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Parkinson's Disease

Quality Measurement Set

Approved by the Movement Disorders Work Group on [DATE]. Approved by the AAN Measure Development Subcommittee on [DATE]. Approved by the AAN Quality Committee on [DATE]. Approved by the American Academy of Neurology Institute Board of Directors on [DATE].

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Improving Outcomes for Patients with Parkinson's Disease

Prevalence and Impact of Parkinson's Disease

Parkinson's disease (PD) is the second most common neurodegenerative disorder[i]. Age is the most consistent risk factor for PD, which is uncommon below the age of 50 and peaks in both prevalence and incidence in the 9th decadei[ii]. Globally, the overall prevalence of PD in 2016 was 6.1 million[ii]. In the United States, there were an estimated 680,000 cases of PD among individuals aged ≥45 years in 2010[iii]. This number was projected to rise to 930,000 cases in 2020 and double to 1,238,000 cases by 2030 [iii].

Clinically, PD is characterized by both motor (rest tremor, bradykinesia, rigidity) and non-motor (including but not limited to neuropsychiatric, autonomic, and sensory) symptoms. Dopaminergic neuron loss and α-synuclein-containing Lewy bodies are seen in the substantia nigra pathologically. While there are effective symptomatic treatments for the major motor symptoms of PD, there are currently no proven therapies to modify disease progression. Symptom burden increases as the disease advances, and PD is now the fastest growing source of neurological disability worldwideii. Estimated direct medical expenses for the PD population were approximately $14.4 billion in 2010, $8.1 billion more than the estimate for the general population without PD[iv], with the majority of costs going towards nursing home care. The estimated indirect nonmedical cost of PD, which includes work days lost, disability payments and home health care costs, was estimated to be $6.3 billion in 2010[iv]. This economic burden will only grow in the coming years as the population ages and the number of persons with PD increases.

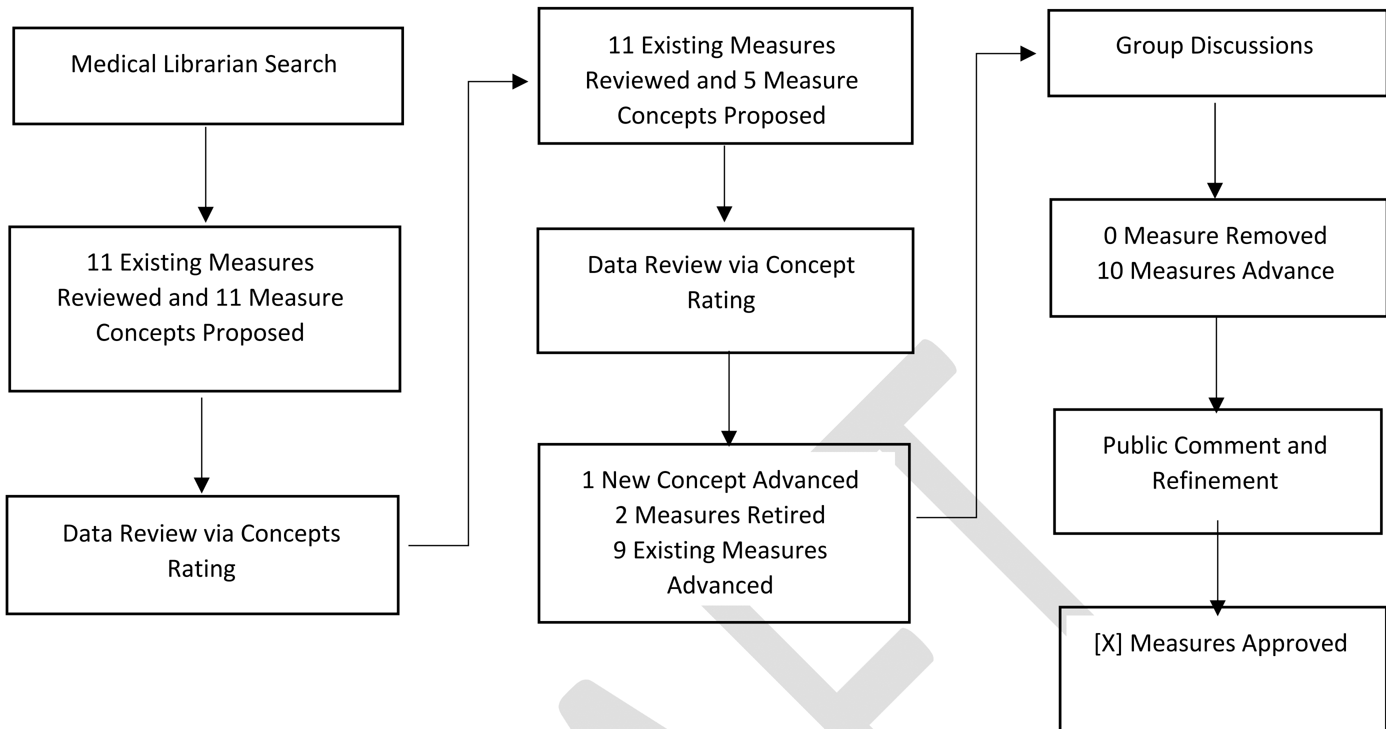
Measure Development Process

The AAN Quality Measures Subcommittee approved a Movement Disorder Standing Work Group for this update. The work group includes physician, nursing, patient, and care giver representatives from professional associations and patient advocacy organizations to ensure measures developed included input from all members of the healthcare team. All members are required to disclose relationships with industry and other entities to avoid actual, potential, or perceived conflicts of interest. Individuals were instructed to abstain from voting on individual measure concepts if a conflict was present.

The AAN anticipates the measure work group will revisit measures every six months evaluating new evidence statements, new measures released by other developers, and AAN movement disorder implementation and performance data to nimbly respond to developments in these areas. The work group is charged with updating measures as needed over the two-year period and developing supporting materials and implementation guides as appropriate.

The AAN measure development process involves a modified Delphi review by the work group to reach consensus on measures to be developed prior to a 21-day public comment period and further refinement.

Below is an illustration of the measure development process from proposals, discussion, research, evaluation, and approval.



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2020 Parkinson's Disease Measurement Set

Annual Parkinson Disease Diagnosis Review
Avoidance of Dopamine-blocking Medications
Assessment of PD Medication-related Motor Complications
PD Rehab Therapy Referral
Exercise or Physical Activity Counseling
Assessment of Mood Disorders
Assessment of Psychiatric Complications of Dopaminergic Medications
Assessment of Sleep Disturbances
Assessment or Screening of Cognitive Impairment or Dysfunction
Assessment of Autonomic Dysfunction

Other Potential Measures

- Caregivers asked about and counseled on caregiver burden
- Discussion of cholinesterase inhibitors
- Counseling on complementary physical therapy modalities
- PD symptoms not adequately controlled by medications that had surgical/device therapies discussed
- Ability to manage medications
- PD patients engaging in exercise
- Caregiver quality of life
- Palliative care consult or referral
- Ability to carry out ADL/IADL

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Retired 2015 Measures

2015 Parkinson's Disease Quality Measurement Set Update
Annual Parkinson's Disease Diagnosis Review ***Updated***
Avoidance of Dopamine Blocking Medications in Patients with Parkinson's Disease ***Updated***
Psychiatric Symptoms Assessment for Patients with Parkinson's Disease ***Updated***
Cognitive Impairment or Dysfunction Assessment for Patients with Parkinson's Disease ***Updated***
Querying About Symptoms of Autonomic Dysfunction for Patients with Parkinson's Disease ***Updated***
Querying About Sleep Disturbances for Patients with Parkinson's Disease ***Updated***
Fall Rate for Patients with Parkinson's Disease *Retired*
Parkinson's Rehabilitative Therapy Options ***Updated***
Counseling Patients with Parkinson's Disease About Regular Exercise Regimen ***Updated***
Querying About Parkinson's Disease Medication-Related Motor Complications ***Updated***
Advanced Care Planning for Patients with Parkinson's Disease *Retired*

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Measure Title	Annual Parkinson's Disease diagnosis review	
Description	Percentage of all patients with a diagnosis of PD who had their diagnosis reviewed annually for the first 5 years after diagnosis of PD	
Measurement Period	January 1, 20xx to December 31, 20xx	
Eligible Population	**Eligible Providers**	Medical Doctor (MD), Doctor of Osteopathy (DO), Physician Assistant (PA), Advanced Practice Registered Nurse (APRN)
	Care Setting(s)	Outpatient, skilled nursing home
	Ages	All patients
	Event	Office visit
	Diagnosis	Parkinson's Disease
Denominator	All patients with a diagnosis of PD	
Numerator	Patients who had their diagnosis reviewed^ annually for the first 5 years after initial diagnosis of PD ^Reviewed is defined as an evaluation using the UK Parkinson's Disease Society Brain Bank Clinical Diagnostic Criteria or the MDS-PD criteria or discussion of differential diagnosis.	
Required Exclusions	None	
Allowable Exclusions	None	
Exclusion Rationale	N/A	
Measure Scoring	Percentage	
Interpretation of Score	Higher score indicates better quality	
Measure Type	Process	
Level of Measurement	Provider	
Risk Adjustment	N/A	
For Process Measures Relationship to Desired Outcome	Process •Review PD diagnosis annually for first 5 years Outcomes •Confirmation of PD diagnosis	
Opportunity to Improve Gap in Care	Literature has shown that the PD clinical diagnosis can be elusive. Confirmation of PD diagnosis on a yearly basis should enhance the ability to make a proper diagnosis and provide appropriate prognostic information and therapeutic approaches.	

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	In a 2013 study by Baek et al., reviewing compliance with quality measure recommendations, it was noted provider compliance rate for annual review of Parkinson's medications was 97.2% while the annual review of atypical features was 14.3%.
Harmonization with Existing Measures	No existing measures known.
References	1. National Institute for Health and Clinical Excellence (NICE) Parkinson's disease: Diagnosis and management in primary and secondary care. NICE clinical guideline 35. June 2006. (Still a current guideline; revision anticipated in October 2016). 2. Suchowersky O, Reich S, Perlmutter J, et al. Practice parameter: diagnosis and prognosis of new onset Parkinson disease (an evidence-based review): Report of the Quality Standards Subcommittee of the American Academy of Neurology. *Neurology* 2006;66(7):968-975. Reaffirmed July 13, 2013. 3. Scottish Intercollegiate Guidelines Network. Diagnosis of pharmacological management of Parkinson's disease. 2010. 4. EFNS/MDS-ES recommendations for the diagnosis of Parkinson's disease. European Journal of Neurology 2013; 20:16-34. 5. Adler GH, Beach TB, Hentz JG, et al. Low clinical diagnostic accuracy of early vs advanced Parkinson disease: clinicopathologic study. Neurology 2014;83(5):406-412. 6. Baek WS, Swenseid SS, Poon KT. Quality Care Assessment of Parkinson's Disease at a Tertiary Medical Center. International Journal of Neuroscience 2013; 123(4): 221-225.

Code System	**Code**	**Code Description**
Initial Population		
CPT	99201-99205	Office or other outpatient visit, new patient
CPT	99211-99215	Office or other outpatient visit, established patient
CPT	99241-99245	Office or other outpatient consultation, new or established patient
CPT	99304-99310	Nursing home consultation
Denominator		
ICD-10	G20	Parkinson's Disease
		Hemiparkinsonism
		Idiopathic parkinsonism or Parkinson's Disease
		Paralysis agitans
		Parkinsonisms or Parkinson's disease NOS
		Primary Parkinsonism or Parkinson's disease
SNOMED	49049000	Parkinson's disease (disorder)
SNOMED	230291001	Juvenile Parkinson's disease (disorder)
SNOMED	715345007	Young onset Parkinson disease (disorder)
SNOMED	737582007	Hemiparkinsonism hemiatrophy syndrome (disorder)
SNOMED	32798002	Parkinsonism (disorder)

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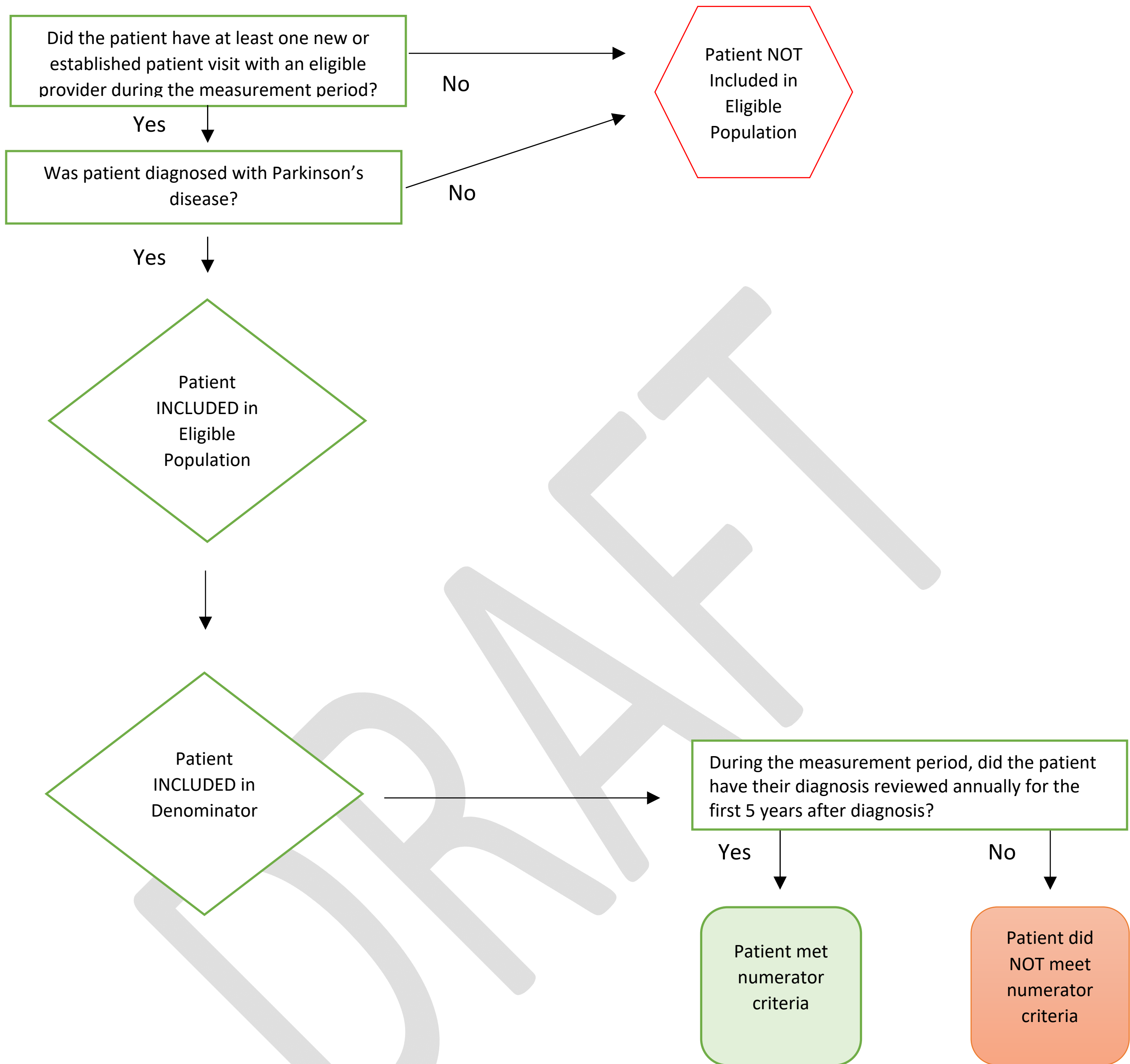
Flow Chart Diagram: Annual diagnosis review



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<table>
<tr><td>Measure Title</td><td colspan="2">Avoidance of dopamine-blocking medications in patients with Parkinson’s Disease</td></tr>
<tr><td>Description</td><td colspan="2">Percentage of patients with a diagnosis of PD who are currently prescribed a contraindicated dopamine-blocking agent

*Note: this is an inverse measure where a lower score is more desirable.</td></tr>
<tr><td>Measurement Period</td><td colspan="2">January 1, 20xx to December 31, 20xx
*Performance is based on a 12-month look back period</td></tr>
<tr><td rowspan="5">Eligible Population</td><td>Eligible Providers</td><td>Medical Doctor (MD), Doctor of Osteopathy (DO), Physician Assistant (PA), Advanced Practice Registered Nurse (APRN)</td></tr>
<tr><td>Care Setting(s)</td><td>Outpatient, inpatient, skilled nursing home, ED, urgent care</td></tr>
<tr><td>Ages</td><td>All patients</td></tr>
<tr><td>Event</td><td>Office visit, E/M services performed or supervised by an eligible provider, admitted to an inpatient or residential facility, seen for consultation in the ED or urgent care</td></tr>
<tr><td>Diagnosis</td><td>Parkinson’s Disease</td></tr>
<tr><td>Denominator</td><td colspan="2">All patients with a diagnosis of PD</td></tr>
<tr><td>Numerator</td><td colspan="2">Patients currently prescribed a contraindicated dopamine blocking agent* (i.e., anti-psychotic, anti-nausea, anti-GERD) in the previous 12 months

*Dopamine blocking agents are:
Acepromazine, amisulpride, amoxapine, asenapine, azaperone, aripiprazole, benperidol, brexpiprazol, bromopride, butaclamol, chlorpromazine, chloprothixene, clomipramine, clopenthixol, deutratetrabenazine, droperidol, eticlopride, flupenthixol, fluphenazine, haloperidol, hydroxyzine, iodobenzamide, levomepromazine, loxapine, lurasidone, mesoridazine, metoclopramide, nafadotride, nemonapride, olanzapine, paliperidone, penfluridol, perazine, perphenazine, pimozide, prochlorperazine, promazine, promethazine, raclopride, remoxipride, reserpine, risperidone, spipersone, spiroxatrine, stepholidine, sulpride, sultopride, tetrabenazine, tetrahydropalmatine, thiethylperazine, thioridazine, thiothixene, tiapride, trifluoperazine, trifluperidol, triflupromazine, trimipramine, valbenazine, ziprasidone</td></tr>
<tr><td>Required Exclusions</td><td colspan="2">Patients taking clozapine or quetiapine</td></tr>
<tr><td>Allowable Exclusions</td><td colspan="2">None</td></tr>
<tr><td>Exclusion Rationale</td><td colspan="2">Clozapine and quetiapine have been demonstrated to not worsen motor symptoms significantly.</td></tr>
<tr><td>Measure Scoring</td><td colspan="2">Percentage</td></tr>
<tr><td>Interpretation of Score</td><td colspan="2">Lower score indicates better quality</td></tr>
<tr><td>Measure Type</td><td colspan="2">Process</td></tr>
<tr><td>Level of Measurement</td><td colspan="2">Provider</td></tr>
<tr><td>Risk Adjustment</td><td colspan="2">N/A</td></tr>
<tr><td>For Process Measures Relationship to Desired Outcome</td><td colspan="2">Dopamine blocking agents are often given to PD patients with psychotic, gastrointestinal, or sleep problems. Measuring how many patients with PD were prescribed these medications will result in reduced inappropriate prescriptions thereby preventing worsening of motor features of PD, avoiding medical errors, and shortening the length of inpatient admissions.</td></tr>
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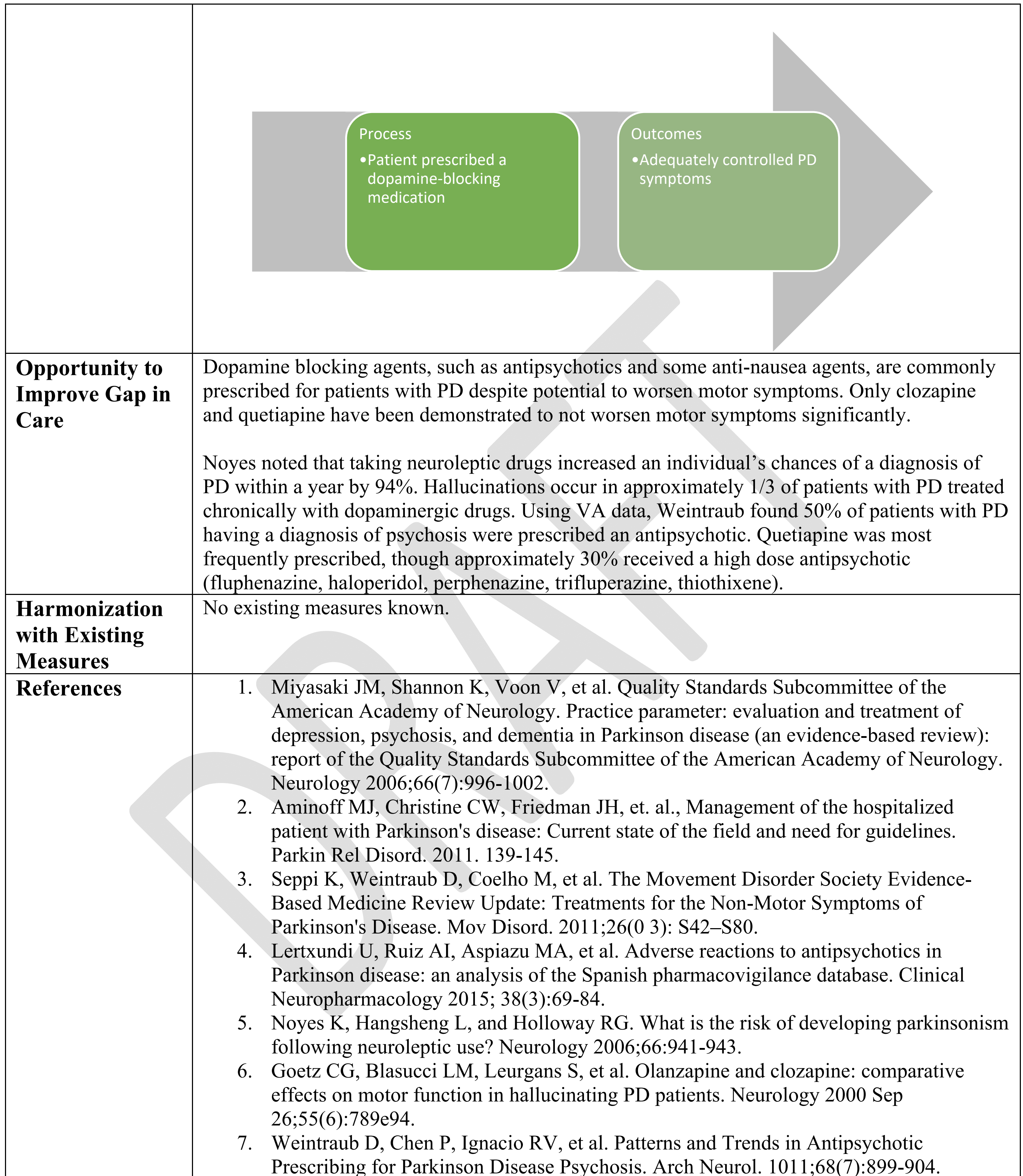

