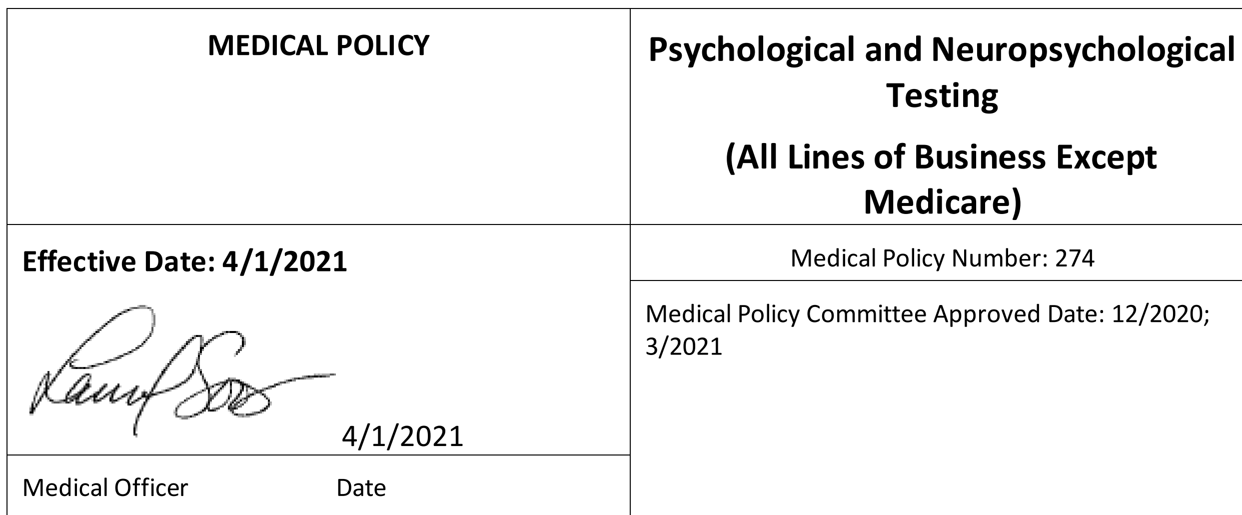

MEDICAL POLICY	Psychological and Neuropsychological Testing (All Lines of Business Except Medicare)
Effective Date: 4/1/2021 4/1/2021 Medical Officer Date	Medical Policy Number: 274 Medical Policy Committee Approved Date: 12/2020; 3/2021

See Policy CPT/HCPCS CODE section below for any prior authorization requirements

SCOPE:

Providence Health Plan, Providence Health Assurance, Providence Plan Partners, and Ayin Health Solutions as applicable (referred to individually as "Company" and collectively as "Companies").

APPLIES TO:

All lines of business except Medicare

BENEFIT APPLICATION

Medicaid Members

Oregon: Services requested for Oregon Health Plan (OHP) members follow the OHP Prioritized List and Oregon Administrative Rules (OARs) as the primary resource for coverage determinations. Medical policy criteria below may be applied when there are no criteria available in the OARs and the OHP Prioritized List.

POLICY CRITERIA

Policy Criteria Links

- ***Psychological Testing:*** *based on InterQual® Behavioral Health Procedures Psychological Testing policies.*
  - Millon® Adolescent Clinical Inventory (MACI®)
  - Minnesota Multiphasic Personality Inventory-2®
  - Minnesota Multiphasic Personality Inventory-Adolescent® (MMPI-A®)
  - Personality Assessment Inventory™ (PAI®)
  - Unspecified Symptom Validity Test (SVT)
  - Unspecified Test
- ***Neuropsychological Testing***

Millon® Adolescent Clinical Inventory (MACI®)

I. Psychological testing with the Millon® Adolescent Clinical Inventory (MACI®) may be considered **medically necessary and covered** when all of the following criteria are met (A.-M.):

A. Patient is between the ages of 13 and 18 years of age; **and**
B. Psychological testing has been requested and a testing plan is in place; **and**
C. Clinical interview has been performed; **and**
D. Case-specific question has been formulated; **and**
E. Provider has documented what action will be taken or how treatment plan will be affected by testing results; **and**
F. Provider confirms that patient has the cognitive and language skills required for the proposed test; **and**
G. Provider confirms that any existing medical condition, substance use, psychotic features, or recent trauma do not contraindicate testing; **and**
H. At least one parent or guardian has been interviewed; **and**
I. Lack of expected progress in evidence-based psychiatric or psychological treatment, <u>or</u> psychiatric disorder is evident but there is uncertainty about differential diagnosis and all of the following criteria are met (1.-4.):
    1. At least 1 validated symptom inventory or rating scale administered to patient or caregiver; **and**
    2. Patient psychiatric and medical history obtained; **and**
    3. Functional impairment or report of internal distress; **and**
    4. Family psychiatric and medical history explored; **and**
J. At least one of the following criteria are met (1.-4.):
    1. Provider reviewed records of previous treatment or psychological testing; **or**
    2. Provider consulted with previous or current service provider; **or**
    3. Provider is unable to obtain this information despite at least 2 attempts; **or**
    4. No other psychiatric or substance use services provided to patient within last 2 years; **and**
K. At least one of the following structured or semi-structured interviews have been performed (1.-5.):
    1. Mini-International Neuropsychiatric Interview for Children and Adolescents (MINI-KID); **or**
    2. Anxiety Disorders Interview Schedule for Children (ADIS) Child and Parent Interview Schedules; **or**
    3. Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS); **or**
    4. Children's Interview for Psychiatric Syndromes (ChIPS) Child and Parent (P-ChIPS) Versions; **or**
    5. Diagnostic Interview Schedule for Children (DISC); **and**
L. If behavioral disturbance is suspected or confirmed, at least one of the following

criteria are met (1.-3.):
1. Validated rating scale completed by teacher(s); **or**
2. Consultation with school personnel or other important persons in patient's life; **or**
3. Direct observation of parent-child interactions or child in natural settings; **and**

M. All assessment activities have failed to answer the case-specific question.

Minnesota Multiphasic Personality Inventory-2®

II. Psychological testing with the Minnesota Multiphasic Personality Inventory-2® may be considered **medically necessary and covered** when all of the following criteria are met (A.-L.):

