Healthcare abuse is defined as "conduct that is inconsistent with accepted industry standards that could result in unnecessary costs to a healthcare program." Law enforcement agencies can bring charges (the FBI in the case of Medicare charges) and if convicted, health providers can face large fines and even imprisonment.

Assigning E&M CPT Codes.—The CPT code-set is maintained by the American Medical Association, which profits from their licensing fees for it. There are several types of CPT codes, but the 2 types which are of particular interest to the clinician are (1) E&M codes and (2) procedure codes. There are some 7800 CPT codes, numbered between 00100 and 99602. The CPT codes are all 5 digits, are revised annually, and govern both outpatient and inpatient work. E&M codes include the following:

Outpatient visits	
Initial visit – new patient	99201-99205
Initial visit – consultation	99241-99245
Follow-up visit	99211-99215
Inpatient visits	
Initial hospital care	99221-99223
Subsequent hospital care	99231-99233
Initial consultation	99251-99255

A common area of confusion is the distinction between a consultation and new patient code for an initial visit by a specialist. It is not enough to consider any visit a "consultation" if the patient was referred by another provider. A visit cannot be billed for a consultation, for example, if there is the expectation that the patient will commence ongoing care

Table 1.—Factors Determining Evaluation and Management Code Levels

Key factors	Contributory factors
History	Nature of presenting problem
Exam	Coordination of care
Medical decision-making	Counseling

with the specialist. This would constitute a "new patient" visit. On the other hand, a visit can be coded as a "consultation" if the intent of the referring provider was indeed to obtain consultation even if the consultant decides after evaluating the patient to schedule a follow-up visit.

Evaluation and management code "levels" (1, 2, 3, 4, or 5) are based on the following factors: history, exam, level of medical decision-making (MDM), nature of presenting problem (NPP), time spent in coordination of care, and time spent in counseling. The first 3 are considered key factors and the last 3 are considered "contributory" factors (Table 1).

A great deal of literature has been generated in an attempt to provide guidance in these parameters and a detailed explanation of how to assign code levels based on these factors is beyond the scope of this review. However, several aspects are definitely worth a brief further discussion.

First, and perhaps most complex (and burdensome), is the assigning of intensity level to the history and physical examination. There are 4 possible levels to the history: problem-focused, expanded problem-focused, detailed, and comprehensive. The examination is also graded in these 4 levels. For a history to be graded at the comprehensive level, many things need to be done and documented, including chief complaint, history of present illness, personal history, family history, social history, and thorough review of systems. Far less needs to be accomplished during "problem-focused" history-taking. To determine the level of the examination, a number of systems need to be examined and documented, even if the provider has performed a completely thorough neurological exam, as well as related pertinent exams. There is a point system which can be used to determine the extent of the exam. Useful aids in this process are the CPT codebook and other sources in the reference list at the end of this article. The problem is that the system for assigning history and exam levels is not very well correlated with clinical need, or the amount of time/energy expended. Hence, one encounters the situation of a very extensive evaluation paradoxically leading to coding at a relatively "low" level. Frustrating, but sometimes unavoidable. At any rate, once grading is performed for both the history and exam, one is well on the way to determining the E&M level.

But now the level of MDM must be determined. This too is complex, and, as in the history and physical exam, somewhat arbitrary. Factors to be considered include: (1) the number of possible diagnoses in a particular case; (2) the number of possible management options; (3) the amount of data to be reviewed; and (4) the risk of complications (morbidity and mortality). And within each category, there are 4 grading levels: straightforward, low complexity, moderate complexity, high complexity. And what if the levels are different in each category (ie, highly complex data reviewed but low risk of complications)? This too is governed by a set of rules, which basically looks for a kind of (but not quite) median average approach.

Next comes the NPP, a descriptor of generally how serious the disease process is. This is always difficult with a new patient, prior to diagnostic work, but is nonetheless generally necessary for billing. There are 5 NPP levels and are based on the predicted natural history of the patient's condition if untreated: minimal, minor or self-limited, low, moderate, and high. It is the authors' opinion that any headache patient with significant functional impairment deserves the highest level of NPP, but it is highly advisable to document in medical notes a basis for this conclusion.

