Irish College of Ophthalmologists

Eye Doctors of Ireland

Protecting your Vision

IRISH COLLEGE OF OPHTHALMOLOGISTS

ANNUAL CONFERENCE 2022

Kilkenny Convention Centre
Lyrath Estate

16 - 18 May 2022

Irish College of
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ANNUAL CONFERENCE 2022

Contents


Tim Fulcher

Letter from the President

Dear Fellow College members,

Welcome back! It is so good to welcome you all to the 2022 Irish College of Ophthalmology annual conference. It is hard to believe that it has been three years since we last gathered together. The last two years in particular have been very long and so I expect that we will all have a lot to catch up on. What better place to do it than in the Lyrath Hotel in Kilkenny?

This year's conference includes symposia on "Ocular Surface Disease", "Delivering Integrated Care in Ireland" and "Planning for the Future". I hope these symposia will stimulate enthusiastic debate as we enter a changing environment for the delivery of eyecare in Ireland and plan to manage the future with the expanding and aging population.

I would like to extend a warm welcome to all of our international colleagues who have taken the time to join us and share their experience, expertise and knowledge in their specialty areas. In particular, I would like to welcome Prof. Stanley Chang from Columbia University, who will deliver the 2022 Mooney lecture entitled "Improving the outcome of surgery for retinal detachment".
You may notice that we have not published an ICO yearbook this year to accompany the programme. This has been replaced with an annual report which will be published later in the year and will outline all of the College activities in more detail. I hope you enjoyed reading our first annual report that was published in 2021. We will also continue to publish a quarterly newsletter. This will now include a section on Board updates so that members can keep abreast with the ongoing work being undertaken. A more detailed Board workplan is available to see on the members portal.

I would like to thank all of the Board members of the College. The Board members give up a huge amount of their time to act on your behalf in the interest of our College. In particular, I would like to thank the Chairs of the Committees; Patricia Quinlan, John Doris, Kathryn McCreery and Colm O'Brien. I would also like to thank the outgoing Board members who have served us so well for the past three years; Kathryn McCreery, Joanne Kearney and Paul Connell.

In addition, sincere thanks to Siobhan Kelly (CEO), Billy Power (Clinical Programme Director) and Yvonne Delaney (Dean), who contribute enormously to the work of the College.

I would also like to thank all of our committee members, who give valuable contributions to the running of our College. Without you, we could not progress our Specialty in the manner that we do. I would like to encourage all members of our College to consider joining committees in the future as the College will always benefit from the valuable contributions that you have to give.

Finally, I would like to give particular thanks to our immediate past President, Patricia Quinlan. Patricia was President from 2019-2021. She worked tirelessly during her tenure and was instrumental in modernising our College structure to bring it in line with company law and with the Charities Regulator. This included introducing a new Constitution and a robust governance structure under which rules our Board now operate. Unfortunately, due to Covid, Patricia never got to preside over an annual conference. However, your dedication to the College did not go unnoticed Patricia. Thank you.

I sincerely hope that you all have a thoroughly enjoyable time, rekindle acquaintances and learn loads at this year's conference.

With best wishes,

TIM FULCHER
President
Irish College ofOphthalmologists.
May 2022

Monday 16th May

11.00am **Refreshments and Parallel Exhibition**

12.00pm **Official Welcome**
Mr Tim Fulcher
President, Irish College of Ophthalmologists

12.05pm **Paper Session**
Chairs: Prof Colm O'Brien, Mater Misericordiae University Hospital, Dublin and Dr Fiona Kearns, Beaumont Hospital, Dublin

Effectiveness and Safety of the XEN 45 Gel Stent as a Minimally Invasive Glaucoma Surgery Device in the Management of Open-Angle Glaucoma
Simon Neary

The Role of Small Incisional Cataract Surgery (SICS) in an Indian Hospital
Joseph Keenan

A Screening Tool to Detect Chronic Ocular Graft Versus Host Disease in a Hematology/ Oncology Outpatient Setting
Emily Greenan

Clinical Evaluation of a New Extended Depth-of-Focus Intraocular Lens, the PhysIOL Isopure 123, in Achieving Functional Distance, Intermediate, and Near Vision Post Cataract Surgery.
James Morris

An Analysis of Ophthalmology Inpatient Consults at Cork University Hospital
Robert McGrath

The Use of Autologous Serum in Dry Eyes and Ocular Surface Diseases
Azher Aldouri

Efficacy of Selective Laser Trabeculoplasty as an Adjuvant Treatment in Open Angle Glaucoma
Shane O'Regan

The Ecological Impact of Cataract Surgery - Single-use Items Consumption and Knowledge of Ophthalmic Theatre Staff in University Hospital Limerick
Emilie Mahon

Questions

1.00pm **Lunch**

2.00pm **Delivering Integrated Care in Ireland**
Chair: Prof Colm O'Brien, Mater Misericordiae University Hospital, Dublin

The National Clinical Programme for Ophthalmology: Supporting the Delivery of Integrated Care
Prof Billy Power
Clinical Lead for Ophthalmology and Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital, Dublin

Establishment of a Novel Governance Structure to Transform, Integrate and Deploy Regional Eye Care - the virtual Accountable Care Organisation (vACO)
Prof David Keegan
Consultant Ophthalmic Surgeon, Mater Misericordiae University Hospital, Dublin; Clinical Professor of Ophthalmology and Retina, University College Dublin

Expanding and Delivering Eye Care in the Non-Acute Setting
Dr Margaret Morgan
Consultant Medical Ophthalmologist, Royal Victoria Eye and Ear Hospital and CHO7

The Role of an Optometrist in a Multidisciplinary Team
Ms Chríosa O Connor
Optometrist, Mater Misericordiae University Hospital, Dublin

3.30pm **Refreshments**

4.00pm **Paper Session**
Chairs: Mr John Doris, University Hospital Waterford and Prof Conor Murphy, Royal Victoria Eye and Ear Hospital, Dublin

The Role of NUAK1 and its Inhibition in Human Glaucoma Lamina Cribrosa Cells
Sarah Powell

The Effect of miR-29b Expression on ADAM 12 & ADAM19 in the Lamina Cribrosa in Primary Open Angle Glaucoma
Aoife Smyth

Application of a Recellularised Porcine Corneal Graft in an in Vivo Leporine Anterior Lamellar Keratoplasty Model
Robert Brady

Hypoxia Drives Fibrosis in Pseudoexfoliation Glaucoma via DNA Methylation
Deborah Wallace

Circadian Regulation of the Inner Blood Retinal Barrier: a Paradigm for Dry Age-related Macular Degeneration Development
Fionn O'Leary

"Guardian of the Genome" p53 Dysregulation in Glaucomatous Lamina Cribrosa Cells
Kealan McElhinney

Autotaxin: A Fibrosis Target in the Lamina Cribrosa in Glaucoma
Amy O'Regan

Questions

5.00pm **Annual Mooney Lecture 2022**
Introduction: Prof David Keegan

'Improving the Outcomes of Surgery for Retinal Detachment'
Prof Stanley Chang
K.K. Tse and Ku Teh Ying Professor of Ophthalmology, Department of Ophthalmology, Columbia University Medical Center, New York

Tuesday 17th May

8.00am **Breakfast Session**
Kindly supported by Bayer

9.15am **Ocular Surface Disease Symposium**
Chair: Ms Nikolina Budimlija, Institute of Eye Surgery, Waterford

Allergic Eye Disease: Myths, Mysteries and Modern Medicine
Mr Tom Flynn
Consultant Ophthalmic Surgeon, Bon Secours Hospital, Cork

Paediatric Ocular Surface Disease: JOMO to FOMO
Mr Samer Hamada
Clinical Lead and Consultant Ophthalmic Surgeon, Queen Victoria Hospital NHS Foundation Trust, UK

Conjunctival Inflammation from Beyond! Diagnosis and Management of Cicatrising Conjunctival Disease
Prof Conor Murphy
Professor of Ophthalmology, Royal College of Surgeons in Ireland and Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital, Dublin

Ménage à Trois: Sex, Sex Steroids and Dry Eye Disease
Mr David Sullivan
Chairman, Board of Directors, Tear Film & Ocular Surface Society, Boston and former Associate Professor, Department of Ophthalmology, Harvard Medical School, United States

10.45am **Coffee**

11.15am **ICO National Training Programme**
Miss Yvonne Delaney
Dean of Postgraduate Education, Irish College of Ophthalmologists

12.00pm **European Society of Ophthalmology (SOE) Lecture 2022**
Introduction: Ms Patricia Logan

Oculoplastics and Orbit Today!
Ms Elizabeth McElnea
Consultant Ophthalmic Surgeon, University Hospital Galway.

12.30pm **Irish College of Ophthalmologists Annual General Meeting**
Chair: Mr Tim Fulcher, President, ICO
ICO Members Only

1.00pm **Lunch**

2.00pm **Recent Clinical Trials**
Chairs: Ms Janice Brady, University Hospital Waterford

The Treatment of Advanced Glaucoma Study - Outcomes at 24 Months
Prof Anthony King
Consultant Ophthalmologist, Nottingham University Hospital, NHS Honorary Professor of Clinical Ophthalmology at the University of Nottingham

Myopia
Mr Ian Flitcroft
Consultant Paediatric Ophthalmologist, Children's University Hospital, Dublin

Clinical Trials – Trials and Tribulations of Using the Results in Everyday Practice
Prof Tunde Peto
Professor of Clinical Ophthalmology, Queen's University Belfast

3.00pm **Refreshments**

3.30pm **Parallel Workshops**

1. Ocular Motility

The Basics
Ms Edel Cosgrave
Consultant Ophthalmologist, University Hospital Waterford

Seeing is Believing
Ms Jaina Byrne
Orthoptist, Beaumont Hospital, Dublin

Strabismic Thinking
Mr Edward Loane
Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital and St James's Hospital, Dublin

2. OCTA

Angiography in Practice
Mr Tomás Burke
Consultant Ophthalmologist, Mater Misericordiae University Hospital, Dublin

4.30pm **Sponsored Session**
Kindly supported by Alimera Sciences

Wednesday 18th May

9.00am **Paper Session**
Chairs: *Dr Muhammad Akram,* Sligo University Hospital and *Ms Elizabeth McElnea*, University Hospital Galway

Differential Experience-dependent Plasticity of Form and Motion Mechanisms in Anisometropic Amblyopia.
Sean Chen

Is Point Wise Analysis of the Humphrey Visual Field Feasible as a Primary Outcome in Idiopathic Intracranial Hypertension?
Aine Ní Mhealoid

Improving Quality of a Claiming Process for Paediatric Spectacles: Results of a Regional Healthcare Collaborative Initiative
Aniela Krezel

The Ophthalmic Care of Children with Intellectual Disability
Kirk Stephenson

Conjunctival Melanoma: Analysis of Risk Factors and Outcomes over 12 years at RVEEH
Alison Greene

What is the Prevalence of True Papilledema Among Patients Referred to the Eye Casualty Service for Suspected Disc Swelling?
Bridget Moran

Retinopathy Screening in the Republic of Ireland in 2021
Sarah Chamney

Five Year Trends in New Blind Registrations in Ireland (2017-2021)
Rory Murphy

Questions

10.00am **Planning for the Future**
Chair: Mr Tim Fulcher, Mater Misericordiae University Hospital, Dublin

The Idiosyncrasies of Telemedicine in Ophthalmology
Ms Dawn Sim
Lead Medical Director of Ophthalmology, Genentech Roche; Director of Telemedicine, Moorfields Department of Digital Medicine; Associate Professor at the University College London, Institute of Ophthalmology.

Transitioning Stable Glaucoma Care to the Community
Ms Aoife Doyle
Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital and St James's Hospital, Dublin

Set Up and Safe Assessment of Diagnostic (virtual) Clinic Pathways
Mr Jonathan Clarke
Consultant Ophthalmologist, Moorfields Eye Hospital, London

Transitioning Emergency Eye Care During the Pandemic
Ms Evelyn O'Neill
Consultant Ophthalmologist, Mater Misericordiae University Hospital, Dublin

11.30am **Refreshments**

12.00pm **Paper Session**
Chair: *Ms Niamh Collins*, Mater Private Hospital, Cork and *Dr Geraldine Comer,* The Galway Clinic

Iluvien Use for Posterior Uveitis and Cystoid Macular Oedema: Real-world Experience in RVEEH
Barry Power

Development and Launch of the National Uveitis Registry (NUR) of Ireland.
Mehera Yousif

Non-attendance Rates of Patients Attending Treatment Centres for Diabetic Retinopathy
Stephen Kelly

Assessment of Diabetic Retinal Screening Programme Referrals to Diabetic Retinal Treatment Clinic in Mater Misericordiae University Hospital for the Purpose of Evaluating Pigmented Retinal Lesions as Non-Diabetic Retinal Disease
Rashid Nahar

Report on Multidisciplinary Team Approach on Genetic Service for Inherited Retinal Diseases
Julia Zhu

The Impact of the COVID-19 Pandemic on the Number of Cases and Clinical Characteristics of Rhegmatogenous Retinal Detachment in a Tertiary Referral Centre.
Amy Coman

Outcome of Early Vitrectomy in Endophthalmitis Patients
Esraa Hegazy

The Natural Evolution and Effect of Covid-19 on Referrals from the Diabetic Retinal Screening Programme 2017 to 2021
Alan Hopkins

Questions

Presentation of 2022 ICO Medals
Sir William Wilde Medal for Best Poster
Barbara Knox Medal for Best Paper
John Blake Medal for Best Scientific Research Paper

1.00pm **Conference Close**

Conference Posters

An Uncommon Source of Insidious Ocular Toxicity.
Eimear O'Leary

Post-partum Haemorrhage Associated Choroidopathy:
https://casereports.bmj.com/content/15/3/e249226
Sarah Powell

Cataractous Intraocular Lens Implants.
Joseph Keenan

Childhood Strabismus Patterns in North-West Ireland, a Ten Years Review
Marwa Mohamed

Analysis of Cataract Referrals from Community Optometrists and General Practitioners and Subsequent Clinic Visit Outcomes in a University Hospital in The West of Ireland
Patrick Canning

Ataxia with a Lot of Retinal Nerves!
Aine Ní Mhealoid

Audit of Outcomes Following Attendance at the CityWest Drive Through IOP Glaucoma Clinic during the COVID-19 Pandemic
Sarah Powell

Novel Potential Nuclear Genetic Modifier in Leber Hereditary Optic Neuropathy in Wolfram Syndrome-associated Variant WFS-1 c.799G>A
Clare Quigley

Complex Penetrating Eye Injury with Intra-scleral Foreign Body; Staged Surgical Management
Saad Martini

Candidaemia and the Eye - Should we Really be Screening Everyone?
Brian Woods

Poppers Retinopathy
Jay Jun Lee

Exercise Induced Cluster Migraine with Visual disturbance
Michael Waldron

Posterior Staphyloma in the Absence of High Myopia
Luke O'Brien

Ocular Oncology Service During the COVID-19 Outbreak: Uveal Melanoma Characteristics Presenting in 2019 Compared to 2020
Aisling McGlacken-Byrne

Leber's Miliary Aneurysms
Michael Waldron

The Impact of Covid-19 on the Attendance Rate to the Eye Casualty in Cork University Hospital
Mohammed Mohamed

Incidence of Posterior Capsule Rupture (PCR) and Post-PCR Complications in CUH (January 2019 - December 2019)
Mohammed Mohamed

A Comparison of Outcomes Between Conventional Cyclodiode Laser (CL) and Micropulse Cyclodiode Transcleral Photocoagulation (MP-TSCPC) in the Reduction of Intraocular Pressure (IOP) in Patients with Glaucoma.
Sam Quill

A Rare Choroidal Metastasis of Unknown Origin
Alison Greene

Addressing Technical Failures in a Diabetic Retinopathy Screening Programme
Darragh Garrahy

The Impact of the National Diabetic Retinal Screening Programme on the Training of Ophthalmology Trainees in the Performance of Diabetic Laser Procedures.
Miollie Kelly

Central Retinal Vein Occlusion- Four-year Follow up of a Patient with a Poor Presenting Visual Acuity
Liam Connolly

The Implementation of a Logbook for the Documentation of Telephone Consultations for On-call NCHDs.
Edward Ahern

Eikenella Corrodens Canaliculitis. A Case Report.
Mary Walsh

A Review of the 'Long Waiters' for Ophthalmology Outpatient Services in Cork University Hospital and its Impact on Planning for the New Integrated Eye Care Team
Rubeena N Shaffi

Evaluating the Efficiency of the Irish National Diabetic Retinal Screening Service's Treatment Pathway
Ian Brennan

Adherence of Patients with Age-related Macular Degeneration to AREDS 2-recommended Vitamin Supplements
Ammr Alghamdi

Anatomical and Visual Outcomes of Full-Thickness Macular Hole Repair Surgery
Grace McCabe

Investigating Inner Blood Retinal Barrier Integrity in Rare Neurological Disorders
Deirdre Harford

Bing There, Done That! Just another GCA Case?
Aine Ní Mhealoid

Review of The Eye Clinic Liaison Service (ECLO)
Hilary Devlin

Analysis of Metformins Effect on Human Glaucomatous Lamina Cribrosa Cells
Daire Hurley

Congenital Free Floating Pigmented Vitreous Cyst
Jay Jun Lee

A Focus on Ocular Parameters and their Impact on Quality of Life Measures in Patients with Primary Sjögrens Syndrome
Emily Greenan

A Case report of Paediatric Vogt Koyanagi Harada(VKH) Treated Successfully with Adalimumab (Humira)
Christine Goodchild

Conference Posters

Evaluating Medical Students Experience of Near-Peer Led Teaching in Ophthalmology
Alexandra McCreery

Review of Prescribing Practices in University Hospital Limerick Ophthalmology Department
Emilie Mahon

Xen Gel Stents – The Cork University Hospital Experience
Mohammed Mohamed

12-year Annalysis of the Microbiological Profile of Infectious Keratitis (IK) in an Irish Tertiary Hospital.
Kealan McElhinney

Clinical and Genetic Re-Evaluation of Inherited Retinal Degeneration Pedigrees following Initial Negative Findings on Panel-Based Next Generation Sequencing
Julia Zhu

2.5-year Analysis of Photo-dynamic Therapy for Chronic Central Serous Chorioretinopathy in an Irish Tertiary Hospital.
Kealan McElhinney

Effectiveness, Capacity And Referral Patterns Of Ophthalmology Consultations In A Non-Emergency Service Provision Hospital
Alexandra McCreery

Case Study: The Boy with the Eyesore Tattoo.
Robert Brady

Retinoblastoma in Ireland - A Review of the Caseload, Genotyping and Molecular Profiles of Patients over the Past 20 Years.
Alison Greene

Internuclear Ophthalmoplegia Secondary to Ischaemia in a Young Patient with Ampiginous Choroiditis
Aisling Naylor

Students Experience and Outcomes Following a Targeted, Blended Teaching Module During Their Ophthalmology Rotation
Micheál Troy

Post-operative Outcomes of MRSA Positive Patients who Received Intracameral Vancomycin During Cataract Surgery
James Morris

12-month Analysis of Emergency Argon Laser Retinopexy in an Irish Tertiary Hospital
Rory Holohan

Anterior Segment Findings in Patients with Multiple Myeloma Treated with Belantamab
Mary Walsh

Ocular Manifestations of Syphilis - a Case Series of Six Patients.
Edward Ahern

Neurological Complications of Orbital Cellulitis Beware!
Joséphine Behaegel

Cystoid Macular Oedema Rates After Artisan Versus Scleral Fixated Lens Implantation
Amy O'Regan

Moving Glaucoma Care into the Community - Experience from RVEEH and CH07
Shane O'Regan

Annual Mooney Lecture 2022

Prof Stanley Chang


Prof Stanley Chang

K.K. Tse and Ku Teh Ying Professor of Ophthalmology, Columbia University Medical Center, New York.

Professor Stanley Chang completed his residency at the Massachusetts Eye and Ear Infirmary, and fellowship at Bascom Palmer Eye Institute. From 1995-2012, he was Chair of Ophthalmology at the Edward Harkness Eye Institute, and now remains an active faculty member.

Prof Chang has developed and pioneered several revolutionary surgical approaches to treat complicated forms of retinal detachment, improving outcomes for patients worldwide. He was the first to use perfluoropropane gas in the management of retinal detachments caused by scar tissue proliferation (PVR) on the retina. He developed perfluorocarbon liquids and the related surgical techniques for vitreoretinal surgery. In collaboration with Avi Grinblat, he developed a panoramic viewing system and led in the worldwide adaptation by retina surgeons to this technique.

Prof Chang is the recipient of honors including the Hermann Wacker Prize from the Club Jules Gonin; the Helmerich Prize from the American Society of Retinal Specialists; the Lifetime Achievement Honor Award, the Charles Schepens Lecture, and the Jackson Memorial Lecture from the American Academy of Ophthalmology; the Lifetime Innovator Award from Ophthalmology Innovation Summit; and the Gonin Medal from the International Council of Ophthalmology.

Prof William Power


Prof William Power

Consultant Ophthalmologist, Royal Victoria Eye and Ear Hospital, St Vincent's University Hospital and The Blackrock Clinic, Dublin.

Mr William Power has been a Consultant Ophthalmologist practicing laser eye surgery, cataract and corneal surgery for 20 years. He was appointed assistant Professor of Ophthalmology, Harvard Medical School and Consultant Ophthalmic Surgeon in the Massachusetts Eye and Ear Infirmary (MEEI) in 1995 and appointed Chief of Ophthalmology, Brigham and Women's Hospital, Boston in 1996. He returned to Dublin in 1998.

Prof Power is a Member Royal College of Physicians, Ireland (MRCPI); Fellow Royal College Surgeons, Glasgow (FRCSGlasg); Fellow Royal College of Ophthalmologists (FRCOphth); and Masters in Surgery (TCD). Professional memberships include the American Academy of Ophthalmology, American Society of Cataract and Refractive Surgeons, International Society of Refractive Surgeons, European Society of Cataract and Refractive Surgeons and the Irish College of Ophthalmologists.

He is a past president of the Irish College of Ophthalmologists and the current National Clinical Lead for Ophthalmology.

Prof David Keegan


Prof David Keegan

UCD Clinical Professor of Ophthalmology and Retina, UCD School of Medicine, University College Dublin. National Clinical Lead for Diabetic Retinopathy Screening and Target 5000 (All-Ireland Inherited Retinal Degeneration Programme).

Prof Keegan is the lead for Ireland's collaborative application to the European Reference Network for Rare Eye Disease (ERN-EYE Ireland Consortium: EEIC).

He trained at Moorfield's Eye Hospital, London (1997-2005), attained his PhD from UCL and followed that with a Fellowship in Vitreo-retinal Surgery, Columbia University New York (2005-2006) with Prof Stanly Chang.

He specialises in medical and surgical retinal disease including paediatric retinal surgery. He runs the Mater Retina Research Group and their interests include Inherited Retinal Disease, Macular Degeneration (Biomarkers and Low vision devices), Diabetic retinopathy, Artificial Intelligence and Enhanced Imaging.

Prof Keegan is currently involved in developing and deploying the transformation plan for North East Eye Care Delivery (NERIECS), which he will speak about today.


Dr Margaret Morgan

Dr Margaret Morgan

Consultant Medical Ophthalmologist, CHO 7 & Royal Victoria Eye and Ear Hospital, Dublin.

Dr Margaret Morgan is a Consultant Medical Ophthalmologist based in Dublin with a clinical commitment in Community Healthcare Organisation 7 and the Royal Victoria Eye and Ear Hospital with an interest in developing eye services for adults in the community.

She led a pilot service for diabetic retinopathy screening and was the first clinical lead for the development and rollout of the National Diabetic Retinopathy Screening Service in Ireland.

Dr Morgan is a member of the newly formed service development committee of the Irish College of Ophthalmologists.


Ms Chríosa O'Connor

Ms Chríosa O'Connor

Hospital Optometrist, Mater Misericordiae University Hospital, Dublin.

Chríosa O'Connor qualified as an optometrist from DIT, Kevin Street in 2000. She moved to the UK where she gained clinical experience working as an optometrist in a range of settings including refractive surgery, diabetic retinopathy screening and grading, independent and corporate practice, accredited cataract referrals schemes, and in the laser clinic, St James's Hospital in Leeds. She took on a role in professional services at Vision Express, overseeing their pre-registration optometrist support across the UK and Ireland.

Whilst in the UK she completed a post-graduate diploma in Clinical Optometry from City University, London.

Chríosa returned to Ireland in 2011 where she worked as an optometrist in private practice, followed by a clinical optometrist role in Prof William Power's iVision practice, Blackrock Clinic.

Since 2017, Chríosa has been a part time clinic supervisor in the student optometry clinics at TU Dublin. In January 2021 she started in her post as a hospital optometrist in the Mater Misericordiae University hospital. Here she is also part of the North East Region Integrated Eye Care Service (NERIECS) team who are currently working on integration and transformation of the eye care pathway in the North East.

Chríosa served as an AOI council member and has represented the AOI on the NSS Diabetic Retina screen Quality Assurance and Clinical Advisory Group committees.


Mr Tom Flynn

Mr Tom Flynn

Consultant Ophthalmologist, Bon Secours Hospital Cork.

Mr Tom Flynn is a Consultant Ophthalmologist at Bon Secours Hospital Cork, specialising in cornea, cataract and refractive surgery.

A graduate of University College Cork, he trained in ophthalmology at Moorfields Eye Hospital London. In 2013, he joined the consultant staff at Moorfields where he worked as a specialist in cornea, cataract and refractive surgery before returning to Cork in 2019. In 2011, he was awarded a PhD by University College London for his research on the immunology of corneal transplantation.

Other research interests have included injury prevention, allergic conjunctivitis, corneal imaging and outcomes of cataract surgery.


Mr Samer Hamada

Mr Samer Hamada

Consultant Ophthalmologist and Cornea Surgeon, Queen Victoria Hospital NHS Trust, UK.

Mr Samer Hamada is a corneal surgeon with 25 years' experience in ophthalmology both in the UK and internationally. He has completed cornea and anterior segment fellowships at the Birmingham and Midland Eye Centre, Wolverhampton Eye Infirmary, and Queen Victoria Hospital's Corneoplastic Unit and Eye Bank. He also completed a fellowship in paediatric ophthalmology at Great Ormond Street Hospital for Children in London.

Mr Hamada has a particular focus on innovations for managing patients with cornea and ocular surface diseases including stem cell therapy, lamellar keratoplasties, and complex ocular surface reconstruction. He has special interest in managing corneal problems in children including corneal transplantation for infants born with congenital eye diseases and children with complex cornea and ocular surface diseases at Great Ormond Street before joining Queen Victoria Hospital.

Mr Hamada articles have been published in many peer-reviewed journals and he has written many book chapters on cornea and cataract. He has chosen as a reviewer for several renowned ophthalmology journals including the American Journal of Ophthalmology and British Journal of Ophthalmology.

Prof Conor Murphy


Prof Conor Murphy

Chair and Professor of Ophthalmology, RCSI University of Medicine and Health Sciences; Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital, Dublin.

Prof Conor Murphy is the Chair and Professor of Ophthalmology at the RCSI University of Medicine and Health Sciences and a Consultant Ophthalmic Surgeon at the Royal Victoria Eye and Ear Hospital in Dublin. He received his medical degree from University College Dublin in 1996 and this was followed by an MMedSc degree in Physiology (1998) and a PhD in Ocular Immunology (2005) from the same institution. He undertook his clinical training in Dublin, Bristol, Liverpool and Perth, returning to Ireland to take up his current role in 2009.

