



# **Annual Participants' Conference**

5<sup>th</sup> October 2017

Ashling Hotel, Dublin

**Programme  
&  
Book of Abstracts**

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# Welcome

Welcome to this year's IEQAS Participants' Conference. Now in its 36<sup>th</sup> year, IEQAS is one of the longest-standing quality initiatives in the Irish health service. We provide External Quality Assessment (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, such as standardisation and harmonisation of analysis.

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

Ms Dympna Murphy, Chair  
Dr Peadar McGing, Vice-Chair

Ms Hazel Graham, Quality Manager  
Ms Patricia Howley, Operations Manager  
Ms Anne Kane, Scheme Manager

On behalf of the IEQAS Steering Committee



European Organisation For External Quality Assurance  
Providers in Laboratory Medicine

# IEQAS Committees

## **Steering Committee**

Murphy, Dympna <sup>4</sup>	<u>Chair</u> Chief Medical Scientist, Tallaght Hospital
McGing, Peadar <sup>4</sup>	<u>Vice - Chair</u> Principal Biochemist, Mater University Hospital
Brady, Jennifer <sup>2</sup>	Principal Clinical Biochemist, Mater University Hospital
Brady, John <sup>1</sup>	Formerly Laboratory Manager, Our Lady's Children's Hospital
Driscoll, Therese <sup>4</sup>	Senior Medical Scientist, Tallaght Hospital
Fitzgerald, Susan <sup>3</sup>	Consultant Microbiologist, St Vincent's University Hospital
Graham, Hazel <sup>5</sup>	IEQAS Quality Manager
Griffin, Damian <sup>3</sup>	Consultant Chemical Pathologist, Galway University Hospital
Howley, Patricia <sup>5</sup>	IEQAS Operations Manager
Judge, Gerry <sup>4</sup>	Formerly Chief Medical Scientist, Tallaght Hospital
Kane, Anne <sup>4</sup>	IEQAS Scheme Manager
Shirley, Ivan <sup>1</sup>	Chief Medical Scientist, St Vincent's University Hospital

## **Associated Professional Bodies**

<sup>1</sup> Academy of Clinical Science & Laboratory Medicine

<sup>2</sup> Association of Clinical Biochemists in Ireland

<sup>3</sup> Royal College of Physicians of Ireland, Faculty of Pathology

<sup>4</sup>Co-opted by Steering Committee

<sup>5</sup>IEQAS Operations Management

## **Additional Specialist Advisors**

Boran, Gerard	Consultant Chemical Pathologist, Tallaght Hospital
Clarke, Frank	Lecturer, School of Biological Sciences, DIT
McCafferty, Richard	Chief Medical Scientist, St James's Hospital
O'Kelly, Ruth	Principal Clinical Biochemist, Coombe Women & Infants University Hospital
O'Sullivan, Niamh	Consultant Microbiologist, Our Lady's Children's Hospital / Coombe Women & Infants University Hospital
Perera, Kanthi	Consultant Haematologist, Midland Reg Hosp Tullamore
Smith, Tom	Principal Biochemist, St Vincent's University Hospital
Ward, Cara	Senior Medical Scientist, St Vincent's University Hospital

## **Operations Management**

Graham, Hazel (Quality Manager)

Howley, Patricia (Operations Manager)

Kane, Anne (Scheme Manager)

# Plenary Programme

## *Liffey Suite*

### **First Plenary Session**

*Chair: Ms Dympna Murphy#, Tallaght Hospital*

**09:20 Opening Address**

Ms Dympna Murphy#, IEQAS Chair

**09:30 Developing Evidence-based Clinical Guidelines**

Dr Eve O'Toole, National Cancer Control Programme

**10:10 Quality Issues in the National Bowel Screening Programme**

Prof Diarmuid O'Donoghue, BowelScreen

### **10:40– 11:10 Tea/Coffee**

### **Second Plenary Session**

*Chair: Dr Peadar McGing#, Mater UH*

**11:10 Quality in Molecular Diagnostics-The Role of EQA:**

Prof David Barton, National Centre for Medical Genetics

**11:50 Quality Monitoring of Pre-analytical Sample Labelling:**

Dr Ann Leonard, Tallaght Hospital

# Member of IEQAS Steering Committee

### **12:30 – 14:00 LUNCH**

Lunch in the Chesterfields Restaurant on the Ground Floor (main course, dessert, tea/coffee).