A. Patient is at least 18 years of age; **and**
B. Psychological testing has been requested and a testing plan is in place; **and**
C. Clinical interview has been performed; **and**
D. Case-specific question has been formulated; **and**
E. Provider has documented what action will be taken or how treatment plan will be affected by testing results; **and**
F. Provider confirms that patient has the cognitive and language skills required for the proposed test; **and**
G. Provider confirms that any existing medical condition, substance use, psychotic features, or recent trauma do not contraindicate testing; **and**
H. At least one of the following criteria are met (1.-3.):
   1. Lack of expected progress in evidence-based psychiatric or psychological treatment, or psychiatric disorder is evident but there is uncertainty about differential diagnosis and **all** of the following criteria are met (a.-d.):
      a. At least 1 validated symptom inventory or rating scale administered to patient or caregiver; **and**
      b. Patient psychiatric and medical history obtained; **and**
      c. Functional impairment and medical history explored; **and**
      d. Family psychiatric and medical history explored; **or**
   2. Behavioral prediction for judicial or correctional purposes; **or**
   3. Detection of malingering for disability adjudication or forensic purposes; **and**
I. At least one of the following criteria are met (1.-4.):
   1. Provider reviewed records of previous treatment or psychological testing; **or**
   2. Provider consulted with previous or current service provider; **or**
   3. Provider is unable to obtain this information despite at least 2 attempts; or
   4. No other psychiatric or substance use services provided to patient within last 2 years; **and**
J. At least one of the following structured or semi-structured interviews have been performed (1.-3.):

1. Structured Clinical Interview for DSM Disorders (SCID)**; or**
2. Mini-International Neuropsychiatric Interview (MINI)**; or**
3. Schedule for Affective Disorders and Schizophrenia (SADS); **and**

K. In seeking collateral information from significant other or family members that live with patient, at least one of the following criteria are met (1.-6.):
   1. Interview at least 1 family member**; or**
   2. All other adults in the home contacted and each refuses to participate; or
   3. Contact with any other adult in the home contraindicated because abuse by family member suspected or confirmed**; or**
   4. Contact with any other adult in the home contraindicated because family member cognitively impaired due to medical condition or persistent substance use or dementia**; or**
   5. Patient refuses to allow significant other or family member involvement due to profound distrust or paranoia**; or**
   6. Patient does not live with significant other or any adult family members**; and**

L. All assessment activities have failed to answer the case-specific question.

Minnesota Multiphasic Personality Inventory-Adolescent® (MMPI-A®)

III. Psychological testing with the Minnesota Multiphasic Personality Inventory-Adolescent® (MMPI-A®) may be considered **medically necessary and covered** when all of the following criteria are met (A.-N.):

   A. Patient is between 13 and 18 years of age; **and**
   B. Psychological testing has been requested and a testing plan is in place; **and**
   C. Clinical interview has been performed; **and**
   D. Case-specific question has been formulated; **and**
   E. Provider has documented what action will be taken or how treatment plan will be affected by testing results; **and**
   F. Provider confirms that patient has the cognitive and language skills required for the proposed test; **and**
   G. Provider confirms that any existing medical condition, substance use, psychotic features, or recent trauma do not contraindicate testing; **and**
   H. At least one of the following criteria are met (1.-3.):
      1. Lack of expected progress in evidence-based psychiatric or psychological treatment, or psychiatric disorder is evident but there is uncertainty about differential diagnosis and **all** of the following criteria are met (a.-d.):
         a. At least 1 validated symptom inventory or rating scale administered to patient or caregiver; **and**
         b. Patient psychiatric and medical history obtained; **and**
         c. Functional impairment and medical history explored; **and**
         d. Family psychiatric and medical history explored; **or**

2. Behavioral prediction for judicial or correctional purposes; **or**
3. Detection of malingering for disability adjudication or forensic purposes; **and**

I. At least one parent or guardian has been interviewed; **and**

J. Lack of expected progress in evidence-based psychiatric or psychological treatment, or psychiatric disorder is evident but there is uncertainty about differential diagnosis and all of the following criteria are met (1.-4.):
1. At least 1 validated symptom inventory or rating scale administered to patient or caregiver; **and**
2. Patient psychiatric and medical history obtained; **and**
3. Functional impairment or report of internal distress; **and**
4. Family psychiatric and medical history explored; **and**

K. At least one of the following criteria are met (1.-4.):
1. Provider reviewed records of previous treatment or psychological testing; **or**
2. Provider consulted with previous or current service provider; **or**
3. Provider is unable to obtain this information despite at least 2 attempts; or
4. No other psychiatric or substance use services provided to patient within last 2 years; **and**

L. At least one of the following structured or semi-structured interviews have been performed (1.-5.):
1. Mini-International Neuropsychiatric Interview for Children and Adolescents (MINI-KID); **or**
2. Anxiety Disorders Interview Schedule for Children (ADIS) Child and Parent Interview Schedules; **or**
3. Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS); **or**
4. Children's Interview for Psychiatric Syndromes (ChIPS) Child and Parent (P-ChIPS) Versions; **or**
5. Diagnostic Interview Schedule for Children (DISC); **and**

M. If behavioral disturbance is suspected or confirmed, at least one of the following criteria are met (1.-3.):
1. Validated rating scale completed by teacher(s); **or**
2. Consultation with school personnel or other important persons in patient's life; **or**
3. Direct observation of parent-child interactions or child in natural settings; **and**

N. All assessment activities have failed to answer the case-specific question.

Personality Assessment Inventory™ (PAI®)

IV. Psychological testing with the Personality Assessment Inventory™ (PAI®) may be considered **medically necessary and covered** when all of the following criteria are met (A.-L.):

