# Cyramza® (ramucirumab)

(Intravenous)

Document Number: IC-0199

Last Review Date: 06/01/2023 Date of Origin: 06/24/2014

Dates Reviewed: 09/2014, 01/2015, 05/2015, 11/2015, 04/2016, 08/2016, 11/2016, 05/2017, 08/2017, 11/2017, 02/2018, 05/2018, 09/2018, 12/2018, 03/2019, 06/2019, 09/2019, 12/2019, 03/2020, 06/2020, 09/2020, 12/2020, 03/2021, 06/2021, 09/2021, 12/2021, 03/2022, 06/2022, 09/2022, 12/2022, 03/2023, 06/2023

## I. Length of Authorization

Coverage will be provided for 6 months and may be renewed.

## **II.** Dosing Limits

### A. Quantity Limit (max daily dose) [NDC Unit]:

- Cyramza 100 mg/10 mL single-dose vial: 4 vials per 14 days
- Cyramza 500 mg/50 mL single-dose vial: 2 vials per 14 days

#### B. Max Units (per dose and over time) [HCPCS Unit]:

Indication	Billable Units (BU)	Per unit time (days)
Gastric/Esophageal/Esophagogastric Junction Cancers, Colorectal Cancer, Appendiceal Adenocarcinoma, & HCC	180 BU	14 days
NSCLC	240 BU	14 days
MPM	240 BU	21 days

## III. Initial Approval Criteria <sup>1</sup>

Coverage is provided in the following conditions:

• Patient is at least 18 years of age; **AND** 

#### Universal Criteria <sup>1</sup>

- Patient does not have uncontrolled severe hypertension; AND
- Patient must not have had a surgical procedure within the preceding 2 weeks or have a surgical wound that has not fully healed; **AND**

#### Colorectal Cancer (CRC) † 1,3,9-11,17,18

- Used in combination with irinotecan or FOLFIRI (irinotecan, folinic acid/leucovorin, and fluorouracil); **AND**
- Used in one of the following treatment settings:

- Used as initial treatment for unresectable metastatic disease after previous FOLFOX (fluorouracil, folinic acid/leucovorin, and oxaliplatin) or CapeOX (capecitabine and oxaliplatin) within the past 12 months ‡; AND
  - Patient has mismatch repair proficient/microsatellite-stable (pMMR/MSS) disease; OR
  - Patient has mismatch repair deficient/microsatellite instability-high (dMMR/MSI-H) disease AND is not a candidate for immunotherapy (Note: Only applies to Colon Cancer), OR
- Used as subsequent therapy for progression of advanced or metastatic disease; AND
  - Patient has not previously been treated with irinotecan-based therapy

## Appendiceal Adenocarcinoma - Colon Cancer ‡ 3

- Used as subsequent therapy in combination with irinotecan or FOLFIRI (fluorouracil, leucovorin, and irinotecan) for progression of advanced or metastatic disease; **AND** 
  - Patient has mismatch repair proficient/microsatellite-stable (pMMR/MSS) disease;
     OR
  - Patient has mismatch repair deficient/microsatellite instability-high (dMMR/MSI-H) disease AND is not a candidate for or has progressed on checkpoint inhibitor immunotherapy; AND
- Patient has not previously been treated with irinotecan-based therapy

## Gastric, Esophageal, and Esophagogastric Junction Cancers † $\Phi$ 1-3,5-7,14,15

- Patient has adenocarcinoma histology; AND
- Used as subsequent therapy; **AND**
- Used as a single agent OR in combination with paclitaxel OR in combination with an irinotecan-based regimen; **AND** 
  - o Patient has unresectable locally advanced, recurrent, or metastatic disease; **OR**
  - o Patient is not a surgical candidate

#### Hepatocellular Carcinoma (HCC) † Φ 1,3,4,16

- Used as a single agent; AND
- Used as subsequent therapy for progressive disease; AND
- Patient has an alfa-fetoprotein (AFP) level of ≥ 400 ng/mL; AND
- Patient has Child-Pugh Class A hepatic impairment (i.e., excludes class B and C impairments);
   AND
  - o Patient was previously treated with sorafenib †; OR
  - o Patient has unresectable disease and is not a transplant candidate ‡; OR
  - Patient has liver-confined disease that is inoperable by performance status, comorbidity, or with minimal or uncertain extrahepatic disease ‡; OR

©2016 Health New England, Inc.

