IEQAS

Irish External Quality Assessment Scheme CLG

Annual Conference
Thursday 5th October 2023

Programme & Book of Abstracts

Contents

Welcome

Welcome to this year's IEQAS Conference. IEQAS is the longest-standing quality initiative 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).

IEQAS has been incorporated as a Company Limited by Guarantee (CLG) since November 2022. The Directors are Peadar McGing, Hazel Graham, Dympna Murphy & Therese Driscoll with Patricia Howley as Company Secretary.

IEQAS is a non-profit organisation overseen by the Directors and a Steering Committee which includes 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**

We continue to 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.

ISO 9001:2015 EQA QUALITY ASSURED ORGANISATION

EQALM European Organisation For External Quality Assurance Providers in Laboratory Medicine

Irish External Quality Assessment Scheme CLG
Organisation Structure

Directors:	
Peadar McGing (Chair)	Formerly Principal Biochemist, Mater Misericordiae University Hospital
Therese Driscoll	Senior Medical Scientist, Tallaght University Hospital
Hazel Graham	Formerly IEQAS Quality Manager
Dympna Murphy	Formerly Chief Medical Scientist, Tallaght University Hospital
Company Secretary:	
Patricia Howley	IEQAS Operations and Quality Manager
Members: Steering Committee	
Peadar McGing (Chair)	Formerly Principal Biochemist, Mater Misericordiae University Hospital
Therese Driscoll (Vice Chair)	Senior Medical Scientist, Tallaght University Hospital
Hazel Graham	Formerly IEQAS Quality Manager
Dympna Murphy	Formerly Chief Medical Scientist, Tallaght University Hospital
Patricia Howley	IEQAS Operations and Quality Manager
Brendan Byrne	Principal Biochemist, Mater Misericordiae University Hospital
Susan Fitzgerald	Consultant Microbiologist, St Vincent's University Hospital
Anne Kane	IEQAS Scheme Manager
Cara Ward	Senior Medical Scientist, Letterkenny University Hospital
Members: Specialist Advisors	
Bernadette Jackson	POCT Manager, Naas General Hospital
Padraig Kiernan	Chief Medical Scientist, Connolly Hospital
Marguerite MacMahon	Principal Biochemist, Mater Misericordiae University Hospital
Richard McCafferty	Chief Medical Scientist, St James's Hospital
Deirdre Murphy	Chief Medical Scientist, The Rotunda Hospital
Victoria Murphy	Senior Medical Scientist, Tallaght University Hospital
Maria Phelan	IEQAS Scheme & Quality Administrator
Additional Specialist Advisors:	
Gerard Boran	Consultant Chemical Pathologist, Tallaght University Hospital
Catherine Flynn	Consultant Haematologist, St James's & The Coombe Hospital
Ruth O'Kelly	Formerly Principal Clinical Biochemist, The Coombe Hospital
Niamh O'Sullivan	Consultant Microbiologist, CHI Crumlin & The Coombe Hospital
Erum Rasheed	Consultant Chemical Pathologist, University Hospital Limerick

First Plenary Session (Kindly sponsored by ACSLM) Chair: Mr Dermot McBrierty, Beaumont Hospital	
09:15	**IEQAS Chair's address**
09:30	**Transgender People and Laboratory Reference Ranges:** Prof Donal O'Shea, SVUH
10:10	**Overview of the National Serosurveillance Programme:** Dr Jane Finucane & Dr Katie O'Brien, Health Protection Surveillance Centre
10:40 COFFEE	
Second Plenary Session **(Kindly sponsored by Roche)** Chair: Dr Peadar McGing* IEQAS	
11:00	**Experiences and Feedback in Preanalytical EQA**: Ms Jonna Pelanti, Labquality
11:35	**INAB Accreditation against the New ISO 15189 Standards, and Gap Analysis:** Ms Breda Dreaper, National Laboratory Manager for Uisce Eireann
12:10	**The CELTIC Ranges Project (Comprehensive and Effective Laboratory Test Reference Intervals for Irish Children):** Dr Ann Leonard, Tallaght University Hospital and TCD
12:45 LUNCH	

Chemistry Workshop (Kindly sponsored by ACBI) Chair: Dr Lucille Kavanagh, Mater UH		Haematology Workshop Chair: Ms Therese Driscoll* Tallaght UH	
13:45	**Hypertriglyceridaemia: Diagnosis and Implications:** Dr Aidan Ryan, Cork University Hospital	13:45	**Blood Cell Morphology Scheme - Annual Review**: Dr Catherine Flynn, St James's Hospital
14:15	**Case Study - Rennies to the Rescue - Or Maybe Not!:** Mr Micheál Ryan, University Hospital Limerick	14:45	**The Clinical Utility of D-dimers in TUH:** Ms Lorraine McMahon & Ms Lisa Potts, Tallaght University Hospital
14.35	**The Validation of NT-Pro-BNP for the Management of Patients with Chronic Heart Failure:** Ms Zara Brady, Cavan General Hospital	15:00	**Case Study - Abnormal Bloods in Pregnancy:**: Ms Isabel Fitzsimons, Coombe Hospital