A. Patient is at least 18 years of age; **and**
B. Psychological testing has been requested and a testing plan is in place; **and**
C. Clinical interview has been performed; **and**
D. Case-specific question has been formulated; **and**
E. Provider has documented what action will be taken or how treatment plan will be affected by testing results; **and**
F. Provider confirms that patient has the cognitive and language skills required for the proposed test; **and**
G. Provider confirms that any existing medical condition, substance use, psychotic features, or recent trauma do not contraindicate testing; **and**
H. At least one of the following criteria are met (1.-3.):
    1. Lack of expected progress in evidence-based psychiatric or psychological treatment, or psychiatric disorder is evident but there is uncertainty about differential diagnosis and **all** of the following criteria are met (a.-d.):
        a. At least 1 validated symptom inventory or rating scale administered to patient or caregiver; **and**
        b. Patient psychiatric and medical history obtained; **and**
        c. Functional impairment and medical history explored; **and**
        d. Family psychiatric and medical history explored; **or**
    2. Behavioral prediction for judicial or correctional purposes; **or**
    3. Detection of malingering for disability adjudication or forensic purposes; **and**
I. At least one of the following criteria are met (1.-4.):
    1. Provider reviewed records of previous treatment or psychological testing; **or**
    2. Provider consulted with previous or current service provider; **or**
    3. Provider is unable to obtain this information despite at least 2 attempts; or
    4. No other psychiatric or substance use services provided to patient within last 2 years; **and**
J. At least one of the following structured or semi-structured interviews have been performed (1.-3.):
    1. Structured Clinical Interview for DSM Disorders (SCID)**; or**
    2. Mini-International Neuropsychiatric Interview (MINI)**; or**
    3. Schedule for Affective Disorders and Schizophrenia (SADS); **and**
K. In seeking collateral information from significant other or family members that live with patient, at least one of the following criteria are met (1.-6.):
    1. Interview at least 1 family member**; or**
    2. All other adults in the home contacted and each refuses to participate; or
    3. Contact with any other adult in the home contraindicated because abuse by family member suspected or confirmed**; or**
    4. Contact with any other adult in the home contraindicated because family member cognitively impaired due to medical condition or persistent

substance use or dementia**; or**
5. Patient refuses to allow significant other or family member involvement due to profound distrust or paranoia**; or**
6. Patient does not live with significant other or any adult family members**; and**

L. All assessment activities have failed to answer the case-specific question.

Unspecified Symptom Validity Test (SVT)

V. Psychological testing with the Unspecified Symptom Validity Test (SVT) may be considered **medically necessary and covered** when all of the following criteria are met (A.-H.):

A. Patient is at least 18 years of age; **and**
B. Psychological testing has been requested and a testing plan is in place; **and**
C. Clinical interview has been performed; **and**
D. Case-specific question has been formulated; **and**
E. Provider has documented what action will be taken or how treatment plan will be affected by testing results; **and**
F. Provider confirms that patient has the cognitive and language skills required for the proposed test; **and**
G. Provider confirms that any existing medical condition, substance use, psychotic features, or recent trauma do not contraindicate testing; **and**
H. Test is intended to detect malingering for disability adjudication or forensic purposes and both of the following criteria are met (1.-2.):
   1. No psychiatric disorder is evident and there is no uncertainty about differential diagnosis; **and**
   2. Lack of expected progress in evidence-based psychiatric or psychological treatment.

Unspecified Test

VI. Psychological testing with an unspecified test may be considered **medically necessary and covered** when all of the following criteria are met (A.-N.):

A. Psychological testing has been requested and a testing plan is in place; **and**
B. Clinical interview has been performed; **and**
C. Case-specific question has been formulated; **and**
D. Provider has documented what action will be taken or how treatment plan will be affected by testing results; **and**
E. Provider confirms that patient has the cognitive and language skills required for the proposed test; **and**
F. Provider confirms that any existing medical condition, substance use, psychotic

features, or recent trauma do not contraindicate testing; **and**

G. Medical evaluation has been performed since onset of symptoms to rule out medical causes

H. At least one of the following criteria are met (1.-3.):
   1. Lack of expected progress in evidence-based psychiatric or psychological treatment, or psychiatric disorder is evident but there is uncertainty about differential diagnosis and all of the following criteria are met (a.-d.):
      a. At least 1 validated symptom inventory or rating scale administered to patient or caregiver; **and**
      b. Patient psychiatric and medical history obtained; **and**
      c. Functional impairment and medical history explored; **and**
      d. Family psychiatric and medical history explored; **or**
   2. Behavioral prediction for judicial or correctional purposes; **or**
   3. Detection of malingering for disability adjudication or forensic purposes; **and**

I. Lack of expected progress in evidence-based psychiatric or psychological treatment, or psychiatric disorder is evident but there is uncertainty about differential diagnosis and all of the following criteria are met (1.-4.):
   1. At least 1 validated symptom inventory or rating scale administered to patient or caregiver; **and**
   2. Patient psychiatric and medical history obtained; **and**
   3. Functional impairment or report of internal distress; **and**
   4. Family psychiatric and medical history explored; **and**

J. At least one of the following criteria are met (1.-4.):
   1. Provider reviewed records of previous treatment or psychological testing; **or**
   2. Provider consulted with previous or current service provider; **or**
   3. Provider is unable to obtain this information despite at least 2 attempts; or
   4. No other psychiatric or substance use services provided to patient within last 2 years; **and**

K. One of the following criteria are met (1.-3.):
   1. If patient is younger than 13 years of age, all of the following criteria are met (a.-c.):
      a. At least ONE parent or guardian has been interviewed; **and**
      b. To rule out medical causes, medical evaluation has been performed since the onset of symptoms to rule out medical causes via either of the following (i.-ii.)
         i. Provider performed physical examination and appropriate follow-up medical tests or imaging; **or**
         ii. Provider consulted with patient's physician or previous physicians.

c. At least one of the following structured or semi-structured interviews has been performed (i.-v.):
   i. Mini-International Neuropsychiatric Interview for Children and Adolescents (MINI-KID); **or**
   ii. Anxiety Disorders Interview Schedule for Children (ADIS) Child and Parent Interview Schedules; **or**
   iii. Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS); **or**
   iv. Children's Interview for Psychiatric Syndromes (ChIPS) Child and Parent (P-ChIPS) Versions; **or**
   v. Diagnostic Interview Schedule for Children (DISC); **or**

