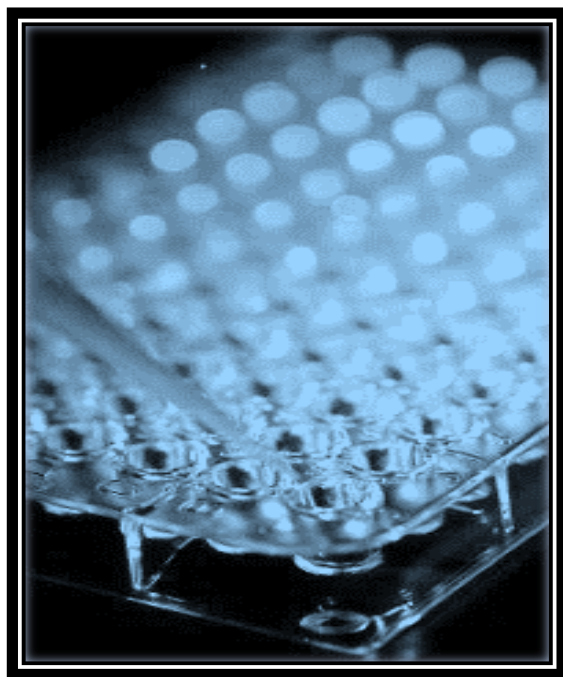


IEQAS

Irish External Quality Assessment Scheme

Programme & Book of Abstracts

**Annual Participants' Conference
Thursday 6th October 2022**



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Welcome

Welcome to this year's IEQAS Participants' Conference. IEQAS is one of the longest-standing quality initiatives in the Irish health service. The IEQAS Annual Conference, is an important event for showcasing commitment to education and improvement in External Quality Assessment (EQA).

We provide EQA schemes for laboratory medicine (including primary care), offering professional advice and guidance as necessary.

The scheme is educational rather than regulatory in nature and provides a means of external audit that operates continuously, thus helping laboratories to achieve their aim of continuous quality improvement.

An increasingly important role for IEQAS is participation in national and international initiatives that have the objective of improving quality of analysis in laboratory medicine.

IEQAS is a non-profit professional association directed by a Steering Committee consisting of nominees from the major professional bodies involved in Irish laboratory medicine:

- **Academy of Clinical Science & Laboratory Medicine**
 - **Association of Clinical Biochemists in Ireland**
- **Royal College of Physicians of Ireland, Faculty of Pathology**

On behalf of the IEQAS Steering Committee



European Organisation For External Quality Assurance
Providers in Laboratory Medicine

IEQAS Committees

Steering Committee

McGing, Peadar ⁴	<u>Chair</u> Formerly Principal Biochemist, Mater Misericordiae UH
Driscoll, Therese ⁴	<u>Vice-Chair</u> Senior Medical Scientist, Tallaght UH
Byrne, Brendan ²	Principal Biochemist, Mater Misericordiae UH
FitzGerald, Susan ³	Consultant Microbiologist, St Vincent's UH
Graham, Hazel ⁴	Formerly IEQAS Quality Manager
Howley, Patricia ⁵	IEQAS Operations & Quality Manager
Kane, Anne ⁵	IEQAS Scheme Manager
Murphy, Dymphna ⁴	Former Chief Medical Scientist, Tallaght UH
Ward, Cara ⁴	Senior Medical Scientist, St Vincent's UH

Associated Professional Bodies

- ¹ Academy of Clinical Science & Laboratory Medicine (ACSLM)
- ² Association of Clinical Biochemists in Ireland (ACBI)
- ³ Royal College of Physicians of Ireland, Faculty of Pathology
- ⁴Co-opted by Steering Committee
- ⁵IEQAS Operations Management

Additional Specialist Advisors

Boran, Gerard	Consultant Chemical Pathologist, Tallaght UH
Jackson, Bernadette	POCT Manager, Naas General Hospital
Kiernan, Pdraig	Chief Medical Scientist, Connolly Hospital Blanchardstown
McCafferty, Richard	Chief Medical Scientist, St James's Hospital
MacMahon, Marguerite	Principal Biochemist, Mater Misericordiae UH
Murphy, Deirdre	Chief Medical Scientist, The Rotunda Hospital
O'Kelly, Ruth	Formerly Principal Clinical Biochemist, Coombe Women & Infants UH
O'Sullivan, Niamh	Consultant Microbiologist, Children's Health Ireland, Crumlin/Coombe Women & Infants UH
Phelan, Maria	IEQAS Scheme and Quality Administrator

Operations Management

Howley, Patricia (Operations & Quality Manager)
 Kane, Anne (Scheme Manager)
 Phelan, Maria (Scheme & Quality Administrator)
 (UH = University Hospital)

