

**POLICY:** Oncology – Kyprolis (carfilzomib injection for intravenous use – Amgen/Onyx Pharmaceuticals)

**EFFECTIVE DATE:** 1/1/2021

**LAST REVISION DATE:** 04/12/2023

**COVERAGE CRITERIA FOR:** All Aspirus Medicare Plans

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## OVERVIEW

Kyprolis, a proteasome inhibitor, is approved for **multiple myeloma** in the following situations:<sup>1</sup>

- for relapsed or refractory disease, in combination with: dexamethasone ± lenalidomide, Darzalex (daratumumab intravenous infusion)/dexamethasone, Darzalex Faspro (daratumumab and hyaluronidase-fihj subcutaneous injection)/dexamethasone, or with Sarclisa (isatuximab-irfc intravenous infusion)/dexamethasone in adults who have received one to three lines of previous therapy.
- for relapsed or refractory disease, as a single agent in adults who have received one or more lines of therapy.

## Guidelines

Kyprolis is discussed in guidelines from the National Comprehensive Cancer Network (NCCN).<sup>2</sup>

- **Multiple Myeloma:** The NCCN guidelines (version 3.2023 – December 8, 2022) recommend multiple therapeutic regimens that may be used for primary therapy and previously treated multiple myeloma.<sup>3</sup> For transplant and non-transplant candidates, Kyprolis/lenalidomide/dexamethasone is recommended as a preferred regimen for primary treatment, and Kyprolis/cyclophosphamide/dexamethasone is among the regimens that are useful in certain circumstances. Additionally, Kyprolis/Darzalex/dexamethasone is listed as useful in certain circumstances as primary therapy for transplant candidates. For previously treated multiple myeloma, multiple preferred regimens are listed, including Kyprolis/lenalidomide/dexamethasone, Kyprolis/Sarclisa/dexamethasone, and Kyprolis/Darzalex/dexamethasone. Additionally, there are multiple Kyprolis-containing regimens recommended as other or useful in certain circumstances.
- **Systemic Light Chain Amyloidosis:** The NCCN guidelines (version 2.2023 – November 28, 2022) list Kyprolis ± dexamethasone as a therapy for previously treated disease, for patients with non-cardiac amyloidosis.<sup>6</sup> Of note, cardiac toxicity and hypertension are among the Warnings listed for Kyprolis.<sup>1</sup>
- **Waldenstrom's Macroglobulinemia/Lymphoplasmacytic Lymphoma:** In NCCN guidelines (version 1.2023 – July 6, 2022), Kyprolis/rituximab/dexamethasone is listed among other recommended regimens for primary treatment of Waldenstrom's Macroglobulinemia/lymphoplasmacytic lymphoma.<sup>4</sup>

## Dosing Information

For multiple myeloma, the dosing regimen is individualized. Refer to the [Appendix](#) for more specific dosing regimens recommended in the prescribing information. Dose modifications of Kyprolis are recommended for the management of hematological toxicity (e.g., neutropenia, thrombocytopenia), renal toxicity, other non-hematological toxicity, and hepatic impairment. This may include reducing the dose (to a minimum of 15 mg/m<sup>2</sup>) or withholding the drug until the toxicity is resolved. In some cases, treatment is continued until disease progression or unacceptable toxicity. Therapy is individualized with careful consideration of the risks and benefits of continued treatment. In Waldenstrom's macroglobulinemia,

limited dosing is available; however, safety has been established for the FDA-approved dosing of Kyprolis. In a small Phase II study, Kyprolis was administered with Rituxan and dexamethasone for patients with Waldenström's macroglobulinemia.<sup>5</sup> During Cycle 1, the dose of Kyprolis was 20 mg/m<sup>2</sup>. During Cycles 2 through 6, the dose of Kyprolis was 36 mg/m<sup>2</sup> on Days 1, 2, 8, and 9 of each 21-day cycle. This was followed by maintenance dosing (8 weeks later) with Kyprolis at a dose of 36 mg/m<sup>2</sup> on Days 1 and 2 every 8 weeks for 8 cycles.

### **POLICY STATEMENT**

Prior Authorization is recommended for medical benefit coverage of Kyprolis. Approval is recommended for those who meet the **Criteria** and **Dosing** for the listed indications. Extended approvals are allowed if the patient continues to meet the criteria and dosing. Requests for doses outside of the established dosing documented in this policy will be considered on a case-by-case basis by a clinician (i.e., Medical Director or Pharmacist). All approvals are provided for the duration noted below. Because of the specialized skills required for evaluation and diagnosis of patients treated with Kyprolis, as well as the monitoring required for adverse events and long-term efficacy, approval requires Kyprolis to be prescribed by or in consultation with a physician who specializes in the condition being treated.

