NHS
North East London

Medical retina treatment pathway for visual impairment associated with centre-involving diabetic macular oedema

NHS North East London

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24/02/2026	1.0	New document

Contents

1. Scope

This document outlines the medical retina treatment pathway for adult patients in north east London (NEL) diagnosed with visual impairment due to centre-involving diabetic macular oedema (DMO). Centre-involving DMO involves the central subfield of the Early Treatment Diabetic Retinopathy Studies (ETDRS) grid and is always clinically significant. This condition will hereafter be referred to as DMO in this document. This treatment pathway offers a best value approach as a whole and outlines criteria that enable switching if patients don't respond fully to treatment or if they don't reach the expected dosing interval within a specific time interval.

The pathway underpins guidance from NHS England (NHSE) and has been developed in collaboration with ophthalmologists and specialist pharmacists in NEL acute provider trusts. It is to be used in conjunction with the National Institute for Health and Care Excellence (NICE) guidance and the published NICE technology appraisal (TA) guidance for each individual medical retina therapy. The pathway is intended to be adopted by all NEL acute provider trusts that deliver medical retina services.

2. NHSE guidance

At the time of publication, this treatment pathway considers the following NHSE commissioning guidance: Medical retinal treatment pathway for centre-involving diabetic macular oedema with visual impairment (version 1.0, October 2025, accessed via NHS Futures).

3. NICE guidance and NICE technology appraisals

At the time of publication, this treatment pathway considers the NICE TAs listed in table 1 and NICE guideline (NG242) Diabetic retinopathy: management and monitoring.

Table 1: NICE technology appraisals for DMO

NICE TA number	Date published/ updated	Title
TA274	Updated 26/10/2023	Ranibizumab for treating diabetic macular oedema
TA346	22/07/2015	Aflibercept for treating diabetic macular oedema
TA799	29/06/2022	Faricimab for treating diabetic macular oedema
TA820	31/08/2022	Brolucizumab for treating diabetic macular oedema
TA824	14/09/2022	Dexamethasone intravitreal implant for treating diabetic macular oedema
TA953	13/03/2024	Fluocinolone acetonide intravitreal implant for treating chronic diabetic macular oedema

N.B. The information provided is accurate at the time of pathway publication but may be subject to future updates or changes.

Eligibility criteria

- Vascular endothelial growth factor inhibitors (anti-VEGFs) are recommended only if the eye has a central retinal thickness of ≥ 400 micrometres at the start of treatment. Anti-VEGFs included in this pathway are: ranibizumab, aflibercept, faricimab and brolucizumab.
- Intravitreal corticosteroid implants are only recommended if the patient's condition has not responded well to, or they are unable to have non-corticosteroid therapy (i.e. anti-VEGF).

4. Principles

This document is based on current NICE TAs, NICE guideline NG242, and NHSE commissioning guidance: Medical retinal treatment pathway for centre-involving diabetic macular oedema with visual impairment. The prescribing pathway has taken into consideration the Regional Medicines Optimisation Committee (RMOC) Advisory statement on the sequential use of biologic medicines (updated 07/05/2020) to formulate a position which meets the needs of patients in the region.

Recommendations from NHSE which are currently outside of NICE recommendations aim to address unmet clinical needs. The use of medicines within this pathway will be monitored on a regular basis through Blueteq or clinical audit where Blueteq is not used.

The pathway is subject to change as new evidence, NICE TAs, NHSE guidance or local agreements are released or updated that will impact on the information outlined in this document. This includes changes in drug costs that may impact on cost effectiveness and drug choice in the treatment pathway. It is expected that drugs presenting best value are selected where clinically appropriate.

For further prescribing information, including contraindications and cautions, please refer to the relevant drug monograph in the latest version of the British National Formulary (BNF) or the respective drug's Summary of Product Characteristics (SPC).

5. Choice of therapy

The choice of treatment should be made after discussion between the clinician and the patient about the advantages and disadvantages of the treatments available. This should take into consideration the patient's medical history, risk factors for adverse effects (e.g., raised intraocular pressure, cardiovascular risk, cataract formation), existing treatment in the other eye (if receiving treatment), and other patient factors.