Opportunity to Improve Gap in Care	Dopamine blocking agents, such as antipsychotics and some anti-nausea agents, are commonly prescribed for patients with PD despite potential to worsen motor symptoms. Only clozapine and quetiapine have been demonstrated to not worsen motor symptoms significantly. Noyes noted that taking neuroleptic drugs increased an individual's chances of a diagnosis of PD within a year by 94%. Hallucinations occur in approximately 1/3 of patients with PD treated chronically with dopaminergic drugs. Using VA data, Weintraub found 50% of patients with PD having a diagnosis of psychosis were prescribed an antipsychotic. Quetiapine was most frequently prescribed, though approximately 30% received a high dose antipsychotic (fluphenazine, haloperidol, perphenazine, trifluperazine, thiothixene).
Harmonization with Existing Measures	No existing measures known.
References	1. Miyasaki JM, Shannon K, Voon V, et al. Quality Standards Subcommittee of the American Academy of Neurology. Practice parameter: evaluation and treatment of depression, psychosis, and dementia in Parkinson disease (an evidence-based review): report of the Quality Standards Subcommittee of the American Academy of Neurology. Neurology 2006;66(7):996-1002. 2. Aminoff MJ, Christine CW, Friedman JH, et. al., Management of the hospitalized patient with Parkinson's disease: Current state of the field and need for guidelines. Parkin Rel Disord. 2011. 139-145. 3. Seppi K, Weintraub D, Coelho M, et al. The Movement Disorder Society Evidence-Based Medicine Review Update: Treatments for the Non-Motor Symptoms of Parkinson's Disease. Mov Disord. 2011;26(0 3): S42–S80. 4. Lertxundi U, Ruiz AI, Aspiazu MA, et al. Adverse reactions to antipsychotics in Parkinson disease: an analysis of the Spanish pharmacovigilance database. Clinical Neuropharmacology 2015; 38(3):69-84. 5. Noyes K, Hangsheng L, and Holloway RG. What is the risk of developing parkinsonism following neuroleptic use? Neurology 2006;66:941-943. 6. Goetz CG, Blasucci LM, Leurgans S, et al. Olanzapine and clozapine: comparative effects on motor function in hallucinating PD patients. Neurology 2000 Sep 26;55(6):789e94. 7. Weintraub D, Chen P, Ignacio RV, et al. Patterns and Trends in Antipsychotic Prescribing for Parkinson Disease Psychosis. Arch Neurol. 1011;68(7):899-904.

Code System	Code	Code Description
Initial Population		
CPT	99201-99205	Office or other outpatient visit, new patient
CPT	99211-99215	Office or other outpatient visit, established patient
CPT	99241-99245	Office or other outpatient consultation, new or established patient
CPT	99304-99310	Nursing home consultation
CPT	99221-99223	Initial hospital care
CPT	99231-99233	Subsequent hospital care
CPT	99238-99239	Hospital discharge
CPT	99251-99255	Initial inpatient consultation
CPT	99281-99285	Emergency department
Denominator		
ICD-10	G20	Parkinson’s Disease
		Hemiparkinsonism
		Idiopathic parkinsonism or Parkinson’s Disease
		Paralysis agitans
		Parkinsonisms or Parkinson’s disease NOS
		Primary Parkinsonism or Parkinson’s disease
SNOMED	49049000	Parkinson’s disease (disorder)
SNOMED	230291001	Juvenile Parkinson’s disease (disorder)
SNOMED	715345007	Young onset Parkinson disease (disorder)
SNOMED	737582007	Hemiparkinsonism hemiatrophy syndrome (disorder)
SNOMED	32798002	Parkinsonism (disorder)
Numerator		
Presence of the dopamine blocking agent in clinical note or presence of the dopamine blocking agent in the med list (captured by SNOMED and RxNorm codes).		
Exclusions		
SNOMED	723948002	Clozapine therapy (procedure)
SNOMED	321573006	Clozapine 25mg oral tablet (clinical drug)
SNOMED	418754000	Clozapine 50mg oral tablet (clinical drug)
SNOMED	321574000	Clozapine 100mg oral tablet (clinical drug)
SNOMED	409167008	Clozapine 12.5mg oral tablet (clinical drug)
SNOMED	441607005	Quetiapine fumarate 50mg oral tablet (clinical drug)
SNOMED	429826005	Quetiapine fumarate 400mg oral tablet (clinical drug)
SNOMED	321625005	Quetiapine fumarate 100mg oral tablet (clinical drug)
SNOMED	429830008	Quetiapine fumarate 300mg oral tablet (clinical drug)
SNOMED	321626006	Quetiapine fumarate 200mg oral tablet (clinical drug)
SNOMED	783585006	Quetiapine fumarate 150mg oral tablet (clinical drug)
SNOMED	321624009	Quetiapine fumarate 25mg oral tablet (clinical drug)
SNOMED	780334003	Quetiapine only product in oral dose form (medicinal product form)
SNOMED	767770006	Quetiapine-containing product in oral dose form (medicinal product form)
SNOMED	108443001	Product containing quetiapine (medicinal product)
RxNorm	104776	Clozapine 100mg Oral Tablet (Clozaril)
RxNorm	2269079	Clozapine 200mg Oral Tablet (Clozaril)
RxNorm	104775	Clozapine 25mg Oral Tablet (Clozaril)
RxNorm	2269081	Clozapine 50mg Oral Tablet (Clozaril)
RxNorm	542977	Clozapine 100mg Disintegrating Oral Tablet (Fazaclo)
RxNorm	721775	Clozapine 12.5mg Disintegrating Oral Tablet (Fazaclo)
RxNorm	1006803	Clozapine 150mg Disintegrating Oral Tablet (Fazaclo)
RxNorm	996923	Clozapine 200mg Disintegrating Oral Tablet (Fazaclo)
RxNorm	543013	Clozapine 25mg Disintegrating Oral Tablet (Fazaclo)

RxNorm	1369831	Clozapine 50mg/ml Oral Suspension (Versacloz)
RxNorm	476177	Clozapine 100mg Disintegrating Oral Tablet
RxNorm	197535	Clozapine 100mg Oral Tablet
RxNorm	721773	Clozapine 12.5mg Disintegrating Oral Tablet
RxNorm	404669	Clozapine 12.5mg Oral Tablet
RxNorm	1006801	Clozapine 150mg Disintegrating Oral Tablet
RxNorm	996921	Clozapine 200mg Disintegrating Oral Tablet
RxNorm	309374	Clozapine 200mg Oral Tablet
RxNorm	476179	Clozapine 25mg Disintegrating Oral Tablet
RxNorm	197536	Clozapine 25mg Oral Tablet
RxNorm	429212	Clozapine 50mg Oral Tablet
RxNorm	1369825	Clozapine 50mg/ml Oral Suspension

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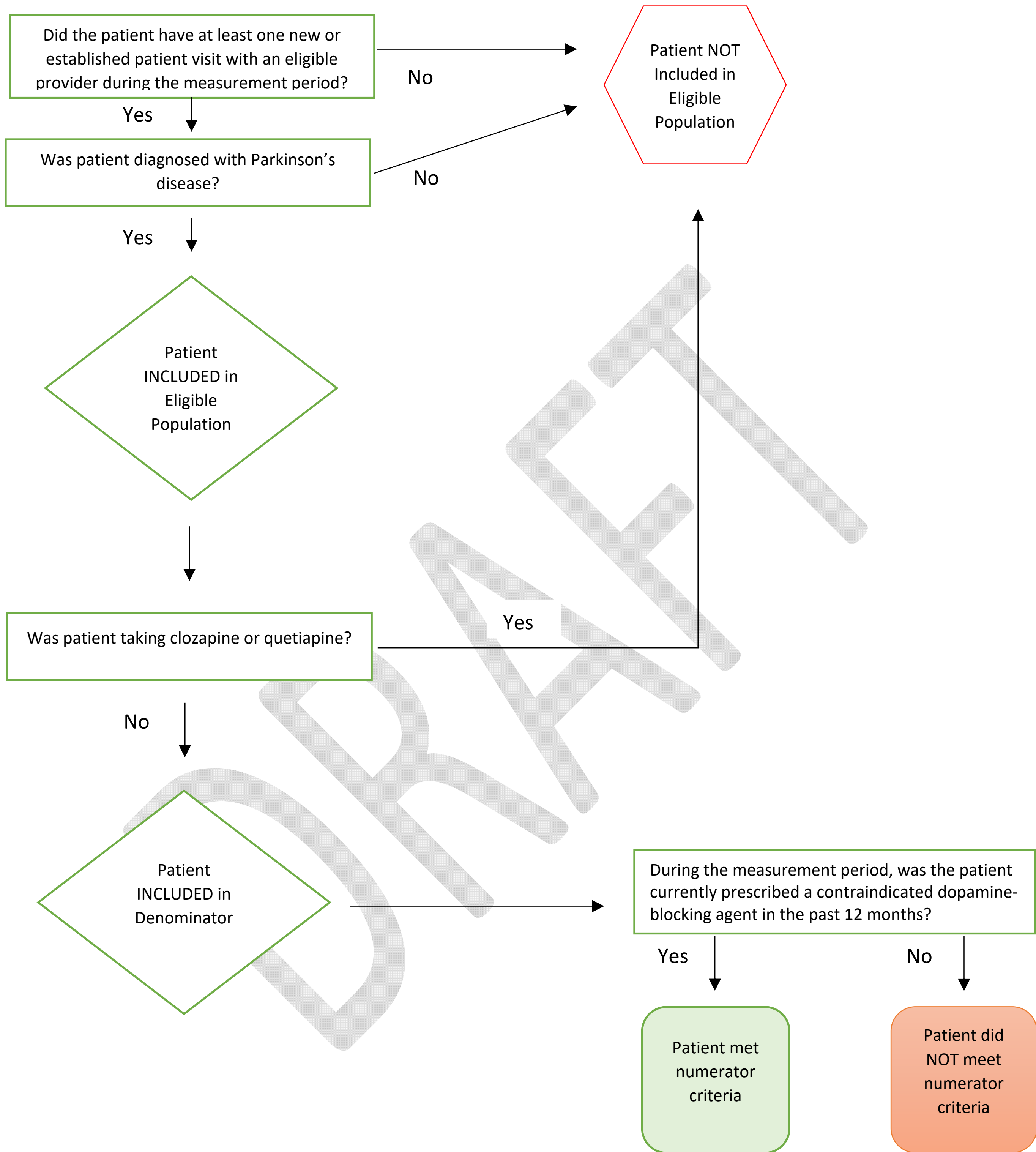
Flow Chart Diagram: Avoidance of dopamine-blocking agents



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<table>
<tr><td>Measure Title</td><td colspan="2">Assessment of Parkinson’s disease medication-related motor complications</td></tr>
<tr><td>Description</td><td colspan="2">Percentage of all patients diagnosed with PD who were assessed for dopaminergic medication-related motor complications at every visit</td></tr>
<tr><td>Measurement Period</td><td colspan="2">January 1, 20xx to December 31, 20xx</td></tr>
<tr><td rowspan="5">Eligible Population</td><td>Eligible Providers</td><td>Medical Doctor (MD), Doctor of Osteopathy (DO), Physician Assistant (PA), Advanced Practice Registered Nurse (APRN)</td></tr>
<tr><td>Care Setting(s)</td><td>Outpatient</td></tr>
<tr><td>Ages</td><td>All patients</td></tr>
<tr><td>Event</td><td>Office visit</td></tr>
<tr><td>Diagnosis</td><td>Parkinson’s disease</td></tr>
<tr><td>Denominator</td><td colspan="2">All patients with a diagnosis of PD on a dopaminergic medication</td></tr>
<tr><td>Numerator</td><td colspan="2">Patients who were assessed* for dopaminergic medication-related motor complications^ at every visit

*Assessed is defined as use of a screening tool or discussion with the patient or caregiver

^Motor complications include the following:
• Wearing off,
• Dyskinesia,
• Dystonia,
• On-off phenomena,
• Off time,
• Motor fluctuations,
• Motor complications
Note: documentation of any one of these complications is enough to satisfy the measure</td></tr>
<tr><td>Required Exclusions</td><td colspan="2">None</td></tr>
<tr><td>Allowable Exclusions</td><td colspan="2">• On date of encounter, patient is not able to participate in counseling, including non-verbal patients, delirious, severely aphasic, severely developmentally delayed, severe visual or hearing impairment and for those patients, no knowledgeable informant available.</td></tr>
<tr><td>Exclusion Rationale</td><td colspan="2">Patient or informant must be able to provide information for assessment of complications to be valid.</td></tr>
<tr><td>Measure Scoring</td><td colspan="2">Percentage</td></tr>
<tr><td>Interpretation of Score</td><td colspan="2">Higher score indicates better quality</td></tr>
<tr><td>Measure Type</td><td colspan="2">Process</td></tr>
<tr><td>Level of Measurement</td><td colspan="2">Provider</td></tr>
<tr><td>Risk Adjustment</td><td colspan="2">N/A</td></tr>
<tr><td>For Process Measures Relationship to Desired Outcome</td><td colspan="2">Motor complications are commonly associated with the medications treating Parkinson’s disease, and these complications are associated with lowered quality of life. Frequent adjustment may be needed to minimize the adverse effect. Patients may also qualify for surgical or device-assisted therapies that can improve quality of life. By measuring how frequently provider assess these complications it is anticipated that earlier interventions will be provided, and quality of life will improve as routine assessment becomes standard.</td></tr>
</table>

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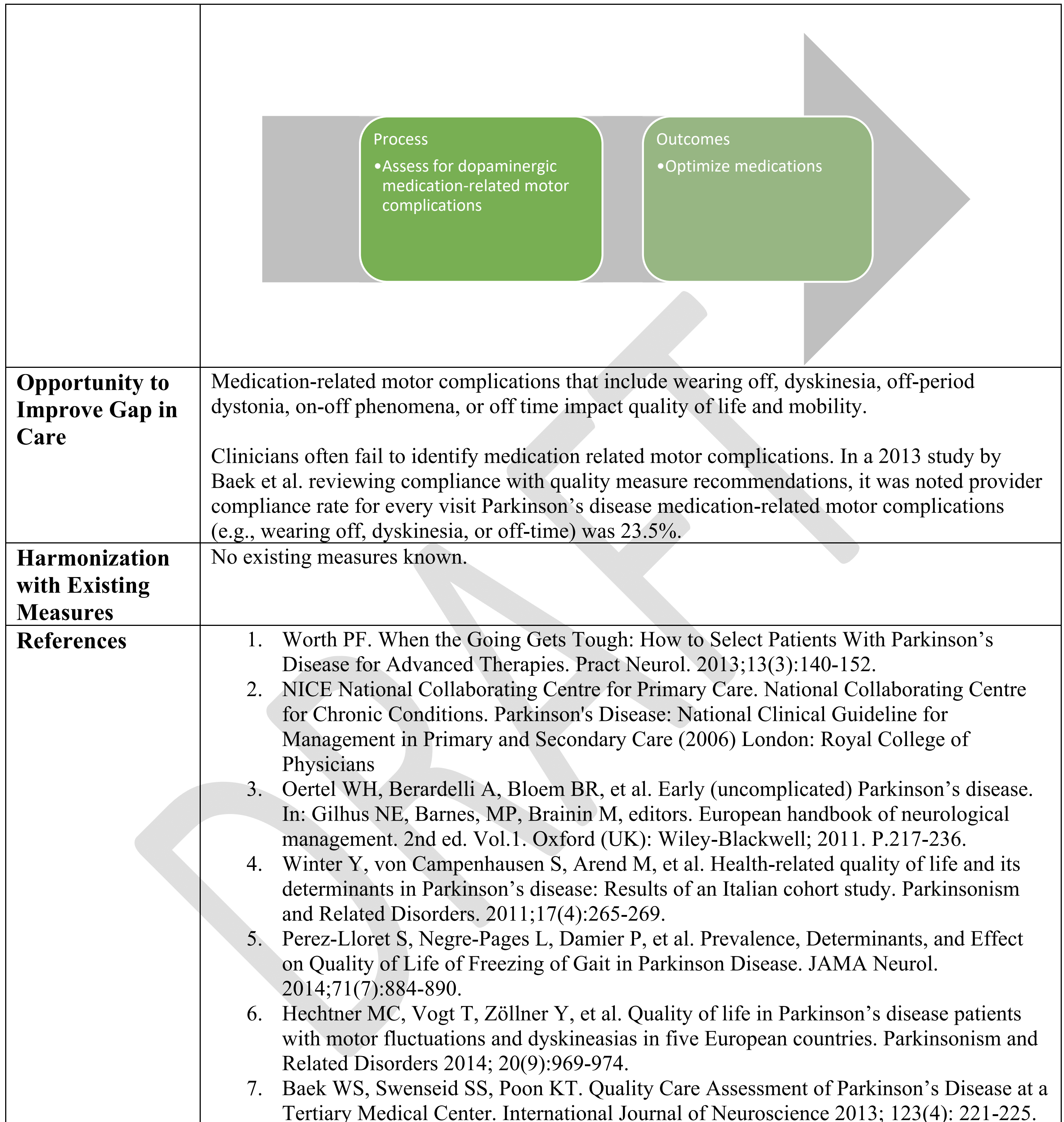

Opportunity to Improve Gap in Care	Medication-related motor complications that include wearing off, dyskinesia, off-period dystonia, on-off phenomena, or off time impact quality of life and mobility. Clinicians often fail to identify medication related motor complications. In a 2013 study by Baek et al. reviewing compliance with quality measure recommendations, it was noted provider compliance rate for every visit Parkinson's disease medication-related motor complications (e.g., wearing off, dyskinesia, or off-time) was 23.5%.
Harmonization with Existing Measures	No existing measures known.
References	1. Worth PF. When the Going Gets Tough: How to Select Patients With Parkinson's Disease for Advanced Therapies. Pract Neurol. 2013;13(3):140-152. 2. NICE National Collaborating Centre for Primary Care. National Collaborating Centre for Chronic Conditions. Parkinson's Disease: National Clinical Guideline for Management in Primary and Secondary Care (2006) London: Royal College of Physicians 3. Oertel WH, Berardelli A, Bloem BR, et al. Early (uncomplicated) Parkinson's disease. In: Gilhus NE, Barnes, MP, Brainin M, editors. European handbook of neurological management. 2nd ed. Vol.1. Oxford (UK): Wiley-Blackwell; 2011. P.217-236. 4. Winter Y, von Campenhausen S, Arend M, et al. Health-related quality of life and its determinants in Parkinson's disease: Results of an Italian cohort study. Parkinsonism and Related Disorders. 2011;17(4):265-269. 5. Perez-Lloret S, Negre-Pages L, Damier P, et al. Prevalence, Determinants, and Effect on Quality of Life of Freezing of Gait in Parkinson Disease. JAMA Neurol. 2014;71(7):884-890. 6. Hechtner MC, Vogt T, Zöllner Y, et al. Quality of life in Parkinson's disease patients with motor fluctuations and dyskineasias in five European countries. Parkinsonism and Related Disorders 2014; 20(9):969-974. 7. Baek WS, Swenseid SS, Poon KT. Quality Care Assessment of Parkinson's Disease at a Tertiary Medical Center. International Journal of Neuroscience 2013; 123(4): 221-225.