CONFERENCE PROGRAMME			
First Plenary Session (Kindly sponsored by Roche) Chair: Dr Peadar McGing* IEQAS Chair			
09:30	IEQAS Chair's address		
09:40	The Rise of Lab Greening as a Climate Action: Dr Una Fitzgerald, NUI Galway		
10:10	Paediatric Hepatitis in the 21st Century: Dr Cilian O'Maoldomhnaigh, CHI Crumlin/Temple St		
10:50 COFFEE/TEA BREAK			
Second Plenary Session (Kindly sponsored by Medicon Ireland) Chair: Ms Therese Driscoll*, TUH & IEQAS Vice-Chair			
11:10	eHealth Laboratory Programme including MedLIS & Laboratory Stabilisation: Mr Thomas Walsh, Laboratory Programme Manager, eHealth Ireland		
11.50	CAR-T cell therapy: Prof Larry Bacon, St James's Hospital		
12:30 LUNCH			
Afternoon Workshops from 13:45			
<div>Chemistry Workshop (Kindly sponsored by ACBI) Chair: Dr Brendan Byrne*, Mater UH</div> <div>Haematology Workshop (Kindly sponsored by ACSLM) Chair: Dr Claire Wynne, TUD</div>			
13:45	Renal Investigations: Prof Denise Sadlier, Mater UH & UCD	13:45	Blood Cell Morphology Scheme - Annual Review: Dr Catherine Flynn*, St James's Hospital
14:25	Case Studies – Ms Karen Heverin, Beaumont Hospital, Ms Ciara Cuning, Mater UH	14:45	Chimeric Antigen Receptor (CAR) T cell Therapy in Paediatric B cell ALL– a potential curative treatment for relapsed/ refractory disease: Mr Mike Corrigan, CHI Crumlin
14:55	An IEQAS report – what does it all mean?: Ms Anne Kane* IEQAS & Ms Bernie Jackson*, Naas General Hospital	15:15	Case study; Ms Therese Driscoll*, Tallaght UH

		15:35	"Evaluation of the suitability of a LMWH calibrated anti-Xa assay for the measurement of Rivaroxaban and Apixaban": Ms Aoife Boylan, SVUH.
Microbiology Workshop (Kindly sponsored by Medical Supply Co) Chair: Dr Suzy Fitzgerald*, SVUH		Transfusion Workshop (Kindly sponsored by Brennan & Company) Chair: Ms Deirdre Murphy* & Mr Padraig Kiernan*	
13:45	The "Itchy & Scratchy Show": Dr Susan Fitzgerald*, SVUH	13:45	TTP in a Paediatric Patient: Ms Arlene Bates, CHI Crumlin
14:15	Is the environment an underestimated source for HCAI?: Dr Saied Ali, SVUH	14:25	Implementation of European interlaboratory testing for QC laboratories in Blood Establishments: Ms Nadine Marpaux, European Blood Alliance
14:45	The emergence of a novel viral pathogen: The diagnostic challenges: Dr Jeff Connell, NVRL	14:45	Administration of Anti-D immunoglobulin : A review of some Rhesus D Negative Patients: Ms Deirdre O'Neill, Rotunda Hospital
15:15	Clinical experience of Monkeypox: Dr Cathal O'Broin, SVUH		
CLOSE 15:45 -16:15			

***IEQAS Steering Committee member or Specialist advisor**

Also Kindly Sponsored By:

ACBI, ACSLM, Brennan & Company, Cruinn Diagnostics, Eurofins Biomnis, Labquality, Medicon Ireland, Medical Supply Company, Roche, Sysmex

IEQAS Annual Report 2021

IEQAS continues to provide and expand a wide-ranging EQA service. Our national schemes include Clinical Chemistry, Full Blood Count, Blood Cell Morphology and HbA1c. We currently have participants in over 90 different schemes, run either by IEQAS directly, or in collaboration with Labquality, the Finnish EQA scheme. We are the partner in Ireland for this international EQA provider, which has 4500 laboratories from more than 50 countries participating in their programme of >150 different schemes. IEQAS has ISO 9001:2015 certification.

We wish to thank all members of the Steering Committee and other IEQAS Specialist Advisors for their continued support and commitment.

Thanks also to the staff in the labs in Tallaght UH, SVUH, Mater UH, Children's Health Ireland (CHI) at Crumlin, St James's and MRH Tullamore for facilitating IEQAS with sample collection, storage and distribution.

In November 2021, Peadar McGing (formerly Mater UH) was elected as IEQAS Chair and Therese Driscoll, TUH was elected as Vice-Chair.

We would like to thank the following retired members for their assistance over the years:

Jennifer Brady, CHI Crumlin & Temple St as Steering Committee member.

Kanthi Perera, MRH Tullamore as a Specialist Advisor for Blood Cell Morphology.

Damian Griffin, Galway UH, Ned Barrett, Retired UH Limerick and Patricia Kelleher, Tallaght UH as a Specialist Advisors.

