

## Putting NICE guidance into practice

### **Resource impact report: Age-related macular degeneration: diagnosis and management (NG82)**

Published: January 2018

## Summary

This report focuses on the resource impact of recommendations for the NICE's guideline on [age-related macular degeneration](#).

We anticipate a small resource impact of as result of this guideline, which will occur gradually over the next 5 years. In a large proportion of cases it will mean people will be treated earlier than they would have been previously.

The resource impact comes from the following recommendations:

- In eyes with visual acuity of 6/96 or worse, consider anti-VEGF treatment for late AMD (wet active) only if a benefit in the person's overall visual function is expected (for example, if the affected eye is the person's better-seeing eye) (recommendation 1.5.3)
- Be aware that anti-VEGF treatment for patients with late AMD (wet active) and visual acuity better than 6/12 is clinically effective and may be cost effective depending on the regimen used (recommendation 1.5.4)

This report is supported by a local resource impact template because the list prices of aflibercept and ranibizumab have discounts that are commercial in confidence. The discounted prices of aflibercept and ranibizumab can be put into the template and other variables may be amended.

Age-related macular degeneration services are commissioned by clinical commissioning groups (CCGs). Providers are NHS hospital trusts and community optometrists.

# 1 Introduction

- 1.1 The guideline offers best practice advice on [diagnosing and managing age-related macular degeneration \(AMD\) in adults aged 18 and over](#).
- 1.2 This report discusses the resource impact of implementing our guideline on age-related macular degeneration in adults aged 18 and over in England. It aims to help organisations plan for the financial implications of implementing this NICE guideline.
- 1.3 We encourage organisations to evaluate their own practices against the recommendations in the NICE guideline and assess costs and savings locally. An illustrative example is provided in the local resource impact template and organisations can input estimates into the template to reflect local practice and estimate the impact of implementing the guideline.
- 1.4 Age-related macular degeneration services are commissioned by clinical commissioning groups (CCGs). Providers are NHS hospital trusts and community optometrists.

# 2 Background

- 2.1 Age-related macular degeneration (AMD) is the commonest cause of severe visual impairment in older adults in the developed world. The two main late AMD phenotypes, geographic atrophy and exudative AMD, are responsible for two-thirds of registrations of visual impairment or blindness in the UK. It is estimated a quarter of a million older adults in the UK alone suffer from blindness due to this condition.
- 2.2 There has been a significant increase in hospital activity in England for treatment and monitoring people with a primary diagnosis of AMD from less than 10,000 visits in 2005–2006 to over 75,000 visits in 2013–2014 (Hospital Episode Statistics). The most

common primary procedure in hospital visits of people with a primary diagnosis of macular degeneration involves intravitreal injection.

- 2.3 The cost of aflibercept and ranibizumab, medicines for the treatment of late AMD (wet active), is significant. In 2015–16, ranibizumab was second and aflibercept was fourth in the list of medicines with positive NICE technology appraisals on which the NHS spent most money, between them accounting for a total of around £450 million (although some of these costs relate to use for other licensed indications) (NHS Digital, 2016).

### **3 Recommendations with potential resource impact**

#### **3.1 Anti-vascular endothelial growth factor (anti-VEGF) treatment**

The guideline recommends:

- In eyes with visual acuity of 6/96 or worse, consider anti-VEGF treatment for late AMD (wet active) only if a benefit in the person's overall visual function is expected (for example, if the affected eye is the person's better-seeing eye)  
(recommendation 1.5.3)
- Be aware that anti-VEGF treatment for patients with late AMD (wet active) and visual acuity better than 6/12 is clinically

effective and may be cost effective depending on the regimen used (recommendation 1.5.4)<sup>1,2</sup>