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Code System	Code	Code Description
Initial Population		
CPT	99201-99205	Office or other outpatient visit, new patient
CPT	99211-99215	Office or other outpatient visit, established patient
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Denominator		
ICD-10	G20	Parkinson’s Disease
		Hemiparkinsonism
		Idiopathic parkinsonism or Parkinson’s Disease
		Paralysis agitans
		Parkinsonisms or Parkinson’s disease NOS
		Primary Parkinsonism or Parkinson’s disease
SNOMED	49049000	Parkinson’s disease (disorder)
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SNOMED	715345007	Young onset Parkinson disease (disorder)
SNOMED	737582007	Hemiparkinsonism hemiatrophy syndrome (disorder)
SNOMED	32798002	Parkinsonism (disorder)
Numerator		
SNOMED	9748009	Dyskinesia (finding)
SNOMED	15802004	Dystonia (disorder)
Presence of motor complication key words in clinical note or presence of motor complication in problem list.		
Exclusions		
SNOMED	288576002	Unable to communicate (finding)
ICD-10	F05	Delirium due to known physiological condition
SNOMED	2776000	Delirium (disorder)
ICD-10	R47.01	Aphasia
SNOMED	87486003	Aphasia (finding)
ICD-10	F88	Other disorders of psychological development
SNOMED	248290002	Developmental delay (disorder)
SNOMED	224958001	Global developmental delay (disorder)
SNOMED	425805004	Cognitive developmental delay (disorder)
SNOMED	441719005	Speech and language developmental delay due to hearing loss (disorder)
SNOMED	397541004	Severe visual impairment (disorder)
SNOMED	433147009	Combined visual and hearing impairment (disorder)
SNOMED	765178008	Total visual and total hearing impairment (disorder)
SNOMED	276039008	No caregiver (finding)
SNOMED	414041006	Does not have a caregiver (finding)
Codes for non-verbal, delirious, severely aphasic, severely developmentally delayed, severe visual or hearing impairment must be documented with the caveat that no caregiver was available at the visit.		

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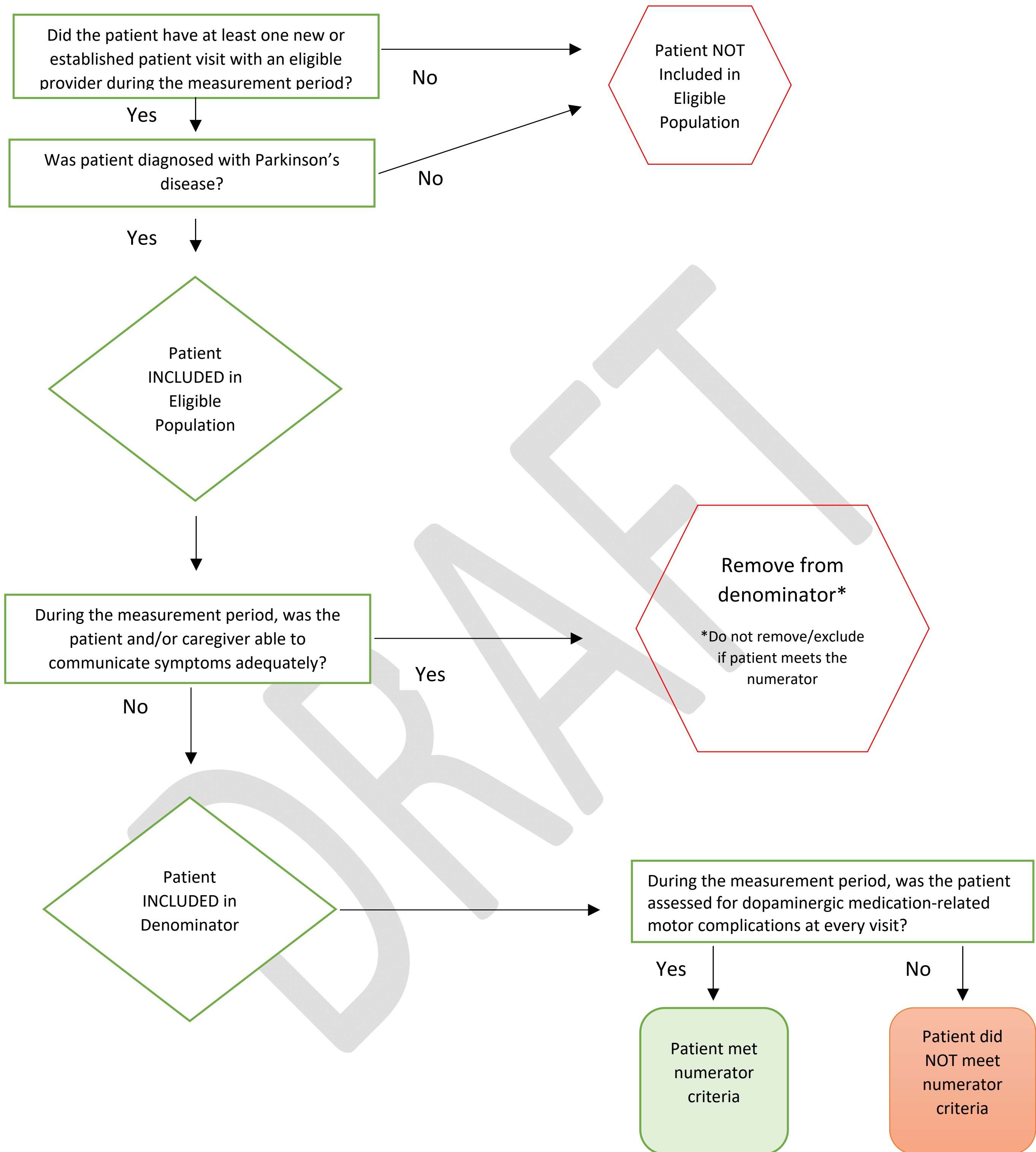
Flow Chart Diagram: Medication related motor complications assessed



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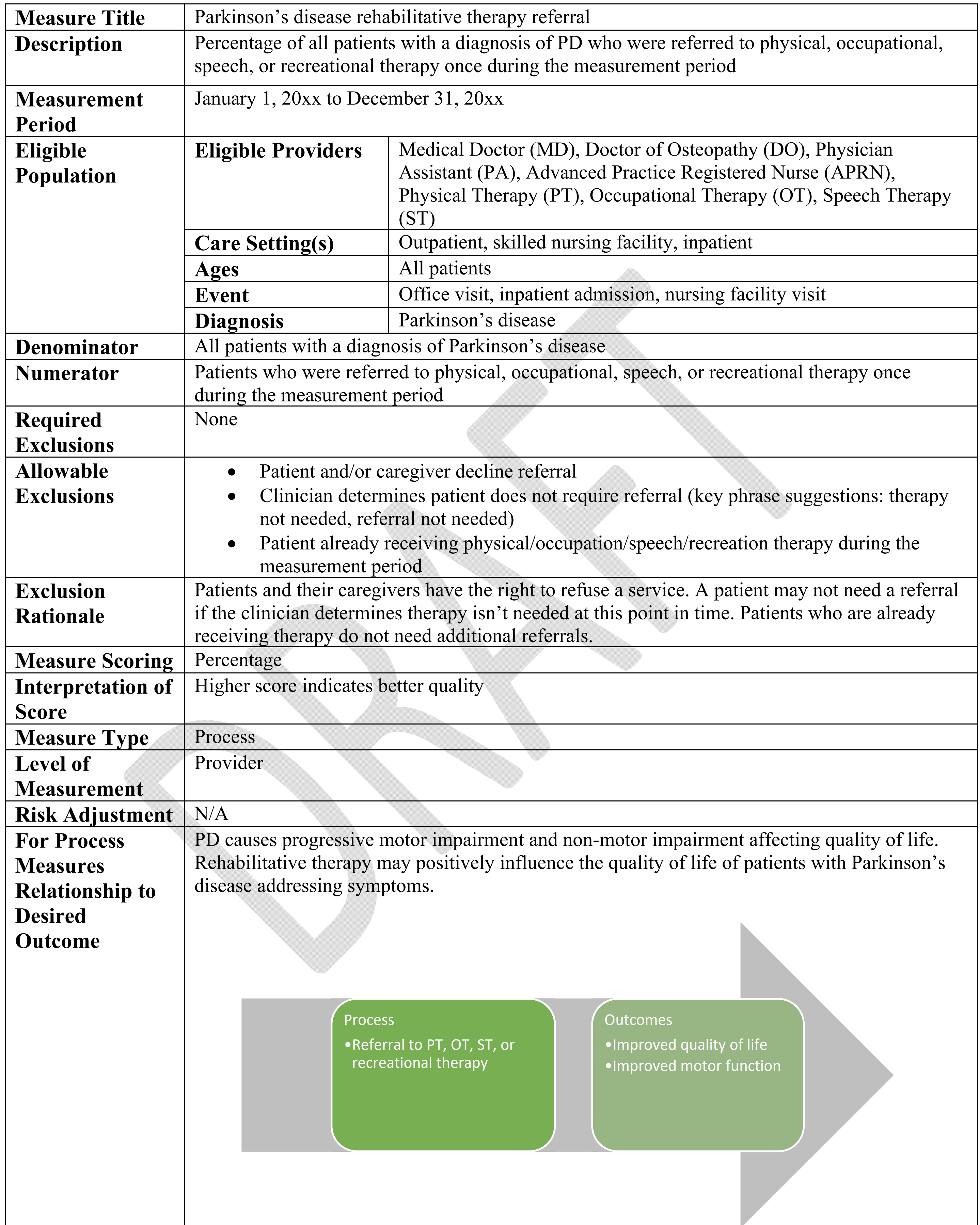
Measure Title	Parkinson's disease rehabilitative therapy referral	
Description	Percentage of all patients with a diagnosis of PD who were referred to physical, occupational, speech, or recreational therapy once during the measurement period	
Measurement Period	January 1, 20xx to December 31, 20xx	
Eligible Population	**Eligible Providers**	Medical Doctor (MD), Doctor of Osteopathy (DO), Physician Assistant (PA), Advanced Practice Registered Nurse (APRN), Physical Therapy (PT), Occupational Therapy (OT), Speech Therapy (ST)
	Care Setting(s)	Outpatient, skilled nursing facility, inpatient
	Ages	All patients
	Event	Office visit, inpatient admission, nursing facility visit
	Diagnosis	Parkinson's disease
Denominator	All patients with a diagnosis of Parkinson's disease	
Numerator	Patients who were referred to physical, occupational, speech, or recreational therapy once during the measurement period	
Required Exclusions	None	
Allowable Exclusions	• Patient and/or caregiver decline referral • Clinician determines patient does not require referral (key phrase suggestions: therapy not needed, referral not needed) • Patient already receiving physical/occupation/speech/recreation therapy during the measurement period	
Exclusion Rationale	Patients and their caregivers have the right to refuse a service. A patient may not need a referral if the clinician determines therapy isn't needed at this point in time. Patients who are already receiving therapy do not need additional referrals.	
Measure Scoring	Percentage	
Interpretation of Score	Higher score indicates better quality	
Measure Type	Process	
Level of Measurement	Provider	
Risk Adjustment	N/A	
For Process Measures Relationship to Desired Outcome	PD causes progressive motor impairment and non-motor impairment affecting quality of life. Rehabilitative therapy may positively influence the quality of life of patients with Parkinson's disease addressing symptoms.	



Opportunity to Improve Gap in Care	There is growing evidence that rehabilitative therapy are effective in improving motor impairment, activities of daily living, and quality of life in PD throughout all stages. As many as 89% of patients with PD suffer from speech disorders, but studies suggest only 3%-4% of people receive treatment. A Cochrane Review indicated that there was insufficient evidence to support the use of one speech and language therapy over another treatment for speech problems. In a 2013 study by Baek et al. reviewing compliance with quality measure recommendations, it was noted provider compliance rate for annual review of rehabilitative therapy options was 7.5% indicating missed opportunities to offer potentially positive interventions to this population. This measure was adopted into the PQRS reporting system as measure #293 in 2012. Eligible provider compliance rates for 2012 are not available. Patients should be referred to therapy programs specific to patients with PD if available in their area.
Harmonization with Existing Measures	No existing measures known.
References	1. NICE National Institute for Health and Care Excellence (NICE). Parkinson's Disease: National Clinical Guideline for Diagnosis and Management in Primary and Secondary Care. NICE Clinical Guidelines 35. National Collaborating Centre for Chronic Conditions (UK). London: Royal College of Physicians; 2006. 2. Suchowersky O, Reich S, Perlmutter J, et al. Quality Standards Subcommittee of the American Academy of Neurology. Practice parameter: diagnosis and prognosis of new onset Parkinson disease (an evidence-based review): report of the Quality Standards Subcommittee of the American Academy of Neurology. Neurology 2006;66(7):968-975. Reaffirmed July 13, 2013. 3. Lima LO, Scianni A, Rodrigues-de-Paula F. Progressive resistance exercise improves strength and physical performance in people with mild to moderate Parkinson's disease: a systematic review. Journal of Physiotherapy 2013; 59: 7-13. 4. Ransmayr G. Physical, occupational, speech and swallowing therapies and physical exercise in Parkinson's disease. J Neural Transm 2011;118:773-781. 5. Sturkenboom IHWM, Graff MJL, Hendriks, JCM, et al. Efficacy of occupational therapy for patients with Parkinson's disease: a randomized controlled trial. Lancet Neurol. 2014; 13(6):557-566. 6. Canning CG, Sherrington C, Lord SR, et al. Exercise for falls prevention in Parkinson disease. Neurology 2015;84:1-9. 7. Chung CL, Thilarajah S, Tan D. Effectiveness of resistance training on muscle strength and physical function in people with Parkinson's disease: A systematic review and meta-analysis. Clin Rehabil 2015. 0269215515570381 E-publsihed ahead of print. 13 p. 8. Ramig LO, Fox C, and Sapir S. Speech treatment for Parkinson's disease. Expert Rev Neurotherapeutics 2008;8(2):299-311. 9. Herd CP, Tomlinson CL, Deane KH, et al. Comparison of speech and language therapy techniques for speech problems in Parkinson's disease. Cochrane Database Syst Rev. 2012 Aug 15;8:CD002814. 10. Baek WS, Swenseid SS, Poon KT. Quality Care Assessment of Parkinson's Disease at a Tertiary Medical Center. International Journal of Neuroscience 2013;123(4):221-225.

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Code System	Code	Code Description
Initial Population		
CPT	99201-99205	Office or other outpatient visit, new patient
CPT	99211-99215	Office or other outpatient visit, established patient
CPT	99241-99245	Office or other outpatient consultation, new or established patient
CPT	99304-99310	Nursing home consultation
CPT	97165-97168	Occupational therapy evaluation, low complexity, moderate complexity, high complexity, re-evaluation
CPT	97161-97164	Physical therapy evaluation, low complexity, moderate complexity, high complexity, re-evaluation
CPT	92521	Evaluation of speech fluency
CPT	92522	Evaluation of speech sound production
CPT	92523	Evaluation of speech sound production with evaluation of language comprehension and expression
CPT	92524	Behavioral and qualitative analysis of voice and resonance
CPT	92526	Treatment of swallowing dysfunction and/or oral function for feeding
Denominator		
ICD-10	G20	Parkinson’s Disease
		Hemiparkinsonism
		Idiopathic parkinsonism or Parkinson’s Disease
		Paralysis agitans
		Parkinsonisms or Parkinson’s disease NOS
		Primary Parkinsonism or Parkinson’s disease
Numerator		
SNOMED	444831000124102	Referral for physical therapy (procedure)
SNOMED	722052006	Physical therapy consult note (record artifact)
SNOMED	453581000124100	Referral for occupational therapy (procedure)
SNOMED	306166004	Referral to occupational therapy service (procedure)
SNOMED	5154007	Speech therapy (regime/therapy)
SNOMED	410162003	Speech therapy education (procedure)
SNOMED	699824009	Education about recreational therapy (procedure)
SNOMED	42364006	Recreational therapy (regime/therapy)
Exclusions		
SNOMED	436571000124108	Patient declines information (situation)
SNOMED	41391002	Patient declines copy of referral letter (finding)
SNOMED	105480006	Refusal of treatment by patient (situation)
SNOMED	721107007	Referral to specialist refused (situation)
SNOMED	452691000124106	Recommendation refused by patient (situation)

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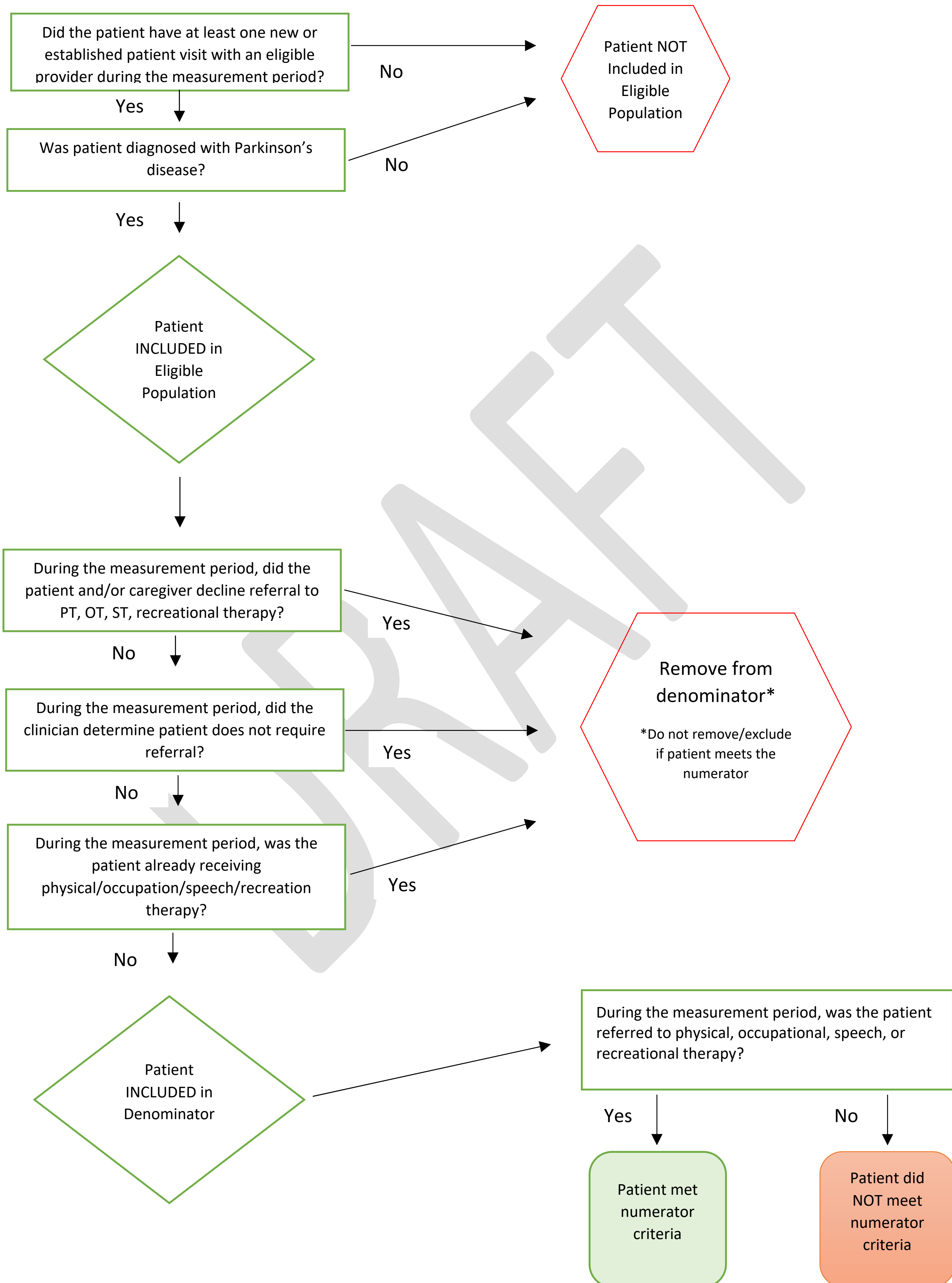
Flow Chart Diagram: PD therapy referral



Do not distribute or disseminate

Measure Title	Exercise or physical activity counseling for PD	
Description	Percentage of patients with PD counseled on an exercise or physical activity regimen once during the measurement period	
Measurement Period	January 1, 20xx to December 31, 20xx	
Eligible Population	**Eligible Providers**	Medical Doctor (MD), Doctor of Osteopathy (DO), Physician Assistant (PA), Advanced Practice Registered Nurse (APRN), Occupational Therapy (OT), Physical Therapy (PT)
	Care Setting(s)	Outpatient, skilled nursing facility
	Ages	All ages
	Event	Office visit, nursing facility visit
	Diagnosis	Parkinson's disease
Denominator	All patients with a diagnosis of PD	
Numerator	Patients counseled on an exercise or physical activity* regimen once during the measurement period *Physical activities may include tai chi, dancing, boxing, and other non-traditional aerobic or strength training exercises	
Required Exclusions	None	
Allowable Exclusions	• Patient and/or caregiver declines counseling • Co-morbid condition that deems the patient unfit to participate in physical activity • On date of encounter, patient is not able to participate in counseling, including non-verbal patients, delirious, severely aphasic, severely developmentally delayed, severe visual or hearing impairment and for those patients, no knowledgeable informant available.	
Exclusion Rationale	Patients and their caregivers have the right to decline counseling. Patients with certain co-morbid conditions may not be able to tolerate exercise or physical activities. Patients and/or a caregiver need to be able to participate in the counseling to be effective.	
Measure Scoring	Percentage	
Interpretation of Score	Higher score indicates better quality	
Measure Type	Process	
Level of Measurement	Provider	
Risk Adjustment	N/A	
For Process Measures Relationship to Desired Outcome	It is anticipated that by educating individuals on the benefits of exercise regularly that the number of patients exercising will increase. Exercise improves they physical and mental functioning levels and quality of life for patients with PD.	

