STATE OF IOWA DEPARTMENT OF
Health AND Human
SERVICES

# Elaprase (idursulfase)
## PAM-004

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| **Iowa Medicaid Program:** | Prior Authorization | **Effective Date:** | 01/01/2008 |
| **Revision Number:** | 9 | **Last Rev Date:** | 04/19/2024 |
| **Reviewed By:** | Medicaid Medical Director | **Next Rev Date:** | 04/18/2025 |
| **Approved By:** | Medicaid Clinical Advisory Committee | **Approved Date:** | 08/16/2017 |

## Overview

| | |
|---|---|
| Medication:[1] | idursulfase |
| Brand Name: | Elaprase® |
| Pharmacologic Category: | Hydrolytic lysosomal glycosaminoglycan (GAG)-specific enzyme |
| FDA-Approved Indication(s): | Indicated for patients with mucopolysaccharidosis type II (MPS II, Hunter syndrome).<br>• Has been shown to improve walking capacity in patients 5 years of age and older.<br>• In patients 16 months to 5 years of age, no data are available to demonstrate improvement in disease-related symptoms or long-term clinical outcome; however, treatment with Elaprase® has reduced spleen volume similarly to that of adults and children 5 years of age and older.<br>• Safety and efficacy have not been established in patients less than 16 months of age. |
| How Supplied: | 6 mg/3 mL (2 mg/mL) in single-use vial |
| Dosage and Administration: | 0.5 mg per kg of body weight, administered once weekly as an intravenous (IV) infusion |
| Benefit Category: | Medical |

**BOXED WARNING: RISK OF ANAPHYLAXIS**

Life-threatening anaphylactic reactions have occurred in some patients during and up to 24 hours after Elaprase® infusions. Anaphylaxis, presenting as respiratory distress, hypoxia, hypotension, urticaria and/or angioedema of throat or tongue have been reported to occur during and after Elaprase® infusions, regardless of duration of the course of treatment. Closely observe patients during and after Elaprase® administration and be prepared to manage anaphylaxis. Inform patients of the signs and symptoms of anaphylaxis and have them seek immediate medical care should symptoms occur. Patients with compromised respiratory function or acute respiratory disease may be at risk of serious acute exacerbation of their respiratory compromise due to hypersensitivity reactions and require additional monitoring.

## Descriptive Narrative

Mucopolysaccharidoses (MPS) are lysosomal storage disorders caused by the deficiency of enzymes required for the stepwise breakdown of glycosaminoglycans (GAGs), previously known as mucopolysaccharides. Fragments of partially degraded GAGs accumulate in the lysosomes resulting in cellular dysfunction and clinical abnormalities. The MPS are rare conditions, with an estimated total incidence of all types of MPS of approximately 1 in 20,000 live births.

All of the MPS are autosomal recessive disorders, with the exception of MPS II, which is X linked. MPS II (MIM #309900) is also known as Hunter syndrome. This disorder is caused by a

deficiency of iduronate 2-sulfatase (IDS), which results in storage of heparan and dermatan sulfate (although the disorder is X-linked, cases in females have been reported). MPS II is a progressively debilitating disorder; however, the rate of progression varies among affected individuals.[2] The enzyme deficiency may be due to total lack of enzyme, but is more often from decreased production, decreased catalytic activity, or protein misfolding.[3]

In 1972, V.A. McKusick[4] recognized two clinically distinguishable forms of MPSII:

1. A severe form (called MPS IIA) with progressive intellectual disability and physical disability and death before 15 years of age in most cases.
2. A mild form (called MPS IIB) compatible with survival to adulthood in which reproduction is known to have occurred and in which intellect is impaired minimally, if at all. MPS IIB is also referred to as attenuated mucopolysaccharidosis Type IIB).

| Comparison[5] | Type A MPS II – severe form | Type B MPS II – milder attenuated form |
|---|---|---|
| Disease presentation | • Disease presentation usually occurs between 2 – 4 years of age | • Disease presentation typically occurs in adolescence or adulthood |
| Clinical features at presentation | • coarse facies • short stature<br>• skeletal deformities • joint stiffness<br>• developmental delay • intellectual disability | • Many of the same physical features from Type A are present in Type B (e.g., joint stiffness, coarse facial features) but become evident over a more protracted time period |
| Disease characterizations | • Progressive neurological involvement<br>• Concurrent somatic effects<br>• Communicating hydrocephalus (may develop; further contributes to neurological deterioration)<br>• Cardiac, pulmonary, and gastrointestinal dysfunction | • Intelligence is usually preserved<br>• Somatic involvement has a decreased rate of progression and lesser degree of eventual handicap<br>• Communicating hydrocephalus doesn't occur as often |
| Life expectancy | • 10-15 years<br>• Death is usually due to complications of obstructive airway disease, cardiac failure, or a combination of both | • May live well into seventh or eighth decades of life with supportive care and management |