We welcome Catherine Flynn St James's Hospital, as Specialist Advisor for Blood Cell Morphology, Deirdre Murphy, Rotunda & Padraig Kiernan, Connolly Hospital as Specialist Advisors for Transfusion, and Brendan Byrne, Mater UH to the Steering Committee.

Activities 2021

- **Fresh material for IEQAS Schemes:** Such material provides valuable information and will be continued where possible. Fresh material was used in our Clinical Chemistry scheme in Mar, Jun & Sept 2021; HbA1c, all 5 distributions and Full Blood Count, May 2021. All 6 Blood Cell morphology slides were donated.

- **IFCC EurA1c-project for HbA1c:** In Oct 2021, two fresh pooled blood samples were distributed simultaneously via multiple EQA organisers to establish a European-wide picture of HbA1c performance (expanded to now include Asia, America & Africa). IEQAS has been participating in this project since it was established in 2016. The Irish participants' results were once again put forward for inclusion in this important project. The EurA1c 2021 report was issued in September 2022 and a copy was sent to all participants. This project is planned again for late October 2022.
- **EQALM:** IEQAS is a member of the European Organisation for EQA Providers in Laboratory Medicine; IEQAS contributes to many EQALM surveys, which assist in suggesting improvements for EQA schemes across Europe.
- **National POCT Committee:** IEQAS are represented on this committee. The published Guidelines for safe and effective Near Patient Testing (NPT) 2021, are available on the IEQAS website.
- **Reference Interval Harmonisation Project Group:** IEQAS assist on this National Clinical Programme for Pathology project.
- **ICSH:** Jointly with the ACSLM, IEQAS are affiliated with the International Council for Standardisation in Haematology; Richard McCafferty is the Irish representative.
- **Health Products Regulatory Authority:** IEQAS have regular contact with the HPRA. Individual participant performance is never discussed and remains the responsibility of the participant.
- **Suppliers:** IEQAS maintains good relations with many suppliers and assists with problems and issues as they arise.

Our online annual re-order forms for 2023 will be emailed to all participants shortly. A summary of all schemes offered by IEQAS, and the changes to Labquality Schemes for 2023, are included with this booklet.

A copy of the [Labquality Product Catalogue 2023](#) can be found on IEQAS website. Labquality schemes should be ordered directly from IEQAS, and we are delighted to assist you with any queries you may have throughout the year.

Patricia Howley BSc, MSc, IEQAS Operations & Quality Manager

IEQAS Programme 2023

IEQAS provides schemes directly and from Labquality, our Finnish EQA partner

- IEQAS deal with all your orders & queries, incl. Labquality
 - Prices in Euro
 - Local advice & expertise
 - Special Surveys
- Pre-order Conference places 2023

IEQAS National Schemes*

www.ieqas.ie -> Participant Info -> IEQAS Schemes

IEQAS National schemes

Blood Cell Morphology

- One sample, distributed every 2 months
- Educational (not scored)
- Annual review at IEQAS Conference
- Participants are encouraged to supply interesting cases

Clinical Chemistry (general)

- One sample, distributed monthly
- Human – based samples
- Minimally processed patient pools (3/year)
- Reference Values quoted (>1/year)

Full Blood Count

- Two samples, distributed every 2 months (analytes include RDW)
- Annual Fresh Blood Survey

HbA_{1c} (suitable for Laboratory and POCT)

- Two samples, distributed 5 times/year
- Minimally processed patient pools
- Participation in EurA_{1c}, (Annual survey since 2016 in Europe and now including Asia/Africa and America)
- Scored vs Reference Value (ERL)
- Suitable for Laboratory and POCT meters

Anonymised IEQAS participant data may be used for research purposes to assist with improvement in EQA services nationally and/or internationally.



9-10 FEBRUARY, 2023
HELSINKI, FINLAND

LABQUALITY DAYS

International Congress on Quality in Laboratory Medicine

Labquality Days is one of the largest annual international congresses in Scandinavia focusing on quality in laboratory medicine and medical devices.

The inspiring atmosphere of the annual scientific congress gathers medical laboratory and quality management professionals to exchange ideas and meet colleagues in Helsinki, Finland in February 2023.

The main theme for the 2023 congress is Green and Sustainable Laboratories. The sub-themes consist of Quality in Laboratory and Developing Health Technology.

Come and enjoy the warm scientific atmosphere and spend a few winter days in the beautiful capital of Finland!

More information at www.labqualitydays.com.