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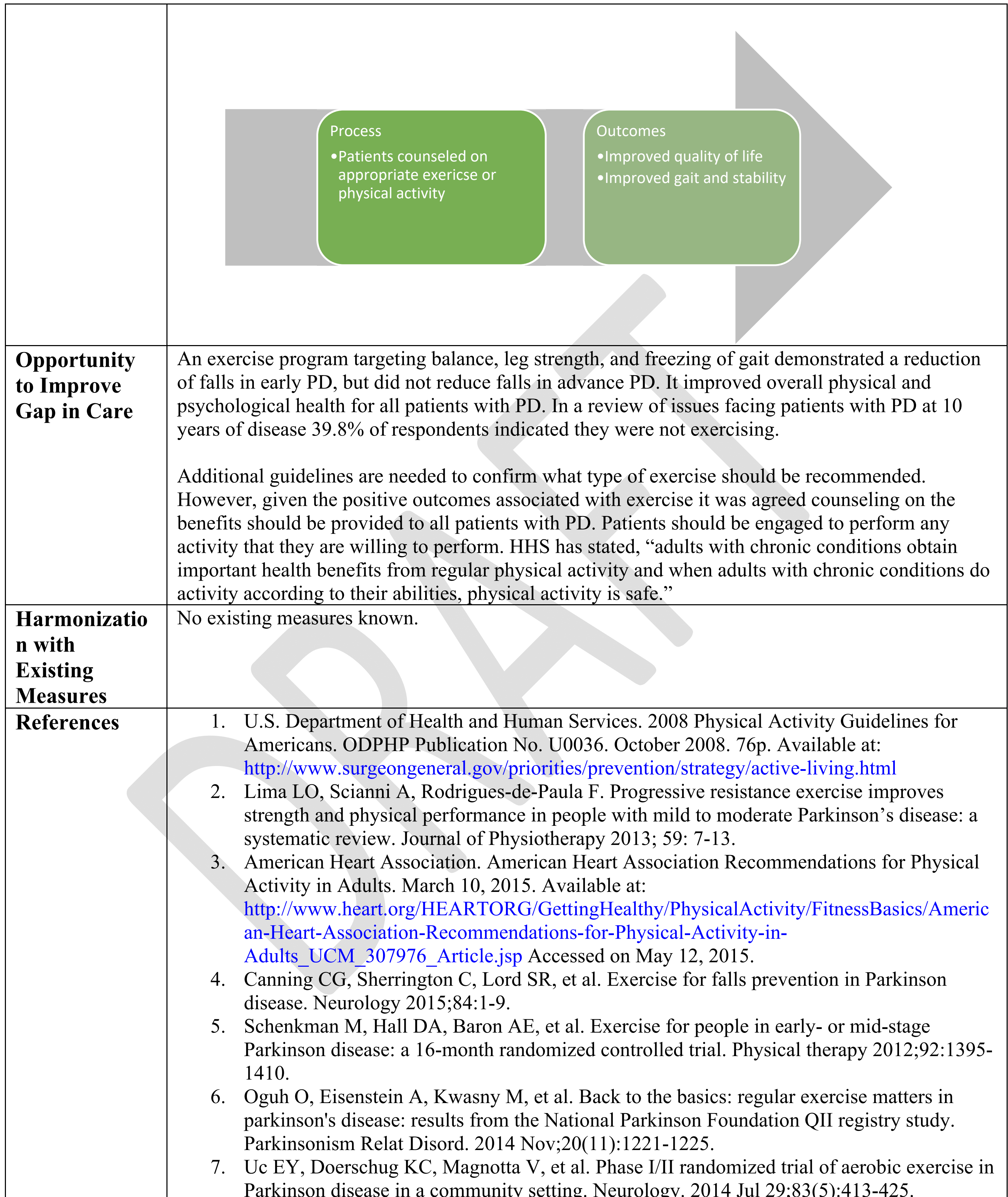

Opportunity to Improve Gap in Care	An exercise program targeting balance, leg strength, and freezing of gait demonstrated a reduction of falls in early PD, but did not reduce falls in advance PD. It improved overall physical and psychological health for all patients with PD. In a review of issues facing patients with PD at 10 years of disease 39.8% of respondents indicated they were not exercising. Additional guidelines are needed to confirm what type of exercise should be recommended. However, given the positive outcomes associated with exercise it was agreed counseling on the benefits should be provided to all patients with PD. Patients should be engaged to perform any activity that they are willing to perform. HHS has stated, “adults with chronic conditions obtain important health benefits from regular physical activity and when adults with chronic conditions do activity according to their abilities, physical activity is safe.”
Harmonization with Existing Measures	No existing measures known.
References	1. U.S. Department of Health and Human Services. 2008 Physical Activity Guidelines for Americans. ODPHP Publication No. U0036. October 2008. 76p. Available at: http://www.surgeongeneral.gov/priorities/prevention/strategy/active-living.html 2. Lima LO, Scianni A, Rodrigues-de-Paula F. Progressive resistance exercise improves strength and physical performance in people with mild to moderate Parkinson’s disease: a systematic review. Journal of Physiotherapy 2013; 59: 7-13. 3. American Heart Association. American Heart Association Recommendations for Physical Activity in Adults. March 10, 2015. Available at: http://www.heart.org/HEARTORG/GettingHealthy/PhysicalActivity/FitnessBasics/American-Heart-Association-Recommendations-for-Physical-Activity-in-Adults_UCM_307976_Article.jsp Accessed on May 12, 2015. 4. Canning CG, Sherrington C, Lord SR, et al. Exercise for falls prevention in Parkinson disease. Neurology 2015;84:1-9. 5. Schenkman M, Hall DA, Baron AE, et al. Exercise for people in early- or mid-stage Parkinson disease: a 16-month randomized controlled trial. Physical therapy 2012;92:1395-1410. 6. Oguh O, Eisenstein A, Kwasny M, et al. Back to the basics: regular exercise matters in parkinson's disease: results from the National Parkinson Foundation QII registry study. Parkinsonism Relat Disord. 2014 Nov;20(11):1221-1225. 7. Uc EY, Doerschug KC, Magnotta V, et al. Phase I/II randomized trial of aerobic exercise in Parkinson disease in a community setting. Neurology. 2014 Jul 29;83(5):413-425.

	8. Hassan A, Wu SS, Schmidt P, et al. What are the issues facing Parkinson's disease patients at ten years of disease and beyond?: Data from the NPF-QII study. Parkinsonism and Related Disorders 2012;18:S10-S14. 9. Salgado S, Williams N, Kotian R, et al. An evidence-based exercise regimen for patients with mild to moderate Parkinson's disease. Brain sciences 2013;3:87-100.

Code System	Code	Code Description
Initial Population		
CPT	99201-99205	Office or other outpatient visit, new patient
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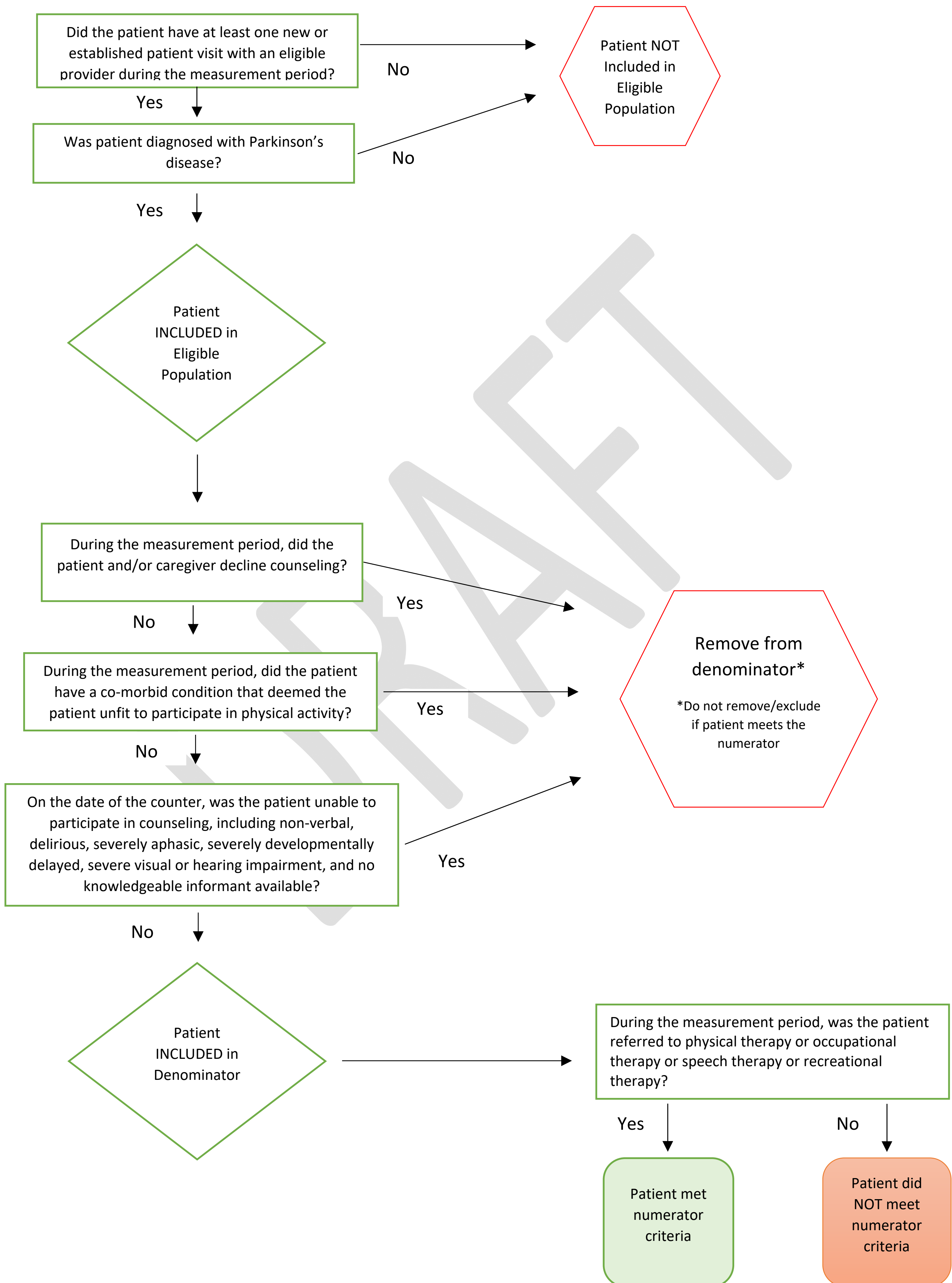
CPT	99304-99310	Nursing home consultation
CPT	97165-97168	Occupational therapy evaluation, low complexity, moderate complexity, high complexity, re-evaluation
CPT	97161-97164	Physical therapy evaluation, low complexity, moderate complexity, high complexity, re-evaluation
Denominator		
ICD-10	G20	Parkinson's Disease
		Hemiparkinsonism
		Idiopathic parkinsonism or Parkinson's Disease
		Paralysis agitans
		Parkinsonisms or Parkinson's disease NOS
		Primary Parkinsonism or Parkinson's disease
Numerator		
SNOMED	435551000124105	Counseling about physical activity (procedure)
ICD-10	Z71.89	Exercise counseling
SNOMED	229223006	Participation in Tai Chi (regime/therapy)
SNOMED	229072005	Aerobic exercises (regime/therapy)
SNOMED	386291006	Exercise promotion: strength training (procedure)
Exclusions		
SNOMED	436571000124108	Patient declines information (situation)
SNOMED	452691000124106	Recommendation refused by patient (situation)
SNOMED	288576002	Unable to communicate (finding)
ICD-10	F05	Delirium due to known physiological condition
SNOMED	2776000	Delirium (disorder)
ICD-10	R47.01	Aphasia
SNOMED	87486003	Aphasia (finding)
ICD-10	F88	Other disorders of psychological development
SNOMED	248290002	Developmental delay (disorder)
SNOMED	224958001	Global developmental delay (disorder)
SNOMED	425805004	Cognitive developmental delay (disorder)
SNOMED	441719005	Speech and language developmental delay due to hearing loss (disorder)
SNOMED	397541004	Severe visual impairment (disorder)
SNOMED	433147009	Combined visual and hearing impairment (disorder)
SNOMED	765178008	Total visual and total hearing impairment (disorder)
SNOMED	276039008	No caregiver (finding)
SNOMED	414041006	Does not have a caregiver (finding)
Codes for non-verbal, delirious, severely aphasic, severely developmentally delayed, severe visual or hearing impairment must be documented with the caveat that no caregiver was available at the visit.		

Flow Chart Diagram: Exercise or physical activity counseling



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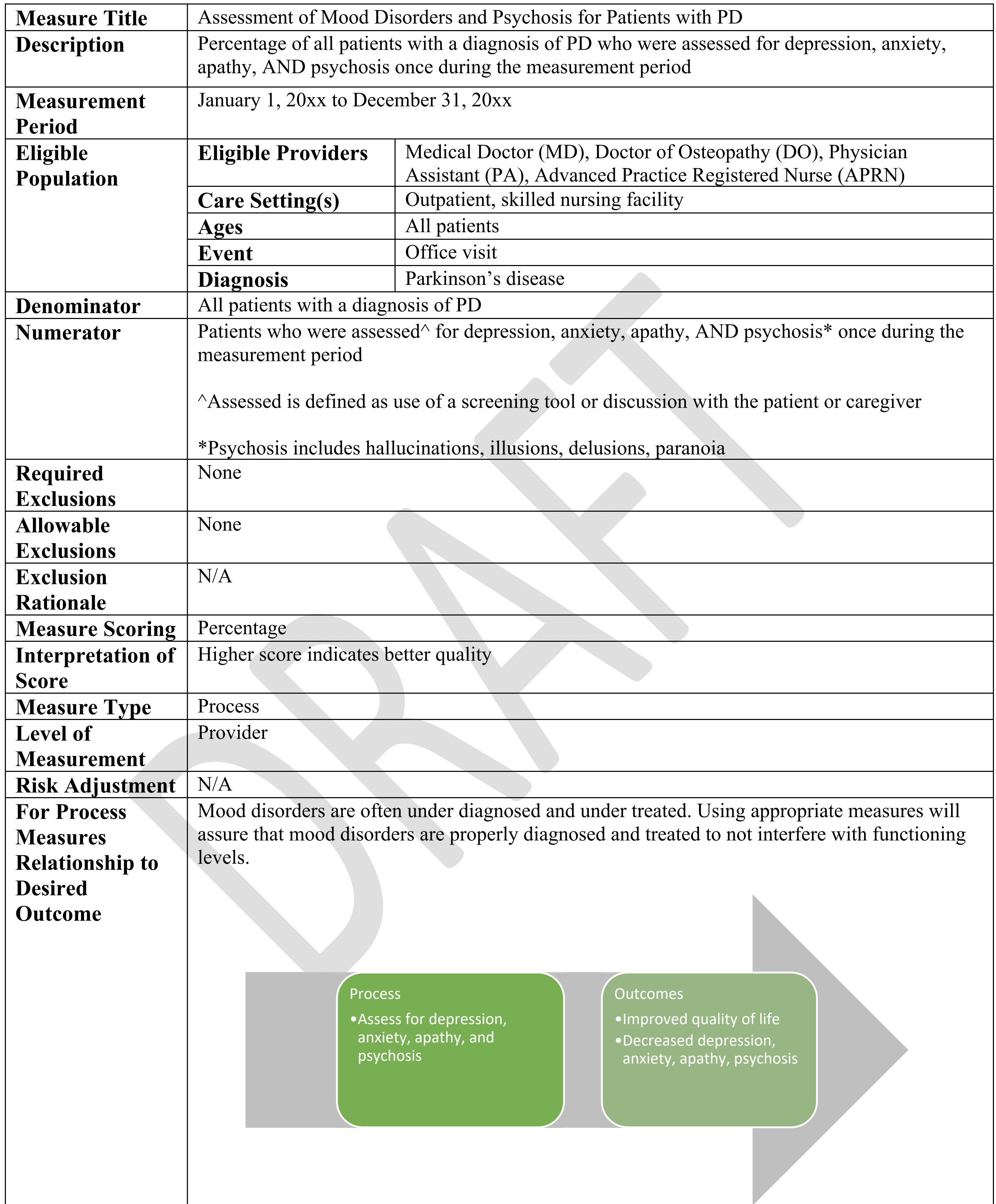
Measure Title	Assessment of Mood Disorders and Psychosis for Patients with PD	
Description	Percentage of all patients with a diagnosis of PD who were assessed for depression, anxiety, apathy, AND psychosis once during the measurement period	
Measurement Period	January 1, 20xx to December 31, 20xx	
Eligible Population	**Eligible Providers**	Medical Doctor (MD), Doctor of Osteopathy (DO), Physician Assistant (PA), Advanced Practice Registered Nurse (APRN)
	Care Setting(s)	Outpatient, skilled nursing facility
	Ages	All patients
	Event	Office visit
	Diagnosis	Parkinson's disease
Denominator	All patients with a diagnosis of PD	
Numerator	Patients who were assessed^ for depression, anxiety, apathy, AND psychosis* once during the measurement period ^Assessed is defined as use of a screening tool or discussion with the patient or caregiver *Psychosis includes hallucinations, illusions, delusions, paranoia	
Required Exclusions	None	
Allowable Exclusions	None	
Exclusion Rationale	N/A	
Measure Scoring	Percentage	
Interpretation of Score	Higher score indicates better quality	
Measure Type	Process	
Level of Measurement	Provider	
Risk Adjustment	N/A	
For Process Measures Relationship to Desired Outcome	Mood disorders are often under diagnosed and under treated. Using appropriate measures will assure that mood disorders are properly diagnosed and treated to not interfere with functioning levels.	