How history, examination, MDM, and NPP levels are synthesized into a composite level of intensity of service as an E&M code is a complex function (Fig.). The situation has essentially generated a new profession – the coding specialist – but many clinicians have learned the system well enough to assign appropriate CPT E&M codes in most cases. Learning to be self-reliant (at least for the most part) in this area is crucial, to avoid becoming overdependent on billing specialists or agencies.

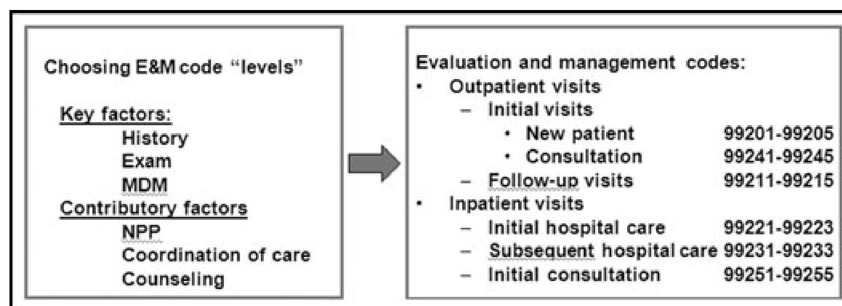

Figure.—Using key and contributing factors to determine E&M codes. E&M = evaluation and management; MDM = medical decision-making; NPP = nature of presenting problem.

For a number of clinical encounters in headache practice, counseling and coordination of care with other providers requires a significant amount of time. The CPT system considers these activities important enough to allow for a parallel system of E&M grading. For example, in cases where counseling and/or coordination of care consumed the majority of time spent with a patient, an E&M level can be determined entirely by how much total time was spent. For example, if 40 min or more was spent in a follow-up visit with a patient, and if more than half of the time was devoted to counseling, one can use the highest level of coding (in this case 99215). Likewise, if a consultation visit was dominated by counseling and/or coordination of care, and required 80 min, the highest level of E&M coding is appropriate (99245).

Assigning CPT Procedure Codes to Headache Patients.—In addition to E&M codes, procedures which are performed must be coded as well in order to submit bills for reimbursement. These have nothing to do with any of the above factors (history, exam, decision-making, etc.), but, rather, are specific to the type of procedure. The CPT coding books have indexes for all coded procedures which, by and large, work well. Unfortunately, in most headache practitioners' work, there are a number of procedures which are not clearly delineated in the procedure code list. Some useful codes include:

Occipital nerve block (greater or lesser)	64405
Supraorbital nerve block	64400
Auriculotemporal nerve block	64402
Chemodenervation of facial muscles	64612
Chemodenervation of cervical spinal muscles	64613
Lumbar puncture	62270

For a given patient encounter, there should be only one CPT E&M code. But there may be several CPT procedure codes. Each must be clearly documented in the medical notes in the usual way procedures are documented in one's practice or institution.

Assigning ICD-9 Diagnostic Codes.—The ICD began as the International List of Causes of Death, and was adopted by the International Statistical Institute in 1893. The modern ICD was created in 1948, and the World Health Organization took over the responsibility for it. The most recent iteration, ICD-10, was published in 1990, and came into use in 1994 in many parts of the world. However, it is not yet in use in the United State where we are using the ICD-9-CM ("Clinical Modification"). ICD Diagnostic Codes are 3-5 digits long, and the ICD-9-CM has over 17,000 diagnoses. The ICD diagnoses for headache disorders make up an array of mostly outmoded categories which is notable for significant absences. For example, there are no ICD-9 categories for paroxysmal hemicranias (chronic paroxysmal hemicrania [CPH] and episodic paroxysmal hemicrania [EPH]), SUNCT, exertional headaches, stabbing headache or hemicrania continua (HC). Nonetheless, we must find an ICD-9-CM diagnostic code (or codes, when multiple diagnoses are present) for each patient in order to expect payment from second party payers. And how we are supposed to use this inaccurate and nearly clinically meaningless diagnostic system, when what we want to use is something that looks like the International Classification of Headache Disorders, 2nd edition, revised (ICHD-IIR), becomes a major challenge. We will try to provide some guidance in the next section.