**Automation:** None.

### **RECOMMENDED AUTHORIZATION CRITERIA**

Coverage of Kyprolis is recommended in those who meet one of the following criteria:

#### **FDA-Approved Indication**

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- 1. Multiple Myeloma.** Approve for 1 year if the patient meets ALL of the following (A, B, and C):
- A) Patient is  $\geq 18$  years of age; AND
  - B) Patient meets ONE of the following (i or ii):
    - i. Kyprolis will be used in combination with lenalidomide or cyclophosphamide and dexamethasone; OR
    - ii. Patient has tried at least ONE prior regimen for multiple myeloma; AND  
Note: Examples include bortezomib, lenalidomide, cyclophosphamide, Darzalex (daratumumab intravenous infusion), Ninlaro (ixazomib capsules).
  - C) The medication is prescribed by or in consultation with an oncologist or a hematologist.

**Dosing.** Approve if the requested dosing meets the following (A and B):

- A) Each single dose must not exceed 70 mg/m<sup>2</sup>; AND
- B) Patient receives a maximum of six infusions per 28-day treatment cycle.

#### **Other Uses with Supportive Evidence**

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- 2. Light Chain Amyloidosis.** Approve for 1 year if the patient meets ALL of the following (A, B, C, and D):
- A) Patient is  $\geq 18$  years of age; AND
  - B) Patient has non-cardiac amyloidosis; AND
  - C) Patient has received at least one other regimen for this condition; AND  
Note: Examples of agents used in other regimens include bortezomib, lenalidomide, cyclophosphamide, and melphalan.
  - D) The medication is prescribed by or in consultation with an oncologist or a hematologist.

**Dosing.** Approve if the requested dosing meets the following (A and B):

- A) Each single dose must not exceed 70 mg/m<sup>2</sup>; AND
- B) Patient receives a maximum of six infusions per 28-day treatment cycle.

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**3. Waldenstrom’s Macroglobulinemia/Lymphoplasmacytic Lymphoma.** Approve for 1 year if the patient meets ALL of the following (A, B, and C):

- A) Patient is ≥ 18 years of age; AND
- B) The medication will be used in combination with a rituximab product and dexamethasone; AND
- C) The medication is prescribed by or in consultation with an oncologist or a hematologist.

**Dosing.** Approve if the requested dosing meets the following (A and B):

- A) Each single dose must not exceed 70 mg/m<sup>2</sup>; AND
- B) Patient receives a maximum of six infusions per 28-day treatment cycle.

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### CONDITIONS NOT RECOMMENDED FOR APPROVAL

Coverage of Kyprolis is not recommended in the following situations:

1. Coverage is not recommended for circumstances not listed in the Recommended Authorization Criteria. Criteria will be updated as new published data are available.

### REFERENCES

1. Kyprolis® intravenous infusion [prescribing information]. Onyx/Amgen: Thousand Oaks, CA; June 2022.
2. The NCCN Drugs and Biologics Compendium. © 2023 National Comprehensive Cancer Network. Available at: <http://www.nccn.org>. Accessed on April 9, 2023. Search term: carfilzomib.
3. The NCCN Multiple Myeloma Clinical Practice Guidelines in Oncology (version 3.2023 – December 8, 2022). © 2022 National Comprehensive Cancer Network. Available at: <http://www.nccn.org>. Accessed on April 9, 2023.
4. The NCCN Waldenstrom’s Macroglobulinemia/Lymphoplasmacytic Lymphoma Clinical Practice Guidelines in Oncology (version 1.2023 – July 6, 2022). © 2022 National Comprehensive Cancer Network. Available at: <http://www.nccn.org>. Accessed on April 9, 2023.
5. Treon SP, Tripsas CK, Meid K, et al. Carfilzomib, rituximab, and dexamethasone (CaRD) treatment offers a neuropathy-sparing approach for treating Waldenström's macroglobulinemia. *Blood*. 2014;124(4):503-510.
6. The NCCN Systemic Light Chain Amyloidosis Clinical Practice Guidelines in Oncology (version 2.2023 – November 28, 2022). © 2022 National Comprehensive Cancer Network. Available at: <http://www.nccn.org>. Accessed on April 9, 2023.