Follow us: @Labquality, #LQD2023

Under the auspices of



Labquality (Finland)

Further details in [2023 Labquality Product Catalogue](#)

New schemes and products

2704 ACTH and Cortisol (p 9)
2706 Salivary cortisol (p 9)
2754 Faecal elastase (p 11)
5250 Interferon Gamma Release Assay (IGRA) for *Mycobacterium tuberculosis* (p 20)
5261 Fungal infections, nucleic acid detection (p 25)
5556 HSV1&2/VZV/*T. pallidum*, nucleic acid detection (p 26)
5965 CXCL13 Chemokine (p 21)
5230 *Mycobacterium tuberculosis*, drug resistance (p 23)
2115 Haemoglobin, 1-level HemoCue 801 and HemoCue 301 (p 7)

Changes in distribution schedule

2200 Lipids and lipoproteins and 2202 Lipoprotein a (4 rounds/year)
2109 Bilirubin, conjugated (4 rounds/year)
5612 Chlamydia trachomatis & Neisseria gonorrhoeae nucleic acid detection
5302 Sexually transmitted diseases multiplex, nucleic acid detection
2132 C-reactive protein (CRP), POCT
5560 Puumala virus, antibodies
5635 Dengue virus, antibodies and antigen detection
5562 Multiple respiratory virus, nucleic acid detection

Discontinued schemes

5850 Brucella antibodies
2733 Erythrocyte sedimentation rate: iSED

Changes in scope, specimens or parameters

5300 Respiratory infections multiplex, nucleic acid detection
New parameter: *Legionella pneumophila*
5472 Faecal parasites multiplex, nucleic acid detection
Discontinued parameter: *Entamoeba dispar*
5681 SARS-CoV-2 antigen detection
Samples: Number of samples increased from two to three

Planned pilot schemes: Information about pilot studies and schedules are updated on the Labquality website. Pilot studies are EQA schemes under development. <https://www.labquality.fi/en/external-quality-assessment/new-round/>

Virology: Monkeypox virus, nucleic acid detection (planned for late 2022)

Microbiology: Blood culture pathogens (sepsis), multiplex, nucleic acid detection

Mycology: Fungal infection, native and fluorescence virtual microscopy

Haematology: Flow cytometry: Immunophenotyping, lymphocyte subsets



Cepheid GeneXpert

Cepheid announce the availability later this year of the Xpert® Xpress CoV-2 plus and Xpert® Xpress CoV-2/Flu/RSV plus. These tests have the addition of a 3rd gene target for SARS CoV-2 and are designed to be more robust against mutations. A full list of available tests on the GeneXpert can be found at www.cepheid.com/en/tests



**Siemens Healthineers Collaboration
with CDC Will Define Threshold
for Neutralizing Antibody
Sufficient to Confer Immunity.**

sight

Sight OLO

Sight OLO from Sight Diagnostics is a high-performance complete blood count (CBC) analyzer that provides accurate results in minutes. Its is CE Marked for point of care and FDA 510(k) cleared for moderately complex settings



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Contact us today

☎ 01-6297400

✉ info@cruinn.ie

Plenary: Abstracts & Biographies

The Rise of Lab Greening as a Climate Action

Dr Una Fitzgerald, NUI Galway

Abstract

Momentum is building worldwide in the area of lab greening, since the increasing recognition that the laboratory sector is a huge carbon emitter and that it generates high-volume chemical and biohazardous waste. Dr Fitzgerald will provide a brief history of lab greening efforts worldwide, before sharing the story of how the CÚRAM lab at NUI, Galway, Ireland, achieved the first green lab certification in Europe by My Green Lab. Una will present on the enormous environmental footprint of the health sector, including medical labs, sharing ideas around the promotion of pro-environmental behaviour and the implementation of sustainable practices within labs.



Biography

After completing a Bachelor in Industrial Engineering and MSc in Biotechnology at the National University of Ireland, Galway, Dr Fitzgerald worked in the pharmaceutical sector for five years in France and the UK, before embarking on a PhD in Molecular Biology at the University of Strathclyde, Glasgow. Following a brief spell in cancer research, on joining Prof. Sue Barnett's lab in Glasgow University, she discovered her true passion – neuroscience and in particular, research on multiple sclerosis (MS) and Parkinson's disease. Since returning to the University in Galway, Ireland, Dr Fitzgerald has built a track record in research on multiple sclerosis; she is a funded investigator in CÚRAM, the SFI Centre for Research on Medical Devices and is ex-director of the Galway Neuroscience Centre (2019-2020). She is the lead PI and Coordinator of a €3.9M EU-funded Innovative Training Network, which is training 15 early-stage researchers across Europe, with the aim of developing a novel device for treating the progressive phase of MS. In 2019 she led the CÚRAM lab to be the first in Europe to gain Green Lab Certification from My Green Lab (see <https://www.youtube.com/watch?v=9QuQ6XoEMKs>).

This led to an invitation to chair a national working group on sustainable public sector labs and the launch on Earth Day 2022 of Irish Green Labs (see <https://irishgreenlabs.org/>).

