Coding and billing issues in hospital neurology compensation

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Abstract

Background: Accurate coding and billing are critical for the financial health of hospitals. Neurologic inpatient services have specific, complex documentation requirements, which can result in inadequate billing.

Methods: We retrospectively compared coding practices from July 2013 to June 2014 (FY2014) using evaluation and management codes for initial inpatient encounters (CPT 99221-3) of a neurohospitalist group (NHG) to a hospital medicine group (HMG) and to national benchmarks. We further examined a sample of the lowest level encounters (CPT 99221) from the 4th quarter of FY2014 for specific deficiencies and compared these among groups.

Results: Low codes (CPT 99221) were more common in the NHG than the HMG and national benchmarks (54% vs 7% vs 4%, $p < 0.01$). Deficiencies in the examination were the most common reason for low coding in the NHG compared to the HMG (62% vs 5%, $p < 0.001$). Deficiencies in social history were more common in the NHG than the HMG (11% vs 0%, $p < 0.003$) but deficiencies in family history (34% vs 37%, $p = 0.75$) and review of systems (30% vs 30%, $p = 1.0$) were common in both groups. In the NHG group, documentation did not reflect the acuity of patients' medical conditions. **Conclusions:** Neurologists should pay close attention to documentation requirements—especially the neurologic examination—in order to allow for accurate coding and billing. *Neurol Clin Pract* 2016;6:487-497

Accurate billing is crucial for the financial health of medical institutions; however, in practice this can be challenging due to extensive documentation requirements. Lack of precise documentation results in billing a lower level than deemed appropriate by the patient's acuity level, which can be financially damaging due to earned but uncaptured revenue. For hospitals, cumulative losses from insufficient billing can destroy the slim profit margin by which these entities remain viable.¹ Billing and coding are based on what services are documented by the provider and may not accurately reflect what actions are actually performed. Selection of the appropriate charge code is most commonly done by the provider or a coding specialist. During this process, there is considerable opportunity for error. Data from the outpatient setting suggest physicians are accurate in only about 57% of cases.² Even among coding specialists, disagreement about the level of service is as high as 50%.³

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Billing and coding are based on what services are documented by the provider and may not accurately reflect what actions are actually performed.

For hospitalists and other hospital providers, services are coded under the Current Procedural Terminology (CPT) Evaluation and Management (E/M) guidelines. These codes are based on either the level of medical complexity or on time spent on care.³ When coding on medical complexity, each E/M service encounter has 3 major components: the history, examination, and the complexity of medical decision-making (MDM). MDM is further divided into the number of diagnostic considerations or management options, amount and intensity of data review, and risk. MDM level is determined by the highest of 2 of the 3 categories. Depending on the type of encounter, i.e., an initial or subsequent visit, inpatient or outpatient, there are specific requirements within those 3 components that must be included in order to achieve a certain billing code level (table 1).⁴

Although clinical encounters may differ among specialties in acuity of care, most of the documentation requirements for level of coding based on medical complexity are common among specialties. For example, the elements required for a comprehensive history are the same for hospital medicine and neurology (i.e., the minimum number of elements for a complete past medical, family, and social history [PFSH] is 3). In addition, the documentation requirements for MDM are nonspecific to specialty. For example, the point system for amount of data is the same if one is independently reviewing an echocardiogram or an EEG.

An exception to the generalizability of the E/M framework is the examination. In 1995, the Centers for Medicare & Medicaid Services (CMS) documentation guidelines for E/M had a single examination called the general multisystem organ examination (1995), but in 1997, the guidelines were revised to include a new general multisystem examination (1997) and several single organ system examinations (specialty examinations) as an alternative. This includes one for neurology referred to as the Neurology Examination, which is capitalized throughout this article to distinguish this specific documentation requirement from more common uses of a neurologic examination (table 2).^{5,6} Although a neurologist can choose either the more flexible general multisystem examinations (1995 or 1997) or the Neurology Examination, the latter more often reflects the traditional clinical neurologic examination. The Neurology Examination comprises 25 elements, or bullets, with 22 neurologic examination findings and 3 elements of the cardiovascular examination. All 22 Neurologic Examination elements and reporting at least one of the cardiovascular elements are required for a comprehensive examination. If any component of neurologic examination is omitted or there is no cardiovascular element, then the examination cannot be considered comprehensive and the encounter will be downgraded to the lowest reimbursement level (table 1).