### HISTORY

Type of Revision	Summary of Changes	Review Date
Annual Revision	<b>Light Chain Amyloidosis:</b> This condition was added to the policy as an Other Use With Supportive Evidence.	04/06/2022
Annual Revision	<b>Multiple Myeloma:</b> In reference to Kyprolis combination therapy, added “or cyclophosphamide”. Also, in reference to one prior regimen, added “cyclophosphamide” in the Note as an example.	04/12/2023

**APPENDIX**

**Table 1. Approved Kyprolis Dosing When Administered with Dexamethasone.\***

Kyprolis Regimen	Cycle 1								
	Day 1	Day 2	Days 3-7	Day 8	Day 9	Days 10-14	Day 15	Day 16	Days 17-28
Kyprolis once weekly regimen	20 mg/m <sup>2</sup>	--	--	70 mg/m <sup>2</sup>	--	--	70 mg/m <sup>2</sup>	--	--
Kyprolis twice weekly regimen	20 mg/m <sup>2</sup>	20 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--
Kyprolis Regimen	Cycles 2 through 9								
Kyprolis once weekly regimen	70 mg/m <sup>2</sup>	--	--	70 mg/m <sup>2</sup>	--	--	70 mg/m <sup>2</sup>	--	--
Kyprolis twice weekly regimen	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--
Kyprolis Regimen	Cycles 10 and later								
Kyprolis once weekly regimen	70 mg/m <sup>2</sup>	--	--	70 mg/m <sup>2</sup>	--	--	70 mg/m <sup>2</sup>	--	--
Kyprolis twice weekly regimen	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--

\* Refer to the Kyprolis prescribing information for recommended dose modifications based on toxicity and for dosing schedule for concomitant dexamethasone.

**Table 2. Approved Kyprolis Dosing When Administered with Revlimid and Dexamethasone.\***

Kyprolis Regimen	Cycle 1								
	Day 1	Day 2	Days 3-7	Day 8	Day 9	Days 10-14	Day 15	Day 16	Days 17-28
Kyprolis twice weekly regimen	20 mg/m <sup>2</sup>	20 mg/m <sup>2</sup>	--	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--
Kyprolis Regimen	Cycles 2 through 12								
Kyprolis once weekly regimen	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--
Kyprolis Regimen	Cycles 13 and later <sup>^</sup>								
Kyprolis once weekly regimen	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--	--	--	--	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--

\* Refer to the Kyprolis prescribing information for recommended dose modifications based on toxicity and for dosing schedule for Revlimid and dexamethasone.

<sup>^</sup> Kyprolis is administered through Cycle 18.

**Table 3. Approved Kyprolis Dosing When Administered as Monotherapy.\***

Kyprolis Regimen	Cycle 1								
	Day 1	Day 2	Days 3-7	Day 8	Day 9	Days 10-14	Day 15	Day 16	Days 17-28
Kyprolis 20/27 mg/m <sup>2</sup> regimen	20 mg/m <sup>2</sup>	20 mg/m <sup>2</sup>	--	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--
Kyprolis 20/56 mg/m <sup>2</sup> regimen	20 mg/m <sup>2</sup>	20 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--
Kyprolis Regimen	Cycles 2 through 12								
Kyprolis 20/27 mg/m <sup>2</sup> regimen	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--
Kyprolis 20/56 mg/m <sup>2</sup> regimen	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--
Kyprolis Regimen	Cycles 13 and later								
Kyprolis 20/27 mg/m <sup>2</sup> regimen	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--	--	--	--	27 mg/m <sup>2</sup>	27 mg/m <sup>2</sup>	--
Kyprolis 20/56 mg/m <sup>2</sup> regimen	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--

\* Refer to the Kyprolis prescribing information for recommended dose modifications based on toxicity.

**Table 4. Approved Kyprolis Dosing When Administered in Combination with Darzalex Intravenous or Darzalex Faspro or Sarclisa (20/56 regimen only) and Dexamethasone.<sup>1\*</sup>**

Kyprolis Regimen	Cycle 1								
	Day 1	Day 2	Days 3-7	Day 8	Day 9	Days 10-14	Day 15	Day 16	Days 17-28
Kyprolis 20/56 regimen	20 mg/m <sup>2</sup>	20 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--
Kyprolis 20/70 mg/m <sup>2</sup> regimen	20 mg/m <sup>2</sup>	--	--	70 mg/m <sup>2</sup>	--	--	70 mg/m <sup>2</sup>	--	--
Kyprolis Regimen	Cycle 2 and later								
Kyprolis 20/56 regimen	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--	56 mg/m <sup>2</sup>	56 mg/m <sup>2</sup>	--
Kyprolis 20/70 mg/m <sup>2</sup> regimen	70 mg/m <sup>2</sup>	--	--	70 mg/m <sup>2</sup>	--	--	70 mg/m <sup>2</sup>	--	--

\* Refer to the Kyprolis prescribing information for recommended dose modifications based on toxicity.