

Policy: MP321

Section: Medical Benefit Policy

Subject: Gene Expression Profiling for Cutaneous Melanoma

I. Policy: Gene Expression Profiling for Cutaneous Melanoma

II. Purpose/Objective:

To provide a policy of coverage regarding Gene Expression Profiling for Cutaneous Melanoma

III. Responsibility:

- A. Medical Directors
- B. Medical Management

IV. Required Definitions

1. Attachment – a supporting document that is developed and maintained by the policy writer or department requiring/authoring the policy.
2. Exhibit – a supporting document developed and maintained in a department other than the department requiring/authoring the policy.
3. Devised – the date the policy was implemented.
4. Revised – the date of every revision to the policy, including typographical and grammatical changes.
5. Reviewed – the date documenting the annual review if the policy has no revisions necessary.

V. Additional Definitions

Medical Necessity or Medically Necessary means Covered Services rendered by a Health Care Provider that the Plan determines are:

- a. appropriate for the symptoms and diagnosis or treatment of the Member's condition, illness, disease or injury;
- b. provided for the diagnosis, and the direct care and treatment of the Member's condition, illness disease or injury;
- c. in accordance with current standards of good medical treatment practiced by the general medical community.
- d. not primarily for the convenience of the Member, or the Member's Health Care Provider; and
- e. the most appropriate source or level of service that can safely be provided to the Member. When applied to hospitalization, this further means that the Member requires acute care as an inpatient due to the nature of the services rendered or the Member's condition, and the Member cannot receive safe or adequate care as an outpatient.

Medicaid Business Segment

Medical Necessity shall mean a service or benefit that is compensable under the Medical Assistance Program and if it meets any one of the following standards:

- (i) The service or benefit will, or is reasonably expected to, prevent the onset of an illness, condition or disability.
- (ii) The service or benefit will, or is reasonably expected to, reduce or ameliorate the physical, mental or development effects of an illness, condition, injury or disability.
- (iii) The service or benefit will assist the Member to achieve or maintain maximum functional capacity in performing daily activities, taking into account both the functional capacity of the Member and those functional capacities that are appropriate for members of the same age.

DESCRIPTION: Melanoma is an aggressive cancer that can be difficult to diagnose. Improved patient outcomes is attributed to accurate and early diagnosis of melanocytic lesions. Histopathologic examination is adequate for most cases, however, approximately 15% of lesions are diagnostically challenging to diagnose by histopathology. In equivocal cases, members are at risk of receiving indeterminate or inaccurate diagnoses, leading to inappropriate treatment. Gene expression profiling is thought to provide additional clarity in these difficult to diagnose cases.

INDICATIONS:

COMMERCIAL AND MEDICARE BUSINESS SEGMENT:

Gene expression profiling for cutaneous melanoma utilizing the myPath Melanoma is considered medically necessary when the following criteria are met:

- The lesion is considered to be a non-metastatic, melanocytic lesion that has not been previously treated, and
- Histopathology and clinical characteristics have not clearly differentiated the lesion as being benign or malignant, and
- The results of the gene expression testing will be used in conjunction with the clinical evaluation, histopathological features and other diagnostic procedures to determine and/or alter the treatment plan

COMMERCIAL AND MEDICARE BUSINESS SEGMENT:

Gene expression profiling for cutaneous melanoma utilizing the DecisionDx-Melanoma test is considered medically necessary when the following criteria are met:

- Patients diagnosed with pathologic stage sentinel lymph node biopsy (SLNB) eligible T1b and T1a cutaneous melanoma tumors with clinically negative sentinel node basins who are being considered for SLNB to determine eligibility for adjuvant therapy. (Per current NCCN and ASCO guidelines, SLNB eligible patients are defined as:
 - Patients with T1a tumors:
 - in whom there is significant uncertainty about the adequacy of microstaging (positive deep margin), or
 - with Breslow depth <0.8 mm and with other adverse features (eg. very high mitotic index [$\geq 2/\text{mm}^2$], lymphovascular invasion, or a combination of these factors)
 - Patients with T1b tumors (≥ 0.8 mm or < 0.8 mm with ulceration)
 - Patients with T2 tumors

COMMERCIAL AND MEDICARE BUSINESS SEGMENT:

Gene expression profiling for cutaneous melanoma utilizing the Pigmented Lesion Assay RNA gene expression test on skin samples obtained via adhesive patches is considered medically necessary when the following criteria are met:

- The lesion must meet one or more ABCDE criteria (Asymmetry, Border, Color, Diameter, Evolving)*
- Primary melanocytic skin lesions is between 5mm and 19mm
- Lesion skin is intact (i.e. non-ulcerated or non-bleeding lesions)
- Lesion does not contain a scar or has been previously biopsied
- Lesion is not located in areas of psoriasis, eczema or similar skin conditions
- Lesion has not already been diagnosed as melanoma or for which the clinical suspicion is sufficiently high that the treating clinician believes melanoma is a more likely diagnosis than not
- Lesion is located in areas other than palms of hands, soles of feet, nails, mucous membranes and hair covered areas that cannot be trimmed.

