

Belantamab mafodotin-blmf (BLENREP)

National Drug Monograph

September 2026

VA Pharmacy Benefits Management Services and National Formulary Committee

The purpose of VA PBM Services drug monographs is to provide a focused drug review for making formulary decisions. The Product Information or other resources should be consulted for detailed and most current drug information.

Abbreviations: BCMA, B-cell maturation antigen; BCVA, best-corrected visual acuity; BPD, belantamab mafodotin + pomalidomide + dexamethasone; BVd, belantamab mafodotin + bortezomib + dexamethasone; DVd, daratumumab + bortezomib + dexamethasone; IMiD, immunomodulatory agent; IV, intravenous; LOT, line of therapy; PI, proteasome inhibitor; PFS, progression-free survival; OS, overall survival; ORR, overall response rate; CR, Complete response; MRD, minimal residual disease; PVd, pomalidomide + bortezomib + dexamethasone; REMS, Risk Evaluation and Mitigation Strategy; RRMM, relapsed or refractory multiple myeloma; LOT, line of therapy

SUMMARY OF PRESCRIBING INFORMATION¹

Description / MOA	Belantamab mafodotin-blmf is a B-cell maturation antigen (BCMA)-directed antibody and microtubule inhibitor conjugate. It consists of a humanized humanized IgG1 monoclonal antibody covalently linked to the microtubule inhibitor mcMMAF. It binds BCMA on myeloma cells, is internalized, and releases cys-mcMMAF, which disrupts the microtubule network, leading to cell cycle arrest and apoptosis.
Indication Under Review	Indicated in combination with bortezomib and dexamethasone for the treatment of adult patients with relapsed or refractory multiple myeloma (RRMM) who have received at least two prior lines of therapy, including a PI and an IMiD
Dosage Regimen	BVd Regimen: 2.5 mg/kg IV q3w for 8 cycles (with bortezomib/dexamethasone), followed by 2.5 mg/kg q3w as monotherapy until disease progression or unacceptable toxicity.
Dosage Forms	70 mg lyophilized powder in a single-dose vial for reconstitution and dilution.
Boxed Warnings	Ocular Toxicity: Causes changes in the corneal epithelium resulting in changes in vision (including severe impairment), blurred vision, and dry eyes. Available only through the restricted BLENREP REMS.
Contraindications	None
Other Warnings	Thrombocytopenia: Monitor CBC at baseline and periodically; withhold or reduce dose based on severity. Embryo-Fetal Toxicity: Can cause fetal harm; advise effective contraception use.
Most Common AEs (≥ 20%)	Reduction in BCVA, corneal exam findings, blurred vision, dry eye, photophobia, foreign body sensation, eye irritation, upper respiratory tract infection, hepatotoxicity, eye pain, diarrhea, fatigue, pneumonia, cataract, and COVID-19
Drug Interactions	
Pregnancy	Can cause fetal harm. Verify pregnancy status prior to initiation. Use effective contraception during treatment and for 4 months (females) or 6 months (males) after the last dose.
Lactation	Advise not to breastfeed during treatment and for 3 months after the final dose.
Renal Impairment	No clinically significant pharmacokinetic differences were observed based on mild to severe renal impairment and kidney failure (eGFR < 30ml/min); No dose adjustments are recommended for renal insufficiency.
Hepatic Impairment	No dose adjustment in mild hepatic impairment; effects of moderate or severe hepatic impairment are unknown