Page 2 of 9

Patient has metastatic disease or extensive liver tumor burden ‡

## Non-Small Cell Lung Cancer (NSCLC) † ‡ 1,3,8,12,13

- Patient has recurrent, advanced, or metastatic disease (excluding locoregional recurrence or symptomatic local disease without evidence of disseminated disease) or mediastinal lymph node recurrence with prior radiation therapy; AND
  - Used in combination with docetaxel; AND
    - Used as subsequent therapy for first progression after initial systemic therapy; AND
    - Patient has not previously been treated with docetaxel or ramucirumab; OR
  - Used in combination with erlotinib for EGFR mutation-positive disease with exon 19 deletions or exon 21 (L858R) substitution mutations; AND
    - Used as first-line therapy; OR
    - Used for continuation of therapy following disease progression on combination erlotinib and ramucirumab therapy for asymptomatic disease, symptomatic brain lesions, or symptomatic systemic limited progression;
       AND
      - ➤ Patient has T790M negative disease

#### Malignant Pleural Mesothelioma (MPM)\* ‡ 3,19,20

Used in combination with gemcitabine as subsequent therapy

† FDA Approved Indication(s); ‡ Compendia Recommended Indication(s); **Φ** Orphan Drug

## IV. Renewal Criteria 1,3,13

Coverage may be renewed based upon the following criteria:

- Patient continues to meet the universal and other indication-specific relevant criteria such
  as concomitant therapy requirements (not including prerequisite therapy), performance
  status, etc. identified in section III; AND
- Disease response with treatment as defined by stabilization of disease or decrease in size of tumor or tumor spread; AND
- Absence of unacceptable toxicity from the drug. Examples of unacceptable toxicity include: hemorrhage, arterial thromboembolic events, uncontrolled hypertension, infusion-related reactions, severe proteinuria (> 3g/24h), nephrotic syndrome, gastrointestinal perforations, impaired wound healing, posterior reversible encephalopathy syndrome (PRES), thyroid dysfunction, worsening of pre-existing hepatic impairment, etc.; AND

Non-Small Cell Lung Cancer (continuation of therapy in combination with erlotinib following disease progression):

©2016 Health New England, Inc.

<sup>\*</sup>Note: May also be used for pericardial mesothelioma and tunica vaginalis testis mesothelioma.

## V. Dosage/Administration 1,13-15,17,18,20

Indication	Dose
Colorectal Cancer, Appendiceal Adenocarcinoma, Gastric/Esophageal/ Esophagogastric Junction Cancers, Hepatocellular Carcinoma	Administer 8 mg/kg intravenously every 14 days until disease progression or unacceptable toxicity
Non-Small Cell Lung Cancer	In combination with docetaxel:  Administer 10 mg/kg intravenously every 21 days until disease progression or unacceptable toxicity  In combination with erlotinib:  Administer 10 mg/kg intravenously every 14 days until disease progression or unacceptable toxicity
Malignant Pleural Mesothelioma	In combination with gemcitabine: Administer 10 mg/kg intravenously every 21 days until tumor progression or unacceptable toxicity

## VI. Billing Code/Availability Information

#### HCPCS Code:

• J9308 - Injection, ramucirumab, 5 mg; 1 billable unit = 5 mg

#### NDC(s):

- Cyramza 100 mg/10 mL solution, single-dose vial: 00002-7669-xx
- Cyramza 500 mg/50 mL solution, single-dose vial: 00002-7678-xx

#### VII. References

- 1. Cyramza [package insert]. Indianapolis, IN; Eli Lilly and Company; March 2022. Accessed May 2023.
- 2. Fuchs CS, Tomasek J, Yong CJ, et al. Ramucirumab monotherapy for previously treated advanced gastric or gastro-esophageal junction adenocarcinoma (REGARD): an international, randomised, multicentre, placebo-controlled, phase 3 trial. Lancet. 2014 Jan 4; 383(9911):31-9. doi: 10.1016/S0140-6736(13)61719-5. Epub 2013 Oct 3.
- 3. Referenced with permission from the NCCN Drugs and Biologics Compendium (NCCN Compendium®) for ramucirumab. National Comprehensive Cancer Network, 2023. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed May 2023.

