



Irish College of  
Ophthalmologists  
*Eye Doctors of Ireland*  
*Protecting your Vision*

**IRISH COLLEGE  
OF  
OPHTHALMOLOGISTS**

YEARBOOK

2015-2016

Incorporating the Programme for the  
Annual Meeting in The Europe Hotel, Killarney, Co Kerry  
Wednesday 18<sup>th</sup> to Friday 20<sup>th</sup> May, 2016

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## **IRISH COLLEGE OF OPHTHALMOLOGISTS**

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### **COUNCIL 2015/2016**

*President:* William Power

*Vice President:* Marie Hickey Dwyer, *President Elect:* Alison Blake

*Secretary:* Patricia Quinlan, *Treasurer:* Mark Cahill, *Dean:* Yvonne Delaney

*Members of Council*

Susan Kelly, Mark Guerin, Gerry Fahy, Michelle Fenton, John Stokes,  
Dara Kilmartin, Jeremy O'Connor and Iain Harrison

### **STANDING COMMITTEES:**

*Medical Ophthalmologists Committee*

*Chairman:* Fiona Kearns

*Members:* Alison Blake, Michelle Fenton, Catherine McCrann, Iain Harrison, Grace O'Malley, Margaret Morgan, Paddy Condon, Joanne Kearney, Loretta Nolan, John Traynor, John Smith, Garry Treacy, Susan Mullaney, Geraldine Comer and Sasha Hutchinson.

*Finance, Policy and Professional Standards Committee*

*Chairman:* Mark Cahill

*Members:* Honorary Officers

*Manpower, Education and Training Committee*

*Chairman:* Gerry Fahy

*Members:* Marie Hickey-Dwyer, Donal Brosnahan, Ian Flitcroft, Yvonne Delaney, Barry Quill, Emily Hughes, Eamonn O'Connell, Billy Power, Deirdre Townley, Iain Harrison, Alison Blake, Kevin Kennelly, Conor Murphy

*Scientific & CME Committee*

*Chairman:* Jeremy O Connor

*Members:* Billy Power, Denise Curtin, Fiona Kearns and Eugene Ng

*Ethics Committee*

*Chairman:* Patricia Quinlan

Paddy Condon, Louis Collum, Marc Guerin, Patricia McGettrick and Lisa McAnena

## LETTER FROM THE PRESIDENT

Dear Fellow College Members

I am delighted to welcome you all to the beautiful surroundings here in Killarney for our 2016 Annual Conference.

This year is a very special occasion for the College as we mark our 25th anniversary. The last 25 years have been a very exciting time in the specialty of ophthalmology, with huge advances in medical technology and treatments for patients, as well as the continuing ground-breaking research into cures and treatments for sight threatening conditions with this fast pace of advancement set to continue.

Our ageing population, coupled with the medical advances made over the past two decades, is resulting in an ever increasing demand for eye care services. Quality of life expectations have changed dramatically in this time, with people in their 70's and 80's motivated to have interventionist procedures and treatments to preserve sight so that they can continue to drive and pursue other activities where good vision is essential. The Medical Fitness to Drive regulations recently enforced in Ireland also mean GP's and eye doctors must follow strict criteria in considering a person's ability to drive which in turn pushes the demand for medical and surgical interventions so people can retain their driving licence.

Cataract surgery is one of the most frequently performed procedures in Ireland, with the vast majority of patients who undergo the procedure having excellent results. The prognosis for patients with AMD has also greatly improved. Anti-VEGF Injections have revolutionised the treatment of both age-related macular degeneration and diabetic eye disease and can stabilise the condition in 90% of cases, improve sight in 70% of cases and restore driving vision in 40% if treatment is started promptly.

The national retina screen programme has been an important development and ensures that diabetic patients with potential sight threatening retinopathies are identified and treated.

It is also an exciting time for trainees to be entering the specialty, as we look to the evolving future delivery of eye care and the subsequent modifications to the model of training for doctors entering the specialty. The work of the Primary Eye Care Services Review Group is nearing completion, with the final report due for publication this summer. I would like to thank the representatives from the College who have campaigned to ensure the most suitable model of care in the interests of patient safety and outcomes,

quality of service and equitable access is achieved. We very much look forward to reading the recommendations.

The new medical training programme commenced in July 2015 and the College will continue to collaborate with the HSE on the enhancement of medical ophthalmology posts as envisaged by the Clinical Programme for Ophthalmology

Thank you to all the Council members, Committee Members and to the Honorary Officers at the College for your on-going time, energy and commitment to the role of the College. A special word of thanks to Siobhan Kelly, Ciara Keenan and Marian Scully, who look after the College's best interest's day to day.

Thank you to our colleagues who attend overseas meetings to represent our specialty at an international level, including Gerard O Connor at the EBO, Louise O Toole at the RCOphth, Pat Logan at the SOE, and to Denise Curtin and Alison Blake at the UEMS. The College looks forward to supporting Alison, Denise and Gerard O Connor as hosts of the UEMS ophthalmology meeting which takes place in Dublin this June.

Mr Peter Barry was appointed Clinical Lead for the Clinical Programme in Ophthalmology in 2015 following Mr Paul Moriarty's leadership since 2012. The College wishes to sincerely thank Paul for his commitment to the programme in ensuring its successful development and we would like to wish Peter all the best in the role.

The publication of Refractive Surgery Guidelines and Advertising and Marketing Guidelines by the ICO in 2015 was an important public statement of our expertise on patient safety matters. The ICO is committed to its patient advocacy role and is continuing to work with the relevant decision makers on securing a clause for responsible advertising of medical and surgical services in the forthcoming Patient Safety Licencing Bill.

With Best Wishes,

Billy Power  
President  
Irish College of Ophthalmologists  
May 2016

## **REPORT OF COUNCIL 2015-2016**

**Patricia Quinlan**, *Honorary Secretary*

There have been four Council meetings: May 15th 2015, September 12th 2015, December 11th 2015 and 20th February 2016.

The Council Members are: Billy Power, Marie Hickey-Dwyer, Mark Cahill, Alison Blake, Michele Fenton, Marc Guerin, Gerry Fahy, Susan Kelly, John Stokes, Jeremy O Connor, Dara Kilmartin, Iain Harrison, Patricia Quinlan and Yvonne Delaney

All Council members have attended the minimum required number of meetings.

### **Changes in Council Membership**

The Council term of Iain Harrison has concluded. On behalf of all the College members I would like to thank Iain for his contribution to Council and in particular for his commitment to the College Committees. Michele Fenton has stood down from Council and I take this opportunity to thank her, in particular for her work as Chair of the Medical Ophthalmologists Committee. Alison Blake has assumed the role of President Elect. The new appointments to Council will be announced at the AGM.

## FINANCE, POLICY AND PROFESSIONAL STANDARDS COMMITTEE

**Mark Cahill, Treasurer**

At the close of 2015, the membership for the Irish College of Ophthalmologists stood at 183 subdivided into the following categories of membership: Ordinary, Affiliate, Senior, Life, Overseas

### **Membership Fees**

The membership fees for the Irish College of Ophthalmologists for 2015 remained unchanged.

Ordinary members	€480.00
Affiliate members	€360.00
Overseas members	€200.00
Senior members	€160.00

The full audited accounts for the year ended 31<sup>st</sup> December 2014 have been circulated to all members and will be discussed during the AGM.

The ICO is a company limited by guarantee and the current Directors

are: Patricia Logan, Philip Cleary, Marie Hickey Dwyer and Paul Moriarty.

### **Funding for Provision of Specialist Training**

There are currently 48 ophthalmic trainees in structured training programmes. The ICO receives funding for all BSTs and Registrars. Funding for Higher Surgical Training goes to the RCSI.

The HSE Medical Education & Training Unit committed to providing up to €143,830.50 in training grants to the College for the period July 2014- June 2015 and additional amounts per registered trainee, to fund the provision of specialist training and associated costs. This funding is claimed retrospectively by the College based on vouched expenses incurred.

## SCIENTIFIC & CME COMMITTEE

**Jeremy O Connor**, *Chairman*

*Committee Members;* Denise Curtin, Billy Power, Fiona Kearns, Eugene Ng

Last year's annual conference was held in the Knockranny House Hotel in Mayo, May 13<sup>th</sup> to 15<sup>th</sup>. Last year's meeting covered a range of topics including the epidemiological aspects of ocular trauma, ocular complications of acquired brain injuries, medical retina and oculoplastics.

### **CME & Professional Competence**

Participation in a Professional Competence Scheme is a requirement for all registered Medical Practitioners. The ICO administers a Scheme on behalf of the Medical Council and the Committee provides advice in this regard as required.

### **ICO/Novartis Research Bursary**

Two research projects were awarded funding for the ICO/Novartis Eye Research Bursary 2015-16, announced at the 7<sup>th</sup> Annual Retina Meeting in Adare last October.

Dr. Khalid Kamel's study looks at a genetic weakness which may predispose glaucoma patients to optic nerve damage. The clinical project is examining the role of mitochondrial DNA mutations and consequent mitochondrial dysfunction on pseudoexfoliation (PXF) glaucoma.

Dr Ghaleb Farouki, study is an animal based project investigating the potential protective role of neutralising interleukin-18 binding protein on the

development of laser induced choroidal neovascularisation in a mouse model. The research is aimed at identifying patients at an increased risk of developing Wet AMD. Congratulations to both as they continue their work.

### **ICO Medals**

Winner of the Barbara Knox Medal for Best Paper was Dr Qistina Pilson for her presentation Pellino3 as a Novel Target for the Treatment of Primary Sjogren's Syndrome Related Dry Eyes. Winner of the Sir William Wilde Medal for Best Poster was Dr Lina Kobayter for her presentation on Visual and Refractive Outcomes in Patients with High Astigmatism Following Cataract Surgery with Toric Lens Implantation

### **Montgomery Lecture**

The 2015 Montgomery Lecture was delivered by Prof dr. Marie-José Tassignon, Professor of Ophthalmology at Antwerp University Belgium. The event which took place in the RCSI on December 11<sup>th</sup> was very well attended. The lecture was entitled 'One Design with Multiple Derivations'. This year's lecture will be given by Mr Frank Larkin, longstanding friend of the College.

### **Mooney Lecture**

The 2015 Mooney lecture was given by Prof Simon Harding on New Directions in the Management of Diabetic Retinopathy. Prof. Harding is Professor of Clinical Ophthalmology, Department

of Eye and Vision Science, University of Liverpool and Honorary Consultant Ophthalmic Surgeon, St. Paul's Eye Unit, Royal Liverpool University Hospital.

This year we welcome Prof Reza Dana, Claes Dohlman Professor of Ophthalmology, Harvard Medical School.

## MEDICAL OPHTHALMOLOGISTS COMMITTEE

**Fiona Kearns, *Chairman***

*Committee Members:* Alison Blake, Catherine McCrann, Iain Harrison, Garry Treacy, Grace O'Malley, Margaret Morgan, Paddy Condon, John Traynor, John Smith, Susan Mullaney, Geraldine Comer, Sacha Hutchinson

The committee met on four occasions during the year with strong attendance from committee membership; January 10<sup>th</sup>, 2015, March 3<sup>rd</sup> 2015, November 1<sup>st</sup> 2015, February 6<sup>th</sup> 2016.

### **Primary Eye Care Service Review**

The group continued to meet and work throughout 2015. Progress has been slow but completion is expected in summer 2016. Implementation will be the focus for Medical Ophthalmology after publication.

The ICO continues to hope that the recommendations forthcoming from the review will support the model of care developed by the Clinical Lead for Ophthalmology and will lead to an improvement in the resources available to, and attractiveness of community posts. This investment will have a positive impact on waiting times and access to medical and optical care in the community.

### **Metrics**

The development of metrics in Community Ophthalmology by the HSE commenced in 2015 and is an important aspect of population care as it aims to inform the decision making process with regard to manpower and

resources needed to care for patients in the community.

The accumulation and interpretation of statistics in the community has been challenging for clinicians as IT and administrative support is inconsistent. In spite of these difficulties, metrics are a vital part of the evidence which supports our work.

The project is an opportunity to demonstrate the work done in community Ophthalmology clinics and to accurately inform decisions on the service

### **EU Directive**

The EU Directive on the Mutual Recognition of Qualifications in its original form listed ophthalmic surgery as the specialty recognised in Europe for automatic reciprocity, disadvantaging Medical Ophthalmologists wishing to travel for work. A complex pathway to resolve has been being followed, involving representations to the Irish Medical Council, Department of Education and the European Commission. The Medical Council have confirmed that the issue is being resolved in line with the College's request and the specialty of ophthalmology has been added to the annex attaching to the EU Directive

### **Medical Indemnity**

Concern about the high cost of indemnity for clinicians in all specialties continues to be of major concern. In the past year a particular issue arose for medical ophthalmologists with the

declared intention of MPS to significantly increase premia by re-categorising the procedures covered in each band. College representatives engaged and corresponded with the MPS and some resolution was achieved.

### **Medical Ophthalmology Curriculum**

Yvonne Delaney, Dean of Postgraduate Education has worked hard to develop the medical

ophthalmology training programme and has been well supported by the Medical Ophthalmologists committee and the wider group of medical Ophthalmologists. Thank you to all who have contributed to the development and implementation of the new curriculum.

And finally a special word of thanks to Michele Fenton for her time in the role of Committee Chair.

## **MANPOWER, EDUCATION & RESEARCH COMMITTEE**

**Gerry Fahy**, *Chairman*

*Committee Members:* Marie Hickey-Dwyer, Donal Brosnahan, Ian Flitcroft, Yvonne Delaney, Emily Hughes, Barry Quill, Eamon O'Connell, Billy Power, Deirdre Townley, Ian Harrison, Alison Blake, Kevin Kennelly, Conor Murphy

The committee met on three occasions in 2015-16; 11<sup>th</sup> September, 3<sup>rd</sup> December and 28<sup>th</sup> February.

### **Medical Council Accreditation**

Significant work has been undertaken in the past year in preparation for the Medical Council accreditation process for the higher surgical training programme. The process is still underway at the time of writing and an update will be provided at the AGM

### **HST Assessments**

A suite of new assessments for HSTs has been introduced. These assessments were a necessity to meet the requirements of the Medical Council, that trainees are appraised in

all 8 domains of good professional practice.