If more than one treatment option is clinically suitable, and service capacity allows for timely delivery, choose the best value option, taking into account administration costs, dosing frequency, and any commercial arrangements. See appendix 1 for treatment algorithm.

Table 2. Treatment choices for DMO

Choice of therapy	Anti-VEGF suitable *(preferred if appropriate)*	Anti-VEGF not suitable
First choice	Aflibercept 2mg IVT biosimilar OR Ranibizumab IVT biosimilar OR ***These options are expected to be used first line if appropriate***	Dexamethasone intravitreal implant
Second choice	Aflibercept 8mg IVT OR Faricimab IVT OR	Fluocinolone intravitreal implant
Third choice	Brolucizumab IVT *Risk of intraocular inflammation*	N/A

Abbreviation: IVT – intravitreal injection

NICE NG242 recognises the use of anti-VEGFs outside of the criteria set in the NICE TAs. Commissioning of medicines recommended in NICE guidance is not mandatory. **The NICE NG242 recommendation for treatment of patients with central retinal thickness < 400 micrometres has not been agreed within NEL ICS, and is therefore not applicable to this pathway.**

When the use of aflibercept 8mg or faricimab may be appropriate as first line

Use of second choice options as first line treatments is not a cost effective long term approach. It may be appropriate to use **aflibercept 8mg** or **faricimab** (associated with slightly fewer appointments based on NHSE modelling), as first line in the following scenarios:

- Learning difficulties, dementia
- Requiring hospital transport
- Requiring treatment in the operating theatre under sedation/deep sedation/general anaesthesia
- Co-morbidities requiring frequent inpatient hospital admissions or other regular attendance (e.g. chemotherapy)
- Non-responder to first choice drugs in fellow eye previously
- Treatment harmonisation

When the use of steroid intravitreal implants (dexamethasone and fluocinolone) may be preferred over anti-VEGFs

If the patient's condition has not responded well enough to, or if they cannot have non-corticosteroid therapy, use steroid implants. Patients should only switch from anti-VEGFs to steroids if the risks outweigh the benefits of continued anti-VEGF treatment.

Use of steroid implant is preferred over anti-VEGFs in the following scenarios:

- Recent cardiovascular events within the last 6 months
- Pregnancy, provided the benefits of treatment outweigh the risk (due to concerns with potential teratogenicity and embryo-/foetotoxicity associated with anti-VEGFs) – dexamethasone may be used due to its short half-life.
- Frequent injections required to maintain disease stability and anti-VEGF treatment burden is not acceptable to the patient. Also see above recommendations – consider using aflibercept 8mg and faricimab, if appropriate, prior to considering steroid implant.

Treatment harmonisation for anti-VEGF treatment

Where one eye is already receiving treatment and the other becomes eligible for a different option, prioritise treatment harmonisation by selecting the most appropriate treatment for both eyes (i.e. using only one drug for both eyes). This strategy minimises drug administration error and allows easy identification of adverse drug reactions of a single drug compared to administering two different drugs.

Capacity constraints

Capacity constraints are normally represented by inability within a service to deliver treatment in a timely way to patients as part of business as usual. Provider trusts are robustly encouraged to transform their services to create the capacity which their service demands, using some of the savings generated by first choice agents.

6. Assessment of response and stopping treatment

The main treatment goals are:

- Improvement (> 5 letters) or stabilisation of visual acuity
- Improvement in central retinal thickness (CRT)
- Manageable treatment burden for the patient

It is recognised that not all patients can achieve complete disease remission despite frequent and timely dosing due to the progressive nature of the disease. Effective diabetes management is essential to reduce the risk of progression of eye disease. Patient should be encouraged to improve glycaemic and blood pressure control.

For anti-VEGFs:

- Consider efficacy assessment at post-loading (typically around 3 – 6 months) and a change in therapy if suboptimal response. Anatomical and functional response assessment at week 12 could help identify patients who are likely to receive continued benefit from anti-VEGFs earlier.
- Consider treatment burden and efficacy assessment at 12 to 24 months from the start of treatment.

