# Clinical Policy: Thymus Tissue Transplantation

Reference Number: WNC.CP.279
Last Review Date: 04/23

Coding Implications
Revision Log

**See Important Reminder at the end of this policy for important regulatory and legal information.**

**Note:** When state Medicaid coverage provisions conflict with the coverage provisions in this clinical policy, state Medicaid coverage provisions take precedence. Please refer to the state Medicaid manual for any coverage provisions pertaining to this clinical policy.

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***PLEASE NOTE: This service REQUIRES Medical Director Review.***

**Description**[1]

Congenital athymia is a rare immune disorder in which a child is born without a thymus – an organ that plays a critical role in helping the body learn to fight infections. Children impacted by this disease typically die within the first two years of life and may have repeated, often life-threatening infections because they lack adequate working T cells.

This policy addresses thymus tissue transplantation (also known as culture thymus tissue [CTT] transplantation) using allogeneic processed thymus tissue (allogeneic processed thymus tissueagdc [RETHYMIC®], Enzyvant Therapeutics, Inc. Cambridge, MA) a regenerative therapy used for immune reconstitution in children with congenital athymia.

**Policy/Criteria**[1]

**I.** WellCare of North Carolina® **shall cover** a single administration of allogeneic processed thymus tissue for immune reconstitution in a beneficiary who is 17 years of age and younger with congenital athymia when ALL of the following criteria are met:
   A. Congenital athymia is confirmed via a circulating T-cell count on flow cytometry demonstrating fewer than 50 naïve T cells/mm3 (CD45RA+, CD62L+) in the peripheral blood or less than 5 percent of total T cells being naïve in phenotype;
   B. Documentation that infection control measures, consisting of immunoprophylaxis and withholding of immunizations, can reasonably be maintained until the development of thymic function is established;
   C. Absence of comorbidities, in the opinion of the treating clinician, that are reasonably likely to result in severe complications, including death from administration of allogeneic processed thymus tissue (such as pre-existing renal impairment, or cytomegalovirus or Epstein-Barr virus infection); AND
   D. HLA matching is required, performed and documented in a beneficiary who has received a prior hematopoietic cell transplantation (HCT) or a solid organ transplant.

**II.** It is the policy of WellCare of North Carolina®**, shall NOT cover** the use of allogeneic processed thymus tissue for administration of all other uses, including:
   A. Immune reconstitution in a beneficiary with severe combined immunodeficiency (SCID); **and**

B. Repeat administration in a beneficiary who has previously received allogeneic processed thymus tissue.

**III. Limitations:** WellCare of North Carolina®**, shall** require prior approval for Thymus Tissue Transplantation.
A. The provider shall obtain prior approval before rendering Thymus Tissue Transplantation.
B. Continued therapy is not authorized as it is to be dosed one time only.
C. Thymus Tissue Transplantation is once per lifetime.

**IV. Documentation Requirements**:
A. Letter of medical necessity **signed by the attending physician**, which documents the beneficiary's medical history, absence of significant comorbidities, and indications for treatment with Thymus Tissue Transplantation;
B. Lab results confirming congenital athymia as described in Criteria I. of this policy;
C. Documentation that infection control measures, consisting of immunoprophylaxis and withholding of immunizations, can reasonably be maintained until the development of thymic function is established; and
D. Documentation that HLA matching has been performed in a beneficiary who has received a prior hematopoietic cell transplantation (HCT) or a solid organ transplant.

**V. Place of Service**:
A. Inpatient Hospital

**Background**[1]
RETHYMIC is composed of human allogeneic thymus tissue that is processed and cultured, and then implanted into beneficiaries to help reconstitute immunity in beneficiaries who are athymic. Dosing is patient customized, determined by the surface area of the RETHYMIC slices and the body surface area of the beneficiary.

**Definitions:**
**Allogeneic -** Taken from different individuals of the same species. Also called allogenic.

**Flow Cytometry -** A laboratory method that measures the number of cells, the percentage of live cells, and certain characteristics of cells, such as size and shape, in a sample of blood, bone marrow, or other tissue. The presence of tumor markers, such as antigens, on the surface of the cells are also measured. The cells are stained with a light-sensitive dye, placed in a fluid, and then passed one at a time through a beam of light. The measurements are based on how the stained cells react to the beam of light. Flow cytometry is used in basic research and to help diagnose and manage certain diseases, including cancer.