Trainees must now undertake a number of clinical case and major topic presentations in each six months and also a number of procedures under direct observation. All assessments must be documented and submitted for review at the six monthly appraisal.

Every effort has been made to ensure that the assessments are both practical and meaningful.

### **CCST**

Eligibility for the Certificate of Completion of Surgical Training has been clarified. The CCST is awarded on completion of five years of higher surgical training. Fellowship training can be embarked on after completing four years on the HST programme, with prior approval by the director of training, but is not a pre-requisite for award of CCST.

## DEAN OF POST GRADUATE EDUCATION AND TRAINING

*Yvonne Delaney, Dean*

Postgraduate Training in Ophthalmology in Ireland has witnessed many changes since the ICO was founded in 1991. None more so than in the last decade when the ICO separated from our sister College, the RCO in London, in 2007, because of a change in the regulation of training in the UK. Challenged with integrating reforms new to all postgraduate training bodies in Ireland but adapting them to ophthalmology's own singular needs, the ICO has successfully forged its own unique path in postgraduate education currently overseeing national training programs in both medical and surgical Ophthalmology.

Among the most significant changes introduced to the National Training Program (NTP) is the new more streamlined approach (introduced in July 2015) to the training journey as the trainee progresses from common core training to either surgical or medical ophthalmology. There were multiple reasons from within the specialty to implement this change but there were also external drivers from both the HSE and Medical Council to introduce certain design changes to the existing NTP in Ophthalmology. Combined, the convergence of external and internal factors created a compelling argument for a more rationalised approach to the training pathway, with the aim of eliminating the gap years and shortening the total training time, whilst retaining competitive entry into both surgical and medical Ophthalmology.

The second major change has been the purposeful incorporation of competence-based education to both the medical and surgical curricula. Critical to understanding the need for this change is the paradigm shift which has taken place in postgraduate medical education with a worldwide movement away from time-based to competency-based programs. The Medical Council requires that national training programs remain in line with international best practice and the incorporation of competence-based training into our NTP is not only long overdue, but is essential for continuing accreditation by the Medical Council. Competence-based training also brings with it a transparency and clarity to the training pathway which is key to attracting and retaining high-quality trainees. The latter is a priority for the HSE. They are eager to eliminate unnecessary 'gap' years and rationalise training programs nationally so as to maximise return on investment, improve graduate retention and more effectively align training programs to future manpower demand and patient need.

### **Recognition of the need for change: The new NTP in Surgical Ophthalmology**

Within the ophthalmic community and the ICO itself, there was recognition of the need for change. The ICO inspection process of February 2014, benchmarked our NTP in Surgical Ophthalmology against other surgical training programs in well-respected

jurisdictions. In terms of length of training, our existing NTP was clearly an outlier, with gap years extending the training journey from a nominal 8 to 10-12 years. Such a prolonged training journey, particularly in an environment where a third of all medical graduates are now graduate entry, has been cited by trainees as a significant issue in their willingness to stay and train in Ireland.

From the curricular point of view it was also difficult to continue to stand over the 'gap' years, with their role primarily focused on getting trainees competition-ready for HST. The gap years were overtly dedicated to the pursuit of research, publications, MDs and surgical numbers. All of these are important but are better purposefully embedded into a curricular structure rather than pursued individually for the sake of competition. The new program will ring-fence a number of HST posts for the academic arena but design the main competition to enter HST around surgical and clinical skills that can be acquired in BST. Publishing papers, understanding research methodologies, critical appraisal of the literature, statistics etc will be redesigned into a revised HST curriculum and embedded into HST year 1 upwards.

### **Recognition of the need for change: The new NTP in Medical Ophthalmology**

The need to more effectively align training programs to future manpower demand and patient need has put the spotlight firmly on medical ophthalmology. Decades of poor resourcing and under-funding have hampered the development of

community delivered ophthalmic care, an issue which may finally be addressed in the much anticipated Primary Care Review. Two changes - the anticipated fivefold increase in the elderly population by 2040 as well as the unprecedented explosion of effective treatments in medical retina - have fundamentally changed the way in which medical ophthalmology needs to be organised and practiced.

Under guidance from the Medical Council the ICO redesigned the medical ophthalmology curriculum, reformatting the existing 'one year' of medical ophthalmology training into a modular program concentrating on the three core areas of paediatric ophthalmology, glaucoma and medical retina. An embedded assessment process of workplace based assessments as well as a *viva voce* assessment at the end of each module underpins a new performance standard to future-proof medical ophthalmology and confirm its practitioners as the exponents of the *highest* standard of eye care in the community. It is hoped that the greater clarity of the training program, linked to improved job prospects with realistic manpower and resource-planning, will rejuvenate medical ophthalmology as, nationally, eye care delivery moves its focus from the acute hospital setting to the community.

### **Challenges ahead**

The ICO is currently operating in a competitive environment with many sister Colleges and Faculties rationalising their training programs, removing incentives to step out of training and shortening their total training journeys.

As we continue to commit to implement the new changes which commenced in July 2015, it is clear with the new programs comes additional responsibilities. The key feature of the new training pathway is that career progression and entry into medical or surgical ophthalmology is linked to trainee performance during the basic common core years of training. Therefore it has never been more important to ensure equity of access to training opportunities across all training units nationally. To do so in the current climate of severe fiscal restrictions with theatre and other resource limitations, is challenging. Beyond the financial are the other less visible but equally

important stressors of increasing subspecialisation, the ever growing demand of intravitreal injections, and the risk-averse environment in which we now train, all of which place additional restraints on existing training opportunities.

Many challenges lie ahead as we continue to engage with delivering high quality postgraduate training in Ireland. Despite some uncertainties the ophthalmic community – trainers, trainees and the College - will work together to ensure the continued delivery of high-quality ophthalmic training in the College and at all training sites nationally.

## **ETHICS COMMITTEE**

**Patricia Quinlan, *Chairman***

*Committee members;* Patricia McGettrick, Marc Guerin, Louis Collum, Paddy Condon, Lisa McAnena, Eamonn O Connell

The Ethics committee met on six occasions over this year: June 17<sup>th</sup>; October 14<sup>th</sup>; November 17<sup>th</sup>; December 15<sup>th</sup>; February 10<sup>th</sup> and April 20<sup>th</sup>. We were concerned by the increasing number of litigations and the rising costs of indemnity insurance for our members. Our efforts have been focussed on working to improve the consent process thereby better protecting both the patient and the doctor as well as reducing risk of litigation.

We held a symposium on minimising malpractice risk as part of the 2015 ICO Winter meeting. The meeting was chaired by Pat McGettrick. It provided practical guidance on the correct process of obtaining informed consent, practising a policy of open disclosure and how to avoid subsequent difficulties or challenges.

We were fortunate to have speakers including Prof Freddie Wood, President IMO, Angela Tysall, HSE Lead for Open Disclosure and Asim Shiekh, Barrister at Law.

We have developed a series of patient information leaflets for the common surgical procedures. These are now ready for circulation and once approved by Council, will be posted on the college website. They can then be downloaded

and adapted to suit the various needs of centres around the country.

Pat McGettrick has drafted a simple guideline of the consent process which will help us all and will also be available on the college website.

We look forward to your feedback in due course.

This project has involved a lot of work and I would like to thank the committee members for their effort and commitment. Special thanks to Kathryn McCreery and Jeremy O Connor for their expert work on the Strabismus and Glaucoma sections.

Irish College of Ophthalmologists Annual Conference 2016  
The Europe Hotel, Killarney, Co. Kerry, May 18<sup>th</sup> – 20<sup>th</sup>  
Programme

Tuesday 17th May

Set up from 3pm

Wednesday 18<sup>th</sup> May

9.00am **Welcome**

Mr William Power

*President, Irish College of Ophthalmologists*

9.05am **Paper Session**

Co-Chairs: Mr Tom Flynn and Dr Alison Blake

**Outcomes in Deep Anterior Lamellar Keratoplasty (DALK) for Corneal Ectasia**

Emily Hughes

**Visual and Functional Outcomes of the TECNIS Symphony Extended Range of Vision 1-Piece Intraocular Lens (IOL), Model ZXROO**

Aine Ní Mhéalóid

**Incidence and Causative Organisms of Infective Keratitis in a North Dublin Population Following Audit of Corneal Scraping Practice from 2009-2016**

Melissa Murphy

**Corneal Tomographic Results Following Accelerated vs. Conventional Protocols for Corneal Collagen Cross-Linking in a Paediatric Population with Keratoconus**

Lina Kobayter

**Evidence Based Guidelines for the Management of Fungal Keratitis in the Republic of Ireland**

Stephen Farrell

**Audit of Indications, Complications and Surgical Outcomes Following Anterior Lamellar Keratoplasty (ALK) and Deep Anterior Lamellar Keratoplasty (DALK) in a Tertiary Referral Hospital**

Melissa Murphy

*Questions*

10am **Annual General Meeting**

Chair: Mr William Power, President ICO

11.00am *Coffee*

11.30am **The Eyes of Rebellion - Ophthalmology and Fighting for Freedom**

Mr Tim Horgan

*Consultant Ophthalmologist, University Hospital Kerry*

12.00pm **The Ins and Outs of Ocular Trauma**

Chair: Ms Rizwana Khan

**Eyelid and Orbital Trauma, Dodging the Stings and Arrows**

Mr Dan Nolan

*Consultant Ophthalmic Surgeon and Clinical Lead in Ophthalmology, East Cheshire NHS Trust Hospitals*

**Ocular Trauma and the Posterior Segment**

Mr Paul Connell

*Consultant Ophthalmic Surgeon, Mater Misericordia University Hospital, Dublin*

1.00pm *Lunch*

2.00pm **Paper Session**

Co-Chairs: Mr David Keegan and Dr Geraldine Comer

**Design of Nanoparticle- based MicroRNA Therapeutics in Sjögren's Syndrome**

Sinead Connolly

**Regulation of Lysyl Oxidase Like 1 expression in Pseudoexfoliation Glaucoma**

Deborah Wallace

**Significance of Novel RS1 Mutations in X-linked Retinoschisis**

Kirk Stephenson

**Target 5000: Next-generation Sequencing for Inherited Retinal Disorders**

Matthew Carrigan

**Negative Regulators of Inflammation and Age Related Macular Degeneration (AMD) in an Irish Population**

Meadhbh Rhatigan

**The role of AMD-derived exosomes in Age-Related Macular degeneration pathogenesis**

Hanan El Shelmania

*Questions*

**Evaluation of Tablet Computers in the Assessment of Visual Acuity: Can iPads Replace the Snellen Chart?**

Conor Malone

3.00pm **Technology and the Future of Healthcare**

Mr Jim Joyce

*Health-tech entrepreneur and Founder of Point of Care Clinic*

3.30pm *Coffee*

4.00pm **European Society of Ophthalmology (SOE) Lecture**

Introduction by Ms Patricia Logan, SOE Board Member

**Tackling Immunological Events in Corneal Transplantation**

Professor Conor Murphy

*Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital, Dublin*

4.30pm **Retina Screen Update**

Mr David Keegan

*National Clinical Lead Diabetic Retina Screen Programme, National Screening Service, Dublin*

**The impact of the Introduction of the Diabetic Retinal Screening (DRS) Programme on the Number of Laser Treatments Carried Out in the Ophthalmology Dept in UHG over a one-year period**

Esraa Hegazy

**Diabetic Retina Screen: The University Hospital Waterford Experience**

Pathma Ramasamay

Thursday 19<sup>th</sup> May

9.00am **Paper Session**

Co-Chairs: Miss Marie Hickey Dwyer and Dr Fiona Harney

**Prism Adaptation and the Surgical Management of Acquired Esotropia**

Clare Quigley

**Cataract Surgery in Paediatric Uveitis**

Michael O'Rourke

*Questions*

**Objective Change in Metamorphopsia as Measured by an M-chart Following Epiretinal Membrane Surgery in Eyes with Good Visual Acuity**

Iryna Surzhenko

**The Differences between Retinoschisis and Retinal Detachments on Wide-Field Fundus Autofluorescence**

Iryna Surzhenko

**Uveal Melanoma: The Irish Experience**

Caroline Bailey

*Questions*

**Evaluation of Outcomes from Transscleral Cyclo diode Laser, in a Tertiary Referral Centre, Including the Outcomes in Neovascular Glaucoma in the Era of anti-VEGF**

Shane Whitlow

**Vision and Health-Related Quality of Life in Patients with Giant Cell Arteritis**

Aine Ní Mhéalóid

10.00am **Future of Specialist Training in Ireland**

Introduction: Ms Yvonne Delaney, Dean of Postgraduate Education, ICO

**20 years of Ophthalmic Surgical Training Opportunities: 1995 to 2015 – What Has Changed?**

Niamh Collins

**Keynote Talk**

Prof. Eilis McGovern

*Director, National Doctors Training and Planning  
Health Service Executive*

11.00am *Coffee*

11.30am **Eye Care for Haiti**

Dr Kevin Tempany

*Ophthalmologist, Ranelagh Eye Clinic, Dublin*

11.40am **Vascular Symposium - Ocular Manifestations of Systemic Disease**

Chair: Ms Patricia Logan

**Ocular Manifestations of Cardiac Disease, the Common, the Complex and the Curious**

Dr Charles McCreery

*Cardiologist, St Vincents Hospital, St Colmcilles Hospital and Blackrock Clinic,  
Dublin*

**Imaging in Neuro-ophthalmology: What to Order and How to Maximise your Diagnostic Yield**

Dr Ronan Killeen

*Consultant Diagnostic Neuro-radiologist & Nuclear Medicine Physician, St Vincent's University Hospital and Royal Victoria Eye and Ear Hospital, Dublin*