Migraine and Cluster Headache in the ICD-9-CR – The "346" Group.—The ICD-9 system does include migraine but divides it in an unusual way: 346.0 "classical migraine," 346.1 "common migraine," 346.2 "variants of migraine," 346.8 "other forms of migraine," and 346.9 "migraine unspecified" (Table 2).

By "classical migraine," ICD means migraine with aura. As we will see, the migraine diagnoses are further subdivided into intractable and nonintractable types. When the "intractable" subtype is used, reimbursement levels are generally higher, so it should be used when appropriate (deciding on what constitutes intractability is, of course, rather subjective). Thus, in the case of a patient with migraine with aura, we have the choice:

346.00 Classical migraine without intractable migraine
346.01 Classical migraine with intractable migraine

Migraine without aura (ie, in ICD-9, 346.1 – common migraine) is similarly formulated:

346.10 Common migraine without intractable migraine
346.11 Common migraine with intractable migraine

The ICD-9-CR category 346.2 "variants of migraine" is defined as:

"Daily episodes of intense periorbital pain that recur over a period of 6-12 weeks that may be followed by a period of remission of months to years. The pain is nonthrobbing, has duration of 30-60 min and tends to occur at night or at regular intervals during the day. Unilateral rhinorrhea, conjunctival injection, lacrimation, facial flushing, and miosis frequently accompany the headaches . . ." Sound familiar? Yes, it is cluster headache. But ICD-9's 346.2 also includes "basilar migraine," "lower half migraine" (an old

Table 2.—Migraine and Other Primary Headaches in ICD-9-CR – Section 346

346.0 Classical migraine (migraine with aura)
346.1 Common migraine (migraine without aura)
346.2 Variants of migraine (cluster headache)
346.8 Other forms of migraine (hemiplegic migraine)
346.9 Migraine unspecified

ICD = International Classification of Diseases.

Table 3.—An ICD-9-CR to ICHD-IIR Concordance

ICD-9-CR	ICHD
346.0 Classical migraine	Migraine w/aura—ICHD 1.2
346.1 Common migraine	Migraine w/o aura—1.1
346.2 Variants of migraine	Cluster—2.1
	Basilar type—1.2.6
346.8 Migraine forms	Hemiplegic migraine—1.2.4, 1.2.5
	Ophthalmoplegic—13.17
	Chronic migraine—1.5.1, A1.5.1
	MOH—8.2
346.9 Migraine unspecified	Any other migraine
307.81 Tension-type HA	TTH—2.1, 2.2, 2.3
635.4 Menstrual migraine	Pure menstrual migraine, menstrually related migraine
	A1.1.1, A1.1.2
627.2 Menopausal migraine	[Closest—estrogen withdrawal headache—8.4.3]
[Closest is 346.9]	CPH, SUNCT,
[Closest is 346.9]	HC, stabbing HA
[Closest is 346.9]	Coital, exertional HA

CPH = chronic paroxysmal hemicrania; HA = headache; ICD = International Classification of Diseases; ICHD-IIR = International Classification of Headache Disorders, 2nd edition, revised; MOH = medication overuse headache; SUNCT = short-lasting, unilateral, neuralgiform headache attacks with conjunctival injection and tearing; TTH = tension-type headache.

term from the National Institutes of Health 1962 classification system's category for carotidynia and facial migraine) and other headache types including abdominal migraine. So, headache clinicians will generally use this diagnosis for cluster headache patients and again it is subdivided into:

346.20 Variants of migraine (cluster headache) without intractable migraine
346.21 Variants of migraine (cluster headache) with intractable migraine