Trial	DREAMM-7 (NCT04246047)^{2,3}
Design	Phase 3, global, open-label, randomized (1:1) controlled trial.
Population	RRMM with (≥1) prior LOT. Efficacy pop'n (n=217) received (≥2) prior LOT; Median Age 64 yrs (57-71); 55% male; 83% white
Interventions	BVd Arm: Belantamab mafodotin 2.5 mg/kg IV q3w + bortezomib + dexamethasone Bortezomib 1.3 mg/m ² SQ days 1, 4, 8, 11 Dexamethasone 20mg IV or PO, day of and day after bortezomib C#1-8 C#9+ belantamab as single agent every 3 weeks
Comparator	DVd Arm: Daratumumab 16 mg/kg IV every week C#1-3 and every 3 weeks C#4-8 + bortezomib + dexamethasone Bortezomib 1.3 mg/m ² SQ days 1, 4, 8, 11 Dexamethasone 20mg IV or PO, day of and day after bortezomib C#1-8 C#9+ daratumumab as single agent every 4 weeks
Efficacy Results	BVd vs. DVd Median PFS: 31.3 vs. 10.4 mos; HR 0.31 (95% CI: 0.21, 0.47) ORR 83 vs. 71%; ≥ CR 25 vs. 10%; MRD negativity (≥ CR) 25 vs. 10% Median OS@39.4 mo: not reached in either arm; HR 0.58 (95% CI 0.43-0.79; p=0.0002) Predicted median OS 84 vs. 51 mos; OS rate@36 mos: 74 vs. 60%
Safety Results	BVd vs. DVd Ocular toxicity: 92 vs. 44% (gr 3/4- 77 vs. 9%) GI: Diarrhea: 32 vs. 31%; nausea 16 vs. 12%; Hepatotoxicity: 33 vs. 16% Decreased platelets: 100 vs. 88% (gr 3/4- 74 vs. 48%); elevated AST 88 vs. 40% (gr 3/4- 5 vs. 0%)

Authors' Conclusions	DREAMM-7 showed that BVd could be a new standard of care for RRMM with improvement in PFS, OS and depth of response. Grade ≥ 3 adverse events were common in both treatment arms. Belantamab has significant ocular toxicity that requires proactive monitoring at baseline and throughout the course of treatment.
Trial limitations	BVd was compared to DVd, a regimen that was once a standard triplet first-line regimen, may have been a reasonable standard at the time of trial design. Now, daratumumab-based quadruplets are considered the standard for transplant-eligible patients, with triplets now recommended for transplant-ineligible. DREAMM-7 excluded patients who were refractory or intolerant of anti-CD38 therapy (including daratumumab) so the results are difficult to extrapolate to patients receiving a quadruplet in the first-line setting. This trial also predated FDA approval of the bispecific T-cell engagers for myeloma. Additional limitations include underrepresentation of black patients (4%), open label design
Miscellaneous	DREAMM-8 is a phase 3 open-label trial that compared belantamab-pomalidomide-dex (BPd) vs. pomalidomide-bortezomib-dex (PVd) in patients who received ≥ 1 LOT that included lenalidomide-refractory, bortezomib-sensitive patients. ⁴ An improvement in median PFS was noted (not reached vs. 12.7 mos); ORR, CR and MRD-negativity were greater with BPd. Although not included in FDA-labelling, this trial shows a benefit with BPd in lenalidomide-exposed patients. Ocular toxicity is still a major concern (89% all gr; 43% gr 3-4).

