

{Insert} Name of Trust

# Clinical Policy for the Administration of Intravitreal Injections of Anti-VEGF Medication for Macular Disease by Non Medical Practitioners

## Summary

*This policy describes the processes required for non-medical clinical staff to carry out intravitreal injections of anti-VEGF medication.*

**Version:** X.0

**Status:** xxx

**Approved:** X.X.20XX

**Ratified:** X.X.20XX

Clinical Unit or Department:	
Name of author(s)	
Name of responsible individual	
Approved by:	
Ratified by :	
Date issued:	
Review date	
CQC relevant domains	
Target audience:	Nursing, orthoptists, optometrists, ophthalmologists, ophthalmology managers

## Version History

Version	Date Issued	Brief Summary of Change	Author

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## 1. Introduction

In recent years, the injection of drugs into the vitreous has expanded rapidly to become hugely important in the treatment of medical retinal diseases and the commonest ophthalmic procedure performed. Most intravitreal injections are to deliver anti-vascular endothelial growth factor medications (anti-VEGF) or steroid drugs and implants. These intravitreal drugs include Avastin (bevacizumab), Lucentis (ranibizumab), Eylea (aflibercept) for patients with Age Related Macular Degeneration (AMD), Diabetic Macular Oedema (DMO), retinal vein occlusion (RVO) and other macular disorders. Steroids include triamcinolone and dexamethasone and implants include Ozurdex (dexamethasone) and Iluvien (fluocinolone) used to treat DMO, RVO and uveitis. These treatments are governed by NICE guidelines and require repeated timely follow up and treatment. As a consequence, attendances within the eye clinics have increased significantly and put significant demands on the available capacity. The involvement of non medical clinical professionals (NMCP) in assessing patients and/or performing intravitreal injections has become widely accepted practice to cope with this demand and to support the expansion of non medical roles, and is supported by the Royal College of Ophthalmologists.

## 2. Purpose

This policy sets out the process required for designated healthcare professionals to train and to deliver intravitreal injections as independent non medical injectors (NMIs) to the standards required by NICE and the Royal College of Ophthalmologists. This will contribute to the efficient delivery of the medical retinal service and will enhance and develop patient-centred care which fulfils national safety and service delivery targets. Service provision will be more flexible and resilient, with the potential for increased capacity for treatment. Staff will be able to develop their roles further, increasing the overall level of expertise in the department and promoting greater job satisfaction.

The policy provides details of:

- the training and competencies
- guidance for the management of patients
- standard operating procedures
- the process to be used for monitoring compliance with the process and outcomes.

## 3. Scope

This policy applies to all trust sites where intravitreal injections are carried out and is relevant to ophthalmic nurses, orthoptists and optometrists who are or wish to become NMI, to ophthalmologists in the adult medical retina service and to those managing ophthalmology retinal services.

It should be read in conjunction with other relevant trust documents:

Infection Control Policy

Medicines Management Policy

Consent Policy.

To be eligible for undergoing training and then undertaking the procedure staff must be:

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- Registered nurse (RN) at **Band 6** or above who must either hold an ophthalmic nursing qualification or have sufficient ophthalmic experience to be judged by their manager as competent to commence training.
- Registered orthoptist at **band 6** or above who has sufficient ophthalmic experience to be judged by their manager as competent to commence training
- Registered optometrist at band 6 or above who have sufficient ophthalmic experience to be judged by their manager as competent to commence training

**Any minimum time post registration?**

## **4.0 Duties and responsibilities**

### **4.1 Practitioners responsibilities**

Practitioners undertaking the training are responsible for compliance with trust policies; engaging actively with the training, keeping up to date, accurate training records; ensuring they act within their sphere of competence; completing accurately the relevant parts of the medical records; following SOPs; reporting adverse events and safety concerns to their supervisor, consultant or their line manager.

Practitioners are accountable for their own practice and must adhere to their relevant Professional Body and Regulatory Body requirements, guidelines and codes of practice / conduct:

- British and Irish Orthoptic Society (BIOS)
- Health and Care Professions Council (HCPC)
- General Optical Council (GOC)
- College of Optometrists
- Nursing and Midwifery Council (NMC)
- General Nursing Council (GNC)

Failure to do so could result in the loss of protection from the trust's liability cover and individual professional indemnity cover, could result in investigation and formal action in line with disciplinary procedures and may put the practitioner's registration at risk if concerns are raised about fitness to practice.

Once signed off as competent to practice independently, the NMI is required to audit their patient records on a 3 monthly basis in the first year and thereafter on a yearly basis, reporting on outcomes to the supervising consultant or designated deputy.

NMIs must attend a mandatory annual peer review and clinical update session on intravitreal injections.

NMIs administering the injection have a duty of care to ensure that the patient that is being treated is fully informed of the risks and benefits of the injection. Patients must be informed that they can refuse their treatment by the NMI if they have any concerns. Reasons for refusal must be clearly documented in the patient records

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## **4.2 Consultant ophthalmologist's and trainer's responsibilities**

The consultant must ensure the NMI has achieved a satisfactory knowledge base and competencies with which to perform this enhanced role. The consultant can undertake this directly or can delegate some or all parts to a senior colleague with appropriate experience, knowledge and training who is a named intravitreal injection trainer that is. an NMI with more than 2 years' experience, or a fellow or ST 6 and above ophthalmic trainee. However, the consultant retains responsibility for the training and sign off and, if not themselves, the trainer, must formally approve the NMI before they begin independent practice.

The trainer will:

Formally examine the NMI to ensure she/he has the knowledge base required

Ensure the NMI only progresses to each stage of training once the consultant or designated trainer has assessed that training is complete/competency has been achieved and the practitioner is ready to progress.

Provide adequate time for the NMI to observe intravitreal injection technique and to subsequently supervise and assess the NMI's procedural skills.

The consultant will arrange that they or a suitably other ophthalmologist is immediately available to support the NMI during an intravitreal injection clinic. The doctor should either be present on site or, if the NMI is competent to manage immediate emergencies (see below), by phone with a pathway in place to see a doctor urgently with the appropriate safe timescale if required, once the NMI has undertaken first treatment.

The patient remains under the care of a named consultant ophthalmic surgeon at all times.

## **4.3 Managers responsibility**

The manager(s) [lead nurse or ophthalmology department manager] will keep a record of all competencies and a register or list of named trainers and NMIs eligible to perform independent injecting.

Managers must only endorse skills if such development is in line with the practitioner's job description and existing trust policies and service requirements.

Managers must ensure that the practitioner is supported in skills development in the form of:

- Opportunities for supervised practice and
- Assessment of competency and sign off.

## **4.4 Employer's responsibilities**

The employer will ensure that the NMIs training and supervision is provided in a timely manner, ensuring trainers and supervisors are supported to deliver the time required. Employers will ensure NMIs are appropriately banded for the work they undertake and are given the time to undertake the training during their current role.

The employers will ensure that, subject to following trust policy, NMIs have suitable indemnity for this scope of practice.