Table 4. Disease outcomes based on recommendations from the NHSE expert working group

Disease outcome	Definition
Optimal response	• CRT: ≥ 20% improvement AND • Visual acuity: > 5 letters improvement
Suboptimal response	• CRT: < 20% improvement OR • Visual acuity: ≤ 5 letters improvement
Poor response	• CRT: < 20% improvement AND • Visual acuity: ≤ 5 letters improvement

Responses can be affected by other causes and may require further assessments to confirm a true suboptimal or poor response. Examples include, but not limited to:

- Not consistently wearing vision correction equipment at each visual assessment
- In early dementia patients where comprehension may fluctuate at each visit
- Following cataract surgery, patients may experience worsening visually significant DMO in the early post-operative phase

Stopping treatment (permanent discontinuation)

Review with consideration to stop treatment if:

- Visual acuity < 25 letters attributable to DMO in the absence of other pathology despite optimal treatment OR
- Poor response to treatment (i.e. no change or worsening CRT and visual acuity)

Questions to be considered when deciding whether further treatment is beneficial (discontinue treatment if yes to all the below):

- For anti-VEGFs – has the patient completed loading phase?
- Is the patient's treatment optimised and adequate (i.e. they have been receiving adequate injections at optimal intervals and on time)?
- Has the patient exhausted a reasonable number of treatment options (patient-specific) and there is no potential for further improvement?
- Is the treated eye the WORSE seeing eye?
- Does the patient agree that they DO NOT receive continuing benefits from treatment?

Permanent discontinuation recommended if, despite optimum treatment:

- Despite optimum treatment, visual acuity is < 15 letters attributable to DMO in the absence of other pathology AND the treated eye is the WORSE seeing eye OR
- There are irreversible structural changes with no prospect of visual improvement with continued treatment.

7. Considerations for treatment switch

There is a good rationale to switch from a steroid implant to an anti-VEGF agent and vice versa as the different mode of actions of these agents may aid in resolution of macular oedema. For some cases, same class treatment switch may be more appropriate. There is limited evidence for sequential use of anti-VEGFs in DMO, but clinical experts have indicated that it would be reasonable to use alternative anti-VEGFs where clinically appropriate to avoid the risks of adverse events with steroid implants.

Clinical experts indicated that steroids are less effective in suppressing new vessel growth when compared to anti-VEGFs, therefore patients should be monitored for neovascularisation if switching from an anti-VEGF to a steroid implant. See note 3 within appendix 1 for switching scenarios.

8. Lines of therapy

The ICB will commission per eye, up to 3 lines of anti-VEGF therapy and 2 lines of steroid therapy. The following scenarios should not count as a line of therapy:

- Switch from branded to biosimilar and vice versa, biosimilar to biosimilar switches for the same agent.
- Switch back to a previous anti-VEGF (i.e. those who did not experience clinical benefit after failed extended interval attempts with newer agents).
- Switch due to adverse drug events or allergy.
- Switching from an anti-VEGF to steroid implant due new contraindication(s) or pregnancy.
- Switching from steroid implant back to an anti-VEGF following pregnancy or after contraindication has resolved.

An adverse drug reaction to a medicine will not count as a line of therapy. However, the patient must have shown a response to therapy for that medicine after the initial response assessment period for it not to count as a line of therapy.

- If the patient has the adverse event **before** this assessment period, it will not count as a line of therapy.
- If the adverse reaction occurs **after** the initial response assessment period and the patient has shown a response to therapy with that treatment, it will not count as a line of therapy.

Worked examples

One line of therapy:

- Patient switched from branded drug A to biosimilar drug A
- Patient switched from drug A to B due to adverse drug events

Two lines of therapy:

- Patient had suboptimal response to drug A, now on drug B
- Patient had suboptimal response to drug A, switched to drug B and had a good clinical response. Unable to extend dose intervals beyond 7 weeks so switched to drug C. Still unable to extend dose intervals on drug C and no clinical benefit, so switchback to drug B because it is more cost-effective.

Three lines of therapy:

- Patient who had suboptimal responses to drugs A and B, now on drug C
- Patient had suboptimal response to drug A, then switched to drug B. Unable to extend dose intervals beyond 7 weeks on drug B so switched to drug C. Remains on drug C because has added clinical benefit compared to drug B even though unable to extend dose intervals further.