Gluten-free & vegetarian options will be available. For other specific dietary requirements, contact the Restaurant Manager.

**Please take a seat and tables will be invited up for service. Be patient as there will be approx 190 people for lunch.**

**TAKE ALL PERSONAL ITEMS WITH YOU DURING LUNCH**

**Afternoon Workshops** (parallel: each 14:00 – 16:00 approx)

**CLINICAL CHEMISTRY** in Phoenix Suite - 2<sup>nd</sup> Floor

*Chair: Dr Graham Lee, Mater UH*

- 14:00 Introduction of a Calprotectin Assay on the Abbott Architect:** Ms Mary Deasy, Mercy Hospital Cork
- 14:30 Implementation of AKI alerts:** Dr Anne Dawnay, Bart's Health, London
- 15:15 Accelerated Chest Pain protocols:** Dr Gareth McKeeman, Royal Victoria Hospital, Belfast

**HAEMATOLOGY** in Liffey Suite

*Chair: Mr Richard McCafferty\*, St James's Hospital*

- 14:00 Blood Cell Morphology Scheme - Annual review**  
Dr Kanthi Perera\*, MRH Tullamore
- 15:00 Review of the Haematology Scheme 2017:**  
Mr Ivan Shirley\*, SVUH
- 15:15 Peripheral Blood Immunophenotyping in MDS:**  
Ms Vicky Murphy, Tallaght Hospital

**MICROBIOLOGY** in Kilmainham Suite - lower ground floor

*Chair: Dr Suzy Fitzgerald#, SVUH*

- 14:00 From Bench to Bedside: Clinical Cases:**  
Dr Suzy FitzGerald\*, SVUH
- 14:40 Introduction of Molecular Testing for Influenza into the Laboratory; the Beaumont Experience:**  
Ms Vanessa Newman, Beaumont Hospital
- 15:20 Evaluation of *Clostridium difficile* -Associated Costs:** Ms Mairead Skally, Beaumont Hospital

**TRANSFUSION** in Montpelier Room - 2<sup>nd</sup> floor

*Chair: Ms Patsy Kelleher Tallaght Hospital*

- 14:00 National Audit of Antenatal Transfusion Testing Practices and Appraisal of 28 Week Screening of all Patients:** Mr Eamon Clavin, Tallaght Hospital
- 14:40 Donors: Guidelines, Deferrals and Challenges:**  
Dr Ellen McSweeney, IBTS
- 15:30 Hospital Blood Transfusion Laboratory Experience in Preparation for MedLIS:**  
Mr John Crumlish, Mater UH

# Member of IEQAS Steering Committee \* Specialist Advisor to IEQAS

Leave **Evaluation forms & badges** at registration desk or workshops.

**ACSLM - 1 Day Conference:** [www.acslm.ie/cpd](http://www.acslm.ie/cpd) (select a one day event, upload supporting documentation & complete reflective practice report).

# IEQAS Annual Report 2017

Now in our 36<sup>th</sup> year, IEQAS continues to provide and expand a wide-ranging EQA service. We currently have participants in over 90 different schemes run either by IEQAS directly or in collaboration with Labquality, the Finnish EQA scheme. IEQAS has ISO 9001:2008 certification.

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, such as standardisation and harmonisation of analysis.

- Labquality Finland: IEQAS is the sole distributor in Ireland for this international EQA provider, which has 4500 laboratories from more than 50 countries participating in their programme of >150 different schemes. Labquality schemes should be ordered directly from IEQAS and we are also responsible for any queries you may have throughout the year.
- IFCC EurA1c-project for HbA1c: IEQAS participated in this EQA project in 2016. Two fresh blood samples were distributed simultaneously via multiple EQA organisers to establish a European-wide picture of HbA1c performance. The project is part of the IFCC Committee for Education in the Use of Biomarkers in Diabetes (C-EUBD). The 2016 report was issued to Irish participants and is available on the IEQAS website (Confidential zone). Plans are underway for a similar project for the end of October 2017.
- NCCP Tumour Marker Harmonisation Project (for NCCP designated cancer centres): IEQAS is continuing to assist the National Cancer Control Programme with this project; currently for PSA, CA<sub>125</sub> and hCG. Each centre will supply samples.
- Histopathology EQA scheme: administered by IEQAS supported by the Faculty of Pathology, Royal College of Physicians of Ireland, with over 90 participants.
- 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.