## **5.0 Training (see appendix 1)**

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Nurses can only commence training after approval by their line manager. Training will be carried out as detailed in appendix 1. Practitioners will receive formal theoretical training initially and, when completed, will undertake observational training and, when this is completed, will undertake practice supervised by a consultant or nominated trainer. At each stage, the practitioner can proceed to the next stage of training only if their supervising consultant/trainer considers he /she is ready. They will require assessment as competent by their trainer or the consultant and competencies recorded as detailed in appendix 2.. The practitioner must be satisfied with his/her own level of competence in accordance with the guidelines and codes of conduct from their relevant regulator and professional body listed in 4.1.

## **6 Frequency of practice**

NMI led intravitreal injection clinics will be carried out according to service need. Once a practitioner has been signed off as competent, it is suggested that no more than 15 injections should be carried out per morning/afternoon session unless there are exceptional circumstances such as an increased number of bilateral cases. Additional patients can only be added to each list with the confirmed agreement of the NMI and the consultant/senior doctor in charge of the session. Each NMI will have a regular designated list but also may be required to treat any additional patients who may require unplanned intravitreal injections following assessment in clinic. The NMIs will be allocated to manage additional lists when colleagues are on annual leave, study leave or other absence. NMIs will be expected to deliver a maximum number of three sessions per week and will only exceed this number with their express agreement.

## **7. Outcome measures**

Data to be collected is:

- Record of all cases to be kept by NMIs for activity levels and denominator for outcome rates.
- Positive experience by the patient and relatives and carers. Measured via patient experience survey undertaken annually by each NMI or the department.
- Post operative endophthalmitis level comparable to doctor endophthalmitis level and in line with RCOphth guidance and evidence from literature. Any cases identified need to be reported as incidents and medical retina consultants should undertake with managers and infection control team a root cause analysis (RCA) investigation.
- Number of cases presenting as emergencies post injection comparable to rates experienced by medical practitioners and within normal limits.
- Any incidents or serious incidents or patient complaints, including the result for the patient or of any investigation, with appropriate reflective practice and learning recorded.

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The NMI will undertake an audit of their first 100 cases performed as above, to be submitted to the medical retinal consultant or nominated trainer, and on an annual basis thereafter once unsupervised practice has begun. The NMI will undergo an informal review of practice with their trainer and/or the medical retinal consultant after three months of independent injecting.

## **8.0 Stakeholder Engagement and Communication**

This guideline was developed by the medical retina medical team with other ophthalmic medical staff, orthoptic, optometrist, nursing staff and the management team.

Stakeholder engagement with consultants and other relevant staff has been through insert name of appropriate meetings and other methods e.g. emails or team meetings.

## **9.0 Approval and Ratification**

This policy was approved by the insert name of committee and ratified by the insert name of committee .

## **10.0 Dissemination and Implementation**

This policy will be implemented and disseminated to all staff involved in the administration of intravitreal injections or medical retinal care, and will be communicated to key stakeholders and policy users via email, and highlighted at team meetings and insert name of other meetings or insert other methods of dissemination.

This policy will be published on the trust intranet site.

## **11.0 Review and Revision Arrangements**

This document will initially be reviewed on a 3 year basis by the Policy Owner/Authors. Changes to the legislation or national guidelines of the administration of intravitreal injections by non-medical personal, or any trust serious incidents will trigger a review of this document.

## **12.0 Document Control and Archiving**

Insert standard trust information of document storage and removal old versions/archiving

## **13.0 Monitoring compliance with this policy**

Monitoring compliance will include:

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Element to be Monitored	Staff conducting	Tool for Monitoring	Frequency	Responsible Individual/Group/ Committee for review of results/report	Responsible individual/group/ committee for acting on recommendations/action plan
Service delivery and unit outcomes	Lead Retinal Consultant	Audit	Every 12 months	Ophthalmic clinical governance/audit meetings	Ophthalmic or MR clinical lead
NMIs	Lead Retinal Consultant	Audit and patient satisfaction survey	For the first 100 patients then annually	Lead Consultants	Retinal Team
Complications or adverse events to be recorded	All staff	Incident reporting	ongoing	Lead consultants Risk team	Ophthalmology CG
Complaints	Complaints team	Complaints process	ongoing	Lead consultant Ophthalmology manager PALS	Ophthalmology CG

## 14.0 Supporting References / Evidence Base

### National documents

British Medical Association (2015) British National Formulary, British Medical Association and the Royal Pharmaceutical Society of Great Britain.

Nursing and Midwifery Council (2015) code of professional conduct, NMC London  
<http://www.nmc.org.uk/globalassets/sitedocuments/nmc-publications/revise-new-nmc-code.pdf>.

The British & Irish Orthoptic Society Code of Ethics.

[https://orthoptics.org.uk/Resources/Documents/Standards/BIOS\\_Code\\_of\\_Ethics.pdf](https://orthoptics.org.uk/Resources/Documents/Standards/BIOS_Code_of_Ethics.pdf)

The Health & Care Professions Council (HCPC) Standards of Conduct, performance & ethics

<http://www.hpcuk.org/aboutregistration/standards/standardsofconductperformanceandethics/>

<http://www.hpcuk.org/aboutregistration/standards/standardsofconductperformanceandethics/>

BIOS – Intravitreal therapy standards of practice 2016..

General Optical Council. Standards of Practice. <https://www.optical.org/en/Standards/>  
 College of Optometrists Guidance for Professional practice. <https://guidance.college-optometrists.org/home/>

Royal College of Ophthalmologists (2018) Guidance intravitreal injections

<https://www.rcophth.ac.uk/wp-content/uploads/2018/02/Intravitreal-Injection-Therapy.pdf>

Royal College of Ophthalmologists (2013) College Statement on intra-ocular injections by non-medical health care professionals

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<http://www.rcophth.ac.uk/news.asp?itemid=1363&itemTitle=College+Statement+on+intra%2Docular+injections+by+non%2Dmedical+health+care+professionals&section=24&sectionTitle=News> May 2013

Royal National Institute of Blind People. Future Sight Loss UK 1: Economic Impact of Partial Sight and Blindness in the UK Adult Population. London: RNIB; 2009. Available from: <http://www.rnib.org.uk/aboutus/research/reports/otherresearch/pages/fsluk1.aspx>. Accessed February 12, 2014.

Varma D, Lunt D, Johnson P, Stanley S. A novel approach to expanding the role of nurses to deliver intravitreal injections for patients with age related macular degeneration. *Int J Ophthalmic Pract.* 2013;4 (2):68–74. 10

RCOphth Quality Standards for medical retina services. RCOphth 2018.

NICE guidance for AMD. <https://www.nice.org.uk/guidance/ng82>

## **Local documents**

Infection control policy

Ophthalmology department guidelines

Consent Policy

Clinical record keeping policy

Add other relevant trust document names

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## Appendix 1 : Training programme for non medical clinical professionals administering intravitreal injections

**Eligibility:** Practitioners must fulfil the requirements of the policy in terms of qualifications and experience and have approval by their line manager before undertaking training. Practitioners must ensure that all training in development is in line with scope of practice and job description and must submit any application for training to their manager for endorsement.

### Who can provide training?

Medical retinal consultants can all provide training. Part or all of the training can also be provided by the following staff, if approval has been granted by the medical retinal lead consultant or other retinal consultant:

- Consultant injectors
- SAS doctors
- Fellows
- Trainees of ST6 and above
- NMIs with more than 2 years of independent injecting experience.

