

# **Medical Policy:**

### Zoledronic Acid (Zometa, Reclast) Intravenous

POLICY NUMBER	LAST REVIEW	ORIGIN DATE
MG.MM.PH.113	February 14, 2025	January 1, 2020

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The treating physician or primary care provider must submit to EmblemHealth, or ConnectiCare, as applicable (hereinafter jointly referred to as "EmblemHealth"), the clinical evidence that the member meets the criteria for the treatment or surgical procedure. Without this documentation and information, EmblemHealth will not be able to properly review the request preauthorization or post-payment review. The clinical review criteria expressed below reflects how EmblemHealth determines whether certain services or supplies are medically necessary. This clinical policy is not intended to pre-empt the judgment of the reviewing medical director or dictate to health care providers how to practice medicine. Health care providers are expected to exercise their medical judgment in rendering appropriate care. Health care providers are expected to exercise their medical judgment in rendering appropriate care.

EmblemHealth established the clinical review criteria based upon a review of currently available clinical information (including clinical outcome studies in the peer reviewed published medical literature, regulatory status of the technology, evidence-based guidelines of public health and health research agencies, evidence-based guidelines and positions of leading national health professional organizations, views of physicians practicing in relevant clinical areas, and other relevant factors). EmblemHealth expressly reserves the right to revise these conclusions as clinical information changes and welcomes further relevant information. Each benefit program defines which services are covered. The conclusion that a particular service or supply is medically necessary does not constitute a representation or warranty that this service or supply is covered and/or paid for by EmblemHealth, as some programs exclude coverage for services or supplies that EmblemHealth considers medically necessary.

If there is a discrepancy between this guideline and a member's benefits program, the benefits program will govern. Identification of selected brand names of devices, tests and procedures in a medical coverage policy is for reference only and is not an endorsement of any one device, test or procedure over another. In addition, coverage may be mandated by applicable legal requirements of a state, the Federal Government or the Centers for Medicare & Medicaid Services (CMS) for Medicare and Medicaid members. All coding and web site links are accurate at time of publication.

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## Length of Authorization

#### Zometa:

- Hypercalcemia of Malignancy: Coverage is provided for up to 2 doses for 12 months and may NOT be renewed.
- All other indications: Coverage is provided for 12 months and may be renewed.

#### **Reclast:**

- Prevention of osteoporosis in post-menopausal women: Coverage is provided for 24 months and may be renewed.
- All other indications: Coverage is provided for 12 months and may be renewed. •
- Fracture risk reduction following alternative osteoporosis class therapy: Coverage will be provided for 12 months and may NOT be renewed.

## **Dosing Limits [Medical Benefit]**

#### Max Units (per dose and over time):

## Zometa:

Indication	Max Units
Hypercalcemia of malignancy	4 billable units per 7 days x 2 doses only
Multiple myeloma & bone metastases from solid tumors, osteopenia/osteoporosis in systemic mastocytosis	4 billable units every 21 days
Prevention of bone loss in breast cancer	4 billable units every 168 days (6 months)
Prevention of bone loss in prostate cancer & Prevention or treatment of osteoporosis in prostate cancer	4 billable units every 84 days (3 months)
Langerhans Cell Histiocytosis	4 billable units every 28 days

## **Reclast:**

Indication	Max Units	
Paget's Disease	5 billable units for 2 doses	
Prevention of osteoporosis in post-menopausal women	5 billable units every 730 days (24 months)	
Fracture risk reduction following alternative osteoporosis class therapy	5 billable units for 1 dose	
Treatment of osteoporosis/Treatment and prevention of glucocorticoid- induced osteoporosis	5 billable units every 84 days (3 months)	

## Guideline

#### I. INITIAL APPROVAL CRITERIA

#### 1. Zometa

Coverage is provided in the following conditions:

#### Hypercalcemia of malignancy +

-Patient has an albumin-corrected serum calcium level of  $\geq$  12 mg/dL

Multiple myeloma †

Bone metastases from solid tumors +

Prevention of skeletal related events in men with castration-recurrent prostate cancer ‡

Prevention of bone loss associated with aromatase inhibitor therapy for breast cancer in post-menopausal women or premenopausal women on adjuvant ovarian suppression ‡

Prevention of bone loss associated with androgen deprivation therapy in men with prostate cancer ‡