- EQALM Symposium 2017: This annual European event is being hosted by IEQAS in Crowne Plaza Hotel, Northwood, Dublin on 19<sup>th</sup> & 20<sup>th</sup> October. [www.egalm.org](http://www.egalm.org)
- National POCT Committee: IEQAS are represented on this committee.
- Reference Interval Harmonisation Project Group: IEQAS are represented on this National Clinical Programme for Pathology project. It is a follow-on to a previous project to establish reference intervals for non-pregnant adults. The specific focus of the current phase is FBC tests for Haematology and Liver and Bone profile tests for Clinical Chemistry.
- ICSH: Jointly with the ACLSM, 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.

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 Tallaght, SVUH, Mater University Hospital, OLCH Crumlin, MRH Tullamore for facilitating IEQAS with sample preparation, storage and distribution. Interesting cases for our Blood Cell Morphology scheme are always welcome from any participant.

Our Order Forms for 2018 will be sent out shortly. A summary of all schemes offered by IEQAS, and the changes for 2018, is included with this booklet. A copy of the Labquality Product Catalogue 2018 is available in your Conference bag and can be found on IEQAS website.

*Ms Patricia Howley, Operations Manager, IEQAS*

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# IEQAS EQA Schemes 2018

IEQAS provides schemes directly, in addition to many from Labquality, our Finnish EQA partner

- IEQAS deal with all your orders & queries, incl. Labquality
  - No VAT payment is required; prices in Euro
    - Local advice & expertise
    - Special Surveys
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## IEQAS-operated schemes

### **HbA<sub>1c</sub>**

- Two samples, distributed quarterly
- Fresh single-donor blood samples from donors with diabetes
- Scored vs Reference Value (ERL)
- Suitable for Laboratory and POCT meters

### **Clinical chemistry (general)**

- One sample, distributed monthly
- Special feature: >3 minimally processed patient pools
- >1 with Reference Values quoted

### **Full Blood Count**

- Two samples, distributed every 2 months (analytes include RDW)

### **Blood Cell Morphology**

- One sample, distributed every 2 months
- Educational (not scored)
- Annual review at IEQAS Conference
- Interesting cases - always welcome from any participant.

### **POCT Lipids**

- One sample, distributed quarterly
- Suitable for pharmacies, clinics and health screening

**NCCP Pilot: PSA, Ca<sub>125</sub>, hCG**  
(NCCP Designated Cancer Centres)

- One sample, distributed quarterly
- Minimally processed patient pools
- Participants also use a common IQC material

**General Histopathology**

Supported by Faculty of Pathology RCPI for  
Histopathologists with full/part generalist practice

- 12 slides, per distribution with peer review
- CPD Certification

**Labquality (Finland)**

Changes for 2018 include:  
(further details in 2018 Labquality Product Catalogue)

New schemes & products

7130 ECG, interpretation

8817 HIL-index [DEKS]

5086 Human papillomavirus, nucleic acid detection

5300 Respiratory infections multiplex, nucleic acid detection

5302 Sexually transmitted diseases multiplex, nucleic acid  
detection

2685 Tryptase [UK NEQAS]

New Integrated EQA Programs:

include pre- and/or post-analytical EQA, fulfilling ISO 15189  
requirements

5040 Coeliac disease, antibodies

2301 Hormones B: Steroid and peptide hormones

2200 Lipids and lipoproteins

2240 Proteins, electrophoresis

1072 Serum A, lyophilised samples

5060 Urine culture, quantitative screening

5065 Urine culture, quantitative screening, ID & susceptibility

Changes in scope, specimens or parameters

2040 Bilirubin, neonatal -now separate scheme from Serum A

5191 Faecal bacterial pathogens, multiplex, nucleic acid detection -  
Multiplex; samples may include EHEC

5190 Faecal culture - samples may include EHEC



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# Abstracts: Plenary

## **Developing Evidence-based Clinical Guidelines**

*Dr Eve O'Toole, Research Manager Guidelines Methodologist,  
National Cancer Control Programme*

### **Background**

The NCCP Leads group mandated the update of the 2012 National Prostate Cancer GP Referral Guideline. This guideline was to be evidence based and it was designed to include the finding from the NCCP PSA harmonisation project. A Guideline Development Group was established with representation from Urology, General Practice, Nursing, Research, HSE library and Patients.