Prof Murphy specialises in disorders of the cornea and ocular surface, uveitis and corneal transplant surgery. He heads the Ocular Immunology Research Group at RCSI, which focuses on research into ocular surface inflammation, corneal transplantation and uveitis.

He has published 85 articles in the peer-reviewed literature including in Ocular Surface, Ophthalmology, JAMA Ophthalmology, Scientific Reports and the British Journal of Ophthalmology and has received research funding of over €1,000,000 from the European Commission, Health Research Board, the Irish College of Ophthalmologists/Novartis Research Bursary, the Royal Victoria Eye and Ear Hospital Research Foundation and the National Eye Research Centre (UK).

In his role as the postgraduate Professor of Ophthalmology in Ireland, he is the Chief Examiner of the professional Membership and Fellowship examinations in ophthalmology of the Royal College of Surgeons in Ireland.

Mr David A Sullivan


Mr David A Sullivan

Chairman, Board of Directors, Tear Film & Ocular Surface Society and former Associate Professor, Department of Ophthalmology, Harvard Medical School, Boston.

Until recently, Mr David Sullivan held the post of Associate Professor in the Department of Ophthalmology at Harvard Medical School and a Senior Scientist at the Schepens Eye Research Institute (Boston, MA, USA).

During his 38 years at those institutions, his research focused on the interrelationships between sex, sex steroids and dry eye disease, as well as on the role of lubricin on the ocular surface. His studies involved basic, clinical, epidemiological and translational aspects and led to authorship on over 260 scientific articles and 15 patents. He was awarded numerous research grants from the National Institutes of Health, and served as a preceptor for 34 postdoctoral fellows.

Mr Sullivan is Founder, recent President, and current Chairman of the Board of Directors of the Tear Film & Ocular Surface Society (TFOS), a non-profit organisation, which was created to advance the research, literacy, and educational aspects of the scientific field of the tear film and ocular surface throughout the world. The Society has helped to promote increased international awareness of external eye diseases, enhance governmental funding for tear film and ocular surface research, stimulate the development of therapeutic drugs and diagnostic devices, and influence the design and conduct of clinical trials of novel treatments for ocular surface disorders.


Miss Yvonne Delaney

Miss Yvonne Delaney

Dean of Postgraduate Education, Irish College of Ophthalmologists.

Miss Yvonne Delaney completed her medical education in University College Dublin, Ireland (MB BCh BAO, 1984-1990) and achieved membership of the Royal College of Physicians of Ireland (MRCPI) in 1993 before pursuing a career in ophthalmology. She entered the specialty initially in Ireland before entering and completing Higher Surgical Training in Ophthalmology in Oxford in the UK and becoming a Fellow of the Royal College of Ophthalmologists in London (FRCOphth 1996-2002). She returned to Ireland to take up a Fellowship in Glaucoma, with Prof Colm O'Brien, Mater University Hospital Dublin, Ireland (2003-2005).

Miss Delaney went on to practice ophthalmology, with an interest in the specialty of glaucoma, as Senior Clinical Lecturer in Ophthalmology in the Mater Misericordiae University Hospital and as Consultant Ophthalmic Surgeon in the Bons Secours Hospital, Dublin.

In 2014, she became Dean of Postgraduate Education of the Irish College of Ophthalmologists, Dublin having completed a Masters in higher medical education in the RCSI in 2012 - a role she continues in 2022.


Ms Elizabeth McElnea

Ms Elizabeth McElnea

Consultant Ophthalmologist, University Hospital Galway.

Ms Elizabeth McElnea is a graduate of University College Dublin. She completed fellowship training in oculoplastic, orbit and lacrimal disease at the Royal Victorian Eye and Ear Hospital in Melbourne, Victoria and in cornea and anterior segment disease at Royal Perth Hospital in Perth, Western Australia.

She currently works as a Consultant Ophthalmologist in University Hospital Galway.


Prof Anthony King

Prof Anthony King

Consultant Ophthalmologist, Nottingham University Hospital, NHS Trust.

Prof Anthony King qualified from University College Galway in 1987 and undertook his ophthalmology postgraduate training in the UK. He was awarded an MD from the University of Leicester and undertook fellowship training in Glaucoma in London at the Western Ophthalmic and Anterior Segment and Cornea in Nottingham.

He is currently a consultant ophthalmologist with a subspecialist interest in glaucoma at Nottingham University Hospital and an Honorary Professor of Ophthalmology at the University of Nottingham. His primary research interest is in the clinical management of glaucoma particularly advanced glaucoma. He has received research funding support from the NIHR-HTA program, the International Glaucoma Association and Fight for Sight. He is currently the Chief Investigator of the NIHR funded Treatment of Advanced Glaucoma Study (TAGS).

He has published extensively and lectured throughout the UK and Europe. He is a past President of the UK & Eire Glaucoma Society and was the Royal College of Ophthalmologist glaucoma lead for development of a National Ophthalmic Database for trabeculectomy, he is currently a member of the European Glaucoma Society Scientific Committee and the Chairman of Glaucoma UK a patient support charity.


Mr Ian Flitcroft

Mr Ian Flitcroft

Consultant Ophthalmologist, Children's Health Ireland (CHI) Temple Street, Dublin.

Mr Ian Flitcroft is a Consultant Paediatric Ophthalmologist at the Children's University Hospital, Dublin. He is also Associate Clinical Professor of Ophthalmology in UCD and Adjunct Professor of Vision Science at the Technological University Dublin. He has been involved in the field of experimental myopia for 25 years. As well as his research on the mechanisms guiding eye growth, he has been long term advocate for the public health implications of myopia and for the need for biological treatments of myopia. He is a lead investigator on several myopia treatment trials.

Prof Tunde Peto


Prof Tunde Peto

Professor of Clinical Ophthalmology, Queen's University Belfast; Clinical Lead of the Northern Ireland Diabetic Eye Screening Programme and Consultant Ophthalmologist in Medical Retina.

Tunde Peto is Professor of Clinical Ophthalmology at Queen's University Belfast, Clinical Lead of the Northern Ireland Diabetic Eye Screening Programme and a Consultant Ophthalmologist in Medical Retina.

Her membership of international organisations include President of the European Association of Diabetic Eye Complications (EAsDEC), Board member of EU-EYE and ECV and member of the Global Burden of Disease Eye Epidemiology Group.

She specialises in chronic blinding diseases, ophthalmic image analysis, epidemiology and statistics and is internationally renowned for setting up and managing diabetic retinopathy screening and training programmes, including the Queen's Diamond Jubilee Trust Fund (DR Section). Professor Peto was recently named among the UK's most influential researchers who study diabetes complications.

As Head of the Belfast Ophthalmic Reading Centre, a unique facility coordinating the grading of ophthalmic images collected for clinical research studies, Professor Peto has expertise in overseeing a wide range of studies, including age-related macular degeneration, diabetic retinopathy and population-based studies, training graders to use a variety of imaging platforms and interpreting the images.

Ms Jaina Byrne


Ms Jaina Byrne

Orthoptist, Beaumont Hospital, Dublin; Chair Irish Association of Orthoptists.

Ms. Jaina Byrne qualified from the University of Liverpool with a BSc (Hons) Orthoptics. Her career started in the UK and she relocated to Ireland in 2009. She currently works in Beaumont Hospital, Dublin. She has a specialist interest in neuro-orthoptics and rehabilitation.

In 2021, Jaina completed a Masters in Medical Education at the University of Dundee and has a keen interest in undergraduate education and professional development.

She is the current Chair of the Irish Association of Orthoptists.

Mr Edward Loane


Mr Edward Loane

Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital and St James's Hospital Dublin.

Mr Edward Loane has a special interest in strabismus and ocular motility disorders. He completed fellowship training in Leicester with Professor Irene Gottlob, and in Liverpool with Mr Ian Marsh and Ms Carmel Noonan. He particularly enjoys managing neurological strabismus.

Ms. Edel Cosgrave


Ms. Edel Cosgrave

Consultant Ophthalmologist, University Hospital Waterford.

Ms. Edel Cosgrave is a graduate of NUIG and completed her basic surgical training in ophthalmology in Cork University Hospital. Her higher surgical training was completed in the UK in the Deanery of East Anglia, working in hospitals in Ipswich, Norwich, Bury St Edmunds and Addenbrooks hospital in Cambridge.

Ms Cosgrave has two fellowships in Paediatric Ophthalmology and Strabismus, firstly from Addenbrooks hospital, the West Suffolk and Moorfields Eye Hospital and secondly from the Royal Eye Hospital Manchester. She was appointed to Harrogate and York hospitals as Consultant Ophthalmologist with a special interest in paediatrics and strabismus in 2010.

She returned to Ireland to take up a consultant post in University Hospital Waterford in 2014.


Mr Tomás Burke

Mr Tomás Burke

Consultant Ophthalmologist, Mater Misericordiae University Hospital, Dublin.

Mr Tomás Burke graduated with honours from National University of Ireland, Galway in 2004. Following post-graduate training in general internal medicine at Beaumont Hospital, Dublin, he was awarded Membership of the Royal College of Physicians of Ireland in 2006. He subsequently entered ophthalmology training at the Mater Misericordiae University Hospital and Galway University Hospitals. He was awarded Membership of the Royal College of Ophthalmologists in 2009, and spent two years at Harkness Eye Institute of Columbia University, New York until 2011. During this period, he developed research interest in retinal imaging, and was subsequently awarded a Doctor of Medicine research degree in 2013 by University College Dublin for his work on "Genotype-Phenotype correlations in Stargardt Disease".

He completed his ophthalmology training in the UK in the Bristol region. He was appointed a Consultant Ophthalmologist at the Bristol Eye Hospital in 2017, but deferred taking up his post for one year to allow him to undertake a sub-specialty fellowship in medical retina, inherited retinal disease, and inflammatory eye disease (uveitis) at Moorfields Eye Hospital, London. He spent almost three years as a consultant ophthalmologist in the NHS in Bristol, and was then appointed a Consultant at the Mater Misericordiae University Hospital, Dublin in 2021 with sub-specialist interests in cataract surgery, medical retina, uveitis, and inherited retinal diseases of suspected wet macular degeneration.

He is co-lead on a project streamlining the intravitreal injection pathway for the Northeast region of Ireland. He has recently commenced work at Mater Private Hospital, Dublin in January 2022.


Ms Dawn Sim

Ms Dawn Sim

Lead Medical Director of Ophthalmology, Genentech Roche; Director of Telemedicine, Moorfields Department of Digital Medicine; Associate Professor at the University College London, Institute of Ophthalmology.

Ms Dawn Sim is currently the Lead Medical Director in Product Development in Ophthalmology for Genentech Roche. From 2015 to April 2022, she was a Consultant Ophthalmic Surgeon specialising in Cataract and Retina at Moorfields Eye Hospital, London. A former chief resident at Moorfields, she is the current Director of Telemedicine at the Moorfields Department of Digital Medicine and Associate Professor at the University College London, Institute of Ophthalmology. She also sits on the Council and Scientific Committee of the Royal College of Ophthalmologists, UK.

Born and raised in Singapore, Dawn moved to the UK to read Medicine at St George's Hospital, University of London in 1996. She completed her Ophthalmology residency in the prestigious North London Rotation in 2015 where she also served a Chief Resident at Moorfields Eye Hospital, and Associate College Tutor at the Royal College of Ophthalmologists, and representative at the British Medical Association. In that time, she also obtain her PhD from the UCL Institute of Ophthalmology for her work on endothelial progenitor stem cells and has published extensively on diabetic retinopathy, age-related macular degeneration, and retinal vein occlusions.

Dawn's current research interests include new technology in retinal imaging, digital health, and the field of teleophthalmology. She is working with device-agnostic platforms to facilitate acceleration of new technology and artificial intelligence software into clinical practice.

For five consecutive years (2017 to 2021) she has been voted on the Ophthalmologist power-list as one of the top 100 ophthalmologists globally. Her previous awards include the ARVO Alcon Early Career Research Award winner, and Dawn is also a patent holder for the use of Indocyanine Green Dye for visualization of inflammation in the eye. A prolific and successful grant-raiser, Dawn also won the Dermot Pierse Royal Society prize in 2009 and the Young Investigator's Award at Asia ARVO in 2007.


Ms Aoife Doyle

Ms Aoife Doyle

Consultant Ophthalmic Surgeon, Royal Victoria Eye and Ear Hospital and St James's Hospital, Dublin.

Ms Aoife Doyle carried out her training in Ophthalmology in Ireland followed by a fellowship as EGS fellow at the Glaucoma Institute in Paris. During her fellowship, she was involved in research into new methods of delivery of novel antifibrotic agents during filtration surgery and early studies on outcomes of selective laser trabeculoplasty.

She has been a Consultant Ophthalmic Surgeon and glaucoma specialist since 2005 at Royal Victoria Eye and Ear Hospital, Dublin, where she set up a specialist glaucoma service and was Medical Director there from 2011-2014. She is a member of the UK-Eire Glaucoma Society and the European Glaucoma Society.

Ms Doyle established a virtual glaucoma clinic at RVEEH in 2018 with early implementation of MediSIGHT (Electronic Medical Record) using a model that would allow for future transition to the community.

She has a particular interest and training in Lean Healthcare management techniques and played a key role in establishing and implementing the City West Drive-through IOP clinic together with colleagues in the Ireland East Hospital Group.

With her team, Ms Doyle has recently extended the virtual clinic model to the CHO7 area, together with Dr Margaret Morgan, with plans to progress the hub and spoke model into further allied community eye care settings in the near future.

Mr Jonathan Clarke


Mr Jonathan Clarke

Consultant Ophthalmologist, Moorfields Eye Hospital, London.

Mr Jonathan Clarke has been a consultant in the glaucoma service at Moorfields Eye Hospital since 2009. He is Clinical Trials Lead for the glaucoma service with a responsibility for delivering clinical trials for new pharmaceutical treatments.

He is Joint Director of the Moorfields North Division and has been involved in testing and setting up new models of care including virtual clinics for glaucoma and medical retina patients.

Mr Clarke is a panel member of the Secretary for State for Transport's Honorary Medical Advisory Panel on Driving and Visual Disorders and a member of Glaucoma UK Clinical Advisory Panel. He holds a MD in post-operative wound healing in glaucoma surgery.

Ms Evelyn O'Neill


Ms Evelyn O'Neill

Consultant Ophthalmic Surgeon, Mater Misericordiae University Hospital, Dublin.

Ms Evelyn O'Neill is currently working as a Consultant Ophthalmic Surgeon with a special interest in Eye Emergency care in the Mater Misericordiae University Hospital.

She attained an honours medical degree from University College Dublin in 2003. She pursued a postgraduate Masters of Science (Honours) degree in UCD in 2005 and has worked in Ophthalmology ever since. She attained her Membership of the Royal College of Ophthalmologists, London in 2007 and completed her Basic Surgical Training in Ophthalmology in 2008.

Ms O'Neill subsequently embarked on an internationally renowned Clinician-Scientist research fellowship in the Centre for Eye Research Australia undertaking full time research in optic nerve and glaucomatous eye disease. This body of work resulted in the award of her Doctor of Medicine degree in 2011.

She subsequently commenced her Higher Surgical Training in Ophthalmic Surgery under the auspices of the Royal College of Surgeons Ireland and The Irish College of Ophthalmologists. She undertook her training both in a full-time and less than full-time capacity (flexible trainee) and was awarded her CCST in Ophthalmic Surgery in July 2018.

She was awarded her Fellowship of the European Board of Ophthalmologist in 2015 and her Fellowship of the Royal College of Surgeons Ireland in Ophthalmology in 2018. She was awarded the Aspire Fellowship in Quality Improvement in eye emergency care - a joint fellowship between the Mater Misericordiae University Hospital and Moorfields Eye Hospital in London. Her research to date has resulted in international and national prizes, awards and publications, and she has lectured worldwide on her findings. She has authored over 25 international peer reviewed publications.

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BOOK OF ABSTRACTS

PAPER SESSION

Monday 16th May - 12pm

Effectiveness and Safety of the XEN 45 Gel Stent as a Minimally Invasive Glaucoma Surgery Device in the Management of Open-Angle Glaucoma

Neary S, Dervan E.
Mater Misericordiae University Hospital, Dublin.

Objectives:
To evaluate the effectiveness and safety of XEN 45 Gel Stent (Allergan plc, Dublin, Ireland), an ab interno gelatin stent, as a minimally invasive glaucoma surgery device in the treatment of patients with medically uncontrolled open angle glaucoma in the Mater Misericordiae University Hospital.

Methods:
Prospective, non-randomised, open label, 3 year clinical study operated on by a single consultant ophthalmic surgeon in a single tertiary referral centre. Baseline characteristics were recorded, including type of glaucoma, intraocular pressure (IOP), number and type of IOP- lowering medications, and disease stage. Patients underwent surgery with implant alone or combined with cataract surgery and an adjunctive subconjunctival antimetabolite injection was delivered in all cases. Primary outcome was mean reduction in IOP and medication use from baseline at 12 months. Clinical success was defined as the percentage of eyes achieving ≥ 20% IOP reduction on the same or fewer medications at 12, 24, and 36 months. Intraoperative complications, postoperative adverse events and bleb needling rates were assessed.

Results:
Overall, 64 eyes of 51 patients participated in the study. 48 eyes (75%), 28 eyes (43.75), and 10 eyes (15.6%) completed the 12 month, 24 month, and 36 month visits respectively. Mean baseline IOP was 26.6 +/- 7.2 mmHg, ranging from 13 to 52 mmHg. Mean preoperative topical IOP-lowering medications were 3.1 +/- 0.8 drops. IOP reduced by 15.4 mmHg, 13.7 mmHg, and 13.9 mmHg at 12, 24, and 36 months respectively. Drops reduced by 3.0, 2.7, and 1.8 at 12, 24, and 36 months respectively. Clinical success was achieved by 81.3%, 82.1% and 70% of eyes at 12, 24, and 36 months respectively. The overall bleb needling rate was 50% (37 needlings in 32 eyes); 56.8% of needling were performed within the first postoperative month. Intraoperative and postoperative complications were reported in 17.2% and 21.9% respectively.

Conclusion:
The XEN 45 Gel Stent has good IOP lowering potential with complete omission of topical IOP-lowering medication in the short term. There was a statistically significant reduction in mean IOP and mean drops from baseline at all time points throughout the study ($p < 0.0001$). It has a favourable safety profile, however the bleb needling rate is high at 50%. Further long term studies are required to compare the safety and effectiveness of the XEN 45 gel stent with gold standard trabeculectomy and with newer MIGS procedures as they become available.

The Role of Small Incisional Cataract Surgery (SICS) in an Indian Hospital

Keenan J, Desai R, Desai S.
Tarabai Desai Eye Hospital, Jodhpur.

Objectives:
To describe the procedure of small incisional cataract surgery (SICS) and the advantages of combining it with the use of phacoemulsification in an Indian hospital setting.

Methods:
Slides to demonstrate the procedure of small incisional cataract surgery (SICS) and the results of an audit of consecutive patients undergoing this procedure, some of whom were converted to SICS from a commencement with phacoemulsification.

Results:
The results support the hypothesis of the advantages of the combined use of phacoemulsification and small incisional cataract surgery (SICS).

Conclusion:
The combination and ability to convert between the two modalities of phacoemulsification and small incisional cataract surgery (SICS) provides an additional facility in the management of the difficult cataracts encountered in an Indian hospital setting.

A Screening Tool to Detect Chronic Ocular Graft Versus Host Disease in a Hematology/Oncology Outpatient Setting

Greenan E, Vandenberghe E, Conneally E, Ní Gabhann-Dromgoole J, Murphy C C.
Department of Ophthalmology, Royal College of Surgeons, Dublin; Department of Ophthalmology, Royal Victoria Eye and Ear Hospital, Dublin; Department of Hematology/Oncology, St James Hospital, Dublin.

Objectives:
We aimed to develop an effective and efficient screening tool for chronic ocular graft versus host disease (oGvHD) that could be integrated into a post-allogeneic transplant follow-up clinic.

Methods:
Consecutive patients attending the post-allogeneic transplant follow-up clinic were recruited. In each instance, questionnaires were completed before the ophthalmic examination to prevent bias. Participants were considered to have a diagnosis of chronic oGvHD if they fulfilled one or both of the National Institute of Health or International Chronic Ocular Graft-vs-Host-Disease Consensus Group criteria.

PHASE I participants completed the Ocular Surface Disease Index (OSDI) questionnaire. A threshold score of >33 was considered suggestive of chronic oGvHD, based on the results from a pilot study. PHASE II participants completed the OSDI as part of a new algorithm (n=68). In this case, an OSDI score of >33 in the context of daily ocular lubricant usage was considered suggestive of chronic oGvHD. Finally, those diagnosed with chronic oGvHD in PHASE I and PHASE II of the study were recruited into prospective study in which patients were asked to complete the OSDI questionnaire before each ophthalmic review, and this score was then correlated to ocular surface disease severity noted on slit lamp examination.

Results:
PHASE I resulted in a sensitivity of 100%, specificity of 86.9%, PPV of 0.59, NPV of 1.0 and LR of 7.3 (n=100, p <0.0001). The negative impact of confounding ocular conditions such as AMD, cataracts and retinal disorders on the specificity was ameliorated in PHASE II through the addition of the 'yes/ no' question relating to daily use of ocular lubricants (n=68).

When this altered algorithm was applied, the screening tool was found to be both 100% sensitive and specific in identifying those with chronic oGvHD, with a PPV and NPV of 1.00 (p <0.0001). Finally in those with oGVHD, OSDI score was found to strongly correlate with ocular surface disease severity (n=65, 0.67, p <0.0001).

Conclusions:
An algorithm including the self-administered OSDI questionnaire and a polar 'yes/ no' question relating to ocular lubricant usage can be used to reliably and consistently identify patients with chronic oGvHD, triggering earlier referral to ophthalmology. The algorithm also provides an accurate prediction of disease severity, enabling ophthalmology services to triage patients so that timely care is provided to those in greatest need.

Clinical Evaluation of a New Extended Depth-of-Focus Intraocular Lens, the Physiol Isopure 123, in Achieving Functional Distance, Intermediate, and Near Vision Post Cataract Surgery.

Morris J, McGlacken-Byrne A, Smyth A, Loane E.
Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
To evaluate the clinical effectiveness of the extended depth-of-focus PhysIOL Isopure 123 lens in restoring near, intermediate, and distance visual function.

Methods:
A prospective study enrolling adult patients who received scheduled phacoemulsification surgery and isofocal lens implantation (PhysIOL Isopure 123) between December 2020 and December 2021. Visual outcomes were assessed 1 month postoperatively; uncorrected and best-corrected distance visual acuity (BCVA) using logMAR at 4 metres, uncorrected and corrected intermediate (70cm) and reading/near visual acuity using a Jaeger chart.

Results:
Twenty-five eyes of 21 patients were analysed. The average age (±SD) was 71.9 ± 10.04. The mean preoperative distance visual acuity was 0.7 ± 0.68 logMAR. At the one-month post-operative visit, average uncorrected distance visual acuity was 0.2 ± 0.22 logMAR and corrected distance visual acuity was 0.1 ± 0.12 logMAR. Mean predicted spherical equivalent (SE) was -0.10D ± 0.18 and mean manifest refractive spherical equivalent post-operatively was 0.02D ± 0.61. Two thirds (64%, n=16) of patients achieved uncorrected intermediate visual acuity (70cm) of N12 or better. Wearing their post-operative auto-refraction correction, sixty percent (n=15) achieved N12 or better at 70cm. Wearing there post-operative auto-refraction correction fifty-two percent (n=13) achieved N12 or better at near.

Conclusions:
The results demonstrated that the PhysIOL Isopure 123 is able to restore near, intermediate, and distance visual function.

An Analysis of Ophthalmology Inpatient Consults at Cork University Hospital

McGrath R, Ahern E, Idrees Z, O'Connell E.
Cork University Hospital, Cork.

Objectives:
While the National Clinical Programme for Ophthalmology aims to move more ophthalmology services out of acute hospitals, Ophthalmology consultations on inpatients remain necessary for patients and other medical teams, but can account for significant service utilization. We sought to analyze the inpatient consults at Cork University Hospital (CUH), Ireland's largest hospital and only level 1 trauma center.

Methods:
A retrospective study of all consecutive inpatient consultations seen in CUH over a 12-month period in the period from COVID lockdown to normal service. Patient demographics, referring services, accuracy and appropriateness of referral, ophthalmic findings, interventions and follow up were analyzed.

Results:
From January to December 2021, 358 inpatient consults were seen. 58% were from adult medical teams (20% from neurology), 21% from surgical teams (14% from neurosurgery) and 19% from paediatric teams. The most common reasons for referral were loss of vision (23%), visual field defects (15%), diplopia (11%), screening for ocular features of systemic disease (11%) and suspected papilloedema (9%). 30% were found to have acute eye pathology, 17% had longstanding or stable eye findings, 53% had normal eye exams. 81% required no intervention, 12% required medical treatment, 4% had orthoptic intervention, 2% required surgical or laser treatment.

Conclusions:
This study presents a large dataset of ophthalmology inpatient consults on the most varied case-mix of referral services of all hospitals in Ireland. It highlights current service utilisation and helps plan future optimal service delivery for CUH and other hospitals.

The use of Autologous Serum in Dry Eyes and Ocular Surface Diseases

Aldouri A, O'Keeffe M
Eye Research Centre, Mater Private Hospital, Dublin.

Objectives:
To devise a protocol for the use of autologous serum in treating ophthalmic conditions.

Methods:
36 eyes of 18 patients received autologous serum eye drops 50% (ASEDs) over six months. 82.35% were female, the mean age was 60.61 years, SDV (18.34), (range 30 - 90 years) and the mean follow up was 14.5 weeks (range 3 - 26 weeks).

Symptoms and signs of dry eye conditions (foreign body sensation, punctate epithelial erosion (PEE), epithelial defect, corneal filaments) and Tear film Breakup time (TBUT) were compared during the follow up visits.

Results:
At 6 months post ASEDs follow up, most treated eyes (94.445%) had a dramatic improvement in their dry eye symptoms and signs with a better unaided visual acuity, enabling all but one patient (2 eyes) to comfortably conduct their daily activities, without the need of using artificial pharmaceutical products.

Minimal corneal filaments persisted in 1 eye of 2 different patients, and 6 eyes (including eyes with filaments) showed mild PEE at the last visit.

No adverse effect recorded, while using ASEDs.

Conclusions:
Management of ocular surface diseases remains a challenge and pharmacological eye lubricants offer minimal to no nourishment, but eye drops made from autologous serum (ASEDs) have tear-like biochemical properties and provide nutritious constituents.
ASEDs is a useful and safe option to treat dry eye and ocular surface conditions.

Efficacy of Selective Laser Trabeculoplasty as an Adjuvant Treatment in Open Angle Glaucoma

O'Regan S, O'Connor J , Doyle A.
Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
The objective of this study was to investigate the effects of adjuvant selective laser trabeculoplasty (SLT) on intraocular pressure (IOP) control in patients already on medical treatment.

Methods:
This retrospective audit examined the electronic medical records of 57 consecutive eyes with open-angle glaucoma treated with SLT. POAG (n=45) NTG (n=7) PXFG (n=5) POAG (n=45). All patients received 360-degree treatment. The mean age of eyes treated was 71.35. The mean pre-treatment IOP was 19.29, on an average of 2.4 IOP lowering agents. The primary outcome was the IOP reading at 6 weeks following treatment.