*ABCDE criteria:

Asymmetry - The shape of one half does not match the other half.

Border that is irregular - The edges are often ragged, notched, or blurred in outline. The pigment may spread into the surrounding skin.

Color that is uneven - Shades of black, brown, and tan may be present. Areas of white, gray, red, pink, or blue may also be seen.

Diameter - There is a change in size, usually an increase. Melanomas can be tiny, but most are larger than 6 millimeters wide (about 1/4 inch wide).

Evolving - The mole has changed over the past few weeks or months.

Note: A complete description of the process by which a given technology or service is evaluated and determined to be experimental, investigational or unproven is outlined in MP 15 - Experimental Investigational or Unproven Services or Treatment.

CODING ASSOCIATED WITH: Gene expression profiling for cutaneous melanoma

The following codes are included below for informational purposes and may not be all inclusive. Inclusion of a procedure or device code(s) does not constitute or imply coverage nor does it imply or guarantee provider reimbursement. Coverage is determined by the member specific benefit plan document and any applicable laws

regarding coverage of specific services. Please note that per Medicare coverage rules, only specific CPT/HCPCS Codes may be covered for the Medicare Business Segment. Please consult the CMS website at www.cms.gov or the local Medicare Administrative Carrier (MAC) for more information on Medicare coverage and coding requirements

81479 – Unlisted Molecular Pathology Procedure

81529 - ONCOLOGY (CUTANEOUS MELANOMA), MRNA, GENE EXPRESSION PROFILING BY REAL-TIME RT-PCR OF 31 GENES (28 CONTENT AND 3 HOUSEKEEPING), UTILIZING FORMALIN-FIXED PARAFFIN-EMBEDDED TISSUE, ALGORITHM REPORTED AS RECURRENCE RISK, INCLUDING LIKELIHOOD OF SENTINEL LYMPH NODE METASTASIS

81599 – Unlisted multianalyte assay with algorithmic analysis [when specified as uveal or cutaneous melanoma gene expression tests, such as DecisionDx-Melanoma, myPath Melanoma]

0089U - Oncology (melanoma), gene expression profiling by RTqPCR, PRAME and LINC00518, superficial collection using adhesive patch(es) [DermTech Pigmented Lesion Assay]

0090U Oncology (cutaneous melanoma), mRNA gene expression profiling by RT-PCR of 23 genes (14 content and 9 housekeeping), utilizing formalin-fixed paraffin-embedded tissue, algorithm reported as a categorical result (ie, benign, indeterminate, malignant) use for MyPathMelanoma

Current Procedural Terminology (CPT®) © American Medical Association: Chicago, IL

LINE OF BUSINESS:

Eligibility and contract specific benefits, limitations and/or exclusions will apply. Coverage statements found in the line of business specific benefit document will supersede this policy. For Medicare, applicable LCD's and NCD's will supercede this policy. For PA Medicaid Business segment, this policy applies as written.

REFERENCES:

Gerami P, Alsobrook JP, Palmer TJ, Robin HS. Development of a novel noninvasive adhesive patch test for the evaluation of pigmented lesions of the skin. *J Am Acad Dermatol.* 2014 Aug;71(2):237-44.

Gerami P, Cook RW, Russell MC, Wilkinson J, et al. Gene expression profiling for molecular staging of cutaneous melanoma in patients undergoing sentinel lymph node biopsy. *J Am Acad Dermatol.* 2015 May;72(5):780-5.

Warf MB, Flake DD, Adams D, Gutin A, et al. Analytical validation of a melanoma diagnostic gene signature using formalin-fixed paraffin-embedded melanocytic lesions. *Biomark Med.* 2015;9(5):407-16.

Hsueh EC, Schwartz TL, Lizalek JM, et al. Prospective validation of gene expression profiling in primary cutaneous melanoma. *Journal of Clinical Oncology* 34, no. 15_suppl (May 2016) 9565-9565.

Clarke LE, Flake DD, Busam K, et al. An independent validation of a gene expression signature to differentiate malignant melanoma from benign melanocytic nevi. *Cancer.* 2017 Feb 15;123(4):617-628.

Cockerell C, Tschen J, Billings SD, Evans B, Brown K, Rock C, Clarke LE. The influence of a gene-expression signature on the treatment of diagnostically challenging melanocytic lesions. *Per Med.* 2017 Mar;14(2):123-130

Cockerell CJ, Tschen J, Evans B, Bess E, Kidd J, Kolquist KA, Rock C, Clarke LE. The influence of a gene expression signature on the diagnosis and recommended treatment of melanocytic tumors by dermatopathologists. *Medicine.* 2016 Oct;95(40):e4887

Clarke LE, Warf MB, Flake DD, Hartman AR, et al. Clinical validation of a gene expression signature that differentiates benign nevi from malignant melanoma. *J Cutan Pathol* 2015; 42: 244–252.