9. Funding

To support data-driven care, the ICB will be extracting outcomes data from Blueteq. In accordance with the pathway, Blueteq must be used for the management of all funding requests for anti-VEGF

and steroid therapies. This includes recording treatment switches and cessation as a result of clinical review and/or remission, drug and formulation switching.

Provider trusts are expected to obtain funding via Blueteq both prior to initiation and for continuation of anti-VEGF and steroid implant treatments for DMO patients as described on the Blueteq forms. Where Blueteq is not available, provider trusts are expected to have a governance process in place to ensure compliance to this pathway. The ICB may request evidence to demonstrate compliance if necessary.

Patients transferred from out of area or from overseas

For patients who have already commenced on their treatment for DMO:

- If the current treatment is covered by a NICE TA or included within this pathway, the patient may continue treatment in line with the relevant TA or this pathway.
- If the treatment is not covered by a NICE TA or this pathway, an individual funding request (IFR) must be submitted to continue the funding for therapy.

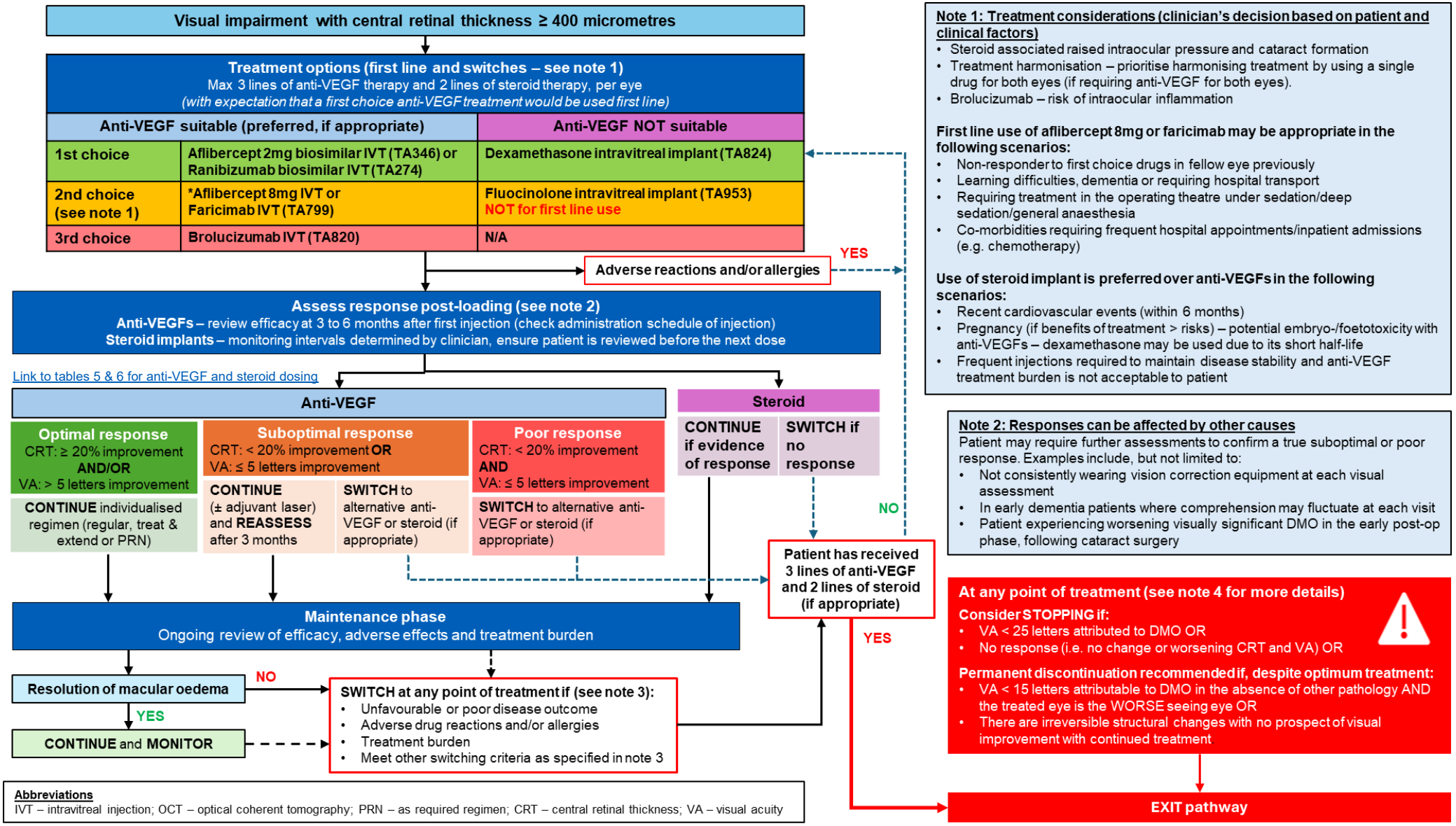
Communication between healthcare providers