Results:
The mean IOP post SLT treatment was 15.57mmHg. This represented a mean drop of 3.7mmHg.

Conclusions:
A single session of adjuvant SLT provided further reductions in IOP at 6 weeks in patients with open angle glaucoma already on topical agents.

The Ecological Impact of Cataract Surgery - Single-use Items Consumption and Knowledge of Ophthalmic Theatre Staff in University Hospital Limerick

Mahon E, Hickey-Dwyer M.
University Hospital Limerick, Limerick.

Objectives:
The aims of our study were two-fold; to assess theatre staff knowledge and opinion concerning the environmental impact of phacoemulsification surgery, and secondly to measure the weight of waste generated for each patient undergoing cataract surgery and ultimately assess the annual single-use item waste weight generated in UHL for performing cataract surgeries, in order to compare this to other centres' data.

Methods:
We performed a paper based multiple choice questionnaire of theatre staff in UHL including CNMs, CNSs, staff nurses and NCHDs. This survey covered in its first part staffs' opinion of the sustainability of cataract surgery in the department, and in its second part assessed staffs' knowledge on the carbon footprint, emissions and forest area required to offset the ecological impact of cataract surgery. The data obtained was analysed using Excel 2010.

Secondly, we weighed the single-use items disposed of for patients undergoing phacoemulsification surgery in UHL, yielding the result of an average of 4.0kg of waste generated per case.

Results:
Seventy seven percent (77%) of staff think about the environmental impact of procedures administered to patients sometimes or often, but only 15% of staff think that current cataract item usage in UHL is environmentally sustainable.

Regarding the average footprint in kilograms of CO2 equivalent, 85% of participating staff underestimate the CO2 emission of performing a phacoemulsification operation, 62% underestimate the equivalence in petrol consumption of a phacoemulsification operation, and 54% underestimate the kilograms of waste generated in single-use equipment per case. Lastly 46% of staff correctly identified the correct minimal area of forest required to offset the carbon emission of yearly phacoemulsification surgeries performed in Ireland.

Conclusions:
The theatre staff are aware of the environmental impact of cataract surgery, but grossly underestimate its impact.

Following this survey, an assessment of single-use item waste was performed in our department, and review of clinical practice is underway and will be discussed.

PAPER SESSION

Monday 16th May - 4pm

The Role of Nuak1 and its Inhibition In Human Glaucoma Lamina Cribrosa Cells

Powell S, Irnaten M[1], Callaghan B[1], Willoughby CE[2], O'Brien C[2,1]

[1]UCD Clinical Research Centre, Dublin; Mater Misericordiae University Hospital, Dublin;
[2]Biomedical Sciences Research Institute; Ulster University, Derry.

Objectives:
Glaucoma, the leading cause of blindness globally is a chronic optic neuropathy characterised by structural changes in the lamina cribrosa (LC), leading to a progressive retinal ganglion cells death and irreversible vision impairment and blindness. We have previously demonstrated defective mitochondrial function and altered cellular bioenergetics in glaucoma LC cells, as well as reduced oxidative phosphorylation and increased glycolysis. To investigate this further, we sought to explore the role of the metabolic sensor AMPK related kinase 5 (NUAK1/ARK5). NUAK1 is activated by an increase in intracellular AMP: ATP ratio. The aims of this study were to examine the differential expression of NUAK1 in glaucoma LC fibroblasts, to identify the upstream activators TGF-β1 and IGF1, and to examine the effects of the known NUAK1 inhibitors HTH-01-015 and miR-211 on TGF-β1-induced ARK5 expression in LC cells.

Methods:
LC cells from three glaucomatous (GLC) donor eyes and 3 normal (NLC) age-matched controls were cultured. Using HiPerFect transfection reagent, SiGLO transfection indicator was used to analyse efficiency. Post- transfection, a cohort of cells were stimulated with TGF-β1 (10ng/ml for 24 hours). Quantitative real-time RT-PCR (qRT-PCR) and immunoblotting were used to measure gene and protein expression levels of NUAK1, upstream activators, inhibitors and extracellular matrix genes. Proliferation rates were measured in NLC and GLC cells using methyl thiazolyl tetrazolium salt (MTS) assay.

Results:
NUAK1 expression was significantly elevated in GLC cells compared to NLC cells ($p<0.05;n=3$). TGFβ1 and IGF1 significantly increased NUAK1 expression in NLC and GLC cells ($p<0.05$; $n=3$), while treatment of GLC cells with HTH-01-015 (1μM) resulted in a significant downregulation of NUAK1 and pro-fibrotic ECM gene expression. Cellular proliferation was also significantly greater in GLC cells and NLC cells treated with IGF1. Treatment with HTH-01-015 significantly reduced proliferation rates in IGF1 treated NLC cells. There was no significant difference between miR-211 levels in NLC versus GLC cells. TGFβ1 significantly reduced expression of miR-211 in NLC and GLC cells. Transfection with miR-211 increased miR-211 levels and reduced NUAK1 levels in TGFβ-1 pre-treated LC cells. Transfection with miR-211 mimic prevented an increase of NUAK1 levels in NLC and GLC cells treated with TGFβ-1.

Conclusions:
The metabolic sensor NUAK1 is overexpressed in glaucoma LC cells. HTH-01-015 and miR-211 inhibited the TGF-β1 and IGF1-induced NUAK1 expression in NLC cells, resulting in a downstream reduction in ECM genes and cellular proliferation. Thus, halting the pro-fibrotic activity and metabolism of GLC cells by downregulating NUAK1 expression is an exciting new therapeutic target aimed at ameliorating glaucoma LC associated fibrosis.

The Effect of Mir-29b Expression on Adam 12 & Adam19 in the Lamina Cribrosa in Primary Open Angle Glaucoma

Smyth A, Callaghan B, Irnaten M, Willoughby C, O'Brien C.
UCD Clinical Research Centre, Mater Misericordiae University Hospital, Dublin.

Objectives:
Primary open angle glaucoma(POAG) is a progressive optic neuropathy characterised by damage and remodelling of the lamina cribrosa (LC) of the optic nerve head(ONH). Increased expression of extracellular matrix (ECM) genes, including transforming growth factor-β-1 (TGFβ-1) leads to alterations in ECM architecture of the LC plates leading to excess force on retinal ganglion cell(RGC) axons and resultant RGC degeneration. A disintegrin and metalloproteinase (ADAM) 12 & 19 are members of a family of transmembrane, multi-domain proteins implicated in a variety of cellular activities including proteolysis, cell adhesion, signalling and the regulation of growth factors through ectodomain shedding. Both ADAM12 & 19 have been shown to be up-regulated in fibrosis in various organs. MiR-29b is an anti-fibrotic microRNA which negatively regulates ECM gene expression. MiR-29b has been shown to be down-regulated in POAG. Our lab has previously shown that glaucoma LC cells have elevated pro-fibrotic gene expression. Our aim was to investigate the effect of miR-29b on the expression of ADAM12 & 19 in human lamina cribrosa cells in POAG.

Methods:
Human lamina cribrosa cells from three healthy and three glaucoma donors were cultured under physiological conditions. Cells were transfected with either 5nM of miRNA-29b-3p mimic or a negative control using HiPerFect transfection reagent. A subset of glaucoma (GLC) and normal (NLC) LC cells were then treated with 10ng/ml TGFβ-1 for 24hrs. Changes in expression of ADAM 12 & 19 mRNA levels amongst all treatment groups were analysed by Quantitative real time reverse transcriptase Polymerase Chain Reaction (qRT-PCR).

Results:
ADAM 12 & 19 expression is significantly up-regulated in GLC compared to NLC cells. Treatment of NLC cells with TGFβ-1 resulted in down-regulation of miR-29b and up-regulation of both ADAM 12 & 19. Transfection of GLC and TGFβ-1 treated GLC with miR-29b resulted in significant down-regulation of ADAM12 & 19.

Conclusions:
Our results demonstrate that transfection of glaucoma LC cells with miR-29b controls the proliferation of ECM proteins, ADAM 12 & 19, even in the presence of the pro-fibrotic cytokine, TGF-β1. This suggests that miR-29b may represent a potential future therapeutic target for the prevention of fibrotic transformation of the lamina cribrosa in glaucoma.

Application of a Recellularised Porcine Corneal Graft in an In Vivo Leporine Anterior Lamellar Keratoplasty Model

Brady RT[1,2], Fernández-Pérez J[2,3], Madden P[2,3], Nowlan PF[4], Ahearne M[2,3].
[1]Department of Ophthalmology, Mater Misericordiae University Hospital, Dublin;
[2]Department of Mechanical, Manufacturing and Biomedical Engineering, School of Engineering, Trinity College, Dublin;
[3]Trinity Centre for Biomedical Engineering, Trinity Biomedical Science Institute, Trinity College,
[4]Dublin; School of Natural Sciences, Trinity College, Dublin.

Objectives:
The objective of this work was to establish and refine an in vivo model for investigating novel corneal implants in development by the Ahearne Corneal Research Group, Trinity College Dublin. Once established, the model was used to carry out an in vivo study, investigating the utility of a novel decellularised and recellularised graft for corneal repair.

Methods:
A rabbit anterior lamellar keratoplasty model was developed and then used to compare an implanted 250 μm thick decellularized lenticule against one that had been recellularised with human stromal cells. These porcine corneal lenticules were previously harvested and decellularised. Lenticule scaffolds were recellularised using human corneal stromal cells and cultured for 14 days in serum-supplemented media followed by a further 14 days in either serum free or serum-supplemented

media. After a three-month period, the corneas underwent post-mortem histological analysis to assess for healing and remodelling.

Results:
Decellularised porcine corneal scaffolds were found to retain little DNA (14.89 ± 5.56 ng/mg) and demonstrated a lack of cytotoxicity by in vitro. The scaffolds were separated into two groups. One left acellular and the other recellularised using human corneal stromal cells. All groups showed full-depth cell penetration after 14 days. When serum was present, staining for ALDH3A1 remained weak but after serum-free culture, staining was brighter and the keratocytes adopted a native dendritic morphology with an increase ($p < 0.05$) of keratocan, decorin, lumican and CD34 gene expression. A rabbit anterior lamellar keratoplasty model was used to compare decellularized against recellularised groups in vivo. In both, host rabbit epithelium covered the implants, but transparency was not restored after 3 months. Post-mortem histology revealed a sub-epithelial less-compact collagen layer, which appeared to be a regenerating zone with some α-SMA staining, indicating fibrotic cells. ALDH1A1 staining was present in all of the acellular scaffolds, but in only one of the recellularised lenticules.

Conclusions:
The main success of this body of work was the successful design and implementation of an advanced in vivo surgical model for investigation of novel corneal implant technologies. Importantly, decellularised scaffolds demonstrated a lack of cytotoxicity in vitro and all groups showed full-depth cell penetration after 14 days. The in vivo anterior lamellar keratoplasty model demonstrated that all implants were epithelialised but transparency was not restored after 3 months. Given there was little difference between acellular and cell-seeded scaffolds in our in vivo study, future scaffold development should use acellular controls to determine if cells are necessary.

Hypoxia Drives Fibrosis in Pseudoexfoliation Glaucoma via DNA Methylation

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[2]Department of Ophthalmology, Duke University, Durham, North Carolina;
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Objectives:
Pseudoexfoliation glaucoma (PXFG) is caused by pseudoexfoliation syndrome (PXF), which is a systemic disease causing a build-up of extracellular material. Transforming growth factor beta 1 (TGF1) and Ras protein activator-like 1 (RASAL1) expression levels contribute to fibrosis and are influenced by methylation, an epigenetic alteration which silences gene expression which can be driven by hypoxia. The objective of this project is to investigate if aberrant methylation in PXFG controlled by hypoxia alters the expression of TGFβ1 and RASAL1, leading to fibrosis.

Methods:
Ethical approval was obtained from the Mater Misericordiae University Hospital Institutional Review Board (Ref:1/378/1956). Human Tenons fibroblasts (HTFs) were propagated from cataract control and PXFG donors. MeDIP assays were used to assess RASAL 1 promoter methylation levels. RT-PCR was used to analyse TGF1 and RASAL1 gene expression levels. Cataract control HTF cells were cultured under hypoxic conditions (1% O2) and gene expression levels were compared with HTFs cultured under normoxic conditions. PXFG HTFs were treated with 5-Azacytidine, a DNA methyltransferase inhibitor and analysed for gene expression.

Results:
MeDIP analysis showed an increase in RASAL 1 promoter methylation levels in PXFG compared to cataract controls ($P \leq 0.05$). A similar increase was also seen in cataract control cells cultured under hypoxic conditions compared cells from the same donor under normoxic conditions. The expression of anti-fibrotic RASAL1 was decreased ($p \leq 0.05$) and pro-fibrotic TGF1 was increased in PXFG ($P \leq 0.01$) compared to cataract controls. Control HTFs cultured in hypoxic conditions were seen to have a similar pro-fibrotic phenotype to PXFG HTFs compared to HTFs cultured in normoxia. Treatment of PXFG HTFs with a methylation inhibitor restored gene expression.

Conclusions:
These results indicate that aberrant methylation mediates fibrosis in PXFG, possibly induced by hypoxia. The reversal of these epigenetic changes is a possible therapeutic target.

Circadian Regulation of the Inner Blood Retinal Barrier: A Paradigm for Dry Age-Related Macular Degeneration Development

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Royal Victoria Eye and Ear Hospital Research Foundation, Dublin; Smurfit Institute of Genetics, Trinity College, Dublin.

Objectives:
Age-related macular degeneration (AMD) is divided into an atrophic (dry) and neovascular (wet) form. The disease aetiology is yet to be fully elucidated and no effective treatment exists for the end stage of dry AMD, known as geographic atrophy. We have shown that the inner blood retinal barrier (iBRB) cycles in a circadian manner in young healthy adult controls. The tight junction protein claudin-5 which cycles in a circadian manner, is thought to be central to the maintenance of iBRB integrity. We performed a case control study to determine the circadian effect on iBRB kinesis in AMD.

Methods:
Participants with dry AMD (n=19) and age matched controls (n=12) were recruited. The Munich Chronotype Questionnaire was used to establish participant chronotype. Participants were assessed using optical coherence tomography (OCT) and fundus fluorescein angiography (FFA). Mid phase fluorescein signal in the macula was quantified using novel Fluorescent Ocular Vascular Analysis Software and analysed as per the Early Treatment Diabetic Retinopathy Study (ETDRS) grid. Fluorescein signal was compared between the morning and the evening for each participant, a proxy for circadian effect on iBRB integrity. Recruitment of participants is ongoing.

Results:
There was an increased fluorescein signal throughout all areas of the macula in the evening compared to the morning in young healthy controls (n=30, P =.033). The evening versus morning fluorescein signal differential was reduced and therefore not significant in AMD participants (P =.78). The fluorescein signal appears to persist in the macula longer in AMD participants compared to young healthy controls.

Conclusion:
These findings suggest that the iBRB is highly dynamic, with increased fluorescein permeability in the evening compared to the morning in young healthy controls. The circadian associated fluorescein signal differential present in young healthy controls appears attenuated in age matched controls, with no significant difference present in AMD subjects. This suggests that the circadian dependant regulation of iBRB kinesis decreases with ageing and may be arrested in AMD. We suggest that this disruption may be due to decreased or dysfunctional claudin-5 resulting in a more open, "leakier" iBRB, which may be one of the early initiating factors in AMD pathogenesis.

"Guardian of the Genome" p53 Dysregulation in Glaucomatous Lamina Cribrosa Cells.

McElhinney K, Irnaten M, Wallace D, O'Brien C.
Institute of Ophthalmology, Mater Misericordiae University Hospital, Dublin.

Objectives:
Primary open-angle glaucoma (POAG) is an age-related fibrotic condition and a leading cause of irreversible blindness worldwide. POAG-related damage is initiated within the lamina cribrosa (LC), driven by the pathological activation of resident LC cells. LC cells bear striking similarities to proliferative, apoptotic-resistant myofibroblasts responsible for organ fibrosis. Myofibroblast dysregulation is linked to proteasomal degradation of p53 by the E3-ubiquitin-protein ligase MDM2 (mouse-double-minute-2) thus negating p53's important regulatory role. This project aims to evaluate the role of p53, MDM2, and the ubiquitin-proteasomal pathway in glaucomatous LC cells.

Methods:
Primary human normal LC (NLC) and glaucoma LC (GLC) cells (n=3 donors per group) were cultured under standard conditions and treated for 48hours with 10 μM p53-MDM2 interaction inhibitor RG-7112 (Abcam). The p53-MDM2-ubiquitin-proteasomal pathway was analysed by real-time polymerase chain reaction (qRT-PCR) for gene expression and protein levels via western blotting. To assess cellular proliferation/viability we utilised colorimetric MTS/MTT assays respectively.

Results:
MDM2 transcription levels were significantly elevated in GLC cells (1.00 ±0.13) versus NLC cells (0.89 ±0.08) ($p<0.01$) while p53 transcription levels were equivocal between GLC (0.89 ±0.08) and NLC (0.87 ±0.08) groups ($p=0.458$). p53-MDM2 inhibitor RG-7112 treatment caused a significant increase in transcription levels of MDM2 (1.17 ±0.04)($p<0.001$) and p53 (0.95 ±0.06)($p<0.01$) in GLC cells. Western blotting analysis showed a significant decrease in p53 protein expression in GLC cells (0.06 ±0.03) versus NLC cells (0.72 ±0.07)($p<0.001$) and a significant increase in MDM2 protein expression levels in GLC cell (1.04 ±0.03) versus NLC cells (0.59 ±0.05)($p<0.001$). Interestingly, RG-7112 treatment significantly increased p53 protein expression in treated GLC cells (0.73 ±0.12)($p<0.05$) and significantly decreased MDM2 protein expression in treated GLC (0.57 ±0.16)($p<0.05$).
MTS assay demonstrated GLC cells had significantly increased cellular proliferation rates (1.83 ±0.22) versus NLC cells (1.60 ±0.22) after 48 hours incubation ($p<0.05$). RG-7112 treatment significantly decreased cellular proliferation in GLC cells (1.43 ±0.26)($p<0.01$) while having no significant effect on treated NLC cells (1.78 ±0.19)($p=0.069$). MTT assay showed equivocal cellular survival rates in NLC and GLC cells ($p=0.345$) with RG-7112 treatment having no adverse effect on cellular viability of NLC cells ($p=0.444$) or GLC cells ($p=0.471$).

Conclusions:
Our data suggests that cellular proliferation and the ubiquitin-proteasomal pathway is significantly dysregulated in GLC cells with MDM2 led p53 protein degradation negatively impacting its key role as "guardian of the genome". Targeting the p53 ubiquitin-proteasomal pathway in lamina cribrosa fibrosis may lead to future novel therapeutic interventions.

Autotaxin: A Fibrosis Target in the Lamina Cribrosa in Glaucoma

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UCD Clinical Research Centre, Mater Misericordiae University Hospital, Dublin.

Objectives:
Autotaxin, an enzyme that produces extracellular lysophosphatidic acid (LPA), has been found to play a key role in pulmonary fibrosis. Overexpression of autotaxin increases LPA signalling through its G-protein coupled receptors, resulting in fibroblast migration, cell proliferation and deposition of extracellular matrix components. Fibrosis is central to the pathogenesis of glaucoma, with extracellular matrix remodelling observed in both the trabecular meshwork and in the lamina cribrosa (LC) of the optic nerve head. Autotaxin levels are increased in the aqueous humor in glaucoma, and autotaxin inhibition has been found to decrease intraocular pressure. We wished to assess the role of autotaxin in the fibrotic changes observed in the LC in glaucoma. As promoter hypomethylation has been shown to regulate autotaxin expression in liver fibrosis, we additionally wished to assess autotaxin promoter methylation status in the LC.

Methods:
We cultured primary human LC cells from age-matched glaucoma and control patient donors. Quantitative real-time PCR was carried out to determine expression of components of the LPA axis including autotaxin and LPA receptors in glaucoma LC cells compared to controls. MTS colorimetric assay was used to measure proliferation rate of normal and glaucoma LC cells. We treated LC cells with an autotaxin inhibitor S32826 and assessed change in expression of fibrosis genes and change in cell proliferation rate. Autotaxin promoter methylation status in LC cells was determined through methylated DNA immunoprecipitation.

Results:
Expression of LPA receptors was increased in glaucoma compared to normal LC cells. Autotaxin was significantly overexpressed in glaucoma LC cells. Treatment of glaucoma cells with 1 uM S32826 decreased expression of collagen I and fibronectin, which were upregulated in glaucoma LC cells compared to normal. The cellular proliferation rate was higher in glaucoma compared to controls. 1uM S32826 treatment decreased proliferation of both normal and glaucoma LC cells. The autotaxin promotor region was found to be hypomethylated in glaucoma LC cells.

Conclusions:
There appears to be a role for autotaxin and LPA signalling in the LC in glaucoma, similar to studies in the trabecular meshwork. Promotor hypomethylation may contribute to the overexpression of autotaxin in the LC in glaucoma. Inhibition of autotaxin reduces cell proliferation and ECM expression in glaucoma LC cells. Autotaxin represents an attractive pharmacological target for fibrosis in glaucoma.

PAPER SESSION

Wednesday 18th May - 9am

Differential Experience-Dependent Plasticity of Form and Motion Mechanisms in Anisometropic Amblyopia

Chen S[1], Chandna A[2], Nicholas S[2], Norcia AM[3].
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[3]Dept. Psychology, Stanford University, California.

Objectives:
To measure neural responses associated with form and motion processing in children with anisometropia before and after treatment with spectacles and occlusion.

Methods:
Prospective, case-control treatment study. Ten children with anisometropia and amblyopia and 16 age-matched visually normal children participated. Steady-State Visual Evoked potentials (VEP) were recorded from electrodes over occipital cortex. The visual stimulus comprised a horizontal bar grating into which Vernier offsets were introduced and withdrawn periodically at 3.75 Hz. The VEP amplitude at 3.75 Hz (first harmonic/1F) and 7.5 Hz (second harmonic/2F) were recorded to index the sensitivity of form/position-sensitive vs motion/transient-sensitive neural populations, respectively. Response amplitude at 1F and 2F were recorded over a series of 10 logarithmically spaced offset sizes before and after treatment. Main outcome measures are VEP amplitude vs displacement functions, inter-ocular response amplitude differences.

Results:
After spectacle adaptation, form/position-sensitive responses in the dominant/ less ametropic eye of the children with anisometropia were larger than those of controls and responses in the more ametropic eye were smaller than those of controls. Motion-transient responses were equal to those of controls in the less ametropic eye, but were smaller than controls in the more ametropic eye. After treatment, responses in both eyes and at 1F and 2F did not differ from those of controls.

Conclusion:
Form and motion responses are differentially susceptible to neural deprivation via optical blur. Form responses are more plastic than motion responses in previously untreated children with anisometropic amblyopia. Most treatment effects occurred above threshold range suggesting some treatment effects are not detected clinically.

Is Point Wise Analysis of the Humphrey Visual Field Feasible as a Primary Outcome in Idiopathic Intracranial Hypertension?

Ní Mhéalóid Á, Mollan SPR, Miller NR, Crabb D, Wall MJ, Sinclair AJ et al.
University Hospitals Birmingham, Queen Elizabeth Hospital, Birmingham.

Objectives:
Using the Idiopathic Intracranial Hypertension Weight Trial (IIH:WT) data, this study aimed to determine if point analysis of the Humphrey visual field (HVF) could be more informative than the perimetric mean deviation (PMD) as an IIH trial outcome measure.

Methods:
IIH:WT was a randomized controlled trial that recruited 66 people with active IIH (mean ± standard deviation age 32 ± 7.8 years). Event-based analysis using a pointwise analysis of the numerical sensitivity data was performed. The number of participants that would be eligible for analysis was calculated when the data were enriched to reflect a medically treated cohort defined as a PMD between -2dB to -7dB.

Results:
The HVF 24-2 mean ± standard deviation PMD in the worse eye was −3.5 ± 1.1dB, (range, −2.0 to −6.4dB), and point sensitivity showed a preference for peripheral and blind spot locations. Those points between 0 and -10dB demonstrated negligible ability to improve compared with those between -10dB and -25dB. In evaluating feasibility for a medical intervention trial, 346 points were available for analysis between -10dB and -25dB bilaterally compared with 4123 in baseline sensitivities of 0 to -10dB.

Conclusion:
Mildly affected baseline sensitivities were unlikely to show considerable change over 24 months. There were fewer points available for analysis and greater variability if moderately affected baseline points were chosen. If point analysis was used as an outcome measure in a medical intervention trial, the majority of points would not demonstrate clinically meaningful change, thus offering little advantage over PMD.

Improving Quality of a Claiming Process for Paediatric Spectacles: Results of a Regional Healthcare Collaborative Initiative

Krezel A.K., McGroarty M, Kerins F, Mullaney P.
Ophthalmology Department, Sligo University Hospital & Community Healthcare Organisation, Sligo, Community Ophthalmic Service, Donegal, Sligo & Leitrim.

Objectives:
Dysfunctionalities of a current paediatric pathway for claiming of optical appliances constitute an underrecognized problem in Irish primary care. We established what current practice is and what are the bottlenecks of the claiming process to offer an action plan to address identified issues.

Methods:
A retrospective review of paediatric appliances claims from 2019 from the North West of Ireland was conducted. Multiple Plan, Do, Study and Act cycles involving meetings, phone calls and a brief survey were implemented to develop a roadmap to the process improvements.

Results:
In our analysis, we included 1426 paediatric optical claims from Sligo and Donegal area with more than three quarters of them (1123, 78.75%) originating from children aged 4-12 years old. Eight areas of the process main inconsistencies were revealed: patient eligibility, validity of the claiming voucher, useful contacts, spare pairs and repeated prescriptions, special requirements, choosing correct voucher value and others. Healthcare Service Executive (HSE) relevant stakeholders identified illegible handwriting and insufficient form content as contributing factors and explored potential improvement solutions. As a consequence, an improvement roadmap (encompassing the form and guidelines updates, digitalisation and local process harmonisation with national payment mechanisms) was formulated and implemented.

Conclusion:
This regional collaborative effort to improve paediatric optical appliances claiming system has a potential to transform the way ophthalmic care is provided and contribute to more appropriate distribution of healthcare resources.

The Ophthalmic Care of Children with Intellectual Disability

Stephenson K, Stephenson G, Comer G.
Galway University Hospital, Galway.

Objectives:
To assess the clinic activities involved in the paediatric ophthalmic care of children with intellectual disabilities (ID). To assess the ocular pathology, assessment techniques, and therapeutic outcomes for children with ID.

Methods:
Retrospective chart review and audit of all paediatric ophthalmic appointments 2021. Assessment of systemic and ophthalmic diagnoses with quantification of vision and refractive error. Review of examination techniques and clinic setup to facilitate appropriate examination.

Results:
Four cohorts were assessed: trisomy 21 (T21, n = 126), autism spectrum disorder (ASD, n = 75), cerebral palsy (CP, n = 23) and 'other' (n = 73, aneuploidy, microdeletions, etc.) comprising 26% of all paediatric ophthalmology appointments. Examination under oral midazolam sedation was required for 29 children and 3 required GA. Modified assessment techniques: e.g. home dilation, multiple visits, dedicated paediatric ID clinics, age/intellect appropriate acuity measurements were employed. Single appointments were standard (80.3%); however, 17.2% and 2.5% required 2 and 3 clinic visits respectively. Refractive error was treated in 83% of T21, 50% of ASD, and 33% of CP. Strabismus was identified/treated in 23% (T21), 18.5% (ASD) and 42.9% (CP). Structural pathology was uncommon: 12% (T21), 5.2% (ASD), and 19.1% (CP).