## Guidelines

A clinical practice resource of the treatment of mucopolysaccharidosis type II (MPS II, Hunter syndrome) was published by the American College of Medical Genetics and Genomics in 2020.3 The authors of this resource state the following:

> *"Most rare diseases, even those with approved therapies, lack enough high-quality data to be able to create an evidence-based guideline to assist clinicians in the care of these individuals. MPS II is no exception. Our attempts to gather all available data from multiple sources, including gray sources (material produced by organizations or government outside of academic publishing), via a systematic evidence-based review failed to yield enough information to create a formal clinical guideline based on evidence alone. We attempted to provide an alternative means for guidance through an unbiased expert consensus statement using a Delphi approach."*

The Delphi study yielded the following recommendations:

1. All individuals with severe MPS II or predicted to have severe MPS II based on genotype warrant starting enzyme replacement therapy (ERT), prior to showing signs or symptoms.
2. Individuals with signs or symptoms with either attenuated or severe MPS II warrant ERT.
3. Individuals with attenuated MPS II who are not showing signs or symptoms of disease do not warrant ERT.
4. Home infusions may be considered for those with early disease, easily managed ERT infusion reactions, and a stable home environment.
5. Individuals receiving ERT who have developed allergic reactions that cannot be controlled by standard therapies or immunomodulation should have ERT discontinued.
6. Pressure equalizing tubes and hearing aids are useful therapies.
7. Clinical evaluation of liver and spleen size are recommended for judging clinical effectiveness of treatment, with optional use of imaging modalities (ultrasound or MRI of the abdomen) to follow organ size. Pulmonary function tests are recommended if the individual can reliably perform them, but there are concerns on the utility of the 6-minute walk test (6-MWT). Lab studies of GAGs are recommended, as well as antibodies to ERT to assess infusion reactions. Finally, neuropsychology testing is recommended for following disease progress.

## Criteria

Prior authorization is required.

Elaprase® is considered medically necessary when **ALL** of the following are met:

1. Diagnosis of mucopolysaccharidoses type II (MPS II) as confirmed by an enzyme assay demonstrating a deficiency of iduronate 2-sulfatase (I2S) enzyme activity or by genetic testing; **AND**
2. Member is 16 months of age or older; **AND**
3. Prescribed by, or in consultation with, a provider specializing in metabolic disorders; **AND**
4. Member meets **ONE** of the following (a *or* b):
    a. Diagnosis of Type A MPS II (severe form); **OR**
    b. Diagnosis of Type B MPS II (milder attenuated form) **AND** member is displaying symptoms *attributed to Type B MPS II*, such as:
        i. Hepatosplenomegaly; and/or
        ii. Skeletal deformities; and/or
        iii. Dysostosis; and/or
        iv. Neurocognitive decline; and/or
        v. Cardiovascular disorders; and/or
        vi. Impaired respiratory function; **AND**
5. Request meets one of the following (a or b):
    a. Regimen prescribed does not exceed 0.5 mg/kg once weekly; or
    b. Regimen is supported by clinical practice guidelines. Supporting clinical documentation must be provided with any request for which regimen prescribed does not align with FDA-approved labeling.

Elaprase® is considered medically necessary for continuation of therapy when **ALL** of the following are met:

1. Member is currently receiving medication through the Iowa Medicaid benefit or has previously met initial approval criteria; **AND**
2. Documentation of positive clinical response to therapy, as evidenced by stabilization/ improvement of spleen volume, and/or liver volume, and/or forced vital capacity (FVC), and/or 6-minute walk time (6-MWT); **AND**
3. Request meets one of the following (a or b):
    a. Regimen prescribed does not exceed 0.5 mg/kg once weekly; or
    b. Regimen prescribed is supported by clinical practice guidelines. Supporting clinical documentation must be provided with any request for which regimen prescribed does not align with FDA-approved labeling.

## Approval Duration and Quantity Limits

| | Initial Authorization | Subsequent Authorization(s) |
|---|---|---|
| Approval Duration | 6 months | 12 months |
| Quantity Limits | Weight-based; not to exceed 0.5 mg/kg once weekly | |

## Coding and Product Information

The following list(s) of codes and product information are provided for reference purposes only and may not be all inclusive. The inclusion of a code does not imply any right to reimbursement or guarantee claim payment, nor does the exclusion of a code imply that its association to the HCPCS code is inappropriate.

| HCPCS | Description |
|---|---|
| J1743 | Injection, idursulfase, 1 mg |

| ICD-10 | Description |
|---|---|
| E76.1 | Mucopolysaccharidosis, type II |
| E76.3 | Mucopolysaccharidoses, unspecified |

| NDC | Labeler | Dosage | Pkg Size | Pkg Qty | Units/Pkg |
|---|---|---|---|---|---|
| 54092-0700-01 | Takeda Pharmaceuticals U.S.A., Inc. | 1 mg | 1 | EA | 6 |

## Compliance

1. Should conflict exist between this policy and applicable statute, the applicable statute shall supersede.
2. Federal and State law, as well as contract language, including definitions and specific contract provisions or exclusions, take precedence over medical policy and must be considered first in determining eligibility for coverage.
3. Medical technology is constantly evolving, and Iowa Medicaid reserves the right to review and update medical policy on an annual or as-needed basis.