It is the responsibility of the Consultant Ophthalmologist to ensure the patient's GP is informed that the patient is receiving treatment with an anti-VEGF or steroid implant. It will then be the responsibility of the GP to update the patient's medical record with this medication.

10. References

1. NHS England. Commissioning guidance: medical retinal treatment pathway for centre-involving diabetic macular oedema with visual impairment (October 2025). Last accessed 05/01/2026 via NHS Futures
2. National Institute for Health and Care Excellence (2024). NICE guidance NG242: Diabetic retinopathy: management and monitoring.
3. National Institute for Health and Care Excellence. NICE TA 274: Ranibizumab for treating diabetic macular oedema. Published February 2013, last updated October 2023
4. National Institute for Health and Care Excellence. NICE TA 346: Aflibercept for treating diabetic macular oedema. Published July 2015
5. National Institute for Health and Care Excellence. NICE TSID10621: Aflibercept for untreated diabetic macular oedema.
6. National Institute for Health and Care Excellence. NICE TA 799: Faricimab for treating diabetic macular oedema. Published June 2022
7. National Institute for Health and Care Excellence. NICE TA 820: Brolucizumab for treating diabetic macular oedema. Published August 2022
8. National Institute for Health and Care Excellence. NICE TA 824: Dexamethasone intravitreal implant for treating diabetic macular oedema. Published September 2022
9. National Institute for Health and Care Excellence. NICE TA 953: Fluocinolone acetonide intravitreal implant for treating chronic diabetic macular oedema. Published March 2024
10. Electronic Medicines Compendium. Individual drug summary of product characteristics. Available at https://www.medicines.org.uk/emc

Appendix 1. Treatment algorithm for adult patients with visual impairment due to centre-involving diabetic macular oedema (DMO)



Note 3 – Considerations for treatment switch

There is a good rationale to switch from dexamethasone implant to an anti-VEGF agent and vice versa as the different mode of actions of these agents may aid in resolution of macular oedema. For some cases, same class treatment switch may be more appropriate. Patients should be monitored for neovascularisation if switching from an anti-VEGF to a steroid implant as steroids are less effective at suppressing new vessel growth.

Switching scenarios	Considerations for switching

Switching to an alternative treatment class	• Poor response, defined as:
	  ○ Visual acuity: ≤ 5 letters improvement or worsening
	  ○ Anatomical changes: < 20% improvement in central retinal thickness (CRT)
	• Adverse drug reaction (anti-VEGFs associated with cardiovascular events, steroids associated with raised intraocular pressure and cataract formation)