### **Update in Neurology**

Dr Brian Sweeney

*Consultant Neurologist, Cork University Hospital, Cork*

*Questions*

1.00pm *Lunch*

2.00pm **Workshops** *(running concurrently)*

#### **The Future Development of Medical Ophthalmology - the Great Debate**

Chair: Dr Fiona Kearns, Chair Medical Ophthalmologists Committee, ICO

#### **Trainee Workshop:**

Chair: Mr Jeremy O Connor, Chair Scientific & CME Committee, ICO

Applying for a fellowship and early career advice

Delivering difficult news – Insight Counselling, Fighting Blindness

3.00pm **Practical Diagnostic Corneal Imaging**

Mr Tom Flynn,

*Consultant Ophthalmic Surgeon, Moorfields Hospital, London*

Friday 20<sup>th</sup> May

9.00am **Poster Session**

Chair: Dr Denise Curtin

#### **Accuracy of Glaucoma Drops Prescribing and Dispensing for Patients Admitted to Hospital for Non-Ophthalmic Complaints**

Mohamad Baba

#### **Implementing a Retinal Artery Occlusion and Retinal Vein Occlusion protocol in an Acute Medical Unit**

Esraa Hegazy

#### **Trabeculectomy Outcomes: Do Results in a District General Hospital Setting Compare to Larger Centres?**

Aisling Higham

**Case Series Report: Congenital Dural Ectasia of the Optic Nerve**

Mohamad Hosney

**Paediatric Ocular Cystinosis in the Republic of Ireland**

Stephen Farrell

**A1 Base- Pair Frameshift Deletion in Codon 893 of SLC24A1 Causes Retinitis Pigmentosa**

Conor Malone

**The Audit of Risk Factors and Clinical Features of Retinal Tears Diagnosed in Eye Casualty**

Donal McCullagh

**Ocular Immunoglobulin G4-related Disease. A Case Series**

Elizabeth McElena

**Initial Clinical Experience with the Trabecular Micro-Bypass Stent (iStent) in Patients with Open Angle Glaucoma**

Sarah Moran

**Eye Massage: Impact on Clinical Signs and Quality of Vision**

Johnny Moore

**Popper Associated Maculopathy – Case Report and Literary Synthesis**

Rory Murphy

**The Changing Treatment Profile of Diabetic Macular Oedema: The Decline of Macular Laser**

Treasa Murphy

**Workings of the Royal Victoria Eye and Ear Hospital Application for Smart Phones**

Patrick Murtagh

**Union is Strength: Looking Back on the First Year of the British Journal of Ophthalmology Founded 100 Years Ago**

Shane O'Regan

**A Retrospective Audit of the Epidemiology of Surgical Presentations to the UHW Vitreoretinal Unit**

Barry Power

10.00am **Annual Mooney Lecture 2016**

**Regulation of Corneal Inflammation and Immunity**

Professor Reza Dana

*Claes Dohlman Professor of Ophthalmology, Harvard Medical School and Director of the Department of Ophthalmology Cornea Center of Excellence*

11.00am *Coffee*

11.30pm **Evolving Trends in Corneal Disease**

Chair: Mr William Power

**Update on ocular graft-versus-host disease**

Prof. Reza Dana

*Professor of Ophthalmology, Harvard Medical School*

**Deep Anterior Lamella Keratoplasty (DALK)**

Mr Tim Fulcher,

*Consultant Ophthalmic Surgeon, Mater and Beaumont Hospitals, Dublin*

**Evolution of Endothelial Keratoplasty**

Mr Tom Flynn,

*Consultant Ophthalmic Surgeon, Moorfields Hospital, London*

**Changing Indications for Keratoprosthesis Surgery**

Mr Billy Power

*Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital, Dublin*

1.00pm **Update from ICO / Novartis Bursary Recipients 2016**

**Mitochondrial Respiratory Function and Mitochondrial DNA Mutations in Pseudoexfoliation Glaucoma**

Dr. Khalid Kamel

**Neutralising Interleukin-18 binding protein (IL-BP) as a potential therapy for treatment of neo-vascular AMD**

Dr. Ghaleb Farouki

***Announcement of ICO Medal Winners***

# **Book of Abstracts**

**Paper Session**  
**Wednesday 18<sup>th</sup> May, 2016**  
**9.00am**

## Outcomes in Deep Anterior Lamellar Keratoplasty (DALK) for Corneal Ectasia

*Hughes E, Stokes J, Condon P, Daya S.*

*University Hospital Waterford, Waterford Eye Specialists, Centre for Sight, East Grinstead.*

**Objectives:** Corneal ectasia can be managed with contact lenses in the majority of cases. Progression of disease can be slowed or treated using riboflavin cross linking, and contact lens intolerance may be reduced with insertion of intracorneal ring segments. However, a proportion of patients will eventually require corneal transplantation- either lamellar, or penetrating. This study presents the outcomes of patients who underwent DALK for corneal ectasia.

**Methods:** Retrospective review of all patients who underwent DALK between 2006 and 2014 within one practice. Parameters recorded included diagnosis and previous treatment, indication for surgery, pre-operative and post-operative clinical measurements (unaided vision- UAVA, best corrected vision- BCVA, refractive error, and corneal topography), complications and subsequent procedures.

**Results:** 12 patients were identified, mean age was 42 years. 11 patients had keratoconus, and one patient had post-LASIK ectasia. The average length of follow-up was 31 months. Mean pre-operative BCVA was 0.87 (LogMAR), improving to 0.55 (UAVA) and 0.34 (BCVA) post-operatively. Mean k on corneal topography reduced by 9.6D on average from 54.78D to 44D. 4 patients had no complications during their follow-up. Complications recorded included stromal rejection (2), graft-host interface scar (2), and steroid induced glaucoma (1). 4 patients developed cataract, and underwent surgery with toric lens placement. 3 patients had Femto-assisted astigmatic keratotomy for residual astigmatism after suture removal. The patient with post-LASIK ectasia required a subsequent penetrating keratoplasty.

**Conclusions:** DALK is a suitable surgical option when corneal transplantation is indicated in corneal ectasia, and may be favorable over PK in this relatively young cohort with healthy corneal endothelium. 66% of our patients achieved BCVA of 0.3 or better (Snellen equivalent 6/12). This compares with 78-92% in published case series. However, the potential benefits must be weighed against the possibility of the unfavourable outcomes described.

## Visual and Functional Outcomes of the TECNIS Symfony Extended Range of Vision 1-Piece Intraocular Lens (IOL), Model ZXROO

*Ní Mhéalóid A, Power W.  
Blackrock Clinic, Dublin*

**Objectives:** To evaluate visual outcomes, spectacle dependence and patient satisfaction after implantation of the TECNIS Symfony Extended Range of Vision 1-Piece Intraocular Lens (IOL), Model ZXROO

**Methods:** This study includes 19 eyes of 12 patients to date. Pre-operative assessment consisted of best corrected distance visual acuity, refraction, biometry, slit-lamp examination and corneal topography. The main outcome measures were uncorrected and best corrected distance visual acuity (UDVA, BCDVA), unaided near visual acuity (UNVA) and post-operative refraction. A subjective questionnaire was administered to evaluate patient satisfaction and spectacle independence.

**Results:** Mean monocular UDVA was  $0.10 \pm 0.09$  LogMar and mean monocular BCDVA was  $0.01 \pm 0.02$  LogMar. Refractive predictability was excellent with a mean spherical equivalent (SE) refraction of  $-0.39 \pm 0.31$  dioptres. Mean UNVA was N 6.35 $\pm$ 1.17. All patients were spectacle independent for distance, 33% required glasses for reading and 8% for intermediate distance. 42% reported symptoms of glare and 33% reported symptoms of halos, though no patient was particularly bothered by these symptoms. Patient satisfaction was recorded at 8.6 on a scale of 0-10, and all patients said that they would undergo the surgery again, given the option.

**Conclusions:** The TECNIS Symfony IOL provides excellent distance and intermediate VA and good near VA. Patient satisfaction is extremely high.

## **Incidence and Causative Organisms of Infective Keratitis in a North Dublin Population Following Audit of Corneal Scraping Practice from 2009-2016**

*Murphy M, Connolly S, Brennan R, Treacy M, Fulcher T.  
Mater Misericordiae Hospital, Dublin*

**Objectives:** Our primary aim was to establish demographics, risk factors and causative organisms of infective keratitis in a tertiary referral hospital in Ireland. The secondary aim was to audit corneal scraping methods in our unit with a view to improving detection rates in infective keratitis.

**Methods:** Patients who underwent corneal scraping over a 5 year period were identified via the microbiology database and a retrospective audit of their medical records was carried out. Clinical information including patient demographics, causative organisms, sensitivities and clinical outcomes was collected. A new protocol for corneal scraping was introduced, including recommendations from the microbiology department to improve the quality of corneal sampling. Data for the 18 months following this was subsequently analysed to assess for improvement in practice.

**Results:** Corneal scraping results of 110 eyes from 109 patients were registered following audit of our practice from 2014-2016. Of these, a positive result was obtained in 46.7%. 41 eyes were positive for bacterial organisms, 9 eyes were positive for fungus and 3 eyes were positive for Acanthamoeba. Following audit, our rates of positivity improved modestly by 7%.

**Conclusions:** Following an audit of our practice we were able to improve the rate of positive results from corneal scrapings. Due to the significant morbidity associated with infective keratitis, improved detection of causative organism is vital in directing appropriate therapy.

## **Corneal Tomographic Results Following Accelerated vs. Conventional Protocols for Corneal Collagen Cross-Linking in a Paediatric Population with Keratoconus**

*Kobayter L, Power B, Murphy C.  
Royal Victoria Eye and Ear Hospital, Dublin*

**Objectives:** To audit and compare the corneal tomographic outcomes following accelerated and conventional protocols of corneal collagen cross-linking for a population with keratoconus, aged under 18, attending the Royal Victoria Eye and Ear Hospital and the Blackrock Clinic in Dublin

**Method:** A retrospective audit was conducted, that looked at all corneal collagen cross-linking procedures with relevant data available for patients with keratoconus under the age of 18 (total of 71 eyes, 51 patients) that took place between 2010 and 2015. Maximum keratometry in diopters (Kmax in D), mean keratometry (Kmean) and pachymetry values (microns) were obtained both preoperatively (pre-op) and at their most recent postoperative visit (post-op). Comparisons were also made between the conventional cross-linking protocol (30 min riboflavin induction, 3mW/cm<sup>2</sup> for 30 minutes: 5.20J/cm<sup>2</sup>) comprising 44 eyes of 31 patients and the accelerated cross-linking protocol (10 min riboflavin induction, 30mW/cm<sup>2</sup> for 4 minutes: 7.20J/cm<sup>2</sup>) comprising 27 eyes of 20 patients, the latter of which was introduced to the Royal Victoria Eye and Ear hospital in July 2013

**Results:** Mean postoperative Kmax values improved when compared to mean preoperative Kmax values following corneal collagen cross-linking in both the accelerated (pre-op mean Kmax 54.6D vs. post-op 53.6D) and conventional protocols (pre-op mean Kmax 56.3D vs. post-op 54.9D). The mean difference between Kmax pre-op vs. Kmax post-op was 0.96D (SD: 3.89D) for the accelerated group vs. 1.35D (SD: 2.89) for the conventional group. The absolute Kmax value improved or remained stable in 60% of eyes undergoing treatment with the accelerated protocol vs. 75% with the conventional protocol. Of those who showed a deterioration in Kmax values, only one patient in the accelerated group was deemed to have clinically significant deterioration, requiring re-treatment. Duration of follow-up varied widely amongst the two groups. For the accelerated protocol duration of follow-up was between 6 and 22 months compared to 9 and 54 months with the conventional protocol.

**Conclusions:** Both the accelerated and conventional protocols have shown improved tomographic outcomes following corneal collagen cross-linking. The conventional protocol has shown a larger mean improvement in Kmax values for a larger population and for a longer period of follow-up. A re-audit of the data following the accelerated protocol at two- and three-year intervals should aim to increase sample size and establish more comparable results.

## **Evidence Based Guidelines for the Management of Fungal Keratitis in the Republic of Ireland**

*Farrell S, Mc Elnea E, Moran S, Murphy C.  
Royal Victoria Eye and Ear Hospital, Dublin*

**Objectives:** Fungal Keratitis is a rare and sight threatening condition for which the treatment varies greatly throughout the country. We performed a nationwide study examining all cases of Fungal Keratitis diagnosed in the 7 main ophthalmology centres in Ireland over a six year period. We previously reported the epidemiological features of these patients. Subsequently we aimed to use data from this study to develop guidelines for the management of fungal keratitis.

**Methods:** All cases of culture positive or microscopy positive fungal keratitis diagnosed in the Royal Victoria Eye and Ear Hospital, Mater Hospital, University Hospital Waterford, Cork University Hospital, University Hospital Limerick, University Hospital Galway and Sligo Regional Hospital occurring from January 2009 to January 2015 were reviewed. The responsible organism and sensitivities to antifungal medications were identified. The clinical treatment including any surgical intervention was recorded and the visual outcome documented.

**Results:** In this presentation we report the findings of this nationwide study focusing on the fungal organism identified, the sensitivities of the organism to antifungal agents and the treatments used including topical, intracameral, intrastromal, intravitreal, oral and intravenous antifungal agents. Patients with pre-existing ocular surface disease predominantly cultured *Candida* species. Contact lens wearers with no other risk factor predominantly cultured *Fusarium* species. Patients with a recent history of corneal trauma predominantly cultured *Aspergillus* species. While *Candida* and *Aspergillus* species were generally sensitive to all antifungal agents, a number of *Fusarium* species demonstrated significant resistance. Despite high levels of sensitivity to antifungal agents, 26% of all patients still required corneal grafts and visual outcomes varied greatly from 6/5 to NPL.

**Conclusions:** Fungal keratitis is a rare condition with very variable management and variable outcomes. This nationwide study contributes significantly to an evidence base for the management of fungal keratitis. In this presentation we propose guidelines for the management of Fungal Keratitis.

## **Audit of Indications, Complications and Surgical Outcomes Following Anterior Lamellar Keratoplasty (ALK) and Deep Anterior Lamellar Keratoplasty (DALK) in a Tertiary Referral Hospital**

*Murphy M, Fulcher T.*

*Mater Misericordiae University Hospital, Dublin*

**Objectives:** To establish the indications, surgical outcomes and complications following ALK/DALK in a tertiary referral hospital for a mean follow-up of 6.5 years post-operatively.