### **Methods**

In 2017 the HSE National Framework for developing Policies, Procedures, Protocols and Guidelines (PPPGS) was published. This framework sets out the stages of PPPG development and requires the completion of a checklist to ensure all PPPGs meet the National Clinical Effectiveness Standards for Clinical Practice Guidance.

To ensure the NCCP adhered to these standards the guideline was developed using the following steps:

- |        |  |
|--------|--|
| Step 1 | Develop Clinical Questions   |
| Step 2 | Search for and find the evidence   |
| Step 3 | Appraise the literature  |
| Step 4 | Generate recommendations   |
| Step 5 | National review and submission to the ICGP Quality in Practice Committee |
| Step 6 | Publication of the GP referral guideline                                 |

### **Outcomes**

The National Prostate Cancer GP Referral Guideline draft and national review has been completed. The Guideline has been submitted to the ICGP QIP committee. The guideline shall be launched at the NCCP Audit, Quality and Risk Prostate Cancer Forum 2017.

### **Biography**

Eve O'Toole completed a Ph.D in Biochemistry in University College Dublin in 1999 and an MSc in Evidence Based Health Care in 2011 from the University of Oxford. She is currently the Research and Guideline Programme Manager in the National Cancer Control Programme (NCCP).

## **Quality Issues in the National Bowel Screening Programme**

*Prof Diarmuid O'Donoghue, Clinical Lead, BowelScreen National Screening Service*

### **Abstract**

Colorectal cancer (CRC) is the commonest cancer affecting both males and females in Ireland where it accounts for > 11% of all cancer deaths. Close to 3,000 cases are expected in 2017. The vast majority of CRCs arise from a benign adenoma and thus it is very suitable for a screening programme. In 2013, the National Screening Service (NSS), after some years of preparation, commenced screening under the name of BowelScreen. The screening method employed was a home based kit looking for occult blood. The Faecal Immunochemical Test (FIT) is easy to use and is quantifiable and read automatically in a central laboratory. The first round was completed at the end of 2016 and the second round will be finished this December.

The results from round 1 are very encouraging with a major shift to earlier diagnoses and the identification of many individuals with asymptomatic adenomas. A screening programme is only as good as its constituent parts which require first class quality assurance (QA). These QAs and their oversight will be discussed.

### **Biography**

Diarmuid O'Donoghue graduated from the School of Medicine in UCD and following an internship in the Mater University Hospital he spent 8 years in the UK pursuing post graduate studies. He worked in St Stephen's Hospital Chelsea, the London Chest Hospital and the National Hospital for Nervous Diseases, Queen's Square before specialising in Gastroenterology and General Medicine at Doncaster Royal Infirmary and finally at St Bartholomew's Hospital, London.

He was then appointed as a General Physician and Gastroenterologist to St Vincent's University Hospital (recently retired).

Diarmuid O'Donoghue is a co-founder of the Centre for Colorectal Disease at St Vincent's University Hospital, Dublin and is a Newman Professor of Clinical Research at University College Dublin.

He is a former President of the Irish Society of Gastroenterology and is a member of the American Association of Gastroenterology.

He is a Fellow of the Royal Colleges of both the UK and Ireland. He was a Member of the Medical Council from 2008-2013.

Professor O'Donoghue's major clinical and research interests include bowel cancer and the inflammatory conditions of Crohn's disease and Ulcerative Colitis. He is the author or co-author of more than 150 peer review papers is currently the Clinical Lead for BowelScreen, the national screening programme for the prevention or early detection of bowel cancer.