2. If patient is between 13 and 18 years of age, both of the following criteria are met (a.-b.)
   a. At least one parent or guardian has been interviewed; **and**
   b. At least one of the following structured or semi-structured interviews has been performed (i.-iv.)
      i. Mini-International Neuropsychiatric Interview for Children and Adolescents (MINI-KID); **or**
      ii. Anxiety Disorders Interview Schedule for Children (ADIS) Child and Parent Interview Schedules; **or**
      iii. Kiddie Schedule for Affective Disorders and Schizophrenia (K-SADS); **or**
      Children's Interview for Psychiatric Syndromes (ChIPS) Child and Parent (P-ChIPS) Versions; **or**
      iv. Diagnostic Interview Schedule for Children (DISC); **or**
3. If patient is more than 18 years of age, at least one of the following structured or semi-structured interviews has been performed (a.-c.):
   a. Structured Clinical Interview for DSM Disorders (SCID); **or**
   b. Mini-International Neuropsychiatric Interview (MINI); **or**
   c. Schedule for Affective Disorders and Schizophrenia (SADS); **and**

L. In seeking collateral information from significant other or family members that live with patient, at least one of the following criteria are met (1.-6.):
   1. Interview at least 1 family member**; or**
   2. All other adults in the home contacted and each refuses to participate; or
   3. Contact with any other adult in the home contraindicated because abuse by family member suspected or confirmed**; or**
   4. Contact with any other adult in the home contraindicated because family member cognitively impaired due to medical condition or persistent substance use or dementia**; or**
   5. Patient refuses to allow significant other or family member involvement due to profound distrust or paranoia**; or**
   6. Patient does not live with significant other or any adult family members**;**

and

M. If behavioral disturbance is suspected or confirmed, at least one of the following criteria are met (1.-3.):
   1. Validated rating scale completed by teacher(s); **or**
   2. Consultation with school personnel or other important persons in patient's life; **or**
   3. Direct observation of parent-child interactions or child in natural settings; **and**
   4. All assessment activities have failed to answer the case-specific question.

Frequency Limits

VII. Billing of psychological testing (including evaluation, administration, scoring, and interpretation) in excess of 8 hours or more than once (1) per calendar year is subject to medical necessity review.

Non-Covered Testing

VIII. Non-computerized psychological testing is considered **not medically necessary and is not covered** when criteria I.-VI. above is not met, including, but not limited to the following:

A. Testing for any vocational or educational purposes
B. Return to sports or recreational activities assessment
C. Disability determination
D. General screening without symptoms of a neurologic disorder
E. Legal competency determination
F. Determining age appropriate mental changes
G. Migraine headache
H. Mild cognitive impairment
I. Chronic fatigue syndrome
J. Baseline assessments in the absence of signs or symptoms

IX. Computerized psychological testing (CPT: 96146) is considered **not medically necessary and not covered** for the treatment of any indication.

Neuropsychological Testing

Non-computerized Neuropsychological Testing

X. The medical application of non-computerized neuropsychological testing may be considered **medically necessary and covered** when **all** of the following (A.-B.) criteria are met:

A. The patient meets **one or more** of the following (1.-3.) criteria:
   1. Testing is required for the diagnosis of a neurologic disorder or injury (see note below for examples of disorders or injuries that may require neuropsychological testing); **or**
   2. Testing is required to measure changes in functional impairment or disease progression (e.g., head injury, stroke, concussion); **or**
   3. The patient has an established diagnosis of a neurologic disorder or injury and testing is required for the formulation of rehabilitation and/or management strategies; **and**

B. Neuropsychological testing is intended to alter patient management.

Note: Clinical *examples* of neurologic disorders or injuries that may require neuropsychological testing when the above criteria are met, include, but are not limited to:

1. Early, undifferentiated dementia (not age related)
2. Differential diagnosis of Alzheimer's disease, Pick's disease, Lewy body disease, etc.
3. Diseases of the brain, including tumors, malformations, demyelinating, and extrapyramidal disease
4. History of intracranial surgery
5. Cerebral anoxic or hypoxic event
6. Toxic, infectious, metabolic, or anoxic encephalopathy
7. Encephalitis or meningitis
8. Seizure disorders
9. Stroke or cerebral vascular injury (e.g., brain aneurysm, subdural hematoma)
10. Moderate or severe traumatic brain injury, including post-concussion syndrome

XI. Non-computerized neuropsychological testing is considered **not medically necessary and is not covered** when criterion IX. above is not met, including, but not limited to the following:

K. Testing for any vocational or educational purposes
L. Return to sports or recreational activities assessment
M. Disability determination
N. General screening without symptoms of a neurologic disorder
O. Legal competency determination
P. Determining age appropriate mental changes
Q. Migraine headache
R. Mild cognitive impairment
S. Chronic fatigue syndrome
T. Baseline assessments in the absence of signs or symptoms

Repeat Non-computerized Neuropsychological Testing

XII. Repeat non-computerized neuropsychological testing may be considered **medically necessary and is covered** when **all** of the following (A.-C.) criteria are met:

A. The initial test was completed within the last 12 months; **and**
B. Repeat testing is needed to measure changes in functional impairment or disease progression (e.g., head injury, stroke, concussion); **and**
C. Results of repeat neuropsychological testing will alter the patient’s treatment plan.

XIII. Repeat non-computerized neuropsychological testing is considered **not medically necessary and is not covered** when criterion III. above is not met.

Frequency Limitation

XIV. Billing of neuropsychological testing (including evaluation, administration, scoring, and interpretation) in excess of 8 hours or more than once (1) per calendar year is subject to medical necessity review.

Computerized Neuropsychological Testing

XV. Computerized neuropsychological testing with computerized cognitive assessment systems is considered **not medically necessary and is not covered** for any indication**.**

Link to Policy Summary

BILLING GUIDELINES

For all lines of business except Providence St. Joseph Health (except Providence St. Joseph Health Northern California):

The CPT codes below will pay when paired with one of the diagnosis codes present in the Billing Guidelines Appendix below.

Billing of psychological or neuropsychological testing (including evaluation, administration, scoring, and interpretation) in excess of 8 hours or more than once (1) per calendar year is subject to medical necessity review.