**Methods:** A retrospective audit of the medical records of fourteen patients who underwent ALK or DALK by a single consultant surgeon in a tertiary hospital was carried out to establish demographics, indications, complications, refractive and visual outcomes following surgery.

**Results:** 19 DALK procedures were scheduled for 15 patients (11 males, 4 females). Of these 4/19 were converted intra-operatively to penetrating keratoplasty due to perforation during surgery. Of the fifteen procedures performed, nine were DALK using the big bubble technique, six were manual lamellar dissections. Surgical indications were keratoconus (9 cases), infectious keratitis (5 cases), Stephen-Johnson syndrome (3 cases, same patient), traumatic corneal scarring (1 case) and aniridia with stem cell failure (1 case). Following surgery, 50% achieved a best-corrected visual acuity of 6/9 or better on last clinic visit. Complications included high post-operative intra-ocular pressure with Urrrets-Zavalía syndrome, recurrence of infection in graft and second chamber formation requiring subsequent drainage/air injection.

**Conclusions:** Long-term follow-up of patients who have undergone ALK/DALK reveal good final visual outcomes but relatively high complication rates.

**Paper Session**  
**Wednesday 18<sup>th</sup> May, 2016**  
**2pm**

## **Design of Nanoparticle- based MicroRNA Therapeutics in Sjögren's Syndrome**

*Connolly S, Pilson Q, Cryan SA, Ní Gabhann J, Murphy C.*

*Molecular & Cellular Therapeutics, RCSI, Dublin, Royal Victoria Eye and Ear Hospital, Dublin, School of Pharmacy RCSI, Dublin.*

**Objectives:** Sjögren's Syndrome is an inflammatory autoimmune disease, primarily affecting mucous membrane epithelia leading to dry eyes and dry mouth. Available treatments are symptomatic, and fail to address the underlying immune dysfunction at the ocular surface. Dysregulated microRNA may contribute to the pathogenesis of pSS by increasing pathogenic cytokine production. Previously we have shown that miR-744-5p expression was significantly increased whilst its predicted gene, Pellino3, a known negative regulator of type I IFN, was significantly reduced in primary conjunctival epithelial cells (CEC) from pSS patients. Manipulation of miR-744-5p expression using a mimic or antagomir resulted in reduced and increased expression of Pellino3 respectively. Given the potential of Pellino3 to reduce inflammation we are investigating strategies to deliver miR modulating compounds to the ocular surface. Specifically, we will describe the development of a nanoparticle vector for this novel therapeutic approach.

**Methods:** psiCHECK-2 luciferase constructs were designed such that one contained the potential miR-744 binding sites within the 3' UTR of Pellino3, while the second contained an unrelated fragment with no binding sites. Co-transfection of psiCHECK-2 constructs containing both of the potential binding sites with a miR-744 mimic demonstrated a significant decrease in luciferase gene expression when compared to the unrelated fragment control. Biodegradable chitosan nanoparticles were loaded with varying concentrations of miR and antagomiR cargo or scrambled short-chain nucleotides as control. Particle size and charge were determined using Malvern Zetasizer Nano 3000. An immortalised conjunctival epithelial cell transfection protocol was developed using chitosan-miR nanoparticles.

**Results:** Overall our results confirming a direct interaction have identified miR-744-5p as a negative regulator of Pellino3. A chitosan nanoparticle delivery system was developed, with N/P ratios of 10 and 70 resulting in particles that met the size and zeta potential criteria.

**Conclusions:** An optimized nanoparticle-miR delivery system has therapeutic potential for modulating inflammation at the ocular surface.

## Regulation of Lysyl Oxidase Like 1 Expression in Pseudoexfoliation Glaucoma

*Wallace D, Zhao J, Ke Z, McDonnell F, Dervan E, O'Brien C.*

*School of Medicine and Medical Science, University College Dublin, Mater Misericordiae University Hospital, Dublin.*

**Objectives:** Pseudoexfoliation syndrome is currently the single most important identifiable risk factor for developing glaucoma. Genetic studies have identified a gene called lysyl oxidase-like 1 (LOXL1) which is thought to be important for an individuals' predisposition to developing this syndrome. Other studies have shown that levels of LOXL1 can vary between normal and disease patients and also in disease progression. While LOXL1 is of importance other factors also play a role in determining if an individual develops glaucoma, for example levels of oxidative stress and hypoxia which can alter gene expression via epigenetics, specifically, methylation. In this study we wish to address the regulation of LOXL1 expression in glaucoma specifically in PXFG Human Tenon Fibroblasts (HTFs).

**Methods:** HTFs were propagated from explanted subconjunctival Tenon's capsules isolated during glaucoma surgery. Briefly, biopsies of human Tenon's capsule were obtained from consented patients with PXFG and cataract during trabeculectomy or in normal non-glaucoma controls undergoing cataract surgery. To establish explant cultures the biopsies were placed in dissection media, DMEM supplemented with 20% FBS, 0.25% Liberase, 0.05% DNase I and 1% Pen-Strep. Immunofluorescence was used to confirm cellular phenotype. Standard molecular laboratory techniques (qPCR) were used for expression analysis and Global Methylation determination. For all assays passages 2-4 cells were used.

**Results:** Following confirmation of the cellular fibroblastic phenotype (Fibronectin & Vimentin) of the explants from the Tenon capsules we found there to be significantly ( $P \leq 0.05$ ) altered levels of global methylation and LOXL1 expression in PXFG HTFs compared to cataract control HTFs.

**Conclusions:** We possess a greater understanding of LOXL1 regulation in PXFG. Completion of this study will provide data required to embark on the use of chromatin modifying intervention in counteracting the pathology integral to PXFG.

## Significance of Novel RS1 Mutations in X-linked Retinoschisis

*Stephenson K, Carrigan M, Farrar J, Kenna P, Keegan D.  
Mater Misericordiae University Hospital, Dublin*

**Objectives:** To describe the phenotypic variability of a family cohort of X-linked retinoschisis in an Irish population with a novel RS1 mutation.

**Methods:** Patients were recruited as part of the Irish national genetic screening registry for inherited retinal degenerations. This screening program includes clinical history and examination with retinal imaging, electrophysiology, visual field testing and blood/saliva sampling for genetic analysis. Six patients were identified with X-linked retinoschisis (five brothers and one male first cousin). Next generation sequencing was performed, which identified a novel mutation in the RS1 gene. Exploration of the family history revealed 5 grandsons and 2 further maternal male first cousins that have a consistent phenotype.

**Results:** All patients had a history of visual acuity and colour vision disturbance from childhood. There was significant phenotypic variability between the six subjects. The least severely affected individual, also the youngest, had a previous enucleation of one eye, a normal macula, with vitreous strands only. The most severe patient, the eldest, had advanced macular atrophy. The four patients of intermediate severity had a more classic macular retinoschisis pattern of outer retinal splitting. A mutation was detected in the RS1 gene (X chromosome); this was a single base change (c.413C>A) in exon 5. This mutation has not been previously seen; however, other mutations within the discoidin domain of the retinoschisin protein have shown structural and functional impact.

**Conclusions:** This family has expressed a novel gene mutation in exon 5 of the RS1 gene, leading to dysfunction of the retinoschisin protein. This cohort exhibited a broad range of phenotypic severity, the common trait being early central & colour vision impairment with temporal deterioration. The next step is to clinically investigate the male children of these patients' daughters for early changes consistent with retinoschisis and to confirm presence of this novel RS1 mutation. Following this, we aim to collaborate with current research in the development of gene therapy for treatment of RS1 gene mutations. The more severely affected patients may have limited benefit from gene therapy as a result of end-stage atrophy of the RPE and photoreceptor cell death. However, the primary beneficiaries of treatment are the younger generation of this family. This may mean that early detection of this (or similar) RS1 mutations in hereditary retinoschisis could prevent permanent central visual loss in susceptible individuals.

## Target 5000: Next-generation Sequencing for Inherited Retinal Disorders

*Carrigan M, Duignan E, Malone C, Stephenson K, Saad T, McDermott C, Green A, Keegan D, Humphries P, Kenna P, Farrar J.  
Trinity College Dublin; Royal Victoria Eye and Ear Hospital; Dublin, Mater Misericordiae University Hospital, Dublin, Our Lady's Hospital, Crumlin, Dublin*

**Objectives:** To identify the genetic mutations underlying inherited retinal disease in the Irish patient population.

**Methods:** Next-generation DNA sequencing was performed with a targeted capture panel of 214 genes. Sequencing was performed using an Illumina MiSeq at St. James's Hospital, Dublin, with some sample groups sequenced off-site on an Illumina HiSeq by GATC Biotech (Konstanz, Germany) and BGI Tech (Shenzhen, China). All computational and downstream analysis, including read mapping and variant calling and filtering, was performed at TCD.

**Results:** 539 individuals from 309 families have been sequenced so far, with a successful diagnosis rate of 57%. We report over 40 novel mutations implicated in disease in this study, as well as the first associations of the genes GNAT1 and SLC24A1 with retinitis pigmentosa. This is the largest study of its kind to date in Ireland, and so we also present our view of the "molecular landscape" of the mutations and genes most commonly implicated in retinal disease in Ireland.

**Conclusions:** Target-capture next-generation sequencing is a cost-effective and efficient approach to diagnosing the mutations underlying inherited retinal disease. Identifying these causative mutations is a necessary prerequisite for patients to access clinical trials and advanced gene- and mutation-specific treatments, including virally-delivered gene therapies.

## **Negative Regulators of Inflammation and Age Related Macular Degeneration (AMD) in an Irish Population.**

*Rhatigan M, Ozaki E, Cahill M, Doyle S.*

*Royal Victoria Eye and Ear Hospital Research Foundation, The Irish Longitudinal Study on Ageing (TILDA), National Children's Research Centre, Crumlin.*

**Objectives:** 1. Confirm that proinflammatory cytokines are increased in people with AMD .2. Establish if Negative Regulators of TLRs are altered in people with AMD 3. Determine if levels of these regulators are associated with disease severity and risk of progression 4. Identify a panel of potential disease biomarkers for AMD

**Methods:** 1.Collected blood samples n = 309 of people with known AMD and age and gender matched controls from the TILDA Cohort 2.Measure plasma levels of 5 cytokines - IL-1, IL-6, IL-8, IL-17, TNFa 3.Measured the mRNA gene expression of 27 Negative Regulators of TLRs using PCR gene array in patient subset. 4.Graded Retinal fundus photographs of participants for AMD severity.

**Results:** Preliminary results showed certain pro-inflammatory cytokines to be elevated in AMD; Preliminary results showed certain anti-inflammatory cytokines to be elevated in controls; We found no difference in plasma levels of IL-6,IL-8, IL-18 or TNF in AMD versus controls; We found that 4.3% of our AMD cohort converted from hard to soft drusen over a five year period and that 2.1% of controls had converted to AMD.

**Conclusions:** These preliminary results show up regulators of TLRs may be implicated in AMD, both atrophic and neovascular. These potential disease biomarkers may have a role as part of a diagnostic investigation set, as an adjunct to clinical exam, optical coherence tomography (OCT), fluorescein angiography and microperimetry. They may also have prognostic value in terms of identifying patients at risk of disease progression. This could help guide management including frequency of outpatient visits and, counselling on lifestyle factors and appropriate timing of therapeutic intervention. They may also form a basis of targets for therapeutic intervention.

## The Role of AMD-derived Exosomes in Age-Related Macular Degeneration Pathogenesis

*El Shelman H, Saad T, O'Driscoll L, Wride M, Keegan D.*

**Background:** Age-related macular degeneration (AMD) is a common condition causing progressive visual impairment, leading to irreversible blindness. Exosomes are 50–90nm membrane micro-vesicles (MVs), released by several cell types. Although exosomal functions are not completely understood, there is much evidence to suggest that exosomes play an essential role in cell-cell communication. They may stimulate target cells by transferring different bioactive molecules such as miRNA.

**Objectives:** The overall aim of this project was to identify the pathological relevance in AMD. Preliminary functional assessment was carried out using the ARPE-19 cell line, human endothelial cells and exosomes (which contain miRNAs) extracted from AMD patients' serum in order to determine the influence of exosomes on ARPE-19. The *in vitro* functional evaluation including apoptosis and angiogenesis to vasculogenesis on exosome treated ARPE-19/ human endothelial cells.

**Methods:** This proof-of-principle study involved exosomes isolation from sera specimens from patients with (i) atrophic AMD, (ii) neovascular AMD, and (iii) age- and gender-matched controls. Exosomes derived from patients'/controls' sera were analysed to investigate the possible clinical relevance of serum- derived exosomes. The presence of exosomes was established using the Exo Quick isolation procedure, and confirmed using NanoSight analyses and Western blot analysis to track exosomes with validated antibodies. The effects of the exosomes on human endothelial cells/ retinal pigment epithelium (ARPE-19) cells were analysed to examine whether they stimulate vascularogenesis/angiogenesis (characteristics of nAMD) and apoptosis (characteristics of atrophic AMD). The assay were performed by Profiling of some target miRNAs in RPE-19 treated with AMD derived exosomes, Markers of apoptosis in exosomes treated ARPE-19 cells, The Human Apoptosis miScript miRNA PCR Array profiling in ARPE-19 cells treated with AMD derived exosomes and Angiogenesis to vasculogenesis assay.

**Results:** we determined that patients' serum-derived exosomes stimulated endothelial tubule formation in human endothelial cells compared with control. Treatment of ARPE-19 cells with AMD- derived exosomes induced apoptosis, along with increasing the expression of human apoptosis miRNAs and apoptosis protein markers. This supports the potential role of exosomes as cargos of miRNA AMD biomarkers.

**Conclusion:** Our *in vitro* preliminary studies indicate that exosomes may play an important role in AMD, in cell-cell communication, and thus may suggest the potential contribution of AMD- derived exosomes in AMD pathogenesis.