Paediatric Hepatitis in the 21st Century

Dr Cilian O'Maoldomhnaigh, Consultant in Paediatric Infectious Disease CHI Crumlin/Temple St

Abstract

Paediatric Hepatitis in the 21st Century

Biography

Dr Cilian Ó Maoldomhnaigh MB BCH BAO MRCPI PhD is a consultant in Paediatric Infectious Disease in Children's Health Ireland in Crumlin and Temple Street. During his paediatric training in Ireland he undertook the post graduate diploma in Paediatric Infectious Disease through Oxford University. Cilian has since completed clinical fellowships in Paediatric Infectious Disease through the RCPI in Dublin and in Hassenfeld Children's Hospital in New York. Cilian was awarded a PhD from Trinity College Dublin for his research on the importance of metabolism in the immune response to Tuberculosis and has a wide variety of research interests.

eHealth Laboratory Programme including MedLIS & Laboratory Stabilisation

Mr Thomas Walsh, Laboratory Programme Manager, eHealth Ireland

Abstract

The Laboratory Programme under the governance of eHealth was established following the 2021 cyber-attack to advance, standardise and support key Laboratory ICT initiatives and projects. The aim of this programme is to provide a framework for laboratory services to engage with HSE eHealth and Acute Operations and to enhance integration with other healthcare programmes.

Biography

Thomas qualified as a Medical Scientist from Kevin St/ Trinity College Dublin in 1991. He subsequently completed an MSc (Haematology) & an MSc in Healthcare Leadership at UWE Bristol & UCC respectively.

Thomas has over 30 years' experience working in acute hospital services as a Medical Scientist in Haematology, as Laboratory ICT Manager and as Hospital ICT Manager at University Hospital Waterford (UHW).

Thomas is currently the Programme Manager for the eHealth Laboratory Programme.

CAR-T cell therapy in Ireland

Professor Larry Bacon, Consultant Haematologist, St James's Hospital

Biography



Professor Larry Bacon is a Consultant Haematologist at the National Allogeneic Bone Marrow transplant unit at St James's Hospital and is the National lead for CAR-T cell therapy in Ireland. He was awarded a clinical professorship in Trinity College Dublin in April 2022.

Professor Bacon's predominant areas of interest are in CAR-T cell therapy, Acute Lymphoblastic Leukaemia, Lymphoma, and clinical trials. He obtained a BSc (1988) and PhD (1992) from the National University of Ireland, Galway. He worked as a post-doctoral research scientist in the Department of Pharmacology NUI Dublin (1993-2001) where his research focussed on the cell cycle and its control.

He graduated with a bachelor degree in medicine in 2001, became a member of the Royal College of Physicians in 2004, a fellow of the Royal College of Pathologists (UK) in 2010 and completed his higher specialist training in Haematology in 2011. He completed a postgraduate training in leukaemia and bone marrow transplant in Vancouver general hospital in 2011.

Workshop Abstracts & Biographies

Clinical Chemistry:

Renal Investigations

Professor Denise Sadlier, Consultant Nephrologist Mater Misericordiae UH & UCD Clinical Professor in Medicine

Biography

Prof Sadlier is a UCD graduate who completed her higher specialist training in Nephrology in Ireland and then undertook a Fellowship in Renal Medicine as part of the Harvard program in Boston.

Since taking up her Consultant Nephrologist in the Mater Hospital, she has gained many years of clinical experience, along with research in the area of diabetic nephropathy and biobanking as well as post graduate training.

Currently Prof Sadlier is the Mater Intern Tutor, Regional Program Director for BST training and the National Specialty Director for Higher Specialist Training in Nephrology.

Case Study 1

Ms Karen Heverin, Beaumont Hospital

Biography

Karen Heverin is a Senior Clinical Biochemist. She was awarded a B.A. (Mod) Hons Biochemistry at the University of Dublin, Trinity College in 2014 and took up her first position as a Biochemist at the Mater Misericordiae University Hospital in 2015.

She graduated with a MSc Blood Sciences (Biochemistry) at the University of Manchester in 2019. Karen undertook a promotional role of Senior Biochemist at Beaumont Hospital in 2019, where she is currently based. More recently, she successfully completed Part 1 of FRCPath examinations in Autumn 2021 and is currently working towards Part 2 examinations.

Karen undertook the role of Secretary/Treasurer of ACB Republic of Ireland region in 2020 and her current position of Treasurer at ACBI in 2022. Karen represents the ACBI as a corresponding member for the Task Force for Young scientists (TF-YS) at the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC).

Case Study 2

Ms Ciara Cuning Mater University Hospital

Biography

Ciara Cuning studied Biomedical Science at Queen's University Belfast. She completed a PhD at The Wellcome-Wolfson Institute for Experimental Medicine (QUB). Ciara currently works as a Clinical Biochemist at The Mater Misericordiae University Hospital, Dublin.

An IEQAS report; what does it all mean?

Ms Anne Kane IEQAS & Ms Bernadette Jackson*, Naas Hospital*

Abstract

IEQAS endeavours to provide clearly presented reports for its Clinical Chemistry scheme. The presentation will explain the information available in these reports and the review a number of examples.