## Background

- 3.1.1 Around 80% of people with late AMD (wet active) have visual acuity between 6/12 and 6/96. In current practice anti-VEGF treatments (given as intravitreal injections) tends to be in line with NICE guidance on [ranibizumab and pegaptanib \(TA155\)](#) and [aflibercept \(TA294\)](#).
- 3.1.2 The committee developing the guideline looked at the evidence for the clinical effectiveness of treating late AMD (wet active) when visual acuity is worse than 6/96 or better than 6/12. They also considered the economic analysis carried out for the guideline (details in guideline appendix J).
- 3.1.3 After considering this evidence, the committee recommended that treatment of eyes with visual acuity lower than 6/96 should be considered only if the clinician expects it will have a positive impact on the person's overall visual function. They noted that in most cases, this would be when treatment was for the patient's better-seeing eye.
- 3.1.4 The committee acknowledged that the evidence suggested that treating late AMD (wet active) when visual acuity is good (better than 6/12) leads to the eye maintaining good visual acuity over

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<sup>1</sup> At the time of publication (January 2018), bevacizumab did not have a UK marketing authorisation for, and is considered by the Medicines and Healthcare products Regulatory Agency (MHRA) to be an unlicensed medication in, this indication. The prescriber should follow relevant professional guidance, taking full responsibility for the prescribing decision. Informed consent would need to be obtained and documented. See the General Medical Council's [Prescribing guidance: prescribing unlicensed medicines](#), and the MHRA's guidance on the [Supply of unlicensed medicinal products \(specials\)](#), for further information. The guideline may inform any decision on the use of bevacizumab outside its UK marketing authorisation but does not amount to an approval of or a recommendation for such use.

<sup>2</sup> Given the guideline committee's view that there is equivalent clinical effectiveness and safety of different anti-VEGF agents (aflibercept, bevacizumab and ranibizumab), comparable regimens will be more cost effective if the agent has lower net acquisition, administration and monitoring costs.

time. They noted that this evidence was in line with clinical experience, which finds that treating late AMD (wet active) before significant visual impairment occurs commonly leads to maintenance of vision (and may lead to fewer injections being required overall).

### **Assumptions made**

- 3.1.5 The adult population (aged 50 and over) is from the [mid-2015 population estimates, office for national statistics](#).
- 3.1.6 The incidence of late AMD (wet active) is from [Owen CG et al \(2012\). The estimated prevalence and incidence of late stage age related macular degeneration in the UK. British journal of Ophthalmology 2012; 96:752-796](#).
- 3.1.7 The proportion of people with late AMD (wet active) with visual acuity between 6/12 and 6/96 and eligible for treatment in TA294 of 80% is from the manufactures submission referenced in the costing template [aflibercept solution for injection for treating wet age-related macular degeneration TA294](#).
- 3.1.8 The increase in prescribing as a result of the guideline recommending treatment for people with late AMD (wet active), and visual acuity not within the range 6/12 to 6/96, of 5% is based on clinical expert opinion. It is anticipated that earlier prescribing may require less treatment overall and, although this cannot be modelled with a high degree of certainty, it has been considered when arriving at the assumption of a 5% overall increase in prescribing. This has been included in the sensitivity analysis.
- 3.1.9 The proportion of eyes that would have been treated anyway is 80% based on clinical expert opinion. This is for eyes with visual acuity better than 6/12 whose visual acuity would have worsened and been eligible for treatment under TA155 and TA294. This proportion has been applied to the number of eyes treated in the

previous year because it is assumed that treatment now happens around 12 months earlier. This proportion has been included in the sensitivity analysis.

- 3.1.10 The proportion of eyes expected to have ranibizumab and aflibercept is 70% and 30% respectively based on clinical expert opinion.
- 3.1.11 The proportion of eyes that continue treatment into years 2 to 5 are from the costing template for [aflibercept solution for injection for treating wet age related macular degeneration TA294](#).
- 3.1.12 The number of intraocular injections included in the drug costs are from the health economics tables 35 and 37 in [appendix J](#) of the guideline.
- 3.1.13 The number of monitoring visits are from the costing template for [aflibercept solution for injection for treating wet age-related macular degeneration TA294](#).
- 3.1.14 A weighted average administration cost is used based on 63% outpatient procedures and 37% day case procedures calculated using HES data for OPCS codes 'C79.4 Injection into vitreous body NEC' and 'C89.3 Injection of therapeutic substance into posterior segment of eye' and National tariff 2017/18, BZ86B 'Intermediate vitreous retinal procedures, 19 years and over, with CC score 0-1'.
- 3.1.15 The cost per visit is taken from National tariff 2017/18 for an outpatient follow-up visit – consultant led (treatment function code 130, WF01A ophthalmology).