## Evaluation of Tablet Computers in the Assessment of Visual Acuity: Can iPads Replace the Snellen Chart?

*Malone C, McCourt C, Al Daqqaq N, Murphy C.*

*Royal Victoria Eye and Ear Hospital, Dublin,. Royal College of Surgeons in Ireland, Dublin, Royal College of Surgeons in Ireland - Medical University of Bahrain, Bahrain*

**Objectives:** Assessment of visual acuity (VA) is an essential clinical examination in ophthalmology and across many other specialties. In the community, primary care teams, emergency medicine physicians, and optometrists use VA to assist in triaging patients for referral to ophthalmology. The advent of tablet computers presents an opportunity to offer healthcare providers access to inexpensive, standardised, and accurate methods of measuring VA. Previous studies have found that glare and low baseline VA limit the reliability of tablet computers in assessing VA. This study seeks to assess the accuracy of a popular, commercially-available tablet computer application used for measuring VA and to examine the effects of decreased luminance on test validity.

**Methods:** 79 ambulatory care patients were randomly recruited from a large national ophthalmology tertiary referral centre. Each patient's VA was tested twice: using the established Lighthouse vision chart and using an Apple iPad 2 tablet with proprietary Kybervision Visual Acuity XL software. Phase 1 used the maximum device luminance setting of 380 cd/m<sup>2</sup>. Phase 2 used a lower luminance of 160 cd/m<sup>2</sup>. Phase 1 included 88 eyes of 46 patients. Phase 2 included 61 eyes of 33 patients. VA was recorded on the LogMAR scale.

**Results:** In Phase 1, at maximum device luminance of 380 cd/m<sup>2</sup>, there was a statistically significant difference between the standard chart and the tablet device for both unaided VA ( $p=0.0028$ ) and best-corrected VA ( $p=0.0003$ ). In Phase 2, at moderate luminance of 160 cd/m<sup>2</sup>, no statistically significant difference was found between measurements on the Lighthouse and iPad charts for either unaided VA ( $p=0.1008$ ) or best-corrected VA ( $p=0.2849$ ).

**Conclusions:** Previous studies have sought to validate the use of tablet devices for measurement of VA, but have cited glare and poor baseline VA as limiting factors. These outcomes were confirmed by Phase 1 of this study. ETDRS protocol recommends that luminance in VA assessment should be set between 80 and 320 cd/m<sup>2</sup>. Phase 2 of this study demonstrated that the use of moderate luminance (160 cd/m<sup>2</sup>) validates the use of this tablet computer and software application as an alternative to traditional printed or projected vision charts.

# **The Impact of the Introduction of the Diabetic Retinal Screening (DRS) Programme on the Number of Laser Treatments Carried Out in the Ophthalmology Department in University Hospital Galway (UHG) Over a One-Year Period.**

*Hegazy E, Townley D.  
University Hospital Galway*

**Objectives:** Diabetic retinopathy (DR) and diabetic macular edema (DME) are major causes of legal blindness in the developed world. In Ireland the Diabetic retinopathy screening was introduced nationwide in 2014. These patients requiring treatment were then referred to a treatment centre. Galway University Hospital was 1 of the 7 treatment centers nationwide. The aim of this project was to assess the number of pan-retinal photocoagulation (PRP), focal lasers and yag lasers carried out to treat patients following the introduction of the DRS in the ophthalmology department in GUH over a one-year period and see if this affected the overall number of patients receiving treatment.

**Methods:** This was a retrospective audit, which compared the total number of lasers carried out in the GUH ophthalmology department one-year prior to and one-year following the introduction of the DRS and its subsequent formation of a Diabetic Retinal Clinic. Information regarding the age of the patient and the laser treatment they received was retrieved from the laser logbooks in the ophthalmology department. This information was gathered from the period between 01.10.2013-01.10.2014 prior to the introduction of the DRS. These logbooks were again assessed following the introduction of the DRS from the period of time between 03.03.2015-03.03.2016.

**Results:** In total 444 lasers were carried out between the period 01.10.2013-01.10.2014. Of these, 233 cases were specifically aimed at diabetic retinal treatment. 123 of these were PRP lasers, 110 were focal lasers. Two hundred and four were yag laser capsulotomy, 5 retinopexy and 2 unknown. During the re-audit period between 03.03.2015-03.03.2016 these numbers had increased to 851 new laser treatments, 618 of these were specifically aimed at diabetic retinal treatment. Four hundred and thirty-six of these were PRP lasers, 176 were focal lasers. 197 were yag laser capsulotomy, 27 retinopexy and 8 unknown.

**Conclusions:** There was an increase of nearly 2-fold in the number of of total lasers performed, with diabetic specific lasers increasing nearly 3-fold. There was no difference to the number of yag laser procedures carried out. The growth in procedures has resulted in the clinic purchasing a Pascal Multifocal Laser to deal with these numbers. This has enabled the ophthalmology department to facilitate the rise in numbers without requiring extra manpower.

## Diabetic Retina Screen: The University Hospital Waterford Experience

*Ramasamy P, Huang J, Henry E.  
University Hospital Waterford*

**Objectives:** To review the management of patients referred to University Hospital Waterford by the Diabetic Retina Screen (DRS) programme

**Methods:** Retrospective review of consecutive patients referred to UHW over a 3 month period (January-March 2014) was undertaken. Data collected include: demographics, reason for referral, attendance rate, percentage of patients screened/treated before DRS and rate of agreement with DRS referral.

**Results:** A total of 114 patients were referred in the 3 month period. 81 (71.1%) and 33 (28.9%) referrals were from Global Vision and Medical Imaging, respectively. The mean age was 63.8 years (range: 15.4 – 86.9 years). There were 75 males (65.8%) and 39 females (34.2%). Of the 114 referrals, 54 were urgent (47.4%) and 60 were non-urgent (52.6%). There were 8 (7%) referrals for R2 in one eye with R0/R1 in the fellow eye and 17 (14.9%) for R3 in one eye with R0/R1 in the fellow eye. 8 (7%) referrals were for R3 in one eye and R2 in the fellow eye. There were 7 (6.1%) referrals for R2 in both eyes and 25 (21.9%) for R3 in both eyes. For maculopathy, there were 32 (28%) referrals for M1 in one eye and 29 (25.4%) for M1 in both eyes. A total of 32 (28%) referrals were for non-DR disease. Of these, 12 (10.5%) also had coexisting DR while 20 (17.5%) did not have DR. 71 (62.3%) patients have been screened previously (80.3% in UHW and 19.7% by a community ophthalmologist). 93.9% of patients attended their first appointment. Of those who did not attend, there was a 100% attendance rate for subsequent appointments. A total of 40 (35.1%) patients referred by the DRS had been previously treated; 21 (18.4%) received treatment for DR while 19 (16.7%) were treated for non-DR disease.

A total of 19 new patients (16.7%) received treatment following referral by DRS; 12 (10.5%) received treatment for DR while 9 (7.9%) for non-DR disease. Clinical findings were in agreement with DRS findings in 46 (40.4%) patients. 31 patients (27.2%) of patients were discharged to DRS after one visit, but 24 of these (77.4%) were referred to an ophthalmic clinic for non-DR related disease. 67 patients (58.8%) required further visits for DR monitoring/treatment and a further 16 patients (14%) required further visits for both DR and non-DR monitoring/treatment.

**Conclusions:** This study demonstrates the management of patients referred to University Hospital Waterford by the Diabetic Retina Screen programme. Although the rate of agreement with the reason for referral was relatively low, the majority of patients required further evaluation and management for both diabetic retinopathy and other diseases. This is an ongoing retrospective observational study and results of a larger cohort of patients will be presented.

**Papers**  
**Thursday 19<sup>th</sup> May, 2016**  
**9am**

## **Prism Adaptation and the Surgical Management of Acquired Esotropia**

*Quigley C, Cairns M, Doyle F, McElnea E, McCance J, Mullaney P.  
Galway University Hospital, Sligo Regional Hospital, Royal Victoria Eye and Ear Hospital, Letterkenny General Hospital*

**Objectives:** Audit the outcomes of surgery in paediatric accommodative esotropia augmented by prism adaptation test (PAT), carried out by one consultant ophthalmic surgeon, with two orthoptics centres carrying out PAT.

**Methods:** Patients from two centres, Sligo Regional Hospital and Letterkenny General Hospital, who underwent PAT during the period from 2010-2014 were retrospectively evaluated. Twenty-six patients completed follow-up at five months. These patients either showed a requirement for prisms which changed; prism-builders, or which remained stable during adaptation; prism-nonbuilders.

**Results:** A total of 28 patients underwent PAT prior to esotropia surgery. The rate of successful motor outcome at six months, an esodeviation  $\leq 10\Delta$  without exodeviation, for all patients was 61%. Prism-builders (n=12, 48% of sample), versus prism-nonbuilders (n=15, 52%), trended toward a higher rate of successful outcome; 83% versus 54%, p=0.07. Larger initial angle of eso-deviation was inversely associated with successful surgical outcome, whereas patient factors including age and sex, and surgical factors including length of resection were not associated with outcome.

**Conclusions:** Up to half of patients in this small cohort show an increase in angle of esotropia with PAT, and these patients trend toward an improved surgical outcome relative to those who show no change in angle. Prism-adaptation may have prognostic use, and possible therapeutic value in determining surgical dosage.

## Cataract Surgery in Paediatric Uveitis

*O'Rourke M, Kilmartin D, Brosnahan D.  
Royal Victoria Eye and Ear Hospital, Dublin*

**Objectives:** To evaluate the indications, management and outcomes of cataract surgery in children with uveitis.

**Methods:** A retrospective chart review of paediatric uveitis cases undergoing cataract surgery between 2002 and 2015 was undertaken. Specifically, the timing of surgery and uveitis activity at this time was examined. Pre and post-operative visual acuity was recorded as well as other co-existing sight threatening pathologies.

**Results:** In total, 12 eyes of 8 patients were included in this study. The mean age was 11.2 years old (range 6 to 18 years). The onset of cataract was noted on average 3.14 years after diagnosis of uveitis (SD 2.7 years) with cataract surgery undertaken on average 0.84 years later. Surgery was undertaken after a period of inactivity of at least 18 months on immunosuppression, except in the case of 3 eyes of 2 children operated before the age of 8 due to the risk of amblyopia. Pre-operative visual acuity mean was LogMAR 0.19 (SD 0.18) and improved to mean LogMAR 0.68 (SD 0.36). All patients were given augmented corticosteroid immunosuppression preoperatively which was tapered slowly in the post-operative period. Only one patient experienced a uveitis flare acutely post-op. All eyes had iris synechiae pre-op. Band keratopathy was present in 6 eyes, cystoid macular oedema in 3 eyes and glaucoma in 5 eyes.

**Conclusions:** Cataract surgery in paediatric uveitis cases generally has favourable outcomes. We recommend deferring surgery until there has been at least 18 months of inactivity except where there is a risk of amblyopia. Many other co-existing complications of uveitis impacts on vision for this cohort of patients.

## **Objective Change in Metamorphopsia as Measured by an M-chart Following Epiretinal Membrane Surgery in Eyes with Good Visual Acuity.**

*Surzhenko I, Beatty S, Lee KL, Ng E.*

*Mater Misericordiae Hospital, Dublin, Manchester Eye Hospital, Manchester; Institute of Eye Surgery, Waterford*

**Objectives:** To describe the objective changes in metamorphopsia following epiretinal membrane (ERM) surgery as measured by an M-chart for eyes with good pre-operative visual acuity.

**Methods:** All patients underwent vitrectomy with ERM and internal limiting membrane peeling. M-chart measurements were obtained before and after ERM surgery on all patients with pre-operative best corrected visual acuity (BCVA) of 6/15 Snellen equivalent or better. Horizontal (H) and vertical (V) M-chart scores were analysed separately.

**Results:** Single surgeon series of 14 eyes of 13 patients were analysed. Eight males and six females with a mean age of 71 years (range 64-76 years) were followed up for an average of 5 months after surgery. Mean pre-operative BCVA was 0.23 (0-0.4) logMAR units. Mean post-operative BCVA was 0.13 (0-0.5) logMAR units. Two eyes lost 1 line of vision while the other eyes had either improved or unchanged BCVA following ERM surgery. Mean M-chart H scores before surgery was 0.63 (0.2 – 2.0) and mean V scores before surgery was 0.71 (0.2 – 2.0). After surgery, mean M-chart scores had improved to 0.16 (0-0.9) and 0.35 (0-1.6) retrospectively.

**Conclusions:** M-chart scores were an objective measure of metamorphopsia that improved independently from BCVA and CRT following ERM surgery.

## **The Differences Between Retinoschisis and Retinal Detachments on Wide-Field Fundus Autofluorescence**

*Surzhenko I, .Ng E.*

*Royal Victoria Eye and Ear Hospital, Dublin, Institute of Eye Surgery, Waterford*

**Purpose:** To describe the differences between retinoschisis and retinal detachments on wide-field fundus autofluorescence imaging.

**Methods:** Analysis of images from 27 eyes (15 with retinal detachments of various forms and 12 with retinoschisis) was carried out. Only eyes with optical coherence tomography (OCT) confirmation of diagnosis or far peripheral retinoschisis with pathognomonic inner retina glistening dots were included in this study. Fundus autofluorescence patterns between retinoschisis and retinal detachments using 532nm wavelength (Optomap 200Tx, Optos) were compared.

**Results:** Retinoschisis was isofluorescent throughout the entire image, from normal retina to the periphery of the area of retina affected. Retinal detachments demonstrated a hyperfluorescent band at the junction between attached and detached retina, while the autofluorescence of the remainder of the detached retina was dependent on the type of retinal detachment (hypofluorescent if chronically detached and atrophic or hyperfluorescent if active and not atrophic).

**Conclusion:** Wide-field fundus autofluorescence imaging is a simple, non-invasive and objective technique to differentiate retinoschisis from retinal detachments in difficult clinical cases.

## Uveal Melanoma: The Irish Experience

*Baily C, O' Neill V, Kennedy S, Cunningham M, Horgan N.  
Royal Victoria Eye and Ear Hospital, Dublin; St. Luke's Hospital, Dublin*

**Objectives:** To determine demographics, clinical features, treatment, incidence and survival in patients with uveal melanoma in Ireland. This has not been looked at to date.

**Methods:** Observational study performed at the Royal Victoria Eye and Ear Hospital, a tertiary referral centre for ocular melanoma in Ireland. We included 259 patients referred to the service since it was established in 2008.