Because of the unique requirements of the Neurology Examination used by neurologic providers compared to the general multisystem examination performed by medicine hospitalists, there is the potential for increased errors and omissions leading to lower billing levels despite a similar clinical intensity of care. To examine this issue, we compared the coding practices of a neurohospitalist group (NHG) with a hospital medicine group (HMG).

METHODS

In this retrospective cohort study, we analyzed inpatient billing data from NHG and HMG providers at the University of Colorado Hospital, a large academic medical center, from July 2013 to June 2014 (FY2014). The NHG is made up of 5 neurologists who staff the stroke

Table 1 Evaluation and management requirements for initial inpatient encounters

Element	Level I: 99221	Level II: 99222	Level III: 99223
History	Detailed	Comprehensive	Comprehensive
CC	Chief complaint		
HPI	Extended: 4–8 elements of single condition or status of 3 chronic conditions		
ROS	Extended: 2–9 elements	Complete: 10+ elements	Complete: 10+ elements
PFSH	Pertinent: 1–2 elements	Complete: 3 elements	Complete: 3 elements
Examination	Detailed	Comprehensive	Comprehensive
General multisystem	Extended: 12–17 bullets of 52 total	Complete: 18 bullets of 52 total available bullets	Complete: 18 bullets of 52 total available bullets
Specialty examination: Neurology	Extended: 12–17 bullets of 25 total	Complete: 22 bullets of 22 neurology bullets and 1 of 3 cardiovascular bullets	Complete: 22 bullets of 22 neurology bullets and 1 of 3 cardiovascular bullets
Medical decision-making	Low	Moderate	High
No. of diagnostic/management options	Limited: 1–2	Multiple: 3	Extensive: 4
	Add points for these problems:		
	Self-limited: 1 (max 2)		
	Established, well-controlled: 1		
	Established, not controlled: 2		
	New problem, no workup: 3 (max 1)		
	New problem, additional workup: 4		
Amount or complexity of data	Limited: 1–2	Multiple: 3	Extensive: 4
	Add points for these actions:		
	Order/review: pathology/laboratory: 1; radiology: 1; medical study: 2		
	Direct inspection of study: 2		
	Discussion with performing physician: 1		
	Obtain old medical records: 1		
	Summarize medical record or history from other sources: 2		
Risk	Low	Moderate	High
Examples			
Problems	One stable chronic illness or 2+ minor illnesses	One or more chronic illness with mild exacerbation or acute illness with systemic symptoms	One or more chronic illness with severe exacerbation, progression, or side effect or acute or chronic illness that threatens life or function
Diagnostic procedures	Imaging studies with contrast	Obtain fluid from body (i.e., lumbar puncture)	Lumbar discography
Management options	OTC drugs PT/OT	Prescription drugs	Emergency major surgery; drug therapy requiring monitoring (IVIg); DNR/DNI for poor prognosis
Time-based coding,^a min	30	50	70

Abbreviations: CC = chief complaint; DNI = do not intubate; DNR = do not resuscitate; HPI = history of the present illness; IVIg = IV immunoglobulin; OT = occupational therapy; OTC = over-the-counter; PFSH = past medical, family, and social history; PT = physical therapy; ROS = review of systems.

^aTo code on time, one must have spent at least 50% of the time on face-to-face counseling or patient care on the inpatient unit. It is important to document the total time of the encounter and the time spent on patient counseling and care coordination.

