



The ROYAL COLLEGE of  
OPHTHALMOLOGISTS

# The Way Forward

Options to help meet demand for the current and future care of patients with eye disease

## Age-Related Macular Degeneration and Diabetic Retinopathy

This summary leaflet provides a quick reference guide to the options and practical steps outlined in the full report document available on the RCOphth website.

The Way Forward was commissioned by the RCOphth to identify current methods of working and schemes devised by ophthalmology departments in the UK to help meet the increasing demand on ophthalmic services. The **information aims to offer a helpful resource for members who are seeking to develop their services to increase capacity**. The findings are based on more than **200 structured interviews offered to ophthalmology clinical leads** in all departments in the four home nations.

**Models of care outlined in The Way Forward have, in general, grown rapidly through necessity because of the urgency of increased need in a climate of limited capacity.** The majority of the schemes and new ways of working reported, have been successful and the benefits and limitations are highlighted to provide a realistic picture.\*

This is one of four summary leaflets covering each of the particularly high volume areas of ophthalmic care:

- Cataract
- Glaucoma
- Medical retina – encompassing macular degeneration and diabetic eye disease
- Emergency eye care

More detailed report findings for each of these areas are available on the RCOphth website.\*\*

**The Way Forward can be shared amongst the ophthalmic community as a practical resource for the development of service redesign.** The RCOphth will facilitate communication by putting members in touch with those who have contributed to The Way Forward and who will be able to offer further information and advice.

**Professor Carrie MacEwen**  
President

# Age Related Macular Degeneration

- Patients with possible neovascular AMD (nAMD) require urgent new appointments and follow ups must not be deferred
- Recurrent assessment and treatment are required
- In excess of 600,000 intra-vitreous injections were given in 2015 in England
- The demand on the service is growing rapidly

## Referral management

- Suspected nAMD requires fast track referrals and rapid access for immediate assessment and imaging
- Direct electronic referral can be used to facilitate this
- Reducing false positive referrals by using OCT in the community needs careful evaluation as it requires training which may be offset by unnecessary referrals due to difficulty with scan interpretation
- New patient triage using clinical assessment and imaging may be performed by trained non-medical healthcare professionals (HCPs) or ophthalmologists (Fig 1, A and B)
- The decision that rapid treatment or no treatment is required should be made and delivered with the most efficient use of time and personnel (Fig 1)

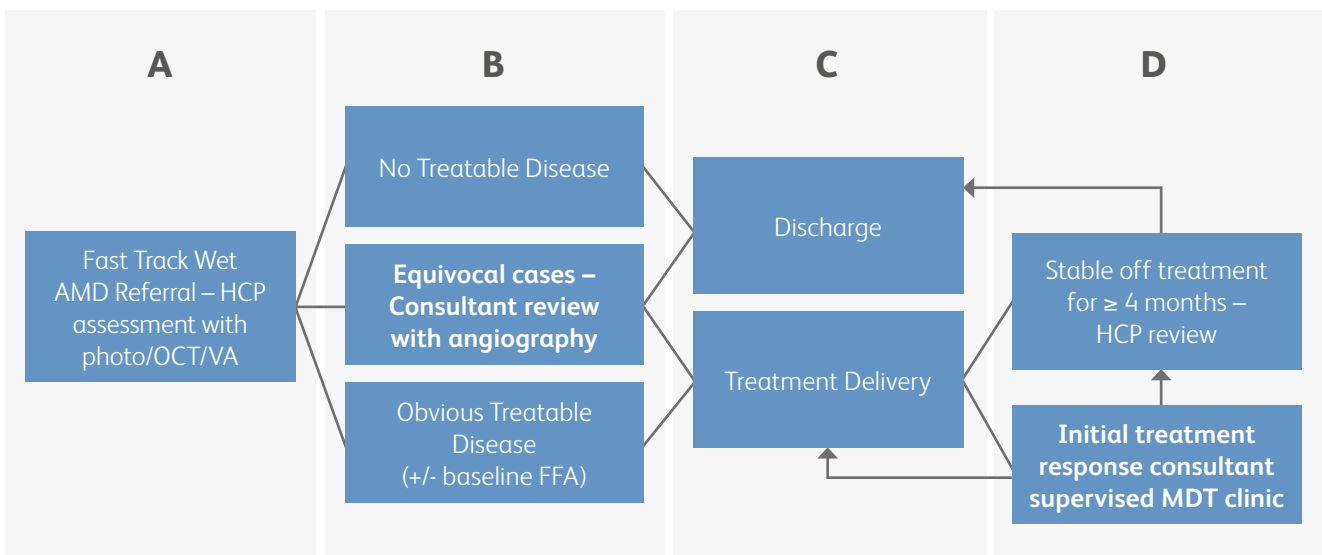


Figure 1: Referral and flow through hospital system with early triage and focused treatment delivery

Benefits	Limitations
<ul style="list-style-type: none"> <li>• Rapid access for patients possible</li> <li>• Increased capacity</li> <li>• Consultant can concentrate on complex cases and decision making</li> </ul>	<ul style="list-style-type: none"> <li>• ‘Impersonal’ with loss of patient relationships with medical staff</li> <li>• Requires space and adequate IT</li> <li>• Training, recruitment and retention of non-medical HCPs essential</li> </ul>

# Management and flow of patients with nAMD

Assessment and treatment must be provided within a tight time frame and this has led to various developments in service design.