Biography

Anne Kane is the Scheme Manager for IEQAS, which she joined in 2012. She previously worked as a Senior Medical Scientist in the Biochemistry lab in Crumlin Hospital. She holds a degree in Applied Science (Biomedical) from DIT, Kevin St and an MSc in Clinical Biochemistry from Trinity College Dublin.

Biography

Bernadette Jackson is a Fellow of the Academy of Clinical Science and Laboratory Medicine (ACSLM); She has a Higher Diploma in Training and Education and an MBA in Healthcare Management.

Bernadette is the Point of Care Manager in Naas General Hospital. She is currently President of ACSLM, Chairperson of the Point of Care Advisory Body and former adjudicator of the Presidents Prize. Member of the National Point of Care Consultative Group, NPHET SARS-CoV-2 Antigen Testing advisory subgroup, HSCP representative Acute Medicine Programme and CORU Registration Board.

Workshop Abstracts & Biographies

Haematology:

Blood Cell Morphology Scheme - Annual Review

Dr Catherine Flynn, Consultant Haematologist, St James's Hospital*

Abstract

IEQAS Morphology Review

Biography

Speciality: Myeloid Malignancies and Bone marrow failure

Dr Catherine Flynn currently holds the position of consultant haematologist at St. James's Hospital and Coombe Women and Infants University Hospital since 2007.

She holds a Bachelor of Medicine, a Bachelor of Surgery and a Bachelor of Obstetrics from the Queens University of Belfast (1995). She completed specialist haematology training in Dublin. Her training took her from Ireland to the University of Minnesota, Minneapolis, United States where she started a haematology fellowship with a subspecialty interest in stem cell transplantation (2003-2006). She completed her MD on haematopoietic stem cells and haematopoiesis in the Katholieke Universiteit of Leuven, Belgium. She returned to Dublin in 2007 and works as a consultant haematologist. She is clinical lead for the National Adult Bone Marrow Transplant Program.

Dr Flynn's clinical interests include malignant myeloid diseases (myeloid leukaemia and myelodysplasia), transplantation, bone marrow failure syndromes and haematological diseases during pregnancy. Her research interests include myeloid diseases, aplastic anaemia and haematological disease in pregnancy. Dr Flynn has published in these areas.

Catherine has been appointed as Clinical Associate Professor in TCD in June 2022.

Chimeric Antigen Receptor (CAR) T cell Therapy in Paediatric B cell Acute Lymphoblastic Leukaemia (B-ALL) – a potential curative treatment for relapsed/ refractory disease

Mr Mike Corrigan, Specialist Medical Scientist, CHI Crumlin

Abstract

Outcomes for paediatric patients diagnosed with B Cell Acute Lymphoblastic Leukaemia (B-ALL) have dramatically improved over the past few decades with upwards of 80% of patients cured with chemotherapy alone. There remains a cohort of patients (15-20%), however, who present with refractory disease or who suffer disease relapse during treatment.

Allogeneic Haematopoietic Stem Cell Transplantation (HSCT) is the preferred treatment option for high-risk patients who achieve a second complete response post relapse but the prognosis for those who are not eligible for HSCT or for those that relapse post-HSCT remains very poor.

Immunotherapies such as CAR-T therapy have emerged as a strategy to treat refractory or relapsed paediatric B cell ALL.

CAR-T therapy utilises a patient's own T cells by genetically modifying them to specifically target and destroy malignant cells. Very promising results have been observed using this technology, with remission rates as high as 90% reported in some trials.

Introduction of CAR-T therapy as a treatment option for relapsed or refractory paediatric B-ALL patients offers hope for a patient cohort with otherwise very limited treatment options.

Biography

Mike Corrigan is the Specialist Medical Scientist in the Haematopoietic Stem Cell Transplant Laboratory (HSCT) in Children's Health Ireland (CHI) at Crumlin.

The HSCT Department in CHI Crumlin services the national paediatric allogeneic and autologous haematopoietic stem cell transplant programs in Haematology/ Oncology from a dedicated clean room facility within the Pathology Department. The HSCT laboratory is licenced by the HPRA and JACIE accredited.

Case Study

Ms Therese Driscoll, Senior Medical Scientist, Haematology, Tallaght University Hospital*

Biography

Therese Driscoll graduated as a Medical Scientist from C.I.T later obtaining an MSc in Biomedical Science from the University of Ulster in Coleraine in 1993. She is employed as a Senior Medical Scientist in the Haematology Laboratory in Tallaght Hospital since 2000, where she has a particular interest in blood film morphology.

Therese has been involved with IEQAS since 2004 serving as a Specialist Adviser and member of the IEQAS Haematology Review Group, a previous Chair and currently Vice-Chair of the IEQAS Steering Committee.