**Hematopoietic Stem Cell Transplant -** Is a procedure in which a beneficiary receives healthy stem cells (blood-forming cells) to replace their own stem cells that have been destroyed by Treatment with radiation or high doses of chemotherapy. The healthy stem cells may come from the blood or bone marrow of the beneficiary or from a related or unrelated donor. A stem cell

transplant may be autologous (using a beneficiary's own stem cells that were collected and saved before treatment), allogeneic (using stem cells from a related or unrelated donor), syngeneic (using stem cells donated by an identical twin), or cord blood (using umbilical cord blood donated after a baby is born).

**Human leukocyte antigen (HLA) -** A type of molecule found on the surface of most cells in the body. HLAs play an important part in the body's immune response to foreign substances. They make up a person's tissue type, which varies from person to person. HLA tests are done before a donor stem cell or organ transplant, to find out if tissues match between the donor and the person receiving the transplant. Also called human leukocyte antigen and human lymphocyte antigen.

**HLA Matching -** A process in which blood or tissue samples are tested for human leukocyte antigens (HLAs). HLAs are molecules found on the surface of most cells in the body. They make up a person's tissue type, which varies from person to person. They play an important part in the body's immune response to foreign substances. HLA matching is done before a donor stem cell or organ transplant to find out if tissues match between the donor and the person receiving the transplant. Also called human leukocyte antigen matching.

**Immunoprophylaxis -** The prevention of disease by the production of active or passive immunity.

**Phenotype -** The physical, biochemical, and behavioral traits that can be observed in a person. Some examples of a person's phenotype are height, eye color, hair color, blood type, behavior, and the presence of certain diseases. A phenotype is based on a person's genes and some environmental factors, such as diet, exercise, and smoking.

**Thymus -** An organ that is part of the lymphatic system, in which T lymphocytes grow and multiply. This plays a critical role in helping the body learn to fight infection. The thymus is in the chest behind the breastbone.

**T-Cell -** A type of white blood cell. T cells are part of the immune system and develop from stem cells in the bone marrow. They help protect the body from infection and may help fight cancer. Also called T lymphocyte and thymocyte.

**Coding Implications**

This clinical policy references Current Procedural Terminology (CPT®). CPT® is a registered trademark of the American Medical Association. All CPT codes and descriptions are copyrighted 2022, American Medical Association. All rights reserved. CPT codes and CPT descriptions are from the current manuals and those included herein are not intended to be all-inclusive and are included for informational purposes only. Codes referenced in this clinical policy are for informational purposes only. Inclusion or exclusion of any codes does not guarantee coverage. Providers should reference the most up-to-date sources of professional coding guidance prior to the submission of claims for reimbursement of covered services.

| CPT®* Codes | Description |
|---|---|
| Non-Applicable | |

| HCPCS ®* Codes | Description |
|---|---|
| Non-Applicable | |

**ICD-10-PCS Code that Support Coverage Criteria**

+ Indicates a code(s) requiring an additional character

| ICD-10-PCS Code | Description |
|---|---|
| XW020D8 | INTRODUCTION OF ENGINEERED ALLOGENEIC THYMUS TISSUE INTO MUSCLE, OPEN APPROACH, NEW TECHNOLOGY GROUP 8 |

| Reviews, Revisions, and Approvals | Reviewed Date | Approval Date |
|---|---|---|
| Original approval date | 04/23 | |

**References**

1. State of North Carolina Medicaid. Medicaid and Health Choice Clinical Coverage Policy No:1A-12 Breast Surgeries. Program Specific Clinical Coverage Policies | NC Medicaid (ncdhhs.gov). Published April 7, 2023. Accessed April 7, 2023.

