Parkinson Disease *ICD-10-CM* Coding

Current *ICD-10-CM* coding does not adequately reflect the complexity of Parkinson disease after motor fluctuations and dyskinesia emerge.

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The International Classification of Diseases, Tenth Revision, Clinical Modification (*ICD-10-CM*) is a morbidity classification used in the US for classifying diagnoses and reasons for visits to all health care settings.[1] The codes comprising the *ICD-10-CM* are used to compile statistics, adjudicate coverage, calculate payment, and assess quality of care.[2] Codes are updated annually because inadequate coding can prevent accurate payment for services rendered and limit the evaluation of medical processes and outcomes.[2] We have assessed the need for additional *ICD-10-CM* codes for Parkinson disease (PD) to better reflect patient care.

PD Progression & Motor Complications

PD is a chronic, progressive disorder affecting approximately 1 million people in the US.[3-5] Disease progression causes greater morbidities and disabilities because of advancing fluctuations in motor and nonmotor symptoms. These issues are further compounded by the heterogeneous nature of PD in which symptoms, manifestations, and natural history often vary from person to person, thus complicating disease management.

The pathologic hallmark of PD is the presence of Lewy bodies, which are intracellular inclusions of α-synuclein.[6,7] These α-synuclein protein aggregates are associated with the death of dopamine-producing neurons[4] and have been implicated in the progressive, neurodegenerative process underlying idiopathic PD.[8] Levodopa and other dopaminergic therapies replenish striatal dopamine and provide symptomatic benefit.[9] As neurodegeneration progresses over 3 to 5 years, however, progressive striatal denervation coupled with variable intestinal absorption of levodopa due to gastric dysmotility—reflecting enteric nervous system involvement—causes the emergence of motor complications, including motor fluctuations (ie, "OFF" episodes) and dyskinesia.[10]

As a consequence of motor fluctuations, patients alternate throughout the day between increasingly shorter periods when they have improvement in symptoms ("ON"), periods of dyskinesia ("ON" with dyskinesia), and increasing periods when motor and nonmotor symptoms of PD reemerge ("OFF" episodes).[11] Progressive neurodegeneration in different parts of the nervous system results in different types of "OFF" episodes (Table 1). These motor complications of dyskinesia and "OFF" episodes become the major problem for individuals with PD through the remaining course of their disease and significantly increase the complexity of clinical evaluation and management compared with early-stage PD without motor complications.

TABLE 1. MOTOR FLUCTUATIONS IN PARKINSON DISEASE

Type of episode	Definition
Morning "OFF"	An "OFF" state before taking a first morning dose of medication (morning akinesia)
Delayed "ON"	Delayed response to medication with satisfactory improvement in motor and/or nonmotor symptoms
End-of-dose wearing "OFF"	Predictable recurrence of motor and/or nonmotor symptoms before next scheduled dose of medication
Unpredictable "OFF"/"ON"	Random and abrupt transition from an "ON" to an "OFF" state
Partial "ON"	Partial response to medication with less than satisfactory improvement in motor and/or nonmotor symptoms
No "ON" (dose failure)	No response to medication (ie, no improvement in motor and/or nonmotor symptoms)

Nearly all patients will experience "OFF" episodes during the course of their disease. After 4 to 6 years of oral levodopa treatment, "OFF" episodes occur in approximately 40% of people with PD, and this increases to approximately 70% after 9 years.[12] Dyskinesia is also common with disease progression,[13] occurring in 11% of individuals with PD treated for less than 5 years, 32% of those treated for 6 to 9 years, and 89% of those treated for 10 years or more.[14]

Fluctuating episodes of "ON" time, "ON" time with dyskinesia, and "OFF" time create substantial burdens affecting quality of life and activities of daily living.[10,15,16] "OFF" episodes may increase the risk of injury and the number of hospitalizations caused by falls.[17] Additionally, symptom management becomes more complex in advancing stages of PD.[18] Treatment in early-stage disease is usually associated with robust improvement in symptoms and patients may not notice any fluctuations throughout the day.[19] Within several years, however, most experience symptom fluctuations associated with disease progression.[20] As PD progresses, individuals will require more frequent adjustments of their initial therapy along with the addition of adjunctive medications, including treatments that increase "ON" time (ie, on-extenders), on-demand treatments to manage "OFF" episodes, and therapies to reduce dyskinesia.[4,21] Furthermore, fluctuating PD symptom management must be personalized for each patient, reflecting comorbidities, polypharmacy, nonmotor PD symptoms, and risk of falls.[21]