CPT/HCPCS CODES

All Lines of Business Except Medicare	
No Prior Authorization Required *Note: Prior authorization is required for Providence St. Joseph Health (except Providence St. Joseph Health Northern California).*	
96116	Neurobehavioral status exam (clinical assessment of thinking, reasoning and judgment, [eg, acquired knowledge, attention, language, memory, planning and problem solving, and visual spatial abilities]),), by physician or other qualified health care professional , both face-to-face time with the patient and time interpreting test results and preparing the report ; first hour
96121	Neurobehavioral status exam (clinical assessment of thinking, reasoning and judgment, [eg, acquired knowledge, attention, language, memory, planning and problem solving, and visual spatial abilities]), by physician or other qualified health care professional, both face-to-face time with the patient and time interpreting test results and preparing the report; each additional hour (List separately in addition to code for primary procedure)
96130	Psychological testing evaluation services by physician or other qualified health care professional, including integration of patient data, interpretation of standardized test results and clinical data, clinical decision making, treatment planning and report, and interactive feedback to the patient, family member(s) or caregiver(s), when performed; first hour
96131	Psychological testing evaluation services by physician or other qualified health care professional, including integration of patient data, interpretation of standardized test results and clinical data, clinical decision making, treatment planning and report, and interactive feedback to the patient, family member(s) or caregiver(s), when performed; each additional hour (List separately in addition to code for primary procedure)
96132	Neuropsychological testing evaluation services by physician or other qualified health care professional, including integration of patient data, interpretation of standardized test results and clinical data, clinical decision making, treatment planning and report, and interactive feedback to the patient, family member(s) or caregiver(s), when performed; first hour
96133	Neuropsychological testing evaluation services by physician or other qualified health care professional, including integration of patient data, interpretation of standardized test results and clinical data, clinical decision making, treatment planning and report, and interactive feedback to the patient, family member(s) or caregiver(s), when performed; each additional hour (List separately in addition to code for primary procedure)
96136	Psychological or neuropsychological test administration and scoring by physician or other qualified health care professional, two or more tests, any method; first 30 minutes

96137	Psychological or neuropsychological test administration and scoring by physician or other qualified health care professional, two or more tests, any method; each additional 30 minutes (List separately in addition to code for primary procedure)
96138	Psychological or neuropsychological test administration and scoring by technician, two or more tests, any method; first 30 minutes
96139	Psychological or neuropsychological test administration and scoring by technician, two or more tests, any method; each additional 30 minutes (List separately in addition to code for primary procedure)
Not Covered	
96146	Psychological or neuropsychological test administration, with single automated, standardized instrument via electronic platform, with automated result only

DESCRIPTION

Non-computerized Neuropsychological Testing

Neuropsychological testing is a performance-based method to assess a patients cognitive functioning.[1] Testing can be used to examine the cognitive consequences of brain damage, brain disease, and severe mental illness. "There are several specific uses of neuropsychological assessment, including collection of diagnostic information, differential diagnostic information, assessment of treatment response, and prediction of functional potential and functional recovery."[1] Neuropsychological evaluation involves a clinical interview along with the administration, scoring, and interpretation of assessments that objectively and quantitatively assess the functional integrity of the brain.

Computerized Neuropsychological Testing

Computerized cognitive assessment systems, such as MindStreams® Cognitive Health Assessment (Neuropteran); Cambridge Neuropsychological Testing Automated Battery (CANTAB); Alzheimer's, CANTAB ADHD; CANTAB's Core Cognition battery; CNS Vital Signs; MicroCog; and Computer-Administered Neuropsychological Screen for Mild Cognitive Impairment (CANS-MCI) are computerized cognitive testing systems for the assessment and treatment of cognitive health. "Computerized neurocognitive assessments have been deemed advantageous due to the ease of administration, ability for immediate scoring, and reported increases in test-retest reliability."[2]

REVIEW OF EVIDENCE

A review of the ECRI, Hayes, Cochrane, and PubMed databases was conducted to evaluate the medical application of neuropsychological testing. Below is a summary of the available evidence identified through May of 2018.

Non-Computerized Neuropsychological Testing

Neurologic disorders/injuries that may require neuropsychological testing:	Evidence:
Dementia, Alzheimer's disease, Lewy body disease, etc.	- A 2017 systematic review and meta-analysis by Belleville et al. found high sensitivity and specificity values for 61 neuropsychological tests; thus indicating a good predictive value of neuropsychological testing to detect the progression of mild cognitive impairment to Alzheimer's demention.[3] - In 2017, the Joint Program for Neurodegenerative Disease Work Group conducted a systematic review to evaluate the role of neuropsychological assessments in evaluating neurodegenerative dementias.[4] Neuropsychological testing was shown to aid in the differentiation of Alzheimer's dementia from dementia due to other causes (e.g., vascular disease). - In 2015, a study by Yoon et al. found that neuropsychological testing helped to predict conversion of mild cognitive impairment to dementia with Lewy bodies or Alzheimer's dementia.[5]
Traumatic brain injury (TBI)	- Historical and more recent studies support the clinical utility of neuropsychological testing in patients with traumatic brain injury.[6,7] These more recent studies indicate neuropsychological testing can aid in the classification of TBI (i.e., mild, moderate, severe) and help predict concurrent TBI symptoms.
Brain lesions, including tumors and malformations	- A 2017 study by Pranckeviciene et al. found that neuropsychological evaluation of brain tumor patients was predictive of cognitive impairments and psychological distress.[8] - A 2016 systematic review by Meskal et al. found that neuropsychological testing in meningioma patients resulted in the adequate diagnosis and treatment of cognitive deficits. The results also suggested that neuropsychological testing may lead to improved outcomes and quality of life in meningioma patients.[9] - Cochereau et al. found that patients with low-grade gliomas (LGG) have neuropsychological impairments, and neuropsychological testing in LGG patients can aid in the diagnosis of insidious cognitive deficits.[10]