Conclusions:
Although representing only 25% of paediatric ophthalmic appointments, children with ID have significant treatable pathology that requires adequate preparation including special clinic approaches and expert clinicians.

Conjunctival Melanoma: Analysis of Risk Factors and Outcomes over 12 years at RVEEH

Greene A, Murphy T, O'Neill V, Horgan N.
Department of Ophthalmology/Pathology, Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
To identify the risk factors of conjunctival malignant melanoma which predict local recurrence, distant metastasis, exenteration and mortality.

Methods:
All cases of conjunctival melanoma treated in the Royal Victoria Eye and Ear Hospital from 2009 – 2021 were analysed (n=18). The clinical parameters of the patient, tumour and treatment were analysed in relation to their risk of local recurrence, distant metastasis, exenteration and death using multivariate analysis on SPSS version 24™.

Results:
The Kaplan-Meier estimate of local recurrence was 22.22% at 1 year, 38.89% at 5 years and 44.44% at 10 years. The mean number of recurrences per patient was 1.33 (median 0.5). 9 (50%) patients had no recurrences, 11.11% had one, 2 patients (11.11%) had 2 recurrences and 5 patients (27.78%) had ≥3 recurrences. According to multivariate analysis, female gender was predictive of local recurrence (p=0.03).

Tumour metastasis occurred in 5.55% of patients at 1 year, 16.67% at 5 years and 22.22% at 10 years. Metastasis were initially to the regional lymph nodes in 3 cases (75%), then to the larynx in 1, the liver in 1, and disseminated in 1 case.

Tumour related death occurred in 11.11% patients at 1 year, 16.67% at 5 years and 10 years. Risk factors for death on multivariate analysis included being >65 years of age at diagnosis (P=0.03) and VA ≥1.0 LogMAR (0.70 vs. 1.92, p=0.02). The tumour location was less likely to be on the bulbar conjunctiva and more likely to present at the palpebral conjunctiva or caruncle.

In terms of surgical management, those requiring extenuation had a significantly higher melanoma thickness on pathological

analysis (1.8mm vs. 5.2mm, p=0.03), and poorer VA in the affected eye (LogMAR 1.9 vs. 0.7, p=0.03). Initial surgical approach appears important. Patients who had initial biopsy at another unit prior to referral were more likely to develop eventual tumour recurrence, metastasis and death, however our sample size was not large enough to establish statistical significance.

Conclusions:
Conjunctival melanoma is a potentially deadly tumour. In this study, metastasis were detected in 22.22% of patients and death occurred in 16.67% at 10 years. Meticulous surgical planning, with the initial excisional biopsy carried out at the tertiary treatment unit where possible may improve outcomes. Particular attention should be paid to the palpebral conjunctiva and caruncle on post-operative surveillance.

What is the Prevalence of True Papilledema Among Patients Referred to the Eye Casualty Service for Suspected Disc Swelling?

Moran B, Greene A, Cassidy L.
Department of Ophthalmology, Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
Optic disc swelling is a challenging presentation with a wide differential including potentially life-threatening diagnoses alongside benign causes. The rate of referrals have increased in recent years. This creates a significant workload for eye casualty services as these patients often require an extensive workup including multimodal imaging (OCT, AF, neuroimaging) to exclude intracranial pathology. We wished to establish what proportion of the patients referred, had true papilloedema.

Methods:
We undertook a retrospective data collection of all patients who attended RVEEH with suspected disc swelling between 01/01/20 and 01/01/22 inclusive.

Results:
36,016 patients attended the eye casualty service over this period. Of these patients, 215 were referred with suspected disc swelling. 64.7% of these patients were referred by the Optometrist, 17.6% by the GP and 17.6% by another hospital. 70.05% of the patients were female and the average age was 34.5717.18 years (range 5 – 77).

35.55% had a normal ocular examination or had pseudopapilloedema due to ONH drusen, crowded or tilted discs, myelinated nerve fibres, amblyopia or high myopia. 51.1% had disc swelling due to optic neuritis, hypertensive retinopathy and AION. Only 13.3% had 'true' papilledema with 4.4% having intracranial pathology on neuroimaging. Of those sent for neuroimaging, the pick-up rate of pathology was high.

Conclusions:
Over a third of those referred have benign causes to their disc appearance. However, there are a significant proportion that also have true disc swelling. Thorough, systematic investigation and workup is required to ensure life threatening pathology is not missed. The majority of cases can be discharged following assessment with OCT, AF and B-scan. Efforts should be made to limit exposure to radiation and anaesthetic where possible, particularly in Children. Of those requiring neuroimaging following these initial investigations, the pick-up of pathology is high.

Retinopathy Screening in the Republic of Ireland in 2021

Chamney S on behalf of the ROP screening group
Children's Health Ireland @ Crumlin and Temple Street, Dublin.

Objectives:
The number of infants born at risk of developing ROP (less than 31 weeks gestational age or less than 1500grams birth weight) has been gradually increasing. The survival rates of extremely premature infants also had increased. These factors and changes in neonatal practices resulting in early discharge home of infants has resulted in a shift from inpatient to

outpatient screening.The objective of this audit was to to look at ROP screening episodes taking place across the country in 2021and to identify the location of these reviews.

Methods:
All screening ophthalmologists we asked to submit the number of ROP screening episodes and the location of each of these episodes.

Results:
2501 screening episodes took place across 21 locations by 19 screeners. 750 (30%) of these episodes took place as outpatients. The location of the outpatient screening episodes varied across the country from ophthalmology clinics to neonatal units. Outpatient screening represents a significant number of the screening events taking place across the country.

Conclusions:
We as a group aim to use this data to continue to streamline service across the country with the development of a national ROP coordinator role based in the treatment hub of Children's Health Ireland @ Crumlin and Temple Street.

Five Year Trends in New Blind Registrations in Ireland (2017-2021)

Murphy R, Hughes E, Doyle A.
Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
The National Council for the Blind of Ireland (NCBI) maintain a single, national, centralised database of blind and visually impaired individuals in the Republic of Ireland. Two previous reviews of the registry were conducted in 1996 and 2003. The aim of this study was to assess the composition of new registrations between 2017 and 2021, and identify trends over the last 5 and 25 years.

Methods:
Analysis of national dataset for new registrations to NCBI from 2017 to 2021, including visual function classification level and diagnosis of contributary eye condition. Visual function criteria level 3 (best corrected visual acuity less than or equal to 6/60 in the better eye, or visual field reduced to 20 degrees or less) meets criteria for registration as blind.

Results:
Ten thousand, one hundred and twenty-seven individuals were referred to the NCBI from 2017-2021, of whom 1,873 (18%) met the criteria for blind registration. The numbers of new registrations increased steadily over 2017-2019 (341, 406, 461) prior to a reduction during 2020 and 2021, likely secondary to the global COVID19 pandemic (268, 397). Where a diagnosis was recorded and specified (86%), the three most common aetiologies in 2021 were age related macular degeneration (ARMD) (43%), glaucoma (14%) and retinitis pigmentosa (6%). Total sight loss (No Light Perception) was only seen in 5% of individuals registered as blind. For 25 years, ARMD and glaucoma have consistently been the two most contributory pathologies.

Conclusions:
Despite ongoing advances in treatment options for blinding conditions, and improvements in service delivery, their impact is likely being offset by an increasing aged population, as there continues to be a significant number of blind and visually impaired individuals in Ireland. AMD and Glaucoma continue to be the largest contributors to this burden of sight loss, emphasising the importance of research into their pathogenesis, future treatment strategies, and national care pathways.

PAPER SESSION

Wednesday 18th May - 12pm

Iluvien Use for Posterior Uveitis and Cystoid Macular Oedema: Real-world Experience in RVEEH

Power B.
Cornea, Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
To audit our experience with the Iluvien implant for the treatment of posterior segment uveitis and inflammatory cystoid macular oedema

Methods:
We performed a retrospective audit of all Iluvien injections administered in the RVEEH since the drug was approved for use. Data collected included: age, sex, indication, medications at time of administration, baseline and follow up visual acuity, intraocular pressure, presence of ocular inflammation, disease activity and central macular thickness on OCT. Our primary data points were 6 months and 1 year. Patients were excluded if they had significant gaps in their data.

Results:
Data was available for 17 patients, 14 of whom had complete data at 6 months and 9 patients who had complete 1 year data. 13 of 14 patients were quiet at 6 months and 9 of 9 patients at 12 months. The average CMT at listing was 338, with averages of 277 and 228 at 6 and 12 months respectively. Intraocular pressure increase was detected in 5 eyes; 4 were treated successfully medically and one was treated successfully with trabeculectomy. The Iluvien implant migrated into the AC in one eye.

Conclusions:
Iluvien implants are a relatively new therapy for the treatment of posterior uveitis and CMO. An efficacy lasting up to 36 months was reported in the RCT leading to licensing. From our initial review, we are satisfied with disease control of 92% (13/14) at 6 months at in 9 of 9 patients at 12 months. Complication rates were similar to those reported in the RCT. Further follow up is required to assess the real-world duration of efficacy of Iluvien.

Development and Launch of the National Uveitis Registry (NUR) of Ireland.

Mohammed M, Murphy C.C.
Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
The aim of this paper is to describe the design, scope and objectives of the recently launched National uveitis Registry and to present our experience of adopting the registry at the Royal Victoria Eye and Ear Hospital (RVEEH) during a 6-month pilot phase.

Methods:
The NUR is a GDPR compliant, cloud-based Clinical Quality Registry which is available for use by all ophthalmologists in Ireland who manage uveitis. During a pilot phase from November 2021 to May 2022, clinical and demographic data of patients with uveitis and scleritis attending Professor Murphy's inflammatory eye disease clinic were recorded on the registry. Baseline and periodic data are recorded, allowing the prospective, longitudinal analysis of clinical profiles and outcomes of patients with uveitis and scleritis as well as the epidemiological characteristics of these diseases in Ireland.

Results:
Over 100 patients have provided informed consent to participate in the National Uveitis Registry so far, with approximately 8-10 new patients being added to the registry per week from a single clinic. The registry is formatted to support limitless numbers of patient entries to enable us to identify epidemiological trends, audit treatment outcomes and deliver effective clinical and health service research with the overarching aim of improving outcomes for patients with uveitis.

Conclusions:
A highly effective and comprehensive national uveitis registry has been created and implemented in practice at RVEEH. All ophthalmologists involved in the management of uveitis and scleritis are now invited to contribute their patients' data to the registry so that together we can deliver a state-of-the-art uveitis service to the people of Ireland which achieves the very best in clinical outcomes for our patients.

Non-Attendance Rates of Patients Attending Treatment Centres for Diabetic Retinopathy

Kelly SR, Pandey R, Combes A, Murphy C, Kavanagh H, Fitzpatrick P, Mooney T, Kearney P, Crabb DP, Keegan DJ.
Mater Retina Research Group, Mater Misericordiae University Hospital, Dublin,

Objectives:
To determine the patient and clinic level factors that are associated with non-attendance among patients attending treatment centres for diabetic retinopathy. A secondary aim was to understand the transition from treatment centres back to community screening after discharge.

Methods:
Mixed-effects models were used to estimate the influence of factors known to be associated with screening level non-attendance to determine if they are relevant for an analysis of treatment centres and discharges. A total of 81,106 appointments from 16,089 patients over seven years were included in the analysis.

Results:
The overall rate of non-attendance within the treatment centres was 0.13 with the highest rates of non-attendance (0.21) found in patients who were referred for non-diabetic eye disease (NDED). Morning appointments had lower rates of non-attendance when compared to afternoon appointments (OR: 0.55). One in four discharges from the treatment centres were for repeated non-attendance. Although patients with NDED had the highest rates of non-attendance, they had the lowest risk of presenting to the screening service with a worse grade after discharge.

Conclusions:
This study is the first to explore the non-attendance rates of patients attending treatment centres for DR on a national scale. Several factors that are linked with higher rates of non-attendance have been identified. Of patients who are discharged back to the screening programme, most are not at risk of worsening DR grades, although patients with active proliferative retinopathy are an exception. Future work should aim to increase the retention rate of this subpopulation.

Assessment of Diabetic Retinal Screening Programme referrals to Diabetic Retinal Treatment Clinic in Mater Misericordiae University Hospital for the Purpose of Evaluating Pigmented Retinal Lesions as Non-Diabetic Retinal Disease

Nahar Dr R, Barac Dr C, and Keegan Prof D.
Diabetic Retinal Treatment Centre, Department of Ophthalmology, Mater Misericordiae University Hospital, Dublin.

Objectives:
To evaluate adherence to DRS guidelines for referring pigmented retinal lesions (PRL), the quality of the guidelines, and the need for an upgrade in referral criteria.

Methods:
An observational data-based audit was undertaken. This assessed 98 patients screened between 05/07/2017 and 04/03/2020 and referred to DRT clinic for NDED PRL. The data was collected by evaluating referral notes and images in the Optomize system and reviewing MMUH patient notes. Information was input into Excel Performa sheet. The audit ended on the 28th of January 2022.

Results:
Of the 98 cases audited 74 patients have been referred respecting the referral criteria (PRL > 3 disc diameter and/or orange pigment). 20 were referred on the basis of other suspicious observations: 16 for PRLs next to optic disc, 3 PRLs at the macula, 1 PRL next to disc – DRS unable to grade DR due to cataract (but referred only for PRL). 4 patients did not fulfil referral criteria nor had any reasonable grounds for referral that could be found in the Optomize notes. Of the 74 patients referred respecting DRS criteria 5 were seen in DRT and were not further referred towards a retina clinic (either deemed suitable to be discharged to DRS or kept in DRT for diabetic retinopathy), 1 was referred directly to the ocular oncology service in RVEEH and 68 were referred to the local retina clinic for monitoring. Of this last group of patients, 25 had already been seen in the retina clinic at the time of audit with 2 patients being seen/treated with the retina clinic for different pathology, 1 patient having been deemed suitable for discharge to DRS and 1 patient having been referred to the ocular oncology service for evaluation. Of the 24 patients referred not respecting DRS criteria 14 were deemed as needing referral towards the retina clinic for continuous monitoring.

Conclusions:
- Most of the patients referred to DRT for PRL were deemed in need of referral to the local retina clinic (91.89% of those respecting referral criteria and 58.33% of those not respecting referral criteria as well)
- Through this pathway, patients are referred to the ocular oncology clinic (1 patient directly from the DRT clinic and 1 patient reviewed first in the retina clinic)
- A recommendation of modifying the standards for quality assurance in Diabetic Retinopathy Screening to include more comprehensive criteria for RPLs referrals should be considered.
- Adding lesion margin proximity within 3 mm of the optic disc to the criteria sounds reasonable compared to standard evidence and is possible to assess by coloured fundus images.
- Adding another criteria for PRLs referrals (sub retinal fluid and lesion thickness) would necessitate availability and access to more specialised imaging equipment like OCT or ocular ultrasound. Digital surveillance programme may play a role in assessing sub retinal fluid with OCT done over the lesion and could provide a more comprehensive impression for priority of the referral.

Report on Multidisciplinary team approach on Genetic Service for Inherited Retinal Diseases

Zhu J, Turner J, Stephenson K, O'Byrne J, Burke T, Dockery A, Howard S, Whelan L, Jane Farrar G and Keegan D.J.

[1]Mater Clinical Ophthalmic Genetics Unit, The Mater Misericordiae University Hospital, Dublin;
[2]Next Generation Sequencing Laboratory, Pathology Department, The Mater Misericordiae University Hospital, Dublin;
[3]The School of Genetics & Microbiology, Trinity College, Dublin.

Objectives:
In September 2018, a new Clinical Genetic service, consisting of a clinical geneticist and genetic counsellor was set up for Target 5000 patients. The aim of the service is to act as a conduit to safely and efficiently bring genetic testing, initially performed in a research setting into a diagnostic setting where patients are explained their results and clinical action becomes a possibility. This is primarily achieved by monthly multidisciplinary meetings (comprised of Clinical genetics team/ Ophthalmologists/bioinformaticians/scientists) where clinical findings, family history and genetic reports are reviewed followed by weekly clinics where patients and their families are relayed the information contained within those reports.

Methods:
Patients enrolled on the Target 5000 study who had a genotype report were discussed in monthly MDTs.

Results:
357 patients have been genotyped so far and their genetic reports reviewed by the Clinical Genetic Service.

38 MDT meetings taken place to date with over 200 pedigrees discussed.

A clinically actionable variant is one that is a Class 4 'likely pathogenic' or Class 5 'Pathogenic'. Clinically actionable means that it can be used as a predictive test for other family members, a prenatal test or for entry onto Clinical trials. Of the 222 reports evaluated to date, 30 patients have had the reported variant classification challenged by the Clinical Genetics team with approx 50% being successfully challenged, resulting in an altered classification.

34 patient samples were also returned to the diagnostic laboratory for a full new gene panel evaluation as it was clear that the genetic report did not explain their condition.

Conclusions:
This is the first Clinical Genetic Service set up specifically for Inherited Retinal Diseases in the Republic of Ireland which is hoped will develop and expand into the future.

Through MDT discussions and further genetic sequencing, we have upgraded x% of the variants from Class 3 into Class 4 or 5.

Our service aims to be embedded in a full MDT so that patients can be clinically evaluated before genetic testing takes place. This is in keeping with European guidelines on the management of rare disease patients.

The Impact of the COVID-19 Pandemic on the Number of Cases and Clinical Characteristics of Rhegmatogenous Retinal Detachment in a Tertiary Referral Centre.

Coman A, Whitlow S, Kilmartin D.
Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
Rhegmatogenous Retinal Detachment (RRD) is a serious sight-threatening, life-altering ocular emergency. It develops following a retinal 'break' with associated inflowing of fluid, resulting in the separation of the neurosensory retina (NSR) from the underlying retinal pigment epithelium (RPE). The incidence of RRD is estimated to be 1 in 10,000 in Europe. Our aim was to investigate the impact of the COVID-19 pandemic and the associated restrictions and lockdowns on the number and clinical characteristics of RRD presentations to a tertiary eye casualty in Dublin.

Methods:
A retrospective chart analysis on RRD patients in a tertiary eye casualty in Dublin were analysed. The period examined was the 1st March to 31st May inclusive, comparing pre-COVID-19 pandemic year 2019 with COVID-19 pandemic years 2020 and 2021.

HIPE patient lists and theatre log-books for this period were analysed for patients undergoing Vitrectomy Surgery and after subsequent chart review of 388 charts, we isolated 116 cases of primary RRD repair. We excluded tractional and exudative retinal detachments and children under the age of 10 years. Patient demographics, date of surgery, pre and post-operative visual acuity, co-pathology, lens status, foveal status, extent of retinal involvement and presence of PVR at presentation were documented.

Results:
A total of 116 (n=116) subjects of primary RRD repair were included in this study, with 46 cases included from the examined period in 2019, 32 cases in 2020 and 38 cases in 2021. The higher rates on RRD occurrence are documented in the male population, which remained consistent across the three-year span (2019 – 29 (61.7%), 2020 -22(68.8%), 2021 – 24(63.1%) and average male age was 57.8 years of age. There was no significant difference noted across the three years in rates of occurrence in phakic patients (2019 – 37 (80.4%, 2020 – 25(78.5%) and 2021 29(76.3%)).

In the 2019 group (n=46), 21 cases (45.7%) had macular involvement. In 2020 (n=32), 21 (65.6%) cases and in 2021 (n=38), 21 (50%) cases had macular involvement. Of the 2019 patients who had macular involvement RRD, 52% of patients had significant improvement (better than 6/36) in post-operative visual acuity (VA) - (patients pre-op with poor (worse than 6/36) visual acuity was 17(81%) and patients post-op with poor visual acuity was 6(28.6%)). In the 2020 group of patients with macula involvement RRD, there was a 38.1% improvement of VA, while in 2021, there was a 47.4% improvement of patient with better than 6/36 VA.

Other factors at presentation included presence of PVR and the number of clock hours involved in the RRD. In relation to PVR, there was no significant difference in grading observed across the three year period (2019 - 9 (19.6%), 2020 - 7 (21.9%) vs 2021 8 (21.1%)). Of note, there was an increase in the numbers of cases presenting with greater than 3 clock hours of retinal involvement (2019 – 29 (63%) vs 2020 – 26 (81.3%) vs 2021 – 34 (89.5%)).

Conclusions:
The COVID-19 pandemic has had a substantial impact on the presentation of patients with primary RRD. There was a reduction in the overall number of patients presenting to eye casualty with primary RRD. Of these patients, a greater percentage presented with macula involvement and were more likely to have a greater extent of retinal involvement at time of presentation.

Outcome of Early Vitrectomy in Endophthalmitis Patients

Hegazy E, Ramasamy P, Doris J.
Waterford University Hospital, Waterford.

Objectives:
The aim of this study is to determine the effect on final visual acuity in patients with postoperative bacterial endophthalmitis who underwent a pars plana vitrectomy on day 3 of diagnosis.

Methods:
A retrospective chart review was performed from March 2015 until April 2022. All patients diagnosed with postoperative bacterial endophthalmitis who underwent a pars plana vitrectomy were included in our study, regardless of pre-operative visual acuity. Information including age, gender, preoperative procedure performed, symptom onset, treatment provided, complications, and pre- and post-vitrectomy visual acuity was collected.

Results:
In total, 19 patients underwent pars plana vitrectomy as part of the management of bacterial endophthalmitis. Of these, 2 patients acquired endophthalmitis after undergoing a vitrectomy procedure and the remaining 17 after either cataract surgery or intravitreal injections. Follow up ranged from 2 weeks to 5 years. Three patients needed a repeat procedure. All patients were given intravitreal antibiotics as part of their management. Final visual acuity was significantly improved following early vitrectomy.

Conclusions:
Early pars plana vitrectomy is a safe and effective treatment option for the management of postoperative bacterial endophthalmitis.

The Natural Evolution and Effect of Covid-19 on Referrals from the Diabetic Retinal Screening Programme 2017 to 2021

Hopkins A, Klis O, Hickey Dwyer M.
University Hospital Limerick, Limerick.

Objectives:
In our unit, anecdotally, we noticed an increase in the proportion of non-diabetic referrals (suspicious discs, cataracts etc.) from the screening programme compared to referrals for diabetic retinopathy. Our questions, were, was this indeed a real effect and if so, what might be the cause? This data set captures two major effects, that of a programme that is maturing and stabilising and perhaps more notably, that of a global pandemic.

Methods:
The diabetic screening programme in our region began in 2014, with a population of roughly 400,000, representing both urban and rural areas. We reviewed the referrals from the years 2017 to 2021, between the months of January and August (allowing for the most up to date data from 2021 to be comparable). We began our analysis in 2017 so as to minimise the effect of the previously undiagnosed diabetic eye disease in the community in the earlier years of the programme. To date we have looked, primarily, at the proportion of non-diabetic retinopathy to diabetic retinopathy referrals in the form of percentages of total referrals.

Results:
Logically, and for the purpose of analysis we considered the years prior to the pandemic separately to those during the pandemic. Pre-pandemic, for these three years there was an increase in non-diabetic referrals year on year from 30% to 35% to 44%. In 2020 the programme halted for several months, and the result was a reduced total number of referrals, this was matched, inversely, by 2021 then being the largest number of referrals to date, presumably as a result of the 'catch up' effect. The proportion of non-diabetic referrals increased again to 51% in 2020 and 48% in 2021. Notably, 48% in 2021 is a highly significant increase compared to 30% in 2017.

Conclusion:
Our hypothesis at the beginning of our retrospective review was correct. There is an increasing trend of non-diabetic retinopathy referrals as a percentage of total referrals in our region. Pre-pandemic this could represent continuing maturation of the screening programme, where less diabetic eye disease is detected each year until a status-quo is reached. During the pandemic however the ratio of non-diabetic to diabetic retinopathy referrals was essentially 1-1. With the closure of opticians, fear in attending clinical settings and cessation of the majority of surgery, it may be that the programme identified pathology that might otherwise have previously been identified and treated by these other routes.

Our results pose many questions; is our system designed correctly and funded adequately to deal with this increased numbers of non-diabetic retinopathy referrals? It also raises ethical issues relating to access to treatment for diabetic versus non-diabetic patients. Continuing analysis will focus on the make-up and nature of these non-diabetic referrals as well as analysis of the proportion of DR referrals going on to receive treatment in our centre. The results of this further analysis will be discussed.

POSTER PRESENTATIONS

ICO Annual Conference 2022

An Uncommon Source of Insidious Ocular Toxicity

O'Leary Dr E, Gasior S, McElnea E.
Ophthalmology Department, Galway University Hospital, Galway.

Objectives:
To increase awareness of the human ocular toxicity associated with the ingestion of a widely available agricultural drug. To provide a concise summary of that small number of previously reported cases of toxicity in humans, for reference as needed in future by others.

Methods:
Closantel is a broad-spectrum anti-helminthic agent. A veterinary drug it is used only in animals – usually cattle, sheep and goats. A 65 years-old gentleman accidentally ingested approximately 1500mg closantel intended for oral administration to his sheep.

His visual acuity deteriorated. Right best corrected visual acuity (BCVA) was 6/30. Left BCVA was 6/24. He could not read any of the Ishihara colour vision plates with either eye. No further abnormalities were noted at ophthalmic clinical examination.

Optical coherence tomography (OCT) showed disruption of the outer retinal layers. Electroretinography (ERG) identified abnormalities in macula and inner retinal function.

He received methylprednisolone 1g daily intravenously for three days and two doses of pabrinex I and II also intravenously. He was discharged to take prednisolone 60mg orally daily and reduce this by 10mg daily every five days thereafter.

Results:
Improvements in his visual acuity followed. Improvements in the appearance of the macula bilaterally at OCT were also noted.

Conclusions:
This case alerts us to the risk with drugs not approved for human use. It indicates the profoundly destructive effect of this drug on humans even when consumed in a very low dose. Prompt treatment with plasmapheresis and/or systemic steroids may be beneficial even in cases where there is a delay in presentation.

Post-Partum Haemorrhage Associated Choroidopathy

Powell S[1], Garrahy D[1], Stephenson K[1], Burke T[1].
Mater Misericordiae University Hospital, Dublin.