The ICD-9-CM Diagnosis 346.8, "other forms of migraine" includes a very small portion of migraine patients: hemiplegic migraine and ophthalmoplegic migraine (which is now felt by most to represent a neuralgic process rather than a type of migraine). Many tend to use 346.8 to include chronic daily headache and medication overuse headache, but there is controversy. And, once again, there is the "intractable" option:

346.80 Other forms of migraine without intractable migraine
346.81 Other forms of migraine with intractable migraine

Finally, for the many migraine subtypes missed by the above ICD-9-CR menu, we have a catch-all category of "migraine unspecified" – 346.9, and of course:

346.90 Migraine unspecified without intractable migraine
346.91 Migraine unspecified with intractable migraine

This category therefore includes CPH, SUNCT, HC, stabbing headache, coital headache, and exertional headaches. The problem is that billing is always lower for an "unspecified" diagnosis.

Two diagnostic codes for hormonally related migraines are found in the gynecology/obstetrics section and are: menstrual migraine 635.4, and menopausal migraine 627.2. One should always include the ICD-9 "346" section migraine diagnosis too, in order to maximize the chance of authorization of payment for that diagnostic category.

Tension-Type Headache (TTH) and the ICD-9-CR.—The diagnostic code for TTH is 307.81 and is rather specific. Unfortunately, the numerically close category 307.80 refers to psychogenic pain ("psychalgia"), and as a result, some payers consider TTH a psychological condition subject to perhaps lower levels of (or no) coverage.

A final alternative for primary headache coding is the ICD-9-CM Diagnosis 784.0 – headache unspecified. Perfectly reasonable, except that using this code may easily result in very low or no reimbursement. It is important to remember that unlike CPT codes, only one of which should be listed for a particular patient encounter, *multiple* ICD codes may be specified (and probably should be) whenever appropriate.

An ICD-9/ICHD Concordance for Primary Headache Disorders.—For clinical, and research, purposes, it would be nice to have a 1:1 concordance between the ICD-9-CR and the ICHD-IIR. Unfortunately, as we have seen, there is no 1:1 correlation. In Tables 3 and 4, we have tried to come up with an approximation.

There are a number of secondary headache types that are seen regularly in headache practices, and a number of

Table 4.—An ICHD–ICD Concordance

Migraine	346.1
Migraine with aura	346.0
Chronic migraine	346.8
Hemiplegic migraine	346.8
Tension-type headache	307.81
Cluster headache	346.2
HC, CPH, EPH, SUNCT	346.9 (or 346.81)
Exertional headaches, coital headaches	346.9

CPH = chronic paroxysmal hemicrania; EPH = episodic paroxysmal hemicrania; HC = hemicrania continua; ICD = International Classification of Diseases; ICHD = International Classification of Headache Disorders; SUNCT = short-lasting, unilateral, neuralgiform headache attacks with conjunctival injection and tearing.

Table 5.—ICD-9-CR Codes for Common Secondary Headache Types

Post-LP headache	349.0
CSF leak	349.89
Trigeminal neuralgia	350.1
Atypical facial pain	350.2
Pseudotumor (IIH)	348.2
Temporal arteritis (GCA)	446.5
Vasculitis	447.6
Cervicalgia	723.1
Cervical root headache	723.4
Occipital neuritis	723.8
Fibromyalgia/myalgia	729.1
Neuralgia	729.2

CSF = cerebrospinal fluid; GCA = giant cell arteritis; ICD = International Classification of Diseases; IIH = idiopathic intracranial hypertension; LP = lumbar puncture.

frequent co-occurring conditions in headache patients. Tables 5 and 6 summarize these.

There is hope yet for a more appropriate list of headache diagnoses that can used for billing. The American Headache Society Economics Committee has been working on new ICD codes for headache which have been accepted for inclusion as a revision of the ICD-9-CR list, hopefully by the end of 2008. These are patterned on the ICHD-II primary headache categories and will make life easier for all of us. We have summarized these in Table 7.