15.05	**Neonatal Care – The Role of the Biochemistry Lab:** Dr David Corcoran, Rotunda Hospital	15:15	**Current Testing Strategies/Practices in CMD for both Diagnostic and MRD Testing:** Dr Lesley Ann Sutton, CMD, St James's Hospital
Microbiology Workshop (Kindly sponsored by Medical Supply Co) Chair: Dr Suzy FitzGerald* SVUH		**Transfusion Workshop (Kindly sponsored by Brennan & Company)** Chair: Mr Padraig Kiernan* Connolly Hospital	
13:45	**Antimicrobial Stewardship – where would it be without the laboratory?:** Dr Sinead McNicholas, SVUH	13:45	**Impact of the Malware attack on serious adverse events in the Republic of Ireland:** Ms Caroline Casey HVO, IBTS
14:15	**New *C. difficile* NRL: Initial findings:** Dr Anne Carroll, Public Health Lab, Cherry Orchard Hospital	14:25	**The Introduction cffDNA RHD Genotyping Assay to Prevent the Inappropriate Administration of Anti-D IgG and Evaluate the Benefits of its Implementation and Cost Savings:** Ms Emer Grant, Letterkenny University Hospital
14:45	**What's Happening with *Shigella* and CPE?:** Ms Christina Clarke, University Hospital Galway	14:45	**Case Studies - A Tale of Two Antibodies:** Ms Emily Forde, Rotunda Hospital
CLOSE 15:15 -16:00			

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

Kindly Sponsored By:

ACBI, ACSLM, Brennan & Company (with Ortho Clinical Diagnostics), Cruinn Diagnostics, Eurofins Biomnis, Labquality, Medicon Ireland, Medical Supply Company, Roche

IEQAS Annual Report 2022

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 104 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.

Irish External Quality Assessment Scheme CLG was incorporated in November 2022 with Peadar McGing, Hazel Graham, Dympna Murphy and Therese Driscoll as Directors and Patricia Howley as Company Secretary.

We wish to thank 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, Mater UH, Children's Health Ireland (CHI) at Crumlin and St James's for facilitating IEQAS with sample collection, storage and distribution.

We welcome Erum Rasheed, UH Limerick as Specialist Advisor for Clinical Chemistry.

A booklet outlining the history of IEQAS was prepared by Hazel Graham & Peadar McGing. This was printed and circulated after the Conference in 2022. Some copies are still available. It is also available online.

Activities 2022

- **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 Jan, May, July & Nov 2022; HbA1c, all 5 distributions and Full Blood Count, March 2022. All 6 Blood Cell morphology slides were donated.

- **EurA1c-project for HbA1c:** In Oct 2022, 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 2023.

- **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 is 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 2024 will be emailed to all participants shortly. A summary of all schemes offered by IEQAS, and the changes to Labquality Schemes for 2024, are included with this booklet. A copy of the Labquality Product Catalogue 2024 can be found on IEQAS website at: https://www.ieqas.ie/index.php?route=information/information&information_id=22 . 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 2024

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 2024

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 EurA1c, (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.

8-9 FEBRUARY, 2024
HELSINKI, FINLAND

LABQUALITY DAYS

International Congress on Quality in Laboratory Medicine and Health Technology

Labquality Days is one of the largest international congresses in Scandinavia focusing on quality in laboratory medicine and health technology. The inspiring atmosphere of the annual scientific congress gathers medical laboratory and health technology professionals together to exchange ideas and meet colleagues in Helsinki, Finland. The international scientific program will cover topics on the clinical value of laboratory medicine, personalized medicine, IVDR, data, and risk management.

More information at **www.labqualitydays.com**

Under the auspices of

ifcc International Federation of Clinical Chemistry and Laboratory Medicine

EFLM

Labquality (Finland)

2024 Labquality EQA Product Catalogue

New schemes and products

2707 Maternal serum screening

8205 Pipette control

5254 Mycoplasma genitalium, drug resistance, nucleic acid detection

5253 Helicobacter pylori, nucleic acid detection

5088 HIV, antibodies and antigen detection, extra set of samples

5231 Mycobacterium tuberculosis, drug resistance, nucleic acid detection, extra set of samples

4389 D-dimer, extra set of samples

5683 Mpox (Monkeypox virus), nucleic acid detection

8850 DNA sequencing (EQUALIS)

8851 Quantification of ABO antibodies (EQUALIS)

8852 Titration of erythrocyte antibodies (EQUALIS)

8853 Iohexol (EQUALIS)

8854 Phosphatidyl ethanol in blood (EQUALIS)

8855 Alcohol biomarkers in urine (EQUALIS)

Changes in distribution schedule

2754 Faecal Elastase (2 rounds/year)

5261 Fungal infections, nucleic acid detection (April and September)

5562 Multiple respiratory virus, nucleic acid detection (4 rounds/year)

5556 HSV1&2/VZV/Treponema pallidum, nucleic acid detection (April and October)

Discontinued schemes and products

4151 Reticulocyte count, automated: Cell-Dyn 4000, Saphire

4152 Reticulocyte count, automated: Coulter Gens, LH750

4155 Reticulocyte count, automated: Cell Dyn 3200, 3500, 3700, Ruby

4235 Leucocyte differential count, 5-part, automated: Coulter ACT5-diff

Changes in scope, specimens or parameters

2749 Faecal occult blood, quantitative: New artificial stool sample including human Hb (rounds 2 and 4).

5100 Blood culture (incl. sepsis multiplex methods): 3 samples/round.

5101 Blood culture, screening (incl. sepsis multiplex methods): 3 samples/round.

5670 Influenza virus A+B and RS virus, nucleic acid detection: 3 samples/round.

5556 HSV1&2/VZV/Treponema pallidum, nucleic acid detection: 3 samples/round.

5300 Respiratory infections multiplex, nucleic acid detection. Examinations: Bocavirus added.

5420 Toxoplasma, antibodies. Examinations: IgA antibodies removed.

5190 Faecal culture. Examinations: Antimicrobial susceptibility (rounds 2 and 4) added. 5930 Autoimmune liver disease and gastric parietal cell antibodies. Examinations: LKMAb removed.