Methods:
Case report of a rare Post-Partum hemorrhage associated Choroidopathy

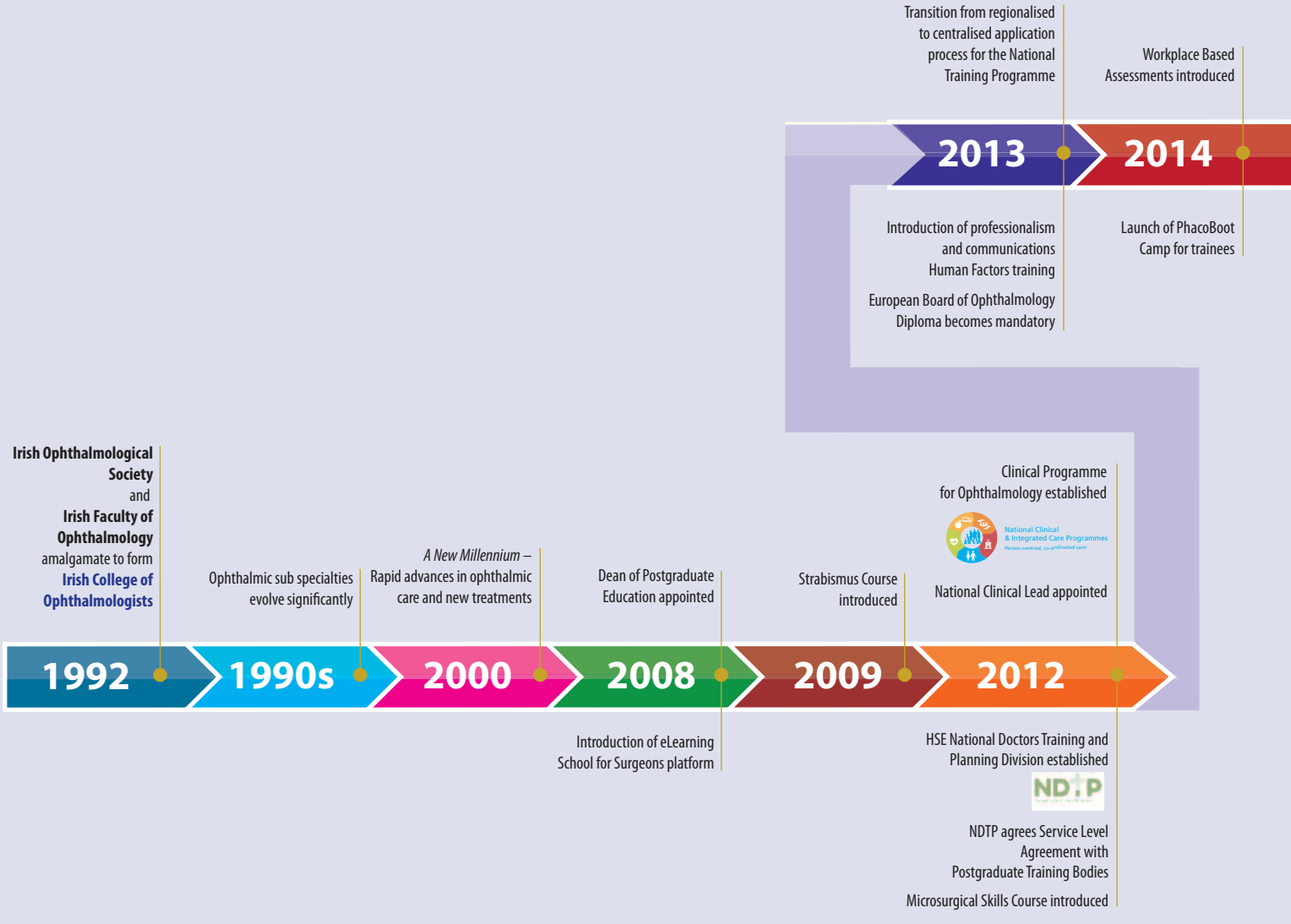
Conclusions:
There are very few published reports of PPH-associated visual loss (PPHAVL) in the literature; one case of non-arteritic anterior ischaemic optic neuropathy and one case of bilateral posterior ischaemic optic neuropathy. We present an unusual case of transient PPHAVL, whereby transient hypovolaemia from PPH led to choroidal hypoperfusion resulting in choroidal effusion. Possible pathophysiological mechanisms include (1) choroidal ischaemia and (2) reduced choriocapillaris oncotic pressure (ie, loss of plasma proteins). The prognosis for visual recovery after PPHAVL is largely unknown; however, prolonged PPH (ie, delayed haemostasis/resuscitation) and underlying vascular risk factors (eg, diabetes mellitus, hypertension and smoking) likely confer a poorer prognosis. In this case, the patient had a complete return to baseline vision likely due to rapid vascular resuscitation and lack of other comorbidities.

Irish College of Ophthalmologists

Eye Doctors of Ireland

Protecting your Vision

National Training Programme Key Milestones Timeline



2015

Introduction of new progression scorecard to enter Higher Training

2016

ICO revises training pathway in line with National Doctors Training and Planning streamlining requirements

International Medical Graduates Training Programme introduced

2017

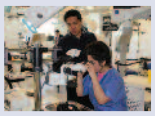
ICO launches National Training Programme in Medical Ophthalmology

Model of Care for Ophthalmology published

2018

Introduction of Leadership Skills Series for higher trainees and newly appointed Consultant Ophthalmologists

Phacoemulsification & Anterior Vitrectomy Simulation Courses introduced



2019

Introduction of structured oral assessments for higher trainees

First Higher Specialist Trainee in Medical Ophthalmology appointed in Royal Victoria Eye and Ear Hospital

ICO Member & Trainee Online Portal launched

New Consultant Medical Ophthalmologist posts approved

ICO expands education to include the Integrated Eye Care Team and launches the National Education Series

INTEGRATED EYE CARE TEAM
ICO National Education Series

2020

8 new Higher Medical Training posts funded by the HSE

New Consultant Medical Ophthalmologists appointed

COVID impact – move to virtual platform for assessments, interviews, and Medical Careers Day

ICO launches National eTutorials Series

National eTutorial Series for Ophthalmology

First sitting of mandatory sub-specialty assessment for Higher Medical Trainees

Introduction of OKAP® Exam for Higher Surgical Trainees

2021

Medical Students Ophthalmology Society of Ireland formed with ICO support

Communication campaign for promotion of Medical Ophthalmology Training

Launch of animated video

2022

Higher Medical Ophthalmology Training expands to new Integrated Eye Care Team sites

ICO launches Masterclass Series for Medical Ophthalmology

Cataractous Intraocular Lens Implants

Keenan J, Desai D, Desai S.
Tarabai Desai Eye Hospital, Jodhpur, Rajasthan, India.

Objectives:
To describe two patients with significant intraocular lens opacification misdiagnosed as cataract at screening in an Indian eye camp.

Methods:
The patient history, clinical profile, and lens characteristics are described.

Results:
The lens type and opacification characteristics of these significantly opacified intraocular lenses are discussed and described.

Conclusions:
Significant intraocular lens opacification can masquerade as cataract in the high volume screening setting of an Indian cataract camp.

Childhood Strabismus Patterns in North-West Ireland, a Ten Years Review

Mohamed M, Mullaney P.
Sligo University Hospital, Sligo.

Objectives:
To asses the hypothesis that the prevalence of exotropia is increasing in comparison to the prevalence of esotropia in a predominantly Caucasian population

Methods:
Retrospective analysis of charts of children who attended the Paediatric Ophthalmology outpatient clinics in Sligo university hospital or the Orthoptists community clinics for the first time between January 2010 and December 2019.

Results:
2805 charts were reviewed, of which 803 fulfilled the inclusion criteria of the study. 81.3% had esotropia. 31.2% of children with exotropia were myopes, while 47.2% were hyperopes. The frequency of exotropia showed an increasing pattern and esotropia showed a decreasing pattern over the study period, the difference in these patterns over the years was statistically significant ($p<0.0001$). The exotropia to esotropia ratio was increasing steadily over the years, in the first year it was 1:7.7 (12.5%), in the fifth year 1:5 (19.7%) and in the tenth year 1:2.8 (35.2%).

Conclusions:
There were indeed increasing numbers of exotropia patients over the years and decreasing numbers of esotropia patients, these changes were statistically significant.

Analysis of Cataract Referrals from Community Optometrists and General Practitioners and Subsequent Clinic Visit Outcomes in a University Hospital in The West of Ireland

Canning P.
Sligo University Hospital, Sligo.

Objectives:
Our primary endpoint is to assess the number of cataract referrals listed for surgery and the number which included that visual loss from the cataract resulted in a detrimental effect on the patient's lifestyle, the patient's willingness to have surgery and that the patient was symptomatic from their cataract. Secondary endpoints include a statistical analysis of what referral details/characteristics increase the likelihood of a patient subsequently being listed for surgery and patient characteristics.

Methods:
This project followed the Declaration of Helsinki. This was an audit of interventions that had already taken place. No active clinical intervention was undertaken, and patient anonymity was preserved thus individual patient consent was not obtained.

Results:
Between February 2021 and February 2022, 198 patients were seen in Mr. PM's cataract clinic after being referred from an optometrist or general practitioner for cataract assessment alone.

Overall, 129 patients (67.5%) were listed for cataract surgery.

47 referrals (23.7%) reported that the cataract was having a detrimental effect on the patient's life and these patients were more likely to be listed for surgery (93.6% vs. 59.2%, p=0.00). 25 referrals (12.6%) reported that the patient was willing to undergo surgery and these patients were more likely to be listed for surgery (88% vs. 64.8%, p=0.02).

130 referrals (65.7%) reported that the patient was symptomatic from their cataract and these patients were more likely to be listed for surgery (81.5% vs. 38.3%, p=0.00).

Conclusions:
We believe that a regional or even national cataract referral form is needed.

Ataxia with a Lot of Retinal Nerves!

Ní Mhéalóid Á, Hepschke J.L, Mollan S.P.
University Hospitals Birmingham, Queen Elizabeth Hospital, Birmingham.

Objectives:
To describe how the neuroophthalmologist can aid in the diagnosis of autosomal recessive spastic ataxia of Charlevoix-Saguenay (ARSACS).

Methods:
A 23 year old male was referred to the neuroophthalmology clinic for gaze evoked nystagmus. He had been previously investigated for lower limb incoordination due to slowly progressive difficulty walking since the age of 8. On neurological examination, he had reduced distal sensation to pinprick, temperature and vibration in his feet. He had a wide-based gait, was unable to perform a tandem gait and had marked heel-to-shin ataxia. Neuroimaging revealed cerebellar vermis atrophy. Electrophysiology testing showed prolonged motor latencies, severely reduced sensory responses and evidence of demyelination as well as secondary axonal degeneration. Following genetic screening for ataxia, polymorphisms in the sacsin molecular chaperone (SACS) and Tyrosyl-DNA phosphodiesterase 1 (TDP1) genes were found and he was finally diagnosed with confirmed ARSACS, at the age of 22.

Results:
Visual acuities were 6/6 in both eyes, with normal colour vision and no relative afferent pupillary defect. Horizontal gaze-evoked nystagmus was present with no oscillopsia. Pursuit and saccadic eye movements were normal.

Fundal examination revealed normal optic nerve heads with pale yellow peripapillary striations radiating from the discs along the major vascular arcades. Optical coherence tomography (OCT) revealed significant thickening of the global peripapillary retinal nerve fibre layer (pRNFL) in both eyes (159µm in the right eye and 142µm in the left eye) and absence of the normal foveal depression.

Conclusions:
Parkinson et al noted that 70.6% of patients with ARSACS had thickened pRNFLs clinically on fundoscopy and 100% had thickening on OCT imaging in comparison to their controls (patients with other forms of ataxia), which had normal or reduced RNFL measurements. They propose a cut off level of 119µm in average global pRNFL thickness, which provides a sensitivity of 100% and a specificity of 99.4% for ARSACS amongst patients affected by ataxia.

OCT imaging can quickly and non-invasively help diagnose this condition with high sensitivity and specificity and is a useful adjunct to neurological examination and genetic testing.

Audit of Outcomes Following Attendance at the CityWest Drive Through IOP Glaucoma Clinic during the COVID-19 Pandemic

Powell S[1], Doolan E[1],Curtin K[2], Doyle A[2],O'Brien C[1,2].
[1]**Department of Ophthalmology, Mater Misericordiae University Hospital, Dublin,**
[2]**Department of Ophthalmology, Royal Victoria Eye and Ear Hospital, Dublin.**

Objectives:
Glaucoma is the leading use of irreversible blindness globally. During the COVID-19 pandemic an enforced reduction in capacity resulted in the deferral of routine outpatient appointments for glaucoma patients. This study analyses patient outcomes following the establishment of a drive-through intra-ocular pressure (IOP) clinic during the COVID 19 pandemic to alleviate increased pressure on the tertiary glaucoma services at Royal Victoria Eye and Ear Hospital (RVEEH) and Mater Misericordiae University Hospital (MMUH) between August 2020 and June 2021.

Methods:
A 1-lane driveway system was established in a marquee on the grounds of City West hotel. IOPs were measured in patients' cars using a hand held iCare100 tonometer. Results were reviewed by a consultant ophthalmologist. At hospital follow up clinic visits IOP was measured using the Goldmann Applanation Tonometer (GAT).

Results:
301 patients of a total of 672 who attended the drive-through clinic have subsequently attended a designated hospital follow-up appointment. In this cohort, the mean drive-through iCare IOP of 19.4mmHg±6.0 was significantly higher (<0.005) than the mean GAT IOP at the pre-drive through clinic visit (16.3mmHg±3.7) and the post drive-through hospital follow-up visit (17.2mmHg±4.1). 226 (75%) patients did not need any treatment change, 53 (18%) required eye drop medication changes, 10 (3%) underwent a laser procedure, 4(1%) required surgical intervention and 8 (3%) were discharged. When patient outcomes were analysed according to IOP grade assigned at the drive-through clinic those with an iCare IOP <21 were significantly less likely to require a treatment change. The cohort with iCare IOP ≥30 were significantly more likely to have a laser or surgical intervention.

Conclusions:
The implementation of a drive through IOP clinic was a safe and effective way to monitor glaucoma patients during COVID 19, and identify those at high risk of poor IOP control or requiring a change in treatment.

Novel Potential Nuclear Genetic Modifier in Leber Hereditary Optic Neuropathy in Wolfram Syndrome-Associated Variant WFS-1 c.799G>A

Quigley C, Stephenson K, Hanrahan G, Cassidy L.
Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
Case Report

Methods:
We prospectively evaluated a cohort of LHON patients and their asymptomatic carrier relatives who had the m.11778G>A mutation (n=20), including clinical history, examination, and genetic sequencing including full mitochondrial genome (37 genes), and a nuclear gene panel relevant to neuro-ophthalmology (56 genes).

Results:
In the cohort of 10 LHON patients (3 female) and 10 asymptomatic carriers (9 female), we identified one patient, a 20-year-old male, who was 100% homoplasmic for the MT-ND4 m.11778G>A mitochondrial mutation, who also had a variant of potential significance, WFS-1 c.799G>A. This patient had bilateral optic neuropathy with reduced vision, Logmar RVA 0.6 and LVA 0.5, that developed over 4 weeks at 19 years old. He did not have diabetes or hearing problems, and his mother was also 100% homoplasmic for the m.11778G>A mutation, but did not carry the WFS-1 and had normal vision.

Conclusions:
In LHON we identified a variant in the gene WFS-1 which has been previously described in a patient with a diagnosis of Wolfram syndrome, which features optic atrophy. This is a novel association in LHON.

Complex Penetrating Eye Injury with Intra-Scleral Foreign Body; Staged Surgical Management

Martini S, McElhinney K, Ahern E, Anthony Cullinane A.
Department of Ophthalmology Cork University Hospital, Cork.

Objectives:
To present our experience of managing a complex penetrating eye injury with resultant excellent visual outcome.

Methods:
A 17 year old male presented to our eye casualty with a metallic intraocular foreign body in his left eye after using a pneumatic drill. On examination of the affected eye there was an irregular full thickness corneal perforation with lenticular fragmentation. Posterior segment examination revealed a dense vitreous haemorrhage with an intra-scleral foreign body at the superior arcade (Optos photos posterior+ OCT macula + Anterior segment photos). CT orbit showed 5x5x5mm metal FB imbedded in the sclera superotemporal in-relation to the optic disc.
He was brought to theatre where his corneal perforation was repaired, he underwent a lensectomy and pars plana vitrectomy. The reflection of the foreign body was visible intra-operatively but it was deep to the retinal pigment epithelium and no purchase of the foreign body was possible with the intra-ocular forceps. Barrier endo-laser retinopexy was applied around the area of the foreign body.

Results:
He was brought back to theatre one week later where the posterior globe was explored via an external approach and the foreign body was removed through the external exit wound. One year later an Artisan lens was placed and his best corrected visual acuity is currently 6/6 in that eye.

Conclusions:
Here we describe our staged surgical management of a young man with an intra-scleral foreign body involving the posterior pole. It was unable to be retrieved via the pars plana approach but was successfully removed via an external approach. The visual outcome was excellent.

Candidaemia and the Eye - Should we Really be Screening Everyone?

Woods B, O'Regan A, McCreery A, Horgan N.
St Vincent's University Hospital, Dublin.

Objectives:
Endogenous ocular involvement is a rare but sight-threatening complication of candida bloodstream infection (BSI). However, a recent systematic review has shown that the prevalence of ocular candidiasis is much lower than previously reported. The Royal College of Ophthalmology and the American Academy of Ophthalmology have released new guidelines that do not recommend routine ocular screening for all patients with candida BSI as was previously advised, rather targeted screening of those at increased risk or those with symptoms/signs of ocular involvement. In accordance with international infectious disease guidelines however, an ophthalmology consult was advised in St Vincent's University Hospital (SVUH) for all patients with candida BSI. We wished to determine the proportion of patients with candida BSI that were seen by ophthalmology in SVUH, and establish the prevalence of ocular involvement.

Methods:
A retrospective chart review was carried out on all patients who had candida BSI in SVUH over a one-year period.

Results:
There were 79 positive blood cultures for candida in 38 patients in 2018. Data was available for 89% patients. 66.7% were treated with fluconazole. Ophthalmology were consulted on 55.9% patients. The majority of patients not seen had died prior to consult. 26.3% patients seen were sedated and intubated in ICU, the remainder were alert. None of the patients were noted to have new visual symptoms. 68% patients had a completely normal ocular exam. No patients had evidence of candida endophthalmitis or chorioretinitis. 32% had unrelated incidental ocular findings.

Conclusions:
Current evidence does not support routine ophthalmic consultation in the setting of candidaemia. Based on our results and international recommendations, we are proposing new guidelines for ocular screening in the setting of candidaemia.

Poppers Retinopathy

Jun Lee J, Harney F.
Galway University Hospital. Galway.

Objectives:
Poppers is the generic name given to a group of volatile alkyl nitrite compounds that are often used recreationally to relax involuntary smooth muscles, such as those in the throat and anus. Poppers come in liquid form, but the vapors are inhaled rather than directly consumed. There is an increased incidence of foveal maculopathy since its reformulation in 2007.

Methods:
We present a case of a 40-year-old man who was referred by the optician with 3 week history of bilateral central vision loss. He uses inhaled alkyl nitrates recreationally and has no ocular history. On examination his corrected visual acuity was 6/12 on the right eye and 6/9-1 in the left eye. Fundus examination showed a yellow discoloration of the fovea in both eyes.

Results:
Spectral-Domain OCT shows bilateral disruption of the junction between the inner and outer photoreceptor segments in the foveal area. Fundus fluorescein angiography did not show any hypo or hyperflourescence. These findings were consistent with "Poppers retinopathy". He was advised to stop using alkyl nitrate and to take Lutein. Vision and OCT remained stable at the 4 months visit.

Conclusions:
The mechanism of poppers retinopathy has not yet been fully identified. One hypothesis that experimental studies have provided evidence is that high concentrations of nitric oxide can induce photoreceptor apoptosis. The excess level of nitric oxide is stimulated by the upregulation of nitric oxide synthase by alkyl nitrates, this results in excessive activation of photoreceptors by activating guanylate cyclase, causing the inhibition of calcium. One important differential diagnosis and

clinical expression is solar maculopathy, as fundus and OCT patterns may be identical. There is an association between improvement of visual acuity and OCT imaging following cessation of poppers use. The prognosis of this condition is difficult to establish as many patients do not attend follow-up visits. However, multiple case series have reported improvement in visual acuity post-cessation of exposure.

Exercise Induced Cluster Migraine with Visual Disturbance

Waldron M, Townley D, Harney F.
Galway University Hospital, Galway.

Objectives:
Description of presentation and management of visual disturbance associated with cluster migraines.

Methods:
Case report describing the presentation and management of a complex case of severe cluster migraine associated with persistent visual disturbance

Results:
Ms. AF, a 36 year old lady with a background of cluster migraine presented with persistent visual disturbance following a recent severe migraine. She reported that her visual disturbance was compounded by exercise. Ocular examination and neurological visual fields were unremarkable. Fluorescein angiogram showed delayed arterial filling in a small area of the temporal retina. This corresponded with an area of deep capillary spasm on OCT-A. These tests were performed following strenuous exercise by AF. A diagnosis of cluster migraine with persistent visual disturbance due to vascular spasm and hypo delayed perfusion.

AF was commenced on prophylactic Propranolol, Trusopt (to reduce vascular congestion) and low dose aspirin. After six weeks, AF returned for review reporting only a single mild episode of migraine and a significant reduction in visual disturbance.

Conclusions:
Exercise-induced cluster migraines can have potential debilitating effects on patients physical health including visual disturbance. Knowledge of appropriate diagnostic aids and prophylactic treatment can have a profound impact on the patients quality of life.

Posterior Staphyloma in the Absence of High Myopia

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Objectives:
A staphyloma is a circumscribed outpouching of the globe wall. A posterior staphyloma is considered a hallmark of pathologic myopia, however it can also rarely be seen in non-myopic eyes, often acquired secondary to infection or trauma.

We present the case of a 33-year-old gentleman with an incidental finding of a left posterior staphyloma in a non-myopic eye.

Methods:
The patient was referred to ophthalmology following a routine optometry visit where OCT demonstrated some left posterior pole changes. The patient had no recent visual changes and no past medical history other than a history of cluster headaches 14 years previously. There was a history of mild left amblyopia from childhood. Visual acuities were 6/5 right eye and 6/10 left eye uncorrected, improving to 6/7.5 corrected. Refraction was plano in his right eye with mild myopic astigmatism in his left eye (-0.25-1.25, axis 75°)

Results:
OCT and B-scan demonstrated excavation at the posterior pole of the left eye, temporal to the macula and some peripheral vitreoretinal changes without any retinal tears or detachment.

Conclusions:
The finding of a posterior staphyloma in the absence of significant myopia is relatively unusual. This case illustrates the value of multimodal imaging in confirming the diagnosis.

Ocular Oncology Service During the COVID-19 Outbreak: Uveal Melanoma Characteristics Presenting In 2019 Compared To 2020

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Objectives:
The COVID-19 pandemic resulted in an unprecedented disruption to healthcare. We aim to evaluate the impact of the COVID-19 pandemic on ocular oncology in Ireland, comparing uveal melanoma trends in 2019 to 2020

Methods:
Retrospective review of patients presenting to the Royal Victoria Eye and Ear Hospital oncology service, who were diagnosed and underwent primary treatment for uveal melanoma (proton beam therapy, brachytherapy or enucleation) from January 2019 to December 2020

Results:
Ninety-seven patients presented in 2019 (n=46) and 2020 (n=51) who underwent primary treatment for uveal melanoma. Presentation via the eye casualty department was more common in 2020. Dimensions of choroidal melanomas were increased both in basal diameter and thickness compared to those in 2019 ($P < 0.05$). More patients had enucleations in 2020 than in 2019 (21.6% vs 9.3%, respectively), and less had proton beam therapy (6.2% vs 12.4%). More patients had evidence of extra-scleral extension at the time of surgery in 2020 compared to 2019 (4.1%, n=4 versus 0%, respectively). The mean duration of brachytherapy therapy was longer in 2020 (5.3 ± 1.5 days) compared to 2019 (4.6 ± 1.6 days). Mean time between presentation and primary treatment was 35.6 ± 28.8 days in 2019 and 24.1 ± 20.4 days in 2020.

Conclusions:
More advanced disease is suggested by the increased mean basal diameter and tumour thickness, extra-scleral extension and longer duration of brachytherapy. Time from diagnosis to primary treatment was not increased from 2019 to 2020.

Leber's Miliary Aneurysms

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Objectives:
Description of the presentation and management of Leber's miliary aneurysms

Methods:
In this case, we present a patient with an uncommon finding of Leber's miliary aneurysms localised to an area of the peripheral retina.

Results:
Mr. AF, a 61 year old gentleman with a background On fundal examination of the left eye, there were superotemporal aneurysm dilatations with lipid exudation. Intravenous fluorescein angiography showed early and late leakage, capillary dropout with late hypo-fluorescence. The right ocular examination was unremarkable.

The findings superotemporally in the left eye resembled those of Leber's miliary aneurysm, which were localised. Initially the management plan was for observation with plan for laser if the area of exudation extends clinically or on angiogram.

Conclusions:
Leber's disease is a form of primary retinal telangiectasia characterized by the presence of abnormalities in the retinal vasculature. It is an idiopathic, unilateral condition with male predilection.

The Impact of Covid-19 on the Attendance Rate to the Eye Casualty in Cork University Hospital

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Objectives:
To report attendance to eye casualty over 12 months period during COVID lockdown and compare with attendance pre lockdown.

Methods:
To record the attendance during lockdown a booked appointment system was designed, to facilitate social distancing and prioritising urgency, so register was maintained. Prior to lockdown a walk-in system was in place. The appointment book was used starting from April 2020, accommodating patients every 15 minutes. The new register included referral source, date of acceptance, reason for referral, accepting doctor/nurse and examination outcome. The data were collected from April 2019 to March 2020 as the Pre-COVID year and from April 2020 to March 2021 as the COVID year. We report our initial findings on patients' numbers.

Results:
Data from April 2019 to March 2020 showed; a total number of 15145 patients were seen and treated in the eye emergency in Cork University Hospital in comparison to 9944 patients between April 2020 till March 2021. Mean value of all the visits/ month from April 2019 to March 2020 was 1262 - the lowest attendance per month was 661 recorded in March 2020 – and highest was 1433 recorded in May 2019). On March the 11th 2020, WHO announced COVID-19 as a pandemic. However, full lockdown was only placed on the 27th of March 2020. In April 2020, only 493 patients visited the eye casualty which is only 60 % of the mean of the patients seen that period and 39 % of the previous year. The first restrictions were eased on May the 5th and the total eye emergency visit jumped to 52.5 %, followed by 74.5 % in June when further restrictions were eased (the Irish Government confirmed that "phase two plus" of easing the COVID-19 restrictions on the 5th of June). By the end of June, the 29th; hairdressers, barbers, gyms, cinemas were back open and on July the second; Dr. Tony Holohan the chief Medical Officer has stepped down to spend time with his family. This saw a further increase of patients visit to reach 82 % in July 2020. When the government agreed to move the entire country to full level 5 lockdown from midnight of 30th December 2020 till 31st of January 2021; The total number of casualty visits in January dropped again from 68 % in December to 48 %. The lockdown was extended to February by the government as January showed more cases than the entire year 2020. February total visits was at 62 % increased to 79 % visits in March 2021 (Protests against lockdown erupted in Dublin on February 27th)

Conclusions:
The audit is limited to impact of COVID-19 and the lockdown on the number of patients visit to the eye emergency department. A 34 % reduction in eye emergency visit to Cork university hospital was noticed during the first year of COVID-19. Further audits are required to report the effect of this reduction on the patients' eye health.

Incidence of Posterior Capsule Rupture (PCR) and Post-PCR Complications in CUH (January 2019 – December 2019)

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Objectives:
1. To measure the incidence of Posterior Capsule rupture
2. To measure patient final visual acuity outcome
3. To measure the effect of level of experience on the final outcome in term of (Vision, post-operative complications, and additional surgery).

Methods:
A retrospective chart review of all cataract surgery operated under a single lead consultant in the time from the first of January 2019 till December 31st, 2019. Patients' characteristics and type of anaesthesia was documented for each patient. Co-existing eye diseases, complicating co-morbidities, Pre and 12 months post op best corrected visual acuities were included in the audit. The audit has also commented on the level of the surgeon operating, type of the IOL used, and any additional postoperative complications or procedures.

