**Medica Coverage Policy**

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**Policy Name:** Gene Expression Profiling for Detection of Heart Transplantation Rejection  
**Effective Date:** 4/20/2020

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**Important Information – Please Read Before Using This Policy**

These services may or may not be covered by all Medica plans. Please refer to the member’s plan document for specific coverage information. If there is a difference between this general information and the member’s plan document, the member’s plan document will be used to determine coverage. With respect to Medicare and Minnesota Health Care Programs, this policy will apply unless those programs require different coverage. Members may contact Medica Customer Service at the phone number listed on their member identification card to discuss their benefits more specifically. Providers with questions about this Medica coverage policy may call the Medica Provider Service Center toll-free at 1-800-458-5512.

Medica coverage policies are not medical advice. Members should consult with appropriate health care providers to obtain needed medical advice, care and treatment.

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**Coverage Policy**

AlloMap gene expression profiling for the detection of heart transplantation rejection is **COVERED** for monitoring rejection in heart transplant recipients more than six months post-heart transplant.

AlloMap gene expression profiling for detection of heart transplantation rejection for all other indications is considered investigative and unproven, and therefore **NOT COVERED**. There is insufficient reliable evidence in the form of high quality peer-reviewed medical literature to establish the effects on health care outcomes.

Molecular Microscope Diagnostic System-Heart (MMDx-Heart) gene expression profiling for detection of heart transplantation rejection is considered investigative and unproven, and therefore **NOT COVERED**. There is insufficient reliable evidence in the form of high quality peer-reviewed medical literature to establish the safety and efficacy or effects on health care outcomes.

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**Description**

Heart transplantation is common therapy for the treatment of end-stage heart failure. Since the first heart transplant procedure performed in 1967, overall survival rates have increased dramatically, and current estimated survival rates are approximately 90% at one year, 70% at five years, and 50% at 10 years. However, life-threatening complications may occur with heart transplantation, including infection, allograft rejection, and allograft vascular disease. Immunosuppressive drugs are provided to patients following heart transplantation. Graft rejection is most frequent within the first month following transplantation, and patient survival is dependent on accurate monitoring for allograft rejection and dysfunction.

Endomyocardial biopsy is the current standard for detecting allograft rejection after transplantation, occurring on a regular basis. As endomyocardial biopsy is invasive and has several limitations, alternative noninvasive techniques to detect rejection have been investigated. Gene expression profiling of mononuclear cells in peripheral blood specimens is being studied as an alternative to endomyocardial biopsy to detect cellular rejection. The AlloMap (CareDx, Brisbane, CA) messenger RNA (mRNA) gene expression analysis is intended for patients with low probability of moderate to severe acute cellular rejection (ACR) at the time of testing. It incorporates gene expression profiles of 11 informative genes and 9 control genes using a laboratory-generated algorithm score to determine rejection risk in heart transplant patients 55 days or more post-transplant. The Heart Molecular
Microscope Diagnostic System (MMDx-Heart; Kashi Clinical Laboratory) mRNA gene expression analysis of 1,283 genes uses microarray to measure mRNA transcript levels in transplant heart biopsy tissue. An allograft rejection and injury algorithm is reported as a probability score.

FDA Approval
In 2008, the FDA granted 510(k) Class II clearance for AlloMap to “aid in the identification of heart transplant recipients with stable allograft function who have low probability of moderate/severe acute cellular rejection (ACR) at the time of testing in conjunction with standard clinical assessment.”

Genetic tests are regulated under the Clinical Laboratory Improvement Amendments (CLIA) Act of 1988. Premarket approval from the FDA is not required as long as the assay is performed in a laboratory facility that observes CLIA regulations and the test is not marketed for general distribution. One example is the Molecular Microscope Diagnostic System-Heart (MMDx-Heart) gene expression profile.

Prior Authorization
Prior authorization is not required. However, services with specific coverage criteria may be reviewed retrospectively to determine if criteria are being met. Retrospective denial may result if criteria are not met.

Coding Considerations
Use the current applicable CPT/HCPCS code(s). The following codes are included below for informational purposes only, and are subject to change without notice. Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement.

CPT Codes:
- 81595 - cardiology (heart transplant), mRNA, gene expression profiling by real-time quantitative PCR of 20 genes (11 content and 9 housekeeping), utilizing subfraction of peripheral blood, algorithm reported as a rejection risk score

HCPCS Code:
- 0087U - Cardiology (heart transplant), mRNA gene expression profiling by microarray of 1283 genes, transplant biopsy tissue, allograft rejection and injury algorithm reported as a probability score

Original Effective Date: 5/1/2017

Re-Review Date(s): 2/19/2020