Planned pilot schemes

Pilot studies are EQA schemes under development. Information about pilot studies and schedules are updated on our website: **https://www.labquality.com/external-quality-assessment/new-schemes/**

Kindly sponsoring Morning Registration & Coffees

Plenary: Abstracts & Biographies

Transgender People and Laboratory Reference Ranges

Professor Donal O'Shea, St Vincent's University Hospital

Biography

Professor Donal O'Shea graduated from UCD School of Medicine in 1989. He moved to Hammersmith Hospital in London and worked as a Registrar in General Medicine, Cardiology and Endocrinology before being appointed as Senior Registrar in Diabetes and Endocrinology. In 1993, Donal was awarded a Wellcome Trust Research Training Fellowship, where he completed the work for an MD Thesis and was awarded that MD from Imperial College School of Science, Medicine and Technology, London. In 1996, Donal was appointed to the post of Consultant Physician/ Senior Lecturer in Diabetes and Endocrinology at Charing Cross Hospital, London.

Professor O'Shea returned in Ireland in 1999 and was appointed as a Consultant Endocrinologist at St Vincent's University Hospital (SVUH) and St Columcille's Hospital, Dublin and has been the Lead Clinician for a hospital-based multi-disciplinary obesity service in those hospitals since. Donal is also the Head of the Obesity Research Group, Education and Research Centre, SVUH and Associate Professor of Medicine at UCD where he lectures in Endocrinology.

Awards include:

- Patrick Meenan UCD MGA Inaugural Research Medal in 1996
- Norman Plummer Prize for Postgraduate Clinical Research in 1998
- Imperial College School of Medicine Undergraduate Teacher of the Year in 1999
- Irish Endocrine Society O'Donovan Medal for group's research activity in 2006
- UCD Premier Award for Undergraduate Teaching Excellence in 2003-2008 & in 2010.

Overview of the National Serosurveillance Programme (NSP)

Dr Jane Finucane & Dr Katie O'Brien, Health Protection Surveillance Centre

Abstract

The National Serosurveillance Programme (NSP) is the national programme for serosurveillance in Ireland. It was established within the Health Protection Surveillance Centre (HPSC) in June 2021 as a response to the COVID-19 pandemic. Serosurveillance provides estimates of serum antibody levels against infectious diseases due to previous infection and/or previous vaccination and is an important part of disease surveillance. The programme provides information on the spread of the disease in the population, which can be used in the planning of vaccination programmes and to aid public health policy decision making.

Currently the main focus of the NSP is the seroepidemiology of COVID-19 in Ireland, but also extends to other infectious diseases of public health importance, including measles and hepatitis C. This talk will provide an overview of the NSP including the establishment and structure of the programme, how it works, results of the projects and studies undertaken to date, and future plans for national serosurveillance.

Biography

Dr Jane Finucane, Senior Medical Officer, SeroEpidemiology Unit, HPSC

Jane Finucane is a senior medical officer on the Seroepidemiology Unit at the Health Protection Surveillance Centre. She previously worked in general practice in North Dublin and Wicklow and also has experience in community medicine focused on immunisation programmes and early child development.

Dr Katie O'Brien, Statistician, SeroEpidemiology Unit, HPSC

Katie O'Brien is a statistician at the Health Protection Surveillance Centre, Ireland where she works in the Seroepidemiology Unit as well as leading the respiratory disease modelling group. Previously she worked at the London School of Hygiene and Tropical Medicine (Department of Infectious Disease Epidemiology) and the National Cancer Registry of Ireland.

Experiences and Feedback in Preanalytical EQA

Ms Jonna Pelanti, R & D Director, Labquality

Abstract

Laboratories have tweaked the quality in the analytical phase almost into its perfection. However, according to research, most of the errors happen in the extra-analytical phases, and mainly in the preanalytical phase, most of which caused by hemolyzed samples. According to the ISO 15189 standard, laboratories should choose external quality assessment (EQA) programs that cover the total testing process. There has been a lot of focus internationally in the extra-analytical phases and both the IFCC and the EFLM have working groups focusing on laboratory errors and especially preanalytical topics. The working groups have been very active, and they have recommended strategies and published several articles and consensus documents on different preanalytical topics such as on venous blood sample collection, the order of draw and instructions on how to meet the preanalytical requirements in ISO 15189.

The EQA providers have reacted to this and today there are specific preanalytical EQA schemes available by several EQA providers. At Labquality we have provided preanalytical schemes for almost ten years and especially the integrated schemes having preanalytical parts integrated into the traditional schemes have been popular.

In this talk our experiences in quality assessment of the preanalytical phase and client feedback from our schemes will be presented.