THERAPEUTIC ALTERNATIVES AND THEIR PLACE IN THERAPY				
DRUG	VANF	VA Restrictions	Pertinent Clinical Outcomes in Comparable Setting	Guidelines/ Pathways
Belantamab	TBD	TBD	RRMM Setting: In combination with bortezomib and dexamethasone as BVd for treatment of RRMM in patients after ≥ 2 LOT (incl PI and IMiD) Pop'n: ≥ 1 prior LOT, anti-CD38 naïve Median PFS 36.6 mos Median OS 84 mos Duration of response 40.8 mos ORR 83% ($\geq$ CR 25%)	NCCN v5.2026: RRMM BVd (category 1) Other Recommended after 2 prior LOT incl PI and IMiD VA Plasma Cell Disorders Pathway v1.2026: MM Multiply Relapsed if not a candidate for CAR T-cell therapy or Bispecific T-cell engager as monotherapy (Teclistamab), then directed to BVd
Daratumumab inj (IV) Daratumumab and hyaluronidase (SQ)	PA-F	CFU	RRMM Setting: In combination with bortezomib and dexamethasone for treatment of RRMM in patients after ≥ 2 LOT (incl PI and IMiD) Pop'n: ≥ 1 prior LOT, anti-CD38 naïve Median PFS 13.4 mos Median OS 51 mos Duration of response 17.8 mos ORR 71% ($\geq$ CR 10%)	NCCN v5.2026: Primary therapy SQ: D-RVd (cat 1) Preferred quadruplet as primary therapy for HCT candidates SQ: D-KRd (cat 2A) for same population SQ or IV: DRd (cat 1) Preferred triplet as primary therapy in HCT ineligible SQ or IV: D-VRd (cat 1) Preferred quadruplet in fit patients who are HCT ineligible (age < 80) NCCN: RRMM post 1-3 LOT (all cat 1) DKd, DRd, DPd, dara-teclistamab DVd, DKd
Cilta-cel	n/a	n/a	CARTITUDE-4 ⁵ Pop'n: 1-3 prior LOT, lenalidomide-refractory; Endpoints @ median 34 mos: Median PFS not reached @ 34 mos ORR 85% ($\geq$ CR 77%) MRD-negativity 62% Median OS	NCCN v5.2026 Cilta-cel is preferred (cat 1) recommendation after one prior LOT including IMiD and a PI and refractory to lenalidomide Also, preferred (cat 2A) after 3 LOT VA Plasma Cell Disorders Pathway v1.2026: MM Multiply Relapsed if not a candidate for CAR T-cell therapy or Bispecific T-cell engager as monotherapy (Teclistamab), then directed to BVd
Teclistamab	PA-F	CFU	MajesTEC-1 ⁶ Pop'n: ≥ 3 prior LOT, triple-class exposed to PI, IMiD and anti-CD38 mAb (with median 5 LOT) Endpoints @ median 14 mos ORR 63% (primary) MRD-negativity: 27% (those $\geq$ CR, MRD-neg 46%) Median PFS 11.3 mos; Median duration of response 18.4 mos	NCCN v5.2026 Teclistamab is one of 4 BsAb preferred after ≥ 4 prior therapies including an anti-CD38 mAb, PI and IMiD VA Plasma Cell Disorders Pathway v1.2026: MM Multiply Relapsed if not a candidate for CAR T-cell therapy or Bispecific T-cell engager as monotherapy (Teclistamab) then directed to BVd

POTENTIAL PLACE IN THERAPY

Summary of Evidence and Potential Place-in-Therapy	Belantamab is a first-in-class BCMA-directed antibody-drug conjugate with phase 3 evidence (DREAMM-7, DREAMM-8) supporting its use in combination therapy for RRMM after ≥2 prior lines (that did not include an anti-CD38 antibody). It offers an "off-the-shelf" BCMA-targeting alternative to CAR-T cell therapy and bispecific antibodies but carries a unique ocular toxicity profile requiring REMS-mandated ophthalmologic monitoring. BVd was compared to DVd, due to the time period in which the trial was performed. It is currently positioned as "Other Recommended" (not Preferred) in NCCN guidelines and is included in the Multiply Relapsed Myeloma VA Clinical Pathway for those ineligible for CAR T-cell or bispecific T-cell engager therapy.
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References

¹ BLENREP (belantamab mafodotin) formulation [prescribing information online]. Philadelphia, PA: GlaxoSmithKline. October 2025. Available at: https://gskpro.com/content/dam/global/hcpportal/en_US/Prescribing_Information/Blenrep/pdf/BLENREP-PI-MG.PDF Accessed July 17, 2026.

² Hungria V, Robak P, Hus M, et al. Belantamab mafodotin, bortezomib and dexamethasone for multiple myeloma. N Engl J Med 2024; 391: 393-407.

³ Hungria V, Robak P, Hus M, et al. Belantamab mafodotin plus bortezomib and dexamethasone in patients with relapsed or refractory multiple myeloma (DREAMM-7): updated overall survival analysis from a global, randomized, open-label, phase 3 trial. Lancet Oncol 2025; 26: 1067-1080.

⁴ Dimopoulos MA, Beksac M, Pour L, et al. Belantamab mafodotin, pomalidomide and dexamethasone in multiple myeloma. N Engl J Med 2024; 391: 408-421

⁵ San-Miguel J, Dhakal B, Yong K, et al. Cilta-cel or standard care in lenalidomide-refractory multiple myeloma. N Engl J Med 2023; 389: 335-347

⁶ Moreau P, Garfall AL, van de Donk NWCJ, et al. Teclistamab in relapsed or refractory multiple myeloma. N Engl J Med 2022; 387: 495-505