Limitations of Current *ICD-10-CM* Coding for PD

Unlike other neurologic disorders (eg, migraine and epilepsy), there is only a single *ICD-10-CM* code for PD, namely G20.[22] The single, nonspecific code for PD cannot accurately capture motor fluctuations and dyskinesia that emerge with PD progression. Based on the limitations of a single *ICD-10-CM* code for PD, a 7-member panel (6 movement disorder specialists and an *ICD-10-CM* coding expert) convened to review *ICD-10-CM* coding for PD and possible current ancillary codes that could be used to document "OFF" episodes and dyskinesia in PD. Other potential *ICD-10-CM* codes were considered for PD but did not provide accuracy or specificity.

Motor Fluctuations and Dyskinesia

As fluctuations and dyskinesia reflect disease progression, codes that specify treatment consequences are not accurate. These motor complications are neither adverse effects of medications nor do they reflect underdosing of medications due to patient nonadherence. "OFF" episodes are not a result of dose or medication failure and do not indicate that a drug regimen is no longer effective. Therefore, coding PD with dyskinesia and/or "OFF" episodes using T42.8X5 (ie, adverse effect of antiparkinsonism drugs and other central muscle-tone depressants) or T42.8X6 (ie, underdosing of antiparkinsonism drugs and other central muscle-tone depressants) is inconsistent with the nature of these events. In contrast, adverse dopaminergic effects such as nausea or foot edema would be appropriately coded as T42.8X5, and consistent nonfluctuating bradykinesia could be coded with T42.8X6.

Dystonia

There is currently an *ICD-10-CM* code for dystonia (G24) and subcodes for different types of dystonia (G24.0–G24.9), as well as an *ICD-10-CM* code for drug-induced subacute dyskinesia (G24.01). These are not accurate to specify PD with dyskinesia, however. In PD, dyskinesia results from multiple mechanisms associated with disease progression, including glutamatergic overactivity, serotonin neuronal false transmitter release of dopamine, and loss of striatal buffering capacity.[14,23,24] In contrast, another unrelated movement disorder, tardive dyskinesia, is accurately coded by G24.01,[22] because this is caused by drug-induced dopamine receptor blocking mechanisms.[25]

Recommendations for PD *ICD-10-CM* Coding

Based on this review, the panel recommends the *ICD-10-CM* coding structure for PD be expanded to provide specificity to distinguish motor complications of dyskinesia and/or "OFF" episodes (Table 2; Figure 1). The proposed changes include delineating between individuals without dyskinesia or fluctuations (G20.01), without dyskinesia but with fluctuations (G20.02), with dyskinesia but without fluctuations (G20.11), and with dyskinesia and fluctuations (G20.12).

Revising PD *ICD-10-CM* Coding May Improve Care

The current, single, nonspecific *ICD-10-CM* code for PD does not accurately specify patients with motor complications, including "OFF" episodes and dyskinesia. Consequently, the prevalence of these symptoms and their effect on patients, caregivers, and the overall health care system is extremely difficult to screen, document, and track in a systematic fashion. There is a pressing need for additional research to determine the prevalence of motor complications that occur with disease progression and their effect on people with PD. Moreover, a claims analysis with the current *ICD-10-CM* codes is likely to vastly underestimate the prevalence of "OFF" episodes and dyskinesia. This lack of data capture for patients with PD and symptom fluctuations can also impede proper patient evaluation and management. Specific *ICD-10-CM* codes for "OFF" episodes and dyskinesia could help facilitate appropriate access to care and the growing armamentarium of therapies for patients with PD, and could also increase awareness and lead to better disease management.