Biography

Jonna Pelanti has a master of science in technology degree from Helsinki University of Technology and a clinical biochemist degree from Helsinki University faculty of medicine. After gaining almost ten years of experience working in different laboratories she joined Labquality, a Finnish service company focused on quality assessment to medical laboratories and point of care testing, 13 years ago and she now holds the position of R&D Director. Her main responsibility is to develop new clinically relevant services.

Jonna is interested in external quality assessment in general and as a science. She finds that it is important to work towards correct results in laboratory medicine through co-operation between EQA-

providers, customers and relevant groups, institutions and organisations. Developing new kinds of products for end-to-end quality assessment and especially for the preanalytical phase is one of her key interests. She has, thanks to her technology background, an interest and knowledge in digital solutions. She is fascinated with developing external quality assessment and eventually patient safety through professional utilisation of modern solutions. PhD thesis ongoing on ”Improving diagnostic testing quality by meaningful data mining” at Helsinki Univeristy Faculty of Medicine.

Jonna Pelanti is a board member of the Finnish society of clinical chemistry, a member of the Nordic preanalytical working group and a newly appointed corresponding member in the IFCC Task Force on Global Lab Quality.

INAB Accreditation against the New ISO 15189 Standards, and Gap Analysis

Ms Breda Dreaper, National Laboratory Manager for Uisce Eireann

Abstract

Accreditation for the revised edition of ISO15189:2022 Medical Laboratories- Requirements for Quality and Competence, requires accredited laboratories to have a transition plan, including gap analysis, in place and submitted by 1st November 2023, and accredited Medical laboratories and POCT will be assessed to this revised edition from dates in 2024 onwards. All accredited Medical laboratories and POCT providers will be required to have completed transition to this 2022 edition by 6th December 2025.

This presentation will provide a brief overview of the key changes and focus areas of ISO15189:2022 vs. ISO15189:2012 and ISO22870:2016 POCT, and a guide and discussion on potential approaches to managing these within existing Quality Management Systems. Key learnings from transition assessments for ISO17025 from 2005 to 2017 edition will also be discussed.

Biography

Breda graduated from CIT/UCC in 1997 with a BSc in Biomedical Science, and subsequently completed an Msc in Biomedical Science, Post-Graduate Diplomas in Quality Management and Business Administration, and is currently completing a Black Belt Diploma in Lean Healthcare Management from UL.

Breda has over 25 years of experience working in Medical and Public Health laboratories in a wide range of roles, including Quality Manager in the Public Health Laboratory in UHL when that department successfully completed transition assessment to ISO17025:2017 in 2019; and Chief Medical Scientist of Quality in UHL. Breda worked with the HSE National teams as National COVID Laboratory Quality Director from 2021-January 2023. She also provides Technical and Quality expertise to INAB as an Assessor since 2017 (ISO15189 and ISO17025) and contributes to national policy development, and has conducted several successful transition assessments to ISO17025:2017.

Her current role is the National Laboratory Manager for Uisce Éireann, responsible for the development and delivery of a new accredited National Testing Laboratory for regulatory testing.

The CELTIC Ranges Project (Comprehensive and Effective Laboratory Test Reference Intervals for Irish Children)

Dr Ann Leonard, Tallaght University Hospital and TCD

Abstract

Authors: A. Leonard[1,2], G. Boran[1,2]

[1]*Laboratory Medicine Innovation Hub, Tallaght University Hospital, Dublin 24, Ireland*

[2]*Clinical Biochemistry Unit, School of Medicine, Trinity College Dublin, Ireland*

Background: No comprehensive studies of paediatric reference intervals (RI) have been completed in Ireland. The CELTIC Ranges project aims to deliver a comprehensive range of reference intervals for commonly ordered laboratory investigations suitable for use in an Irish population as well as enabling comparison with relevant international studies. The study intends to use residual and additional samples collected from children attending the General Practitioner phlebotomy clinics at our Hospital.

Methods: Patients who had known clinical or metabolic conditions or demonstrated signs of acute infection were excluded. An explanation of project including information leaflets were provided to all participants (parents and children). Parents and children (> 7 years) provided informed consent followed by detailed structured questionnaire e.g. time of last meal, wellness in previous week etc. Anthropometric measurements included height and weight using standard stadiometer® (Holtain Limited) and step-on weighing scales (SECA® Model 799 7021129).

All phlebotomy procedures took place in a private room by nursing staff trained in paediatric phlebotomy. Blood sampling was carried out in accordance with standardised phlebotomy procedures and hospital policy[33] using the Becton Dickson Vacutainer® Safety lok™ (25g) blood collection system. Sample analysis was performed as part of routine laboratory service, which is fully accredited to BS EN ISO 15189:2012 by the Irish National Accreditation Board (INAB www.inab.ie). Clinical chemistry analysis was performed on Roche COBAS® Modular systems, which included a full CELTIC Ranges profile of agreed analytes.

All haematology and clinical chemistry laboratory results were reported to the requesting clinician via the Laboratory Information System (LIS) in accordance with laboratory policy and procedures. Prior to release, all laboratory results were clinically reviewed and appropriate follow up was arranged where necessary.