Table 2 The general multisystem examination compared to the Neurology Examination

Systems/areas	Elements
General multisystem^a	
Constitutional	<ul style="list-style-type: none"> • Three vital signs • General appearance
Eyes	<ul style="list-style-type: none"> • Inspection of conjunctivae and lids • Examination of pupils and irises • Ophthalmoscopy examination
Cardiovascular	<ul style="list-style-type: none"> • Palpation of heart • Auscultation of heart • Examination of femoral artery • Examination of carotids • Examination of aorta • Examination of pedal pulse • Examination of extremities
Musculoskeletal	<ul style="list-style-type: none"> • Examination of gait and station • Inspection/palpation of digits and nails • Inspection/palpation of joint • Range of motion • Stability • Muscle strength/tone
Neurologic	<ul style="list-style-type: none"> • Cranial nerves • Examination of DTRs • Examination of sensation
Psychiatric	<ul style="list-style-type: none"> • Judgment and insight • Memory • Mood and affect • Orientation
Respiratory	<ul style="list-style-type: none"> • Respiratory effort • Percussion • Palpation • Auscultation
Chest (breasts)	<ul style="list-style-type: none"> • Inspect breasts • Palpate breasts and axillae
Neck	<ul style="list-style-type: none"> • Examination of neck • Examination of thyroid
ENT	<ul style="list-style-type: none"> • Examination of ears and nose • Hearing • Inspection of lips, teeth, and gums • Otoscopic examination • Examination of nasal mucosa, septum, and turbinates • Examination of oropharynx

Continued

Table 2 Continued

Systems/areas	Elements
Gastrointestinal (abdomen)	• Examination of abdomen
	• Examination of liver and spleen
	• Examination for hernia
	• Examination of obtain stool sample
	• Examination of anus, perineum, rectum
Genitourinary/genitalia, groin, and buttocks	Male examination of:
	• Scrotum
	• Penis
	• Rectum
	Female examination of:
	• Cervix
	• Uterus
	• Adnexa
	• Genitalia
	• Urethra
Skin	• Bladder
	• Inspection of skin
	• Palpation of skin
Lymphatic	Palpation of lymph nodes
	• Neck
	• Axillae
	• Groin
	• Other
Areas	Elements
Specialty examination: Neurology (single organ)^b	
Constitutional	• Three vital signs
	• General appearance
Eyes	• Ophthalmoscopy examination
Cardiovascular	• Examination of carotid arteries
	• Auscultation of heart
	• Examination of peripheral vascular system
Musculoskeletal	• Examination of gait and station
	• Muscle strength
	• Muscle tone
Neurologic	Evaluation of higher integrative functions, including:
	• Orientation to time, place, and person
	• Recent and remote memory
	• Attention span and concentration

Continued

Table 2 Continued

Areas	Elements
	• Language
	• Fund of knowledge
	Test the following cranial nerves:
	• 2nd cranial nerve
	• 3rd, 4th, and 6th cranial nerves
	• 5th cranial nerve
	• 7th cranial nerve
	• 8th cranial nerve
	• 9th cranial nerve
	• 11th cranial nerve
	• 12th cranial nerve
	Other tests of neurologic function:
	• Examination of sensation
	• Examination of DTRs
	• Test coordination
Abbreviations: DTR = deep tendon reflex; ENT = ear, nose, throat.	
When a bullet has multiple elements (i.e., examination of gait and station), only one of these needs to be documented. An element can be stated as normal but if abnormal the particulars of the abnormality must be documented.	
^a A comprehensive examination using the 1997 rules requires 18 of 59 available bullets with at least 2 bullets from each of at least 9 areas. Using the 1995 rules, a comprehensive examination requires any documentation in at least 8 of the 12 organ systems (includes all of the above areas except chest and neck).	
^b A comprehensive examination requires 23 of the 23 available noncardiovascular bullets and 1 of 3 cardiovascular bullets.	

and general neurology services, which takes both inpatients and consults. In contrast, the HMG comprises 42 physicians who practice on the general medicine wards as well on inpatient subspecialty teams such as geriatrics and medical oncology. For all encounters, each provider submits a code to the third party coding specialists and all are reviewed and recoded as necessary. We reviewed only the final code after review by the coding specialists.

Using these data, we first determined the proportion of level 1, level 2, and level 3 initial inpatient E/M codes (CPT 99221, CPT 99222, and CPT 99223, respectively) for both groups. These numbers were compared against national benchmarks for hospital medicine based on a survey in the State of Hospital Medicine Report from 2014.⁷ Consultations that were converted into initial inpatient E/M codes from consult codes were also included. Level 1 initial inpatient E/M coding was identified as an area for further investigation due to a large variation from the national benchmark.