### The training programme

There are two main parts to the training programme, and the practical training comprises 3 aspects:

- Theoretical training
- Practical training
  - Observation of practice
  - Supervised practice:
    - preparation of patient
    - administration of injection

The member of staff must have completed the intravitreal training course including both theoretical and practical components and have been assessed as competent by their supervising consultant or trainer. All training completion must be approved by a medical retinal consultant if it has been delivered by other trainers before independent practice commences.

Note that, in due course, the planned Royal College of Ophthalmologists OCCC training programme to competency level 3 may deliver a nationally recognised training pathway.

### Theoretical training

This may be delivered in the following ways:

- Attendance at a recognised external intravitreal training day e.g. Moorfields course
- Locally delivered half to one day training course run by medical retinal consultants
- At least 4 one to one sessions with Medical Retina consultant to informally cover key knowledge.
- This may be supplemented by an educational DVD or online video training

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Ideally there may also be access to .wet lab to practice the technique on an artificial eye with saline

Topics which must be covered through these routes are as follows:

- Anatomy and physiology of the eye and the retina
- Classification of macular disease
- OCT images (relevant to macular disease)
- Issues around infection control and intravitreal injections
- Pharmacology update (to include all drugs administered during injection visits)
- Risk and legal issues around extended role development
- Latest clinical information on treatment and treatment delivery
- How to audit NMI injections
- Consenting update for intravitreal injections
- Process of giving intravitreal injection, including the practicalities
- Recognition of complications and what actions to take.

The practitioner needs to undergo an assessment with a trainer to record their knowledge competencies and understanding of key trust policies and national requirements and obtain sign off.

## **Practical Training: Observation of practice**

On satisfactory completion of the theory training, NMIs in training can commence their period of observation whereby they shadow their assigned trainer(s) and follow each patient from assessment through to discharge. Once the treatment of twenty patients has been observed, recorded on the competency assessment log sheet which is countersigned by the trainer, the next stage can begin.

## **Practical training: Supervised Practice: Preparation of the patient**

The next step of the training pathway is to prepare the patient for the intravitreal injection. The practitioner will need to be able to demonstrate the following:

- Checks room and equipment and drugs
- Confirmation patient identity
- Suitable assessment key factors and consent in the records
- Checks patient history
- Explanation of the procedure to the patient
- Explanation NMI led procedure
- Checks allergies
- Positioning of the patient and discussion on comfort
- Hand hygiene
- Skin cleansing
- Draping of the patient

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- Insertion of the speculum

On completion of twenty preparations with completion of the signed competency sheet, the trainer will decide if the practitioner can proceed to the next stage or whether further practice is required.

## **Practical training: Supervised Practice: Administration of the injection**

The final step of the training pathway will be for the practitioner to administer the intravitreal injection. The practitioner will, under strict supervision, administer at least **50? one hundred** injections before the trainer/ will assess whether the practitioner is safe to proceed independently. This will be discussed and confirmed with a medical retinal consultant if the trainer is not a consultant.

If at this stage the practitioner is not yet ready to practice unsupervised they must continue supervised practice until the trainer feels they are ready for a further assessment. The trainer must also be happy that the practitioner can undertake lists to the required safety and efficiency to practice independently a whole list.

All the competencies must be completed and signed off and audit of practice must occur at this stage and be approved by a medical retinal consultant before undertaking independent practice.

At all stages, The NMI trainee must not be signed off as a competent practitioner unless the trainer and consultant are fully confident in the practitioner's ability to run independent lists.

The first 3 lists/clinics should occur with experienced injectors nearby with some degree of supervision to ensure support is nearby and practitioners can cope.

After three months, the NMI should undergo an informal review of their independent practice with a trainer or consultant and should then undertake the required audit and patient satisfaction survey every year.

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## Appendix 2. Competencies.

For **New Practitioners** who are:

- Undertaking intravitreal injection as a new skill or,
- Undertaking intravitreal injections after a period of time (six months) where the skill has not been used or;
- Unable to present their manager with proof of continuing competency.

You must complete the training and then ensure all competencies signed off not only by your trainer, but also by the medical retina consultant before you practice independently. You must be reassessed against the competency standard every year or after a break of six months or more where the skills have not been undertaken. You must also be confident you are performing within your sphere of competency.

For **Current Practitioners** who have:

- Completed the NMI training programme previously and have been assessed and signed off as competent against the NMI competencies.
- Completed training from another provider/Trust previously and have proof of continuing competency in the form of a completed and signed recent (within the last two years) competency document.

You must be assessed as competent using this competency standard by a competent trainer before continuing to undertake the skill independently. You must be reassessed against the competency standard every year or after a break of six months or more where the skills have not been undertaken. You must also be confident you are performing within your sphere of competency.

All practitioners must ensure that successful completion of the competencies occur on time and that this is fully discussed and signed off by the trainer. Practitioners must ensure that copies of the signed competency are sent to their manager, and they should retain a copy for their own portfolio.

### **The assessor**

The Assessor must be a competent medical injector or NMI who is on the list of approved trainer/assessors. The Assessor must only sign the competency when all aspects of the competency standards have been demonstrated by the practitioner.

## **Competency recording forms**

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## Intravitreal injections: Competency checklist - knowledge

Ward / Department .....Name .....

	Competency	Competency Checklist	Assessor's / Self Assessor's Signature
1	Demonstrate familiarity with and understanding of the principles of the insert document name e.g.Trust Framework for Enhancing the Scope for Clinical Practice or Trust intravitreal injecting policy	<p><b>States key aspects of Trust Framework for Enhancing the Scope for Clinical Practice/Intravitreal injection policy:-</b></p> <ul style="list-style-type: none"> <li>• Competence to be assessed via Trust ratified competencies.</li> <li>• Competency development must be appropriate and safe.</li> <li>• Vicarious liability.</li> <li>• On-going competency-Trust requirements</li> <li>• Evidenced based practice.</li> </ul>	
2	Demonstrate familiarity with Trust Infection Control Policy	<p><b>Under observation and where appropriate can state and demonstrate:</b></p> <ul style="list-style-type: none"> <li>• Correct use of Personal Protective Equipment.</li> <li>• Safe handling of sharps.</li> <li>• Safe handling of clinical waste and spillage.</li> <li>• Decontamination of equipment.</li> <li>• Decontamination of environment.</li> </ul> <p><b>Under observation and where appropriate can state and demonstrate:</b></p> <ul style="list-style-type: none"> <li>• The importance of correct hand hygiene.</li> </ul>	
3	Demonstrate familiarity with Trust policy and Profession specific guidelines on records and record keeping  Demonstrate familiarity with the Nursing Midwifery Council (NMC) "Record Keeping: Guidance for Nurses and Midwives. (2009) or similar professional guidance	<p><b>State and discuss:-</b></p> <ul style="list-style-type: none"> <li>• The key points in the Trust/NMC or other professional Guidelines for Records and Record keeping.</li> <li>• The importance of accurate documentation.</li> <li>• Individual accountability and confidentiality.</li> </ul> <p><b>Under observation:</b></p> <ul style="list-style-type: none"> <li>• Can document the appropriate information accurately and according to Trust Policy in the notes.</li> </ul>	