Results: 1023 participants were recruited from children aged up to 17 years who were referred by their general practitioner (GP) to the paediatric phlebotomy clinic at our hospital between May 2019 and February 2022. Following exclusion due to medical conditions and insufficient cohort numbers resulted in a total of 1015 with an age range of 0.45 to 16.99 years.
The female to male ratio was 530:485. Participants were classified as fasting (458) or non-fasting (557) based on self-reporting. The age distribution of participants showed relatively even distribution with a lower number of participants in children < 1 year.

Conclusions: The CELTIC Ranges will provide a comprehensive range of paediatric RIs for use in laboratory medicine departments for commonly ordered laboratory investigations in the area of Blood Sciences. We also expect that our findings will improve knowledge regarding of children's metabolic health in Ireland.

Biography

Dr Ann Leonard works at Tallaght University Hospital as the Quality Innovation Manager. She is also the Chief Medical Scientist in the hospital's Laboratory Medicine Innovation Hub (LMIH) - the first of its kind in Europe. Ann has been involved in numerous projects, initiatives and improvements over the years including the Celtic Ranges Project. This project will have a significant impact on the laboratory reference ranges in Ireland and hopefully also on Children's health. She and her team were also involved in the first COVID -19 Antibody study in Healthcare workers at TUH (TABS), with a press release from TUH at the time achieving over 3 million views across broadcast and print media.

Another important initiative is the establishment of the TUH academy of Phlebotomy (TAP) in conjunction with CLD and the Phlebotomy department. A crucial and often forgotten step in the patient journey is the taking of a blood sample. 70% of all medical decisions are based on a laboratory result and a laboratory result relies on a good quality sample taken by a well-trained phlebotomist. TAP has already had a significant impact on improving the patient experience and treatment at TUH.

Ann's goal is to make the LMIH the best innovation hub for Laboratory medicine in Ireland and Europe. She is inspired by the following quote from *Harriet Tubman*: "Always remember, you have within you the strength, the patience, and the passion to reach for the stars to change the world."

Workshop Abstracts & Biographies Clinical Chemistry:

Hypertriglyceridaemia: Diagnosis and Implications

Dr Aidan Ryan, Cork University Hospital

Abstract

The diagnosis and specific management of hypertriglyceridaemia (HTG) is overshadowed and often ignored in favour of LDL-C. GPs will often not request it, partly because most cardiovascular disease (CVD) risk calculators do not require it, and partly because of the potential need for patients to be fasting. So why bother? The answer is twofold - accurate diagnosis and assessment of risk of CVD and of acute pancreatitis. This presentation will cover the definition, aetiology and management of HTG, particularly in relation to acute pancreatitis. The challenges that laboratories face in terms of dealing with lipaemic samples will also be covered.

Biography

Dr Aidan Ryan is a Chemical Pathologist with specialist interest in monogenic and polygenic lipid disorder.

Case Study: Rennies to the Rescue – Or Maybe Not!

Dr Micheál Ryan, University Hospital Limerick

Biography

Micheál Ryan is currently employed as a Senior Clinical Biochemist in the Biochemistry Dept., University Hospital Limerick.

Micheál graduated from the University of Limerick with a BSc. in Industrial Biochemistry (2003) and completed a MSc. in Biomedical Science (2007), University of Ulster, Coleraine.

He returned to the University of Limerick and completed a Post-Graduate Diploma in Quality Management – Lean Health Systems (2009). He successfully completed Part 1 of the FRCPath examinations in Autumn 2019.

Micheál formerly served as Trainee Representative for the ACB RoI Region (2017-2020) and was co-opted onto ACBI Council in June 2022.

The Validation of NT-proBNP for the Management of Patients with Chronic Heart Failure

Ms Zara Brady, Cavan General Hospital

Abstract

Introduction: The first aim of this study was to verify the NT-proBNP assay for use on two Abbott Alinity analysers. The second aim involved evaluating whether NT-proBNP can be utilised in the management of patients with chronic heart failure (CHF).

Methods: Precision, accuracy, comparability, recovery, linearity, and stability studies were performed for the verification of the assay. For the second aspect of the study, linear mixed effects modelling was performed to determine the relationship between therapy changes and NT-proBNP, creatinine, and potassium concentrations. A second model was utilised to evaluate the relationship between NT-proBNP and the New York Heart Association (NYHA) classification, and creatinine and potassium concentrations.

Results: The variability of NT-proBNP using the MAS-Omni CARDIO internal quality controls (IQC) was high. Precision studies were thus repeated using TechnoPath IQC which yielded a co-efficient of variation of <3%. For the second aspect of the study, a significant relationship was seen between therapy changes and serial NT-proBNP measurements for all patients (n=60). A significant relationship was also seen between NT-proBNP and NYHA classification ($p<0.001$).

Conclusion: The Abbott NT-proBNP assay showed good analytical performance. For the management of all patients with CHF, NT-proBNP can be utilised to support clinical decisions. However, further analysis is needed to determine can NT-proBNP be used to optimise treatment.

Biography

Zara Brady is currently working in the Biochemistry Department in Cavan General Hospital. Zara graduated from Atlantic Technological University (ATU) in 2021 where she studied Medical Science (BSc.) Zara recently completed her MSc. at ATU in Medical Science this year, choosing Clinical Chemistry as her main elective.