In subset analysis, level 1 inpatient E/M encounters from April 1, 2014, through June 30, 2014 (4th quarter FY 2014), were identified for detailed chart analysis. Encounters were reviewed for appropriateness of level 1 coding including assessment of MDM and deficiencies in documentation of elements in the history and examination. Note was also made of coding errors. Fisher exact test was used to compare the proportions of level 1 encounters between the NHG and the HMG as well to compare reasons for level 1 billing. Statistical analysis was performed with SPSS (version 21; IBM Corp., Armonk, NY). Fisher exact test was used when appropriate. *p* Values <0.05 were considered significant. This study met exempt status as nonhuman research from the local institutional review board.

The Neurology Examination has a small margin of error, with a documentation requirement of all 22 neurologic elements and 1 of 3 cardiovascular elements.

RESULTS

During FY2014, the NHG and the HMG had 1,036 and 6,591 initial inpatient encounters, respectively. In FY2014, there is a higher percentage of level 1 encounters in the NHG than in the HMG (54% vs 7%, $p < 0.01$) and the national benchmark (54% vs 4%, $p < 0.01$) (table 3).

In the subset analysis from April 2014 to June 2014, 101 NHG level 1 encounters including 60 (59%) consultations, 41 (41%) admissions, and 79 HMG level 1 encounters were identified (table 4). Of all the level 1 encounters in the NHG, 30 (30%) had a statement indicating the time spent on patient care, but none would have increased the coding level. In 62 (61%) of the NHG encounters, there was a single missing element in documentation leading to a level 1 encounter and there were multiple reasons in 39 (39%). Compared to the HMG, the incidence of omissions in the examination was much higher in the NHG (62% vs 5%, $p < 0.001$). These deficiencies in the Neurology Examination were divided into omission of an examination element in 52% of encounters and insufficient documentation in 48%, with the most common reason being the examination element had been deferred without a stated, legitimate reason. The most common missing elements of the examination were the fundoscopic examination ($n = 35$, 56%) and gait ($n = 30$, 48%).

Of the 101 NHG encounters in the subset, other missing elements included family histories in 34%, full review of systems (ROS) in 30%, and social histories in 11%. Compared to the HMG, there were higher incidents of failure to document social histories in level 1 encounters (11% vs 0%, $p < 0.01$) but similar rates for the family history (34% vs 37%, $p = 0.75$) and complete ROS (30% vs 30%, $p = 1.0$).

All 101 NHG initial patient encounters met criteria for moderate or high levels of MDM based on 2 of the 3 major components: a multiple number of diagnoses or one new problem requiring additional workup. All cases also met criteria for moderate or high risk.

DISCUSSION

Level 1 encounters for initial inpatients, the lowest billing level, in the NHG represented more than half the encounters and was 7 times higher than the HMG. To explain this difference, we first considered the clinical comparability of the 2 groups. The 2 services comprise disparate diagnoses; therefore the difference could be attributed to lower complexity of care. However, as per E/M guidelines, the MDM criteria are the same regardless of specialty, i.e., the number of diagnosis points are identical whether treating an exacerbation of chronic obstructive pulmonary disease or myasthenia gravis (table 1).

Table 3 Comparison of neurohospitalist group (NHG) initial inpatient encounter billing codes to hospital medicine group (HMG) and national benchmarks

FY2014	NHG (n = 1,036), %	HMG (n = 6,591), %	SHM ⁶ (n = 858,830), %	p Value
Level 1: 99221	54	7	4	<0.01
Level 2: 99222	18	12	19	
Level 3: 99223	28	81	77	

Table 4 Reasons for level 1 documentation for a subset of initial inpatient encounters in 4th quarter of FY2014

Q4 FY2014	NHG (n = 101), %	HMG (n = 79), %	p Value
Family history	34	37	0.753
Social history	11	0	0.003
Review of systems	30	30	1.000
Examination	62	5	<0.001
Coding errors	17	34	0.009
Multiple issues	39	5	—

Abbreviations: HMG = hospital medicine group; NHG = neurohospitalist group.