**Results:** The study included 259 eyes with a mean age of presentation of 64 years (58% male, 42% female). All patients were Caucasian. Location was iris in 6.9%, iridociliary in 1.1%, ciliochoroidal in 9.2% and choroidal in 81.4%. The mean basal diameter was 12.6 mm and mean thickness was 6.3%. Treatment modalities included brachytherapy in 63.7%, enucleation in 27.0% and proton beam radiation in 9.2%. Histology was available in 83 cases (43.3% spindle, 15.6% epitheloid and 40.9% mixed). Chromosome 3 loss and chromosome 8q gain were identified in 29.3% and 29.7% respectively. The age-adjusted incidence was 11 cases per million. One year survival was 95.8% (95% CI, 0.92-0.98) and five year survival was 84.3% (95% CI, 0.78-0.88). Survival prognostic factors were also analysed.

**Conclusions:** This is the first study to look at the epidemiology of uveal melanoma in Ireland.

## **Evaluation of Outcomes from Transscleral Cyclodiode Laser, in a Tertiary Referral Centre, Including the Outcomes in Neovascular Glaucoma in the Era of Anti-VEGF**

*Whitlow S, Collins N, Doyle A.*

*Royal Victoria Eye and Ear Hospital, Dublin.*

**Objectives:** To assess the outcomes from transscleral cyclodiode laser, in a tertiary referral centre, including the outcomes in neovascular glaucoma in the era of anti-VEGF

**Methods:** Retrospective chart review of patients who underwent cyclodiode laser between May 2014 +Sept 2015 in a tertiary centre. Data included: demographics including age, gender, type of glaucoma, prior glaucoma surgery or cyclodiode treatment and for neovascular glaucoma (NVG) whether the patient had prior treatment with PRP or anti-VEGF injection; cyclodiode laser parameters including total energy administered, concomitant anti-VEGF treatment and whether the patient was under the care of a glaucoma subspecialist (GC) or a consultant not specializing in glaucoma (NGC). Data was collected on the following variables for patients pre- and post-cyclodiode laser: intraocular pressure (IOP), best corrected visual acuity (BCVA) and number of glaucoma medications.

**Results:** 106 patients had undergone cyclodiode laser. 59 patients (60 eyes) had sufficient follow-up data for analysis were included in the study. Mean age was 61 years. There was a significant reduction in mean IOP from 34.2mmHg (StDev 11.7mmHg) to 20.9mmHg (StDev 10.2mmHg) at 6 weeks post cyclodiode laser treatment (student paired t-test (2-tailed)  $p < 0.0001$ ). 65% of patients achieved an IOP  $< 22$ mmHg or decreased IOP by at least 30%. 35% of patients were able to decrease the number of IOP lowering agents. 13 of 59 (22%) patients had neovascular glaucoma. Of these, 8 patients had undergone prior PRP or anti-VEGF treatment for NVG, and 5 patients had no prior treatment. Patients treated with prior PRP / anti-VEGF had lower pre- and post-cyclodiode IOP (mean IOP 33.9 and 18.5 respectively) than those without prior treatment (mean IOP 43.2 and 21.8mmHg respectively) although the differences were not statistically significant.

**Conclusions:** Cyclodiode laser is an effective way to decrease IOP and to decrease the no of IOP medications. This study did not show the any significant difference in the whether a Glaucoma or non glaucoma specialist preformed the procedure.

## Vision and Health-Related Quality of Life in Patients with Giant Cell Arteritis

*Ní Mhéalóid Á, Conway R, Molloy E, Murphy C C.  
Royal Victoria Eye and Ear Hospital, Dublin*

**Objectives:** To assess visual function, vision related quality of life (VR-QOL) and general health related quality of life (HR-QOL) in patients with giant cell arteritis (GCA).

**Methods:** VR-QOL and HR-QOL were evaluated in 30 patients (more to follow) at baseline with confirmed GCA using the Vision Core Module 1 (VCM1) and the 36-Item Short Form Health Survey (SF-36) respectively. LogMar visual acuity (VA) and clinical data were also recorded. HR-QOL outcomes were compared with normative data for the Irish population.

**Results:** 27% of patients had permanent visual loss and a further 23% had symptoms consistent with amaurosis fugax. Median VA of 9 affected eyes was 2 (CF, 20/2000) and of 21 unaffected eyes was 0.1 (20/25). 57% of patients had a VCM1 score of more than 2.0, indicating "more than a little" concern over vision. The SF-36 subscales of role limitations due to physical problems ( $p=0.007$ ), bodily pain ( $p<0.001$ ), vitality ( $p<0.001$ ), social functioning ( $p=0.003$ ), role limitations due to emotional problems ( $p=0.005$ ) and mental health ( $p<0.001$ ) were significantly worse than the age matched general population. Eyes with visual loss were predictive of a VCM1 score of  $>2$  ( $p=0.015$ ), independent of age, sex and systemic co-morbidities. Correlations (Spearman correlation analysis) were found between the VCM1 and all of the SF-36 subscales ( $r = -0.453$  to  $-0.810$ ,  $p<0.05$  for all). The VCM1 was predictive of both the physical composite score (PCS) ( $r^2 = 0.369$ ,  $p=0.001$ ) and the mental composite score (MCS) ( $r^2=0.347$ ,  $p=0.001$ ). Eyes with visual loss showed a correlation with the physical functioning subscale ( $r= -0.810$ ,  $p<0.001$ ).

**Conclusions:** The majority of patients with GCA do not suffer permanent visual loss when treated appropriately. GCA is associated with impairment of HR-QOL in 6 out of 8 subscales of the SF-36 survey when compared with normative data. VR-QOL impairment in GCA correlates to impaired HR-QOL.

## 20 Years of Ophthalmic Surgical Training Opportunities: 1995 to 2015 – What Has Changed?

*Collins N, Murphy T, Hickey-Dwyer M.  
University Hospital Limerick*

**Objectives:** The past 20 years has seen vast changes in ophthalmic surgical training in Ireland and internationally. Evolving service demands, such as the burden of intravitreal (IVT) injection treatments, has led to concern among national ophthalmology training bodies, regarding provision of adequate surgical training opportunities for trainees. This study examines the changing nature of surgical opportunities for trainees across a 20-year period from 1995 to 2015 in University Hospital Limerick (UHL).

**Methods:** Surgical records of ophthalmic theatres in UHL from 1995 and 2015 were examined. Numbers and types of cases performed, and the training level of the operating surgeon were extracted from these records for a four-month sample period (August to November) in 1995 and in 2015.

**Results:** Surgical opportunities for trainees differed greatly between the four-month periods in 1995 and 2015. The most obvious change is the advent of IVT injections: trainees performed 402 of 754 (53%) IVT injections in 2015 vs. no injections in the same period in 1995. Of the total 211 cataract surgeries performed in the four-month period in 1995, trainees performed one case (0.5%), compared to 87 of 354 (24.6%) in 2015. Of these 87 cataract procedures in 2015, 45 (52%) were performed by an SpR. More surgical cases were performed in UHL in 1995 vs. 2015 for strabismus (30 vs. 19 squint surgeries), glaucoma (24 vs. 2 trabeculectomies) and cornea (3 vs. 0 corneal grafts). However, in 1995 all of these cases were performed by consultants. In 2015, although trainees did not perform any trabeculectomies or corneal grafts, trainees operated on 6 of 19 (32%) strabismus surgeries. Vitreoretinal training opportunities increased from 7 cases (0 performed by trainees) in 1995 to 18 cases (8 performed by trainees, 44%) in the four-month period in 2015. Surgical opportunity in globe rupture repair was slightly greater in 2015 (trainees performed one of 6 cases), vs. 1995 (trainees performed 0 of 4 cases). Numbers of oculoplastics surgeries were similar for 1995 and 2015: trainees performed 11 of 26 (42%) vs. 8 of 27 (30%) entropion / ectropion surgeries in 1995 vs. 2015, and 25 of 76 (33%) vs. 32 of 115 (28%) of all oculoplastics cases in 1995 vs. 2015.

**Conclusions:** The surgical opportunities for trainees in ophthalmic surgery have changed dramatically in the past 20 years at UHL. The exposure to subspecialty cases is more limited now compared to 20 years ago. Much of trainees' dedicated surgical time is now taken up by IVT injections. However, excluding IVT injections, trainees also now perform a greater proportion of surgeries than in 1995. These results have implications for ophthalmic surgical training, and requirements for subspecialty surgical experience.

**Posters**  
**Friday 20<sup>th</sup> May, 2016**  
**9am**

## **Accuracy of Glaucoma Drops Prescribing and Dispensing for Patients Admitted to Hospital for Non-Ophthalmic Complaints.**

*Baba M, Khan S.*

*Altnagelvin Hospital, Londonderry, Northern Ireland.*

**Objectives:** To assess whether patients have their glaucoma eye drops correctly prescribed and administered when admitted to non-ophthalmic wards.

**Methods:** Electronic records were searched to compile a list of patients known to glaucoma clinic who had a hospital admission for a non-ophthalmic complaint during the past two years. The patient case notes were called and data compiled by scrutinisation of the inpatient drug charts as well as electronic patient records.

**Results:** Nineteen patients were on long term eye drops. The average age was 61 years and average length of stay was 6.4 days. The majority of patients suffered from primary open angle glaucoma (83%) followed by pseudoexfoliative glaucoma (11%) and then normal tension glaucoma (6%). Four (21%) patients had at least one drop not prescribed or administered for the duration of their inpatient stay. Three (16%) had an incorrect frequency of medication prescribed. In total 11 patients (58%) had their eye drops correctly prescribed on the day of admission. Five (26%) had a delay in administration of their eye drops despite timely prescription. Four (21%) were due to the drug not being available on the ward. In total only 5 (26%) had their eye drops correctly prescribed on the day of admission with timely administration.

**Conclusions:** The prescription of eye drops is not satisfactorily done on general medical and surgical wards. This may have consequences for ophthalmic disease progression.

## **Implementing a Retinal Artery Occlusion and Retinal Vein Occlusion protocol in an Acute Medical Unit.**

*Hegazy E, Gurney M, O'Regan J, Gallagher D.  
University Hospital Galway.*

**Objectives:** Retinal Artery Occlusion (RAO) and Retinal Vein Occlusion (RVO) presentations are referred to the Acute Medical Unit (AMU) for investigation of underlying causes and for optimisation of cardiovascular risk factors. This audit assessed current practice in the AMU to identify indicated tests which may have been omitted and unnecessary tests which may have been performed.

**Methods:** A retrospective audit was performed over the period 1/8/14 to 1/8/15. Investigations performed were retrieved from discharge letters, laboratory records and radiology records. Following this, an AMU protocol for RAO and RVO was implemented and a repeat audit was performed for the period 15/9/15 to 29/2/15.

**Results:** Eight patients were referred for evaluation over the retrospective audit period (6 RAO, 2 RVO). Six were male and 2 were female. Mean age was 71 years. Sixty investigations were performed, 6 of which were not indicated (4 CT Brains). Six patients were referred during the re-audit period (RAO 2, RVO 4). One was male and 5 were female. Twenty-five investigations were performed, 2 of which were not indicated (1 CT Brain).

**Conclusions:** The AMU is ideally suited to investigate systemic causes of retinal vessel occlusion. Implementation of a protocol led to a reduction in tests which were not indicated.

## **Trabeculectomy Outcomes: Do Results in a District General Hospital Setting Compare to Larger Centres?**

*Dowlut M, Higham A, Chakrabarti M, Parker J, Hassett P.  
Altnagelvin Area Hospital, Londonderry*

**Objectives:** Trabeculectomy is the most widely used procedure for surgical management of glaucoma (Landers et al., 2012). We aimed to evaluate the efficacy of reducing intraocular pressure (IOP) and preserving best corrected visual acuity (BCVA) after trabeculectomy in a routine district general hospital setting, with an average of 14 trabeculectomies performed per year. This is a retrospective cohort study of consecutive patients undergoing trabeculectomy by one surgeon at a district general hospital between 2009 and 2012.

**Methods:** These cases were identified by their surgical code, after which a case note review and pro-forma was completed to collect data. Success was defined as IOP remaining below 21mmHg post operatively or at least a 20% reduction in IOP. Failure was defined as any patient needing further filtration surgery, or if the patient was left with vision worse than 1.3 (logMAR) in the affected eye. This excluded patients with other ophthalmic causes of visual reduction. Data was analysed using Microsoft Excel, 2011.

**Results:** A total of 54 trabeculectomies (in 44 patients) were performed during this period; 16 of which were combined phaco-trabeculectomies. The mean patient age was 65 years. Follow up period ranged from 17-69 months. IOPs remained under 21mmHg throughout in 39% of patients. 72.5% patients' IOPs decreased by more than 20%. Total 'success' was achieved in 78% cases. There was 1 failure (2%), this patient had a redo trabeculectomy. The mean pre and final BCVA were 0.08 (SD0.22) and 0.42 (SD 0.76), respectively. The mean pre and final IOPs were 27.7mmHg (SD 10.2) and 15.6 mmHg (SD 5.1) respectively.

**Conclusions:** Within this setting of routine clinical practice, with a relatively small number of annual cases performed, a similar success and failure rate were observed when compared to a 20year follow up study by Landers et al., 2012. Our study has all the limitations of retrospective audits and case series with reliance on existing case records. Trabeculectomy remains a successful way of lowering intraocular pressure and thus preserving patients' vision.

## **Case Series Report: Congenital Dural Ectasia of the Optic Nerve.**

*Hosny M, Idrees Z, Fenton S.  
Cork University Hospital, Cork*

**Objectives:** We present 3 cases of dural ectasia of the optic nerve. One of them detected in 2016 of a 50 year old female patient referred from optician for query optic disc swelling. The other is for a 46 year old female patient presented for the same reason in 2002 and the last was her own son who was detected on screening.

**Methods:** Full clinical eye examination, including optic nerve function. B-scan and MRI were done for those patients which confirmed the diagnosis of bilateral congenital ectasia of the optic nerve.