## Virtual clinics in AMD

- 63% (17/27) departments reported using virtual clinics
- Reliance on imaging has made these more acceptable
- These can be delivered in the HES or at peripheral sites, including mobile units or via telemedicine to provide more space
- Decisions about treatment are made by the consultant at a virtual reporting session or by the HCPs directly where trained for case-mix
- Different levels of decision making are being developed (Fig 2)

Virtual Clinic	Virtual with HCP Input	Autonomous HCP Clinic	HCP Virtual Clinic
Images acquired by HCP reviewed by consultant for treatment decision	HCPs acquire images, evaluate and propose treatment plan, confirmed by consultant	HCP clinics with access to consultant support if needed. Quality assurance by audit or review of a sample	Technicians acquire images for HCP review, with consultant input on request

Figure 2: Virtual clinic models

Benefits	Limitations
<ul style="list-style-type: none"> <li>• Expands available personnel to deliver an overburdened service</li> <li>• Can use off-site facilities</li> </ul>	<ul style="list-style-type: none"> <li>• Requires fast, reliable, capable IT systems</li> <li>• Requires increase in available space and equipment to assess patients in larger numbers</li> <li>• Training, audit and governance must be appropriate</li> </ul>

## One stop clinics

Clinics where patients are both assessed and treated at the one time have been successful in reducing the number of hospital appointments for patients. These can be used for new or return patients, but are reported as being more common for review patients (53%) than new referrals (30%). The advantages are not fully known and attempts to get the best of both worlds with injection lists running alongside assessment clinics have also developed, ie start with booked patients for injection and leave space for those being assessed.

Benefits	Limitations
<ul style="list-style-type: none"> <li>• Reduces transport costs</li> <li>• Reduces 'fixed' costs – pulling notes, making appointments, bookings etc</li> <li>• Can be adapted to virtual 'treat and extend' clinics</li> <li>• Positive environmental impact</li> </ul>	<ul style="list-style-type: none"> <li>• Patient uncertainty and anxiety 'will I won't I need an injection?'</li> <li>• Variation in demand and potential waste of capacity – injector may be under-utilised if there is not adequate demand</li> <li>• Efficient two stop lists can be higher volume</li> </ul>

## Treatment provision

The success of regular Anti-VEGF injections has placed a great demand on medical retina services. Training HCPs – most commonly nurses – to perform intra-vitreous injections has shared this load.

- 64% (18/28) interviewed used trained nurse injectors and governance arrangements had been put in place
- HCPs are reported to deliver similar numbers of injections per session as doctors
- Using dedicated space and available staff well can improve efficient injection regimes
- Consider mobile or community units
- Clear policies about when to use different investigations to direct treatment improves patient flow and experience
- Theatre time should not be used if possible - clean rooms mean theatre time is kept for surgery

## Barriers and solutions to delivering an efficient AMD service

	Issue	Consequences and solutions
<b>Clinic Space</b>	Limited space can prevent patient-centred one-stop service development	Re-locating parts of the pathway to <b>mobile or community</b> facilities, or creation of <b>virtual clinics</b> can help this
<b>Staffing</b>	Shortage of MR consultants or other senior ophthalmologists	Where the bottleneck is for consultant review, all <b>non-consultant dependant tasks must be devolved to HCPs</b>
	Administrative staff shortages	Loss of capacity due to inefficiency in booking and clinical risks with appointment mismanagement
	Limited appropriately skilled HCPs	This creates inability to task-shift from consultants to HCPs, but can be helped by ensuring <b>all staff are operating at the top of their training and competence</b> freeing up more senior HCPs to take on advanced roles
<b>Equipment</b>	Insufficient access to OCT or angiography	<b>Virtual clinics</b> permit divorce of image acquisition from main clinic times easing bottleneck but risking patient inconvenience if multiple visits needed
<b>Support and monitoring</b>	Weak support services for patients (LVA, ECLO) or clinicians to record data for audit	<b>Electronic patient records</b> circumvent problems collating information for audit of clinical outcomes for quality assurance and feedback to commissioners
<b>Funding</b>	Unsuccessful or short-term focussed business plans lead to failure to build long-term capacity	Lack of expansion possibilities for human resource or infrastructure. Need to <b>“invest to save”</b>

Figure 3: Various key capacity issues create different limitations to AMD service capacity

From – Amoaku W, Blakeney S, Freeman M, et al. Action on AMD. Optimising patient management: act now to ensure current and continual delivery of best possible patient care. Eye 2012; 26 Suppl 1: S2-21.