Moreover, evaluation of risk to determine level of coding for the encounter utilizes standard elements of inpatient care rather than specialty-specific interventions. For instance, prescribing any new medications qualifies as a moderate risk across all specialties. Of the 101 initial encounters with the NHG, all had at least a moderate to high risk for MDM, with more than one problem being actively addressed, thus qualifying for a higher, level 2 or level 3, coding designation. Therefore, rather than attributing this billing level disparity between the HMG and NHG to low-complexity MDM, our evidence shows the most likely reason is a lack of documentation in the history or examination resulting in coding a lower-level charge (table 4).

The majority of the level 1 encounters in the NHG had missing elements in the Neurology Examination. Despite the importance of comprehensive examinations, there were missing examination elements in the majority (65%) of level 1 encounters. It is unknown whether these elements were not documented because they were not performed or simple omissions.

In addition to the Neurology Examination, the NHG had a higher incidence of omission of the social history in the NHG than the HMG (11% vs 0%, $p < 0.003$), with a similar percentage of omission of the family history and review of systems. These were often excluded entirely and can be attributed to either failing to collect this information or a failure of documentation. This deficiency may also be in part due to an unintended consequence of our electronic medical record (EMR) systems' ability to autopopulate previously collected patient information. In our current system, an existing note template is programmed to automatically pull in information in the social history. Due to this default, providers may assume these data have been collected on prior admissions, and skip over this portion of the documentation. In addition, if nothing has been entered on the patient prior to the encounter, there is fill in text: "No social history documentation on file." To the inattentive, this text could be misread as data collected and complete.

Our analysis highlights both the need for precise documentation practices by inpatient neurologists, as well as the utility of the level 1 billing percentage as a viable metric for determining compliance. These documentation omissions could have had a real negative financial consequence over time. Assuming comparable acuity and complexity of care as documented in the MDM and using local reimbursement rates, we estimated the total amount of revenue that would have been earned but lost per year due to low-level inpatient encounters ranges anywhere from \$33,000 to over \$100,000 depending on payer mix. (With average reimbursement ranges of level 1 ~\$70–\$225, level 2 ~\$100–\$300, level 3 ~\$150–\$450, the difference of reimbursement for level 2 and 3 encounters to level 1 is ~\$27–\$80 and \$75–\$225, respectively. Expected proportions of levels 2 and 3 were calculated and multiplied by the differences above and the number of level 1 encounters expected in SHM benchmark – the actual to determine the revenue lost.) The total revenue lost is likely greater than this estimate since this does not include documentation omissions in subsequent patient encounters.

Our study had several limitations. These data are from a single large academic medical center (AMC), making the results very specific to our institution. In our AMC, much of the face-to-face care is delivered by trainees, and this cannot be counted towards the time on behalf of the faculty provider and may be the reason for the low incidence of time-based coding. This may not be the same in other settings as many neurologic encounters require lengthy family discussions with counseling or other patient care coordination. If other practices are using time-based coding, then many of the issues raised here in MDM coding would not have as much of an effect.

In addition, trainees provide much of the initial documentation, which is then reviewed, edited, and attested by an attending physician. These trainees often have little to no prior training in E/M documentation. Both the NHG and HMG utilize a third-party, internal auditing service that reviews all inpatient E/M codes and will adjust the charges according to the documentation. In addition, no nationwide benchmarks exist specifically for inpatient neurologists, thus the need to compare against inpatient internal medicine physicians as a benchmark.

Although the study results are specific to our institution, they highlight the importance of reviewing and understanding national documentation guidelines and principles. Neurologists should pay careful attention to the documentation requirements for E/M. First, they should be aware of the option to code based on MDM or time spent on care. This is particularly important as neurologic encounters in the hospital often require a lot of time for counseling. If more than half the encounter time is spent on counseling or other patient care coordination, it would obviate the need for the complexity of MDM-based coding.