Demyelinating diseases (e.g., multiple sclerosis)	- A 2018 study by von Bismarck et al. found a high prevalence of patients with early-stage multiple sclerosis had neuropsychological symptoms, and these symptoms were accurately diagnosed with neuropsychological testing.[11] - Ruet and Brochet (2018) found neuropsychological testing in patients with multiple sclerosis (MS) to be validated methods for evaluating and characterizing the extent and severity of cognitive impairment in MS patients.[12] - A 2016 systematic review by Vollmer et al. found an association between neuropsychological testing diagnosed cognitive decline and associated brain volume loss in MS patients.[13]
Encephalopathies	- A 2017 study by Moore et al. established the clinical utility of neuropsychological testing for diagnosing cognitive impairment in adults living with HIV/AIDS.[14] - A 2017 systematic review and meta-analysis by Burton et al. found that neuropsychological testing diagnosed ongoing specific cognitive impairments in post childhood acute disseminated encephalomyelitis.[15]
Epilepsy and seizure disorder	- A 2017 systematic review by Parra-Diaz and colleagues found that pre-surgical neuropsychological testing along with a functional MRI predict memory outcome after surgical treatment of refractory mesial temporal lobe epilepsy.[16] - In 2017, Grau-Lopez evaluated neuropsychological and clinical features in predicting seizure control in patients with mesial temporal epilepsy.[17] Neuropsychological testing identified moderate-severe cognitive impairment in patients with poor seizure control.
Neurotoxin exposure	- A 2016 study by Nascimento et al. demonstrated the clinical utility of neuropsychological testing for diagnosing neurotoxicity in children due to environmental exposure to manganese.[18]
Stroke	- Recent studies have demonstrated the clinical benefits of neuropsychological testing in post-stroke patients.[19,20] The early diagnosis of neurological and functional deficits may improve quality of life and the rehabilitative process in these patients.

Computerized Neuropsychological Testing

Systematic Reviews

- In 2017, Farnsworth et al. conducted a systematic review and meta-analysis to evaluate the reliability of computerized neurocognitive tests (CNTs) for concussion assessment.[21] The literature review identified 18 studies encompassing 2,674 patients. Of the CNTs evaluated, the proportion of acceptable outcomes was highest for the Axon Sports CogState Test (75%) and lowest for the ImPACT test (25%). The authors concluded that the Axon Sports CogState Test may be a reliable CNT; however, "future studies are needed to compare the diagnostic accuracy of these instruments."[21]

- In 2014 (updated 2018), Hayes conducted an evidence review to evaluate computerized neurocognitive testing (CNT) for sports-related head injury.[2] The literature search identified 6 studies evaluating the ability of CNT to detect cognitive impairments after concussion in athletes. The outcomes were diagnostic performance (sensitivity, specificity, negative and positive predictive values), prognostic ability for recovery, and safety. No studies evaluated the impact of CNT on health outcomes.

  The overall quality of evidence evaluating the diagnostic performance of CNT was low. Limitations were due to poor study design, small sample sizes, and the limited generalizability of the findings to all athletes. The Hayes review assigned the following ratings (these ratings apply to athletes who have undergone a traumatic blow to the body or head resulting in a suspected sports-related concussion):

  - "C (potential but unproven benefit): For computerized neurocognitive testing (CNT) using the ImPACT test as an adjunct to clinical assessment to delineate presence of cognitive impairment in asymptomatic or symptomatic athletes after suspected concussion. This Rating reflects positive but inconsistent findings from studies showing that the test moderately improved the accuracy of clinical assessment to identify impairment in both symptomatic and asymptomatic patients, and uncertainty whether the use of CNT improves health outcomes.
  - D2 (insufficient evidence): For CNT using the ImPACT test to evaluate recovery. This Rating reflects the paucity of evidence for this application.
  - D2 (insufficient evidence): For other computerized neurocognitive tests. This Rating reflects the lack of evidence for these tests."[2]

Nonrandomized Studies

- In 2017, Nelson 2017 et al. conducted a nonrandomized study to evaluate the reliability and validity of three computerized neurocognitive assessment tools (CNTs) for assessing mild traumatic brain injury (mTBI).[22] A total of 94 mTBI patients and matched trauma control (n=80) patients were recruited from an emergency department and given neurocognitive assessments within 72 hours of injury and at 15 and 45 days post-injury.

The CNTs evaluated did not yield significant differences between patients with mTBI versus other injuries. Other measures (e.g., symptom scores) better differentiated groups than CNTs. The authors concluded that, "(n)onspecific injury factors, and other characteristics common in ED settings, likely affect CNT performance across trauma patients as a whole and thereby diminish the validity of CNTs for assessing mTBI in this patient population."[22]

CLINICAL PRACTICE GUIDELINES

Non-computerized Neuropsychological Testing

American Academy of Neurology (AAN)

In 1996, the AAN published an evidence-based assessment of neuropsychological testing of adults.[23] The assessment indicated that neuropsychological testing in adults is most useful for the management and treatment of patients with suspected dementia, multiple sclerosis, Parkinson's disease, traumatic brain injury, stroke, and HIV encephalopathy. The authors also concluded that neuropsychological testing is useful in patients undergoing epilepsy surgery.

The 2010 AAN (reaffirmed in 2013) evidence-based practice parameter regarding the evaluation and management of driving risk in patients with dementia indicated there was inadequate or conflicting data to reach a conclusion regarding the clinical utility of neuropsychological testing or other interventions for drivers with dementia.[24]

The 2013 AAN evidence-based guideline for the evaluation and management of concussion in sports recommends the use of neuropsychological testing of memory performance, reaction time, and speed of cognitive processing to identify the presence of concussion.[25]

A 2018 AAN evidence-based practice guideline for mild cognitive impairment (MCI) concluded the following regarding neuropsychological testing to diagnose MCI:

> "When screening or assessing for MCI, validated assessment tools should be used. Various instruments have acceptable diagnostic accuracy for detecting MCI, with no instrument being superior to another. Because brief cognitive assessment instruments are usually calibrated to maximize sensitivity rather than specificity, patients who test positive for MCI should then have further assessment (e.g., more in-depth cognitive testing, such as neuropsychological testing with interpretation based on appropriate normative data) to formally assess for this diagnosis."[26]

American Psychological Association (APA)

The 2012 evidence-based APA guidelines for the evaluation of dementia and age-related cognitive changes recommended the following:

- "Neuropsychological evaluation and cognitive testing remain the most effective differential diagnostic methods in discriminating pathophysiological dementia from age-related cognitive decline, cognitive difficulties that are depression related, and other related disorders. Even after reliable biological markers have been discovered, neuropsychological evaluation and cognitive testing will still be necessary to determine the onset of dementia, the functional expression of the disease process, the rate of decline, the functional capacities of the individual, and hopefully, response to therapies.
- Comprehensive neuropsychological evaluations for dementia and cognitive change include tests of multiple cognitive domains, typically including memory, attention, perceptual and motor skills, language, visuospatial abilities, reasoning, and executive functions."[27]