## **Costs**

- 3.1.16 This report is supported by a local resource impact template. Aflibercept and ranibizumab have patient access schemes, agreed between the Department of Health and Bayer and Novartis, which makes them available with a commercial-in-confidence discount to

the list prices. The discounted prices of aflibercept and ranibizumab can be put into the template and other variables may be amended.

3.1.17 The number of additional eyes less the number of eyes that would have been treated anyway and therefore anticipated to receive treatment in the illustrative calculation in 2018/19 is 310, rising to reach full uptake of 1,777 in 2022/23. See table 3 below.

**Table 3 Illustrative annual uptake of implementing the guideline in England: number of eyes treated**

Financial year	2018/19	2019/20	2020/21	2021/22	2022/23
First year of treatment	310	621	931	1241	1552
Second year of treatment	0	299	599	898	1198
Third year of treatment	0	0	243	487	730
Fourth year of treatment	0	0	0	198	396
Fifth year of treatment	0	0	0	0	161
<b>Total eyes having treatment</b>	<b>310</b>	<b>920</b>	<b>1,773</b>	<b>2,824</b>	<b>4,036</b>
<b>Less eyes that would have been treated</b>	<b>0</b>	<b>248</b>	<b>736</b>	<b>1,419</b>	<b>2,259</b>
<b>Net increase in treatment numbers</b>	<b>310</b>	<b>672</b>	<b>1,037</b>	<b>1,406</b>	<b>1,777</b>

### Savings and benefits

3.1.18 The current threshold not to treat eyes with good baseline visual acuity better than 6/12, means eyes have less potential to improve due to a ceiling effect and greater potential to decline.

## 3.2 **Other recommendations with a potential resource impact**

3.2.1 Some other recommendations in the guideline have the potential to incur costs or make savings. The resource impact for these recommendations is not expected to be significant at a national level. At a local level, the resource impact will depend on local current arrangements and the extent to which the recommendations are already part of existing practice.

3.2.2 The recommendations with potential impact are as follows.

3.2.3 Offer fundus examination as part of the ocular examination to people presenting with changes in vision (including micropsia and metamorphopsia) or visual disturbances (recommendation 1.4.1).

The committee noted that fundoscopy is an inexpensive and simple-to-perform test. Using it is likely to reduce the number of inappropriate referrals to retinal clinics, and therefore be cost-saving compared with referral based on clinical features alone.

3.2.4 For eyes with confirmed late AMD (wet active) for which antiangiogenic treatment is recommended, offer treatment as soon as possible (within 14 days of referral to the macula service) (recommendation 1.4.10).

There will be no change in the number of people referred to the macula service, but some macular services will require additional resources and planning for demand and capacity to meet the recommended 14 days referral.

3.2.5 Do not routinely monitor people with early AMD or late AMD (dry) through hospital eye services (recommendation 1.7.1).

Advise people with late AMD (dry), or people with AMD who have been discharged from hospital services to:

- self-monitor their AMD
- consult their eye-care professional as soon as possible if their vision changes
- continue to attend routine sight-tests with their community optometrist (recommendation 1.7.2)

The recommendations have the potential to free up secondary services that could lead to resource savings.

## **4 Implications for commissioners**

4.1 Commissioners may need to review age-related macular degeneration commissioning policies in order to meet the recommendations on anti-VEGF treatments. Demand and capacity planning may be needed to model any changes to age-related macular degeneration services.

4.2 Age-related macular degeneration falls under programme budgeting category 08X (problems of vision).

### **About this resource impact report**

This resource impact report accompanies the NICE guideline on [Macular degeneration](#) and should be read in conjunction with it. See [terms and conditions](#) on the NICE website.

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