Results:
From January to December 31st, 2019; A total of 291 cataract surgeries were performed. Ten patients had PCR. From which 6 were male. The mean age of the patients was 75 years ranging from 60-94. All the patients had subtenon anaesthesia administered by a consultant anaesthetist. 8 patients had pre-existing eye conditions which limited their visual potential (3 had diabetic retinopathy, one macular degeneration, one pseudoexfoliative glaucoma, one primary open angle glaucoma, one retinal detachment and one amblyopia). 3 patients had a Complicating Co-morbidities like zonular dehiscence: 1 patients, one post vitrectomy and one hypermature cataract. Preoperative vision was measured 6/12 or less in most patients (range 6/9– 6/60).

Of the 10 patients who developed PCR; 7 had MA60 IOL implanted during the surgery, 1 was left aphakic and had a secondary artisan IOL implanted, one had an MTA3OU IOL and one patient had an MTA4OU IOL.

2 patients were operated by consultant, 6 patients by trainee with an experience less than a 100 phacoemulsification, and 2 by trainee with an experience of more than 100 cases.

Of the 10 patients who developed PCR; 5 patients did not develop further post operative complications, two had dropped lens fragments in the vitreous that required further vitrectomy, one developed cystoid macular oedema that didn't require further treatment and two developed high post operative IOP that was managed medically.

Except for one patient who ended with same vision 6/60; all the 9 patients had better visual acuity post operatively compared to pre-op (4 patients ended with vision of 6/6, three with 6/9, One patient vision improved from 6/60 to 6/36 and one from 6/36 to 6/18). The level of the surgeon was not found to have effect on the number of post operative complications, the need of additional surgery, or the final visual outcome.

Conclusions:
Posterior capsular rupture is a known complication with phacoemulsification with international incidence rate ranging from 0.2 – 14%. In our audit the percentage of PCR collectively for all the surgeons involved was 3.4%.

A Comparison of Outcomes between Conventional Cyclodiode Laser (CL) and Micropulse Cyclodiode Transcleral Photocoagulation (MP-TSCPC) in the Reduction of Intraocular Pressure (IOP) in Patients with Glaucoma.

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Objectives:
MP-TSCPC has been developed as an alternative to CL to avoid the potential side effects occasionally experienced as a consequence of CL therapy. While inconclusive, the current literature indicates that MP-TSCPC and CL are similarly effective in the reduction of IOP. This study aims to compare the effectiveness of MP-TSCPC and CL in the reduction of IOP in the real-world setting. We also aim to audit the glaucoma subtypes receiving MP-TSCPC and CL at our institution.

Methods:
Data was collected from electronic hospital records on 66 sessions of MP-TSCPC and CL across 47 eyes and 41 patients from January 2018 to March 2022. Intraocular pressure was measured pre- and post-treatment, allowing for the construction of the following outcome measures: rate of response to treatment as defined by experiencing a reduction in IOP; the percentage reduction in IOP as a result of treatment; treatment success as defined by a reduction of IOP to within normal limits; and rate of adverse effects as defined by post-op hypotony. Details of patient's age, sex, glaucoma subtype were also collected from patients medical records. Treatment assignment patterns were investigated by looking at differences in baseline IOPs between patient groups assigned to MP-TSCPC versus CL. We then compared outcomes between CL and MP-TSCPC using simple summary statistics.

Results:
The sample consisted of 53 male and 13 female participants. The glaucoma subtypes treated were as follows: 26 (39%) open angle glaucoma; 17 (26%) neovascular glaucoma; 7 (11%) pseudoexfoliation glaucoma; 3 (5%) traumatic angle closure glaucoma; 2 (3%) phacomorphic; 2 (3%)normotensive glaucoma; 1 (1.5%) acute angle closure glaucoma; and 8 (12%) were glaucoma of undetermined aetiology.The mean pre-op IOP for CL was 36.5mmHg. In contrast, the mean pre-op IOP for MP-TSCPC was 25.6mmHg, suggesting patients with higher IOPs at time of treatment are more likely to receive CL treatment, rather than MP-TSCPC. 22.6% of patients in the CL group had no response to treatment, as defined by a rise in post-op IOP. Patients treated with MP-TSCPC were less likely to respond to treatment, with 33% of patients exhibiting a rise in IOP post-op. Of those patients who responded to CL treatment, the mean percentage reduction in IOP was 35%, compared to 27% in the MP-TSCPC laser.
A total of 41% of the MP-TSCPC group and 42% of the CL group achieved a post-op IOP within normal limits and there were no reported cases of hypotony following either CL or MP-TSCPC.

Conclusions:
In this study, both conventional CL and MP-TSCPC demonstrated a similar success rate in achieving normal post-op IOP levels. However, CL tended to be used on patients with a higher pre-treatment IOP, and achieved a higher percentage reduction in IOP than MP-TSCPC. Further investigation is needed into factors that influence the success of IOP reduction with CL and MP-TSCPC, including patient, operator and equipment factors that may impact the efficacy of treatment. This better understanding would allow improved patient selection leading to better health outcomes.

A Rare Choroidal Metastasis of Unknown Origin

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Objectives:
The uveal tract is the most common ophthalmic site for ocular metastasis, and 88% of these originate in the choroid(1). The most common primary cancer sites are breast, lung, gastrointestinal and kidney. We present an unusual case of a choroidal metastasis due to endometrial carcinoma.

Methods:
Case presentation as outlined below

Results:
A 58-year-old female was referred with a 2-week history of right blurring of vision. She had no previous ocular or oncological history. Examination revealed a RVA of CF with a choroidal tumour at the posterior pole. It measured 6.2mm in thickness and 15.7mm in largest basal diameter on B-scan. Clinically, a presumptive diagnosis of right choroidal melanoma was made. CT TAP at presentation showed no systemic malignancy and a right enucleation was performed. Histopathology revealed a moderately differentiated metastatic adenocarcinoma, however the site of the primary remained unknown.

Of note, Ms. BS had past medical history of fibroids and irregular menstrual bleeding. On abdominal examination she had a non-tender pelvic mass. Repeated CT TAP revealed a large volume myometrial mass, and PET CT showed tracer uptake throughout the uterus consistent with high-grade malignant disease. She underwent a total abdominal hysterectomy with right salpingo-oophorectomy. Histology showed a high-grade malignant epithelial tumour and a diagnosis of endometrial mesonephric-like carcinoma with ocular metastasis was made.

Conclusions:
Choroidal metastases from gynaecologic cancers, specifically endometrial cancer, are extremely rare thus diagnosis can be challenging. To our knowledge, this is the first reported case of endometrial mesonephric-like adenocarcinoma presenting as an ocular lesion. Such lesions may masquerade as a primary intraocular malignancy or retinitis, particularly in the absence of any oncological history. This case highlights the importance of systemic evaluation to avoid delays in cancer diagnosis and treatment.

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Addressing Technical Failures in a Diabetic Retinopathy Screening Programme

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Objectives:
To assess the causes of technical failure (TF) in those screened for under the diabetic retinopathy programme; to assess the impact of interventions made during the review period and to modify protocol based on same, if applicable; to assess the proportions of technical failure not preventable, and the causes of these.

Methods:
The TF rate was determined at monthly intervals over a 24 month period from February 2019 to February 2021. The images of 250 patients classed as TF at screening were analyzed in total- 50 from five months each.

An analysis for the specific reasons for TF was performed at six monthly intervals. Interventions introduced during the 24 months included the use of G Phenylephrine 2.5% for pupils not dilating with Tropicamide (July 2020), the capture of 3 instead of 2 fundal images, regular camera servicing to reduce artefact and multidisciplinary teaching (MDT) sessions. An audit of each TF from July 2020 to December 2020 was also carried out, feasible by lower numbers at clinic due to Covid-19.

Results:
Technical failures from Feb 2019 to Feb 2021 were analyzed.
In Feb 2019 the TF rate was 13.61% (529/3357), in Feb 2021 it had reduced to 5% (199/4410), with a 5-7% rate of TF being considered acceptable for diabetic retinopathy screening. A commensurate reduction in TF was seen as each of the next five months were analyzed:
- July 2019- 7.8%
- February 2020- 5.98%
- July 2020- 6.73%
- February 2021- 5.41%

This rate has continued to lower, outside of the five audited months: in December 2021 it was 4.3%.

The most common cause of TF at each 6 monthly analysis was cataract 48% (range 40-60). The number of artefact-related TF fell from 30% to 5% over 24 months. Non-modifiable causes for TF included asteroid hyalosis, corneal scarring, and patients not being able to appropriately position at the camera (patient mobility, cognitive impairment).

Following the introduction of MDT at four time points, we saw a substantial fall in TF in the months after, highlighting the strength of the intervention but also the necessity of these presentations at regular intervals as there seems to be a high impact short- to medium term from them. With conversion to three rather than two image acquisition, the TF rate reduced from 14% in Feb 2019 to 6% a month later. The introduction of G Phenylephrine 2.5% combined with MDT resulted in a decrease in the TF rate from 7% in July 2020 to 5% two months later.

Overall the TF rate fell from 8.21% in 2019 to 5.89% in 2021, giving strength to the various interventions made during the period, and crucially reducing the TF rate to below the service rate objective maximum level of 7%.

Conclusions:
MDT sessions alone or combined with other interventions, resulted in a significant reduction in the TF rate. This underlines the need for ongoing educational sessions for screeners. Cataracts account for the majority of TFs in our catchment area, and despite full dilation and multiple image acquisition, most patients with cataracts still require referral to our optometric services for lsit lamp evaluation.

The impact of the National Diabetic Retinal Screening Programme on the Training of Ophthalmology Trainees in the Performance of Diabetic Laser procedures.

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Objectives:
This study aims to examine the impact the establishment of the DRS Programme has had on trainee exposure, learning and perceived confidence in performing laser procedures used in the treatment of Diabetic Retinopathy.
There are a number of objectives.

1. To determine the number of Panretinal photocoagulation and Focal Macular Lasers carried out before and after the establishment of the Diabetic Retinal Screening Programme by:
   a. General Ophthalmic Consultants
   b. Diabetic Retinopathy Screening Consultants
   c. Non-consultant Hospital Doctors
2. To establish whether the numbers of these lasers increasing or decreasing due to DRS screening
3. To determine whether the DRS programme is impacting on the numbers of laser NCHDs can perform
4. To establish the NCHDs perception of their training, exposure and level of confidence surrounding laser procedures

Methods:
This is an observational, cross-sectional study and dataset review.
A Retrospective dataset gained from the laser logbook located in the Ophthalmology Department, CUH. This examines the number of diabetic laser treatments performed and the physician grade performing them from a 5-year period both prior to and after the establishment of the DRS programme on the 11th of December 2013.

A newly designed questionnaire examines the opinions of NCHDs regarding their exposure to Diabetic Laser Procedures. It was distributed to NCHDs who have worked or are currently working in Cork University Hospital in the Ophthalmology department.
Statistical analysis was performed using MS excel/SPSS.

Results:
Retrospective Dataset:
In the 5-year period prior to DRS establishment there were 785 diabetic laser treatments performed. Of these 51.5% were performed by NCHDs while 48.6% were performed by either Consultant or Community Only. In the 5-year period after the program's establishment there were 1988 diabetic laser procedures performed. Of these. 68.7% were performed by Community Ophthalmologists while only 24.8% were performed by NCHDs.

Questionnaire:
There were 17 responses to the questionnaire. 76% of respondents were SHOs while 24% were registrars. When participants were asked how confident they were performing diabetic laser only one participant admitted to being fairly confident. 29% said they were still not all confident, 47% said slightly confident while 18% said somewhat confident. In terms of the type of teaching received with regards to diabetic laser procedures- 76% said they had received no formal teaching such as tutorials, 18% said they received a little and only one participant said they received a moderate amount. When asked if they were satisfied with the types of teaching they have received regarding diabetic lasers- 53% answered not at all satisfied, 41% answered slightly satisfied and only one participant answered moderately satisfied. When asked if they thought that the fact that diabetic laser treatments are now mainly performed in consultant only clinics since the establishment of the DRS has impacted on their training- 41% said strongly agree while 59% said agree. When asked if they believed that this impact was negative- 47% said strongly agree while 53% said agree.

When asked if they were satisfied with the quality of their training regarding performing diabetic laser treatments 35% strongly disagreed, a further 35% disagreed while 2 participants said they neither agree nor disagree and only one person agreed that they were satisfied.

Conclusions:
Establishment of the National Diabetic Retinal Screening programme has meant a decrease in the number of NCHDs performing diabetic laser procedures. The majority of NCHDs are not confident or only slightly confident in performing these procedures. NCHDs are unsatisfied with the quantity and quality of training received with regard to diabetic laser procedures. Many believe that the establishment of the DRS programme was negatively impacted their training. Measures should be taken to improve training of NCHDs in the performance of diabetic laser procedures.

Central Retinal Vein Occlusion - Four-year Follow up of a Patient with a Poor Presenting Visual Acuity

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Objectives:
Case Report

Methods: Introduction
The visual prognosis for ischaemic central retinal vein occlusion (CRVO) is poor, with over 90% of patients having a VA of 6/60 or worse1. Many of the major trials examining intravitreal injections (IVI) of anti-VEGF for CRVO excluded patients with a visual acuity (VA) of <6/96.2.3.4.5.However, the clinical guidelines from the Royal College of Ophthalmologists advise a trial of IVI for patients with a VA of <6/96 as some of these patients can have a significant improvement in vision, especially if there is no marked RAPD present.6. This case lends weight to the potential for significant visual acuity improvements with IVI treatment for patients with ischemic CRVO and a poor presenting visual acuity.

Results: Case presentation
A sixty-year-old female, was referred urgently to eye casualty from an optometrist with a three week history of sudden onset of painless loss of central vision in her right eye.

Medical history included primary hypertension treated with amlodipine and she had no ophthalmic history. VA in her right eye (RE) was counting fingers, and left eye (LE) 6/7.5. There was no RAPD, no NVI and IOPs were 12 mmHg bilaterally. Right fundal examination revealed disc oedema, retinal vein dilatation and tortuosity and widespread deep and superficial haemorrhages in all four quadrants. OCT revealed diffuse sub-retinal and intraretinal fluid. Fluorescein angiography revealed twelve-disc areas of retinal non perfusion.

Diagnosed with an ischaemic CRVO she received treatment with intravitreal injections of bevacizumab at four weekly intervals, followed by PRP. She was also referred to her GP for further investigations and management of risk factors. Post IVI and PRP her OCT showed a significant improvement in OCT thickness and her RVA improved to 6/24.
While further IVI were planned, she did not attend for further treatment until one year later. VA remained at 6/24 with persistent macular oedema and a new lamellar hole. She received an intravitreal steroid implant (Ozurdex) which resulted in a significant decrease in IRF, however IOP increased to 26mmHg which was controlled with Guttae latanoprost od.

The patient's most recent visual acuity four years post presentation in her RE is 6/24 improving to 6/15 with pinhole. OCT showed persistent IRF, and she is currently being treated with a trial of further IVI of bevacizumab.

Conclusions: Discussion points
The Royal College of Ophthalmologists advise a trial of at least three injections of IVI for those with a presenting visual acuity of <6/96 with careful consideration of the individual case if no improvement in VA or OCT central subfield thickness. Other important factors to consider are the degree of macular ischaemia and the structural damage at the fovea. If there are no improvements in VA or OCT findings after six injections further injections are not recommended.6.

This case highlights the potential for visual improvement for patients presenting with an initial poor visual acuity. As mentioned, cut off VA in some of the major trials for IVI for CRVO was <6/96. Further trials are needed to examine the role of IVI in the management of ischemic CRVO with poor presenting VA.

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The Implementation of a Logbook for the Documentation of Telephone Consultations for On-Call NCHDs

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Objectives:
1) To investigate on-call SHOs documentation practices.
2) To design and implement an intervention that facilitates SHO reproduction of their on-call communications for future reference.
3) To describe our experiences with the logbook through a complete audit cycle.

Methods:
An online survey was distributed to audit on-call documentation practices of ophthalmology SHOs at Cork University Hospital. A logbook for documentation of on-call communications was designed and implemented. On-call documentation practices following logbook implementation were re-audited using an online survey. Descriptive data was compiled.

Results:
All SHOs in the department (4 for initial audit, 5 for re-audit) responded to the survey.

From their most recent on-call shift. In the initial audit, 50% of SHOs did not record any information from phone calls received. The other 50% recorded only partial information. When re-audited after introduction of the logbook, 40% of respondents recorded complete information for all telephone calls, 40% recorded partial information and 20% recorded did not record any information.

From all other previous on-call shifts, 25% of SHOs could reproduce documentation of telephone consultations in the initial audit. After introduction of the on-call logbook, the proportion of participants who could reproduce documentation from all of their previous on on-call shifts increased to 60%.

All SHOs used the newly implemented on-call log-book with 40% using it "all or most of the time", and 60% using the logbook "some of the time". The most common alternative method of documentation was on a mobile phone.

Conclusions:
Documentation of telephone consultations improved when the logbook was implemented. Communications received during on-call hours are still unrecorded by some SHOs. Ongoing improvement and re-audit is required to ensure reproducible documentation of all on-call consults. This audit cycle highlights an area for improvement in the on-call documentation system for ophthalmology NCHDs in Ireland.

Eikenella Corrodens Canaliculitis. A Case Report.

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Objectives:
Eikenella corrodens is a slow growing, facultatively anaerobic, Gram-negative bacillus. A rare case of canaliculitis associated with Eikenella corrodens is reported.

Methods:
The presenting symptoms, clinical features, medical and surgical management and outcome in a patient with left lower eyelid canaliculitis caused by Eikenella corrodens is described.

Results:
An adult patient presented with a two-year history of recurrent, purulent, left lower eyelid discharge. Ocular examination confirmed canaliculitis. Eikenella corrodens was cultured. Oral ceftazidime was commenced. Curettage of the left lower eyelid canaliculus was performed. Complete resolution of symptoms and signs was obtained.

Conclusions:
Eikenella corrodens rarely causes canaliculitis. A fastidious organism it is not easily isolated by standard culture methods. Correct diagnosis and subsequent management may be delayed. Chronic canaliculitis should evoke suspicion and prompt consideration of atypical organisms as aetiological.

A Review of the 'Long Waiters' for Ophthalmology Outpatient Services in Cork University Hospital and its Impact on Planning for the New Integrated Eye Care Team.

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Objectives:
To categorize and quantify patients on the 'long waiters' list of CUH's ophthalmology department as part of the planning process for the new Integrated Eye Care Team.

Methods:
Over a six-month period between July and December 2021, a detailed review of 384 charts of patients awaiting recall and 2509 letters of new referrals was carried out for those who were longest on the routine ophthalmology waiting list as identified by CUH's Central Appointments department. Patients were broadly categorized as requiring either a medical ophthalmology or ophthalmic surgeon assessment, and then sub-divided into the various sub-specialty areas. Patients who were identified as no longer requiring an appointment either because of going privately or attending the dedicated diabetic retinopathy screening / treatment services were passed on to management for removal from the waiting list.

Results:
Of the 384 long waiters awaiting routine recall, 223 (58.1%) were triaged for medical ophthalmology clinics, 86 (22.4%) for ophthalmic surgeon review, and 75 (19.5%) for potential discharge. Glaucoma (61; 27.3%) and cataract (31; 36%) made up the largest pathology type for medical and surgical ophthalmology clinics, respectively. The most commonly identified reason for potential discharge was attendance at either the diabetic retinopathy screening or treatment clinics (45; 60%). With respect to the 2509 long waiters on the new referrals list, 1431 (57%) were deemed suitable for medical ophthalmology assessment, while 1078 (43%) required a surgical opinion, the vast majority of these for cataract (862; 80%). Paediatric ophthalmology (330; 23.1%) and glaucoma (305; 21.3%) were the largest sub-categories requiring medical ophthalmology referral.

Conclusions:
Given the years patients are waiting for both routine new and review ophthalmology appointments, there is an urgent need to develop Integrated Eye Care Teams to prevent cases of potentially irreversible vision loss. The breakdown of cases identified in this review will help inform decision makers in how the delivery of eye care can be targeted, expanded and enhanced, allowing for decompression of over-stretched hospital based eye services. With the majority of patients requiring access to medical ophthalmology clinics, this will allow for a more efficient use of our surgical teams, with the ultimate goal of delivering high quality eye care in a more timely fashion, thus enhancing patient safety. Given the numbers involved, the promotion of the role of allied health professionals as part of these new Integrated Eye Care Teams is essential. This report also highlights the significant impact that the Diabetic RetinaScreen programme has had on reducing recall numbers for the general eye clinic.

Evaluating the Efficiency of the Irish National Diabetic Retinal Screening Service's Treatment Pathway

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Objectives:
To evaluate the timeliness of clinical review and treatment of individuals referred to ophthalmology via Diabetic RetinaScreen from 2017-2021

Methods:
OptoMize (NEC, Japan), Diabetic RetinaScreen's centralised electronic record keeping software, was used to collect and organise information. 35096 referrals were sent from screening for ophthalmology review during the study period, of which 21424 had referrable retinopathy (4988 urgent, 16436 routine). Of these, 2277 patients were listed for treatment (1144 urgent, 1133 routine). We assessed the intervals between screening, referral, consultation and treatment.

Results:
From 2017 to 2021, 97.18% of referrals from screening to ophthalmology were sent within 12 business days, meeting the QA standard set by the Quality Assurance Committee for Diabetic Retinopathy Screening in 2019. Of those referred for ophthalmology review during the study period, 48.52% of urgent referrals (target ≤ 24 business days) and 37.30% of routine referrals (target ≤ 108 business days) were seen within the target timeframe. Additionally, 35.05% of urgent cases (target ≤12 business days) and 36.36% of routine cases (target ≤ 60 business days) were treated within the target timeframe. From 2017 to 2021, the percentage of patients seen within the optimal screen-to-treatment time frame for both urgent ($R = 0.9419$, $p = 0.011381$) and routine ($R = 0.516$, $p = 0.373455$) screening referrals has steadily improved.

Conclusions:
The treatment pathway via Diabetic RetinaScreen faces numerous challenges to expediting patient consultation and intervention. Infrastructure, staffing, and attendance concerns, as well as unforeseen program hurdles like the COVID19 epidemic, are chief among these challenges. Despite this, patient treatment times have improved year-on-year and continue trending towards improvement. To further understand how to improve the treatment pathway going forward, a root-cause study of systemic bottlenecks is required.

Adherence of Patients with Age-Related Macular Degeneration to AREDS 2-Recommended Vitamin Supplements

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Objectives:
The Age-Related Eye Disease Study 2 (AREDS 2) proved the benefit of vitamin supplementation in preventing advanced Age-Related Macular Degeneration (AMD). AREDS 2 supplements are indicated for patients with either bilateral intermediate AMD (AREDS category 3) or unilateral neovascular AMD (AREDS category 4). The objectives of this study were to identify the rate of adherence of patients to AREDS 2 supplements, as well as to identify factors associated with non-compliance in these patient groups.

Methods:
This was a retrospective study conducted in a tertiary care centre. Patients were identified by chart review and their AREDS categorization reconfirmed. A telephone consultation was then carried out with each patient, during which their compliance with AREDS 2 supplements was specially addressed.

Results:
Seventy patients met the AREDS criteria for vitamin supplementation. 62 patients were graded as category 4 and 8 patients were graded as category 3. Two thirds of patients were taking AREDS 2 supplements. 91% of that group recalled being recommended supplements by their ophthalmologist. Of the remaining third of patients who met the AREDS criteria but were not taking the recommended supplements, 88% did not recall being advised of their benefit. Cost was not a significant factor for non-compliance, with just 8% citing this as a reason. 4% of patients did not believe the supplements to be of any benefit.

Conclusions:
This study emphasizes the need to improve patient education by eye healthcare providers regarding the benefit of AREDS supplements in preventing advanced ARMD.

Anatomical and Visual Outcomes of Full-Thickness Macular Hole Repair Surgery

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Objectives:
To report the anatomical and visual outcomes of primary full-thickness macular hole (FTMH) repair surgery by a single surgeon (KK). To assess factors predicting outcomes. To compare results with large international studies.

Methods:
A retrospective chart review was performed of all primary FTMH repairs over a 3-year period (March 2019 – February 2022). Data collected included: patient demographics; time from referral to Outpatients Department (OPD) appointment; time to surgery; duration of symptoms; FTMH size (minimum linear diameter, MLD); pre- and post-operative visual acuity (VA), operation details; anatomical success (FTMH closure); complications; re-operation; and cataract. For comparisons, Snellen VA was converted to LogMAR equivalent. Continuous data were compared using the Student's t-test and linear regression models. Logistic regression was used to model covariates affecting probability of achieving ≤0.30 LogMAR (Snellen VA 6/12 or better) post-operatively.

Results:
20 eyes of 19 patients were included. 74% (14/19) were female and 26% (5/19) were male. Mean patient age was 69 years (range 55 to 80). Mean MLD was 440µm (range 170µm to 1200 µm). FTMH size was small (<250µm) in 20%, medium (250-400µm) in 40% and large (>400µm) in 40% of eyes. Mean pre-operative Snellen VA was 6/60 (range 6/24 to CF). Mean duration

of symptoms prior to surgery was 16 weeks (range 3 to 39 weeks). Mean interval from referral to OPD appointment was 3 weeks (range 1 to 8 weeks). Mean interval from OPD appointment to surgery was 4 weeks (range 1 to 11 weeks). 90% (18/20) of eyes were phakic and 10% (2/20) were pseudophakic.

All patients underwent a 25G pars plana vitrectomy with internal limiting membrane (ILM) peel and 25% SF6 gas endotamponade. In addition 20% (4/20) had a hinged ILM flap and 5% (1/20) had combined cataract surgery. 75% of operations were performed under local anaesthetic and 25% under general anaesthetic. 85% (17/20) of operations were day case procedures and 15% (3/20) of patients were inpatients for 1 night post-operatively. 10% (2/20) of eyes developed a peripheral retinal tear intra-operatively that was treated with retinopexy without sequalae. No eye developed a retinal detachment or other serious complication. 10% (2/20) of eyes had post-operative elevated intraocular pressure requiring transient topical treatment.

100% (20/20) of eyes achieved successful anatomical FTMH closure. Any post-surgery improvement in VA was achieved for 100% (20/20) of eyes and a gain of vision of >0.30 LogMAR (2 Snellen lines) by 90% (18/20) of eyes. 55% (11/20) of eyes achieved post-operative VA of ≤0.30 LogMAR (Snellen 6/12 or better). Mean post-operative Snellen VA was 6/15 (range 6/7.5 to 6/36). Mean improvement in vision was 3.8 Snellen lines (range 1 to 7 lines).

Patients with worse pre-operative vision gained more vision than those with better pre-operative vision (p=0.01). Of those eyes who had a duration of symptoms <4 months before surgery, 77% (7/9) achieved ≤0.30 LogMAR (Snellen 6/12 or better) compared to 27% (3/11) in those with a duration of symptoms of >4 months (p=0.03). There was no statistically significant difference in gain of vision based on hole size (p=0.54).

Of the 17 eyes that were phakic following FTMH repair surgery, 59% (10/17) of eyes had subsequent cataract surgery at a mean interval of 7 months (range 2 to 21 months).

Conclusions:
FTMH repair surgery in this series was safe and effective. All patients benefited from surgery regardless of duration of symptoms, presenting VA or FTMH size. Surgery performed within 4 months of onset of symptoms was particularly beneficial. Outcomes in this series compare favourably with those in published international studies.