Opportunity to Improve Gap in Care	Major depressive disorder occurs to some degree in 40%-50% of patients with Parkinson's disease. Anxiety syndromes are estimated to affect up to 30% of patients with PD. Impulse control disorders including pathological gambling, compulsive shopping, compulsive sexual behaviors, and binge eating occur in approximately 13.6% of patients with PD. In a 2013 study by Baek et al. reviewing compliance with quality measure recommendations, it was noted that provider compliance rate for annual review of psychiatric disorders (psychosis, depression, etc.) was 36.9%. This measure was adopted into the PQRS reporting system as measure #290 in 2012. Eligible provider compliance rates for 2012 are not available. The following screening tools may be helpful for use in practice: For depression: • Geriatric Depression Scale • Beck Depression • Hamilton Depression Scale For anxiety: • Beck Anxiety Inventory • Hospital Anxiety and Depression Scale • Self-rating Anxiety Scale • Anxiety Status Inventory • Strait Trait Anxiety Inventory • Hamilton Anxiety Rating Scale
Harmonization with Existing Measures	Several depression measures are currently used in the CMS MIPS program: QPP 411 (Depression remission at six months), QPP 370 (Depression remission at twelve months), QPP371 (Depression utilization of the PHQ-9 Tool), QPP 372 (Maternal depression screening), QPP 134 (Screening for depression and follow-up plan). There are currently no publicly reported measures for anxiety or apathy.
References	1. National Institute for Health and Clinical Excellence (NICE) Parkinson's disease: Diagnosis and management in primary and secondary care. NICE clinical guideline 35. June 2006. 2. Scottish Intercollegiate Guidelines Network (SIGN). Diagnosis and pharmacological management of Parkinson's disease. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2010 Jan. 61 p. (SIGN publication; no. 113). 3. American Psychiatric Association (APA). Practice guideline for the treatment of patients with major depressive disorder. 3rd ed. Arlington (VA): American Psychiatric Association (APA); 2010 Oct. 152p. 4. Fernandez HH, Aarsland D, Fenelon G, et al. Task Force Report. Scales to Assess Psychosis in Parkinson's Disease: Critique and Recommendations. Movement Disorders. 2008:23(4):484-500. 5. Leentjens AFG, Dujardin K, Marsh L, et al. Anxiety Rating Scales in Parkinson's Disease: Critique and Recommendations. Movement Disorders. 2008;23(14):2015-2025. 6. Voon V, Sohr M, Lang AE, et al. Impulse Control Disorders in Parkinson Disease: A Multicenter Case-Control Study. Ann Neurol 2011;69:986-996. 7. Baek WS, Swenseid SS, Poon KT. Quality Care Assessment of Parkinson's Disease at a Tertiary Medical Center. International Journal of Neuroscience 2013; 123(4): 221-225. 8. Thompson AW, Liu H, Hays RD, et al. Diagnostic accuracy and agreement across three depression assessment measures for Parkinson's disease. Parkinsonism Relat Disord. 2011:17(1):40-45. 9. Weintraub D, Mamikonyan E, Papay K, et al. Questionnaire for Impulsive-Compulsive Disorders in Parkinson's Disease-Rating Scale. Mov Disord. 2012;27(2):242-247.

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Code System	Code	Code Description
Initial Population		
CPT	99201-99205	Office or other outpatient visit, new patient
CPT	99211-99215	Office or other outpatient visit, established patient
CPT	99241-99245	Office or other outpatient consultation, new or established patient
CPT	99304-99310	Nursing home consultation
Denominator		
ICD-10	G20	Parkinson's Disease
		Hemiparkinsonism
		Idiopathic parkinsonism or Parkinson's Disease
		Paralysis agitans
		Parkinsonisms or Parkinson's disease NOS
		Primary Parkinsonism or Parkinson's disease
Numerator		
LOINC	48542-5	Geriatric depression scale (GDS) panel
LOINC	48543-3	Geriatric depression scale (GDS) short version panel
LOINC	89211-7	Beck Depression Inventory Fast Screen (BDI)
LOINC	89210-9	Beck Depression Inventory II (BDI)
SNOMED	273481004	Geriatric depression scale (assessment scale)
SNOMED	445041007	Geriatric depression scale short form (assessment scale)
SNOMED	445587006	Assessment using geriatric depression scale (procedure)
SNOMED	445676008	Assessment using geriatric depression scale short form (procedure)
SNOMED	273306008	Beck depression inventory (assessment scale)
SNOMED	446765009	Assessment using Beck depression inventory (procedure)
SNOMED	717268000	Assessment using Beck depression inventory II (procedure)
SNOMED	273503001	Hamilton rating scale for depression (assessment scale)
SNOMED	763071002	Assessment using Hamilton rating scale for depression (procedure)
SNOMED	304711006	Beck anxiety inventory (assessment scale)
SNOMED	273307004	Beck anxiety standardized rating scale (assessment scale)
SNOMED	716598004	Assessment using Beck anxiety inventory (procedure)
SNOMED	273524006	Hospital anxiety and depression scale (assessment scale)
SNOMED	445991008	Assessment using hospital anxiety and depression scale (procedure)
SNOMED	273942006	Zung's self-rating anxiety scale (assessment scale)
SNOMED	273941004	Zung's anxiety status inventory (assessment scale)

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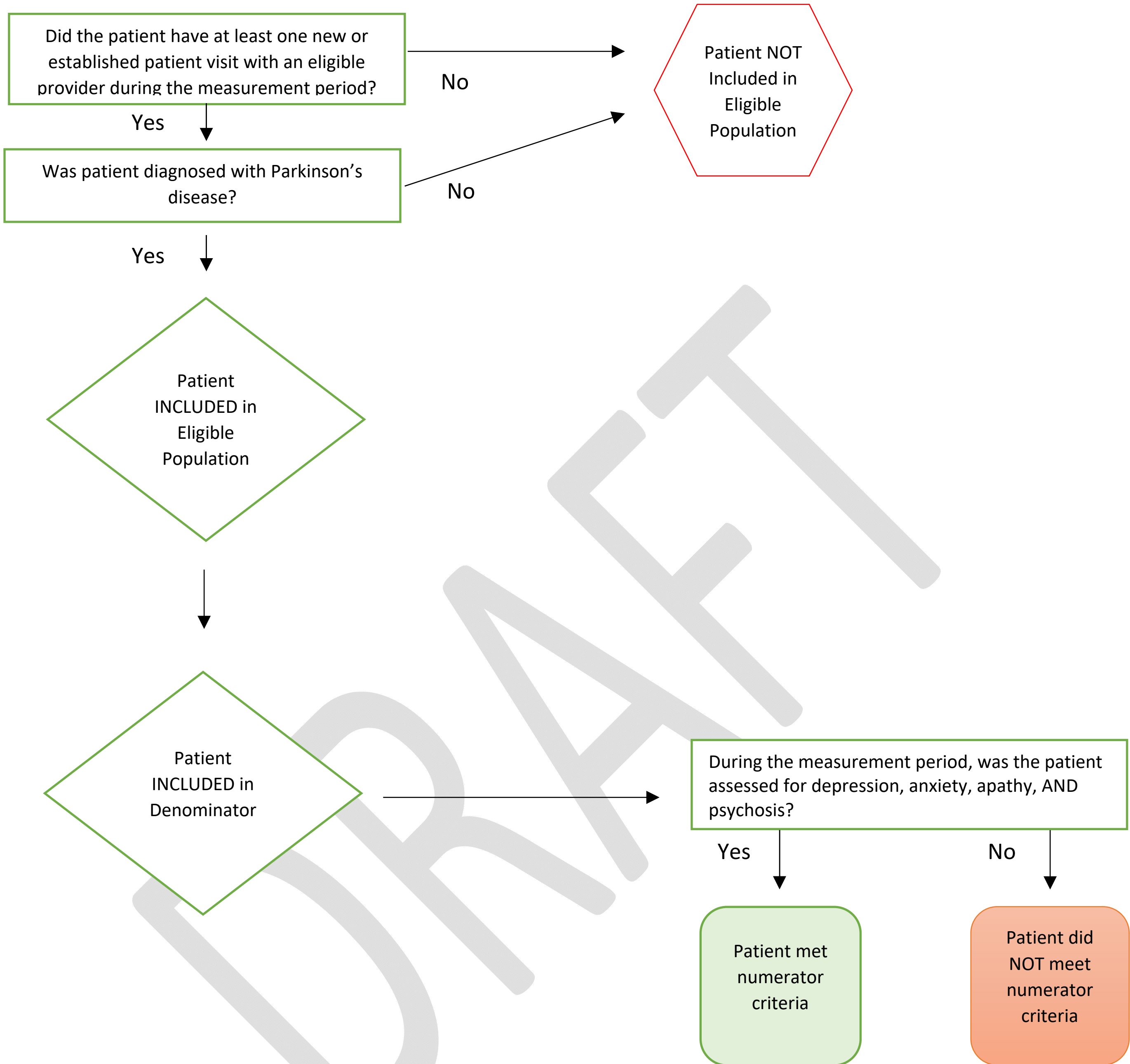
Flow Chart Diagram: Assessment of Mood Disorders and Psychosis



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Measure Title	Assessment of impulse control disorder for patients with PD taking dopaminergic medications	
Description	Percentage of all patients with a diagnosis of PD currently taking dopaminergic medications who were assessed for impulse control disorder	
Measurement Period	January 1, 20xx to December 31, 20xx	
Eligible Population	**Eligible Providers**	Medical Doctor (MD), Doctor of Osteopathy (DO), Physician Assistant (PA), Advanced Practice Registered Nurse (APRN)
	Care Setting(s)	Outpatient, skilled nursing facility
	Ages	All patients
	Event	Office visit
	Diagnosis	Parkinson's disease
Denominator	All patients with a diagnosis of PD currently taking medications for Parkinson's disease# #Parkinson's disease medications include any preparation containing levodopa, dopamine agonists, amantadine, MAOB inhibitors	
Numerator	Patients who were assessed* for impulse control disorder^ (ICD) once during the measurement period *Assessed is defined as use of a screening tool or discussion with the patient or caregiver ^Impulse control disorder includes gambling, hypersexual activity, binge eating, increased spending, dopamine dysregulation, repetitive behaviors, punding	
Required Exclusions	None	
Allowable Exclusions	None	
Exclusion Rationale	N/A	
Measure Scoring	Percentage	
Interpretation of Score	Higher score indicates better quality	
Measure Type	Process	
Level of Measurement	Provider	
Risk Adjustment	N/A	
For Process Measures Relationship to Desired Outcome	Psychiatric symptoms are often under diagnosed and under treated. Using appropriate measures will assure that psychiatric symptoms are properly diagnosed and treated so as to not interfere with functioning levels.	

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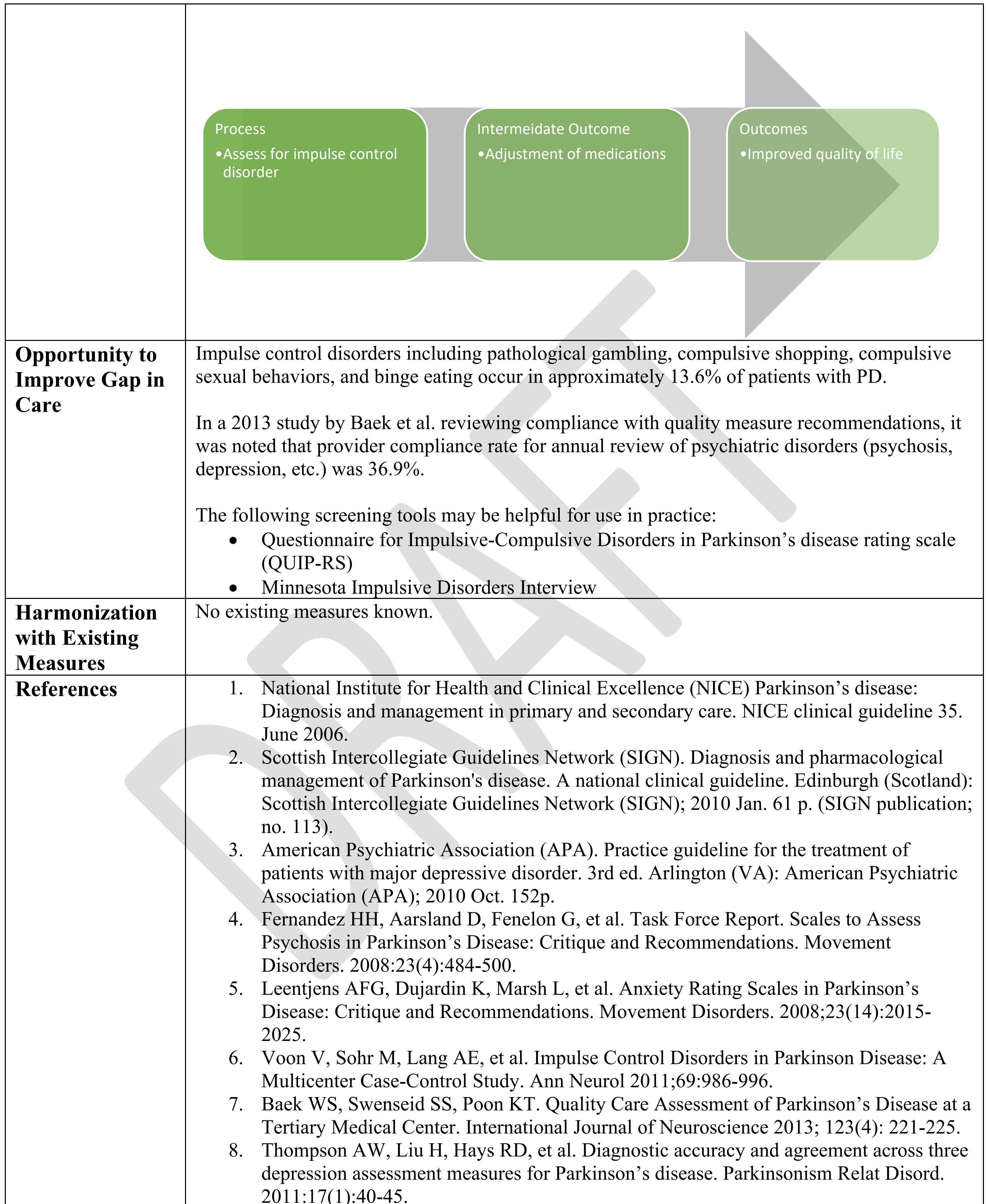

Opportunity to Improve Gap in Care	Impulse control disorders including pathological gambling, compulsive shopping, compulsive sexual behaviors, and binge eating occur in approximately 13.6% of patients with PD. In a 2013 study by Baek et al. reviewing compliance with quality measure recommendations, it was noted that provider compliance rate for annual review of psychiatric disorders (psychosis, depression, etc.) was 36.9%. The following screening tools may be helpful for use in practice: • Questionnaire for Impulsive-Compulsive Disorders in Parkinson's disease rating scale (QUIP-RS) • Minnesota Impulsive Disorders Interview
Harmonization with Existing Measures	No existing measures known.
References	1. National Institute for Health and Clinical Excellence (NICE) Parkinson's disease: Diagnosis and management in primary and secondary care. NICE clinical guideline 35. June 2006. 2. Scottish Intercollegiate Guidelines Network (SIGN). Diagnosis and pharmacological management of Parkinson's disease. A national clinical guideline. Edinburgh (Scotland): Scottish Intercollegiate Guidelines Network (SIGN); 2010 Jan. 61 p. (SIGN publication; no. 113). 3. American Psychiatric Association (APA). Practice guideline for the treatment of patients with major depressive disorder. 3rd ed. Arlington (VA): American Psychiatric Association (APA); 2010 Oct. 152p. 4. Fernandez HH, Aarsland D, Fenelon G, et al. Task Force Report. Scales to Assess Psychosis in Parkinson's Disease: Critique and Recommendations. Movement Disorders. 2008:23(4):484-500. 5. Leentjens AFG, Dujardin K, Marsh L, et al. Anxiety Rating Scales in Parkinson's Disease: Critique and Recommendations. Movement Disorders. 2008;23(14):2015-2025. 6. Voon V, Sohr M, Lang AE, et al. Impulse Control Disorders in Parkinson Disease: A Multicenter Case-Control Study. Ann Neurol 2011;69:986-996. 7. Baek WS, Swenseid SS, Poon KT. Quality Care Assessment of Parkinson's Disease at a Tertiary Medical Center. International Journal of Neuroscience 2013; 123(4): 221-225. 8. Thompson AW, Liu H, Hays RD, et al. Diagnostic accuracy and agreement across three depression assessment measures for Parkinson's disease. Parkinsonism Relat Disord. 2011:17(1):40-45.

	9. Weintraub D, Mamikonyan E, Papay K, et al. Questionnaire for Impulsive-Compulsive Disorders in Parkinson's Disease-Rating Scale. Mov Disord. 2012;27(2):242-247.

Code System	Code	Code Description
Initial Population		
CPT	99201-99205	Office or other outpatient visit, new patient
CPT	99211-99215	Office or other outpatient visit, established patient
CPT	99241-99245	Office or other outpatient consultation, new or established patient
CPT	99304-99310	Nursing home consultation
Denominator		
Patients will meet the denominator if they have a diagnosis of Parkinson's disease AND are currently taking medications for Parkinson's disease (including any preparation containing levodopa, dopamine agonists, amantadine, or MAOB inhibitors)		
ICD-10	G20	Parkinson's Disease
		Hemiparkinsonism
		Idiopathic parkinsonism or Parkinson's Disease
		Paralysis agitans
		Parkinsonisms or Parkinson's disease NOS
		Primary Parkinsonism or Parkinson's disease
RxNorm	2107616	Levodopa 42mg inhalation powder
RxNorm	197872	Levodopa 500mg oral tablet
RxNorm	199563	Benserazide 12.5mg/ Levodopa 50mg oral capsule
RxNorm	199698	Benserazide 12.5mg/ Levodopa 50mg oral tablet
RxNorm	199696	Benserazide 25mg/ Levodopa 100mg oral capsule
RxNorm	199565	Benserazide 25mg/ Levodopa 100mg oral tablet
RxNorm	199564	Benserazide 50mg/ Levodopa 200mg oral capsule
RxNorm	403850	Carbidopa 12.5mg/ entacapone 200mg/ Levodopa 50mg oral tablet
RxNorm	810090	Carbidopa 18.75mg/ entacapone 200mg/ Levodopa 75mg oral tablet
RxNorm	403851	Carbidopa 25mg/ entacapone 200mg/ Levodopa 100mg oral tablet
RxNorm	810083	Carbidopa 31.25mg/ entacapone 200mg/ Levodopa 125mg oral tablet
RxNorm	403852	Carbidopa 37.5mg/ entacapone 200mg/ Levodopa 150mg oral tablet
RxNorm	730988	Carbidopa 50mg/ entacapone 200mg/ Levodopa 200mg oral tablet
RxNorm	1600773	8 HR carbidopa 23.75mg/ Levodopa 95mg extended release oral capsule
RxNorm	1600775	8 HR carbidopa 36.25mg/ Levodopa 145mg extended release oral capsule
RxNorm	1600914	8 HR carbidopa 48.75mg/ Levodopa 195mg extended release oral capsule
RxNorm	1600916	8 HR carbiopa 61.25mg/ Levodopa 245mg extended release oral capsule
RxNorm	483090	Carbidopa 10mg/ Levodopa 100mg disintegrating oral tablet
RxNorm	197443	Carbidopa 10mg/ Levodopa 100mg oral tablet
RxNorm	250432	Carbidopa 12.5mg/ Levodopa 50mg oral tablet
RxNorm	476399	Carbidopa 25mg/ Levodopa 100mg disintegrating oral tablet
RxNorm	308988	Carbidopa 25mg/ Levodopa 100mg extended release oral tablet
RxNorm	197444	Carbidopa 25mg/ Levodopa 100mg oral tablet
RxNorm	476515	Carbidopa 25mg/ Levodopa 250mg disintegrating oral tablet
RxNorm	197445	Carbidopa 25mg/ Levodopa 250mg oral tablet
RxNorm	1599846	Carbidopa 5.63mg/mL/ Levodopa 20mg/mL oral suspension
RxNorm	308989	Carbidopa 50mg/ Levodopa 200mg extended release oral tablet
RxNorm	1599852	Carbidopa 4.63mg/mL/ L-DOPA 20mg/mL oral suspension [Duopa]