©2016 Health New England, Inc.

Page 4 of 9

- 4. Zhu AX, Kang YK, Yen CJ, et al. REACH-2: A randomized, double-blind, placebo-controlled phase 3 study of ramucirumab versus placebo as second-line treatment in patients with advanced hepatocellular carcinoma (HCC) and elevated baseline alpha-fetoprotein (AFP) following first-line sorafenib. J Clin Oncol 2018;36:4003.
- 5. De Vita F, Borg C, Farina G, et al. Ramucirumab and paclitaxel in patients with gastric cancer and prior trastuzumab: subgroup analysis from RAINBOW study. Future Oncol. 2019 Aug;15(23):2723-2731. doi: 10.2217/fon-2019-0243. Epub 2019 Jun 25.
- 6. Shitara K, Muro K, Shimada Y, et al. Subgroup analyses of the safety and efficacy of ramucirumab in Japanese and Western patients in RAINBOW: a randomized clinical trial in second-line treatment of gastric cancer. Gastric Cancer. 2016 Jul;19(3):927-38. doi: 10.1007/s10120-015-0559-z. Epub 2015 Oct 28.
- 7. Wilke H, Muro K, Van Cutsem E, et al. Ramucirumab plus paclitaxel versus placebo plus paclitaxel in patients with previously treated advanced gastric or gastro-oesophageal junction adenocarcinoma (RAINBOW): a double-blind, randomised phase 3 trial. Lancet Oncol. 2014 Oct;15(11):1224-35. doi: 10.1016/S1470-2045(14)70420-6. Epub 2014 Sep 17.
- 8. Garon EB, Ciuleanu TE, Arrieta O, et al. Ramucirumab plus docetaxel versus placebo plus docetaxel for second-line treatment of stage IV non-small-cell lung cancer after disease progression on platinum-based therapy (REVEL): a multicentre, double-blind, randomised phase 3 trial. Lancet. 2014 Aug 23;384(9944):665-73. doi: 10.1016/S0140-6736(14)60845-X. Epub 2014 Jun 2.
- 9. Yoshino T, Portnoy DC, Obermannová R, et al. Biomarker analysis beyond angiogenesis: RAS/RAF mutation status, tumour sidedness, and second-line ramucirumab efficacy in patients with metastatic colorectal carcinoma from RAISE-a global phase III study. Ann Oncol. 2019 Jan 1;30(1):124-131. doi: 10.1093/annonc/mdy461.
- 10. Obermannová R, Van Cutsem E, Yoshino T, et al. Subgroup analysis in RAISE: a randomized, double-blind phase III study of irinotecan, folinic acid, and 5-fluorouracil (FOLFIRI) plus ramucirumab or placebo in patients with metastatic colorectal carcinoma progression. Ann Oncol. 2016 Nov;27(11):2082-2090. Epub 2016 Aug 29.
- 11. Tabernero J, Yoshino T, Cohn AL, et al. Ramucirumab versus placebo in combination with second-line FOLFIRI in patients with metastatic colorectal carcinoma that progressed during or after first-line therapy with bevacizumab, oxaliplatin, and a fluoropyrimidine (RAISE): a randomised, double-blind, multicentre, phase 3 study. Lancet Oncol. 2015 May;16(5):499-508. doi: 10.1016/S1470-2045(15)70127-0. Epub 2015 Apr 12.
- 12. Nakagawa K, Garon EB, Seto T, et al. Ramucirumab plus erlotinib in patients with untreated, EGFR-mutated, advanced non-small-cell lung cancer (RELAY): a randomised, double-blind, placebo-controlled, phase 3 trial. Lancet Oncol. 2019 Dec;20(12):1655-1669. doi: 10.1016/S1470-2045(19)30634-5. Epub 2019 Oct 4.
- 13. Referenced with permission from the NCCN Drugs and Biologics Compendium (NCCN Compendium®) for Non-Small Cell Lung Cancer, Version 3.2023. National Comprehensive Cancer Network, 2023. The NCCN Compendium® is a derivative work of the NCCN