Treatment of osteopenia/osteoporosis in patients with systemic mastocytosis ‡

#### Langerhans Cell Histiocytosis ‡

- Patient has multifocal bone disease OR unifocal isolated bone disease

#### 2. <u>Reclast</u>

Coverage is provided in the following conditions:

#### Treatment and prevention of postmenopausal osteoporosis †

- Patient experienced severe intolerance, ineffective response±, or has contraindications\* to oral bisphosphonate therapy; OR
- Patient had a prior fragility fracture or is at especially high fracture risk

#### Treatment to increase bone mass in men with osteoporosis †

- Patient experienced severe intolerance, ineffective response±, or has contraindications\* to oral bisphosphonate therapy; OR
- Patient had a prior fragility fracture or is at especially high fracture risk

#### Treatment and prevention of glucocorticoid-induced osteoporosis †

- Patient experienced severe intolerance, ineffective response±, or has contraindications\* to oral bisphosphonate therapy; OR
- Patient had a prior fragility fracture or is at especially high fracture risk

#### Treatment of Paget's disease of bone in men and women †

- Serum alkaline phosphatase is two times or higher than the upper limit of the age-specific reference range;
  OR
- Patient is symptomatic; OR
- Patient is at risk for complications from their disease

#### **±** Ineffective response is defined as one or more of the following:

- Decrease in T-score in comparison with baseline T-score from DXA scan
- Patient has a new fracture while on bisphosphonate therapy

\* Examples of contraindications to oral bisphosphonate therapy include the following:

- $\circ$   $\quad$  Documented inability to sit or stand upright for at least 30 minutes
- Documented pre-existing gastrointestinal disorder such as inability to swallow, Barrett's esophagus, esophageal stricture, dysmotility, or achalasia
- Surgical anastomoses are present in the GI tract after certain types of bariatric surgery (e.g.,Roux-en-Y gastric bypass)

**†** FDA Approved Indication(s); **‡** Compendia recommended indication(s)

#### **II. RENEWAL CRITERIA**

Coverage can be renewed based on the following criteria:

- 1. Patient continues to meet the criteria identified above; **AND**
- 2. Absence of unacceptable toxicity from the drug (e.g., renal toxicity, osteonecrosis of the jaw, atypical femoral fractures, hypocalcemia, incapacitating pain in the bone/joint/muscle, etc.); **AND**

#### Reclast

- 1. Disease response as indicated by the following:
  - A. Osteoporosis indications:
    - i. Absence of fractures; **OR**
    - ii. Increase in bone mineral density compared to pretreatment baseline AND

a. Patients who have received 3 years of bisphosphonate therapy should be re-evaluated with a DXA or serum marker for bone turnover [i.e., serum C-terminal crosslinking telopeptide (CTX)]; **AND** 

b. Those patients at low-to-moderate risk of fractures should be considered for a temporary discontinuation of bisphosphonate for up to 5 years (re-assess risk at 2 to 4 year intervals to determine if earlier re-initiation is necessary)

- B. <u>Paget's Disease</u>: Patient previously experienced therapeutic response to treatment (i.e., normalization of serum alkaline phosphatase (SAP) or a reduction of ≥ 75% from baseline in total SAP excess (defined as the difference between the measured level and midpoint of normal range); AND
  - i. Patient is having a relapse of disease based on increases in SAP; OR
  - ii. Patient has symptomatic disease; OR
  - iii. Patients failed to achieve normalization of SAP
- C. <u>Fracture Risk Reduction Following Alternative Osteoporosis Class Therapy:</u>
  - i. May not be renewed

#### Zometa

Disease response as indicated by the following:

- A. <u>Bone metastases/MM</u>: absence/delay in skeletal-related events (e.g., pathologic fracture, radiation therapy to bone, surgery to bone, or spinal cord compression)
- B. <u>Hypercalcemia of Malignancy</u>: May not be renewed
- C. <u>Breast Cancer (bone loss prevention)</u>, Prostate Cancer (bone loss prevention), and Systemic Mastocytosis:
  - i. Absence of fractures; **OR**

ii. Increase in bone mineral density compared to pretreatment baseline

- D. Breast Cancer (risk reduction of distant metastasis):
  - i. Prevention of bone recurrence; **OR**
  - ii. Stabilization of disease from baseline; OR

iii. Absence/delay in skeletal-related events (e.g., pathologic fracture, radiation therapy to bone, surgery to bone, or spinal cord compression)

- E. Langerhans Cell Histiocytosis:
  - i. Improvement in bone pain; OR
  - ii. Improvement/resolution in active bone lesions compared to pretreatment baseline

#### Limitations/Exclusions

Reclast/Zometa is not considered medically necessary for indications other than those listed above due to insufficient evidence of therapeutic value.