Masters Presentation: "Evaluation of the suitability of a LMWH calibrated anti-Xa assay for the measurement of Rivaroxaban and Apixaban"

Ms Aoife Boylan, Medical Scientist Haematology Department, SVUH

Abstract

Direct Oral Anti-Xa inhibitors have become more frequently prescribed since their introduction, offering a stable non-inferior option to warfarin for stroke prevention in patients with atrial fibrillation and recurrent thrombosis. Unlike warfarin they do not require monitoring of coagulation. However, occasions do arise where drug concentration is required.

The objective of this study was to assess the suitability of a chromogenic low-molecular weight heparin (LMWH) anti-Xa assay for the measurement of apixaban and rivaroxaban concentration. The apixaban and rivaroxaban concentration of 17 apixaban patients and 11 rivaroxaban patients was assessed using the IL Liquid Anti-Xa assay kit and drug specific calibrators. Each sample also had an Anti-Xa activity level determined using the IL Liquid Anti-Xa assay and LWMH controls.

Significant correlation was found between apixaban concentration (ng/mL) and Anti-Xa activity (IU/mL) and rivaroxaban concentration (ng/mL) and Anti-Xa activity (IU/mL). From these results we were able to create an equation to determine estimated calculated apixaban or rivaroxaban concentration. This project has shown in the absence of a drug specific Anti-Xa assay, a LMWH Anti-Xa assay could be used to determine the presence and estimated concentration of apixaban and rivaroxaban.

Workshop Abstracts & Biographies

Microbiology:

The “Itchy & Scratchy Show”

Dr Susan Fitzgerald, Consultant Microbiologist SVUH*

Abstract

Two case studies will be presented.

Biography

Dr Suzy FitzGerald is a Consultant Microbiologist at St. Vincent’s University Hospital and St. Columcille’s Hospital. She is a member of the IEQAS Steering Committee.

Is the environment an underestimated source for HCAI?

Dr Saied Ali, Clinical Microbiology Specialist Registrar, SVUH

Abstract

Klebsiella pneumoniae is a major cause of hospital-acquired infections. It is generally accepted that hospitalized patients become colonized with Gram-negative organisms (GNOs), but it is unclear to what extent co-infections caused by susceptible GNOs are due to transmission from other patients or the hospital environment. Clinical isolates were identified from five patients diagnosed with *K. pneumoniae* bloodstream infections (BSIs) from January to June 2021. Environmental swabs were obtained from clinical handwashing sinks in patient and medication preparation rooms three-months apart. Whole-genome sequencing revealed genetic relatedness between clinical isolates and handwashing sink isolates, indicating direct or indirect cross-transmission. Additionally, a genetically-related isolate persisted in handwashing sinks. As *K. pneumoniae* outbreak reports generally focus on ESBL or CPE isolates, our study highlights that the hospital environment is an underestimated source for nosocomial Gram-negative infections and further investigation is vital.

Biography

Dr Saied Ali, hailing from Trinidad and Tobago, is a Clinical Microbiology Specialist Registrar, currently training at St Vincent's University Hospital. His particular interests lie in guideline based antimicrobial usage and its associated governance. To date he continues to contribute to robust antimicrobial stewardship programmes through teaching, health informatics, quality improvement projects and individual research. With this drive, he was appointed Non-Consultant Hospital Doctor representative on the local Antimicrobial Advisory Committee and National Antimicrobial Stewardship Strategy Group. He is also a strong advocate for NCHD Wellbeing, being a consistent member on local NCHD Committees and the faculty of Health and Wellbeing at the Royal College of Physicians of Ireland. Despite working demands, he remains an avid book reader and professional reviewer, food connoisseur, karaoke performer and environmentalist at heart.

The emergence of a novel viral pathogen: The diagnostic challenges

Dr Jeff Connell, Assistant Director, Principle Clinical Scientist, NVRL

Biography

Dr Jeff Connell is the Assistant Director, Principle Clinical Scientist, at the National Virus Reference Laboratory (NVRL), UCD and has over 35 years' experience in diagnostic virology in Ireland and the UK. He has over 80 peer reviewed publications and has a particular interest in emerging viral infections, viral hepatitis and vaccine preventable virus infections. He is the lead for the World Health Organisation (WHO) programs for influenza, measles, rubella and polio programs at the NVRL and the WHO/ECDC national laboratory contact for these viruses.

Jeff was heavily involved in the design and the establishment of the CL3 laboratory at the NVRL, and has responsibility for that laboratory and the development of a diagnostic capacity for emerging pathogens requiring high containment.

Clinical experience of monkeypox

Dr Cathal O'Broin, Consultant in Infectious Diseases, SVUH

Biography

Dr Cathal O Broin works as a consultant in Infectious Diseases at St Vincent's University Hospital. He is the clinical lead for the sexual health service. This includes the Prevention Support Clinic (PrEP), which caters for over 750 patients, as well as the newly developed Monkeypox Infection Clinic.