## **Quality in Molecular Diagnostics – The Role of EQA**

*Prof David Barton, Chief Scientist, National Centre for Medical Genetics, Dublin*

### **Abstract**

DNA-based diagnostic technologies may have an aura of infallibility in the eyes of the public, yet they are just as vulnerable to errors as any other technology. Errors in genetic test results can have catastrophic and long-lasting consequences for patients and families. EMQN (the European Molecular Genetics Quality Network) has data on 20 years' worth of external quality assessment of genetic testing laboratories world-wide. We see increases in error rates whenever a new technology is introduced, and when new labs take on existing technologies, emphasizing the importance of adequate method validation, use of reference materials and early participation in EQA. The EuroGentest project developed guidelines for validating molecular tests. However, developing and providing timely EQA schemes, in the face of constant progression of technologies is a challenge for EQA providers as they try to stay ahead of the technology curve, to remain relevant and to preserve patient safety. The rapid and widespread adoption of next-generation DNA sequencing technologies is the latest of these challenges. EMQN, in collaboration with UK NEQAS, has led the world in developing EQA for NGS. Our latest results will be presented.

### **Biography**

David E Barton, PhD, DipRCPath

- Chief Scientist, National Centre for Medical Genetics, Dublin, Ireland
- Adjunct Associate Professor, School of Medicine & Medical Sciences, University College Dublin
- Chair, Board of Management, European Molecular Genetics Quality Network
- Spokesperson on the regulation of genetic testing for the European Society of Human genetics
- Member, Advisory Committee for Medical Devices, Health Protection & Regulatory Authority

Having trained in Trinity College Dublin, and The Queen's University of Belfast, David Barton carried out medical genetics research at Yale University and Cambridge University before

setting up the NHS molecular genetics diagnostic laboratory in Cambridge, UK. He returned to Dublin to set up his current laboratory at the National Centre for Medical Genetics in 1995.

Prof Barton has been involved in work to monitor and improve the quality of genetic testing for many years, working with UK NEQAS, the European Molecular Genetics Quality Network EMQN (which he now chairs), the OECD, WHO and EuroGentest. He co-ordinated the EU CRMGEN project, developing certified reference materials for genetic testing. In EuroGentest he continued to work on reference materials development and also has responsibility for examining the role and impact of IVD regulation in genetic testing.

David Barton has published over 120 papers in peer-reviewed journals. Research interests include the genetics of vesicoureteral reflux, male infertility and the development of novel DNA diagnostic devices.

Prof Barton is a member of the ESHG's Genetics Services Quality Committee, Chair of the Irish Molecular Diagnostics Network, member of the Medical Devices Advisory Board at the Irish Health Protection and Regulatory Authority and a Board Member of the Genetic and Rare Diseases Association.

## **Quality Monitoring of Pre-Analytical Sample Labelling**

*Dr Ann Leonard, Quality Manager, Tallaght Hospital, Dublin*

### **Abstract**

**Authors:** Ann Leonard<sup>1</sup>, Dympna Murphy<sup>2</sup>, Heather Baker<sup>2</sup>, Fionnuala O Dwyer<sup>2</sup>, Sarah Hickey<sup>2</sup>, Margaret Finnegan<sup>2</sup>, Niamh Strahan<sup>2</sup>, Tony Moulton<sup>2</sup>, Ursula Fox<sup>2</sup> and Gerard Boran<sup>1</sup>

<sup>1</sup>Clinical Biochemistry Unit, Trinity College, Dublin

<sup>2</sup>Department of Laboratory Medicine, AMNCH, Tallaght Hospital, Dublin

**Key words:** PID, Specimen, Six Sigma

**Background:** There is substantial evidence to support the view that the pre-analytical phase although not under the direct control of laboratory maybe the most error prone of all the phases. The aim of this project, was to implement and monitor a six-sigma metric score to assess the quality of specimen and request-form labelling and ultimately patient identification.

**Materials and Methods:** A working group was established to develop a process which supported the documented identified sample labelling quality issues and develop/assign an appropriate coding structure. All patient samples in the study were registered on the Laboratory Information System (LIS Clinisys® Ver.5.32). Central to the process was the implementation of a barcode system to facilitate data code capture and QM codes being recorded against individual patient requests. Six sigma scores were calculated from total number of errors recorded versus the total number of requests. This was supported through data extraction linked to Microsoft Excel 2010®.

**Results:** A total of approximately 623,875 samples were received in the Laboratory Department between January and June 2017. Over 40,000 sample labelling issues were identified through the use of QM codes. The highest number of labelling errors identified were QM16 no location specified (24724) and QM15 no clinician specified (13395) followed by QM1 Unlabelled sample (305). This resulted in an overall sigma score for the quality of sample labelling on samples (including request form completion) received in the department as 3.02.