## **Applicable Procedure Codes**

Code	Description	
J3489	Injection, zoledronic acid, 1 mg	

# **Applicable NDCs**

	Code	Description		
ĺ	00078-0590-XX	Zometa 4 mg/100 mL single-use ready-to-use bottle		
ĺ	00078-0387-XX	Zometa 4 mg/5 mL single-use vial of concentrate		
ĺ	00078-0435-XX	Reclast 5 mg/100 mL ready-to-infuse solution		
ĺ	00409-4229-01	Zoledronic acid 4 mg/100 mL single use IV vial		

## ICD-10 Diagnoses

## Zometa:

Code	Description	
C79.51	Secondary malignant neoplasm of bone	
C79.52	Secondary malignant neoplasm of bone marrow	
C90.00	Multiple myeloma not having reached remission	
C90.01	Multiple myeloma in remission	
E83.52	Hypercalcemia	

### **Dual coding requirements:**

Prevention of bone loss in prostate cancer/ Prevention or treatment of osteoporosis in prostate cancer:

• Primary code: M89.9 or M94.9 plus Z85.46

Prevention of aromatase inhibitor induced bone loss in breast cancer:

• Primary code: M89.9 or M94.9 plus: Z85.3

### **Reclast:**

Code	Description			
M81.0	Age-related osteoporosis without current pathological fracture			
M81.6	Localized osteoporosis			
M81.8	Other osteoporosis without current pathological fracture			
M88.0	Osteitis deformans of skull			
M88.1	Osteitis deformans of vertebrae			
M88.811	Osteitis deformans of right shoulder			
M88.812	Osteitis deformans of left shoulder			
M88.819	Osteitis deformans of unspecified shoulder			
M88.821	Osteitis deformans of right upper arm			
M88.822	Osteitis deformans of left upper arm			
M88.829	Osteitis deformans of unspecified upper arm			
M88.831	Osteitis deformans of right forearm			
M88.832	Osteitis deformans of left forearm			
M88.839	Osteitis deformans of unspecified forearm			
M88.841	Osteitis deformans of right hand			
M88.842	Osteitis deformans of left hand			
M88.849	Osteitis deformans of unspecified hand			
M88.851	Osteitis deformans of right thigh			
M88.852	Osteitis deformans of left thigh			
M88.859	Osteitis deformans of unspecified thigh			
M88.861	Osteitis deformans of right lower leg			

M88.862	Osteitis deformans of left lower leg			
M88.869	Osteitis deformans of unspecified leg			
M88.871	Osteitis deformans of right ankle			
M88.872	Osteitis deformans of left ankle			
M88.879	Osteitis deformans of unspecified ankle			
M88.88	Osteitis deformans of other bone			
M88.89	Osteitis deformans of multiple sites			
M88.9	Osteitis deformans of unspecified bone			
Z13.820	Encounter for screening of osteoporosis			

Dual coding requirement for prevention of bone loss in prostate cancer/ Prevention or treatment of osteoporosis in prostate cancer: Primary code: M89.9 or M94.9 plus Z85.46

# **Revision History**

Company(ies)	DATE	REVISION		
EmblemHealth &	2/14/2025	Revision: ICD-10	code update	
ConnectiCare		Zometa: Remove		
			Malignant neoplasms of lip, oral cavity and	
		C00-C14	pharynx	
		C15-C26	Malignant neoplasms of digestive organs	
			Malignant neoplasms of respiratory and	
		C30-C39	intrathoracic organs	
		C40 C41	Malignant neoplasms of bone and articular	
		C40-C41	cartilage Melanoma and other malignant neoplasms of	
		C43-C44	skin	
			Malignant neoplasms of mesothelial and soft	
		C45-C49	tissue	
		C50-C50	Malignant neoplasms of breast	
		C51-C58	Malignant neoplasms of female genital organs	
		C60-C63	Malignant neoplasms of male genital organs	
		C64-C68	Malignant neoplasms of urinary tract	
			Malignant neoplasms of eye, brain and other	
		C69-C72	parts of central nervous system	
			Malignant neoplasms of thyroid and other	
		C73-C75	endocrine glands	
		C7A-C7A	Malignant neuroendocrine tumors	
		С7В-С7В	Secondary neuroendocrine tumors	
			Malignant neoplasms of ill-defined, other	
		C76-C80	secondary and unspecified sites	
		C81	Hodgkin lymphoma	
		C82	Follicular lymphoma	
		C83	Non-follicular lymphoma	
		C84	Mature T/NK-cell lymphomas	
			Other specified and unspecified types of non-	
		C85	Hodgkin lymphoma	
		C86	Other specified types of T/NK-cell lymphoma	
			Malignant immunoproliferative diseases and	
		C88	certain other B-cell lymphomas	
		C90.02	Multiple myeloma in relapse	

