The Macular service in Exeter
An ongoing project.

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June 2014
Age Related Macular Degeneration

The leading cause of irreversible central vision loss in people over the age of 55 throughout the developed world. (Vendula 2008)

- 2% of population over the age of 50
- 8% of population over the age of 65
- 20% of population over the age of 85
The annual incidence of Wet AMD requiring anti-VEGF treatments in the UK is approx 26,000 (NICE, RCO 2007).

Based on a local population of 350,000, Exeter would expect approximately 150 new cases of treatable Wet AMD annually.
Eyes in treatment

- 2009: 400
- 2010: 600
- 2011: 800
- 2012: 1000
- 2013: 1500
- 2014: 2000

Series 1
Existing resources in the unit were felt insufficient to cope with service demands and new methods of service delivery were sought.

Two key resource constraints

Lack of personnel
Capacity for injection lists.
Ophthalmologists.

- 1,100 Consultants
- 650 trainees
- 800 Staff and Associate Specialist doctors

Ratio of ophthalmologists per head of population one of the lowest in Europe.
Limited medical manpower and expanding patient numbers have stretched the resources of many units.
Nurse practitioner involvement in ophthalmology

- Assessment of emergency patients
- Assessment of clinic patients
- Perform minor ops
- Give sub-Tenon injections
- Give Botulinum injections
- Perform yag laser capsulotomies

- Why not give anti-VEGF injections?
Obstacles

- Royal college of Ophthalmologists in the past not supportive.

- Novartis recommend that injections are given by a qualified medical practitioner.
GMC view

The General Medical Council are satisfied that providing we respect good clinical practice in delegating tasks to individuals that have been appropriately trained, and the training and accreditation is approved locally by a trust governance committee the service can proceed.
Nurse Practitioner led injection service.
Royal Devon and Exeter Clinical Governance Committee April 2008.

- Trust to accept vicarious liability for the nurse practitioner led service.
- Only identified nurse practitioner to carry out treatment.
- Consultant / Senior trainee to be present for immediate advice within the unit.
Audit to assess safety and performance.
A business plan was formulated for a clean room dedicated to intravitreal injections.

The specification of this room met with Royal College Guidelines.
Clean room
Consultant support

- Enabling development of the service.
  Governance, risks, facilities.
  Encouragement and training.
New Practitioners.

Qualities required

- Experience
- Knowledge
- Aptitude
Structured training.

- Observation.

- Practical training.

- Observed / Assessed practice.

- Involvement in AMD clinics and FFA meetings.
Protocol for procedures.

Key skill and competency document.
Check visual acuity within criteria.

Seek medical advice for following contraindications:
- Recent evidence of conjunctivitis (eg. red eye, sticky discharge),
- Blepharitis (eg inflamed eyelids)
- Uncontrolled high blood pressure
- Unstable angina
- Recent stroke

Local anaesthetic drops administered: Proxymetacaine 0.5%, then Benoxinate 0.4%.

Eye washed with Povidone-Iodine 5% solution and sterile drape applied.
Lid speculum inserted and patient asked to gaze to left or right.
Injection site measured and marked: 4.00mm from the limbus for phakic and 3.5mm from limbus for pseudo phakic eyes.
Intra-vitreal injection of 0.05ml of Ranibizumab.
Topical stat dose of Ofloxacin
Test visual acuity for hand movements and enquire about onset of severe pain. Urgent medical assessment to be sought for significant loss of vision or severe pain.
Audit.

- Requirements from governance committee.
- 1 year audit.
- 18 month audit.
- 2 year audit
Audit results to date.

In the first 5.5 years of the service (1\textsuperscript{st} May 2008 – 8\textsuperscript{th} October 2013) 11,893 injections of ranibizumab were given of which 10,006 (84.1\%) were administered by nurse practitioners.
Complications.

- 4 patients developed presumed infectious endophthalmitis within the cohort of 10,005 eyes injected by the Nurse practitioner. (1 case was culture positive and three were culture negative)

- 1 Patient had an intraocular pressure spike immediately after the injection.
Endophthalmitis has been reported in large cohorts injected with intravitreal Ranibizumab

Marina study 1% per patient 0.05% per injection.

Anchor study 0.7% per patient. 0.1% per injection.

Exeter Nurse practitioner audit 0.1% per patient 0.04% per injection
There were no clinically significant episodes of corneal abrasion or sub conjunctival haemorrhage necessitating re-presentation to the unit.

There was no evidence of lens touch (nine patients had surgery after their Lucentis Injections for existing cataracts)

There were no retinal detachments or thromboembolic events recorded.
At present we have 9 injection lists per week (108 slots) all of which are covered by nurse practitioners leaving medical staff to cover other clinical sessions.
Lessons learnt

- Adequate number of practitioners.
- Robust patient safety checking system.
- Practitioners to keep personal logbooks.
- Accurate patient database
Lessons Learnt

- Adequate admin support
- Support staff
- Forge close links with local patient groups
Conclusion.

A nurse practitioner delivered intravitreal injection service has similar rates of adverse events to that reported in other large studies undertaken by ophthalmologists.
An injection service provided by a carefully selected and rigorously trained NP adhering to the necessary clinical governance safeguards, has the potential to help eye units throughout the UK meet the rising demands for Wet AMD treatment in an ageing population.
Comparisons of cost effectiveness and visual outcomes between Ophthalmologist only and NP Delivered injection services provide scope for future research.
Nurse led WAMD follow up clinics.

- The increase in Anti – VEGF injection activity led to a consequent increase in the number of follow up appointments needed.

- This led to the clogging up of our general medical retinal clinics.

- It was decided to set up practitioner led clinics and to pull patients into them.
A protocol was written recommending that nurse practitioners within the AMD service carry out follow up review appointments within the outpatient clinics.

Such a service follows the Royal college of Ophthalmologists guidance 2009.

‘Clinical assessments and evaluation of images be undertaken by trained Optometrists / Nurses under the supervision of a retinal specialist with expertise in AMD.’
A training programme was set up with a period of shadowing and supervised clinical practice.

Accreditation – Following a minimum of 12 supervised clinical sessions there is a review and assessment carried out by the Consultant if the practitioner has demonstrated the required level of competence they will be included on the register of practitioners formally accredited to work under the protocol.
Currently in Exeter all WAMD Patients are treated and reviewed in practitioner led Clinics. Only being referred back to Consultant clinics in cases of difficult co pathology and treatment decisions.
Outcomes.

- Reduction in follow up delays.
- Adherence to NICE treatment guidance.
- Patient satisfaction.
Future Developments?

- Community clinics
- Mobile unit
- Virtual clinics