**North Carolina Guidance**

*Eligibility Requirements*

a. An eligible beneficiary shall be enrolled in the NC Medicaid Program (Medicaid is NC Medicaid program, unless context clearly indicates otherwise);
b. Provider(s) shall verify each Medicaid beneficiary's eligibility each time a service is rendered.
c. The Medicaid beneficiary may have service restrictions due to their eligibility category that would make them ineligible for this service.

*EPSDT Special Provision: Exception to Policy Limitations for a Medicaid Beneficiary under 21 Years of Age*

a. 42 U.S.C. § 1396d(r) [1905(r) of the Social Security Act]

Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) is a federal Medicaid requirement that requires the state Medicaid agency to cover services, products, or procedures for Medicaid beneficiary under 21 years of age if the service is medically necessary health care to correct or ameliorate a defect, physical or mental illness, or a condition [health problem] identified through a screening examination (includes any evaluation by a physician or other licensed practitioner).

This means EPSDT covers most of the medical or remedial care a child needs to improve or maintain his or her health in the best condition possible, compensate for a health problem, prevent it from worsening, or prevent the development of additional health problems.

Medically necessary services will be provided in the most economic mode, as long as the treatment made available is similarly efficacious to the service requested by the beneficiary's physician, therapist, or other licensed practitioner; the determination process does not delay the delivery of the needed service; and the determination does not limit the beneficiary's right to a free choice of providers.

EPSDT does not require the state Medicaid agency to provide any service, product or procedure:

1. that is unsafe, ineffective, or experimental or investigational.
2. that is not medical in nature or not generally recognized as an accepted method of medical practice or treatment.

Service limitations on scope, amount, duration, frequency, location of service, and other specific criteria described in clinical coverage policies may be exceeded or may not apply as long as the provider's documentation shows that the requested service is medically necessary "to correct or ameliorate a defect, physical or mental illness, or a condition" [health problem]; that is, provider documentation shows how the service, product, or procedure meets all EPSDT criteria, including to correct or improve or maintain the beneficiary's health in the best condition possible, compensate for a health problem, prevent it from worsening, or prevent the development of additional health problems.

**EPSDT and Prior Approval Requirements**

1. If the service, product, or procedure requires prior approval, the fact that the beneficiary is under 21 years of age does NOT eliminate the requirement for prior approval.
2. **IMPORTANT ADDITIONAL INFORMATION** about EPSDT and prior approval is found in the *NCTracks Provider Claims and Billing Assistance Guide*, and on the EPSDT provider page. The Web addresses are specified below:
   *NCTracks Provider Claims and Billing Assistance Guide*:
   https://www.nctracks.nc.gov/content/public/providers/provider-manuals.html
   *EPSDT provider page*: https://medicaid.ncdhhs.gov/

*Provider(s) Eligible to Bill for the Procedure, Product, or Service*

To be eligible to bill for the procedure, product, or service related to this policy, the provider(s) shall:

a. meet Medicaid qualifications for participation;
b. have a current and signed Department of Health and Human Services (DHHS) Provider Administrative Participation Agreement; and
c. bill only for procedures, products, and services that are within the scope of their clinical practice, as defined by the appropriate licensing entity.

*Compliance*

Provider(s) shall comply with the following in effect at the time the service is rendered:

a. All applicable agreements, federal, state and local laws and regulations including the Health Insurance Portability and Accountability Act (HIPAA) and record retention requirements; and

b. All NC Medicaid's clinical (medical) coverage policies, guidelines, policies, provider manuals, implementation updates, and bulletins published by the Centers for Medicare and Medicaid Services (CMS), DHHS, DHHS division(s) or fiscal contractor(s).