RxNorm	2107621	Levodopa 42mg inhalation powder [Inbrija]
RxNorm	809002	Carbidopa 10mg/ Levodopa 100mg disintegrating oral tablet [Parcopa]
RxNorm	809006	Carbidopa 25mg/ Levodopa 100mg disintegrating oral tablet [Parcopa]
RxNorm	809010	Carbidopa 25mg/ Levodopa 250mg disintegrating oral tablet [Parcopa]
RxNorm	1600774	8 HR carbidopa 23.75mg/ Levodopa 95mg extended release oral capsule [Rytary]
RxNorm	1600776	8 HR carbidopa 36.25mg/ Levodopa 145mg extended release oral capsule [Rytary]
RxNorm	1600915	8 HR carbidopa 48.75mg/ Levodopa 195mg extended release oral capsule [Rytary]
RxNorm	1600917	8 HR carbidopa 61.25mg/ Levodopa 245mg extended release oral capsule [Rytary]
RxNorm	724606	Carbidopa 10mg/ Levodopa 100mg oral tablet [Sinemet]
RxNorm	792381	Carbidopa 25mg/ Levodopa 100mg extended release oral tablet [Sinemet]
RxNorm	724598	Carbidopa 25mg/ Levodopa 100mg oral tablet [Sinemet]
RxNorm	724602	Sinemet 25/250 oral tablet
RxNorm	834341	Carbidopa 50mg/ Levodopa 200mg extended release oral tablet [Sinemet]
RxNorm	404552	Carbidopa 25mg/ entacapone 200mg/ Levodopa 100mg oral tablet [Stalevo]
RxNorm	810087	Stalevo 125 oral tablet
RxNorm	404553	Carbidopa 37.5mg/ entacapone 200mg/ Levodopa 150mg oral tablet [Stalevo]
RxNorm	730992	Carbidopa 50mg/ entacapone 200mg/ Levodopa 200mg oral tablet [Stalevo]
RxNorm	404551	Carbidopa 12.5mg/ entacapone 200mg/ Levodopa 50mg oral tablet [Stalevo]
RxNorm	810094	Carbidopa 18.75mg/ entacapone 200mg/ Levodopa 75mg oral tablet [Stalevo]
RxNorm	859077	Bromocriptine 0.8mg oral tablet
RxNorm	250490	Bromocriptine 1mg oral tablet
RxNorm	250491	Bromocriptine 10mg oral capsule
RxNorm	197411	Bromocriptine 2.5mg oral tablet
RxNorm	197412	Bromocriptine 5mg oral capsule
RxNorm	859081	Bromocriptine 0.8mg oral tablet [Cycloset]
RxNorm	105446	Bromocriptine 2.5mg oral table [Parlodel]
RxNorm	105050	Bromocriptine 5mg oral capsule [Parlodel]
RxNorm	199703	Cabergoline 0.5mg oral tablet
RxNorm	153331	Cabergoline 1mg oral tablet
RxNorm	153332	Cabergoline 2mg oral tablet
RxNorm	153333	Cabergoline 4mg oral tablet
RxNorm	855856	3mL apomorphine hydrochloride 10mg/mL cartridge
RxNorm	199929	Apomorphine 10mg/mL injectable solution
RxNorm	389140	Apomorphine 2mg sublingual tablet
RxNorm	389141	Apomorphine 3mg sublingual tablet
RxNorm	855858	3mL apomorphine hydrochloride 10mg/mL cartridge [Apokyn]
RxNorm	901541	24 HR pramipexole dihydrochloride 0.375mg extended release oral tablet
RxNorm	901546	24 HR Pramipexole dihydrochloride 0.75 MG Extended Release Oral Tablet
RxNorm	901550	24 HR Pramipexole dihydrochloride 1.5 MG Extended Release Oral Tablet
RxNorm	1114479	24 HR Pramipexole dihydrochloride 2.25 MG Extended Release Oral Tablet
RxNorm	901555	24 HR Pramipexole dihydrochloride 3 MG Extended Release Oral Tablet
RxNorm	1114485	24 HR Pramipexole dihydrochloride 3.75 MG Extended Release Oral Tablet
RxNorm	901534	24 HR Pramipexole dihydrochloride 4.5 MG Extended Release Oral Tablet
RxNorm	859033	Pramipexole dihydrochloride 0.125 MG Oral Tablet
RxNorm	859040	Pramipexole dihydrochloride 0.25 MG Oral Tablet
RxNorm	859044	Pramipexole dihydrochloride 0.5 MG Oral Tablet
RxNorm	858625	Pramipexole dihydrochloride 0.75 MG Oral Tablet

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RxNorm	859052	Pramipexole dihydrochloride 1 MG Oral Tablet
RxNorm	859048	Pramipexole dihydrochloride 1.5 MG Oral Tablet
RxNorm	901543	24 HR Pramipexole dihydrochloride 0.375 MG Extended Release Oral Tablet [Mirapex]
RxNorm	901547	24 HR Pramipexole dihydrochloride 0.75 MG Extended Release Oral Tablet [Mirapex]
RxNorm	901551	24 HR Pramipexole dihydrochloride 1.5 MG Extended Release Oral Tablet [Mirapex]
RxNorm	1114481	24 HR Pramipexole dihydrochloride 2.25 MG Extended Release Oral Tablet [Mirapex]
RxNorm	901557	24 HR Pramipexole dihydrochloride 3 MG Extended Release Oral Tablet [Mirapex]
RxNorm	1114487	24 HR Pramipexole dihydrochloride 3.75 MG Extended Release Oral Tablet [Mirapex]
RxNorm	901537	24 HR Pramipexole dihydrochloride 4.5 MG Extended Release Oral Tablet [Mirapex]
RxNorm	859035	Pramipexole dihydrochloride 0.125 MG Oral Tablet [Mirapex]
RxNorm	859042	Pramipexole dihydrochloride 0.25 MG Oral Tablet [Mirapex]
RxNorm	859046	Pramipexole dihydrochloride 0.5 MG Oral Tablet [Mirapex]
RxNorm	858627	Pramipexole dihydrochloride 0.75 MG Oral Tablet [Mirapex]
RxNorm	859054	Pramipexole dihydrochloride 1 MG Oral Tablet [Mirapex]
RxNorm	859050	Pramipexole dihydrochloride 1.5 MG Oral Tablet [Mirapex]
RxNorm	824959	24 HR ropinirole 12 MG Extended Release Oral Tablet
RxNorm	799055	24 HR ropinirole 2 MG Extended Release Oral Tablet
RxNorm	799056	24 HR ropinirole 4 MG Extended Release Oral Tablet
RxNorm	848582	24 HR ropinirole 6 MG Extended Release Oral Tablet
RxNorm	799054	24 HR ropinirole 8 MG Extended Release Oral Tablet
RxNorm	312845	ropinirole 0.25 MG Oral Tablet
RxNorm	312846	ropinirole 0.5 MG Oral Tablet
RxNorm	314208	ropinirole 1 MG Oral Tablet
RxNorm	312847	ropinirole 2 MG Oral Tablet
RxNorm	283858	ropinirole 3 MG Oral Tablet
RxNorm	562704	ropinirole 4 MG Oral Tablet
RxNorm	312849	ropinirole 5 MG Oral Tablet
RxNorm	152952	ropinirole 0.25 MG Oral Tablet [Requip]
RxNorm	213068	ropinirole 0.5 MG Oral Tablet [Requip]
RxNorm	152953	ropinirole 1 MG Oral Tablet [Requip]
RxNorm	152954	ropinirole 2 MG Oral Tablet [Requip]
RxNorm	351991	ropinirole 3 MG Oral Tablet [Requip]
RxNorm	261309	ropinirole 4 MG Oral Tablet [Requip]
RxNorm	152955	Requip 5 MG Oral Tablet
RxNorm	824961	24 HR ropinirole 12 MG Extended Release Oral Tablet [Requip]
RxNorm	799832	24 HR ropinirole 2 MG Extended Release Oral Tablet [Requip]
RxNorm	800497	24 HR ropinirole 4 MG Extended Release Oral Tablet [Requip]
RxNorm	848584	24 HR ropinirole 6 MG Extended Release Oral Tablet [Requip]
RxNorm	800499	24 HR ropinirole 8 MG Extended Release Oral Tablet [Requip]
RxNorm	1251912	24 HR Rotigotine 0.0417 MG/HR Transdermal System
RxNorm	722253	24 HR Rotigotine 0.0833 MG/HR Transdermal System
RxNorm	1251916	24 HR Rotigotine 0.125 MG/HR Transdermal System
RxNorm	722295	24 HR Rotigotine 0.167 MG/HR Transdermal System
RxNorm	722279	24 HR Rotigotine 0.25 MG/HR Transdermal System

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RxNorm	1251920	24 HR Rotigotine 0.333 MG/HR Transdermal System
RxNorm	1251914	24 HR Rotigotine 0.0417 MG/HR Transdermal System [Neupro]
RxNorm	722256	24 HR Rotigotine 0.0833 MG/HR Transdermal System [Neupro]
RxNorm	1251918	24 HR Rotigotine 0.125 MG/HR Transdermal System [Neupro]
RxNorm	724142	24 HR Rotigotine 0.167 MG/HR Transdermal System [Neupro]
RxNorm	724156	24 HR Rotigotine 0.25 MG/HR Transdermal System [Neupro]
RxNorm	1251922	24 HR Rotigotine 0.333 MG/HR Transdermal System [Neupro]
RxNorm	312308	Pergolide 0.05mg oral tablet
RxNorm	312309	Pergolide 0.25 MG Oral Tablet
RxNorm	312310	Pergolide 1 MG Oral Tablet
RxNorm	207479	Pergolide 0.05 MG Oral Tablet [Permax]
RxNorm	207482	Pergolide 0.25 MG Oral Tablet [Permax]
RxNorm	207483	Pergolide 1 MG Oral Tablet [Permax]
RxNorm	1191354	Pergolide 1 MG Oral Tablet [Prascend]
RxNorm	672356	1.3 ML aripiprazole 7.5 MG/ML Injection
RxNorm	1602163	1.5 ML ARIPiprazole 200 MG/ML Prefilled Syringe
RxNorm	1602171	2 ML ARIPiprazole 200 MG/ML Prefilled Syringe
RxNorm	485496	ARIPiprazole 1 MG/ML Oral Solution
RxNorm	643019	ARIPiprazole 10 MG Disintegrating Oral Tablet
RxNorm	349545	aripiprazole 10 MG Oral Tablet
RxNorm	643022	aripiprazole 15 MG Disintegrating Oral Tablet
RxNorm	349490	ARIPiprazole 15 MG Oral Tablet
RxNorm	602964	aripiprazole 2 MG Oral Tablet
RxNorm	643027	aripiprazole 20 MG Disintegrating Oral Tablet
RxNorm	349553	aripiprazole 20 MG Oral Tablet
RxNorm	643058	aripiprazole 30 MG Disintegrating Oral Tablet
RxNorm	349547	aripiprazole 30 MG Oral Tablet
RxNorm	1659816	aripiprazole 300 MG Injection
RxNorm	1659812	aripiprazole 400 MG Injection
RxNorm	402131	aripiprazole 5 MG Oral Tablet
RxNorm	1998451	Sensor aripiprazole 10 MG Oral Tablet
RxNorm	1998454	Sensor aripiprazole 15 MG Oral Tablet
RxNorm	1998456	Sensor aripiprazole 2 MG Oral Tablet
RxNorm	1998458	Sensor aripiprazole 20 MG Oral Tablet
RxNorm	1998460	Sensor aripiprazole 30 MG Oral Tablet
RxNorm	1998462	Sensor aripiprazole 5 MG Oral Tablet
RxNorm	672540	1.3 ML aripiprazole 7.5 MG/ML Injection [Abilify]
RxNorm	1602604	1.5 ML aripiprazole 200 MG/ML Prefilled Syringe [Abilify]
RxNorm	1602607	2 ML aripiprazole 200 MG/ML Prefilled Syringe [Abilify]
RxNorm	544412	aripiprazole 1 MG/ML Oral Solution [Abilify]
RxNorm	352307	aripiprazole 10 MG Oral Tablet [Abilify]
RxNorm	352308	aripiprazole 15 MG Oral Tablet [Abilify]
RxNorm	615172	aripiprazole 2 MG Oral Tablet [Abilify]
RxNorm	352309	aripiprazole 20 MG Oral Tablet [Abilify]
RxNorm	352310	aripiprazole 30 MG Oral Tablet [Abilify]
RxNorm	1659818	aripiprazole 300 MG Injection [Abilify]
RxNorm	1659814	aripiprazole 400 MG Injection [Abilify]
RxNorm	404602	aripiprazole 5 MG Oral Tablet [Abilify]
RxNorm	643021	aripiprazole 10 MG Disintegrating Oral Tablet [Abilify]
RxNorm	643023	aripiprazole 15 MG Disintegrating Oral Tablet [Abilify]
RxNorm	1998453	Sensor aripiprazole 10 MG Oral Tablet [Abilify]

RxNorm	1998455	Sensor aripiprazole 15 MG Oral Tablet [Abilify]
RxNorm	1998457	Sensor aripiprazole 2 MG Oral Tablet [Abilify]
RxNorm	1998459	Sensor aripiprazole 20 MG Oral Tablet [Abilify]
RxNorm	1998461	Sensor aripiprazole 30 MG Oral Tablet [Abilify]
RxNorm	1998463	Sensor aripiprazole 5 MG Oral Tablet [Abilify]
RxNorm	250831	Lisuride 0.2 MG Oral Tablet
Numerator		
SNOMED	66347000	Impulse control disorder (disorder)
ICD-10-CM	F63.9	Impulse disorder, unspecified
ICD-10-CM	F63.89	Other impulse disorders
SNOMED	105523009	Gambling (finding)
ICD-10-CM	Z72.6	Gambling and betting
ICD-10-CM	F63.0	Pathological gambling
SNOMED	18085000	Compulsive gambling (disorder)
SNOMED	73744004	Hypersexuality state (finding)
SNOMED	248122005	Binge eating (finding)
ICD-10-CM	F50.81	Binge eating disorder
ICD-10-CM	Z72.4	Inappropriate diet and eating habits
SNOMED	439960005	Binge eating disorder (disorder)
SNOMED	423884000	Repetitious behavior (finding)
ICD-10-CM	R46.81	Obsessive-compulsive behavior

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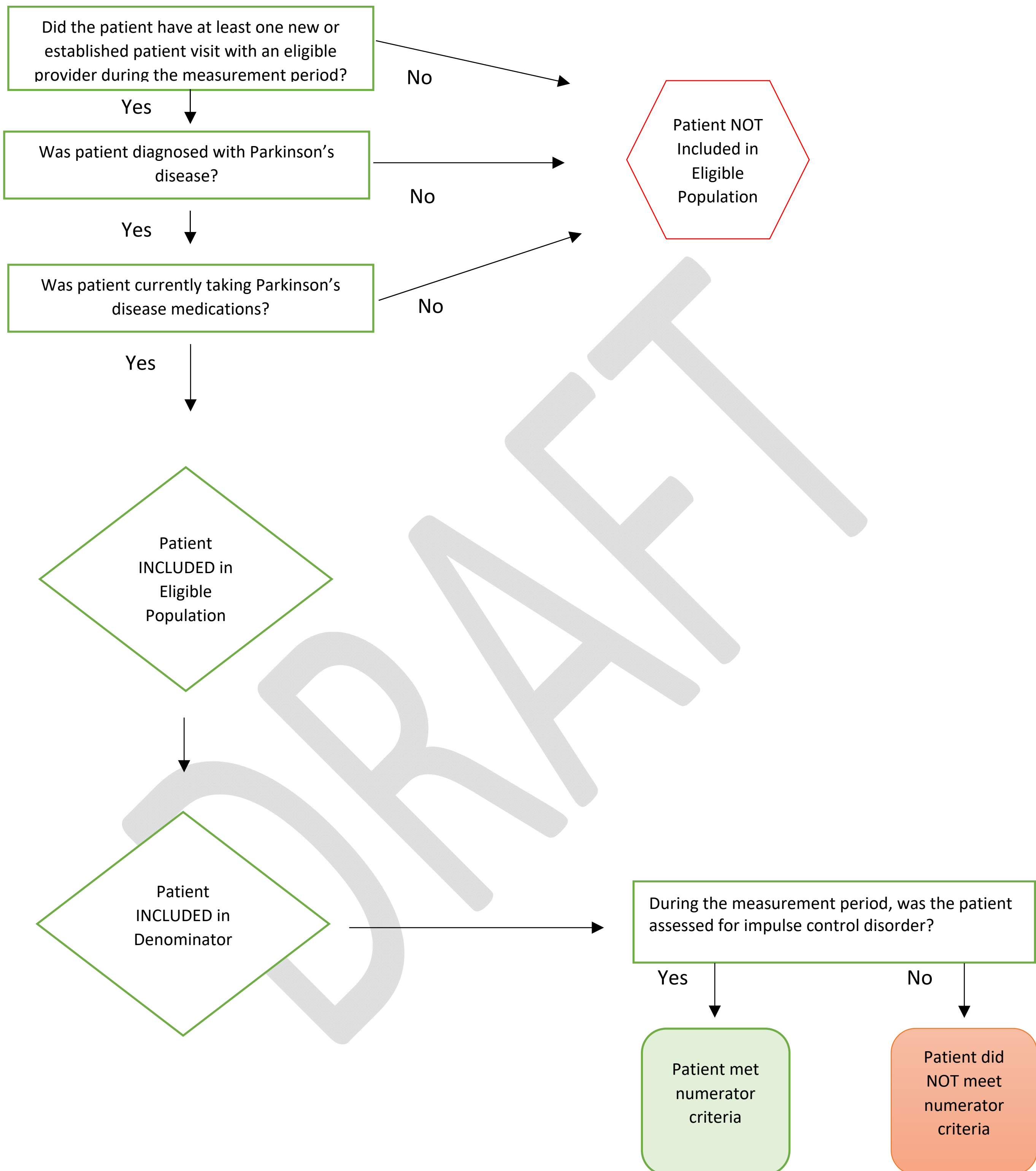
Flow Chart Diagram: Assessment of Impulse Control Disorders for PD Patients Taking Medications



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<table>
<tr><td>Measure Title</td><td colspan="2">Assessment of sleep disturbances for patients with Parkinson’s disease</td></tr>
<tr><td>Description</td><td colspan="2">Percentage of all patients with a diagnosis of PD who were assessed for sleep disturbances once in the past 12 months</td></tr>
<tr><td>Measurement Period</td><td colspan="2">January 1, 20xx to December 31, 20xx</td></tr>
<tr><td rowspan="5">Eligible Population</td><td>Eligible Providers</td><td>Medical Doctor (MD), Doctor of Osteopathy (DO), Physician Assistant (PA), Advanced Practice Registered Nurse (APRN)</td></tr>
<tr><td>Care Setting(s)</td><td>Outpatient</td></tr>
<tr><td>Ages</td><td>All patients</td></tr>
<tr><td>Event</td><td>Office visit</td></tr>
<tr><td>Diagnosis</td><td>Parkinson’s disease</td></tr>
<tr><td>Denominator</td><td colspan="2">All patients with a diagnosis of PD</td></tr>
<tr><td>Numerator</td><td colspan="2">Patients who were assessed^ for sleep disturbances* once in the past 12 months

^Assessed is defined as use of a screening tool or discussion with the patient or caregiver

*Sleep disturbances include at least one of the following:
• Excessive daytime sleepiness
• Restless leg syndrome
• REM sleep behavior disorder (RBD)
• Hypersomnolence
• Lethargy
• Early awakening
• Frequent awakening
• Insomnia
• Sleep apnea
• Snoring</td></tr>
<tr><td>Required Exclusions</td><td colspan="2">None</td></tr>
<tr><td>Allowable Exclusions</td><td colspan="2">None</td></tr>
<tr><td>Exclusion Rationale</td><td colspan="2">N/A</td></tr>
<tr><td>Measure Scoring</td><td colspan="2">Percentage</td></tr>
<tr><td>Interpretation of Score</td><td colspan="2">Higher score indicates better quality</td></tr>
<tr><td>Measure Type</td><td colspan="2">Process</td></tr>
<tr><td>Level of Measurement</td><td colspan="2">Provider</td></tr>
<tr><td>Risk Adjustment</td><td colspan="2">N/A</td></tr>
<tr><td>For Process Measures Relationship to Desired Outcome</td><td colspan="2">Sleep disorders are quite common in PD and impact on quality of life. Screening for sleep disturbances increases recognition, enhance likelihood that treatment options will be discussed and offered, and ultimately decrease rates of sleep disturbance in this patient population.</td></tr>
</table>

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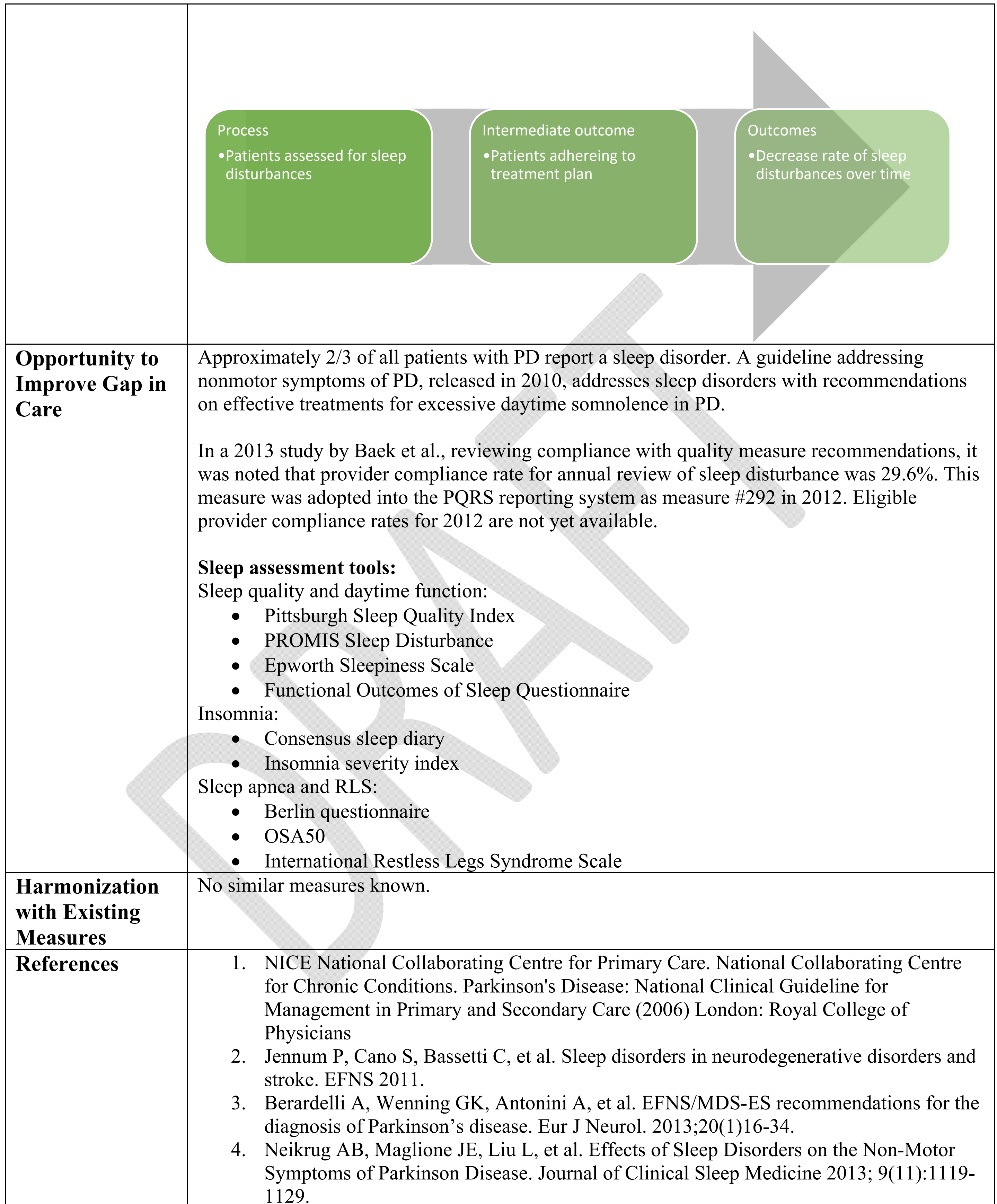