- Guidelines<sup>®</sup>. NATIONAL COMPREHENSIVE CANCER NETWORK<sup>®</sup>, NCCN<sup>®</sup>, and NCCN GUIDELINES<sup>®</sup> are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed May 2023.
- 14. Referenced with permission from the NCCN Drugs and Biologics Compendium (NCCN Compendium®) for Gastric Cancer, Version 1.2023. National Comprehensive Cancer Network, 2023. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed May 2023.
- 15. Referenced with permission from the NCCN Drugs and Biologics Compendium (NCCN Compendium®) for Esophageal and Esophagogastric Junction Cancers, Version 2.2023. National Comprehensive Cancer Network, 2023. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed May 2023.
- 16. Referenced with permission from the NCCN Drugs and Biologics Compendium (NCCN Compendium®) for Hepatocellular Carcinoma, Version 1.2023. National Comprehensive Cancer Network, 2023. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed May 2023.
- 17. Referenced with permission from the NCCN Drugs and Biologics Compendium (NCCN Compendium®) for Colon Cancer, Version 2.2023. National Comprehensive Cancer Network, 2023. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed May 2023.
- 18. Referenced with permission from the NCCN Drugs and Biologics Compendium (NCCN Compendium®) for Rectal Cancer, Version 2.2023. National Comprehensive Cancer Network, 2023. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed May 2023.
- 19. Referenced with permission from the NCCN Drugs and Biologics Compendium (NCCN Compendium®) for Mesothelioma: Pleural, Version 1.2023. National Comprehensive Cancer

Network, 2023. The NCCN Compendium® is a derivative work of the NCCN Guidelines®. NATIONAL COMPREHENSIVE CANCER NETWORK®, NCCN®, and NCCN GUIDELINES® are trademarks owned by the National Comprehensive Cancer Network, Inc. To view the most recent and complete version of the Compendium, go online to NCCN.org. Accessed May 2023.

20. Pinto C, Zucali PA, Pagano M, et al. Gemcitabine with or without ramucirumab as second-line treatment for malignant pleural mesothelioma (RAMES): a randomised, double-blind, placebo-controlled, phase 2 trial. Lancet Oncol. 2021 Oct;22(10):1438-1447. doi: 10.1016/S1470-2045(21)00404-6. Epub 2021 Sep 6. PMID: 34499874.

## **Appendix 1 – Covered Diagnosis Codes**

ICD-10	ICD-10 Description	
C15.3	Malignant neoplasm of upper third of esophagus	
C15.4	Malignant neoplasm of middle third of esophagus	
C15.5	Malignant neoplasm of lower third of esophagus	
C15.8	Malignant neoplasm of overlapping sites of esophagus	
C15.9	Malignant neoplasm of esophagus, unspecified	
C16.0	Malignant neoplasm of cardia	
C16.1	Malignant neoplasm of fundus of stomach	
C16.2	Malignant neoplasm of body of stomach	
C16.3	Malignant neoplasm of pyloric antrum	
C16.4	Malignant neoplasm of pylorus	
C16.5	Malignant neoplasm of lesser curvature of stomach, unspecified	
C16.6	Malignant neoplasm of greater curvature of stomach, unspecified	
C16.8	Malignant neoplasm of overlapping sites of stomach	
C16.9	Malignant neoplasm of stomach, unspecified	
C18.0	Malignant neoplasm of cecum	
C18.1	Malignant neoplasm of appendix	
C18.2	Malignant neoplasm of ascending colon	
C18.3	Malignant neoplasm of hepatic flexure	
C18.4	Malignant neoplasm of transverse colon	
C18.5	Malignant neoplasm of splenic flexure	
C18.6	Malignant neoplasm of descending colon	
C18.7	Malignant neoplasm of sigmoid colon	
C18.8	Malignant neoplasm of overlapping sites of large intestines	
C18.9	Malignant neoplasm of colon, unspecified	

