I. Policy: Non-invasive Testing for Heart Transplant Rejection

II. Purpose/Objective:
   To provide a policy of coverage regarding Non-invasive Testing for Heart Transplant Rejection

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:
The Heartsbreath test assesses heart transplant rejection by measuring the amount of methylated alkanes, a marker of oxidative stress, in the patient’s breath. Heart transplant rejection seems to be accompanied by oxidative stress which degrades membrane polyunsaturated fatty acids, creating methylated alkanes that are then excreted in the breath as volatile organic compounds. As per the FDA-approved product labeling, the product is to be used along with endomyocardial biopsy, to diagnose grade 3 heart transplant rejection in patients who have received a heart transplant within the past year.

AlloMap Molecular Expression Testing is a non-invasive, 20-gene expression assay that measures the activity of the immune system with respect to the risk of cardiac allograft rejection. In essence, the testing is thought to detect the absence of rejection in a transplanted heart.

INDICATIONS:

For COMMERCIAL BUSINESS SEGMENT:
AlloMap testing is considered medically necessary when the following criteria are met:
- The member is 15 years of age or older; and
- The member is between 6 months and 5 years post-transplant; and
- The member is otherwise clinically stable and without overt evidence of acute rejection; and
- The member is has not received high dose steroids within the preceding 21 days; and
- The member has not received blood transfusion or hematopoietic growth factor within the preceding 30 days

For Medicare and Medicaid Business Segments:
CMS directives allows AlloMap, an In Vitro Diagnostic Multivariate Index assay (IVDMIA) test service performed in a single laboratory to aid in the identification of heart transplant recipients with stable allograft function who have a low probability of moderate/severe acute cellular rejection (ACR) at the time of testing in conjunction with standard clinical assessment. Palmetto GBA established a formal coverage policy for all Medicare patients. This local carrier determination is applicable nationally.

EXCLUSIONS: The Plan does NOT provide coverage for Heartsbreath breathing test for heart transplant rejection detection because it is considered experimental, investigational or unproven. There is insufficient evidence in the peer-reviewed published medical literature to establish the effectiveness of this treatment on health outcomes when compared to established treatments or technologies.

The Plan does NOT provide coverage for the use of peripheral blood measurement of donor-derived cell-free DNA in the management of patients after heart transplantation (e.g., myTAIHEART), including but not limited to the detection of acute transplant rejection because it is considered experimental, investigational or unproven. There is insufficient evidence in the peer-reviewed published medical literature to establish the effectiveness of this treatment on health outcomes when compared to established treatments or technologies.

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: Breath Testing for Heart Transplant Rejection
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.

0085T Breath Test For Heart Transplant Rejection
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
Cardiology (heart transplant), cell-free DNA, PCR assay of 96 DNA target sequences (94 single nucleotide polymorphism targets and two control targets), plasma

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

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 supersede this policy. For PA Medicaid Business segment, this policy applies as written.

REFERENCES:


Winifred S. Hayes. Allopap Molecular Expression testing (Xdx Inc.[Expression Diagnostics]) for detection of heart transplant rejection. Winifred S. Hayes (online) Current as of August 23, 2006.


National Coverage Determination (NCD) for Heartsbreath Test for Heart transplant Rejection (260.10)

ECRI Institute. Gene expression profiling to monitor acute heart transplant rejection. [Emerging


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

Devised: 12/23/05

Revised: 12/07(addition of Allomap), 1/13 (Medicare segment), 12/17 (add indication); 12/19 (add exclusion for cfDNA)

Reviewed: 12/06, 12/09; 12/10, 1/12, 1/14, 1/15, 1/16, 1/17, 12/18