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	Competency	Competency Checklist	Assessor's / Self Assessor's Signature
4	Demonstrate familiarity with the Trust Consent to Policy	<p><b>State and discuss:-</b></p> <ul style="list-style-type: none"> <li>• The key principles of the Trusts Consent Policy with respect to consenting for care and treatment.</li> <li>• Staff responsibility and accountability for ensuring that they act in accordance with the policy when consenting patients for treatment including recognising when they are not permitted to take consent.</li> <li>• For consent to be valid, the patient must:               <ul style="list-style-type: none"> <li>○ Be competent to take the particular decision;</li> <li>○ Have received sufficient information to take it;</li> <li>○ Not be acting under duress.</li> </ul> </li> <li>• Patient's agreement to the intervention and the discussions which led up to that agreement.</li> <li>• Process to follow when a patient does not have capacity to consent including minors and in emergency situations.</li> <li>• Process to follow when a patient refuses treatment or changes their mind about consenting to a procedure when they have already signed the consent form</li> <li>• Documentation – either through the use of a consent form or through documenting in the patient's health records that they have given verbal consent.</li> </ul>	

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	Competency	Competency Checklist	Assessor's / Self Assessor's Signature
5	<p>Uphold the Nursing &amp; Midwifery Council: The Code Professional Standards of practice and behaviour for nurses and midwives (2015) or similar professional standards</p> <p>Health Care Professions Council Standards of Conduct, Performance and Ethics</p>	<p><b>State and discuss key aspects of the NMC or similar Code:-</b></p> <ul style="list-style-type: none"> <li>• Exists to safeguard the health and wellbeing of the public.</li> <li>• Sets the standards of education, training and conduct that Nurses and Midwives need to deliver high quality healthcare consistently throughout their careers.</li> <li>• Ensures that Nurses and Midwives keep their skills and knowledge up to date and uphold the standards of their professional code.</li> <li>• Ensures that Midwives are safe to practise by setting rules for their practice and supervision.</li> <li>• Fair processes to investigate allegations made against Nurses and Midwives who may not have followed the code.</li> </ul> <p><b>State and discuss key aspects of the Health Care Professions Council Standards of Conduct, Performance and Ethics:- You must</b></p> <ul style="list-style-type: none"> <li>• Act in the best interests of service users.</li> <li>• Respect the confidentiality of service users.</li> <li>• Keep high standards of personal conduct.</li> <li>• Provide any important information about your conduct and competence.</li> <li>• Keep your professional knowledge and skills up to date.</li> <li>• Act within the limits of own knowledge, skills and experience and if necessary refer the matter to another practitioner.</li> <li>• Communicate properly and effectively with service users and other practitioners.</li> <li>• Keep accurate records.</li> <li>• Obtain informed consent to provide care or services (so far as possible).</li> </ul>	

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	Competency	Competency Checklist	Assessor's / Self Assessor's Signature
6	Demonstrate familiarity with the legal and professional implications of intravitreal injection	<p><b>State &amp; discuss:</b></p> <ul style="list-style-type: none"> <li>• Individual legal responsibility.</li> <li>• Implications for the practitioner.</li> <li>• Accountability.</li> <li>• Duty of care/reasonable care.</li> <li>• Vicarious liability.</li> <li>• Informed /valid consent.</li> <li>• Mental capacity.</li> <li>• Local policies and procedures.</li> <li>• Negligence.</li> <li>• Registered practitioner understands that an ophthalmologist must be available on the phone and, if cannot manage immediate complications themselves, doctor must be in the department and available to assist with complications, whilst clinic is progress</li> <li>• The competency does <b>not</b> cover the injection to pregnant patients.</li> <li>• The competency does not cover intravitreal injections of insert name of drug eg Avastin (Bevacizumab).</li> </ul>	
7	Demonstrate knowledge of the anatomy and physiology of the eye.	<p><b>State &amp; discuss:</b></p> <ul style="list-style-type: none"> <li>• Appropriate patients for intravitreal injection.</li> <li>• The anatomy of the eye.</li> <li>• Areas of the eye to avoid.</li> <li>• Individual patient factors.</li> </ul>	
8	Demonstrate knowledge of the procedure for intravitreal injection	<p><b>State &amp; discuss:</b></p> <ul style="list-style-type: none"> <li>• Is able to access relevant trust policies and procedures.</li> <li>• Is up to date with current practice.</li> </ul>	
9	Is able to identify appropriate equipment and drugs and understands the process for delivering an intravitreal injection	<p><b>State &amp; discuss:</b></p> <ul style="list-style-type: none"> <li>• Describes the equipment used and demonstrates understanding of its use.</li> <li>• Rationale for the cleaning of the trolley prior to use.</li> <li>• Describes drugs used, how to use and how they work</li> <li>• Describes requirements for prescribers.</li> </ul>	

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	Competency	Competency Checklist	Assessor's / Self Assessor's Signature
10	Discuss patient preparation prior to intravitreal injection insertion	<b>State &amp; discuss:</b> <ul style="list-style-type: none"> <li>• Informed / valid consent (as appropriate).</li> <li>• Limits of practice and patient selection.</li> <li>• Reassurance and explanation.</li> <li>• Previous injection history.</li> <li>• Correct area for injection selection.</li> </ul>	
11	Demonstrate knowledge of the infection control issues relating to intravitreal injections.	<b>State &amp; discuss:</b> <ul style="list-style-type: none"> <li>• Main sources of bacteria for intravitreal injections associated infections.</li> <li>• Standard precautions for infection control.</li> <li>• Appropriate single use equipment.</li> <li>• Aseptic non-touch technique.</li> <li>• Hand hygiene and bare below the elbow.</li> <li>• Eye preparation.</li> <li>• Sharps safety including disposal care and maintenance.</li> <li>• Issues of iodine “allergy” and use of chlorhexidine.</li> </ul>	
12	Demonstrate knowledge of risk management issues relating to intravitreal injection and trust sharps and incident policies	<b>State &amp; discuss:</b> <ul style="list-style-type: none"> <li>• Needle stick injuries:               <ul style="list-style-type: none"> <li>○ Incidence.</li> <li>○ Reasons for.</li> <li>○ Cost to the practitioner/organisation.</li> <li>○ Trust’s policy.</li> </ul> </li> <li>• Best and safe practice to reduce risks</li> <li>• The Trust’s incident reporting procedure.</li> <li>• Awareness of clinical governance processes and audit, e.g. Safety Thermometer Data Collection Tool.</li> </ul>	
13	Demonstrate knowledge of the potential complications of intravitreal injection and how to reduce the risk	<b>State &amp; discuss:</b> Signs and symptoms, management of the following: <ul style="list-style-type: none"> <li>• Wrong eye injected.</li> <li>• Iodine administered in iodine allergic patient.</li> <li>• Sub-conjunctival haemorrhage.</li> <li>• Corneal abrasion.</li> <li>• Cataract.</li> <li>• Retinal tears/detachment.</li> <li>• Air bubbles.</li> <li>• Raised intraocular pressure.</li> <li>• Vitreous wicks.</li> <li>• Endophthalmitis.</li> <li>• Post procedure infection.</li> </ul>	









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## Intravitreal injecting - Competency Checklist - Skills

Ward / Department .....Name .....