Under the current *ICD-10-CM* coding structure, individuals with PD and their health care providers are at risk of delays, gaps, and/or barriers in the management of these symptoms. An analysis of national commercial and Medicare pharmacy patients demonstrated that 26% and 70% of patients, respec-

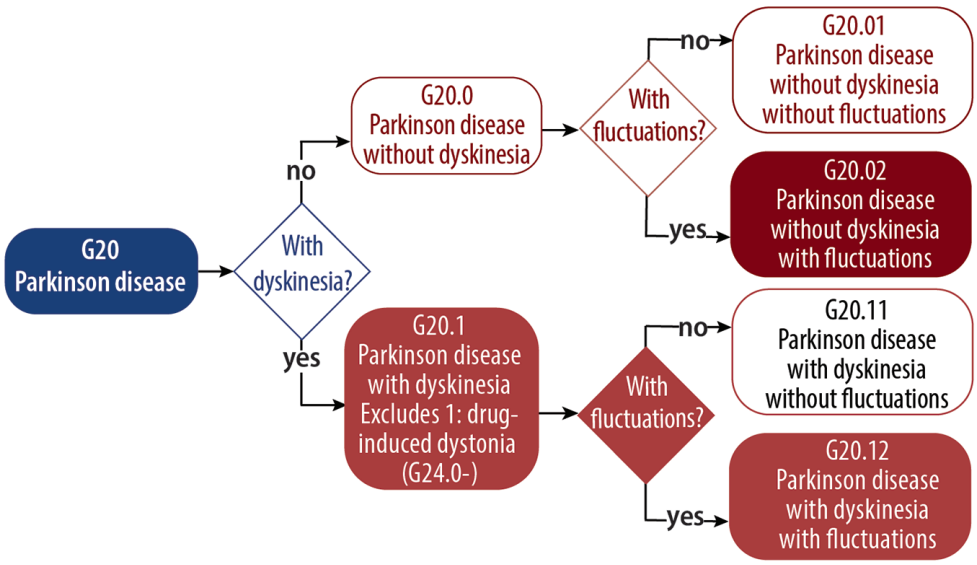

Figure 1. Proposed *International Classification of Diseases, Tenth Revision, Clinical Modification* (*ICD-10-CM*) codes for Parkinson disease.

TABLE 2. PROPOSED *ICD-10-CM* CODES FOR PARKINSON DISEASE

G20 Parkinson disease	
Hemiparkinsonism, parkinsonism or Parkinson disease (idiopathic, primary, or not otherwise specified [NOS]), and paralysis agitans	
New subcategory	G20.0 Parkinson disease without dyskinesia
New code	G20.01 Parkinson disease without dyskinesia, without fluctuations
Add	Parkinson's disease without dyskinesia, without "OFF" episodes
New code	G20.02 Parkinson disease without dyskinesia, with fluctuations
Add	Parkinson disease without dyskinesia, with "OFF" episodes
New subcategory	G20.1 Parkinson disease with dyskinesia
Add	Excludes 1: Drug-induced dystonia (G24.0–)
New code	G20.11 Parkinson disease with dyskinesia, without fluctuations
Add	Parkinson disease with dyskinesia, without "OFF" episodes
New code	G20.12 Parkinson disease with dyskinesia, with fluctuations
Add	Parkinson disease with dyskinesia, with "OFF" episodes

Abbreviations: *ICD-10-CM*, *International Classification of Diseases, Tenth Revision, Clinical Modification*.

tively, have restricted access to subcutaneous apomorphine, an on-demand treatment for "OFF" episodes, because payer policies require a diagnosis of "OFF" episodes as a condition of access to therapy.[26] Revising the *ICD-10-CM* coding structure for PD would assist in simplifying and standardizing the documentation of a diagnosis of "OFF" episodes or dyskinesia and improve patients' ability to gain access to medically necessary and appropriate treatments.

The proposed revisions to the *ICD-10-CM* coding structure for PD could also increase the payment accuracy for services rendered and facilitate the evaluation of medical processes and outcomes from a quality-of-care perspective. Physicians spend substantially more time and resources treating patients with motor complications compared with those who are in stable condition at earlier stages of the disease. The proposed coding could help health service researchers obtain a better understanding of the epidemiology and medical and economic burden of motor complications experienced by patients with PD. For example, an *ICD-10-CM* code specific for "OFF" episodes could also allow for the collection of data and development of a database for future clinical research, including studying the influence that "OFF" episodes have on PD-related health care resource utilization.