Opportunity to Improve Gap in Care	Approximately 2/3 of all patients with PD report a sleep disorder. A guideline addressing nonmotor symptoms of PD, released in 2010, addresses sleep disorders with recommendations on effective treatments for excessive daytime somnolence in PD. In a 2013 study by Baek et al., reviewing compliance with quality measure recommendations, it was noted that provider compliance rate for annual review of sleep disturbance was 29.6%. This measure was adopted into the PQRS reporting system as measure #292 in 2012. Eligible provider compliance rates for 2012 are not yet available. **Sleep assessment tools:** Sleep quality and daytime function: • Pittsburgh Sleep Quality Index • PROMIS Sleep Disturbance • Epworth Sleepiness Scale • Functional Outcomes of Sleep Questionnaire Insomnia: • Consensus sleep diary • Insomnia severity index Sleep apnea and RLS: • Berlin questionnaire • OSA50 • International Restless Legs Syndrome Scale
Harmonization with Existing Measures	No similar measures known.
References	1. NICE National Collaborating Centre for Primary Care. National Collaborating Centre for Chronic Conditions. Parkinson's Disease: National Clinical Guideline for Management in Primary and Secondary Care (2006) London: Royal College of Physicians 2. Jennum P, Cano S, Bassetti C, et al. Sleep disorders in neurodegenerative disorders and stroke. EFNS 2011. 3. Berardelli A, Wenning GK, Antonini A, et al. EFNS/MDS-ES recommendations for the diagnosis of Parkinson's disease. Eur J Neurol. 2013;20(1)16-34. 4. Neikrug AB, Maglione JE, Liu L, et al. Effects of Sleep Disorders on the Non-Motor Symptoms of Parkinson Disease. Journal of Clinical Sleep Medicine 2013; 9(11):1119-1129.

	5. Sung VW, Nicholas AP. Nonmotor Symptoms in Parkinson's Disease: Expanding the View of Parkinson's Disease Beyond a Pure Motor, Pure Dopaminergic Problem. Neurol Clin 2013;31:S1-S16. 6. Zesiewicz TA, Sullivan KL, Arnulf I, et al. Quality Standards Subcommittee. Practice Parameter: treatment of nonmotor symptoms of Parkinson disease: report of the Quality Standards Subcommittee of the American Academy of Neurology. Neurology 2010;74(11):924-931. 7. Baek WS, Swenseid SS, Poon KT. Quality Care Assessment of Parkinson's Disease at a Tertiary Medical Center. International Journal of Neuroscience 2013; 123(4): 221-225.

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Code System	Code	Code Description
Initial Population		
CPT	99201-99205	Office or other outpatient visit, new patient
CPT	99211-99215	Office or other outpatient visit, established patient
CPT	99241-99245	Office or other outpatient consultation, new or established patient
Denominator		
ICD-10	G20	Parkinson's Disease Hemiparkinsonism Idiopathic parkinsonism or Parkinson's Disease Paralysis agitans Parkinsonisms or Parkinson's disease NOS Primary Parkinsonism or Parkinson's disease
Numerator		
SNOMED	230489007	Excessive daytime sleepiness – normal night sleep
SNOMED	191999000	Persistent hypersomnia
SNOMED	3731000119107	Idiopathic hypersomnia
SNOMED	426451004	Recurrent hypersomnia
SNOMED	268653004	Transient hypersomnia
SNOMED	36124002	Primary hypersomnia
SNOMED	31771000119102	Daytime hypersomnia
SNOMED	77692006	Hypersomnia
ICD-10	R40.0	Daytime somnolence
ICD-10	G47.10	Hypersomnia, unspecified
ICD-10	G47.11	Idiopathic hypersomnia with long sleep time
ICD-10	G47.12	Idiopathic hypersomnia without long sleep time
ICD-10	G47.13	Recurrent hypersomnia
ICD-10	G47.14	Hypersomnia due to medical condition
ICD-10	G47.19	Other hypersomnia (including daytime hypersomnia)
SNOMED	32914008	Restless legs syndrome
ICD-10	G25.81	Restless legs syndrome
ICD-10	G47.52	REM sleep behavior disorder
SNOMED	415238003	REM sleep behavior disorder
ICD-10	G47.00	Insomnia, unspecified
ICD-10	G47.01	Insomnia due to medical condition
ICD-10	G47.09	Other insomnia
SNOMED	193462001	Insomnia
SNOMED	724748004	Chronic insomnia
SNOMED	268652009	Transient insomnia
SNOMED	3972004	Idiopathic insomnia
ICD-10	G47.30	Sleep apnea, unspecified
ICD-10	G47.39	Other sleep apnea
SNOMED	73430006	Sleep apnea
ICD-10	R06.83	Snoring
SNOMED	72863001	Snoring
SNOMED	162375000	Snoring symptoms
SNOMED	214264003	Lethargy
SNOMED	708735004	Epworth Sleepiness Scale
SNOMED	763254009	Epworth Sleepiness Scale Score
SNOMED	763227006	Assessment using Epworth Sleepiness Scale
SNOMED	699200007	Pittsburgh sleep quality index (assessment scale)
SNOMED	763105008	Assessment using Pittsburgh sleep quality index (procedure)

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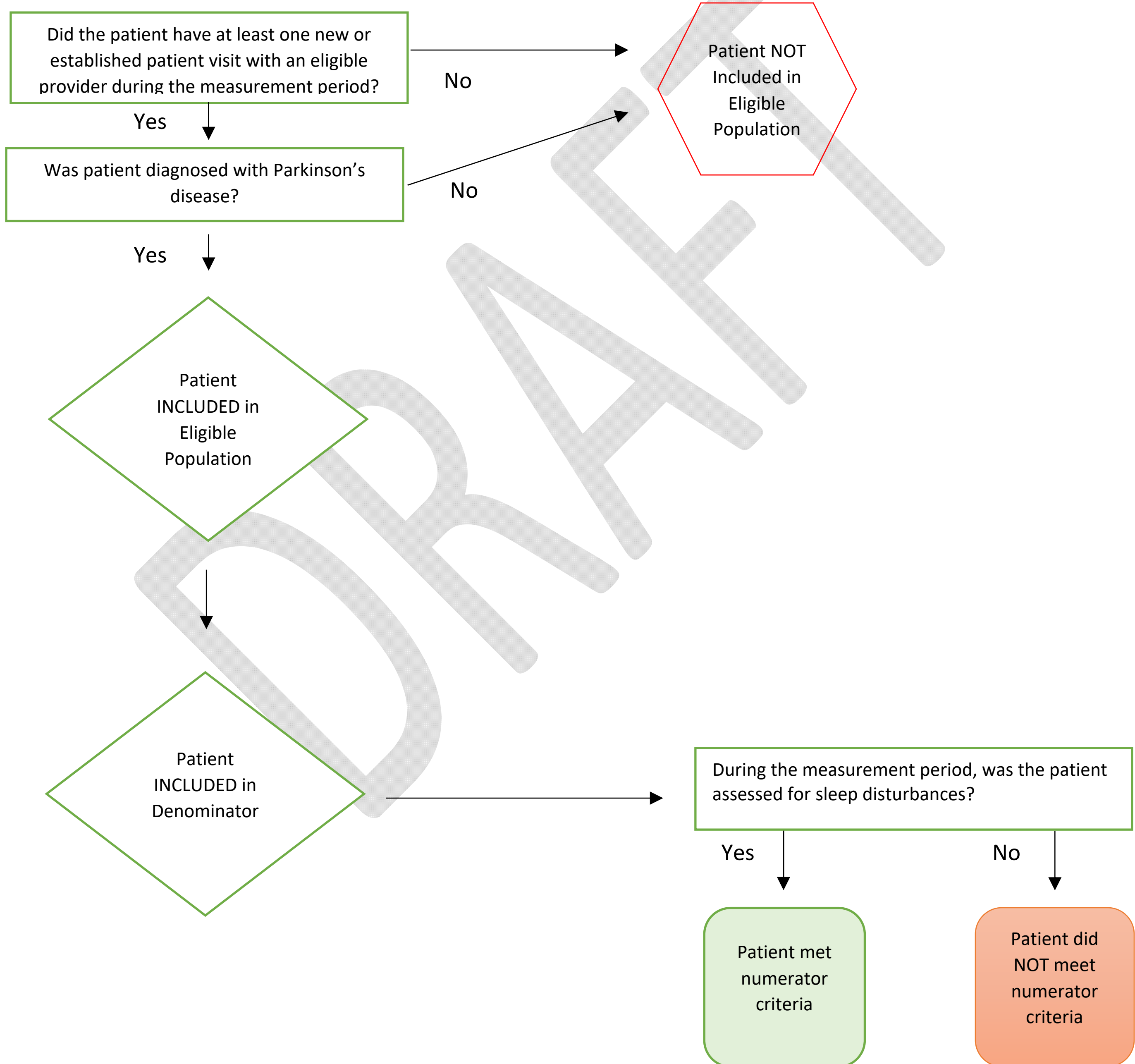
LOINC	61982-5	PROMIS item bank – sleep disturbance – version 1.0
LOINC	75258-4	PROMIS short form – sleep disturbance 4a – version 1.0
LOINC	76703-8	PROMIS short form – sleep disturbance 6a – version 1.0
LOINC	62197-9	PROMIS short form – sleep disturbance 8b – version 1.0
SNOMED	454481000124101	Insomnia severity index (assessment scale)
SNOMED	761885003	Assessment using insomnia severity index (procedure)
SNOMED	445483007	Berlin questionnaire for sleep apnea (assessment scale)

Flow Chart Diagram: Sleep disturbances assessed



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Measure Title	Assessment of or screening for Cognitive impairment or dysfunction in Parkinson's disease	
Description	Percentage of all patients with a diagnosis of PD who were assessed or screened for cognitive impairment or dysfunction in the past 12 months	
Measurement Period	January 1, 20xx to December 31, 20xx	
Eligible Population	**Eligible Providers**	Medical Doctor (MD), Doctor of Osteopathy (DO), Physician Assistant (PA), Advanced Practice Registered Nurse (APRN), Physical Therapist (PT), Occupational Therapist (OT), Speech Language Pathologist (SLP), Clinical Psychologist
	Care Setting(s)	Outpatient, skilled nursing facility
	Ages	All patients
	Event	Office visit
	Diagnosis	Parkinson's disease
Denominator	All patients with a diagnosis of PD	
Numerator	Patients (or caregiver as appropriate) who were assessed* or screened^ for cognitive impairment or dysfunction once in the past 12 months *Assessed is defined as a discussion with the patient or caregiver and may include the following key words: • Memory loss • Cognitive impairment • Dementia • Forgetfulness • Word finding difficulty • Confusion/confused • Mental status changes ^Screening is defined as use of a tool or referral to neuropsychologist for testing. Screening tools for use in this measure include: • Mini-Mental State Exam (MMSE) • Montreal Cognitive Assessment (MoCA) • Dementia Rating Scale (DRS-2) • Parkinson's Disease Dementia -Short Screen (PDD-SS) • Parkinson Neuropsychiatric Dementia Assessment (PANDA) • Parkinson's Disease- Cognitive Rating Scale (PD-CRS) • Scales for Outcomes of Parkinson's Disease – Cognition (SCOPA-Cog)	
Required Exclusions	None	
Allowable Exclusions	• Patient and caregiver decline screening or assessment • On date of encounter, patient is not able to participate in assessment or screening, including non-verbal patients, delirious, severely aphasic, severely developmentally delayed, severe visual or hearing impairment and for those patients, no knowledgeable informant available.	
Exclusion Rationale	N/A	
Measure Scoring	Percentage	
Interpretation of Score	Higher score indicates better quality	
Measure Type	Process	

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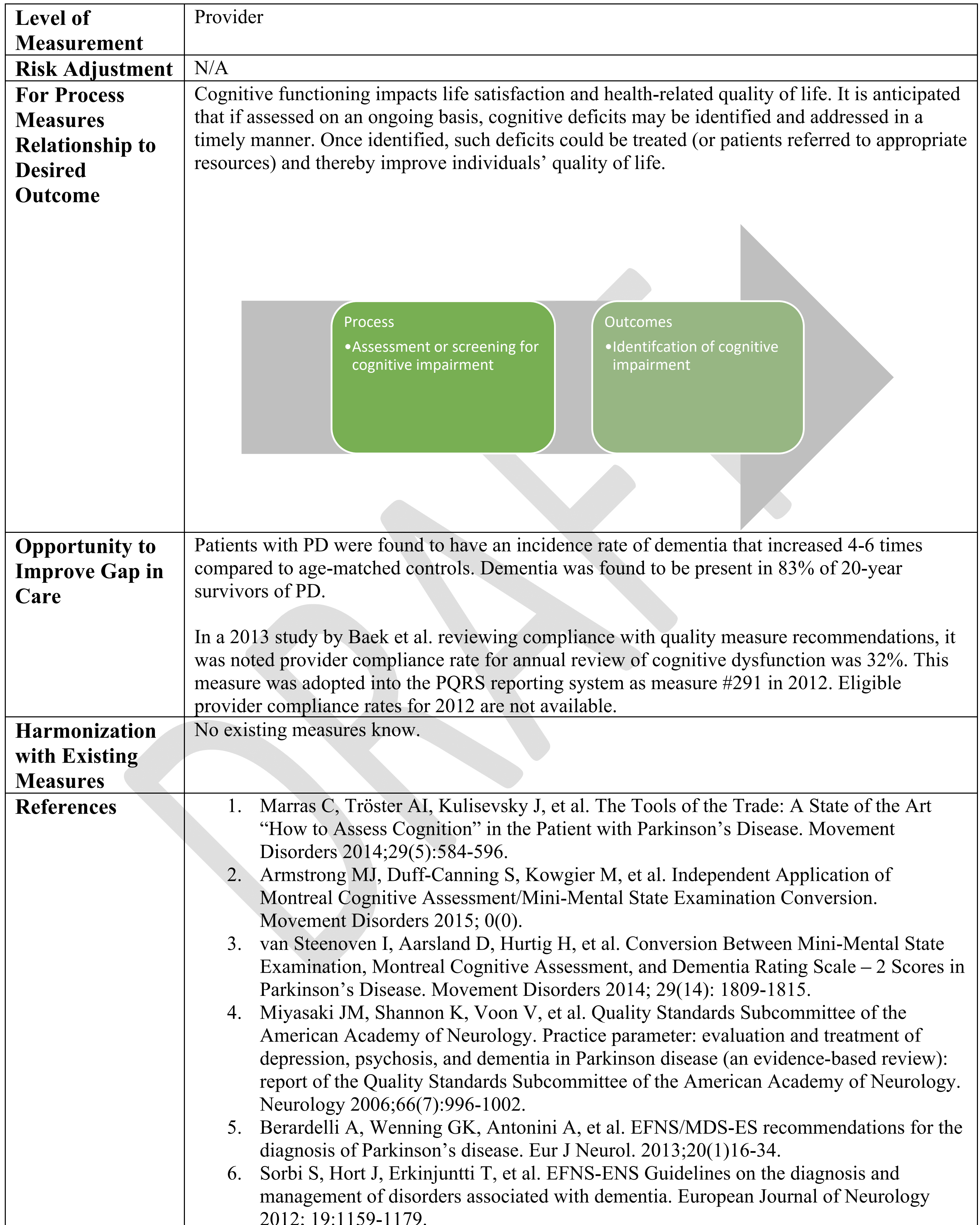
Level of Measurement	Provider
Risk Adjustment	N/A
For Process Measures Relationship to Desired Outcome	Cognitive functioning impacts life satisfaction and health-related quality of life. It is anticipated that if assessed on an ongoing basis, cognitive deficits may be identified and addressed in a timely manner. Once identified, such deficits could be treated (or patients referred to appropriate resources) and thereby improve individuals' quality of life. 
Opportunity to Improve Gap in Care	Patients with PD were found to have an incidence rate of dementia that increased 4-6 times compared to age-matched controls. Dementia was found to be present in 83% of 20-year survivors of PD. In a 2013 study by Baek et al. reviewing compliance with quality measure recommendations, it was noted provider compliance rate for annual review of cognitive dysfunction was 32%. This measure was adopted into the PQRS reporting system as measure #291 in 2012. Eligible provider compliance rates for 2012 are not available.
Harmonization with Existing Measures	No existing measures know.
References	1. Marras C, Tröster AI, Kulisevsky J, et al. The Tools of the Trade: A State of the Art "How to Assess Cognition" in the Patient with Parkinson's Disease. Movement Disorders 2014;29(5):584-596. 2. Armstrong MJ, Duff-Canning S, Kowgier M, et al. Independent Application of Montreal Cognitive Assessment/Mini-Mental State Examination Conversion. Movement Disorders 2015; 0(0). 3. van Steenoven I, Aarsland D, Hurtig H, et al. Conversion Between Mini-Mental State Examination, Montreal Cognitive Assessment, and Dementia Rating Scale – 2 Scores in Parkinson's Disease. Movement Disorders 2014; 29(14): 1809-1815. 4. Miyasaki JM, Shannon K, Voon V, et al. Quality Standards Subcommittee of the American Academy of Neurology. Practice parameter: evaluation and treatment of depression, psychosis, and dementia in Parkinson disease (an evidence-based review): report of the Quality Standards Subcommittee of the American Academy of Neurology. Neurology 2006;66(7):996-1002. 5. Berardelli A, Wenning GK, Antonini A, et al. EFNS/MDS-ES recommendations for the diagnosis of Parkinson's disease. Eur J Neurol. 2013;20(1)16-34. 6. Sorbi S, Hort J, Erkinjuntti T, et al. EFNS-ENS Guidelines on the diagnosis and management of disorders associated with dementia. European Journal of Neurology 2012; 19:1159-1179.

	7. National Guideline System (SNLG). SNLG Regions – Dementia: Diagnosis and Treatment. 38 p. Publication 2011. Update 2015. 8. Hely MA, Reid WGJ, Adena MA, et al. The Syndney Multicenter Study of Parkinson's Disease: The Inevitability of Dementia at 20 years. Movement Disorders 2008;23(6):837-844. 9. Baek WS, Swenseid SS, Poon KT. Quality Care Assessment of Parkinson's Disease at a Tertiary Medical Center. International Journal of Neuroscience 2013; 123(4): 221-225.