Investigating Inner Blood Retinal Barrier Integrity In Rare Neurological Disorders

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Objectives:
Tight junctional protein claudin-5 is richly expressed at the level of the inner blood retinal barrier (iBRB) and at the level of the blood brain barrier (BBB). Therefore it follows that imaging modalities investigating iBRB integrity may provide information on iBBB integrity. The eye is a uniquely accessible organ with sophisticated imaging systems in place for evaluation of its anatomy. Our group has developed a software to quantify ocular vasculature permeability which may have applications in neurodegenerative disorders and neurological insults. Our objective was to examine the retinal vasculature in subjects with neurological disorders associated with BBB disruption. We sought to evaluate the integrity of the iBRB in neurological disorders (CSF1R mutation and Visual Snow) using FOVAS (Fluorescent Ocular Vascular Analysis Software), a novel quantitative analysis software tool for FFA studies.

Methods:
A total of 3 subjects were recruited, 1 with adult onset leukoencephalopathy with axonal spheroids (ALSP) – (an autosomal dominant CSF1R mutation) and 2 with visual snow syndrome. Fundus fluorescein Angiography (FFA), Optical Coherence Tomography (OCT) and fundal autofluorescence were performed using the Heidelberg SPECTRALIS. The dye sodium fluorescein (1 mg/mL) was administered intravenously and images obtained at 1 minute, 2 minutes, 4 minutes and 5 minutes post injection. FFA and OCT images were obtained with a 30 degree angle of view and 73 line cuts were acquired. FFA analysis and quantification was conducted using FOVAS against a threshold determined from a the fluorescein signal of n = 33 normal healthy controls (aged 18 -30) acquired from the Irish Retinal Circadian Project cohort.

Results:
In the subject with a CSF1R mutation, FFA images showed a significantly increased fluorescein signal in the peri- and para-foveal regions of the macula, mirroring the increased vascular permeability described in the BBB in this disorder. In both subjects with visual snow, FFA images showed a significantly increased fluorescein signal in the foveal, peri, para and extra foveal regions suggesting an increased iBRB permeability in this disorder. FOVAS analysis suggests a potential pathology involving tight junctional proteins of the endothelium.

Conclusions:
We report increased permeability of the iBRB in a single case of an individual with a condition involving a dominant acting mutation in the gene CSF1R and in a small case series of patients with Visual Snow syndrome following FOVAS analysis. We conclude that with the development of FOVAS and a robust dataset demonstrating 'normal' inner retinal vascular integrity, we can potentially expedite the study of blood tissue barrier disruption in neurodegenerative diseases with ocular imaging.

"Bing There, Done That! Just another GCA Case?"

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Objectives:
To describe an unusual presentation of Bing-Neel syndrome.

Methods:
A 55-year old lady presented to her general practitioner with new onset pressure headache over the occipital area, scalp tenderness, jaw claudication, shoulder arthralgia, night sweats and loss of appetite but no amaurosis fugax. Her bloods showed an elevated ESR of 26mm/hr, a CRP of 4mg/L, and normal haemoglobin and platelets. She was diagnosed with giant cell arteritis (GCA) and empirically treated with 60mg of oral prednisolone. Her headache persisted and she was referred to her local hospital, where she was noted to have a right Horner's syndrome. Brain MRI with gadolinium and MRA were reported as normal. She was then referred for a neuro-ophthalmology opinion. Right visual acuity (RVA) was 6/9, left visual acuity was 6/6. A right Horner's syndrome was confirmed. Colour vision was normal, no RAPD was present and both optic discs were normal clinically and on OCT imaging. There was reduced sensation in the V1-V3 distribution on the right side of her face including reduced corneal sensation. Bulk, tone and power were normal in the upper and lower limbs. A temporal artery biopsy was performed and reported as "no active inflammation but degenerative changes of the elastic lamina present." A repeat MRI showed evidence of small vessel ischaemic disease and nil else. Lumbar puncture testing showed normal protein, elevated glucose and no evidence of neoplastic cells. The patient was treated with oral steroids but remained symptomatic. Repeat bloods including ANA, ANCA, ACE, serum immunoglobulins and an infectious screen including hepatitis and HIV were done. ESR had risen to 37mm/hr and CRP to 15mg/L.

Results:
A mild paraproteinaemia was found and she was referred for a haematology opinion. A bone marrow biopsy showed a slight excess of mature lymphocytes.

The trephine revealed infiltration by lymphoplasmacytic lymphoma, comprising 10% of haemopoiesis with no evidence of high-grade transformation. A diagnosis of Waldenström's macroglobulinaemia was made. A full body CT showed no lymph node or organ enlargement. A FDG-PET scan showed bone marrow activity, but no metabolic evidence of nodal disease. Following multi-disciplinary discussion, a diagnosis of Bing-Neel syndrome was made on clinical grounds and she was commenced on bendamustine and rituximab. Unfortunately, she developed neutropaenic sepsis and treatment was discontinued. She remained symptomatic despite remaining on 10mg of prednisolone. Ibrutinib was commenced and

tolerated for 3 weeks before she developed another episode of sepsis. Upon discontinuation of this medication, she developed mildly reduced RVA of 6/12, reduced right colour vision and an increase in retinal nerve fibre layer thickness in the right eye. Repeat neuroimaging showed no evidence of CNS disease. She resumed treatment with Ibrutinib and had resolution of the above findings.

Conclusions:
Bing-Neel syndrome is a rare disease manifestation of Waldenström's macroglobulinaemia that results from infiltration of the central nervous system by malignant lymphoplasmacytic cells. (1) It occurs in ~1% of patients with Waldenström's macroglobulinaemia.(2) There is currently no consensus on the diagnostic criteria, treatment strategies and evaluation of response.(3)

The clinical symptoms of BNS are diverse. Symptoms of meningeal involvement include headaches, visual disturbances, hearing loss and cranial neuropathies (mostly of the facial or oculomotor nerves).(1) Seizures, cognitive decline, aphasia, psychiatric symptoms, cerebellar dysfunction, impairment of consciousness and paresis typically represent involvement of the brain parenchyma or the spinal cord.1 Orbital involvement has also been described.(4) Possible MRI findings are leptomeningeal enhancement (70.8%), parenchymal involvement with high T2 signal (41.7%) and dural involvement (37.5%).(5)

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4) *Stacey et al. Orbital involvement in Bing-Neel syndrome. J Neuroophthalmol. 20110 Sep;30(3): 255-9.*
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Review of The Eye Clinic Liaison Service (ECLO)

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Objectives: Introduction:
The Eye Clinic Liaison Officer (ECLO) programme is well-established across the UK, with full coverage of all eye clinics in Northern Ireland. The ECLO programme was introduced into the Republic of Ireland in 2019 across three major hospital eye clinics in Dublin, the Mater Misericordiae University Hospital, Royal Victoria Eye and Ear Hospital, CHI at Temple Street, with the addition of CHI at Crumlin in 2021.

The ECLO acts as an intermediary between the acute and community setting, working with the eye clinic teams to provide emotional support and signposting to community-based services in response to the patient and family's needs. The ECLO role aims to improve patient continuum of care by connecting patients, their families and/or carers to community-based services and provide vital supports to the hospital eye clinic teams.

Whilst the benefits of timely access to vision rehabilitation for individuals with sight loss are well documented, in the context of Ireland, a lack of defined pathway between acute and community care in the past has hindered this transition, which has been of major concern for ophthalmology patients. In combination with the currently lengthy outpatient ophthalmology waitlists for diagnosis, patients and their families on average only begin to avail of community supports three years following diagnosis (NCBI, 2016). In line with the directives of SlainteCare, and the HSE's Primary Care Eye Services Review Group Report (2017) investment into programmes providing strategies to expedite transition to community care setting should be explored.

This research aims to review the onboarding experience and integration and functionality of the ECLO post into the clinical setting at CHI at Temple Street, analyse patient profile engaging with the service, onward referrals provided, and self-reported impact of the service on patients and their families.

Methods:
An internationally recognised, independent, and anonymous telephone survey was utilised to assess patient experience with a cohort of consenting patients and their families who had received support by the ECLO service at CHI at Temple Street between 2019 - 2022.

To assess eye clinic team feedback, an independent and anonymous online survey was also distributed to all clinical staff engaging with the ECLO at CHI at Temple Street in both 2019 and 2021. All survey responses were anonymised prior to analysis.

Service data was collated from internal customer management systems, anonymised and analysed independently.

Results:
Patient profile at CHI at Temple Street reflected top conditions seeking additional support were:
1 Nystagmus
2 CVI
3 Albinism
4 Optic Atrophy
5 Cataracts

In regard to referral to community supports and services the highest number of referrals made to:
1 NCBI
2 Visiting Teacher
3 Fighting Blindness
4 Childvision
4 Vision Sports Ireland

Patient Profile reflected that 33% of referrals to ECLO were newly diagnosed, 12% were in treatment and 55% were being reviewed at clinic.

Conclusions:
Feedback suggested that prior to meeting with the ECLO, patients were not well informed about community-based services available to them following diagnosis. Following meeting with the ECLO, reports of increased understanding of the eye condition and treatment plans, alongside increased emotional wellbeing was evident in both quantitative and qualitative patient data. As a result of the ECLO, 9 out of 10 patients are now in receipt of community-based services.

Similar results were collected from eye clinic teams, suggesting that the addition of an ECLO role within their teams fills a gap in support not otherwise offered, and resulted in improved efficiency of the department.

Analysis of Metformin's Effect on Human Glaucomatous Lamina Cribrosa Cells

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Objectives:
The Lamina Cribrosa (LC) is a key site of retinal ganglion cell axonal injury in primary open angle glaucoma (POAG). Metformin has been used in fibrotic disease and cancer models, as well as being associated with reduced POAG incidence in a large cross-sectional study. In this study, we assess metformin's effect on glaucomatous LC cells by carrying out a systematic mitochondrial bioenergetic assessment and measuring markers of fibrosis and endoplasmic reticulum (ER) stress activity, in addition to a novel pathway involving the oncogene HMGA1.

Methods:
Human LC cells from age matched normal and confirmed glaucoma donors were assessed using a Seahorse XFe96 Analyzer. Glaucoma LC cells were treated with Metformin at different doses (10mM, 5mM, 2mM, 1mM, 0.5mM, 0.1mM and 0.05mM) and a dose response curve was assessed. The optimal dose of metformin was then utilised to examine extracellular matrix (ECM) (Col1A1, -SMA, and vitronectin), endoplasmic reticulum (ER) stress (CHOP, ATF-4 and GRP78) and HMGA1 gene expression with real time RT-PCR.

Results:
Glaucoma LC cells have lower basal and maximal oxygen consumption rate (OCR), lower spare respiratory capacity and lower ATP production than the normal cells. Treatment with Metformin, however, significantly improves maximal OCR ($p < 0.05$) and

spare respiratory capacity ($p < 0.05$) in glaucoma cells. The most effective Metformin dose was 0.1 mM. Metformin treatment with this dose (0.1mM) resulted in a significant reduction of the ECM, ER stress and HMGA1 gene expression seen in glaucoma LC cells ($p < 0.05$).

Conclusions:
We demonstrate evidence of mitochondrial dysfunction and raised levels of ER stress, fibrosis and HMGA1 in glaucoma LC cells and subsequent improvement with Metformin treatment. These results provide some explanation as to the reduced POAG incidence in those taking Metformin and may aid the development of a disease modifying agent in POAG.

Congenital Free Floating Pigmented Vitreous Cyst

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Objectives:
Vitreous cyst is an extremely rare condition, it was first described by Tansley in 1899.It can be congenital or acquired. Acquired cyst caused by various pathologies such as trauma or inflammation. Congenital cysts are non-pigmented (yellow-gray) or pigmented (brown), the former originate from the hyaloid vascular system and the latter from the pigmented epithelium of the iris of the ciliary body. The shape ranges from spherical, oval, or lobulated, while the surface could be smooth or crenated. Its diameter can be from 0.15mm to as large as 12mm.

Methods:
We present a case of a 12-year-old male who was referred to the eye emergency department by the optician for a vitreous mass. He complains of a large floater in the left eye for as long as he could remember. He did not have any significant medical history. Visual acuity was 6/4 in both eyes with glasses. On examination the anterior segment was normal. Intraocular pressure was 15 OU. The appearance of the fundus was normal but a pigmented vitreous cyst was noted in the left eye.

Results:
Multiple imaging modalities were taken. B scan ultrasonography demonstrated a hyperechogenic wall and acoustically hollow interior that is 3mm wide and mobile in the Cloquet canal. Anterior segment photo showed a smooth, brown, spherical cystic mass with a single lobule. Anterior segment video showed a freely mobile cyst that is gravity-dependent.

Conclusions:
The characteristic of this cyst is suggestive of a congenital free-floating pigmented vitreous cyst. Treatment options for cysts include either laser cystotomy or pars plana vitrectomy with cyst excision. In our case, follow-up was decided because he was asymptomatic.

A Focus on Ocular Parameters and their Impact on Quality of Life Measures in Patients with Primary Sjögren's Syndrome

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Objectives:
To quantify the impact of dry eye disease (DED) on health and vision related quality of life (HR-QOL, VR-QOL) in an Irish cohort of Primary Sjögren's Syndrome (pSS) patients.

Methods:
Thirty-four participants with a confirmed diagnosis of pSS as per the 2016 ACR EULAR criteria participated. Main outcome measures included ocular surface parameters and HR-QOL and VR-QOL questionnaires. Clinical examination included visual acuity, Schirmer I testing, ocular surface staining (OSS) and measurement of tear film breakup time. The questionnaires

included Ocular Surface Disease Index, National Eye Institute Visual Function Questionnaire-25, Short Form-36 (SF-36) and EULAR Sjogren's Syndrome Patient Reported Index.

Results:
Despite the majority of participants (28 female, 6 male, mean age 61.3 years) having attained LogMAR 0.3 or better visual acuity, participants scored low on VR-QOL measures, representing DED related fluctuation in functional vision. All participants suffered from moderate to severe DED. OSS did not correlate with DED symptoms or QOL parameters. Lubricant usage and symptom severity had a statistically moderate to strong negative correlation with VR-QOL and HR-QOL. This was most evident in relation to physical and physiological well being. Compared with normative data, participants had a lower HR-QOL in all scales of the SF-36 ((MD= 9.91 ± 5.16); t(7) =5.43, p=0.001).

Conclusions:
Participants with pSS have a lower perceived QOL especially in relation to physical and mental wellbeing, correlating to severity of DED symptoms and treatment burden. Clinical signs do not align with symptoms. Therefore, clinicians should remain cognisant, adjusting treatment in accordance with patient reported perceptions.

A Case Report of Paediatric Vogt–Koyanagi–Harada(VKH) Treated Successfully with Adalimumab (Humira)

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Objectives:
To report a case of paediatric Vogt–Koyanagi–Harada(VKH) treated successfully with adalimumab (Humira)

Methods:
Case Report

Results:
A 12 year old boy presented with a 2 week history of right eye redness, photophobia and epiphora. Initial examination showed normal left eye and right eye with severe anterior uveitis and RVA of 6/12. He was treated with subconjunctival dexamethasone in addition to intense topical steroids and cyclopentolate. Six days after initial presentation he developed a swollen right optic disc and RPE disturbance at the macula with a RVA of 6.7.5. A week later he subsequently developed a right vitritis, snowballs and exudate at the macula with a RVA of 6/9.5. (5/4/2021) Oral steroids and Methotrexate was started at this point. Full uveitis investigation was sent at initial visit including QuantiFERON and bartonella which was negative. The only positive test was a low Vitamin D of 20 and ACE level of 114.

Unfortunately, the patient missed 5 doses of methotrexate and subsequently developed new headaches, vomiting, reduction in vision in Left eye. At this point his RVA was 6/7.6 LVA was 6/76 with bilateral severe optic disc swelling and bilateral serous retinal detachment. A provisional diagnosis of Vogt–Koyanagi–Harada (VKH) was given, and he was admitted for full neurologic workup which was normal. Intravenous methylprednisolone (IVMP) for 3 days and adalimumab was commenced. LVA improved with 6/12 on day 3 of IVMP and patient was discharged on oral steroids. On review 17 days post IVMP and adalimumab, VA in both eyes was 6/6 with resolution of fluid at the macula and residual optic nerve swelling. Oral steroids were tapered and stopped 5 weeks post starting adalimumab. Our patient has maintained 6/4.8 vision in both eyes with resolution of optic disc swelling and no recurrence in the last 8 months post starting adalimumab.

VKH is an idiopathic multi system granulomatous disease, where a dysfunctional immune response is directed against melanin-associated antigens within the eye, inner ear, meninges, hair and skin. VKH is seen more frequently in adult patients. However, VKH can occur in the paediatric population and the prognosis in this subpopulation can be variable. It is possible that differences in interval between onset of uveitis and starting treatment, type of treatment, and/or duration of treatment could have played a role in the differences in outcomes reported by previous studies. The majority of studies describing the effectiveness of adalimumab in treating VKH are based on adult population.

Conclusions:
This case report is highlights the benefit and effectiveness of early intervention with adalimumab in paediatric patients with VKH.

Evaluating Medical Students' Experience of Near-Peer Led Teaching in Ophthalmology

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Objectives:
Near-Peer Teaching (NPT) or Intern-Led Teaching (ILT) is an expanding component of a medical student's education particularly in their clinical years. It was first described in 1988 by Whitman as teaching delivered by physicians one to two years more senior than those they are training. (1)

ILT has been welcomed by medical schools globally as a valuable adjunct to clinical curriculum and allows for synchronous learning and collaboration between student and tutor. (1,2). We believe it can provide a degree of teaching that is more relevant for a student's examinations, in a comfortable environment cultivating a space where students can freely engage.

ILT has been evaluated by several intern-led teaching programs in Ireland. (3) Our goal was to provide this level of teaching and evaluate its effectiveness when intern – led teaching was used in ophthalmology. We assessed our students based on their attitudes towards the experience and towards interns as tutors versus more senior physicians.

Methods:
We developed a weekly teaching program focusing on neuro-ophthalmology lead by newly qualified ophthalmology interns. The same curriculum was taught weekly to students rotating through the department over the course of 6 weeks. After each session students would complete an eleven-question survey.

Our questions assessed the student's attitudes towards the benefits of tutorials, attitudes regarding interns as tutors and finally who in a team would they most likely approach with a question. Results of the survey were tabulated and assessed.

Results:
18 students responded to our survey over the course of 6 weeks

- 94.4% of students said when attached to a team, the person they would most likely approach with a question was an intern
- 61.1% strongly agreed the tutorials were beneficial, with 89.3% strongly agreeing or agreeing they felt more confident performing clinical examinations afterwards.
- 77.8% of students strongly agreed that there was a more comfortable atmosphere in intern led tutorials compared to senior physician led.
- 83.3% strongly agreed that they felt they could ask interns questions that they could not ask more senior doctors.
- 77.8% of students agreed or strongly agreed that interns covered topics more relevant to their examinations.

Conclusions:
Our results indicate NPT programs provide benefit to medical students in several aspects and may have a beneficial role if adopted as part of the teaching curriculum in ophthalmology.

With increased medical student places in Ireland combined with staff shortages in hospitals, there are limitations and constraints on the amount of time physicians can allocate to student teaching. Interns may serve as a great asset in this way to deliver education. Furthermore, teaching and education is one of the key pillars of clinical governance. By engaging with formal teaching at an early stage of their career, clinicians have an opportunity to develop effective communication skills that will serve them going forward.

Based on our results and available literature, intern led teaching could be a valuable adjunct to ophthalmology curriculum for medical students. The unique features of these programs allow for congruent learning and may cite a mutual benefit.

Review of Prescribing Practices in University Hospital Limerick Ophthalmology Department

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Objectives:
Our objective was to assess the current prescribing practices in our department and decipher whether specific areas of prescribing would require improving or modifying, in order to optimise safe prescribing practices.

Indeed, prescribing is a complex task performed by doctors on a daily basis as part of their practice. As this task involves potential risk for patients, multiple guidelines and prescribing tools have been introduced to help prescribers reduce the risk of erroneous medication prescribing, however ongoing monitoring through audit and education of prescribers is also important to ensure optimal patient care.

Ophthalmological medications constitute a niche part of prescribing, as the conditions and medication formulations are specific to ocular pathologies. Having received communication from general practitioners on prescriptions delivered to patients attending the ophthalmology department, we performed an audit of prescribing in the ophthalmology department.

Methods:
We retrospectively reviewed 101 prescriptions given to patients attending the ophthalmology department, and assessed each for 17 criteria including legibility, signature, allergy status, route, dose and course duration amongst others. We also collected information on the grade of the prescriber to assess whether a difference between SHOs, registrars or consultants would be observed.

Results:
It emerged from this audit that the majority of prescriptions received by patients in the ophthalmology department have either no errors or one error (each 32% of prescriptions). Furthermore, there was no statistical significance in difference between the number of prescriptions with ≤1 errors between SHOs, registrars and consultants (68%, 60% and 64% respectively) demonstrating that patients attending our department can expect the same quality of prescribing independent of the grade of the doctor attending to them. Lastly, the most frequently encountered error was the omission of documentation regarding a patient's allergy status on the prescription (accounting for 60% of errors noted).

Conclusions:
This audit enabled us to observe that the majority of ophthalmological prescriptions have ≤1 errors or omissions, and that patients can expect homogenous prescribing quality irrespective of the grade of the doctor delivering their prescription. Furthermore, by establishing that the omission of allergy status documentation was the most frequent prescribing error, this allowed us to address this and obtain a "NKDA" stamp to remind doctors to document allergy status and save time when doing so.

Xen Gel Stents – The Cork University Hospital experience

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Objectives:
1. To report postoperative intraocular pressure (IOP) control within 12 months.
2. To report complications of xen implant surgery.
3. To report experience of antimetabolites used in conjunction with xen implant.

Methods:
A Retrospective chart review of all patients who underwent xen stent procedure by a single consultant. Intraoperative Mitomycin or 5-FU were used. Preoperative baseline information was obtained for each patient, which included age, diagnosis, previous ocular surgery, visual acuity, intraocular pressure (IOP), and ocular medications. Postoperative data were collected at day one, 6 months and 12 months post procedure. Data were analysed using IBM SPSS 21 - P value < 0.05 was considered statistically significant.

Results:
A total of 10 patients were included. The mean age of the study population is 76.2 years. 7 patients had the xen stent implanted into their left eye. 9 patients had previous ocular surgery of whom (7 had at least phacoemulsification surgery done, 6 had also trabeculectomy with/ without further bleb needling and 4 had previous vitrectomy. A diagnosis of primary open angle glaucoma was made in 6 patients (one of them had glaucoma related to silicone oil implanted after previous retinal detachment surgery complicated by an intraoperative suprachoroidal haemorrhage); the rest were 2 patients Pseudoexfoliation glaucoma, 1 patient neovascular glaucoma and 1 patient uveitis associated glaucoma. One patient was using 4 anti-glaucoma medication before the surgery and the most (6 patients) were using three. Pre-operative mean IOP - IOP measured with Goldmann applanation- was 29.2mmhg (range 14 - 40), Post operative mean IOP on day one was 5.1mmhg (range 2 - 11) and 10mmhg on day twelve months (range 9- 24). 6 patients had mitomycin and 4 had 5-FU used during surgery.

Outcome:
5 patients required no glaucoma medications 12 months after the procedure, 4 patients were using two and one was using single medication. Using different antineoplastic (either mitomycin or 5-FU) medications made no difference to the final IOP. There was no change in vision 12 months after the procedure in all patients of the study.
3 patients developed postoperative complications: One patient had high IOP (Preoperative IOP was 34 reduced to 28 at 6 months and to 24 at 12 months - on topical antiglaucoma-), one patient developed hyphaema that completely resolved and one patient developed suprachoroidal haemorrhage. Surgical complications were not related to the type of glaucoma (P Value 0.06). IOP measurement on day one was lower with neovascular glaucoma patients (P Value 0.023). However, there was no statistical difference on 6 and 12 months and no statistical difference regarding the number of post op medication nor post op complications. Previous ocular surgery had no influence on all the variables shown above.

Conclusions:
This is a limited review of 10 patients. Xen gel implant were an effective tool in minimizing post operative anti-glaucoma medications in the treated eyes as 5 patients went without treatment for 12 months. It is a safe procedure, with complications mainly limited to failure to implant/position satisfactorily, or failure to adequately control IOP, so the use of the device is left to the discretion and experience of the surgeon.

12-Year Analysis of the Microbiological Profile of Infectious Keratitis (Ik) in an Irish Tertiary Hospital.

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Objectives:
To examine the frequencies and causative microorganisms of infectious keratitis (IK) in Cork University Hospital, Ireland.

Methods:
A retrospective review of all patients who were diagnosed with IK and underwent corneal scraping between February 2010 and January 2022 (a 12-year period) at Cork University Hospital, a tertiary referral centre in Ireland. Corneal scrape specimens were identified from an established microbiology database. Demographic factors and microbiological profiles of IK were analysed. Polymerase chain reaction (PCR) swab results (acanthamoeba, herpes simplex virus, varicella zoster virus) were also included in this study.

Results:
Mean age was 52.0 ± 25.6. Of the 319 corneal scrape specimens from 288 patients identified for inclusion, 189 (60%) had positive culture results. Polymicrobial growth (caused by ≥2 different microorganisms) occurred in 48 cases (15%). In total, there were 198 bacterial/fungal isolates recorded, with 17 specimens (8%) reported as mixed growth of skin flora. The most commonly isolated microorganisms were Coagulase-negative Staphylococci (CoNS) (33%), Staphylococcus aureus (17%), Pseudomonas aeruginosa (12%), Streptococcus pneumoniae (8%), and Gram-negative bacilli (8%). Fungi were isolated in 4% of cases. In 105 specimens a gram-stain slide was received, however 3 had insufficient sample to allow microscopy. 22 of the 102 gram-stain results were positive (22%) with 15 of these (68%) showing concordance with culture results. 48 specimens had swabs referred to the National Virus Reference Laboratory (NVRL) for viral PCR, of which 5 were positive for Herpes simplex virus 1 DNA (10%) and 2 for Varicella zoster virus DNA (4%). Between 2020-2021 we received 111 swabs from 89 patients for Acanthamoeba PCR. 12 swabs from 11 patients had detectable Acanthamoeba DNA.

Conclusions:
Our results show a high positive-culture rate of 60% in a relatively low number of samples (135/189 corneal scrape specimens) when compared to comparative centres/studies in the UK. Furthermore, there was a higher proportion of polymicrobial results (15.2%), likely relating to a significant number of contaminants being isolated (e.g. CoNS 35%). 12% of isolates were identified as Pseudomonas aeruginosa - this is a smaller than expected figure that warrants further investigation. We plan to review the threshold for performing corneal scrapes and highlight aseptic technique in sample acquisition to reduce contaminant isolation rates. Revised guidance will be disseminated within the ophthalmology department through ongoing quality improvement education and implementation of a standard operating procedure (SOP).

Clinical and Genetic Re-Evaluation of Inherited Retinal Degeneration Pedigrees following Initial Negative Findings on Panel-Based Next Generation Sequencing

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Objectives:
First-tier screening of inherited retinal degenerations (IRD) with next generation sequencing (NGS) has a diagnostic yield of ~70%. Whole exome/genome sequencing (WES/WGS) may detect further variants, resolving up to 79% of pedigrees however they come with increased cost and need for capacity to manage secondary findings. Deep phenotyping is required to assess which genetic testing modality is most appropriate.

Methods:
Patients enrolled on the Target 5000 study who had negative result after NGS techniques were reassessed by reviewing their records (clinical examinations, multi-modal imaging, electrodiagnostics). This was performed by 3 clinicians in a masked fashion.