C00 10	Plasma cell leukemia not having reached
C90.10 C90.12	
C90.12	
C00 20	Extramedullary plasmacytoma not having reached remission
C90.20 C90.22	
C90.22	
C00 20	Solitary plasmacytoma not having reached
C90.30	
C90.32	
	Other and unspecified malignant neoplasms of
<u>C96</u>	lymphoid, hematopoietic and related tissue
D00-D0	
	Benign neoplasms, except benign
D10-D3	
D3A-D3	5
	Neoplasm of uncertain behavior of oral cavity
D37	and digestive organs
	Neoplasm of uncertain behavior of middle ear
D38	and respiratory and intrathoracic organs
520	Neoplasm of uncertain behavior of female
D39	genital organs
D40	Neoplasm of uncertain behavior of male genital organs
	Neoplasm of uncertain behavior of urinary
D41	organs
D42	Neoplasm of uncertain behavior of meninges
042	Neoplasm of uncertain behavior of brain and
D43	central nervous system
	Neoplasm of uncertain behavior of endocrine
D44	glands
	Neoplasm of uncertain behavior of other and
D48	unspecified sites
D49-D4	
M80.80X	
M80.88)	
M81.6	Localized osteoporosis
M81.8	
	pathological fracture
M85.80	
	structure, unspecified site
	Other specified disorders of bone density and
M85.85	, , ,
	Other specified disorders of bone density and
M85.85	, ,
	Other specified disorders of bone density and
M85.85	
M85.9	•
	unspecified
M89.9	
M94.9	Disorder of cartilage, unspecified
705	Personal history of malignant neoplasm
Z85	

		C79.51	Secondary malignant neoplasm of bone	
		C79.52	Secondary malignant neoplasm of bone marrow	
		C90.01	Multiple myeloma in remission	
		Reclast:		
		Removed:		
		C61	Malignant neoplasm of the prostate	
			Other specified disorders of bone density and	
		M85.80	structure, unspecified site	
			Other specified disorders of bone density and	
		M85.851	structure, right thigh	
			Other specified disorders of bone density and	
		M85.852	structure, left thigh	
			Other specified disorders of bone density and	
			structure, unspecified thigh	
			Other specified disorders of bone density and	
		M85.88	structure, other site	
		N405-00	Other specified disorders of bone density and	
		M85.89	structure, multiple sites	
		M85.9	Disorder of bone density and structure, unspecified	
		M94.9	Disorder of cartilage, unspecified	
		Z85.46	Personal history of malignant neoplasm of prostate	
		Added: Z13.820		
EmblemHealth &	1/2/2025	Annual Review:		
ConnectiCare		-	f authorization and max units charts.	
		Zometa: Hypercalcemia of malignancy + Updated statement to include > "Patient		
	has an albumin-corrected serum calcium lev			
		Renewal Criteria: Reclast Added: "Patients who have received 3 years o bisphosphonate therapy should be re-evaluated with a DXA or serum m		
		bone turnover [i.e., serum C terminal crosslinking telopeptide (CTX)]; AND		
			-moderate risk of fractures should be considered for a	
			tinuation of bisphosphonate for up to 5 years (re-assess risk at 2	
			to determine if earlier re-initiation is necessary)"	
			Ipdated the following statement: "normalization of serum	
		-	ase (SAP) or a reduction of $\geq$ 75% from baseline in total SAP	
		excess (defined as	the difference between the measured level and midpoint of	
		normal range)" to	: " Patient previously experienced therapeutic response to	
			ormalization of serum alkaline phosphatase (SAP) or a reduction	
			seline in total SAP excess (defined as the difference between the	
			nd midpoint of normal range); AND Patient is having a relapse of	
			increases in SAP; OR Patient has symptomatic disease; OR	
			achieve normalization of SAP"	
		Renewal Criteria: Reclast: Added: "Fracture Risk Reduction Following Alternative		
		-	s Therapy: May not be renewed"	
			Zometa Added: "Breast Cancer (bone loss prevention), Prostate	
			prevention), and Systemic Mastocytosis: Absence of fractures;	
			ne mineral density compared to pretreatment baseline Breast	
			tion of distant metastasis): Prevention of bone recurrence; OR	
			sease from baseline; OR Absence/delay in skeletal-related events	
			racture, radiation therapy to bone, surgery to bone, or spinal	
			" Removed and reworded as above: "Prevention of bone	
			patients/Osteoporosis or Osteopenia in Systemic Mastocytosis: res; OR Increase in bone mineral density compared to	
		pretreatment bas		
		precieacinent bas		