ICD-10	ICD-10 Description	
C19	Malignant neoplasm of rectosigmoid junction	
C20	Malignant neoplasm of rectum	
C21.8	Malignant neoplasm of overlapping sites of rectum, anus and anal canal	
C22.0	Liver cell carcinoma	
C22.8	Malignant neoplasm of liver, primary, unspecified as to type	
C22.9	Malignant neoplasm of liver, not specified as primary or secondary	
C33	Malignant neoplasm of trachea	
C34.00	Malignant neoplasm of main bronchus	
C34.01	Malignant neoplasm of right main bronchus	
C34.02	Malignant neoplasm of left main bronchus	
C34.10	Malignant neoplasm of upper lobe, unspecified bronchus or lung	
C34.11	Malignant neoplasm of upper lobe, right bronchus or lung	
C34.12	Malignant neoplasm of upper lobe, left bronchus or lung	
C34.2	Malignant neoplasm of middle lobe, bronchus or lung	
C34.30	Malignant neoplasm of lower lobe, unspecified bronchus or lung	
C34.31	Malignant neoplasm of lower lobe, right bronchus or lung	
C34.32	Malignant neoplasm of lower lobe, left bronchus or lung	
C34.80	Malignant neoplasm of overlapping sites of unspecified bronchus and lung	
C34.81	Malignant neoplasm of overlapping sites of right bronchus and lung	
C34.82	Malignant neoplasm of overlapping sites of left bronchus and lung	
C34.90	Malignant neoplasm of unspecified part of unspecified bronchus or lung	
C34.91	Malignant neoplasm of unspecified part of right bronchus or lung	
C34.92	Malignant neoplasm of unspecified part of left bronchus or lung	
C45.0	Mesothelioma of pleura	
C45.2	Mesothelioma of pericardium	
C45.7	Mesothelioma of other sites	
C45.9	Mesothelioma, unspecified	
C78.00	Secondary malignant neoplasm of lung	
C78.01	Secondary malignant neoplasm of lung	
C78.02	Secondary malignant neoplasm of lung	
C78.6	Secondary malignant neoplasm of retroperitoneum and peritoneum	
C78.7	Secondary malignant neoplasm of liver and intrahepatic bile duct	
D37.1	Neoplasm of uncertain behavior of stomach	
D37.8	Neoplasm of uncertain behavior of other specified digestive organs	

ICD-10	ICD-10 Description	
D37.9	Neoplasm of uncertain behavior of digestive organ, unspecified	
Z85.00	Personal history of malignant neoplasm of unspecified digestive organ	
Z85.01	Personal history of malignant neoplasm of esophagus	
Z85.028	Personal history of other malignant neoplasm of stomach	
Z85.038	Personal history of malignant neoplasm of large intestine	
Z85.118	Personal history of other malignant neoplasm of bronchus and lung	

## Appendix 2 – Centers for Medicare and Medicaid Services (CMS)

Medicare coverage for outpatient (Part B) drugs is outlined in the Medicare Benefit Policy Manual (Pub. 100-2), Chapter 15, §50 Drugs and Biologicals. In addition, National Coverage Determination (NCD), Local Coverage Determinations (LCDs), and Local Coverage Articles (LCAs) may exist and compliance with these policies is required where applicable. They can be found at: <a href="https://www.cms.gov/medicare-coverage-database/search.aspx">https://www.cms.gov/medicare-coverage-database/search.aspx</a>. Additional indications may be covered at the discretion of the health plan.

Medicare Part B Covered Diagnosis Codes (applicable to existing NCD/LCD/LCA): N/A

Medicare Part B Administrative Contractor (MAC) Jurisdictions				
Jurisdiction	Applicable State/US Territory	Contractor		
E (1)	CA, HI, NV, AS, GU, CNMI	Noridian Healthcare Solutions, LLC		
F (2 & 3)	AK, WA, OR, ID, ND, SD, MT, WY, UT, AZ	Noridian Healthcare Solutions, LLC		
5	KS, NE, IA, MO	Wisconsin Physicians Service Insurance Corp (WPS)		
6	MN, WI, IL	National Government Services, Inc. (NGS)		
H (4 & 7)	LA, AR, MS, TX, OK, CO, NM	Novitas Solutions, Inc.		
8	MI, IN	Wisconsin Physicians Service Insurance Corp (WPS)		
N (9)	FL, PR, VI	First Coast Service Options, Inc.		
J (10)	TN, GA, AL	Palmetto GBA, LLC		
M (11)	NC, SC, WV, VA (excluding below)	Palmetto GBA, LLC		
L (12)	DE, MD, PA, NJ, DC (includes Arlington & Fairfax counties and the city of Alexandria in VA)	Novitas Solutions, Inc.		
K (13 & 14)	NY, CT, MA, RI, VT, ME, NH	National Government Services, Inc. (NGS)		
15	KY, OH	CGS Administrators, LLC		