Ko JS, Matharoo-Ball B, Billings SD, et al. Diagnostic Distinction of Malignant Melanoma and Benign Nevi by a Gene Expression Signature and Correlation to Clinical Outcomes. *Cancer Epidemiol Biomarkers Prev;* 2017;26(7); 1107–13.

Leachman SA, Koon SM, Korcheva VB, White KP. Assessing Genetic Expression Profiles in Melanoma Diagnosis. *Dermatol Clin* 2017;35: 537–544.

Berger AC, Davidson RS, Poitras JK, et al. Clinical impact of a 31-gene expression profile test for cutaneous melanoma in 156 prospectively and consecutively tested patients. *Curr Med Res Opin.* 2016 Sep;32(9):1599-604.

Farberg AS, Glazer AM, Winkelmann RR, Rigel DS. Assessing Genetic Expression Profiles in Melanoma Prognosis. *Dermatol Clin.* 2017 Oct;35(4):545-550.

Ferris LK, Farberg AS, Middlebrook B, et al. Identification of high-risk cutaneous melanoma tumors is improved when combining the online American Joint Committee on Cancer Individualized Melanoma Patient Outcome Prediction Tool with a 31-gene expression profile-based classification. *J Am Acad Dermatol*. 2017 May;76(5):818-825.

Minca EC, Al-Rohil RN, Wang M, et al. Comparison between melanoma gene expression score and fluorescence in situ hybridization for the classification of melanocytic lesions. *Modern pathology: an official journal of the United States and Canadian Academy of Pathology, Inc*. 2016;29(8):832-843.

Cassarino DS, Lewine N, Cole D, Wade B, Gustavsen G. Budget impact analysis of a novel gene expression assay for the diagnosis of malignant melanoma. *Journal of medical economics*. 2014;17(11):782-791.

National Comprehensive Cancer Network (NCCN) – Melanoma v2.2021

Hayes Genetic Testing Evaluation (GTE) Synopsis: DecisionDx- Melanoma

MolDX: DecisionDx-Melanoma (DL37725)

Renzetti M, Farma J, Handor B et al. Combined experience of two tertiary referral centers with DecisionDx-Melanoma GEP testing. In Society of Surgical Oncology Seattle, WA: 2017.

Fleming MD, Johnson C, Covington KR et al. Clinical impact of a 31-gene expression profile test on physician recommendations for management of melanoma patients in a prospectively tested cohort. In Society of Melanoma Research. Brisbane, Australia: 2017

Moody JA, Ali RF, Carbone AC et al. Complications of sentinel lymph node biopsy for melanoma - A systematic review of the literature. *Eur J Surg Oncol* 2017; 43: 270-277.

Wong SL, Faries MB, Kennedy EB et al. Sentinel Lymph Node Biopsy and Management of Regional Lymph Nodes in Melanoma: American Society of Clinical Oncology and Society of Surgical Oncology Clinical Practice Guideline Update. *J Clin Oncol* 2017;

Faries MB, Thompson JF, Cochran AJ et al. Completion Dissection or Observation for Sentinel-Node Metastasis in Melanoma. *N Engl J Med* 2017; 376: 2211-2222

Zager JS, Gastman BR, Leachman S et al. Performance of a prognostic 31-gene expression profile in an independent cohort of 523 cutaneous melanoma patients. *BMC Cancer* 2018; 18:130

Hsueh EC, DeBloom JR, Lee J et al. Interim analysis of survival in a prospective, multi-center registry cohort of cutaneous melanoma tested with a prognostic 31-gene expression profile test. *J Hematol Oncol* 2017; 10: 152

Gerami P, Cook RW, et al. Development of a Prognostic Genetic Signature to Predict the Metastatic Risk Associated with Cutaneous Melanoma. *Clin Cancer Res* 2015;21:175-183.

Svoboda RM, Glazer AM, et al. Factors affecting dermatologists' use of a 31-gene expression profiling test as an adjunct for predicting metastatic risk in cutaneous melanoma. *J Drugs Dermatol*. 2018;17(5):544-547.

Schuitevoerder D, Heath M, et al. Impact of gene expression profiling on decision-making in clinically node negative melanoma patients after surgical staging. *J Drugs Dermatol*. 2018;17(2):196-199.

Farberg AS, Glazer AM, et al. Impact of a 31-gene Expression Profiling Test for Cutaneous Melanoma on Dermatologists' Clinical Management Decisions *J Drugs Dermatol*. 2017;16(5):428-431.