Code System	**Code**	**Code Description**
Initial population		
CPT	99201-99205	Office or other outpatient visit, new patient
CPT	99211-99215	Office or other outpatient visit, established patient
CPT	99241-99245	Office or other outpatient consultation, new or established patient
CPT	99304-99310	Nursing home consultation
Denominator		
ICD-10	G20	Parkinson's Disease
		Hemiparkinsonism
		Idiopathic parkinsonism or Parkinson's Disease
		Paralysis agitans
		Parkinsonisms or Parkinson's disease NOS
		Primary Parkinsonism or Parkinson's disease
Numerator		
SNOMED	408902006	Memory loss care assessment (procedure)
SNOMED	386806002	Impaired cognition (finding)
SNOMED	386805003	Mild cognitive disorder (disorder)
SNOMED	702956004	Severe cognitive impairment (finding)
SNOMED	110352000	Minimal cognitive impairment (finding)
SNOMED	702955000	Moderate cognitive impairment (finding)
SNOMED	38369006	At risk for cognitive impairment (finding)
SNOMED	52448006	Dementia (disorder)
SNOMED	428051000124108	Mild dementia (disorder)
SNOMED	428351000124105	Severe dementia (disorder)
SNOMED	430771000124100	Moderate dementia (disorder)
SNOMED	312991009	Senile dementia of the Lowy body type (disorder)
SNOMED	26929004	Alzheimer's disease (disorder)
SNOMED	273617000	Mini-mental state examination (assessment scale)
LOINC	72107-6	Mini-mental state examination (MMSE)
SNOMED	459661000124109	Assessment using montreal cognitive assessment (procedure)
SNOMED	273367002	Clinical dementia rating scale (assessment scale)
LOINC	72133-2	Montreal Cognitive Assessment (MoCA)

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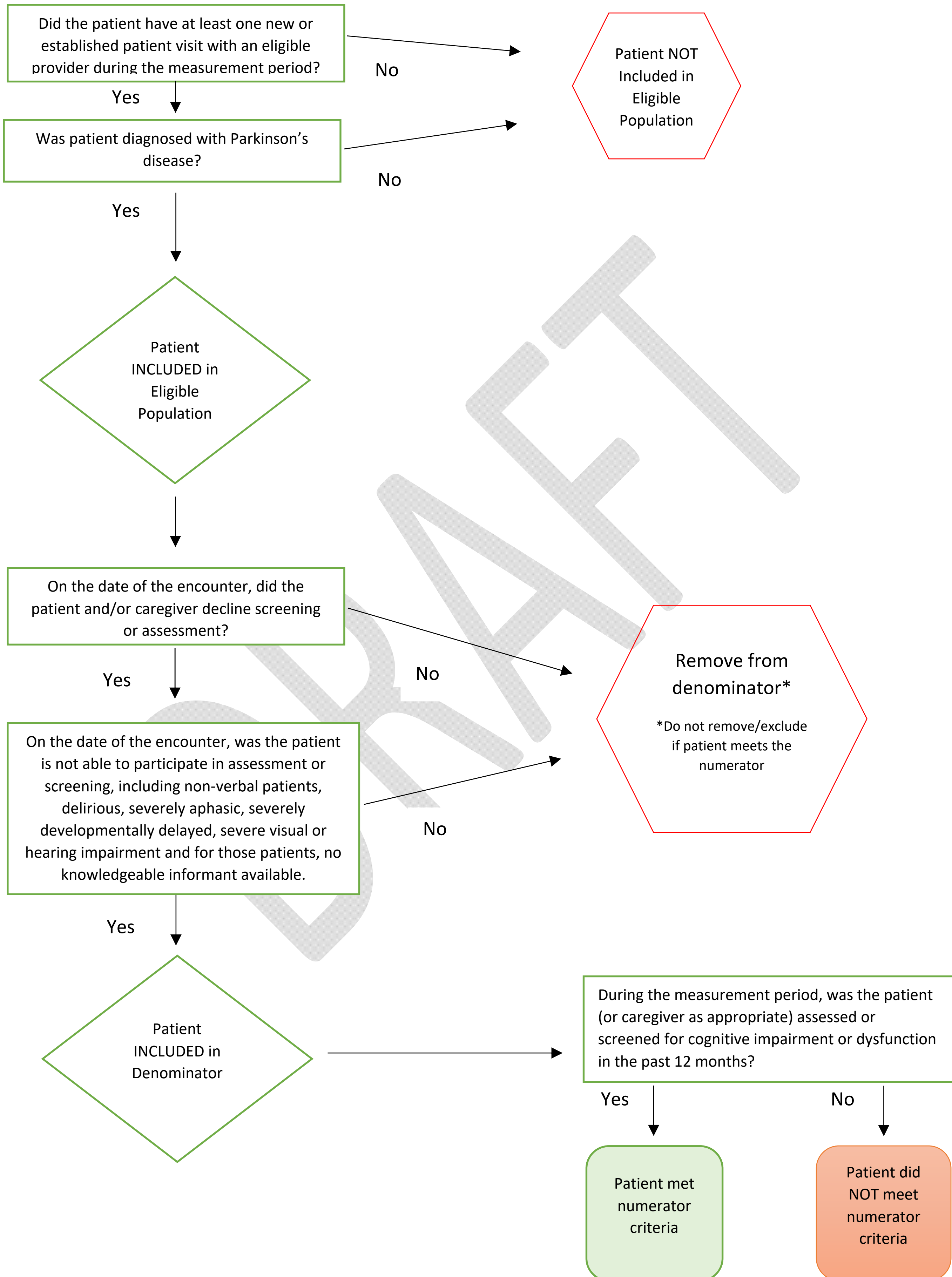
Flow Chart Diagram: Assessment or Screening for Cognitive Impairment



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Measure Title	Assessment of autonomic dysfunction for patients with Parkinson's disease	
Description	Percentage of all patients with a diagnosis of PD (or caregiver as appropriate) who were queried about symptoms of autonomic dysfunction in the past 12 months.	
Measurement Period	January 1, 20xx to December 31, 20xx	
Eligible Population	**Eligible Providers**	Medical Doctor (MD), Doctor of Osteopathy (DO), Physician Assistant (PA), Advanced Practice Registered Nurse (APRN)
	Care Setting(s)	Outpatient, skilled nursing facility,
	Ages	All patients
	Event	Office visit
	Diagnosis	Parkinson's disease
Denominator	All patients with a diagnosis of PD	
Numerator	Patients (or caregivers as appropriate) who were assessed^ for symptoms* or signs[#] of autonomic dysfunction once in the past 12 months ^Assessed is defined as use of a screening tool or discussion with the patient or caregiver *Symptoms of autonomic dysfunction is defined as including at least one of the following: • orthostatic hypotension or intolerance, • constipation, • urinary urgency, • incontinence or nocturia, • fecal incontinence, • urinary retention requiring catherization, • delayed gastric emptying, • dysphagia, • drooling or sialorrhea, • hyperhidrosis, • sexual dysfunction or erectile dysfunction, • syncope, lightheadedness, or dizziness [#]Signs • orthostatic vital signs	
Required Exclusions	None	
Allowable Exclusions	None	
Exclusion Rationale	N/A	
Measure Scoring	Percentage	
Interpretation of Score	Higher score indicates better quality	
Measure Type	Process	
Level of Measurement	Provider, Practice, System	
Risk Adjustment	N/A	
For Process Measures Relationship to	Autonomic dysfunction is directly related to the quality of life of patients with PD. The desired outcome is to address and eliminate autonomic dysfunction in patients with PD. This measure	

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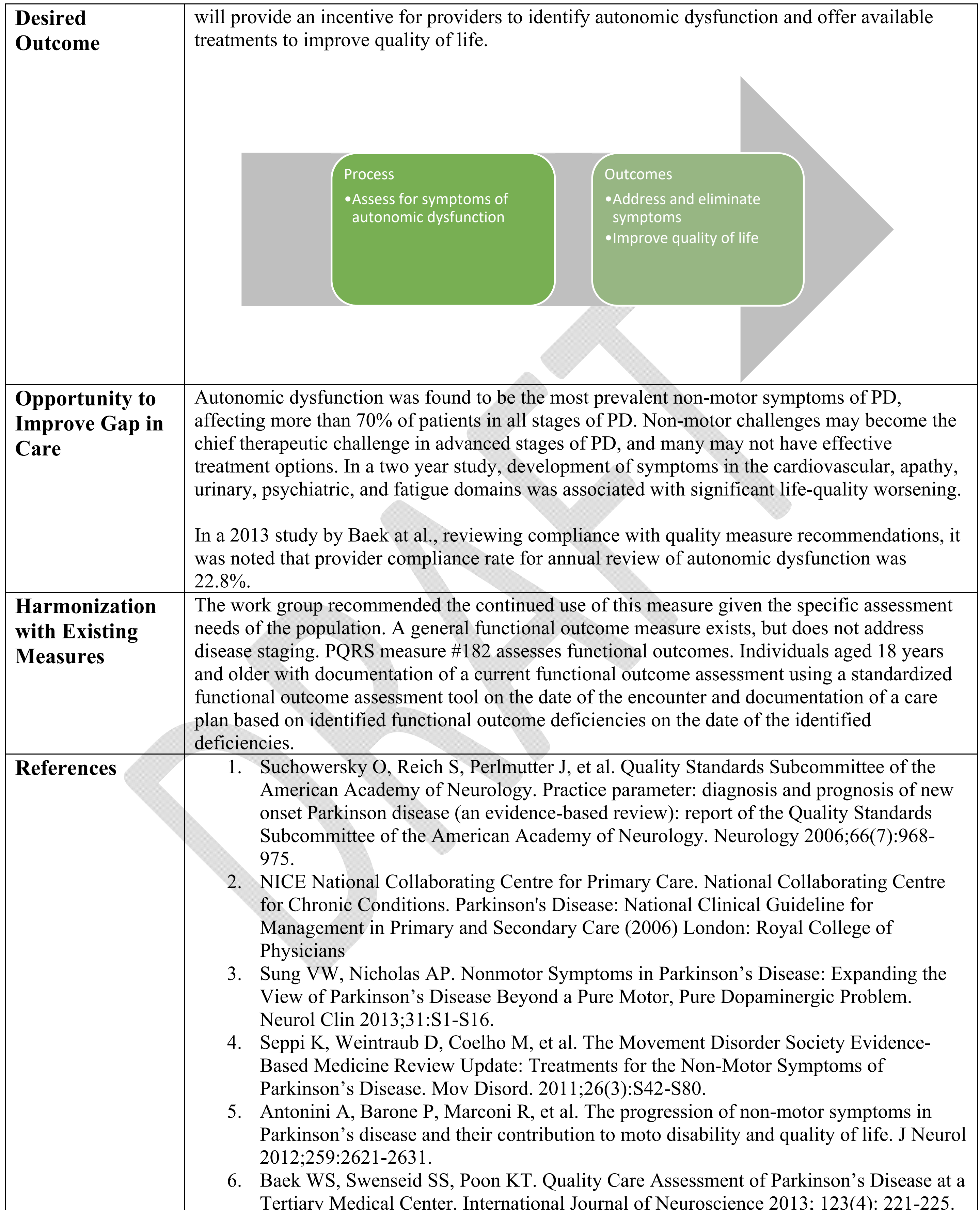
Desired Outcome	will provide an incentive for providers to identify autonomic dysfunction and offer available treatments to improve quality of life. 
Opportunity to Improve Gap in Care	Autonomic dysfunction was found to be the most prevalent non-motor symptoms of PD, affecting more than 70% of patients in all stages of PD. Non-motor challenges may become the chief therapeutic challenge in advanced stages of PD, and many may not have effective treatment options. In a two year study, development of symptoms in the cardiovascular, apathy, urinary, psychiatric, and fatigue domains was associated with significant life-quality worsening. In a 2013 study by Baek at al., reviewing compliance with quality measure recommendations, it was noted that provider compliance rate for annual review of autonomic dysfunction was 22.8%.
Harmonization with Existing Measures	The work group recommended the continued use of this measure given the specific assessment needs of the population. A general functional outcome measure exists, but does not address disease staging. PQRS measure #182 assesses functional outcomes. Individuals aged 18 years and older with documentation of a current functional outcome assessment using a standardized functional outcome assessment tool on the date of the encounter and documentation of a care plan based on identified functional outcome deficiencies on the date of the identified deficiencies.
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Code System	Code	Code Description
Initial population		
CPT	99201-99205	Office or other outpatient visit, new patient
CPT	99211-99215	Office or other outpatient visit, established patient
CPT	99241-99245	Office or other outpatient consultation, new or established patient
CPT	99304-99310	Nursing home consultation
CPT	99221-99223	Initial hospital care
CPT	99231-99233	Subsequent hospital care
CPT	99238-99239	Hospital discharge
CPT	99251-99255	Initial inpatient consultation
Denominator		
ICD-10	G20	Parkinson's Disease
		Hemiparkinsonism
		Idiopathic parkinsonism or Parkinson's Disease
		Paralysis agitans
		Parkinsonisms or Parkinson's disease NOS
		Primary Parkinsonism or Parkinson's disease
Numerator		
SNOMED	28651003	Orthostatic hypotension (disorder)
ICD-10-CM	I95.1	Orthostatic hypotension
SNOMED	14760008	Constipation (finding)
ICD-10-CM	K59.00	Constipation, unspecified
ICD-10-CM	K59.09	Other constipation
ICD-10-CM	R39.15	Urgency of urination
SNOMED	48340000	Incontinence (finding)
SNOMED	139394000	Nocturia (finding)
ICD-10-CM	N39.498	Other specified urinary incontinence
ICD-10-CM	N39.41	Urge incontinence
ICD-10-CM	R35.1	Nocturia
SNOMED	460671000124103	Frequent fecal incontinence (finding)
ICD-10-CM	R15.1	Fecal smearing
ICD-10-CM	R15.2	Fecal urgency
ICD-10-CM	R15.9	Full incontinence of feces
SNOMED	410024004	Catheterization of urinary bladder (procedure)
SNOMED	314944001	Delayed gastric emptying (disorder)
SNOMED	20301004	Dysphasia (finding)
ICD-10-CM	R47.02	Dysphasia
ICD-10-CM	R13.10	Dysphasia, unspecified
SNOMED	62718007	Dribbling from mouth (finding)
SNOMED	53827007	Excessive salivation (disorder)
ICD-10-CM	K11.7	Disturbances of salivary secretion
SNOMED	312230002	Hyperhidrosis (disorder)
ICD-10-CM	L74.519	Primary focal hyperhidrosis, unspecified
SNOMED	56925008	Sexual dysfunction (finding)
SNOMED	397803000	Erectile dysfunction (disorder)
ICD-10-CM	R37	Sexual dysfunction, unspecified
ICD-10-CM	N52.9	Male erectile dysfunction, unspecified
SNOMED	271594007	Syncope (disorder)
ICD-10-CM	R55	Syncope and collapse

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SNOMED	386705008	Lightheadedness (finding)
SNOMED	404640003	Dizziness (finding)
ICD-10-CM	R42	Dizziness and giddiness
SNOMED	425058005	Taking orthostatic vital signs (procedure)

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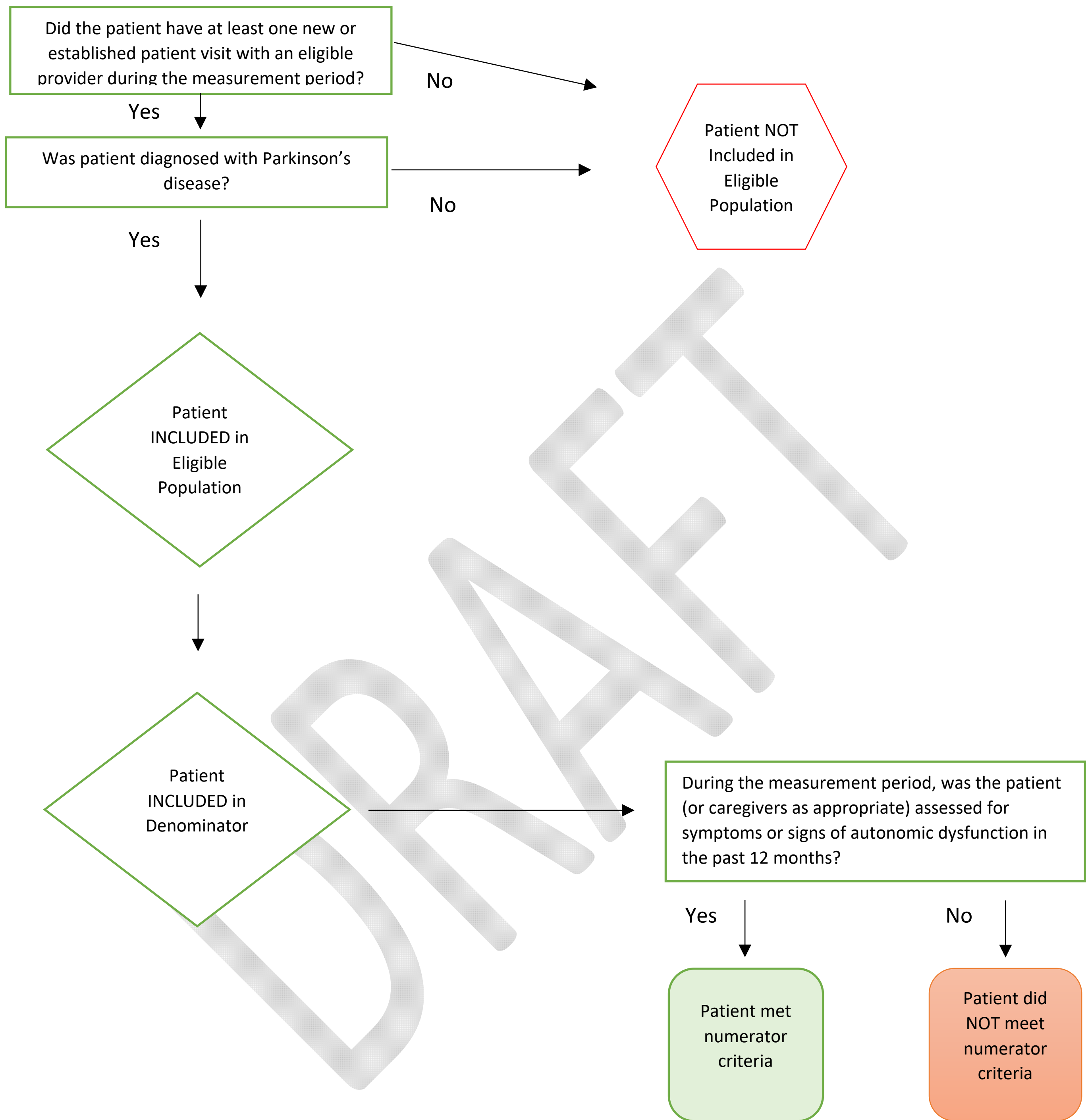
Flow Chart Diagram: Assessment of Symptoms of Autonomic Dysfunction



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Appendix A Disclosures

Work Group Member	Disclosures
Juliana Atem, ACAGNP	Nothing to disclose.
Kelvin Chou, MD	Received funding for travel from Sunovion Pharmaceuticals and Inventram. Serves on NPJ Parkinson's disease editorial board and Parkinsonism and Related Disorders editorial board. Receives royalties from publishing from Springer Deep Brain Stimulation: A New Life for Patient's with Parkinson Disease, Essential Tremor and Dystonia, Essential Tremor in Clinical Practice and UpToDate. Received honoraria from Sunovion Pharmaceuticals and Inventram. Receives research support from Eli Lilly, Cavion, Sunovion Pharmaeuticals, and NIH.
Matt Elrod, DPT	Nothing to disclose.
Erin Foster, PhD, OTD, MSCI, OTR/L	Receives research support from NIH.
Karen Freshwater, PA-C	Nothing to disclose.
Steven Gunzler, MD	Receives research support from Impax and the Parkinson Study Group.
Hojoong Kim, MD	Received funding for travel and honoraria from Cleveland Clinic.
Abhimanyu Mahajan, MD, MHS	Nothing to disclose.
Justin Martello, MD	Received personal compensation for consulting on a scientific advisory speaking board, speaking, or other activities with Neurocrine, Medtronic, Teva, Abbvie, and Lundbeck.
Harini Sarva, MD	Received honoraria from the Edmond J Safra Foundation and the American Parkinson's Disease Association.
Glenn Stebbins, PhD	Serves on a scientific advisory board for Acadia Pharmaceuticals, Adamas Pharmaceuticals Inc, Biogen, Ceregene, CHDI Management, Cleveland Clinic Foundation, Ingenix Pharmaceutical Services, MedGenesis Therapeutix, Neurocrine Biosciences, Pfizer, Tools-4 Patients, Ultragenyx, Sunshine Care Foundation. Received funding for travel from NIH, Michael J Fox Foundation, Dystonia Coalition, CHDI, International Parkinson and Movement Disorder Society, Alzheimer's Association. Received honoraria from International Parkinson and Movement Disorder Society, American Academy of Neurology, Michael J Fox Foundation, FDA, NIH, Alzheimer's Association. Receives research support from NIH, Department of Defense, Michael J Fox Foundation, Dystonia Coalition, Cleveland Clinic Foundation, International Parkinson and Movement Disorder Society, and CBD Solutions.
Laurice Yang, MD	Serves on a scientific advisory board for Acacia Pharmaceuticals. Receives research funding from Biogen, Alzheimer's Disease Research Center, Udall, and the Michael J Fox Foundation. Holds stock or stock options with Teva and Nvidia.

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iv: Kowal SL, Dall TM, Chakrabarti R, Storm MV, Jain A. The current and projected economic burden of Parkinson's disease in the United States. Mov Disord. 2013 Mar;28(3):311-8.

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