



## PROVIDER POLICIES & PROCEDURES

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### WHOLE EXOME AND WHOLE GENOME SEQUENCING

The purpose of this document is to assist providers enrolled in the Connecticut Medical Assistance Program (CMAP) with the information needed to support a medical necessity determination for whole exome sequencing (WES) and whole genome sequencing (WGS). By clarifying the information needed for prior authorization of services, HUSKY Health hopes to facilitate timely review of requests so that individuals obtain the medically necessary care they need as quickly as possible.

#### WES

The evolution of next generation sequencing has led to the development of tests that sequence multiple genes simultaneously. Whole exome sequencing (WES) sequences the portion of the genome that contains protein-coding DNA. WES has been proposed in patients with certain disorders or anomalies that have not been explained by a standard clinical evaluation who may be left without a clinical diagnosis despite a lengthy diagnostic workup. For a portion of these patients, WES may find a likely pathogenic variant. Determining a genetic cause of disease and establishing a molecular diagnosis in clinical practice can: confirm a suspected diagnosis; inform prognosis; and assist in selecting treatment, surveillance or preventative options.

#### WGS

Whole genome sequencing (WGS) consists of analysis of most of the DNA content in an individual's genome. WGS has been used as a tool to establish a diagnosis in individuals with exceptionally complex and severe phenotypes and has also been used in the oncology setting to characterize tumor genomes. High-quality clinical trial data are lacking in the published peer reviewed medical literature to inform on the use and effectiveness of whole genome sequencing in routine clinical practice. At this time the clinical utility of this testing to impact clinical management and improve health outcomes has not been established.

#### CLINICAL GUIDELINE

Coverage guidelines for WES and WGS are made in accordance with the DSS definition of Medical Necessity. The following criteria are guidelines *only*. Coverage determinations are based on an individual assessment of the member and their unique clinical needs. If the guidelines conflict with the definition of Medical Necessity, the definition of Medical Necessity shall prevail. The guidelines are as follows:

WES may be considered medically necessary for the evaluation of unexplained congenital or neurodevelopmental disorders in children when ALL of the following criteria are met:

1. The test is ordered by a board certified medical geneticist or other board certified physician with specialty specific expertise in clinical genetics;
2. The child has been evaluated by a board-certified medical geneticist or other board certified physician specialist with expertise in the conditions and genes for which testing is being considered;
3. Genetic counseling has been completed by a board certified medical geneticist or other board

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- certified physician with expertise in clinical genetics;
4. A genetic etiology is considered the most likely explanation for the phenotype despite previous genetic testing that failed to yield a diagnosis;
  5. The WES results may directly impact clinical decision-making e.g., guide diagnosis, prognosis and treatment options, including response to therapies;
  6. No other causative circumstances (e.g. environmental exposures, injury, infection) have been identified; AND
  7. WES results may preclude the need for multiple and/or invasive procedures (e.g. muscle biopsy) that would be recommended in the absence of WES testing.

WES may be considered medically necessary for prenatal testing of fetuses for congenital disorders during the second and third trimester when ALL of the following criteria are met:

1. The test is ordered by a board certified medical geneticist or other board certified physician with specialty specific expertise in clinical genetics;
2. The individual has been evaluated by a board-certified medical geneticist or other board certified physician specialist with expertise in the conditions and genes for which testing is being considered;
3. Genetic counseling has been completed by a board certified medical geneticist or other board certified physician with expertise in clinical genetics;
4. A genetic etiology is considered the most likely explanation for the clinical scenario of the patient despite previous genetic testing that failed to yield a diagnosis e.g. fetal aneuploidy testing;
5. The WES results may directly impact clinical decision-making e.g., guide diagnosis and prognosis;
6. No other causative circumstances (e.g. teratogenic exposures) have been identified; AND
7. WES results may preclude the need for multiple and/or invasive procedures that would be recommended in the absence of WES testing.

### **Not Medically Necessary**

- Repeat testing for WES for the above indications is typically considered not medically necessary.
- WES is considered investigational for the diagnosis of genetic disorders for all other indications, except as described above, and therefore not medically necessary.
- WES is considered investigational for screening asymptomatic individuals for genetic disorders and therefore not medically necessary.
- Prenatal diagnosis or preimplantation testing of an embryo using WES is considered investigational and therefore not medically necessary.
- Whole genome sequencing (WGS) for any indication is considered investigational and therefore not medically necessary.

Repeat analysis of **existing** exome data may be considered medically necessary when the individual has a new diagnosis.

During initial analysis missense mutations unrelated to the original diagnosis may not have been recognized as pathogenic and incidental heterozygous pathogenic mutations underlying a recessive condition may not have been reported.

### **NOTE: EPSDT Special Provision**

Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) is a federal Medicaid requirement that requires the Connecticut Medical Assistance Program (CMAP) to cover services, products, or procedures for Medicaid enrollees under 21 years of age where the service or good is medically necessary health

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care to correct or ameliorate a defect, physical or mental illness, or a condition identified through a screening examination. The applicable definition of medical necessity is set forth in Conn. Gen. Stat. Section 17b-259b (2011) [ref. CMAP Provider Bulletin PB 2011-36].