Medical necessity guidelines have been developed for determining coverage for member benefits and are published to provide a better understanding of the basis upon which coverage decisions are made. Medical necessity guidelines are developed for selected physician-administered medications found to be safe and proven to be effective in a limited, defined population or clinical circumstances. They include concise clinical coverage criteria based on current literature review, consultation with practicing physicians in the service area who are medical experts in the particular field, FDA and other government agency policies, and standards adopted by national accreditation organizations. Criteria are revised and updated annually, or more frequently if new evidence becomes available that suggests needed revisions.

## References


[1] Elaprase prescribing information (09/2021). Takeda Pharmaceuticals U.S.A., Inc.: Lexington, MA. Available online at www.elaprase.com/hcp. Accessed January 2, 2024.

[2] Hahn S. Mucopolysaccharidoses: Clinical features and diagnosis. Tepas E, ed. UpToDate. Waltham, MA: UpToDate Inc. www.uptodate.com. Accessed January 24, 2024.

[3] McBride KL, Berry SA, Braverman N; ACMG Therapeutics Committee. Treatment of mucopolysaccharidosis type II (Hunter syndrome): a Delphi derived practice resource of the American College of Medical Genetics and Genomics (ACMG). Genet Med. 2020 Nov;22(11):1735-1742. Epub 2020 Aug 3. PMID: 32741966.

[4] Online Mendelian Inheritance in Man, OMIM. Johns Hopkins University, Baltimore, MD. MIM Number: 309900: Mucopolysaccharidosis, Type II; MPS2. Last edited 01/13/2023. Available online at www.omim.org. Accessed January 24, 2024.

[5] Defandi GL. Hunter Syndrome (Mucopolysaccharidosis Type II). Published online: emedicine.medscape.com/article/944723-overview. Last updated April 18, 2018. Accessed January 4, 2023.


Development of utilization management criteria may also involve research into other state Medicaid programs, other payer policies, consultation with experts and review by the Medicaid Clinical Advisory Committee (CAC). These sources may not be referenced individually unless they are specifically published and are otherwise applicable to the criteria at issue.

## Criteria Change History

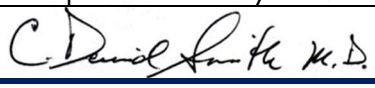
| Change Date | Changed By | Description of Change | Version |
|---|---|---|---|
| [mm/dd/yyyy] | | | |
| **Signature** | | | |

| Change Date | Changed By | Description of Change | Version |
|---|---|---|---|
| 04/19/2024 | CAC | Annual review (postponed from January to April to align with other enzyme replacement policies). Added boxed warning regarding risk of anaphylaxis. Added dosing into criteria. Changed labeler name from Shire to Takeda Pharmaceuticals, U.S.A., Inc. | 9 |
| **Signature** | | | |
| William (Bill) Jagiello, DO | |  | |

| Change Date | Changed By | Description of Change | Version |
|---|---|---|---|
| 01/20/2023 | CAC | Annual review. Added table comparing Types A and B MPS II in the Descriptive Narrative. | 8 |
| **Signature** | | | |
| William (Bill) Jagiello, DO | |  | |

| Change Date | Changed By | Description of Change | Version |
|---|---|---|---|
| 01/21/2022 | CAC | Criteria re-write. Formatting changes. | 7 |
| **Signature** | | | |
| William (Bill) Jagiello, DO | |  | |

| Change Date | Changed By | Description of Change | Version |
|---|---|---|---|
| 07/17/2020 | Medical Director | No longer requires prior authorization. | 6 |
| **Signature** | | | |
| William (Bill) Jagiello, DO | |  | |

| Change Date | Changed By | Description of Change | Version |
|---|---|---|---|
| 07/15/2016 | Medical Director | Added paragraph with description above Criteria. Criterion #1 added description of Hunter syndrome. | 5 |
| **Signature** | | | |
| C. David Smith, MD | |  | |

| Change Date | Changed By | Description of Change | Version |
|---|---|---|---|
| 07/17/2015 | CAC | Added last paragraph in References. | 4 |
| **Signature** | | | |

| Change Date | Changed By | Description of Change | Version |
|---|---|---|---|
| 07/19/2013 | CAC | Criterion #2 was removed and #3 became #2. | 3 |
| **Signature** | | | |

| Change Date | Changed By | Description of Change | Version |
|---|---|---|---|
| 04/26/2013 | Medical Director | Added details of drug indication and criteria around walking capacity at CAC request. | 2 |
| **Signature** | | | |

| Change Date | Changed By | Description of Change | Version |
|---|---|---|---|
| 07/27/2012 | CAC | Generic name of medication and technical diagnosis name. | 1 |
| **Signature** | | | |

CAC = Medicaid Clinical Advisory Committee