EmblemHealth &	1/2/2024	Annual Review:
ConnectiCare		Max Units- updated chart
		Initial Criteria: Reclast: removed the following: Osteoporosis, Secondary
		prophylaxis in patients with recent low-trauma hip fracture <sup>+</sup>
		Prevention or treatment of osteoporosis in men with prostate cancer during
		androgen deprivation therapy ‡
		Renewal Criteria: Zometa: Hypercalcemia of Malignancy: Removed
		"corrected serum calcium ≤ 11.5 mg/dL" Replaced with "May not be
		renewed"
EmblemHealth &	5/02/2023	Annual Review:
ConnectiCare		Under Zometa; Coverage is provided in the following conditions:
connecticate		Hypercalcemia of malignancy + Added "Patient has an albumin-corrected
		serum calcium level of > 12 mg/dL"
		Under Zometa; Coverage is provided in the following conditions:
		Added the following indications: "Treatment of osteopenia/osteoporosis in
		patients with systemic mastocytosis ‡ and Langerhans Cell Histiocytosis ‡"
		and criteria for Langerhans Cell Histiocytosis: "Patient has multifocal bone
		disease OR unifocal isolated bone disease"
		Add the following statement "Osteoporosis or Osteopenia in Systemic
		Mastocytosis" :to Zometa renewal criteria in the following section:
		"Prevention of bone loss/SRE in cancer patients/Osteoporosis or Osteopenia
		in Systemic Mastocytosis:
		-Absence of fractures; OR
		-Increase in bone mineral density compared to pretreatment baseline"
		Added Langerhans Cell Histiocytosis to Zometa renewal criteria.
EmblemHealth &	1/19/2023	Transfer to New Template
ConnectiCare		
EmblemHealth &	7/15/2020	Added new NDC 00409-4229-01
ConnectiCare		
EmblemHealth &	01/01/2020	Annual Review

## References

- 1. Zometa [package insert]. Stein, Switzerland; Novartis Pharmaceuticals; December 2018. Accessed December 2019.
- 2. Reclast [package insert]. East Hanover, NJ; Novartis Pharmaceuticals; July 2017. Accessed December 2019.
- 3. Referenced with permission from the NCCN Drugs & Biologics Compendium (NCCN Compendium<sup>®</sup>) for Zoledronic Acid. National Comprehensive Cancer Network, 2017. The NCCN Compendium<sup>®</sup> 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 June 2017.
- 4. Bhoopalam, N. et al. Intravenous zoledronic acid to prevent osteoporosis in a veteran population with multiple risk factors for bone loss on androgen deprivation therapy. J Urol. 2009 Nov;182(5):2257-64. Epub 2009 Sep 16.