	Competency	Competency Checklist	Assessor's / Self Assessor's Signature
1	Has observed 20 injection pathways	<b>Provide evidence</b> <ul style="list-style-type: none"> <li>That 20 injections pathways have been observed.</li> <li>That trainer happy for them to proceed</li> </ul>	
2	Has undertaken 20 injection preparations	<b>Provide evidence</b> <ul style="list-style-type: none"> <li>That 20 injections have been prepared.</li> <li>That trainer happy for them to proceed</li> </ul>	
3	Has undertaken 50/100 observed or supervised injections	<b>Provide evidence</b> <ul style="list-style-type: none"> <li>That 50/100 injections have been performed under supervision.</li> <li>That trainer happy for them to proceed.</li> <li>They have observed a number of different practitioners to observe differing techniques.</li> <li>Kept a record of all patients and audited patients for outcome.</li> </ul>	
4	Prepares room and equipment	<b>Under observation:</b> <ul style="list-style-type: none"> <li>Checks room and equipment is clean and suitable</li> <li>Ensures all equipment present and suitable</li> <li>Ensures all drugs are present and not expired</li> </ul>	
5	Checks notes	<b>Under observation:</b> <ul style="list-style-type: none"> <li>Checks notes and ensures completed consent, clinical notes with up to date examination, no contraindications or concerns, drug prescribed</li> <li>Ensures correct drug</li> </ul>	
6	Patient discussion and comfort	<b>Under observation:</b> <ul style="list-style-type: none"> <li>Identifies patient, checks allergies, checks medical history changes</li> <li>Checks patient understands procedure</li> <li>Checks patient understands NMI</li> <li>Positions patient</li> <li>Ensure patient comfort and advice how to say if not comfortable</li> <li>Completes miniWHO checklist and marks eye</li> </ul>	

# {Insert} Name of Trust

	Competency	Competency Checklist	Assessor's / Self Assessor's Signature
7	Is able to identify appropriate equipment and understands the process for delivering an intravitreal injection	<b>Under observation:</b> <ul style="list-style-type: none"> <li>• Assembles equipment as identified in procedure and in accordance with manufacturer's instructions.</li> <li>• Cleans trolley if not done</li> <li>• Dons</li> <li>• Sterile gloves, packs, syringes and needles, drops opened onto sterile field.</li> <li>• Sterile gallipot/tray filled with 5ml normal saline 0.9% and approximately 5mls Iodine solution.</li> <li>• Instils anaesthetic and iodine drops</li> </ul>	
8	Demonstrate procedure for intravitreal injection.	<b>Under observation can:</b> <ul style="list-style-type: none"> <li>• Perform hand hygiene and don sterile gloves</li> <li>• Draws up and prepares drug as required</li> <li>• Reconfirms eye</li> <li>• Instill anaesthetic drops</li> <li>• .Instill iodine drops</li> <li>• Clean skin with iodine</li> </ul>	
8	Continued	<b>Procedure continued:</b> <ul style="list-style-type: none"> <li>• Apply drape or lash tape if used and inserts speculum</li> <li>• Or inserts injection device carefully under upper, then lower, eyelid.</li> <li>• Marks site</li> <li>• Administer the injection.</li> <li>• Remove injection needle and any device or speculum.</li> <li>• Dispose of needle in appropriate sharp bin..</li> </ul>	
9	Is able to identify successful/unsuccessful intravitreal injection.	<b>Under observation can demonstrate:</b> <ul style="list-style-type: none"> <li>• Signs of successful injection.               <ul style="list-style-type: none"> <li>○ Minimum discomfort to the patient (during and after procedure).</li> <li>○ No pain.</li> <li>○ No significant sub-conj bleeding</li> <li>○ Clear injection site/no vitreous wick.</li> <li>○ Patient can detect hand movement vision</li> <li>○ Seeks urgent medical care if issues.</li> </ul> </li> </ul>	
10	Safe discharge	<b>Under observation can:</b> <ul style="list-style-type: none"> <li>• Provide and advise on any postop prescription</li> <li>• Check next appointment date</li> <li>• Advice on symptoms of concern and contact if problems</li> <li>• Check IOP if required according to protocol</li> </ul>	

# {Insert} Name of Trust

	Competency	Competency Checklist	Assessor's / Self Assessor's Signature
11	Documentation	<b>Under observation can:</b> <ul style="list-style-type: none"><li>• Complete documentation correctly side, drug, drug amount, batch number, name etc and any GP letter</li></ul>	

# {Insert} Name of Trust

## Competency sign off form: Non Medical Intravitreal Injecting

This form must be completed and returned to your line manager once you have gathered all your evidence to support your claim of competence and been assessed in practice.

Name:	
Designation:	
Ward / Department:	
Date of study day:	
Date of original sign off as independent injector	
Date of last Assessment:	
<p>I feel competent in this procedure and understand the competency statement, action and outcome. Having received appropriate training, I accept responsibility for my own competence and have discussed this role as part of my job description with the person to whom I am managerially accountable.</p> <p>Your signature: .....</p>	
<p>I have assessed ..... in this competency and feel that both practice and knowledge meet the required standard.</p> <p>Assessor's signature: .....</p>	
<p>I confirm that the above named person has provided appropriate evidence to support a claim of competence and has been assessed in practice.</p> <p>Manager's name: .....</p> <p>Manager's signature: .....</p>	

This competency is due for reassessment on (date) .....XXX..... and also complete an independent audit on at least 50 cases each year.

# {Insert} Name of Trust

## Appendix 3. Reflective practice template

Ward / Department .....Name .....

O/S/I*	Date	Brief description of episode and comments or reflections by practitioner	Trainer/assessor comments and constructive feedback	NMI sign	Trainer print and sign

\*O/S/I = Observed/supervised/independent

{Insert} Name of Trust

**Appendix 4 Guidance on the measurement of Intra Ocular Pressure (IOP) following Intravitreal injection of anti-VEGF medication for macular disease.**

Loading doses: Following injection numbers 1, 2, 3 tThe IOP should be measured pre and post injection

After loading doses have been administered, the patient's IOP should be measured every 6 months unless the practitioner feels that more frequent IOP measurement is indicated. Reasons for this must be discussed with the supervising doctor and documented in the patient's health records

**Patients with glaucoma or identified as at risk by the ophthalmology:**

Glaucoma patients or other high risk patients require IOP measurement pre and post injection every visit.

**Appendix 5 SOP**

# Standard Operating Procedure

**Title** Administration of Intravitreal Injections of anti-VEGF medication for macular disease by non medical injectors

**Department:** Ophthalmology

**SOP Summary**

*This SOP describes the equipment and procedure required for the administration of medication via Intravitreal injection.*

**Version:** X.X

**Approved:** x.x.20xx

**Ratified:** x.x.20xx

xClinical Unit or Department:	
Name of author(s)	
Name of responsible individual	
Approved by:	
Ratified by :	
Date issued:	
Review date	
CQC relevant domains	
Target audience:	Nursing, orthoptists, optometrists, ophthalmologists, ophthalmology managers

Version	Date Issued	Brief Summary of Change	Author

# {Insert} Name of Trust

## **1. Introduction**

This standard operating procedure (SOP) is for all non medical injectors (NMIs) whether nursing, orthoptist or optometrist, who have been allocated to carry out intravitreal injections for patients with macular disease.

