MN.011.B Whole Genome and Whole Exome Sequencing

Health Partners Plans

Title: Whole Genome and Whole Exome Sequencing
Policy # MN.011.B
Type: Medical
Sub-Type: Medical Necessity (MN)

Original Implementation Date: 3/2/2017
Version [B] Effective Date: 12/1/2018
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Notification Release: N/A

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PRODUCT VARIATIONS

This policy applies to all Health Partners Plans (HPP) product lines unless noted below.

☒ Medicare Variation

For details regarding Medicare's position of non-covered please refer to the following:

- Related Local Coverage Determination
- LCD L35062 Biomarkers Overview

Where Medicare coverage documents address services/conditions, they supersede this policy.

NOTE: This policy only applies when a specific HPP medical necessity policy addressing the item/service does not exist. For Medicare products, Medicare guidance documents (Internet-only manuals, National and Local Coverage Determinations) supersede this policy.

POLICY STATEMENT

Whole Genome Sequencing (WGS) and Whole Exome Sequencing (WES) are considered experimental and investigational and therefore not covered as there is insufficient evidence to support a conclusion concerning the health outcomes or benefits associated with this test.

POLICY GUIDELINES

N/A

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CODING

The Current Procedural Terminology (CPT®), Healthcare Common Procedure Coding System (HCPCS), and the 10th revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) codes that *may* be listed in this policy are for reference purposes only. Listing of a code in this policy does not imply that the service is covered and is not a guarantee of payment. Other policies and coverage guidelines may apply. When reporting services, providers/facilities should code to the highest level of specificity using the code that was in effect on the date the service was rendered. This list may not be all inclusive.

CPT Code	Description
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)
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)

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ICD-10 Code	Description
N/A	N/A

BENEFIT APPLICATION

Medical policies do not constitute a description of benefits. This medical necessity policy assists in the administration of the member's benefits which may vary by line of business. Applicable benefit documents govern which services/items are eligible for coverage, subject to benefit limits, or excluded completely from coverage. This policy is invoked only when the requested service is an eligible benefit as defined in the Member's applicable benefit contract on the date the service was rendered. Services determined by the Plan to be investigational or experimental are excluded from coverage for all lines of business. For Medicaid members under 21 years old, benefits and coverage are always based on medical necessity review.

DESCRIPTION OF SERVICES

Whole exome sequencing (WES) sequences the portion of the genome that contains protein-coding DNA, while whole genome sequencing (WGS) sequences both coding and noncoding regions of the genome. WES and WGS have been proposed for use in patients presenting with disorders and anomalies that have not been explained by standard clinical workup. Potential candidates for WES and WGS include patients who present with a broad spectrum of suspected genetic conditions.

CLINICAL EVIDENCE

Currently, the diagnostic yield of exome sequencing appears to be no greater than 50% and possibly less for patients with suspected genetic disorder accompanied by multiple anomalies. Medical management decisions, including initiation of new treatment or discontinuing inappropriate treatment, may result for only a subset of those diagnosed. Reproductive decisions for parents considering an additional pregnancy may be informed by determining the mode of inheritance. Appropriate use of exome sequencing requires considerable genetic, clinical, and genetic counseling expertise.

As cited in a 2013 Blue Cross Blue Shield Association (BCBSA) Technology Evaluation Center (TEC) Special Report on exome sequencing for patients with suspected genetic disorders, Currently there are no published studies that systematically examine potential outcomes of interest such as changes in medical management (including revision of initial diagnoses), and changes in reproductive decision making after a diagnosis of a Mendelian disorder by WES.

A small number of studies of patient series, and a larger number of very small series or family studies report anecdotal examples of medical management and reproductive decision-making outcomes of exome sequencing in patients who were not diagnosed by traditional methods. These studies show that over and above traditional molecular and conventional diagnostic testing, exome sequencing can lead to a diagnosis that influences patient care and/or reproductive decisions, but gave no indication of the proportion of patients for which this is true.

The publication of a large number of small diagnostic studies with positive results but few with negative results; raise the possibility of publication bias—the impact of which is unknown. [4] Since the publication of the 2013 TEC Special Report, studies continue to demonstrate that WES can be used to identify novel genetic mutations in a range of clinical conditions.

DEFINITIONS

N/A

DISCLAIMER

Approval or denial of payment does not constitute medical advice and is neither intended to guide nor influence medical decision making.

POLICY HISTORY

This section provides a high-level summary of changes to the policy since the previous version.

Summary	Version	Version Effective Date
Annual policy review and re-issue. No revisions to this version.	B	12/1/2018
N/A. New policy bulletin.	A	3/2/2017

REFERENCES

1. "ACMG policy statement: updated recommendations regarding analysis and reporting of secondary findings in clinical genome-scale sequencing", American College of Medical Genetics, January 2015.

2. BCBSA Technology Assessment Program, August 2013 Volume 28, No. 5 "Special Report: Exome Sequencing for Clinical Diagnosis of Patients with Suspected Genetic Disorders".

3. Medicare Managed Care Manual, Section 90.4. Electronically available at the https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/mc86c04.pdf

4. Novitas Solutions Inc. Local Coverage Determination LCD L35062 Biomarkers Overview Effective 3/8/2018 https://www.cms.gov/medicare-coverage-database/details/lcd-details.aspx?LCDId=35062&ver=81&name=314*1&UpdatePeriod=771&bc=AAAAEAAAAAAA&

5. "Whole Exome Sequencing for Cancer Indications" Hayes Inc. GTE Report; Published on July 22, 2013.

6. "Whole Exome Sequencing for Noncancer Indications" Hayes Inc. GTE Report; Published on August 13, 2013.