Neonatal Care – The Role of the Clinical Chemistry Laboratory

Dr David Corcoran, Rotunda Hospital

Abstract

Clinical biochemistry in a tertiary neonatal unit; the circle of trust:
The introduction of surfactant replacement therapy in the early 1990s and subsequent developments has led to increased survival of extremely preterm infants and a consequent increase in complexity of problems encountered in neonatal units. These include electrolyte disturbance, bone disease of prematurity, and complications of prolonged periods of total parenteral nutrition. The introduction of therapeutic hypothermia to reduce the neurological sequelae of moderate and severe hypoxic ischaemic encephalopathy in term infants has created a demand for point of care lactate measurements.

Advancing maternal age, a rapid rise in incidence of gestational diabetes and a rising percentage of infants who are born at 35 to 37 weeks gestation has increased the number of infants who require ward observations for issues such as neonatal hypoglycaemia and neonatal jaundice. Point of Care testing has proved indispensable in this area. Earlier hospital discharge has also increased the number of infants who need follow up for neonatal jaundice.

The role of clinical biochemistry in these areas is critical to the effective and safe functioning of a neonatal service. Evolving information systems and point of care equipment increases the need for development of a multidisciplinary integrated approach to provide an efficient and safe patient care environment. The presentation will include time to discuss how we might improve physician-scientist collaboration and the barriers to this progression.

Biography

David Corcoran, MD FRCPI, Consultant neonatologist, Rotunda Hospital and Clinical Associate Professor, RCSI and Trinity College Dublin. David is a Consultant Neonatologist of 24 years experience at the Rotunda Hospital, and at The Children's University Hospital, Temple St. He has been working in the field of hospital paediatrics and neonatology since 1987 and has a particular interest in neonatal jaundice and respiratory distress syndrome.

Workshop Abstracts & Biographies Haematology:

Blood Cell Morphology Scheme - Annual Review

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

Abstract

IEQAS Blood Cell 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 was appointed as Clinical Associate Professor in TCD in June 2022.

MSc project presentation: The Clinical Utility of D-dimers in TUH

Ms Lorraine McMahon & Ms Lisa Potts, Tallaght University Hospital

Abstract

The D-dimer level has been routinely used in the clinical investigation of venous thromboembolisms in low risk patients. However, its specificity lowers with age. This results in false positives in patients >50 years, leading to more imaging, increased hospital costs and potential harm due to radiation exposure. Newly revised ESC and NICE guidelines have recommended the use of an age adjusted cut off in patients >50 years.

A comparative age adjusted cut off was applied to each of 194 patients based on age and the corresponding radiological imaging was reviewed. The age adjusted cut off increased specificities in patients >50 years, without considerably lowering sensitivity.

73 COVID-19 patients were selected and separated into good and poor outcome groups. D-dimer levels were proven to be a significant marker in predicting the odds of poor prognosis in COVID-19 positive patients ($p<0.05$) and could contribute to decision making in relation to clinical pathways.

Biography

Lorraine Mc Mahon, Chief Medical Scientist, Haematology, Tallaght University Hospital. Lorraine was Senior MS in Coagulation in Tallaght from pre-hospital opening until taking up the post of Chief MS in 2018. She has experience of routine and specialist coagulation assays, including both hypo and hyper coagulable states.

Lisa Potts, Senior Medical Scientist, Coagulation, Tallaght University Hospital. Lisa is the lead Senior MS in the Coagulation lab in TUH, having previously, undertaken both her undergraduate and M.Sc projects on coagulation topics.

Case Study: Abnormal Bloods in Pregnancy

Ms Isabel Fitzsimons, Coombe Hospital

Abstract

The Coombe hospital is a large tertiary maternity hospital in Dublin which delivers approximately 7000 babies a year. The haematology laboratory processes approximately 50,000 FBC requests a year. Routine findings in the haematology laboratory in pregnancy include nutritional deficiencies, thrombocytopenia and infection.

This case study involves a 36-year-old lady who presented for routine booking bloods at 12 weeks gestation. This was her second pregnancy. This lady then presented again at 29 weeks with abnormal bloods, Hb 9.1 g/dL, platelets of 95 x 10^9/L and a monocyte count of 16.7 x 10^9^L, which triggered a blood film review and further investigations. This case study involves the differential diagnosis of this case and the subsequent investigations carried out.

Biography

Isabel Fitzsimons is a Senior Medical Scientist in the Haematology Laboratory of the Coombe Hospital.

Current Testing Strategies/Practices in CMD for both Diagnostic and MRD Testing:

Dr Lesley Ann Sutton, CMD, St James's Hospital

Biography

Dr Lesley Ann Sutton is the Principal Clinical Scientist within the Cancer Molecular Diagnostics department, St James's Hospital, Dublin. Dr Sutton undertook undergraduate training in Dublin, then moved to Sweden to pursue doctoral and post-doctoral studies as well as taking up senior positions in both Uppsala Academic Hospital and Karolinska Institutet, Stockholm. With >70 peer-reviewed publications to her name, her publication track-record is focused on precision medicine and the translation of novel molecular technologies into clinical diagnostics. She has served as a reviewer on numerous high impact-haematology journals and holds advisory roles within various consortia including ERIC, Euroclonality and GenQA. As a senior clinical lecturer in Trinity College Dublin, she is involved in the supervision and teaching of undergraduate and post-graduate students.