## **2. Scope**

The purpose of this SOP is to describe the preparation and process for carrying out intravitreal injections in the ophthalmology service.

## **3. Process**

### **3.1 Consent, prescribing and documentation**

The plan for treatment is discussed with the patient in the consultant led clinics; this includes treatment modality, course of treatment, consent for treatment, any commissioner therapy application and provision of the intravitreal injection patient information leaflet.

Before starting the procedure the NMI must ensure that the patient has been given the relevant information and written consent for the procedure has been obtained prior to the first injection taking place. The NMI should also check the consent for the course of treatment is up to date. This process will ensure that the patient is aware of the rationale for the procedure and of all potential complications.

The NMI must ensure that the patient is aware that the injection procedure is to be carried out by a trained non medical injector.

The NMI must ensure that the drug has been prescribed by a doctor or independent prescriber and that this is documented correctly.

### **4.2 Exemptions to treatment by the NMI**

The intravitreal injection procedure should not be performed by the NMI if:

- Informed consent is not obtained
- The patient refuses treatment by the NMI
- The NMI does not feel it is safe to proceed or has concerns performing the injection
- The NMI does not have immediate access to medical support (ie the doctor should either be present on site or, if the NMI is competent to manage immediate emergencies, by phone with a pathway in place to see a doctor urgently with the appropriate safe timescale if required, once the NMI has undertaken first treatment).
- The consultant or senior fellow decides that the patient requires a member of the medical team to perform the procedure
- A patient has had repeated previous complications such as central retinal artery occlusion and required paracentesis.
- Active eyelid and/or ocular surface disease such as blepharitis
- Other high risk ocular comorbidity e.g. retinal detachment
- Other medical conditions making the administration difficult e.g Parkinson's disease, difficult positioning or ocular fixation problem such as nystagmus

### **4.3 Prior to intravitreal injection commencing**

# {Insert} Name of Trust

The NMI will:

- Review the patient's notes and:
  - Ensure the patient has been referred for treatment by the consultant or trained assessor in charge of the clinic.
  - Ensure that the drug has been prescribed correctly.
  - Confirm that a recent retinal and macular examination has been taken place and details of the examination are recorded in the notes. If not, a review must be obtained before intravitreal injection taking place.
  - Confirm that the patient has undergone all the relevant checks and tests in accordance with clinic protocols
  - Check if the patient has any allergies and if the patient has a definite allergy to povidone iodine ensure that this has been verified by the consultant so an alternative preparation can be used. When patients are allergic to povidone iodine, chlorhexidine gluconate can be used.
  - Check a visual acuity test has been performed
  - Ensure the patient shows no signs of infection such as conjunctivitis and blepharitis, if there possible signs of infection this must be discussed with the doctor and a clear treatment plan put in place.
  - Check the patient's medical history as NMIs must not inject the patient if the patient is suffering from:-

*Unstable angina*

*Uncontrolled hypertension*

*Any evidence of infection*

*Ocular infection*

*Recent MI or CVA*

*Pregnancy*

*Previous allergy to the drugs*

*Too high INR*

Also note the exemptions of administering Ozurdex injections

- *OZURDEX should not be used in patients with any infection in or around the eyes*
  - *OZURDEX should not be used in patients with glaucoma that has progressed to a cup-to-disc ratio of greater than 0.8.*
  - *OZURDEX should not be used if the patient has a posterior lens capsule that is torn or ruptured.*
  - *OZURDEX should not be used in patients with AC IOLs or Aphakic patients*
- 
- Check that the consultant or fellow in charge of the injection session is available in the injection service. The injection list must not commence until the senior doctor in charge of the session is available. If the NMI is trained to instigate initial management of complications, check there is a senior doctor available on the phone and someone who can receive any urgent complications.
  - Review the injection room facilities, ensuring it is clean and safe for use.
  - Check all equipment is ready for the session.

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- Ensure all drugs are present and in date
- Ensure that a designated nurse or healthcare assistant/technician is present in the treatment room to assist with the procedure.
- Ensure that the assistant has followed the correct hygiene precautions and aseptic technique in preparing the patient for the injection.

## **4.4 Preparation of the patient**

- The NMI should introduce themselves to the patient and confirm the patient's identity in accordance with the trust policy, ensuring that the patient states their name and date of birth.
- The NMI should explain to the patient that they will be administering the intravitreal injection prescribed by the doctor or independent prescriber.
- The NMI should again verbally confirm with the patient their allergy status and past medical history including checking for hypertension and whether they have suffered a recent heart attack or stroke or attended hospital since their last injection. This will prevent any untoward side effects from medications used during this procedure.
- The patient consent form should be checked and the NMI should confirm with the patient which eye(s) is to be treated. The patient's eye(s) to be treated must be marked according to trust policy, if there is a discrepancy between the notes and patient the consultant or fellow in charge of the clinic should be consulted.
- The abbreviated surgical safety checklist should be completed and both the injecting practitioner and assistant must check and verbally confirm.
- The Correct Identity of the patient.
- The Correct Eye to be injected and eye is marked.
- The drug to be injected.
- The NMI should check if the eye to be treated is phakic or pseudophakic. Document this in the patient's clinical record as this will influence the choice of injection site.
- If the patient has a history of glaucoma and/ or previous complications from an injection procedure this should be noted
- The procedure should be fully explained, allowing time for the patient to ask questions.

## **4.5 Equipment required to perform Intravitreal Injection**

- Proxymetacaine or Oxybuprocaine hydrochloride eye drops
- Iodine skin scrub (10% aqueous solution) or Tisept solution (Chlorhexidine gluconate 0.015% and Cetrimide 0.1%) if patient has skin sensitivity or allergy to Povidone Iodine.
- Povidone Iodine 5% eye drops, if the patient is allergic to Iodine the use of Chlorhexidine 0.02% must be confirmed with the doctor.
- Tissues
- Injection pack
- Injection drug
- Dressing trolley cleaned thoroughly with detergent, followed by 70% isopropyl alcohol.

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- Surgical face mask
- Sterile gloves
- Disposable plastic apron
- Hand antiseptic (4% Chlorhexidine Gluconate or 7.5% Iodine)
- Sharps container
- Clinical Waste bin

All eye drops and equipment must be checked before use in accordance with trust policy. All eye drops must be instilled in accordance with the policy and procedure guidelines and the relevant patient group directions (PGDs)