American Psychiatric Association (APA)

The 2007 evidence-based APA guideline for the treatment of patients with Alzheimer's disease and other dementias recommends the following regarding neuropsychological testing:

> "Neuropsychological testing may be helpful in a number of ways. It may help in deciding whether a patient with subtle or atypical symptoms actually has dementia as well as in more thoroughly characterizing an unusual symptom picture. It is particularly useful in the evaluation of individuals who present with mild cognitive impairment, which requires evidence of memory and/or other cognitive difficulties in the presence of intact functioning, and in the evaluation of individuals with the onset of dementia early in life. Testing may help to characterize the extent of cognitive impairment, to distinguish among the types of dementias, and to establish baseline cognitive function. Neuropsychological testing may also help identify strengths and weaknesses that could guide expectations for the patient, direct interventions to improve overall function, assist with communication, and inform capacity determinations."[28]

American Heart Association/American Stroke Association (AHA/ASA)

A 2016 evidence-based AHA/ASA guideline for adult stroke rehabilitation and recovery recommended the following regarding neuropsychological testing in post-stroke patients:

> "A formal neuropsychological examination (including assessment of language, neglect, praxis, memory, emotional responses, and specific cognitive syndromes) may be helpful after the detection of cognitive impairment with a screening instrument. Neuropsychological protocols must be sensitive to a wide range of abilities, especially the assessment of executive and attentional functions."[29]

The guidelines go on to state that screening for cognitive deficits is recommended for all stroke patients before being discharged, and if deficits are identified a more detailed neuropsychological evaluation may be beneficial.

Computerized Neuropsychological Testing

American Psychological Association (APA)

The 2012 evidence-based APA guidelines for the evaluation of dementia and age-related cognitive changes stated the following regarding computerized neuropsychological testing:

> "Technology assisted assessments (e.g., computer administered cognitive batteries, telehealth visits) are rapidly advancing, but appropriate psychometric properties and normative data are nascent. These technologies may have significant advantages for older persons with limited mobility or health care access but may also disadvantage older persons with limited experience and expertise interacting with technology."[27]

POLICY SUMMARY

Evidence demonstrates the clinical validity and utility of non-computerized neuropsychological testing for diagnosing neurologic disorders or injuries. These neurologic disorders or injuries include, but are not limited to, dementia, Alzheimer's disease, traumatic brain injury, brain lesions, demyelinating diseases, encephalopathies, seizure disorders, neurotoxin exposure, and stroke. In addition, several evidence-based clinical practice guidelines recommend neuropsychological testing for the evaluation and treatment of neurologic disorders and injuries.

There is insufficient published evidence to establish the accuracy and clinical utility of computerized neuropsychological testing. Additional studies of good methodological quality are required to establish the validity of these neuropsychological assessment technologies.

BILLING GUIDELINES APPENDIX

Diagnosis codes for psychological and neuropsychological testing may include any of the ICD-10 codes listed below.

E66.01, E66.2, F20.0, F20.1, F20.2, F20.3, F20.5, F20.81, F20.89, F20.9, F21, F22, F23, F24, F25.0, F25.1, F25.8, F25.9, F28, F29, F30.10, F30.11, F30.12, F30.13, F30.2, F30.3, F30.4, F30.8, F30.9, F31.0, F31.10, F31.11, F31.12, F31.13, F31.2, F31.30, F31.31, F31.32, F31.4, F31.5, F31.60, F31.61, F31.62, F31.63, F31.64, F31.70, F31.71, F31.72, F31.73, F31.74, F31.75, F31.76, F31.77, F31.78, F31.81, F31.89, F31.9, F32.0, F32.1, F32.2, F32.3, F32.4, F32.5, F32.81, F32.89, F32.9, F33.0, F33.1, F33.2, F33.3, F33.40, F33.41, F33.42, F33.8, F33.9, F34.0, F34.1, F34.81, F34.89, F34.9, F39, F40.00, F40.01, F40.02, F40.10, F40.11, F40.210, F40.218, F40.220, F40.228, F40.230, F40.231, F40.232, F40.233, F40.240, F40.241, F40.242, F40.243, F40.248, F40.290, F40.291, F40.298, F40.8, F40.9, F41.0, F41.1, F41.3, F41.8, F41.9, F42.2, F42.3, F42.4, F42.8, F42.9, F43.0, F43.10, F43.11, F43.12, F43.20, F43.21, F43.22, F43.23, F43.24, F43.25, F43.29, F43.8, F43.9, F44.0, F44.1, F44.2, F44.4, F44.5, F44.6, F44.7, F44.81, F44.89, F44.9, F45.0, F45.1, F45.20, F45.21, F45.22, F45.29, F45.41, F45.42, F45.8, F45.9,