Table 6.—ICD-9-CR Codes for Common Comorbid Conditions in Patients With Headache

Blurred vision, visual disturbance	368.8, 368.9
Cervical spondylosis	721.0
Cervicobrachial pain	723.3
Fatigue	780.79
Postconcussion syndrome	310.2
Insomnia	780.52, 307.42
Disruption of sleep	780.55
Tic disorder	307.22
Vertigo, BPV	780.4, 386.11
Panic disorder	300.01
ADHD	314.01
Anxiety	300
Depressive disorder	311
Psychosis	298.9
Bipolar disorder	296.80
Alcohol dependence	303.90
Nicotine dependence	305.1
Sedative, anxiolytic dependence	304.10

ADHD = attention deficit hyperactivity disorder; BPV = benign positional vertigo; ICD = International Classification of Diseases.

Table 7.—AHS Recommendations for Revision of the Primary Headache ICD-9-CR System

G43 Migraine
G43.0 Migraine without aura
G43.1 Migraine with aura
G43.2 Status migrainosis
G43.4 Hemiplegic migraine
G43.5 Menstrual migraine
G43.6 Persistent migraine aura
G43.7 Chronic migraine without aura
G43.8 Other migraine—including periodic syndromes
G43.9 Migraine unspecified
G44 Other headache syndromes
G44.0 Cluster and TACs
G44.00, 01, 02 Cluster
G44.03, 04 Episodic and chronic paroxysmal hemicrania
G44.05 SUNCT
G44.1 Other vascular headache
G44.2 TTH
G44.3 Posttraumatic headache
G44.4 Drug-induced headache
G44.5 HC, NDPH, primary thunderclap headache
G44.8 Other—including hypnic HA, sexual activity, cough headache, exertional headache, stabbing headache

AHS = American Headache Society; HA = headache; HC = hemicrania continua; ICD = International Classification of Diseases; NDPH = new daily persistent headache; SUNCT = short-lasting, unilateral, neuralgiform headache attacks with conjunctival injection and tearing; TACs = trigeminal autonomic cephalalgias; TTH = tension-type headache.

CONCLUSIONS

In our current medical system, payment for evaluating and managing patients with headaches depends upon proper assignment of CPT E&M codes (and procedure codes when appropriate), and ICD-9-CR diagnostic codes. Neither is terribly intuitive or clinically very relevant. But, we need to learn and use these systems, while working toward making them more useful and relevant. Unfortunately, despite the busy schedules of clinicians, time and effort must be devoted to staying current with coding and billing regulations in order to avoid pitfalls from underbilling to fraud. We have tried to supply an introduction to these issues as they relate to headache medicine. You might try your hand at the sample cases below to see how you do. Also, we suggest that you take a look at the resources we have included in the reference list below. Good luck.

Further Reading

1. Levinson SR, Practical EM. *Documentation and Coding Solutions for Quality Patient Care*. Chicago, IL: AMA Press; 2006.
2. American Headache Society (AHS). *AHS Headache Coding Corner*. http://www.americanheadachesociety.

org/professionalresources/AHSsHeadacheCoding Corner.asp

3. American Medical Association. *American Medical Association Current Procedural Terminology CPT 2007*. Chicago, IL: AMA press; 2006. (AMA CPT related resources can be found at http://www.ama-assn.org/ama/pub/category/3113.html).
4. Centers for Medicare and Medicaid Service (CMS). *Evaluation and Management Services Guide*. http://www.cms.hhs.gov/MLNProducts/downloads/eval_mgmt_serv_guide.pdf. (The CMS home site is www.cms.hhs.gov, and the subpage that lists a number of useful and free materials is http://www.cms.hhs.gov/MLNEdWebGuide).
5. American Medical Association. *ICD-9-CM for Physicians –Volumes 1 & 2. International Classification of Diseases 9th Revision Clinical Modification*. 6th edition.

PRACTICE CASES

Case 1.—A 42-year-old woman is referred to you for consultation regarding chronic migrainous headaches refractory to several treatments. There are a number of medical records to review as well as computerized tomography and magnetic resonance imaging films to look over. After a very thorough, and well-documented, history and complete physical exam, you decide she has migraine, probable medication overuse headache, and chronic depression and anxiety. The visit took 80 min, easily half of which involved discussion/counseling.