- Bundred, N.J. et al. Effective inhibition of aromatase inhibitor-associated bone loss by zoledronic acid in postmenopausal women with early breast cancer receiving adjuvant letrozole: ZO-FAST Study results. Cancer. 2008 Mar 1;112(5):1001-10.
- 6. Brufsky A, Harker WG, Beck JT, et al, "Zoledronic Acid Inhibits Adjuvant Letrozole-Induced Bone Loss in Postmenopausal Women with Early Breast Cancer," J Clin Oncol 2007, 25(7):829-36.
- Himelstein AL, Qin R, Novotny PJ, et al. "CALBG 70604 (Alliance): A randomized phase III study of standard dosing vs longer interval dosing of zoledronic acid in metastatic cancer. J Clin Oncol 33, 2015 (suppl; abstr 9501).
- WHO Scientific Group on the Prevention and Management of Osteoporosis. Prevention and management of osteoporosis: report of a WHO scientific group. (WHO technical report series; 921). Geneva, Switzerland: WHO; 2000.
- Kanis JA on behalf of the World Health Organization Scientific Group (2007). Assessment of osteoporosis at the primary health care level. Technical Report. World Health Organization Collaborating Center for Metabolic Bone Diseases. University of Sheffield, UK; 2007.
- 10. National Osteoporosis Foundation. Clinician's Guide to Prevention and Treatment of Osteoporosis. Washington, DC: National Osteoporosis Foundation; 2014.
- 11. Camacho PM, Petak SM, Binkley N, et al. AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS AND AMERICAN COLLEGE OF ENDOCRINOLOGY CLINICAL PRACTICE GUIDELINES FOR THE DIAGNOSIS AND TREATMENT OF POSTMENOPAUSAL OSTEOPOROSIS - 2016. Endocr Pract. 2016 Sep 2; 22(Suppl 4):1-42.
- Hortobagyi GN, Van Poznak C, Harker WG, et al. Continued Treatment Effect of Zoledronic Acid Dosing Every 12 vs 4 Weeks in Women With Breast Cancer Metastatic to Bone: The OPTIMIZE-2 Randomized Clinical Trial. JAMA Oncol. 2017 Jan 26. doi: 10.1001/jamaoncol.2016.6316.
- Himelstein AL, Foster JC, Khatcheressian JL, et al. Effect of Longer-Interval vs Standard Dosing of Zoledronic Acid on Skeletal Events in Patients With Bone Metastases: A Randomized Clinical Trial. JAMA. 2017 Jan 3;317(1):48-58. doi: 10.1001/jama.2016.19425.
- Dhesy-Thind S, Fletcher GG, Blanchette PS, et al. Use of Adjuvant Bisphosphonates and Other Bone-Modifying Agents in Breast Cancer: A Cancer Care Ontario and American Society of Clinical Oncology Clinical Practice Guideline. DOI: 10.1200/JCO.2016.70.7257 Journal of Clinical Oncology - published online before print March 6, 2017.
- 15. Hadji P, Aapro MS, Body JJ, et al. Management of Aromatase Inhibitor-Associated Bone Loss (AIBL) in postmenopausal women with hormone sensitive breast cancer: Joint position statement of the IOF, CABS, ECTS, IEG, ESCEO IMS, and SIOG. J Bone Oncol. 2017 Mar 23;7:1-12
- 16. Qaseem A, Forciea MA, McLean RM, Denberg TD; Clinical Guidelines Committee of the American College of Physicians. Treatment of Low Bone Density or Osteoporosis to Prevent Fractures in Men and Women: A Clinical Practice Guideline Update from the American College of Physicians. Ann Intern Med. 2017 May 9. doi: 10.7326/M15-1361.
- 17. Jeremiah MP, Unwin BK, Greenawald MH, et al. Diagnosis and Management of Osteoporosis. Am Fam Physician. 2015 Aug 15;92(4):261-8.

- Wisconsin Physicians Service Insurance Corporation. Local Coverage Determination (LCD) for Bisphosphonate Drug Therapy (L34648). Centers for Medicare & Medicaid Services. Updated on 11/22/2016 with effective date 12/1/2016. Accessed June 2017.
- 19. First Coast Service Options, Inc. Local Coverage Determination (LCD) for Bisphosphonates (Intravenous [IV]) and Monoclonal Antibodies in the Treatment of Osteoporosis and Their Other Indications (L33270). Centers for Medicare & Medicaid Services, Inc. Updated on 10/18/2016 with effective date 10/14/2016. Accessed June 2017.
- Cahaba Government Benefit Administrators, LLC. Local Coverage Determination (LCD) for Drugs and Biologicals: Zoledronic Acid (L34260). Centers for Medicare & Medicaid Services, Inc. Updated on 6/9/2016 with effective date 10/1/2015. Accessed June 2017.
- National Government Services, Inc. Local Coverage Article for ZOLEDRONIC Acid (e.g., Zometa <sup>®</sup>, Reclast<sup>®</sup>) Related to LCD L33394 (A52455). Centers for Medicare & Medicaid Services. Updated on 10/16/2015 with effective date 10/1/2015. Accessed June 2017.