# Diabetic Retinopathy

- The prevalence of diabetes increased by 50% in the decade leading up to 2005
- Increase in diabetic retinopathy is expected to continue, reflecting this
- Prevention is possible – every percentage point reduction in HbA1c conveys a 30–40% reduction in risk of retinopathy
- Diabetic screening has had a positive impact on the rate of blinding retinopathy

## Referral refinement (Fig 4)

- More than 50% of referrals from the diabetic retinal screening (DRS) service are considered false positives (low risk maculopathy)
- Automated grading has been shown to be successful and has promise to reduce workload
- 53% of diabetic services reported using virtual review (OCT) of referable maculopathy cases detected at screening
- This referral refinement can occur as part of the diabetic retinopathy service in HES clinic or community setting
- Patients are then directed back to screening for active surveillance or for treatment

Benefits	Limitations
<ul style="list-style-type: none"> <li>• Fewer patients attend HES clinics</li> </ul>	<ul style="list-style-type: none"> <li>• Risk of missing non-maculopathy sight threatening disease</li> <li>• Requires IT systems and training</li> </ul>

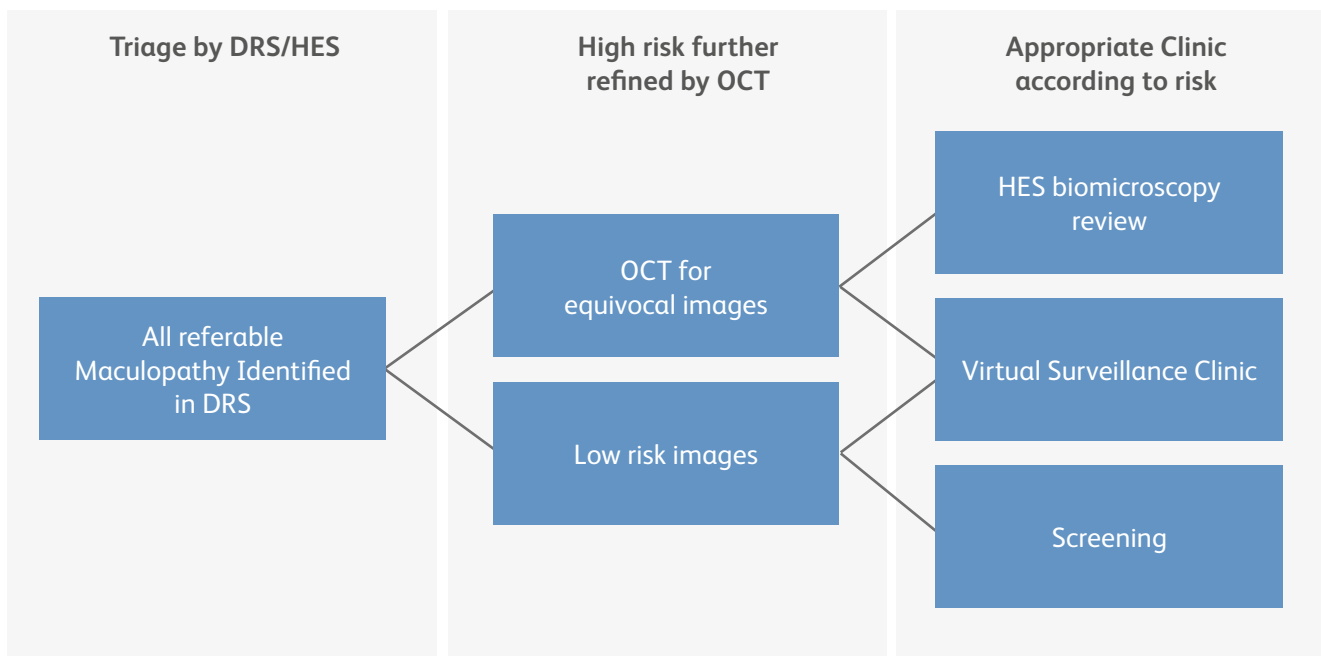


Figure 4: Managing referrals from diabetic screening

# Treatment provision

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## One stop laser or anti-VEGF injection clinics

Diabetics commonly have multiple health related appointments and therefore above average 'Did not attend' (DNA) rates. The same issues apply for diabetics as for patients with nAMD regarding one stop anti-VEGF injection clinics (see One stop clinics page 3). They may also have a small window of opportunity for treatment that may be missed by waiting. One stop laser treatment clinics are attractive, but they are:

- Logistically difficult due to lack of laser availability in the out-patient department
- Currently unusual in the UK but can be implemented in most departments for patients with clinically urgent disease

## Factors common to AMD and DR

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Nurse injectors for diabetic anti VEGF treatment.