*Claims-Related Information*
Provider(s) shall comply with the NC Tracks Provider Claims and Billing Assistance Guide, Medicaid bulletins, fee schedules, NC Medicaid's clinical coverage policies and any other relevant documents for specific coverage and reimbursement for Medicaid:

a. Claim Type - as applicable to the service provided:
   Professional (CMS-1500/837P transaction)
   Institutional (UB-04/837I transaction)
   Unless directed otherwise, Institutional Claims must be billed according to the National Uniform Billing Guidelines. All claims must comply with National Coding Guidelines.
b. International Classification of Diseases and Related Health Problems, Tenth Revisions, Clinical Modification (ICD-10-CM) and Procedural Coding System (PCS) - Provider(s) shall report the ICD-10-CM and Procedural Coding System (PCS) to the highest level of specificity that supports medical necessity. Provider(s) shall use the current ICD-10 edition and any subsequent editions in effect at the time of service. Provider(s) shall refer to the applicable edition for code description, as it is no longer documented in the policy.
c. Code(s) - Provider(s) shall report the most specific billing code that accurately and completely describes the procedure, product or service provided. Provider(s) shall use the Current Procedural Terminology (CPT), Health Care Procedure Coding System (HCPCS), and UB-04 Data Specifications Manual (for a complete listing of valid revenue codes) and any subsequent editions in effect at the time of service. Provider(s) shall refer to the applicable edition for the code description, as it is no longer documented in the policy. If no such specific CPT or HCPCS code exists, then the provider(s) shall report the procedure, product or service using the appropriate unlisted procedure or service code.
   *Unlisted Procedure or Service*
   CPT: The provider(s) shall refer to and comply with the Instructions for Use of the CPT Codebook, Unlisted Procedure or Service, and Special Report as documented in the current CPT in effect at the time of service.
   HCPCS: The provider(s) shall refer to and comply with the Instructions For Use of HCPCS National Level II codes, Unlisted Procedure or Service and Special Report as documented in the current HCPCS edition in effect at the time of service
d. Modifiers - Providers shall follow applicable modifier guidelines.
e. Billing Units - Provider(s) shall report the appropriate code(s) used which determines the billing unit(s).
f. Co-payments -
   For Medicaid refer to Medicaid State Plan:
   https://medicaid.ncdhhs.gov/get-involved/nc-health-choice-state-plan

g. Reimbursement - Provider(s) shall bill their usual and customary charges. For a schedule of rates, refer to: https://medicaid.ncdhhs.gov/.

**Important Reminder**

This clinical policy has been developed by appropriately experienced and licensed health care professionals based on a review and consideration of currently available generally accepted standards of medical practice; peer-reviewed medical literature; government agency/program approval status; evidence-based guidelines and positions of leading national health professional organizations; views of physicians practicing in relevant clinical areas affected by this clinical policy; and other available clinical information. The Health Plan makes no representations and accepts no liability with respect to the content of any external information used or relied upon in developing this clinical policy. This clinical policy is consistent with standards of medical practice current at the time that this clinical policy was approved. "Health Plan" means a health plan that has adopted this clinical policy and that is operated or administered, in whole or in part, by Centene Management Company, LLC, or any of such health plan's affiliates, as applicable.

The purpose of this clinical policy is to provide a guide to medical necessity, which is a component of the guidelines used to assist in making coverage decisions and administering benefits. It does not constitute a contract or guarantee regarding payment or results. Coverage decisions and the administration of benefits are subject to all terms, conditions, exclusions and limitations of the coverage documents (e.g., evidence of coverage, certificate of coverage, policy, contract of insurance, etc.), as well as to state and federal requirements and applicable Health Plan-level administrative policies and procedures.

This clinical policy is effective as of the date determined by the Health Plan. The date of posting may not be the effective date of this clinical policy. This clinical policy may be subject to applicable legal and regulatory requirements relating to provider notification. If there is a discrepancy between the effective date of this clinical policy and any applicable legal or regulatory requirement, the requirements of law and regulation shall govern. The Health Plan retains the right to change, amend or withdraw this clinical policy, and additional clinical policies may be developed and adopted as needed, at any time.

This clinical policy does not constitute medical advice, medical treatment or medical care. It is not intended to dictate to providers how to practice medicine. Providers are expected to exercise professional medical judgment in providing the most appropriate care, and are solely responsible for the medical advice and treatment of members/enrollees. This clinical policy is not intended to recommend treatment for members/enrollees. Members/enrollees should consult with their treating physician in connection with diagnosis and treatment decisions.

Providers referred to in this clinical policy are independent contractors who exercise independent judgment and over whom the Health Plan has no control or right of control. Providers are not agents or employees of the Health Plan.