F48.1, F48.2, F48.8, F48.9, F50.00, F50.01, F50.02, F50.2, F50.81, F50.82, F50.89, F50.9, F51.01, F51.02, F51.03, F51.04, F51.05, F51.09, F51.11, F51.12, F51.13, F51.19, F51.3, F51.4, F51.5, F51.8, F51.9, F52.0, F52.1, F52.21, F52.22, F52.31, F52.32, F52.4, F52.5, F52.6, F52.8, F52.9, F53.0, F53.1, F54, F55.0, F55.1, F55.2, F55.3, F55.4, F55.8, F59, F60.0, F60.1, F60.2, F60.3, F60.4, F60.5, F60.6, F60.7, F60.81, F60.89, F60.9, F63.0, F63.1, F63.2, F63.3, F63.81, F63.89, F63.9, F64.0, F64.1, F64.2, F64.8, F64.9, F65.0, F65.1, F65.2, F65.3, F65.4, F65.50, F65.51, F65.52, F65.81, F65.89, F65.9, F66, F68.10, F68.11, F68.12, F68.13, F68.8, F68.A, F69, F90.0, F90.1, F90.2, F90.8, F90.9, F91.0, F91.1, F91.2, F91.3, F91.8, F91.9, F93.0, F93.8, F93.9, F94.0, F94.1, F94.2, F94.8, F94.9, F95.0, F95.1, F95.2, F95.8, F95.9, F98.0, F98.1, F98.21, F98.29, F98.3, F98.4, F98.5. A01.01, A02.21, A17.0, A17.82, A20.3, A27.81, A32.11, A32.12, A39.0, A39.81, A42.81, A42.82, A50.41, A50.42, A51.41, A52.13, A52.14, A54.81, A69.21, A81.1, A83.0, A83.1, A83.2, A83.3, A83.4, A83.5, A83.6, A83.8, A83.9, A84.0, A84.1, A84.8, A84.9, A85.0, A85.1, A85.2, A85.8, A86, A87.0, A87.1, A87.2, A87.8,
A87.9, A92.31, B00.3, B00.4, B01.0, B02.0, B02.1, B05.0, B05.1, B06.01, B06.02, B10.01, B10.09, B26.1, B26.2, B27.02, B27.12, B27.82, B27.92, B37.5, B38.4, B40.81, B57.41, B57.42, B58.2, B60.11, B94.1, C71.0, C71.1, C71.2, C71.3, C71.4, C71.5, C71.6, C71.7, C71.8, C71.9, D86.81, E70.1, F20.0, F20.1, F20.2, F20.3, F20.5, F20.81, F20.89, F20.9, F21, F22, F23, F24, F25.0, F25.1, F25.8, F25.9, F28, F29, F30.10, F30.11, F30.12, F30.13, F30.2, F30.3, F30.4, F30.8, F30.9, F31.0, F31.10, F31.11, F31.12, F31.13, F31.2, F31.30, F31.31, F31.32, F31.4, F31.5, F31.60, F31.61, F31.62, F31.63, F31.64, F31.70, F31.71, F31.72, F31.73, F31.74, F31.75, F31.76, F31.77, F31.78, F31.81, F31.89, F31.9, F32.0, F32.1, F32.2, F32.3, F32.4,
F32.5, F32.81, F32.89, F32.9, F33.0, F33.1, F33.2, F33.3, F33.40, F33.41, F33.42, F33.8, F33.9, F34.0, F34.1, F34.81, F34.89, F34.9, F39, F40.00, F40.01, F40.02, F40.10, F40.11, F40.210, F40.218, F40.220, F40.228, F40.230, F40.231, F40.232, F40.233, F40.240, F40.241, F40.242, F40.243, F40.248, F40.290, F40.291, F40.298, F40.8, F40.9, F41.0, F41.1, F41.3, F41.8, F41.9, F42.2, F42.3, F42.4, F42.8, F42.9, F43.0, F43.10, F43.11, F43.12, F43.20, F43.21, F43.22, F43.23, F43.24, F43.25, F43.29, F43.8, F43.9, F44.0, F44.1, F44.2, F44.4, F44.5, F44.6, F44.7, F44.81, F44.89, F44.9, F80.0, F80.1, F80.2, F80.4, F80.81, F80.82, F80.89, F80.9, F84.0, F90.0, F90.1, F90.2, F90.8, F90.9, G00.0, G00.1, G00.2, G00.3, G00.8, G00.9, G01, G02, G03.0, G03.1, G03.2, G03.8, G03.9, G04.00, G04.01, G04.02, G04.1, G04.2, G04.30, G04.31, G04.32,
G04.39, G04.81, G04.89, G04.90, G04.91, G05.3, G05.4, G10, G31.84, G35, G40.001, G40.009, G40.011, G40.019, G40.101, G40.109, G40.111, G40.119, G40.201, G40.209, G40.211, G40.219, G40.301, G40.309, G40.311, G40.319, G40.401, G40.409, G40.411, G40.419, G40.501, G40.509, G40.801, G40.802, G40.803, G40.804, G40.811, G40.812, G40.813, G40.814, G40.821, G40.822, G40.823, G40.824, G40.89, G40.901, G40.909, G40.911, G40.919, G40.A01, G40.A09, G40.A11, G40.A19, G40.B01, G40.B09, G40.B11, G40.B19, G80.0, G80.1, G80.2, G80.3, G80.4, G80.8, G80.9, G91.0, G91.1, G91.2, G91.3, G91.4, G91.8, G91.9, G93.1, G93.49, I63.00, I63.011, I63.012, I63.013, I63.019, I63.02, I63.031, I63.032, I63.033, I63.039, I63.09, I63.10, I63.111, I63.112, I63.113, I63.119, I63.12, I63.131, I63.132, I63.133, I63.139, I63.19, I63.20, I63.211, I63.212, I63.213, I63.219, I63.22, I63.231, I63.232, I63.233, I63.239, I63.29, I63.30, I63.311, I63.312, I63.313, I63.319, I63.321, I63.322, I63.323, I63.329, I63.331, I63.332, I63.333, I63.339, I63.341, I63.342, I63.343, I63.349, I63.39, I63.40, I63.411, I63.412, I63.413, I63.419, I63.421, I63.422, I63.423, I63.429, I63.431, I63.432, I63.433, I63.439, I63.441, I63.442, I63.443, I63.449, I63.49, I63.50, I63.511, I63.512, I63.513, I63.519, I63.521, I63.522, I63.523, I63.529, I63.531, I63.532, I63.533, I63.539, I63.541, I63.542, I63.543, I63.549, I63.59,

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INSTRUCTIONS FOR USE

Company Medical Policies serve as guidance for the administration of plan benefits. Medical policies do not constitute medical advice nor a guarantee of coverage. Company Medical Policies are reviewed annually and are based upon published, peer-reviewed scientific evidence and evidence-based clinical practice guidelines that are available as of the last policy update. The Companies reserve the right to determine the application of Medical Policies and make revisions to Medical Policies at any time. Providers will be given at least 60-days' notice of policy changes that are restrictive in nature.

The scope and availability of all plan benefits are determined in accordance with the applicable coverage agreement. Any conflict or variance between the terms of the coverage agreement and Company Medical Policy will be resolved in favor of the coverage agreement.

Mental Health Parity Statement

Coverage decisions are made on the basis of individualized determinations of medical necessity and the experimental or investigational character of the treatment in the individual case. In cases where medical necessity is not established by policy for specific treatment modalities, evidence not previously considered regarding the efficacy of the modality that is presented shall be given consideration to determine if the policy represents current standards of care.

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