Case 2.—A 28-year-old woman with idiopathic intracranial hypertension, migraines since childhood, major depression, and chronic insomnia is sent to you "for consultation or continuing care." A comprehensive history and exam were documented. There was no evidence of other disease. Her last lumbar puncture was performed 2 days ago (opening pressure was 320-mm H_2O) and she complains of positional headache since then. You formulate a treatment plan, which includes medication toxicity monitoring, and arrange for a follow-up visit in 2 weeks.

Case 3.—A chronic migraine patient of your partner's for the past year calls Friday afternoon and demands to be seen for his acute migraine even though his regular provider (your partner) is away for the week. You see him, take a full history and do a complete exam and decide that he has a severe migraine and needs treatment with intravenous dihydroergotamine, which you arrange and supervise. You then stay late to make sure he is alright and then let him go home.

Case 4.—You are asked to see an inpatient on the renal ward with persistent migraine headaches. You arrive and he is in tears about pain in his left hemicranium that has been present for the last month. He is on methadone for his chronic back, neck, and feet pain. He has many trigger points in muscles of his limbs and back and a stocking pattern of hypesthesia in his lower extremities. You spend 60 min with the patient and decide he has either status migrainosis or hemicrania continua. You spend another 25 min discussing the case on rounds with the nephrology team.

PRACTICE CASE "ANSWERS"

Case 1.—CPT—99245. A lot of work was performed here; if an auditor was reviewing this case, he or she would be looking for high-level history, exam, and MDM to justify the "5 level." In this case, these 3 key components seem to indicate the level 5 code, but detailed documentation (outlined in part 4 of the American Headache Society Coding Corner – see Further Reading) would need to be present in the medical note. An alternate way to fulfill the requirements for 99245 is of course to use "time" as the deciding factor since 80 min was spent, the minimum time required in a new outpatient consultation to code at "5" level for a consultation based on time and coordination of care. However, one needs to remember that time is not a factor unless it is *specifically stated that more than 50% of the time was spent in counseling and coordination of care* irrespective of the H/P levels and MDM. Therefore, if time is the deciding factor, the first 3 key components are not even considered.

ICD-9—346.11 intractable migraine without aura, and 346.81 chronic migraine. Feel free to add diagnoses in the depression and anxiety categories if you addressed them during the visit.

Case 2.—CPT—99205. Without going into details about what constitutes high-level history, exam, MDM, and NPP, it sounds as if all of these were at the highest intensity. Here is where familiarization with the guidelines for assigning levels of intensity is important.

ICD-9—348.2 IIH, and 349.0 postlumbar puncture headache, and, if you feel these are clear, 307.42 insomnia, and 296.33 major depressive disorder.

Case 3.—CPT—99214. Despite the fact that this encounter actually constituted a "new patient" visit for you, not to mention a great deal of time and energy spent (on a Friday afternoon!), this visit is, at most, considered a follow-up, since this patient is under the care of another physician in your practice. In fact, this would be true if the patient was seen by anyone in your practice within the last 3 years. As for the level of intensity, perhaps a "5" level is appropriate but care must be taken to document all that was performed. Or perhaps you did a great deal of counseling which would allow a coding level based on counseling and coordination of care.

ICD-9—346.11 intractable migraine without aura, and 346.81 intractable chronic migraine.

Case 4.—CPT—99254. To qualify for the 5-level, high MDM and NPP would have to exist and it sounds as if some of the components were probably at only moderate level. Again, understanding of the necessary documentation requirements for high levels is crucial.

ICD-9—346.11 intractable migraine without aura (one could also add 346.9 probable HC), 723.1 cervicalgia, 729.1 fibromyalgia, and 356.9 peripheral neuropathy.

This article, as well as the suggested reference reading material, meets the ACGME requirements for residency training in the following core competency areas: Patient Care, Medical Knowledge, Practice-Based Learning and Improvement, and Systems-Based Practice.