If coding on MDM, it is important to correctly document all common elements including family history, social history, and review of systems regardless of specialty. Of specific importance to neurology are the various rules and ways of documenting the examination. As mentioned previously, there are the 2 general multispecialty examinations (1995, 1997) and the Neurology Examination. Although the Neurology Examination is most consistent with the commonly performed examination, occasionally the general multispecialty examination may be more appropriate. The Neurology Examination has a small margin of error, with a documentation requirement of all 22 neurologic elements and 1 of 3 cardiovascular elements. This disparity in requirements highlights the high level of documentation precision required by neurologists to accurately code using this examination (table 2).

Comparatively, there is more flexibility with the general multisystem examinations documentation requirements, but providers should know of the 2 versions of the general multisystem examination: the 1995 and 1997. Nuanced differences between the two may be key for neurologic providers as the 1995 version only requires some documentation in 8 of 12 organ systems and the 1997 version is more rigid (table 2). There is a lot of overlap in the organ systems of the 1995 version in what is covered commonly in the neurologic examination, including constitutional, eyes, cardiovascular, musculoskeletal, neurologic, psychiatric, and ENT. If there is a clinical reason to examine at least one other organ system, i.e., respiratory, then it would qualify as a comprehensive examination.

This choice of which examination rules to use is further complicated by the clinical circumstances often encountered by providers of inpatient neurologic care. Oftentimes, patients are in a clinical state that renders parts of the Neurology Examination impractical, such as an obtunded patient. In this situation, the provider has 2 options. They may (1) defer an element; however, the reason behind the deferral should be documented—a coding nuance that is often overlooked; or (2) use one of the general multisystem examination requirements if this is more representative of the examination performed. It should be noted that although most carriers follow the CMS guidelines, some of these specific rules vary, i.e., not all carriers will accept a deferred examination element even if there is a stated reason.

There are several additional and important specifics of proper documentation of which providers should be aware. One example is that although some bullets on the examination include 2 items (i.e., gait and station), both should be examined, but only one needs to be documented.

Another is that normal is considered a complete documentation of normal elements on the examination but anything abnormal explained as abnormal alone is considered deficient. All providers should avoid using deferred as default terminology, and instead explain briefly the reason for omission. Sometimes providers refer to other areas of the medical record containing certain up-to-date elements of the history: PFSH and ROS. For example, patients might fill out ROS forms on admission, and this can be scanned to the medical record. This incorporation by reference is valid but providers must review this information with the patient or other historians and document this review. Some auditors require a specific reference to the source information, including note author, date, and time.

Possible solutions for improving documentation could include updated templates in an EMR system that could alert providers to collect and document these elements. These could be dynamic templates tailored to the various versions of the examination to ensure proper documentation. In addition, our providers could be encouraged to include elements of social history in the history of present illness because they count no matter where in the documentation they are written.

With these numerous and complicated rules, various options for the examination, and the specific narrow margin for error on the Neurologic Examination, regular periodic educational sessions to both faculty and trainees on appropriate documentation is recommended. In addition, timely and regular feedback to providers on key documentation elements would be helpful to improve accuracy and reduce natural attrition.

The neurohospitalist group has considerably lower coding than the medicine hospitalist group despite a similar amount of medical decision-making that could lead to substantial reductions in charges and revenue. This is due to not only to omissions of common documentation elements but specifically to the challenge of adapting a commonly performed neurologic examination to the various disparate documentation rules. Although the results are specific to our institution, they demonstrate the need for neurology providers to review and understand national documentation guidelines and principles. Intermittent education, feedback, and systemic tools like EMR templates are recommended to avoid these omissions.

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AUTHOR CONTRIBUTIONS

P.J. Korb participated in the design and conceptualization of the study, analysis and interpretation of the data, and drafting and revising of the manuscript for intellectual content. S.J. Scott participated in the design and conceptualization of the study, analysis and interpretation of the data, and drafting and revising of the manuscript for intellectual content. A.C. Franks participated in the analysis and interpretation of the data. A. Virapongse participated in the design and conceptualization of the study, analysis and interpretation of the data, and drafting and revising of the manuscript for intellectual

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