His research interests include viral epidemiology, the use of rapid diagnostics in both blood borne and respiratory viral illnesses, and understanding the impact of asymptomatic human monkeypox infection on patients. He is an IDSI representative for the National Immunisation Advisory Committee (NIAC) and supports equitable, global access to vaccines. He lectures in medical microbiology and global health at University College Dublin.

Workshop Abstracts & Biographies

Transfusion:

Thrombotic thrombocytopenic purpura (TTP), a case study

Ms Arlene Bates, Senior Medical Scientist, CHI Crumlin

Abstract

Thrombotic thrombocytopenic purpura (TTP) is a rare disease with high morbidity and mortality and requires rapid diagnosis and prompt initiation of treatment. According to BSH guidelines TTP should be treated as a medical emergency. Diagnosis relies on the recognition of a series of clinical features and laboratory investigation of ADAMTS13 activity. The treatment of choice is plasma exchange.

TTP and haemolytic uremic syndrome (HUS) share an underlying pathological process known as thrombotic microangiopathy (TMA) which complicates diagnosis.

The presentation will aim to describe the pathogenesis of TTP while also outlining the similarities and differences between TTP and HUS. The presentation is a case study of a child that presented in CHI, Crumlin and treated for TTP. The role played by the blood transfusion laboratory will be discussed.

Biography

Arlene Bates is a senior medical scientist who will be presenting on behalf of Sophie Lawlor.

Arlene Bates graduated from Trinity College Dublin with a BA Mod in Microbiology in 2001. She then completed a PhD in Bacterial Genetics with Trinity College Dublin in 2005. In 2006 Arlene embarked on a career change and applied for a postgraduate trainee position in Our Lady's Hospital Navan and became a member of the Academy of Clinical Science and Laboratory Medicine. Arlene has worked in Connolly Hospital Haematology and Blood Transfusion laboratories and in CHI Crumlin. Her latest position is a cross-site role between the blood transfusion laboratories in CHI Crumlin and CHI Temple Street.

Implementation of European interlaboratory testing for QC laboratories in Blood Establishments

Ms Nadine Marpaux, European Blood Alliance

Abstract

External quality assessments (EQA) of labile blood product compliance parameters have been organized at EFS for more than 20 years between quality control (QC) laboratories. In 2020, as part of the European Blood Alliance (EBA), this program was offered to all its members.

Objective: In addition to the objective of demonstrating the equivalence of inter-laboratory procedures, the purpose of this study is to assess the operational and logistical feasibility of the EQA-QC program on an international scale.

Materials and methods: In 2020, 4 cycles (2 on Concentrated Red Blood Cells for Haematocrit and Haemoglobin measurements and 2 on Platelet Concentrate for Platelet concentration) were carried out, including 20 QC laboratories (15 in Europe, 5 in France). The packages prepared in Nancy and Besançon were sent after having chosen suitable packaging and then received in the various countries in a maximum of 3 days. For each cycle, an anonymized report was drawn up with a Lewey-Jennings analysis and bias calculations, Z-score.

Results: Despite the different transport conditions between countries, this pilot phase showed the possibility of carrying out EQAs on an international scale, with nevertheless a need for standardization of the preparation stages, including transport documents.

Discussion: The main axis of improvement is to optimize the delivery conditions.

(Google translated from the original French version).

Administration of Anti-D immunoglobulin: A review of some Rhesus D negative patients

Ms Deirdre O'Neill, Senior Medical Scientist, Rotunda Hospital

Abstract

Administration of immunoglobulin Anti-D during pregnancy is an important treatment to help prevent the development of immune Anti-D which can have serious consequences for the mum and baby.

A review of some Rhesus D negative patients with regard to the administration of Anti-D prophylaxis during pregnancy

- For PSEs (potential sensitizing events)
- RAADP (Routine Anti-D Antenatal prophylaxis)
- Post-delivery of a D positive baby

The cases will highlight the importance of distinguishing Anti-C+D from Anti-G, what to do with weak D positive patients and the importance of reviewing a patient's transfusion history.

Biography

Deirdre O'Neill graduated from Kevin Street and worked as a locum in St. James's Hospital, Beaumont Hospital and the Mater Hospital before getting a permanent post in St Vincent's Hospital.

After completing her Masters degree Deirdre moved to a senior position in the Rotunda Hospital. She has been involved in the introduction of RAADP (routine antenatal Anti-D prophylaxis) at 28 weeks gestation in the Rotunda Hospital.

More recently Deirdre has also been involved in the introduction of offering cell free foetal DNA testing (to predict the D type of the baby) for all Rhesus D negative pregnant women. (This test is performed in the IBTS).

These two programmes together have reduced the amount of prophylactic Anti-D transfused antenatally and improved patient care.

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