**Results:** General physical and ophthalmological examination were normal away from the query optic nerve appearance. MRI confirmed. The subject's diagnosis as having dural ectasia of the optic nerve which had displayed good anatomical and functional results during the follow-up period. Despite the fact that several authors have recommended Acetazolamide treatment or even an optic nerve decompression, most of the patients follow a benign clinical course. The role of corticosteroids is not described in the literature

**Conclusions:** Optic nerve dural ectasia is a rare disease with saccular dilatation of the optic nerve sheath. It can present by visual blurring, retrobulbar pressure or asymptomatic referred from optician for query optic disc swelling. It can be provisionally detected by B scan but MRI is needed to be done to emphasize high spatial resolution and optic nerve anatomy. Follow up only was needed for those cases, while optic nerve decompression is reserved for cases that might be threatening the vision

## **Paediatric Ocular Cystinosis in the Republic of Ireland:**

*Farrell S, Fitzsimmons S.  
Children's University Hospital, Dublin.*

**Objectives:** Cystinosis is a rare multi-organ disease which is associated with corneal crystal deposition in early years but which can also cause severe loss of vision. This can be due to severe corneal disease with endothelial failure, severe pannus formation or band keratopathy. Vision can also be affected by pigmentary retinopathy and optic nerve disease due to intracranial hypertension and glaucoma. Since the introduction of oral cysteamine and topical cysteamine treatment, the frequency of severe disease may have reduced. The Nephrology Department of CUH Temple Street cares for all cases of paediatric cystinosis in Ireland. We wished to review young people with cystinosis in the Republic of Ireland and examine them more comprehensively for early evidence of more severe complications of ocular cystinosis.

**Methods:** The details of all young patients with cystinosis in the Republic of Ireland were obtained from the Nephrology department of CUH Temple Street. All charts were reviewed and patients over the age of 10 years were contacted for a more comprehensive examination including Shirmer test, corneal sensation, meibomian gland assessment, aberometry, topography, anterior segment OCT and endothelial cell count.

**Results:** The charts of all 9 cases of cystinosis attending CUH Temple street were reviewed. 6 patients under the age of 10 had no documented evidence of severe disease. 3 patients over the age of 10 (age 15 to 23) were identified and contacted for more extensive testing. Visual acuity in these patients was normal. They all had significant corneal stromal crystal deposition. One patient had iris crystals present. Corneal epithelium, endothelium, meibomian gland function, and retina and optic discs were normal in all cases. Shirmer test, corneal sensation, aberometry, anterior segment OCT and endothelial cell count and Electrorretinography was normal in all cases.

**Conclusions:** From this small cohort, it appears that young patients with cystinosis in Ireland do not display features of severe disease. We did not find evidence of tear film abnormalities, endothelial dysfunction or decreased corneal sensation which may contribute to more severe corneal disease. In this presentation we also share our insights from our involvement in an international special interest group in cystinosis involving Ophthalmologists from 9 countries and we invite discussion from other Irish ophthalmologists experience with this rare disease.

## **A 1 Base-Pair Frameshift Deletion in Codon 893 of SLC24A1 Causes Retinitis Pigmentosa:**

*Malone C, Carrigan M, Collins K, Dempsey H, Farrar G, Kenna P.  
Research Foundation, Royal Victoria Eye and Ear Hospital, Dublin, Ocular Genetics  
Unit, School of Genetics and Microbiology, Trinity College, Dublin.*

**Objectives:** We report the retinal phenotype associated with a novel mutation in SLC24A1, a gene in which mutations have previously been reported only to cause Congenital Stationary Night Blindness (CSNB), detected in 2 siblings during the course of Target 5000, a next generation sequencing project to genotype Irish patients with inherited retinal degenerations (IRD).

**Methods:** Patients were recruited prospectively and clinically characterised. Assessment included best-corrected visual acuity, Goldmann perimetry, Lanthony D-15 colour vision testing, slit-lamp biomicroscopy, ISCEV clinical standard electroretinography (ERG), colour and autofluorescence fundus photography, and spectral-domain optical coherence tomography. With informed consent, DNA samples drawn from the subjects underwent exon sequencing of 218 retinopathy-associated genes using target-capture oligo panels.

**Results:** The 52-year-old proband and her 47-year-old sister reported lifelong difficulties seeing in low light. There was no known parental consanguinity. Both retained good central vision until the 5th decade. Goldmann perimetry showed marked concentric constriction in both patients with the IV4e, O4e and I4e targets. ERG revealed non-recordable rod-isolated responses. Cone-isolated responses were normal in timing but significantly reduced in amplitude. Fundoscopy demonstrated bone-spicule intra-retinal pigmentary deposits. A diagnosis of retinitis pigmentosa (RP) was made in each case, with possible autosomal recessive inheritance. Next-generation sequencing revealed that both patients were homozygous for a 1bp frameshift deletion in codon 893 of SLC24A1.

**Conclusions:** The only retinopathy-associated mutation in SCL24A1, the rod Na-Ca+K exchanger (NCKX) gene, reported to date is a 2bp deletion in exon 2: c.1613\_1614del, predicted to cause a frame shift resulting in premature termination of SLC24A1, in a large Pakistani CSNB kindred (Riazuddin et al. 2010). We recently demonstrated that a mutation in GNAT1, mutations in which were previously thought only to result in CSNB, could also cause a late-onset form of RP (Carrigan et al. 2015). Our demonstration of a second pathological mutation in SLC24A1, resulting in an unmistakable form of RP, extends the range of retinal dysfunction which disruption of this gene may cause, and adds to the emerging hypothesis that some forms of CSNB may not be as 'stationary' as previously believed.

## **Audit of Risk Factors and Clinical Features of Retinal Tears Diagnosed in Eye Casualty**

*McCullagh D, Best R  
Royal Victoria Hospital, Belfast*

**Objectives:** To determine the frequency of occurrence and significance of risk factors, symptoms and signs in patients with retinal tears. Prompt detection of retinal tears then treatment with laser retinopexy usually prevents the need for invasive retinal detachment surgery. Understanding the relevance of risk factors and clinical features of retinal tears will aid early diagnosis.

**Methods:** Retrospective audit of patients who had a retinal tear diagnosed at eye casualty then treated with laser retinopexy at a tertiary eye department over 1 year. 34 patients were identified. Risk factors were myopia, previous cataract surgery, previous yag laser capsulotomy, retinal tear or detachment in fellow eye, and family history of retinal tear or detachment. Symptoms were flashes and/or floaters, blurred vision and shadow in vision. Signs were tobacco dust and vitreous haemorrhage.

**Results:** For statistical analysis we used the 1 sample z-test and set the null hypothesis at 50%. At least 1 risk factor was recorded in 50% ( $P=1$ , 95% Confidence Interval 32.43-67.57), at least one symptom was present in 97% ( $P<0.0001$ , 95% Confidence Interval 84.58-99.92) and at least one sign was present in 76% ( $P=0.0024$ , 95% Confidence Interval 58.31-88.92)

**Conclusions:** Retinal tears will almost always present with symptoms of flashes and/or floaters, blurred vision or a shadow in vision, and usually with either tobacco dust or vitreous haemorrhage. Myopia was the most common risk factor.

## **Ocular Immunoglobulin G4-related Disease. A Case Series.**

*McEnea E, Tiedt I, Fahy G.  
University Hospital Galway*

**Objectives:** Immunoglobulin G4-related disease is a systemic, chronic, inflammatory disorder that can present to the Ophthalmologist. Its pathophysiology remains poorly understood. Through case description we aim to describe some of the more common ocular features of Immunoglobulin 4-related disease.

**Methods:** We present the cases of three patients with Immunoglobulin G4-related orbitopathy, detailing the extraocular manifestations of their disease, the key features of their clinical examination and the findings at orbital imaging and the histological analysis of tissue samples.

**Results:** Immunoglobulin G4-related disease is a systemic disorder characterized by increased Immunoglobulin G4 serum concentration, multi-organ infiltration with Immunoglobulin G4 producing plasma cells and often fibrosis and responsiveness to steroid therapy.

**Conclusions:** Immunoglobulin G4-related disease is being diagnosed with increased frequency. The work-up requires clinical examination, serological analysis, imaging and histology from affected tissue. It must be distinguished from infections, malignancy and other systemic diseases. Interdisciplinary collaboration is important for proper diagnosis and treatment.

## **Initial Clinical Experience with the Trabecular Micro-Bypass Atent (iStent) in Patients with Open Angle Glaucoma.**

*Moran S, Mongan A, Quinn S, Mullaney P  
Sligo University Hospital*

**Objectives:** To evaluate the 6-month efficacy and safety of the iStent microtrabecular bypass stent in patients with open angle glaucoma, and conduct a review of the literature.

**Methods:** Prospective case series of 6 patients with open angle glaucoma, undergoing phacoemulsification and iStent insertion. Outcome measures recorded pre-operatively, and at 3 and 6 months include visual acuity, intraocular pressure, number of glaucoma medications required, and complications.

**Results:** No intra-operative complications were noted. At 3 months, 1 patient had cystoid macular oedema. No other post-operative complications were recorded to date. 6 months visual acuity and IOP results to follow.

**Conclusions:** The iStent is a safe and effective treatment for patients with open angle glaucoma, and may be a good option for early, or minimally invasive intervention in glaucoma patients.

## **Eye Massage: Impact on Clinical Signs and Quality of Vision (QOV)**

*Moore J, Pazo E, McNeely R, Nesbit A, Moore C.*

*Cathedral Eye Clinic, Belfast, Ulster University, Coleraine, Royal Victoria Hospital, Belfast*

**Objectives:** To assess the effectiveness of eye massage on symptoms of meibomian gland dysfunction (MGD).

**Methods:** In this prospective bilateral-eye study, 40 patients with MGD were enrolled. Each patient used the Eyepeace massage and hot compress for 3-months, once daily. The mean outcome measures tear film osmolarity (TearLab), Cochet-Bonnet esthesiometry, tear lipid quality (Tear Scope), ocular surface parameters (hyperaemia and staining), tear breakup time and OSDI questionnaire were evaluated preoperatively as well as 1-week, 1-month and 3-months. Non-parametric statistical testing with Wilcoxon test, linear regression correlation test and t-test were performed.

**Results:** The mean tear lipid quality improved and was statistically significant ( $p < 0.05$ ), dry eye signs improved 1-month after eye massage treatment started and remained stable ( $p < 0.05$ ), breakup time also improved with treatment, QOV scores and MGD signs showed statistically significant improvement and some of them continued improving from 1-month to 3-month of treatment. Symptomatic changes such as sore and tearing improved but other dry eye symptoms did not reach statistically significant. None of the patients presented adverse effects caused by the treatment.

**Conclusions:** Eyepeace massage combined with hot compress is a good initial approach to manage dry eye due to MGD. Eyepeace treatment improves patient symptoms by enhancing the stability and uniformity of the tear lipid layer. In a few patients topical treatment such as artificial tear or ointments may be warranted.

## **Popper Associated Maculopathy – Case Report and Literary Synthesis.**

*Murphy R, James M, MacSwiney T, Cullinane A.  
Cork University Hospital*

**Objectives:** Prevalence of Alkyl Nitrate, or ‘Poppers’ abuse has remained high since its putative birth in the urban disco scene of the 1970’s, with UK figures from 2014 suggesting a 9.1% adult lifetime use rate. However, an associated retinal toxicity is a new and emerging phenomenon due to the recent change of its main compound and continued popular recreational use. Here we describe, a case of Alkyl Nitrate associated maculopathy.

**Methods:** Case report with literary synthesis.

**Results:** A 44-year-old Caucasian male with no previous ophthalmic history presented to our eye casualty department with bilateral central vision blurring following repeated inhalation of Alkyl nitrates. Drug use was believed to have occurred twice daily by inhalation over an interrupted 6-week period. Best-corrected visual acuity at presentation was 6/6-1 in the right eye and 6/9+1 in the left. Fundal photography reveals subtle yellow foveal spots bilaterally with an otherwise normal peripheral retina and optic disc. Optical coherence topography demonstrates marked disruption of the photoreceptor inner segment / outer segment junction. Fundus Fluorescein Angiography exhibits a subtle foveal hyper-fluorescence bilaterally. Multifocal ERG displayed attenuated responses from the foveal and parafoveal segments of the left eye with blunting of the foveal peak. A synthesis of current literature and various hypotheses to date is subsequently discussed.

**Conclusions:** The rarity of this phenomenon, along with tendencies of reluctant disclosure of substance abuse behaviours, can lead to diagnostic difficulties. When faced with bilateral painless central blurring, in otherwise healthy, young individuals, physicians should obtain a detailed history of possible substance abuse.

## The Changing Treatment Profile of Diabetic Macular Oedema: The Decline of Macular Laser

*Murphy T, Collins N, Hickey-Dwyer M.  
University Hospital Limerick*

**Objectives:** To plot and determine the numbers of macular lasers performed in University Hospital Limerick (UHL) over a 15 year period (2000-2015); To ascertain trends in laser performance; To determine the level of experience of the surgeon performing laser treatment

**Methods:** UHL laser records from 2000-2015 were obtained. The laser record contains data for each laser procedure on location and type of laser, treatment eye, number of laser shots, condition for which laser was being undertaken and the operating surgeon performing the laser. Lasers logged as macular laser, macular focal laser and macular grid laser which were performed for “diabetic maculopathy” and “diabetic macular oedema” were included in the study. Lasers performed for BRVO, other or not logged with cause were excluded.

**Results:** The numbers of lasers performed for the treatment of DME have decreased over the course of the study period. The laser rate per annum declined from a peak of 75 lasers on individual eyes in 2000, to six lasers in 2015, that is a decrease in the annual rate of 92%. Of note, intravitreal anti-VEGF injections were introduced in UHL in the fourth quarter of 2005. The number of lasers performed in 2006, following the introduction of anti-VEGF treatment, was 66% lower than in the year 2004 (prior to the introduction of anti-VEGF). An average of 61 lasers per year were performed prior to and including 2004, compared to an average of 14 performed from 2006-2015, a percentage decrease of 75%. Interestingly, prior to 2004, 41% of lasers were performed by consultants, with the remainder being performed by trainees. In recent years (2013 – 2015) only 21% were performed by trainees, and those trainees were all of HST level.

**Conclusions:** There has been a significant decline in the utilisation of macular laser as treatment for clinically significant diabetic macular oedema since the introduction of anti VEGF injections. The secondary consequence of this in a teaching unit is the reduced opportunity for trainees to gain experience in performing macular laser. Further studies on the economic impact of this change in practice are being undertaken.