Dillon LD, Gadzia JE, et al. Prospective, Multicenter Clinical Impact Evaluation of a 31-Gene Expression Profile Test for Management of Melanoma Patients. *Skin* 2018;2(2):111-121.

Greenshaw BN, Zitelli JA, Brodland DG. Estimation of Prognosis in Invasive Cutaneous Melanoma: An Independent Study of the Accuracy of a Gene Expression Profile Test. *Dermatol Surg* 2018;0:1–7

Mirsky RS, Prado G, et al. management decisions made by physician assistants and nurse practitioners in cutaneous malignant melanoma patients: Impact of a 31-gene expression profile test. *J Drugs Dermatol*. 2018;17(11):1220-1223.

Cook RW, Middlebrook B, et al. Analytic validity of DecisionDx-Melanoma, a gene expression profile test for determining metastatic risk in melanoma patients. *Diagnostic Pathology* (2018) 13:13

Vetto JT, Hsueh EC, Gastman BR, et al. Guidance of sentinel lymph node biopsy decisions in patients with T1–T2 melanoma using gene expression profiling. *Future Oncol.* 29 January 2019

Keller J, Schwartz TL, et al. Prospective validation of the prognostic 31-gene expression profiling test in primary cutaneous melanoma. *Cancer Medicine.* 2019;1–8.

Gastman BR, Zager JS, et al. Performance of a 31-gene expression profile test in cutaneous melanomas of the head and neck. *Head & Neck.* 2019;41:871–879.

Swetter S, Tsao H, Bichakjian C, et. al., America Academy of Dermatology Guidelines of care for the management of primary cutaneous melanoma. *J Am Acad Dermatol* 2019;80:208-50

Greenhaw BN, Covington KR, Kurley SJ, Yeniay Y, Cao NA, Plasseraud KM, Cook RW, Hsueh EC, Gastman BR, Wei ML, Molecular risk prediction in cutaneous melanoma: a metaanalysis of the 31-gene expression profile prognostic test in 1,479 patients, *Journal of the American Academy of Dermatology* 2020

NIH, National cancer Institute. Moles to Melanoma: Recognizing the ABCDE Features. <https://moles-melanoma-tool.cancer.gov/>

Ferris LK, Gerami P, Skelsey MK, et al. Real-world performance and utility of a noninvasive gene expression assay to evaluate melanoma risk in pigmented lesions. *Melanoma Res.* 2018;28(5):478-482.

Ferris LK, Jansen B, Ho J, et al. Utility of a Noninvasive 2-Gene Molecular Assay for Cutaneous Melanoma and Effect on the Decision to Biopsy. *JAMA Dermatol.* 2017;153(7):675-680.

Gerami P, Yao Z, Polsky D, et al. Development and validation of a noninvasive 2-gene molecular assay for cutaneous melanoma. *J Am Acad Dermatol.* 2017;76(1):114-120 e112.

Yao Z, Moy R, Allen T, Jansen B. An Adhesive Patch-Based Skin Biopsy Device for Molecular Diagnostics and Skin Microbiome Studies. *J Drugs Dermatol.* 2017;16(10):979-986.

Local Coverage Determination (LCD):MoIDX: Melanoma Risk Stratification Molecular Testing (L37750)

MOLDX: Pigmented Lesion Assay (L38051)

MoIDX: myPath® Melanoma Assay (L37859)

Kwatra S.G., H.H., Semenov Y.R., Trotter S.C., Holland E., Leachman S. A Dermatologist's Guide to Implementation of Gene Expression Profiling in the Management of Melanoma. *J Clin Aesthet Dermatol* 2020 13, S3-S14

This policy will be revised as necessary and reviewed no less than annually.

Devised: 4/18

Revised: 11/18 (expand Medicare coverage); 5/19 (expand commercial and Medicare coverage); 10/20 (add PLA testing)

Reviewed: 5/20; 10/21

Geisinger Health Plan may refer collectively to health care coverage sponsors Geisinger Health Plan, Geisinger Quality Options, Inc., and Geisinger Indemnity Insurance Company, unless otherwise noted. Geisinger Health Plan is part of Geisinger, an integrated health care delivery and coverage organization.

Coverage for experimental or investigational treatments, services and procedures is specifically excluded under the member's certificate with Geisinger Health Plan. Unproven services outside of an approved clinical trial are also specifically excluded under the member's certificate with Geisinger Health Plan. This policy does not expand coverage to services or items specifically excluded from coverage in the member's certificate with Geisinger Health Plan. Additional information can be found in MP015 Experimental, Investigational or Unproven Services.

Prior authorization and/or pre-certification requirements for services or items may apply. Pre-certification lists may be found in the member's contract specific benefit document. Prior authorization requirements can be found at <https://www.geisinger.org/health-plan/providers/ghp-clinical-policies>

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