Results:
67 patients from 50 pedigrees were identified.

72% (n=48) retained a clinical diagnosis of IRD. 4% (n=2) were referred to the metabolic service for further investigation. 25% (n=17) were deemed non-IRD (4 uveitis, 1 neuro-ophthalmology, 12 AMD).

Of those 48 clinically IRD patients, 8% (n=4) were resolved by further sequencing during the process, 10% (n=5) patients had a single variant associated with autosomal recessive disease and will undergo single gene sequencing for the second variant. 3 pedigrees (n=15) have undergone WGS and 1 pedigree has been resolved. The remaining 48% (n=23) will be reassessed by the clinical genetics team to determine the most appropriate additional genetic testing modalities (e.g., SLA array, WES or WGS).

Conclusions:
After reassessment, further genetic testing was not necessary in 28% of patients by either identifying an alternative diagnosis or referring them onto an appropriate specialty. A care pathway has been developed for the resolution of these patients.

2.5-Year Analysis of Photo-Dynamic Therapy for Chronic Central Serous Chorioretinopathy in an Irish Tertiary Hospital.

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Objectives:
To analyse the anatomical and functional outcomes of patients undergoing photo-dynamic therapy (PDT) with verteporfin for chronic central serous chorioretinopathy (CSC) in the Royal Victoria Eye and Ear Hospital (RVEEH), Ireland.

Methods:
A retrospective review of all patients who were listed for photo-dynamic therapy (PDT) with verteporfin for chronic central serous chorioretinopathy (CSC) between January 2019 and July 2021 (a 2.5 year period) at Royal Victoria Eye and Ear Hospital (RVEEH), a tertiary referral centre in Ireland. Primary outcome measures were change in sub-retinal fluid (SRF) on OCT and change in best-corrected visual acuity (BCVA) following PDT intervention.

Results:
A total of 52 patients were identified with a predominance of male patients (79%) and mean age of 53 ± 10 years. There was a mean duration of symptoms of 20 months (1.9 years) prior to assessment by the medical retinal team in RVEEH (range of 26 days to 14 years). 26 individuals (50%) were noted to have a history of exogenous steroid administration.

Of the 52 patients listed for PDT, 31 patients (60%) underwent PDT treatment while 21 patients (40%) had their treatment cancelled (SRF improvement, declined treatment, did not attend, COVID-19 delays). At the most recent review for the patients who received PDT treatment (mean review of 51 weeks), 15 patients (52%) had sustained SRF resolution, while 6 patients (21%) had SRF recurrence. A 2nd PDT treatment was given to 8 patients (28%)(mean time between PDT treatments of 44 weeks) with 6 of these patients (75%) achieving full resolution of SRF on OCT (mean review of 11 weeks). No adverse outcomes were reported following PDT treatments.

Patients that received one PDT treatment (31 patients) gained 6 ETDRS letters (BCVA mean of 78 ETDRS letters) following treatment (mean review of 51 weeks). Those patients who received a 2nd PDT treatment (8 patients) gained 4 ETDRS letters (BCVA mean of 75 ETDRS letters) following treatment (mean review of 11 weeks).

Conclusions:
Our results show that photo-dynamic therapy (PDT) with verteporfin for chronic central serous chorioretinopathy (CSC) performed by the medical retina service in RVEEH had favourable outcomes. 21 of 31 patients (68%) who received PDT treatment had complete resolution of sub-retinal fluid (SRF) on OCT, a stark improvement compared to those who did not receive PDT treatment where SRF resolution was noted in only 10 out of 21 patients (48%). These figures are comparable to the PLACE trial, a large multi-centre randomized control trial, that noted SRF resolution in 51% of patients at 6 weeks post PDT, and 67% of patient had SRF resolution at 8 months post PDT. Furthermore, the patients that received PDT in RVEEH gained 6 ETDRS letters, similar to the PLACE trail (4.6 letters gained). Our results show that PDT is a safe and effective therapeutic option in an Irish population and should be considered in individuals with chronic CSC.

Effectiveness, Capacity and Referral Patterns of Ophthalmology Consultations in a Non-Emergency Service Provision Hospital

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Objectives:
Ophthalmology consultation services are an important service in tertiary hospitals. Timely consultation is imperative to ensure patients vision is not threatened and they receive high quality care (1). This can present a challenge in a large hospital that does not provide emergency ophthalmological services.

In-patient assessments can also be more difficult due to concurrent Illness, decreased mobility of patients, altered mental status or clashing schedules with axillary services. The severity of systemic disease encountered by the inpatient population is markedly different from an outpatient setting, making inpatient assessment more time-consuming (2,3).

With this in mind, we aimed to profile the patterns of referrals to our department for the purpose of auditing urgency, impact of consults on patient outcomes and to explore potential new methods of stream-lining our service for improved results.

Methods:
We retrospectively reviewed 143 referrals to ophthalmology services at St. Vincent's University Hospital over a 10-month period.

These consultations were assessed based on the referring department, symptom burden, the perceived ophthalmological concern and onset/duration of symptoms.

Based on information provided on the referral form we triaged patients into four categories for evaluation (i) same day, (ii) next day (iii) same week or (iv) next week or OPD.

Finally, we reviewed if these patients, upon discharge, had the ophthalmology consultation outcome mentioned in their discharge letter or if they were followed up by our department as an outpatient, as a measure for significance of the contribution to patient care.

Results:
Medical speciality services requested 84.6% (121/143) of the consults, with 15.4% (22/143) being made by surgical teams. The acute medical unit and the neurology department were the two medical teams which referred most often, each accounting for 11.8% of referrals (17/143). The most common referring symptom was "blurring of vision," or "visual acuity reduction," accounting for 43.3% (62/143) of the referrals. Patients with a pre-existing ophthalmology diagnosis accounted for 23% (33/143) of the referrals.

The most common ophthalmological category was neuro-ophthalmology (63/143), specifically acute onset blurring or vision loss accounting for 53.9% (34/63) of consults, cranial nerve palsies 9.5% (6/63) and evaluation for possible papilloedema 19% (12/63).

Screening examination requests such as visual fields accounted for 4.89% of the referrals.

On average we received 3.65 consults a week, not including bank holidays.

46/143 (32%) patients were triaged to be ideally seen on the same day due to potential urgent pathology.

52 out of 143 (36%) patients seen had "ophthalmology review" mentioned in their discharge letter. Overall, 32 patients received follow up in with the SVUH outpatient ophthalmology services or with other hospitals, 22.37% of all referrals.

Conclusions:
Ophthalmology input is fundamental to the delivery of appropriate care in many inpatients. With almost every third consult ideally being seen the same day it is important that time is allocated for inpatient consults to be seen at short notice.

It is clear our service is impactful to the overall care of these patients with 32% of patients requiring follow up in OPD.

This study provides insights into the conditions we are referred regularly and with this information provide a framework for streamlining consults into sight threatening same day consults versus others that can be seen in a less urgent timeframe.

Case Study: The Boy with the Eyesore Tattoo.

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Objectives:
The objective of this case report is to highlight the significant presentation of sight-threatening uveitis as a complication of cutaneous tattooing.

Methods:
A 31-year-old Caucasian barber presented to the ophthalmology acute clinic with left eye redness, epiphora, and photophobia of four weeks duration. He was found to have anterior chamber cells with keratocytic precipitates, and vitreous cells. He was diagnosed with left anterior and intermediate uveitis. Systems review was unremarkable except for the description of recently itchy red skin tattoos. Examination revealed palpable erythematous tattoos in different locations of his body. A skin biopsy was arranged.

Results:
A skin biopsy showed granulomatous inflammation of tattooed skin. Patient was treated with oral steroids and his symptoms improved. A short period of time later he presented with right eye acute anterior uveitis. He has been managed with low dose oral steroid and was not found to have significant inflammation or symptoms at his last outpatient visit.

Conclusions:
This case highlights a largely unrecognised complication of skin tattooing and, with tattoos becoming increasingly common, it is important to consider it as a rare cause of uveitis. The reaction was first described in 195 by Lubeck and Epstein and appears to involve a granulomatous / delayed hypersensitivity reaction to tattoo ink that may act as an antigenic trigger in susceptible individuals. It can result in blinding uveitis and must be managed aggressively and quickly.

Retinoblastoma in Ireland – A Review of the Caseload, Genotyping and Molecular Profiles of Patients over the Past 20 Years.

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Objectives:
Retinoblastoma is most commonly due to either a germline (inherited) or somatic (within tumour) mutations in the RB1 tumour suppressor gene. Over the past decade non-RB1 somatic mutations in other tumour suppressor/proto-oncogenes have been identified in the development of retinoblastoma. Non-RB1 somatic mutations are associated with a higher grade, more clinically aggressive tumour.

Our objectives are to review all cases of retinoblastoma in the Irish population from 2001 – 2020. The germline status in each case will be obtained. Finally we will assess the molecular profiling of selected enucleation specimens to investigate for non-RB1 genetic alterations in these tumours.

Methods:
Ethical approval was obtained from the CHI Research Ethics Office (REC-087-22). All enucleation cases for suspected retinoblastoma performed in Ireland between 2001 – 2020 were reviewed. Patient demographics were collected and histopathological features including tumour differentiation, extent and AJCC TMN classification were analysed.

Germline RB1 genetic testing results and family history were reviewed in the Department of Clinical Genetics, Crumlin. Tissue from 5 selected cases underwent molecular next generation sequencing in Great Ormond Street Children's Hospital, London.

Results:
65 enucleations were performed on 63 children. 41% were female, 59% were male. The average age at surgery was 2.72 years. 56% had choroidal invasion and 61% had optic nerve invasion at enucleation. 4 of the 5 patients who were referred for tumour molecular profiling had somatic RB1 gene variants. 1 patient had a non-RB1 mutation. This was a heterozygous variant in the BCOR gene (c.4185dup). This tumour was high grade and poorly differentiated, in keeping with a more aggressive tumour.

Conclusions:
The rate of enucleations for retinoblastoma has remained stable over the past 20 years. This study supports the literature in highlighting the importance of molecular profiling to identify non-RB1 somatic mutations, which are often higher grade and may benefit from more aggressive treatment.

Internuclear Ophthalmoplegia Secondary to Ischaemia in a Young Patient with Ampiginous Choroiditis

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Sligo University Hospital, Sligo.

Objectives:
To report a case of ampiginous choroiditis associated with internuclear ophthalmoplegia.

Methods:
Observational case report.

A 21 year old man presented to the eye emergency department with new onset blurred vision and a central scotoma in his right eye. Visual acuity was 6/36 OD and 6/6 OS. Fundal examination revealed multiple, large cream-coloured placoid subretinal lesions throughout the posterior pole in both eyes with macular involvement in his right eye only. Ocular coherence tomography, fundus fluorescein angiography and indocyanine green angiography demonstrated that these lesions were located in the choriocapillaris and had caused extensive atrophy of the outer retinal layers including the photoreceptor layer of the right macula. In the following two weeks these placoid lesions progressed in both eyes with a resultant visual decline. The patient was commenced on corticosteroid and mycophenolate. Three weeks following his initial presentation he re-presented to the emergency department with a left internuclear ophthalmoplegia (INO), nystagmus and leg weakness. MRI brain demonstrated acute ischaemia in the left pons and parietal lobe. Cerebral vasculitis was not present on CT intracranial angiography. Other laboratory and radiological investigations were normal.

Results:
The association between acute posterior multifocal placoid pigment epitheliopathy (APMPPE) and stroke has been well documented in the literature to date. An underlying vasculitic process is thought to account for such findings. There is an overlapping spectrum of clinical appearance among APMPPE, ampiginous choroiditis and serpiginous choroiditis however ampiginous choroiditis may demonstrate a more prolonged and progressive clinical course despite ongoing treatment. There have only been two case reports associating ampiginous choroiditis with central nervous system involvement to date and neither of these were associated with an INO.

Conclusions:
In rare cases cerebrovascular ischaemia may be associated with ampiginous choroiditis, this case highlights the need for close observation of neurological symptoms in patients with the condition.

Students' Experience and Outcomes Following a Targeted, Blended Teaching Module During their Ophthalmology Rotation

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Objectives:
There are approximately 272,000 people living with low vision and sight loss in Ireland. Ocular-related conditions account for 1.5% of all GP consultations - approximately 50 consultations per 1000 population per year. Access to quality eye care is a significant risk factor in the development of irreversible ocular damage. Therefore, it is important for all physicians to be able to recognise and manage common non-vision and vision threatening conditions, and to know when it is appropriate to consult ophthalmology services. We surveyed medical students in a teaching hospital during their ophthalmology rotation which has returned to in-person teaching following several years of online delivery. We set out to establish the preparedness of medical students to identify, diagnose and manage common presentations of cardinal ophthalmology conditions before and after undertaking their ophthalmology clinical rotation.

Methods:
This was a prospective, longitudinal survey whereby a questionnaire was given to students prior to the commencement of their rotation and then at the end of their rotation. This survey was designed to address common clinical scenarios across ophthalmology including cataracts, glaucoma, diabetic eye disease, age-related macular degeneration, visual field defects and ocular manifestations of systemic diseases. Likert scales were used to rank how well equipped students felt to identify and manage common ocular conditions, and when to know when further ophthalmology consultation is necessary. Teaching was delivered in-person via a blended approach: didactic lectures; clinical shadowing; multimedia; simulators; and near-peer led tutorials.

Results:
Overall, student performance improved significantly following their teaching rotation [Pre-teaching: 49% correct versus Post-teaching: 70% correct (p=0.0003)]. The greatest knowledge improvements occurred in the areas of endophthalmitis (p=0.0001), vitreous haemorrhage (p=0.006) and optic neuritis (p=0.009).

Students also reported improved confidence in their ability to identify and manage common ophthalmic conditions presenting to the emergency department, and improved confidence in recognising which cases require onward referral to ophthalmology.

Conclusions:
Targeted delivery of ophthalmology education, focussing on areas of major presentation and acuity improved student overall performance. While significant improvements were seen following the delivery of education in endophthalmitis, vitreous haemorrhage and optic neuritis, similar improvements were not seen in areas such as glaucoma, diabetic eye disease and cataracts. This was explained by high pre-teaching performance in these areas. Therefore, longitudinal assessment of student performance pre-teaching could inform which part of the ophthalmology curriculum to emphasise during the course of ophthalmic rotations and thus help maximise efficiency from limited contact time within a currently packed curriculum.

Post-Operative Outcomes of MRSA Positive Patients who Received Intracameral Vancomycin during Cataract Surgery

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Objectives:
To evaluate the post-operative outcomes in patients who received intracameral Vancomycin during cataract surgery.

Methods:
In this retrospective cohort study, patients with a history of Methicillin Resistance Staphylococcus Aureus (MRSA) colonisation who received cataract surgery between 2017 and 2020 were reviewed. Patients who received intracameral vancomycin were selected and pre-operative Best Corrected Visual Acuity (BCVA) and post-operative BCVA (pinhole) at one month review. The presence of endophthalmitis and any evidence of Haemorrhagic Occlusive Retinal Vasculitis (HORV; defined as presence of any of retinal haemorrhages, retinal vasculitis, anterior chamber inflammation, macular oedema) were recorded.

Results:
Twenty-five eyes of twenty-two patients were analysed. The average age (+/- Standard Deviation) was 76.75 +/- 11.1. All had a history of MRSA colonisation. Either Cefuroxime and Vancomycin (22/25, 88%) or Vancomycin alone (3/25, 12%%) was administered intracamerally. The mean preoperative distance visual acuity was 1.17 ± 0.85 logMAR. The mean postoperative distance visual acuity was 0.62 ± 0.66 logMAR. There was no cases of post-operative endophthalmitis, or of documented HORV. Four (16%) patients had new macular oedema at one month review and one patient (4%) demonstrated macular oedema and retinal haemorrhages. One patient had macular oedema following cataract surgery utilising intracameral Vancomycin on the second eye (1/3, 33.3%). In eyes with post-operative complications which can be associated with HORV (5/22, 20%), pre-operative visual acuity was 1.24 +/- 0.70 LogMAR and post-operative visual acuity was 1.36 +/- 0.88.

Conclusions:
This study demonstrates an improvement in visual acuity following cataract surgery in patients administered intracameral vancomycin. No cases of endophthalmitis or documented HORV were recorded. Post-operative macular oedema was seen at a rate higher than expected for small incision cataract surgery.

12-Month Analysis of Emergency Argon Laser Retinopexy in an Irish Tertiary Hospital

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Objectives:
To identify the post-procedural outcomes following treatment of retinal tears with argon laser photocoagulation by trainee doctors in an emergency setting

Methods:
A retrospective review of all patients who underwent emergency argon laser photocoagulation (retinopexy) for retinal breaks between January 2021 and December 2021 in Cork University Hospital (CUH), a tertiary referral centre in Ireland.

Results:
A total of 87 patients were identified with a mean age of 60 ± 12 years and a gender predominance of female patients (54%). The follow-up period post-procedure ranged from 1 week to 11 months. Pre-disposing risk factors were identified – myopia in 32 patients (37%), recent trauma in 2 patients (2%), and a family history of rhegmatogenous retinal detachment in 4 patients (5%).

All patients had argon laser retinopexy performed on the slit-lamp in the CUH eye emergency department. In 49 of 87 cases (57%) the procedure was performed by a Registrar, 33 of 87 cases (38%) were performed by a Senior House Officer while the remaining 5 cases (6%) were performed by a Consultant. 63 out of 87 patients (72%) had a superior break with a horse-shoe tear (HST) noted in 66 of 87 patients (76%). Associated findings included lattice degeneration in 23 patients (26%), sub-retinal fluid in 48 patients (55%), and vitreous haemorrhage in 29 patients (33%).

14 patients (16%) required multiple slit-lamp argon laser retinopexies in CUH while 20 patients (23%) required further intervention by a vitreo-retinal surgeon which included indirect laser retinopexy for 3 patients (3%), cryotherapy for 10 patients (11%) and pars plana vitrectomy for 7 patients (8%). At the most recent follow-up, all the patients had anatomically attached retinas.

Conclusions:
A notable proportion of patients (23%) undergoing laser retinopexy in the emergency department required further intervention. Many of these cases required either indirect laser retinopexy or cryotherapy to ensure adequate coverage of the anterior aspect of peripheral retinal breaks. Currently, trainees do not have access to indirect laser retinopexy in the CUH emergency department - therefore patients would likely benefit from an early discussion with the on-call vitreo-retinal surgeon. Furthermore, departmental training in laser retinopexy and the management of retinal breaks is recommended as part of ongoing quality improvement.

Anterior Segment Findings in Patients with Multiple Myeloma Treated with Belantamab

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Objectives:
Multiple myeloma is an incurable haematological malignancy typically characterised by multiple relapses requiring ongoing sequential therapy. Belantamab mafodotin, an antibody–drug conjugate, targets B-cell maturation antigen and delivers the cytotoxic microtubule disrupting agent monomethyl auristatin F to multiple myeloma cells. Corneal epithelial microcyst-like changes are however a common adverse effect and may necessitate dose delays and/or reductions. We report experience in the Ophthalmology clinic of those patients treated with Belantamab mafodotin.

Methods:
Anonymised data including patient-reported ocular symptoms, refraction, un-aided visual acuity, best corrected visual acuity and corneal examination findings were analysed. A combination of the latter two of these informed a grading system, which had been subsequently used to guide Belantamab madofotin dose modification i.e. dose delay +/- reduction.

Results:
Blurred vision and dry eye were the most commonly patient reported symptoms. Corneal epithelial changes occurred in the majority of patients and necessitated dose delays and/or reductions. Despite frequent scheduled review in the Ophthalmology department, the onset of these changes prompted emergent review in a number of patients. Permanent vision loss did not occur.

Conclusions:
Belantamab mafodotin represents a novel treatment for patients with already extensively pre-treated multiple myeloma who otherwise may have limited or indeed no treatment options. In turn, appropriate identification and management of corneal changes commonly associated with its use are crucial. Proactive management of such changes could minimize their effects on patients, enable patients to continue their treatment and, in turn, allow better anti-myeloma outcomes.

Ocular Manifestations of Syphilis – A Case Series of Six Patients.

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Objectives:
1) To describe and illustrate the clinical presentation, ophthalmic exam findings and management of six separate cases of ocular involving syphilis.
2) To highlight syphilis as a crucial differential diagnosis for emergency eye presentations.
3) To review the literature body concerning ocular manifestations of syphilis.

Methods:
Six cases of syphilis presenting to Cork University Hospital Eye Casualty were identified over a 4 year period. Retrospective chart review was used to extract relevant clinical details. Cases are described accompanied with multi-modal imaging.

Results:
All cases were in males. Median age was 48.5 years (range 28-76). All were syphilis total antibody positive, RPR reactive and TP-PA reactive. Mean time from ophthalmology assessment to a positive test was 10 days with prolonged time to diagnosis observed in older age patients. Presenting complaints varied between red eye (1/6), blurred vision (2/6), central scotoma (4/6) and floaters (2/6). Systemic symptoms included hearing loss/tinnitus, skin rash, facial nerve palsy, headache and ataxia. Both eyes were involved in 4/6 cases. Exam findings varied between mild to severe anterior segment inflammation (3/6), papillitis (4/6), panuveitis (1/6), acute posterior placoid chorioretinopathy (1/6) and hyperreflective nodular retinal pigment epithelial lesions with disruption of the ellipsoid zone (3/6). All cases were managed in co-ordination with infectious disease specialists with 5 of 6 patients undergoing lumbar puncture. A complete treatment course of IV or IM benzylpenicillin or IV ceftriaxone led to resolution of ocular symptoms in all patients.

Conclusions:
Our case series highlights the increasing prevalence of syphilis. Liaison with infectious disease specialists is key for further investigation of systemic syphilis and initiation of treatment. Variation in clinical presentation and patient age emphasises the need for a high index of suspicion for syphilis in all cases of ocular inflammatory disease.

Neurological Complications of Orbital Cellulitis … Beware!

Behaegel J, Khan R, Mackle T, Husien B, Cassidy L.
Royal Victoria Eye and Ear Hospital, Dublin.

Objectives:
To generate clinical awareness among ophthalmologists of neurological and intracranial complications of orbital cellulitis by presenting 3 unusual cases

Methods:
We describe the clinical presentation and management of two patients with brain abscess formation and one patient with a cranial nerve palsy preceded by an orbital cellulitis. Their case presentations are illustrated with photos and videos.

Results:
A male and a female patient of 56-years old and 14-years old respectively, both developed a brain abscess despite aggressive treatment of an orbital cellulitis with IV antibiotics and orbital abscess drainage. The former patient clinically deteriorated after repetitive drainage and FESS surgery, and eventually was referred for neurosurgical evacuation of the intracranial collection. The latter patient recovered under conservative treatment.

A third case was an 8-year old girl that developed a sixth nerve palsy while under broad-spectrum IV treatment for an orbital cellulitis in underlying sinusitis. She was submitted to urgent endoscopic sinus surgery with a good resolution of her nerve palsy thereafter.

All patients recovered well with no neurological sequelae.

Conclusions:
The case series emphasize that intracranial complications of orbital cellulitis still occur despite maximum medical and surgical management. By presenting these cases we want increase the clinical awareness of these possible devastating complications among ophthalmologists. With prompt recognition and aggressive surgical and medical management the prognosis is good.

Cystoid Macular Oedema Rates after Artisan Versus Scleral Fixated Lens Implantation

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Objectives:
The artisan intraocular lens (IOL) is widely used for correction of aphakia without capsular support, having largely replaced classic anterior chamber IOLs due to a better safety profile. Despite this, artisan IOLs are not without potential complications, such as cystoid macular oedema (CMO). Published rates of CMO after artisan lens implantation vary significantly from 0% up to 25%. Theoretically, artisan lenses may be associated with increased likelihood of CMO due to iris contact which may cause low grade chronic uveitis. Scleral fixated intraocular lenses represent an alternative option in aphakic patients with no capsular support. We wished to compare the visual outcomes and rates of CMO in patients after artisan IOL compared to scleral fixated IOL insertion.

Methods:
We carried out a retrospective chart review on all patients who underwent either artisan lens or scleral fixated lens insertion by a single vitreoretinal surgeon between October 2019 and January 2022. Data collected included indication for procedure, pre- and post-operative visual acuity and refraction, rate of CMO and other complications.

Results:
Data was available for 8 eyes with artisan IOLs and 11 eyes with scleral fixated IOLs. The indications were similar for each group, and included dislocated IOL, capsular tear and ectopia lentis. Mean pre-op visual acuity was 1.0 logmar and not significantly different for each group. Post-operative mean best corrected and pinhole visual acuity was better in the scleral fixated IOL group. 25% of artisan IOL patients had post-operative CMO compared to 18% of scleral fixated IOL patients. 45% of patients with scleral IOLs required re-suturing due to protrusion of a lens haptic post-operatively, related to the surgeon's initial learning curve.

Conclusions:
Post-operative CMO occurred more frequently after artisan IOL insertion than after scleral fixated IOL insertion, although the rate was relatively high in both groups compared to the literature. These patients had all had previous ocular surgery, often a complex procedure, and therefore may have been at higher risk for this complication. Our patients who underwent scleral lens insertion had superior visual outcomes. This study was limited by sample size- further research into this area is indicated.

Moving Glaucoma Care into the Community – Experience from RVEEH and CH07

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Objectives:
The Primary Eye Care Report proposed that the majority of patients with chronic eye conditions attending acute hospitals should have their care moved to Integrated Eye Care Clinics in the community. We describe the transfer of patients from Virtual Glaucoma Assessment Clinic and Long Waiting List in RVEEH to CH07 Primary Care Clinic. We also report the patients seen to date in the CH07 glaucoma clinic.

Methods:
Over a 4 month period (November 21 to March 22) we prospectively screened all the patients reviewed at the virtual clinic for possible transfer to CH07. Only stable patients meeting strict criteria were considered. All patients had to reside in the catchment area. Simultaneously we screened patients on the 'long overdue' list for the doctor's outpatient clinic to assess suitability for transfer to CHO7.

Results:
280 patients were seen in the Virtual Glaucoma Assessment Clinic at RVEEH during the study timeframe. Of these, 82 (29.3%) met the criteria for transfer. The mean age of patients transferred was 62.4 years, with 60% male and 40% female. Ocular hypertension, glaucoma suspect, and primary open glaucoma accounted for 39%, 25% and 28% of referrals. 39% of patients were not taking any eye drops. 35% were using one drop, 25% on two drops and 6% on 3 drops. Since November 2021 to 31st March 2022, 100 patients have been seen in CH07 glaucoma service. 118 were booked into their clinics but 18 DNA. We further screened 200 long waiters which has further identified 31 patients suitable for transfer to CH07.

Conclusions:
29% of patients from the stable glaucoma assessment clinic were eligible for care in the community eye care clinic with virtual review by Consultant Medical Ophthalmologist.

IRISH COLLEGE OF OPHTHALMOLOGISTS

About the ICO

Established in 1992, the Irish College of Ophthalmologists (ICO) is the recognised training and professional body for medical and surgical eye doctors in Ireland.

In 2018, the ICO marked the very significant milestone of the 100th Anniversary of the founding of the Irish Ophthalmological Society (IOS), the forerunner to the Irish College of Ophthalmologists.

The ICO is a registered Irish charity. We are committed to the advancement and improvement of eye health and patient safety and work to protect, enhance and promote the highest standards in the delivery of eye care.

The delivery of healthcare requires a lifelong commitment to learning and the ICO's goal is to provide and support education and learning for ophthalmologists in training, in practice and those who work alongside them as they deliver care to patients.

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