Some potential challenges may exist with expanding the *ICD-10-CM* coding structure for PD. The process of learning and entering new codes might be more time consuming for physicians until they adjust to the new proposed coding system. Under the current coding structure, however, health care providers need to accurately document patients' symptoms to support the proper code. This could indirectly affect how physicians accurately address and manage PD symptoms, which might also impede physicians' time. Therefore, including additional codes to specify motor complications associated with

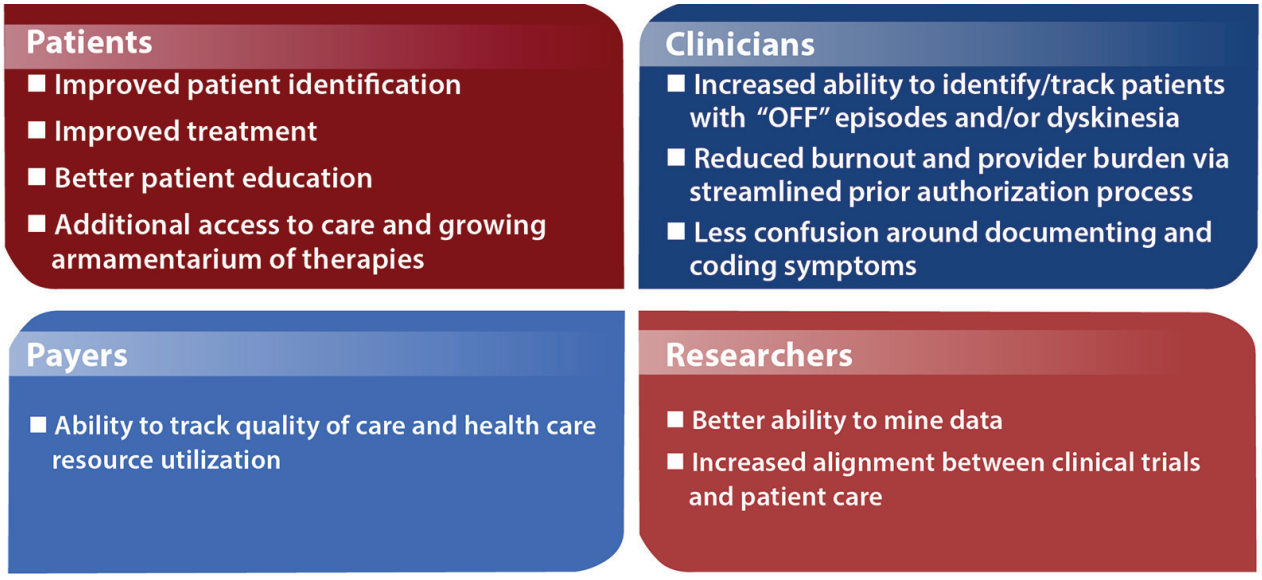

Figure 2. Potential benefits associated with revising the *International Classification of Diseases, Tenth Revision, Clinical Modification* (*ICD-10-CM*) for Parkinson disease.

PD would be expected to facilitate the process for health care providers to accurately diagnose and code a patient with PD and "OFF" episodes and/or dyskinesia. Furthermore, expanding the *ICD-10-CM* coding for PD may reduce the time associated with providing clinical notes and additional documentation to justify both adjunctive and on-demand treatments for "OFF" episodes and dyskinesia for prior authorization. Another potential challenge is the possible learning curve associated with revising the coding structure for PD and more time spent on administrative tasks. However, the *ICD-10-CM* codes are updated on an annual basis and health care providers implement these changes with relative ease. Both potential limitations are expected to be outweighed by the benefits associated with revising the *ICD-10-CM* codes for PD (Figure 2).

Support for Revision of *ICD-10-CM* Codes for PD

The American Academy of Neurology supports the need to update the *ICD-10-CM* coding to better reflect the progression of PD. Patient advocacy groups also support this need, including the Michael J. Fox Foundation for Parkinson's Research (MJFF) and the Unified Parkinson's Advocacy Council (UPAC), which is a group of national, regional, and state organizations including the Parkinson's Foundation, the American Parkinson Disease Association, and the Davis Phinney Foundation for Parkinson's among others.

Summary

Revision of the *ICD-10-CM* coding structure for PD is a major unmet need for a population that is expected to continue to increase over the next decade. The treatment paradigm for PD continues to evolve with specific medications now available for PD dyskinesia and for the on-demand management of "OFF" episodes in PD. The recommended changes to the *ICD-10-CM* coding structure proposed herein could have benefits across a number of stakeholders, with the ultimate goal of improving the overall quality of increasingly complex patient care. ■

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Disclosures
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