## 4.6 Procedure

- Ensure that the patient is positioned comfortably on the couch or wheel chair. **Ensure the patient has been offered the choice of holding the assisting nurse 's hand to ensure that they are comforted and supported throughout the procedure**
- Ensure that the patient knows how to communicate if they are suffering any discomfort during the procedure e.g. asking NMI to pause procedure.
- Open pack:
  - The assisting practitioner must decontaminate hands prior to opening out the pack
  - A strict aseptic technique must be used to prevent potential contamination of the sterile field and the equipment.
  - The injection pack should only be opened when patient is on the couch and ready to receive treatment.
- Instil two drops of either proxymetacaine hydrochloride 0.5% or oxybuprocaine hydrochloride 0.4% eye drops as per PGD.
- Wear a face mask and a disposable plastic apron.
- Staff must be dressed bare below the elbows to carry out this procedure
- Check that the correct medication is selected for the patient, the expiry date, and the dose to be injected before injecting the prescribed medication.
- Decontaminate hands following hand hygiene policy and using chosen antiseptic (4% Chlorhexidine gluconate or 7.5% Povidine iodine) perform aseptic hand wash
- Dry hands thoroughly and apply sterile gloves
- Instil one drop of prescribed 5% Povidone Iodine eye drops into the eye for injection at least 3 minutes prior to injection. If the patient is allergic to Iodine, instil one drop of Chlorhexidine 0.02% eye drops but ensure this is a true allergy and is discussed with the doctor in clinic as iodine is much more effective.
- Clean the eyelids with 10% iodine aqueous solution skin scrub as outlined in PGD, if patient allergic to iodine use Tisept solution (Chlorhexidine gluconate 0.015% and Cetrimide 0.1%).
- Apply sterile drape over patient's eye (in units which drape) **or use lash tape and large lid speculum**
- Insert lid speculum
- Instil additional drop of 0.4% oxybuprocaine or promymetacainas outlined in PGD

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- Mark the injection site by measuring 4.0mm from limbus for phakic eyes and 3.5mm from the limbus in pseudophakic eyes.
- Disinfect the bung on the medicine vial with an alcohol steret, allow it to dry prior to inserting the needle and then drawn up your medication.
- Administer drug by injection at marked site
- Establish that patient can see hand movements (to ensure no significant change in vision).
- Remove eyelid speculum and skin drape and wash off iodine from skin with sterile saline solution
- Remove used AMD pack and ensure that the needle and any other sharps are disposed of directly in to the sharps container.
- Used sterile gloves, surgical mask and plastic apron to be discarded in clinical waste bag together with all other clinical waste.
- Hand decontamination to be undertaken prior to continued patient care and documentation of procedure
- Dressing trolley to be wiped down with 70% alcohol wipes between patients
- Designated nurse to check patient's IOP post procedure as required ( See Appendix 4 of policy)
- Give patient written after care advice and a contact telephone number in case they have any cause for concern. Concerns would include severe pain, a significant drop in visual acuity. Inform patient where they can call or return to if they experience any problems.
- Ensure patient has a follow up appointment.
- Give discharge medications as per PGD

## 4.7 Documentation

- GP letter to be completed on records, filing a copy in the notes
- Record treatment clearly in the patient's health records –including the drug injected, the amount of the drug injected, batch number, expiry date, the eye injected date, time, name, signature and designation .
- If an unexpected event occurs, document and complete and report the incident. This is necessary to facilitate communication within the team, meet legal requirements of practice and enable monitoring over a time period.

## 4.8 Drugs Used for Procedure

### 4.8.1 Proxymetacaine hydrochloride 0.5% eye drops minims.

**Legal status:** Prescription only medicine.

**Dose:** Once only

**Method and route of administration:**

Follow standard eye drop instillation procedure. Instil two drops to the outer aspect of the lower fornix of the affected eye.

**Advice to patients**

- Drop may sting

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- Patients should refrain from touching or rubbing their eyes due to loss of corneal sensation
- Advise the hospital of any unwanted effects.

## **Adverse drug reactions**

- Burning and stinging
- Transient blurring of vision on instillation
- Acute, intense and diffused corneal epithelial keratitis
- Iritis with descemetitis
- Local anaesthetic eye drops cause a temporary (approximately half an hour from administration) elimination of the blink reflex

## **Record keeping**

The administration of proxymetacaine hydrochloride 0.5% eye drops will be recorded in the patient's case notes, recording date, time and signature of NMI.

### **Information to be documented:**

- Name, form and strength of medicine to be documented in full
- Date, which eye time and dosage administered

## **4.8.2 Oxybuprocaine hydrochloride 0.4% eye drops (benoxiate) minims.**

**Legal status:** Prescription only medicine.

**Dose:** Once only

### **Method and route of administration:**

Follow standard eye drop instillation procedure. Instil two drops to the outer aspect of the lower fornix of the affected eye.

### **Advice to patients**

- Drop may sting
- Patients should refrain from touching or rubbing their eyes due to loss of corneal sensation
- Advise the hospital of any unwanted effects.

## **Adverse drug reactions**

- Transient stinging, local irritation
- Superficial punctuate keratitis or oedema
- Ineffective tearing due to temporary elimination of the blink reflex
- Hyperaemia
- Oedema

## **Record keeping**

The administration of oxybuprocaine hydrochloride 0.4% eye drops will be recorded in the patient's case notes, recording date, time and signature of NMI.

### **Information to be documented:**

- Name, form and strength of medicine to be documented in full
- Date, which eye time and dosage administered

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- Signature of NMI

## 4.8.3 Povidone Iodine 5% Eye Drops

**Legal status:** Prescription only medicine. Must be prescribed by a doctor as this is unlicensed

**Dose:** One drop into the lower conjunctival sac and onto lid margins 3 minutes prior to administration of intravitreal injection.

**Method and route of administration:**

One drop into the lower conjunctival sac.

**Advice to patient**

Drop may sting

**Route of administration**

Topically to the lower conjunctival sac and lid margins

**Frequency of administration and maximum dosage**

Instil one drop in to lower conjunctival sac and onto lid margins prior to administration of intravitreal injection.

**Record keeping**

The administration of Povidine iodine 5% eye drops will be recorded in the patient's case notes, recording date and time of administration and signature and designation of NMI following prescription by a doctor.

## 4.8.4 Anti-VEGF medication

This may be Lucentis (Ranibizumab) or Eylea (Aflibercept).

## 4.8.5 Lucentis (Ranibizumab)

**Legal status:** Prescription only medicine.

**Dose:** Supplied as an injection 10mg/ml, dose is once only 500mcg once a month for three months with further injections as needed

**Method and route of administration:**

By intravitreal injection, for supply of treatment:

**Advice to patient**

- Advise if any loss of vision immediately
- Advise the hospital of any unwanted effects.

**Adverse drug reactions**

- Nausea
- Headache
- Eye pain
- Conjunctival and retinal haemorrhage
- Oedema
- Vitreous detachment
- Retinal Detachment
- Endophthalmitis

**Record keeping**

# {Insert} Name of Trust

The administration of Anti-VEGF medication must be recorded in the patient's records including date and time of administration and signature and designation of NMI.

## **4.8.6 Eylea (Aflibercept)**

**Legal status:** Prescription only medicine.

**Dose:** Supplied as an injection 40mg/ml, dose is 2mg aflibercept (50 microlitres-0.05ml) once a month for three months followed by one injection every two months. After 12 months of treatment the treatment interval may be extended depending on the patient's condition

### **Method and route of administration:**

By intravitreal injection, for supply of treatment

### **Advice to patient**

- Advise if any loss of vision immediately
- Advise the hospital of any unwanted effects.

### **Adverse drug reactions**

- Nausea
- Headache
- Eye pain
- Conjunctival and retinal haemorrhage
- Oedema
- Vitreous detachment
- Blindness
- Hypopyon
- Endophthalmitis,
- Uveitis,
- Retinal detachment
- Raised intraocular pressure
- Conjunctival and retinal haemorrhage

### **Record keeping**

The administration of Eylea medication 0.05ml will be recorded in the patient's case notes, including date, time of administration and signature and designation of NMI.