- Intravitreal injections are becoming more commonplace for the treatment of diabetic eye disease and the same advantages of trained HCP injectors apply as for AMD (above)

## Discharge policies

Risk stratification of patients who are no longer receiving active treatment for nAMD or DR may permit graded discharge options. (Fig 1, C and D)

- This requires confidence in secure clinical pathways, adequate IT, trained community staff and clear routes of communication and re-access

## Trained vision support workers / Eye Clinic Liaison Officers (ECLOs)

74% of departments interviewed have vision support workers/ECLOs who assist in the delivery of information for those with visual loss as well as providing practical advice in an acute situation and access to support services. They provide a seamless transition between health and social care and save valuable medical time.

## Questions to consider for improving your services

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It must be emphasised that one size will not fit all in configuration of Medical Retina or diabetic retinopathy services; heterogeneity in patient characteristics and local contexts make it impossible to be prescriptive, but common points for consideration are set out below.

### Encourage managerial engagement with the projected growth

- Emphasise to managers the importance of a departmental plan to cope with a 60% increase in DR and AMD case load over the next 20 years. Decide on specific interventions, and agree what level of demand would trigger the next step in the plan being implemented. Consider using the RCOphth "3 Step Plan" for reducing risks from outpatient delays

### Refinement of referrals from the DRS

- If all referable maculopathy is being reviewed face to face in HES, consider reviewing the images and categorising as A] High risk – must be seen in HES, B] low risk – can be seen again in the DRS in 6 months, and C] equivocal – could have an OCT and then decision made as to appropriate review. If this produces a useful reduction in patient numbers, consider training for a non-medical HCP, or move the task into the DRS itself

### **Virtual clinics for DR or AMD**

- Consider using this to follow up stable R2 if sufficient retinal coverage can be achieved at adequate quality by the available imaging modalities
- Consider what patient groups are lowest risk and could therefore be moved into a virtual clinic service (eg those who have been stable off treatment for three months or more)
- Consider training HCPs who could review the images for this virtual service rather than a consultant undertaking this activity
- Investigate options for decentralised image acquisition for AMD virtual clinics if community OCT and cameras are in existence already

### **Injection services**

- Consider non-ophthalmologist injectors – identify staff who would be suitable for this role, and pursue training on specific courses / get experience at nearby units with non-medical HCP injectors
- Arrange to visit a unit running with higher throughput to see how this is managed if your service delivers less than 16 injections in a four hour dedicated injection session (where the injector is not also performing clinical assessment)
- Investigate the geography of the unit to optimise patient flow

### **Investigations**

- If your department is struggling with capacity for angiograms, consider a targeted approach such that investigations are only instigated when there is an expectation of this altering the management
- Where there is pressure on OCT provision, it could be decided not to perform an OCT on patients who are receiving a planned block of injections until the next management decision is required. However, bear in mind that when it comes to determining response/non-response later, you may have incomplete data to allow a swift decision

### **Administration and Monitoring**

- It is unlikely that monitoring of clinical outcomes will remain optional in the long term. Plans should be put in place to permit outcome audit where this is not currently done
- Monitor DNA rates. Each DNA creates a loss of capacity (and income under PbR in England) that makes the economic case for a fail-safe officer, nurse educator or other interventions to work at minimising DNA
- Review appointment timing is critical; follow up times should be monitored, causes for any delays identified and safety mechanisms implemented

### **Vision Support / ECLO Services**

- Negotiate with charities to fund a Vision Support worker/ECLO Services in the short term, but negotiate with the Trust to take up this funding if the post is seen to provide good value after the initial charitable support ends. Departmental agreement to divert the fees received from certifying patients as visually impaired is another means that departments have used to fund an ECLO post

### **Reporting Clinical Outcomes**

- About 50% of departments perform routine electronic audit of outcomes. Departments not doing this could consider implementation of similar outcome analysis tools

**\*Where schemes do not comply fully with RCOphth standards, this has been highlighted**

**\*\* The more detailed report findings for each of the high volume areas of ophthalmic care are available at [www.rcophth.ac.uk/standards-publications-research/the-way-forward/](http://www.rcophth.ac.uk/standards-publications-research/the-way-forward/)**

**Members can email: [wayforward@rcophth.ac.uk](mailto:wayforward@rcophth.ac.uk) for more information**

The Way Forward was commissioned by The Royal College of Ophthalmologists and appreciation is extended to everyone who contributed to the development of this important initiative. This includes all members who took part in the interviews conducted by Mr John Buchan in undertaking research for The Way Forward.

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