Workshop Abstracts & Biographies Microbiology:

Antimicrobial Stewardship – Where Would It Be Without The Laboratory?

Dr Sinead McNicholas, St Vincent's University Hospital

Abstract

Antimicrobials have made a significant impact on healthcare since they became widely available in the middle of the 20th century. We frequently take it for granted that antimicrobials will always be available to us. However, over recent years we have seen antimicrobials become less effective due to the increase in antimicrobial resistance (AMR). High levels of antimicrobial use and inappropriate use of antimicrobials cause increasing AMR and harm to patients. Antimicrobial stewardship (AMS) is vital in limiting and potentially reversing the development of AMR.

Prudent use of antimicrobials is a key part of antimicrobial stewardship programmes and is essential to preserve these miracle drugs for future generations. All laboratory disciplines play an important role in reducing antimicrobial use by identifying pathogens and resistance patterns and also assessing response to treatment allowing targeted therapy, prompt de-escalation and discontinuation of antimicrobials.

Biography

Sinead McNicholas is a consultant Clinical Microbiologist at St. Vincent's University hospital. A UCD graduate, she completed her higher specialist training with RCPI in 2010. She obtained a PhD in Clinical Microbiology from RCSI in 2012. As part of her role in St. Vincent's Hospital she is involved in teaching, audit and currently leads the antimicrobial stewardship team in St. Vincent's University Hospital.

New C. difficile NRL: Initial Findings

Dr Anne Carroll, Public Health Laboratory, Cherry Orchard Hospital

Biography

Anne has worked for over 20 years in the Public Health microbiology at the PHL Dublin. The PHL provides a National Reference services for VTEC, Campylobacter and most recently C. difficile and also provides a regional Public Health microbiology service.

Anne has developed the molecular diagnostic lab from its infancy to the internationally recognised service it provides today. She was the scientific lead for the introduction of WGS in 2017 and has also played a key role in the development of reference services.

Originally a molecular biologist, Anne has also trained as a Public health microbiologist through the European Centre for Disease Control EUPHEM Fellowship program. In addition, she is a Fellow of Academy of Clinical Science and Laboratory Medicine.

What is Happening with *Shigella* and CPE?

Ms Christina Clarke, University Hospital Galway

Abstract

Shigella landscape 2023: Ireland has seen an increase in *Shigella* numbers year on year. 2023 is looking like it will have the highest *Shigella* numbers to date. In this presentation we will look at ongoing clusters. Many of these chains of transmission are predominantly among gbMSM but not limited to that community. Antimicrobial resistance is important in some of the clusters.

CPE Landscape 2023: Numbers of Carbapenemase Producing *Enterobacteriales* are also increasing. An increase in NDM producers is a particular concern. To date KPC and OXA-48 predominated and NDM was less common. The prevalence of different CPE variants and various ongoing clusters in both humans and the hospital environment will be discussed.

Biography

Christina Clarke is a Specialist Medical Scientist in Galway Reference Laboratory (NSSLRL & CPERL).

Workshop Abstracts & Biographies Transfusion:

Impact of the Malware Attack on Serious Adverse Events in the Republic of Ireland

Ms Caroline Casey HVO, IBTS

Abstract

Impact of the Malware attack on serious adverse events in the Republic of Ireland: Caroline Casey[1], Joanne Scanlon[1], Allison Waters[2]Tor, Hervig[2], Kieran Morris[2,4]
Institution, country: [1] National Haemovigilance Office, Dublin, IRELAND; [2] Irish Blood Transfusion Service, National Blood Centre, Dublin, IRELAND; [3] UCD School of Public Health, Physiotherapy and Sports Science, University College Dublin, IRELAND; [4] St. Vincent's Hospital, Dublin, Ireland.

Background: On the 14th of May 2021 the Health Service Executive (HSE) of Ireland suffered a major ransom-ware attack which forced its information technology (IT) systems nationwide to be shutdown. HSE Hospitals around Ireland reported being unable to access electronic files and electronic databases, such as the Laboratory Information Systems (LIS), and the REES temperature monitoring systems. The HSE uses the electronic identification systems 'Blood Track' (EBTS) and the Cerner Maternity Neonatal Clinical Management System (MNCMS) to aid the sampling process and reduce the occurrence of wrong blood in tube (WBIT) errors.
Aims: The aim of this study was to examine the impact that the 2021 ransom-ware attack had on adverse events in transfusion.
Methods: In Ireland transfusion related adverse events and reactions are reportable to the National Haemovigilance Office (NHO). Adverse event reports reported to the NHO and accepted for analysis from 14th May 2021 to December 2022 were retrospectively reviewed. Database searches were performed using search terms 'Malware' and 'cyber-attack'. Interpretation was subjective with a single reviewer determining whether the case met inclusion criteria. Qualitative analysis of the free text narrative in reports using thematic coding was used to identify error trends.
Results: The NHO received 10 SAE reports which cited the cyber-attack as a contributory factor in the error that occurred. Storage errors due to insufficient temperature monitoring as a result of the REES temperature monitoring system being unavailable was cited in 8 reports. Failure to give an irradiated component as a result of being unable to check patient's history on LIS was cited in 2 reports.