**PROCEDURE**

Prior authorization of genetic testing is required. Requests for coverage of WES and WGS will be reviewed in accordance with procedures in place for reviewing requests for genetic testing. Coverage determinations will be based upon a review of requested and/or submitted case-specific information.

**The following information is needed to review requests for WES and WGS:**

1. Fully completed State of Connecticut Department of Social Services Outpatient Prior Authorization Request form; and
2. Documentation supporting the medical necessity of the requested test which **must** include:
  - a. Evaluation and signed order for testing;
  - b. Office notes;
  - c. Test reports including all prior genetic testing results;
  - d. How the testing will directly impact clinical decision making and clinical outcome;
  - e. How the results will preclude further need for multiple and/or invasive testing;
  - f. Genetic counseling notes;
  - g. Three generation pedigree; and
3. Other information as requested by CHNCT.

**EFFECTIVE DATE**

This Policy is effective for prior authorization requests for WES and WGS for individuals covered under the HUSKY Health Program on or after February 1, 2017.

**LIMITATIONS**

Not Applicable

**CODES:**

Code	Description
81408	Molecular pathology procedure level 9
81415	Exome (e.g., unexplained constitutional or heritable disorder or syndrome); sequence analysis
81416	Exome (e.g., unexplained constitutional or heritable disorder or syndrome); sequence analysis, each comparator exome (e.g., parents, siblings)
81417	Exome (e.g., unexplained constitutional or heritable disorder or syndrome); re-evaluation of previously obtained exome sequence (e.g., updated knowledge or unrelated condition/syndrome)
81425	Genome (e.g., unexplained constitutional or heritable disorder or syndrome); sequence analysis
81426	Genome (e.g., unexplained constitutional or heritable disorder or syndrome); sequence analysis, each comparator genome (e.g., parents, siblings)
81427	Genome (e.g., unexplained constitutional or heritable disorder or syndrome); re-evaluation of previously obtained genome sequence (e.g., updated knowledge or unrelated condition/syndrome)

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## DEFINITIONS

1. **Current Procedural Terminology (CPT):** The most recent edition of a listing, published by the American Medical Association, of descriptive terms and identifying codes for reporting medical services performed by providers.
2. **HUSKY A:** Connecticut children and their parents or a relative caregiver; and pregnant women may qualify for HUSKY A (also known as Medicaid). Income limits apply.
3. **HUSKY B:** Uninsured children under the age of 19 in higher income households may be eligible for HUSKY B (also known as the Children's Health Insurance Program) depending on their family income level. Family cost-sharing may apply.
4. **HUSKY C:** Connecticut residents who are age 65 or older or residents who are ages 18-64 and who are blind, or have another disability, may qualify for Medicaid coverage under HUSKY C (this includes Medicaid for Employees with Disabilities (MED-Connect), if working). Income and asset limits apply.
5. **HUSKY D:** Connecticut residents who are ages 19-64 without dependent children and who: (1) do not qualify for HUSKY A; (2) do not receive Medicare; and (3) are not pregnant, may qualify for HUSKY D (also known as Medicaid for the Lowest-Income populations).
6. **HUSKY Health Program:** The HUSKY A, HUSKY B, HUSKY C, HUSKY D and HUSKY Limited Benefit programs, collectively.
7. **HUSKY Limited Benefit Program or HUSKY, LBP:** Connecticut's implementation of limited health insurance coverage under Medicaid for individuals with tuberculosis or for family planning purposes and such coverage is substantially less than the full Medicaid coverage.
8. **HUSKY Plus Physical Program (or HUSKY Plus Program):** A supplemental physical health program pursuant to Conn. Gen. Stat. § 17b-294, for medically eligible members of HUSKY B in Income Bands 1 and 2, whose intensive physical health needs cannot be accommodated within the HUSKY Plan, Part B.
9. **Medically Necessary or Medical Necessity:** (as defined in Connecticut General Statutes § 17b-259b) Those health services required to prevent, identify, diagnose, treat, rehabilitate or ameliorate an individual's medical condition, including mental illness, or its effects, in order to attain or maintain the individual's achievable health and independent functioning provided such services are: (1) Consistent with generally-accepted standards of medical practice that are defined as standards that are based on (A) credible scientific evidence published in peer-reviewed medical literature that is generally recognized by the relevant medical community, (B) recommendations of a physician-specialty society, (C) the views of physicians practicing in relevant clinical areas, and (D) any other relevant factors; (2) clinically appropriate in terms of type, frequency, timing, site, extent and duration and considered effective for the individual's illness, injury or disease; (3) not primarily for the convenience of the individual, the individual's health care provider or other health care providers; (4) not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of the individual's illness, injury or disease; and (5) based on an assessment of the individual and his or her medical condition.
10. **Prior authorization:** A process for approving covered services prior to the delivery of the service or initiation of the plan of care based on a determination by CHNCT as to whether the requested service is medically necessary.

## ADDITIONAL RESOURCES AND REFERENCES:

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