Anti-VEGF to steroid implant	• Frequent injections required to maintain disease stability and treatment burden is not acceptable to patient (see section 5) • Pregnancy, provided the benefits of treatment outweigh the risks
Dexamethasone to fluocinolone implant	• Consider switch if therapeutic effects of dexamethasone intravitreal implant lasts < 6 months, requiring frequent retreatment (i.e. if 4-monthly dexamethasone is required)
Anti-VEGF to another anti-VEGF (only if an anti-VEGF is still appropriate)	• Adverse drug reaction • Poor response after completing loading or during maintenance phase • Frequent injections are required to maintain disease stability (e.g. unable to extend > 7 weeks) and treatment burden is not acceptable to either patient or service delivery
No response to anti-VEGF and either vitreomacular traction of epiretinal membrane	• Switch to alternative anti-VEGF or steroid implant (check for warning signs of permanent damage and consider vitrectomy before any permanent damage occurs)
If no clinical benefit after THREE months post-switching to an alternative anti-VEGF	• Consider switching back to the previous anti-VEGF if it was previously effective, better value and clinically appropriate • Consider switching to an alternative anti-VEGF or steroid implant if this is the patient's second anti-VEGF, where clinically indicated
Switchback from steroid implant to anti-VEGF	**If patient meets either scenario 1 or scenario 2:** 1. Patient had a better response (disease activity/ treatment interval/ functional outcome) whilst on anti-VEGF compared to steroid implant OR 2. Adverse events (e.g. raised intraocular pressure, normally peaks at 60 days post dexamethasone implant). **AND initial reason for switching away from anti-VEGF was due to any of the following:** • Cardiovascular events (now resolved) • Vitrectomy • High injection burden • Anti-VEGF being deemed unsuitable (e.g. due to other co-morbidities requiring frequent hospital appointments) *It is recommended to trial a different anti-VEGF if the original reason for switch was due to high injection burden*

Note 4 – Stopping treatment (permanent discontinuation)

Review with consideration to stop treatment if, despite optimal treatment:
- Visual acuity < 25 letters attributable to DMO in the absence of other pathology despite optimal treatment OR
- Poor response to treatment (i.e. no change or worsening CRT and visual acuity)

Questions to be considered when deciding whether further treatment is beneficial (discontinue treatment if yes to all the below):
1. For anti-VEGFs – has the patient completed the initiation phase (at least three-monthly injections)?
2. Is the patient's treatment optimised and adequate (i.e. they have been receiving adequate injections at optimal intervals and on time)?
3. Has the patient exhausted a reasonable number of treatment options (patient-specific) and there is no potential for further improvement?
4. Is the treated eye the WORSE seeing eye?
5. Does the patient agree that they DO NOT receive continuing benefits from treatment?

Permanent discontinuation recommended if, despite optimum treatment:
- Visual acuity is < 15 letters attributable to DMO in the absence of other pathology AND the treated eye is the WORSE seeing eye OR
- There are irreversible structural changes with no prospect of visual improvement with continued treatment.

Appendix 2. Drug information and dosing details based on SPC

Table 5. Anti-VEGF dosing details (adapted from NHSE)

Treatment choice	Drug	Mechanism of action – receptor(s) inhibited	NICE TA for other ophthalmology indications	Loading dose	Maintenance dose (post-loading, with disease activity)	Treat and extend dose increment intervals	Minimum dosing intervals during maintenance
First choice	Aflibercept 2mg biosimilar IVT	VEGF-A VEGF-B PLGF	*Biosimilars not available at time of TA publication* Wet AMD (TA294) mCNV (TA486) BRVO (TA409) CRVO (TA305)	2mg monthly for 5 months	1 injection every 2 months	2 weeks (up to 1 injection/ 16 weeks)	4 weeks
	Ranibizumab biosimilar IVT	VEGF-A	Wet AMD (TA155) mCNV (TA298) BRVO and CRVO (TA283)	0.5mg every 4 weeks for 3 months or more until maximum visual acuity achieved	Every 4 weeks	Up to 4 weeks (no specific maximum treatment intervals specified in SPC)	4 weeks
Second choice	Aflibercept 8mg IVT	VEGF-A VEGF-B PLGF	Nil published TA	8mg monthly for 3 months	1 injection every 2 months	Not specified (up to 1 injection/ 16 weeks, can be further extended to 1 injection/ 24 weeks)	8 weeks
	Faricimab IVT	VEGF-A Ang-2	BRVO and CRVO (TA1004) Wet AMD (TA800)	6mg every 4 weeks for 3 doses	1 injection every 8 to 16 weeks	Up to 4 weeks (up to 1 injection/ 16 weeks)	4 weeks (3-weekly interval is off-label and not recommended)
Third choice	Brolucizumab IVT	VEGF-A	Wet AMD (TA672)	6mg every 6 weeks for 5 doses	**With disease activity:** 1 injection every 8 weeks **Without disease activity:** 1 injection every 12 weeks	Not specified (up to 1 injection/ 16 weeks) Extension should only happen after 12 months of treatment	8 weeks