## **4.8.7 Carmellose Sodium 0.5% Eye Drops**

Supplied to the patient to take home

**Legal status:** CE marked medical device

### **Route of administration**

Topically to the lower conjunctival sac unless Doctor requests otherwise

### **Frequency of administration and maximum dosage**

One drop four times a day or as needed

Side Effects

Eye irritation

### **Contraindications**

Pregnant or lactating women

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Children under 16 years of age

Patient refuses consent

Add ozurdex?

## 4.9 Potential risks of Intravitreal injection

The risks of intravitreal injections include:

- Pain
- Bleeding (subconjunctival, vitreous haemorrhage)
- Retinal tear / detachment
- Cataract (from inadvertently hitting the lens)
- Infection (Endophthalmitis)
- Loss of vision (from any of above)
- Loss of the eye (from a severe infection)
- Raised intra ocular eye pressure

Also risk of needlestick injury to staff.

## 4.9 Managing complications immediately if no doctor on site

Intravitreal injections carry risks and one potential risk is if the intraocular pressure (IOP) rises to a very high level which then occludes the central retinal artery. This could result in permanent irreversible vision loss if the IOP is not reduced within a short period of time. It is not always possible for a doctor to have been present in the eye department to provide assistance and to continue to deliver a safe level of capacity of care to avoid unsafe delays to injections. Delays to injection care could result in increased vision loss from macular conditions. The risk of central retinal artery occlusion (CRAO) is very rare, less than 1 in 1000 injections.

After an intravitreal injection, each patient is asked to count fingers or detect whether a hand is moving in front of the patient, to ascertain whether the patients' central retinal artery is adequately perfused. If the IOP has elevated to a critical level, then the CRA could be occluded by this raised IOP and the patient could lose vision permanently without intervention. The recommended intervention is to administer 500mg acetazolamide tablets orally and one drop of apraclonidine 1% STAT in the affected eye. If the IOP is not controlled and if there is not a doctor on site, the patient should be transported via an ambulance to a site where a doctor is available. The incident should be fully documented in the electronic patient record system and in the patients' notes.

Post injection vision check: if unable to CF or see HM then senior assessor will need to examine the patient and determine why the vision has been lost. Variety of reasons exists such as vitreous haemorrhage, lens trauma or raised IOP occluding CRA.

In case of the latter the following steps should be followed:

- 1) administer one drop of apraclonidine 1% STAT to the affected eye

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- 2) administer 500mg po acetazolamide STAT
- 3) doctor called and urgent blue light patient transport arranged to the relevant site if pressure has not decreased and vision resolved

Low Ocular pressure: If patient has glaucoma or OHT one drop of lopicine 1% should be instilled post injection. If ocular pressure is <13mm/Hg they run a risk of hypotony therefore lopicine 1% should not be instilled.

Any complications or untoward incidents must be reported immediately to the supervising consultant or senior fellow and then via the trusts incident reporting system. All cases of endophthalmitis must be reported as an incident and involve the local infection control team.

## 5. Approval

This SOP is part of the NMI policy and was approved by the insert committee name committee and ratified by the committee name.

## 6. Dissemination and Implementation

This SOP will be disseminated following ratification, to all staff involved in the administration of intravitreal injections, and will be communicated to key stakeholders via email and highlighted at insert name of meetings or other methods.

This SOP will be published on the intranet site.

## 7, Review and Revision Arrangements

This document will initially be reviewed on an annual basis by the SOP Owner/Authors, for two years (if practice new) and then every three years after.

Changes to the legislation of the administration of intravitreal injections by non-medical personal will trigger a review of this SOP.

## 8. Document Control and Archiving

The current and approved version of this document can be found on the Trust's intranet site. Should this not be the case, please contact the SOP owner / author.

Previously approved versions of this SOP will be removed from the intranet by the insert details of archiving

## 9. Monitoring compliance with this SOP

Monitoring requirement	Monitoring frequency	Monitoring lead	Monitoring reported to...
This SOP will be reviewed by the authors annually to ensure that its content remains	History	SOP Author	Service meeting review

# {Insert} Name of Trust

valid and in date			
Adverse events- incident reporting	ongoing	Risk Team Retinal consultants	Clinical lead

## 10 Related Documents

Insert any related trust documents

## Glossary

Term	Definition
Cataract	Opacity of the lens
Endophthalmitis	An inflammatory condition of the intraocular cavities
Intravitreal Injection	The route of administration of a drug inside the eye
Retinal detachment	Separation of the neurosensory retina from the pigment epithelium
Hypopyon	Pus in the anterior chamber
Oedema	Swelling
Intraocular eye pressure	The fluid pressure inside the eye
Anti-VEGF medication	Anti-vascular endothelial growth factor

# {Insert} Name of Trust

## Appendix 7 Risk Assessment

Department / Directorate	Ophthalmology
Description of risk	<p><b>This risk assessment is to assess any risks associated with non medical practitioners expanding their role and undertaking Intravitreal injections for patients in the medical retina service.</b></p> <p>Intravitreal injections are associated possible complications such as :-</p> <ul style="list-style-type: none"> <li>• Infection (endophthalmitis)</li> <li>• Retinal Detachment</li> <li>• Cataract</li> <li>• Raised intra ocular pressure</li> </ul> <p>The above complications could occur for all competent practitioners whether medical or non medical professional. These complications are rare. However some are sight threatening, especially if the complication is not spotted or some immediate treatment is not performed.</p> <p>Risks associated with a non medical HCP carrying out this procedure include:-</p> <ul style="list-style-type: none"> <li>• Perception by patient/family that complication was due to injection not performed by doctor]</li> <li>• Failure of NMI to detect complication</li> <li>• Having the experience and ability to manage complications which may occur;</li> <li>• Non enough staff or time to undergo training</li> <li>• Not enough senior staff or consultant time to supervise and sign off training</li> <li>• Capacity issues creating pressure to have excessive numbers on injection clinics</li> <li>• Insert any others here or amend the above</li> <li>•</li> </ul>
	Existing controls in place when risk was identified

# {Insert} Name of Trust

Initial Risk Score i.e. with existing controls in place	Consequence (1-5)		
	Likelihood (1-5)		
	Risk Score (1 – 25)		
Actions to reduce the risk to an acceptable level			
Description of actions	Cost	Responsibility (Job title)	Completion Date
Register risk on DATIX (for all risks > 3) if appropriate	nil		
Existence of Policy complaint with NICE and College guidance			
NMI to follow professional codes of conduct and guidance			
Trainers and trainees given enough time in job plan to train and learn			
Clear detailed training programme and competency recording led by retinal consultants.			
Regular audit of practice and log books			
Doctor on site at all times OR immediate access to named doctor for advice and pathway to send patient			
NMIs trained and competent to diagnose and/or provide immediate treatment for complications			
Insert details of any staffing number or availability adaptations or other mitigations			
Maximum number of patients on NMI at 15			
Target Risk Score i.e. after <b>full</b> implementation of action plan	Consequence (1-5)		
	Likelihood (1-5)		
	Risk Score (1 – 25)		
	Date for completion		
Assessment undertaken by:			
Name	Job title		
Lead:			
Date of assessment		Date of next review	

{Insert} Name of Trust