SmartPA Criteria Proposal

Drug/Drug Class:	Nulibry Clinical Edit
First Implementation Date:	November 18, 2021
Proposed Date:	April 18, 2023
Prepared for:	MO HealthNet
Prepared by:	MO HealthNet/Conduent
Criteria Status:	☒Existing Criteria ☐Revision of Existing Criteria ☐New Criteria

Executive Summary

Purpose: Ensure appropriate utilization and control of Nulibry™ (fosdenopterin)

Why Issue Selected: On February 26, 2021, Nulibry™ became the first FDA-approved agent to reduce the risk of mortality in patients with molybdenum cofactor deficiency (MoCD) Type A, a rare condition that is estimated to occur in 1 in 100,000 - 200,000 newborns worldwide. Three types of MoCD have been classified: Type A, Type B, and Type C. Type A, the most common type, is an autosomal recessive condition caused by a mutation in the molybdenum cofactor synthesis 1 (*MOCS1)* gene which leads to deficient synthesis of cyclic pyranopterin monophosphate (cPMP). The resultant downstream effect of the DNA sequence change is a buildup of the neurotoxic metabolite S-sulfocysteine (SSC), which leads to rapid and irreversible neurological damage. Patients with the classical severe form of MoCD are normally asymptomatic at birth, but within a few hours to days develop early signs and symptoms of encephalopathy, intractable seizures, and feeding difficulties that are characteristic of this rapidly progressing disorder. Children with MoCD that survive beyond the first few months of life usually experience irreversible brain damage coupled with severe developmental delays. Without intervention, the median age of survival of children with MoCD is only 4 years.

Prior to Nulibry, no therapeutic alternatives existed beyond supportive therapies, such as those for the management of seizures. Nulibry, administered as a once daily intravenous infusion, functions as a substrate replacement therapy by providing an exogeneous source of cPMP. Clinical trials demonstrated an increased 3-year survival rate of 84% vs 55% in patients treated with Nulibry compared to those from a natural history study. The most common side effects were catheter-related complications, pyrexia, and viral infections.

Due to the high cost and specific approved indication, MO HealthNet will impose clinical criteria to ensure appropriate utilization of Nulibry.

Program-Specific Information:

Drug	Cost per vial	Cost per year (maintenance dosing based on a 20 kg patient)
NULIBRY 9.5 MG VIAL	$1,424 WAC	$1,025,279 WAC

Type of Criteria:

☐ **Increased risk of ADE**
☒ **Appropriate Indications**
☐ **Preferred Drug List**
☒ **Clinical Edit**

Data Sources: ☐ **Only Administrative Databases** ☒ **Databases + Prescriber-Supplied**

Setting & Population

- Drug class for review: Nulibry™ (fosdenopterin)
- Age range: All appropriate MO HealthNet participants

Approval Criteria

Initial Therapy:

- Confirmed or suspected molybdenum cofactor deficiency (MoCD) Type A **AND**
- Prescribed by or in consultation with a neonatologist or other specialist in the treated disease state

Continuation of Therapy:

- Initial approval is for 3 months, renewal of prior authorization may be given following documentation of the following:
  - Genetic testing to confirm biallelic pathogenic variant of *MOCS1* gene **AND**
  - Claim does not exceed 0.9 mg/kg per day

Denial Criteria

- Therapy will be denied if all approval criteria are not met

Required Documentation

Laboratory Results:	X	Progress Notes:	
MedWatch Form:		Other:	X

Disposition of Edit

Denial: Exception code "0682" (Clinical Edit)
Rule Type: CE

Default Approval Period

1 year

References

- NULIBRY™ (fosdenopterin) [package insert]. Boston, MA: Origin Biosciences, Inc. October 2022.
- Nagappa, M., Bindu, P.S., Taly, A.B. Child Neurology: Molybdenum cofactor deficiency. American Journal of Neurology. December 8, 2015; 85(23). https://n.neurology.org/content/85/23/e175. Accessed January 20, 2023.
- IPD Analytics. New Drug Review: Nulibry (fosdenopterin). March 2021.
- BridgeBio Pharma's Origin Biosciences Presents New Data On The Natural History Of Molybdenum Cofactor Deficiency (MoCD) Type A At The Society Of The Study Of Inborn Errors Of Metabolism (SSIEM) Conference. September 5, 2019. https://bridgebio.com/news/bridgebio-pharmas-origin-

biosciences-presents-new-data-on-the-natural-history-of-molybdenum-cofactor-deficiency-mocd-type-a-at-the-society-of-the-study-of-inborn-errors-of-metabolism-ssiem. Accessed January 20, 2023.
- Scelsa, B., Gasperini, S., Righini A., et. Al. Mild phenotype in Molybdenum cofactor deficiency: A new patient and review of the literature. Molecular Genetics & Genomic Medicine. 2019 June; 7)6): e657. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6565584/. Accessed January 20, 2023.
- MedlinePlus. Molybdenum cofactor deficiency. Molybdenum cofactor deficiency: MedlinePlus Genetics. March 1, 2014. Accessed January 20, 2023.