Abbreviations: IVT – intravitreal injection, CRVO – central retinal vein occlusion, BRVO – branch retinal vein occlusion, wet AMD – wet age-related macular oedema, Ang-2 – angiopoietin-2, PLGF – placental growth factor, VEGF-A – vascular endothelial growth factor A, VEGF-B – vascular endothelial growth factor B

Table 6. Steroid intravitreal implant dosing details (adapted from NHSE)

Drug	NICE TA for other ophthalmology indications	Dosing	Treatment considerations and notes

Dexamethasone intravitreal implant **(preferred choice)**	BRVO and CRVO (TA229)	**Dose**
		700 microgram (1 implant) into the affected eye
		
		Repeated dosing
		• If patient experiences decreased vision and/or an increase in retinal thickness, secondary to recurrent or worsening diabetic macular oedema.
		• Retreatment at 6 months (licensed)
		• Retreatment at 4 months (off-label) – in clinical practice, therapeutic effect can last for 4 months and may require earlier retreatment
			Concurrent administration to both eyes
			Common clinical practice is to administer to one eye at a time for the first injection, then to review for response and side effects. If no concerns and clinically appropriate, clinicians may chose to administer to both eyes at the same time for subsequent doses.
			
			Repeated dosing
			• **Max 3 implants per year** (i.e. treatment every 4 months) will be commissioned until patient meets discontinuation criteria – NHSE recommendation
			• Repeated administrations beyond 7 implants
			  ○ Manufacturer reports no experience of efficacy or safety
			  ○ Clinicians report no concerns and the number of patients requiring this is small

Fluocinolone acetonide intravitreal implant	Uveitis (TA590)	**Dose** 900 microgram (1 implant) into the affected eye **Additional implant after 12 months** • If patient experiences decreased vision and/or an increase in retinal thickness, secondary to recurrent or worsening diabetic macular oedema. • Retreatments should not be administered unless the potential benefits outweigh the risks.	**Use fluocinolone only in patients who have had insufficient response to prior treatment with laser photocoagulation or other available therapies for DMO** Administration to both eyes concurrently – NOT recommended to administer to both eyes at the same visit **Max 2 implants per eye** will be commissioned – NHSE recommendation **Recue treatment** (e.g., anti-VEGFs, laser, dexamethasone implant) may be required in approximately 40% of patients (FAME study and IRISS registry study) – NHSE recommendation

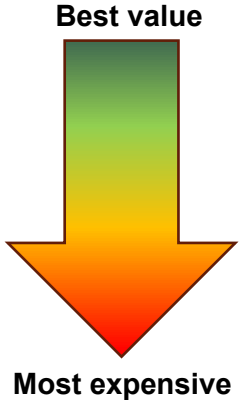
Abbreviations: BRVO – branch retinal vein occlusion, CRVO – central retinal vein occlusion

Appendix 3. Cost comparison across treatments

Based on NHS England modelling, first-line treatment with either ranibizumab biosimilar or aflibercept 2mg biosimilar offers the best value. Therefore, it is recommended to start patients with ranibizumab biosimilar or aflibercept 2mg biosimilar first before moving on to other treatments.

The number of appointments per patient over 3 years required is broadly similar across treatment options, with faricimab and aflibercept 8mg associated with slightly fewer appointments.

Indicative combined costs (drug and activity) of anti-VEGFs and steroid implants based on average number of doses from NHSE modelling and real-world NHS data at the time of writing



Aflibercept 2mg biosimilars (best value)
Ranibizumab biosimilars (best value)
Aflibercept 8mg
Faricimab
Dexamethasone implant (6 monthly/2 implants per year)
Fluocinolone implant (1 implant over 3 years)
Aflibercept 2mg (Eylea)
Dexamethasone implant (4 monthly/3 implants per year)
Fluocinolone implant (2 implants over 3 years)