## **The Royal Victoria Eye and Ear Hospital Application for Smart Phones**

*Murtagh P, O'Connor J, McCoy D.  
Royal Victoria Eye and Ear Hospital, Dublin*

**Objectives:** Beginning in July 2014, an idea was undertaken to develop an application for smart phones and tablets developed by the Royal Victoria Eye and Ear Hospital. Its aim was to have essential information easily available to both employees and students alike and to promote safe prescribing.

**Methods:** The application consists of five main sections including; General Information, General Guidelines, Drugs Dosages, Anti-Microbial Guidelines and Anaesthetic Guidelines. Each section is then subdivided into an easy to use and initiative layout so that whatever information is needed is effortlessly accessible. For instance the medicines sections is organised alphabetically and headings such as indication, posology, interactions, adverse events and use in pregnancy and lactation are elaborated on.

**Results:** The application is currently available for download form the Apple App Store and Google Play. A similar application has been used in other hospitals such as Crumlin and the feedback has been very positive. Its use as an accessible point of up to date medical information retrieval is invaluable and it is proven to be an essential learning tool for both students and NCHDs alike.

**Conclusions:** The aim of this poster is to make those at ICO aware of the App, its attributes and how it can be integrated into everyday use in clinical practice.

## **Union is Strength - Looking Back on the First Year of the British Journal of Ophthalmology Founded 100 Years Ago.**

O'Regan S.

University Hospital Limerick

This year the *British Journal of Ophthalmology* celebrates 100 years since its initial publication in January 1917. The publication arose amidst the Great War, resulting from the union of 3 well known periodicals at the time, namely:

- The Reports of the Royal London Ophthalmic Hospital,
- The Ophthalmic Review
- The Ophthalmoscope.

The editorial opens with; “ *the stress of war has compelled all sorts and conditions of men to ask themselves how they can better utilise their resources and increase their efficiency of their work .In countless ways they are finding that union is strength*”

This visual poster presentation looks back on the topics discussed in the first year of this esteemed publication. Most memorably, Dr Harrison Butler introduces readers to Mellinger's Giant Magnet; a device used to extract metal from the eyes of Britain's returning soldiers.

Reflecting on the origins of Ophthalmic Research in Britain not only reminds us of the tremendous progress made in this exciting field of medicine, but also opens a window into history and the origins of modern medical practice.

## **A Retrospective Audit of Presentations to the University Hospital Waterford Vitreoretinal Service**

*Power B, Doris J.*

*University Hospital Waterford*

**Methods:** We conducted a retrospective analysis of patients who presented to our service over a 15 month period. We analysed all cases of retinal detachment, ocular trauma, epiretinal membranes and macular holes requiring vitreoretinal surgery.

**Objectives:** Our goals were to monitor how many patients presented to our service and from where they presented. The average drive time from home address to university hospital Waterford was calculated to give an indication of the breadth of our service and to plan ahead for our needs as our service expands.

**Results:** Patients - 47 retinal detachments, 11 cases of trauma, 53 macular hole/epiretinal membranes and 25 diabetic vitrectomies. The average traffic free drive time of these patients from UHW was 57 minutes. 12% of cases were over 80 minutes away from the hospital.

**Conclusions:** We hope by continuing to collect this data we can use it to plan our service provision for the future, monitor our growth and compare outcomes of patients geographically. Geographic comparison may help to identify communities or areas in need of further support or education, or highlight problems with access to our service.

## **Past Presidents**

**2013 – 2015;** Miss Marie Hickey Dwyer

**2011 – 2013;** Miss Patricia Logan

**2009 – 2011;** Mr Paul Moriarty

**2007 – 2009;** Mr Peter Tormey

**2005 – 2007;** Mr. Robert Acheson

**2003 -2005;** Prof. Philip Cleary

**2001-2003;** Mr. Brendan Young

**1999-2001;** Professor Louis Collum

**1997-1999;** Mr. Roger Howell

**1995-1997;** Mr. John Nolan

**1993-1995;** Professor Peter Eustace

**1991-1993;** Mr. Stewart Johnston

## **PAST HONORARY LECTURES AND MEDAL WINNERS**

### *Montgomery Lectures and Lecturers*

#### **Royal College of Surgeons in Ireland**

2001 "Pathogenesis of Glaucomatous Damage"

J. Flammer, (Basle)

2002 "What's new in Ocular Tumours and Pseudotumours?"

Dr. Jerry A. Shields (Philadelphia)

2003 "Advances in the Diagnosis & Management Carotid-Cavernous Sinus Fistulas"

Prof. Neil Miller (Baltimore)

2004 "Age – related maculopathy: New aspects of pathogenesis, prevention and treatment" Prof. Peter Wiedemann (Leipzig)

2005 "Biological Treatments of AMD"

Prof. Alan Bird (London)

#### **University of Dublin, Trinity College**

2006 "Developmental Eyelid Abnormalities"

Mr Richard Collin (London)

2007 "Is there any Room for Surgery in AMD Treatment now?"

Prof Dr Bernd Kirchhof (Dusseldorf)

2008 "Normal tension Glaucoma-does it exist?"

Prof Roger Hitchings (London)

2009 "Practical Thoughts on how we Doctors can Best Help our Patients, Ourselves and the World"

Dr Geroge Spaeth (Philadelphia)

2010 The Lecture was not held due to the untimely death of Mr John Lee

#### **Royal College of Surgeons in Ireland**

2011 "Novel Therapeutic Approaches for Diabetic Retinopathy"

Prof Loyd Paul Aiello (Boston)

2012 "Endothelial Keratoplasty: DMEK or DMET - what if Fuchs endothelial dystrophy does not exist?"

Dr Gerrit Melles (Amsterdam)

2013 "Ophthalmoscopy in the 21st century"

Prof Nancy Newman (Atlanta)

2014 "Physics in Everyday Ophthalmology and Vitreoretinal Surgery"

Prof David Wong (Hong Kong)

2015 "One Design with Multiple Derivations"

Prof dr. Marie-José Tassignon (Belgium)

*Mooney Lecture and Lecturers*

2002 "What is Neuro-Ophthalmology"

Professor Peter Eustace, (Dublin)

2003 "Worldwide Eye Disease – It's Prevention and Treatment"

Professor Gordon Johnson

2004 "The Twist and Turn of Macular Surgery"

Mr. David Wong (Liverpool)

2005 "Challenging Cases and the Management of Complication during Cataract Surgery"

Mr. Robert Osher (Cincinnati)

2006 "Reconstruction of the Anterior Segment"

Mr Bruce Noble (Yorkshire)

2007 "Wavefront-Guided Refractive Surgery: Advances and Impediments"

Dr Dimitri Azar (Chicago)

2008 "An Update on Amblyopia"

Prof Gunther von Noorden (Houston)

2009 "Evolving Concepts in Pharmacologic Vitreolysis"

Dr Brooks W. McCuen (North Carolina)

2010 "The Link between Infection and Uveitis"

Prof John Forrester (Aberdeen, Scotland)

2011 "OCT Application in Developing Eyes"

Prof Cindy Toth (North Carolina)

2012 "Retinal Oximetry in Health & Disease"

Prof Einar Steffanson (Reykjavik, Iceland)

2013 "Trans-synaptic Degeneration in the Human Visual System"

Dr Gordon Plant (London)

2014 "MERSI Guidelines for a Preferred Practice Pattern for the Care of Patients with Recurrent or Steroid-Dependent Uveitis"

Prof Stephen Foster (Massachusetts)

2015 "New Directions in the Management of Diabetic Retinopathy"

Mr Simon Harding (Liverpool)

*Barbara Knox Medal Winners*

2002 "Incubation with Endogenous Retinal Antioxidants Inhibits Chemokine Release by PRE in an In-Vitro Model of Age-Related Macular Degeneration"

G.T. Higgins

2003 "Macular Pigment Optical Density and Dietary Intake of Lutein and Zeaxanthin in Healthy Subjects"

J. Nolan

2004 "Correlation of Central Corneal Thickness with vascular risk factors in Normal Tension Glaucoma"

A. Doyle

2005 "A Randomized Placebo Controlled Double-Masked Phase 3 Study of the Treatment of Subfoveal Predominantly Occult Choroidal Neovascularization (CNV) Secondary to Age -Related Macular Degeneration (AMD) using Transpupillary Thermotherapy (TTT)"

A. Hogan

2006 "Survivin Expression & Prognostic Significance in Choroidal Melanoma"

C. Cleary

2007 "MRI as a Novel Non-Invasive Method for *In Vivo* Tracking of Endothelial Progenitor Cells in a Model of Choroidal Neovascularisation"

D. Kent

2008 "A Retrospective Study of the Paediatric Practice of one Community Ophthalmologist Over Seventeen Years in Cavan"

A. Blake

2009 "The Effects Of Acute Cigarette Smoke Exposure on Retinal Pigment Epithelial Cells (Arpe-19)"

S. Ni Dhughbhaill

2010 "Epidemiology And Clinical Associations Of Primary Retinal Detachment In Scotland: 2 Years Of Prospective Recruitment"

D. Mistry

2011 "Prognostic Indicators and Outcome Measures for Surgical Removal of Symptomatic Non-Advanced Cataract"

S. Charlampieidou

2012 "Proteomic Research in Uveal Melanoma"

P. Ramasamay

2013 "The Dublin Uveitis Evaluation Tool (DUET) – an Algorithm for Earlier Diagnosis of Spondyloarthropathies by Ophthalmologists in Acute Anterior Uveitis"

M. O'Rourke

2014 "A Molecular Analysis of Human Lamina Cribrosa and Trabecular Meshwork Cell Behaviours as Determined by the Surrounding Extracellular Matrix"

D. Wallace

2015 Pellino3 as a Novel Target for the Treatment of Primary Sjogren's Syndrome Related Dry Eyes

Q. Pilson

*Sir William Wilde Medal*

- 2000 "The Effects Of Topical Anti-Glaucoma Medications On The Ciliary And Optic Nerve Head Arterioles In The Rat Eye"  
S. Byrne
- 2001 "Ocular Toxoplasmosis-Pathogenesis Revisited".  
H. McLoone
- 2002 "Gene Expression in Diabetic Reinopathy"  
R. Kane
- 2003 "Exposure of Photoreceptor Outer Segments to Blue Light Induces a Pro-Angiogenic Response from the Retinal Pigment Epithelium"  
E. Cosgrave
- 2004 "Investigation and Management of Epidemic Intraocular Lens Opacification"  
R Altaie
- 2005 "The Photopic and Scotopic Visual Thresholds in Eyes with Solar Retinopathy: a Comparison with the Anatomical Damage"  
L O'Toole
- 2006 "The Role of Sonic Hedgehog Protein in Ethanol-Induced Ocular Teratogenesis"  
K. Kennelly
- 2007 "Visual Outcomes and Graft Survival following Corneal Transplants: the need for an Irish National Corneal Transplant Registry"  
M Guerin
- 2008 "Age Dependent Rat Retinal Ganglion Cell (Rgc) Susceptibility To Apoptotic Stimuli: Implications For Glaucoma Research"  
M Guerin
- 2009 "A Cellular Model of Fuchs' Endothelial Dystrophy"  
C Kelliher
- 2010 "Prediction of Effective Lens Position Using A Method Independent Of Preoperative Keratometry Readings"  
I. Dooley
- 2011 "Genomic Medicine and Stargardt Disease "  
D. Armstrong
- 2012 "Childhood Craniopharyngiomas; the Irish Experience"  
L. McAnena
- 2013 "To Evaluate Endothelial Cell Count Loss after Five Years Following Phakic Intraocular Lens Insertion"  
C. Baily
- 2014 "Ocriplasmin in the Treatment of Vitreomacular Traction and Macular Holes"  
L Hendricks
- 2015 Visual and Refractive Outcomes in Patients with High Astigmatism Following Cataract Surgery with Toric Lens Implantation  
L. Kobaytor

## **IRISH COLLEGE OF OPHTHALMOLOGISTS**

The Irish College of Ophthalmologists (ICO) is the professional body for eye doctors in Ireland. The College is responsible for setting and maintaining the highest standards in ophthalmic training for doctors specialising in the field and for continuing medical education and professional development for those in practice. The ICO is recognised by the Medical Council as the only post graduate training body for Ophthalmology. The provision of best in class specialist education and training in ophthalmology is key to the enhancement of the College's role as the professional body for eye doctors in Ireland.

The central goal of the ICO is to maintain standards of excellence for the maintenance and restoration of vision and the preservation of sight through the education of its members, trainees and the public. This is achieved by setting and maintaining the highest standards in ophthalmic training for doctors specialising in the field and for continuing medical education and professional development for those in practice. The mission of the ICO is to reduce the number of annual cases of preventable blindness and vision impairment, to maintain vision and to extend and prolong, to the greatest extent possible, the length of time those who have vision impairment can continue to live independently.

The ICO is focused on its strong leadership role, providing accurate medical information to the public and policy guidance to the government. The ICO is dedicated to working with all relevant parties on the most appropriate model of care for Ireland based on excellence in medical care and patient safety. The College has long standing relationships and strong interaction with a broad range of both government and non-government institutions across healthcare planning, regulation and delivery through which it both promotes and supports the specialist training and education agenda.

The College aims to guarantee the highest standards of patient safety by ensuring that there is an agreed patient pathway in eye care. Through the Forum of Postgraduate Medical Training Bodies the College has supported the development of the clinical directorates and programme model which are a joint initiative between the HSE and the postgraduate training bodies. To demonstrate that commitment the College is funding the research underpinning the national programme for eye care as it evaluates present services in Ireland. The programme aims to deliver changes that will improve the current system in hospital and community care services, ensuring prompt detection, diagnosis and treatment.

As the expert body on eye care in Ireland the ICO takes a broad view on the delivery of care including treatment, diagnosis, prevention, patient safety, quality and cost of care. College policy is fully aligned with the transformation programme for the health services, in particular the concept of patients receiving treatment from the appropriate personnel, in the appropriate location, in a timely manner.

**“Eye Doctors of Ireland, protecting your vision”**

*For further information visit [www.eyedoctors.ie](http://www.eyedoctors.ie)*