The NHO received 5 Near Miss reports associated with the cyber-attack. Deviations in Storage were cited on 2 reports; Issue on 1 report and other on the remaining 2 reports. Two near miss reports were caused when staff failed to verify labels on units correctly. EBTS is used routinely to alert staff of incompatibilities and expiration dates. In one case a sample was handwritten incorrectly because EBTS was unavailable.The NHO received 3 WBIT reports which cited the cyber-attack. All three cases occurred at the sampling stage of the transfusion process and were a direct result of EBTS or MNCMS being unavailable due to the cyber-attack. In all three cases the sample was taken from the wrong patient and labelled as per the intended patient's details. The NHO also received a WBIT notification that details on a request form were incorrect as a result of EBTS being unavailable due to the cyber-attack. This case was not accepted as the NHO do not collect WBIT cases where details on the request form do not match the details on the sample.

Conclusions: There is limited information available on the consequences and effects of ransom-ware attacks experienced by healthcare facilities and healthcare bodies. The NHO identified 18 adverse events associated with the May 2021 malware attack. Ten of these events were serious adverse events that led to inappropriate blood or blood components being issued/distributed for clinical use. The Near Miss and WBIT events led to the issue of inappropriate blood or blood components but not the subsequent transfusion of the units. Sampling processes where electronic identification systems are routinely used are at risk of an increase in WBIT events in the event of a malware attack. Laboratory information systems and REES temperature monitoring systems are also areas of weakness in the transfusion process during malware attacks.

Biography

Caroline Casey is a medical scientist. After completing her BSc in microbiology in UCD she worked in the National Drug Screening Centre and came to the IBTS in 2003 as a trainee medical scientist. Caroline has worked in both the MBG department and the donor grouping laboratory in the NDSL. Caroline has a keen interest in policy and recently completed a Masters in Social Policy and Practice with TCD, where she developed her qualitative research skills. Caroline joined the NHO in early 2021 and had brought a wealth of knowledge and expertise. She joins colleagues on the LBT editorial board and sits on the NTAG HV SIG Group. She recently spoke on the impact of the malware attack in the Republic of Ireland at the ISBT congress in Sweden.

The Introduction of ccfDNA RhD Genotyping Assay to Prevent the Inappropriate Administration of Anti-D IgG and Evaluate the Benefits of its Implementation and Cost Savings

Ms Emer Grant, Letterkenny University Hospital

Abstract

cffDNA foetal Rhesus (RHD) genotyping has recently been piloted at Letterkenny University Hospital (LUH), and results have indicated 45% of RhD-negative mothers tested carry a RHD negative foetus. This supports a targeted approach to RAADP reducing the number of unnecessary anti-D Ig administration by greater than 45%.

A 6 ml EDTA peripheral blood was collected and processed for blood grouping and antibody screening in the Blood Transfusion Service at LUH. RhD-negative mothers > 11 $^{2+}$ gestation with RhD-negative results were offered with consent to avail of cffDNA foetal RHD genotyping. Samples were collected between 12 – 16 weeks' gestation and referred for analysis to Irish Blood Transfusion Service (IBTS) genetic laboratory. A study was performed comparing the number of doses of prophylactic anti-D Ig administered in the years 2021 and 2022, highlighting the number of unnecessary anti-D Ig administrated under RAADP program. The implementation of a tRAADP within the antenatal service in LUH would be feasible, ethical, and cost-saving.

Biography

Emer Grant graduated from University of Ulster, Coleraine and worked as a Medical scientist in Altanagelvin Area Hospital, Co. Londonderry/Derry before getting a permanent post in Letterkenny University Hospital, Co. Donegal. She recently completed Master's Degree and has been involved in the introduction of cell free foetal DNA genotyping to antenatal service improving the antenatal care at LUH.

The introduction of cffDNA RHD genotyping assay to prevent the inappropriate administration of anti-D IgG and evaluate the benefits of its implementation and cost savings**.**

Case Studies: A Tale of Two Antibodies

Ms Emily Forde, Rotunda Hospital

Abstract

Case studies from two Rotunda Obstetric patients.
Patient blood management in patients with complex antibodies in pregnancy.

1. Post-Partum Haemorrhage in a patient with multiple antibodies.
2. Managing a pregnant patient with Anti-PP1PK, titre of 32.

Biography

Emily Forde holds the position of Senior Medical Scientist in Blood Transfusion, in The Rotunda hospital since 2009. Emily is also Deputy Quality Manager and Deputy Haemovigilance Officer.

In 2000, Emily achieved a certificate in Medical Laboratory Science from Galway-Mayo Institute of Technology and a Bachelor of Science in Biomedical Sciences from Dublin Institute of Technology at Kevin Street/Trinity College Dublin in 2002. In 2008, she successfully obtained an MSc in Biomedical Science from University of Ulster. In 2020, Emily then completed the BBTS Specialist Certificate in Clinical Transfusion Practice.

Since graduating Emily has worked in the Haematology Laboratory in St. Vincent's University hospital, before obtaining a permanent position in the Haematology and Blood Transfusion laboratories in the Rotunda. In 2006, she spent a year working in the Immunophenotyping Laboratory in Our Lady of Mercy Cancer Centre, New York before returning to The Rotunda in 2007. In the Rotunda Emily verified a new Flow cytometer as part of the introduction of post-delivery FMH estimation using flow cytometery there. The Rotunda now provides a referral service for this test method.

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