**Conclusion:** The unequivocal identification of the patient is a crucial step in delivery of timely and accurate laboratory results. The sigma score for sample labelling quality performs poorly compared to other industries i.e. Airline safety 6.0, Baggage

handlers 4.0. The final clinical impact of sample labelling issues is difficult to determine as the laboratory detection and management of such issues may mitigate the impact.

### **References:**

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### **Biography**

Ann Leonard has been employed as a medical scientist in AMNCH Tallaght Hospital, since hospital opening. Her current role in the Laboratory Medicine Department is Quality Manager prior to this she was the Laboratory IT manager.

Following her BSc from Trinity College/ DIT Kevin Street, Ann undertook a PhD through research at Tallaght Hospital in the area of postprandial lipaemia and graduated from Trinity College in 2011. In addition to this she undertook studies in Business management in Smurfit Business School (UCD) and graduated in 2014 with a Master's in Business Management.

Ann is an adjunct associate professor and course co-ordinator for the MSC in Clinical Chemistry at Trinity College Dublin.

# Abstracts: Clinical Chemistry Workshop

## **Introduction of a Calprotectin Assay on the Abbott Architect**

*Ms Mary Deasy, Medical Scientist, Mercy Hospital Cork*

### **Abstract:**

Evaluation of the BÜHLMANN f CAL Turbo Faecal Calprotectin Assay on the Abbott Architect C8000. Comparison to the Phadia ELiA and the IBDoc® home test kit.

**Authors:** Mary O' Connell<sup>1</sup>, Eithne Barden<sup>1</sup>

<sup>1</sup> Biochemistry Laboratory, Mercy University Hospital, Cork

**Background:** Faecal Calprotectin is a valuable marker for Inflammatory Bowel Disease and has resulted in significant cost savings. ELISA is the standard assay. There are a few considerations with this method including that it is labour intensive, time consuming and requires specific laboratory equipment. A major advantage of the BÜHLMANN f CAL turbo assay is that it can be adapted to any of the current open clinical chemistry analysers. This will permit more clinical laboratories to perform testing on site and reduce the turn-around time of the test.

**Method:** f CAL turbo assay was evaluated on the Abbott Architect C8000 analyser, with comparison to the Phadia 250 ELiA. A total of 60 faecal samples were measured for comparison. The f CAL turbo was also compared to the IBDoc® home test.

**Results:** Precision of the assay achieved coefficient of variation 0.74% to 3.3%. Linearity is 16µg/g to 1922µg/g (highest calibrator) with an option of an automatic 1:10 dilution for values greater than this. Correlation coefficient of 0.930 in comparison to the Phadia 250, with a statistical significance ( $p=0$ ), with the f CAL turbo reading higher. A review of participant medical charts confirmed the accuracy of the f CAL turbo. A  $p=0.226$  for f CAL turbo versus IBDoc® home test, and  $p=0.003$  for IBDoc® versus the Phadia. Calibration is stable for 60 days.

**Conclusion:** f CAL turbo is very adaptable to the Abbott Architect C8000 analyser. The CALEX ® cap extraction devices are easy to use and practical. Inter-assay variability demonstrated, and recommends users to participate in the UK NEQAS Scheme. No interference to any of the other chemistries.

**Biography**

Mary Deasy is a Medical Scientist in the Biochemistry Laboratory at the Mercy University Hospital, Cork. Mary previously worked in a private laboratory in Australia and in The Children's Hospital in Crumlin.

## **Implementation of AKI alerts**

*Dr Anne Dawnay, Consultant Clinical Biochemist, Bart's Health, London.*

### **Abstract**

AKI develops in some 20% of acute admissions to hospital, about half of which is considered to be community-acquired. AKI is associated with increased morbidity and mortality, and the development and progression of CKD in the longer term. The aim of an automated warning of an acute deterioration in renal function is to improve early detection and treatment of AKI to prevent worsening and improve outcomes. Ease of implementing the NHS England AKI algorithm is highly dependent on the LIMS. Warnings should be accompanied by prompts for patient review, eg through use of the STOP acronym (Sepsis/hypoperfusion; Toxicity; Obstruction; Parenchymal kidney disease – see <http://www.londonaki.net/clinical/>) Reasons for false positive alerts and failure of detection will be discussed along with future improved developments.

### **Biography**

Dr Anne Dawnay is a consultant clinical biochemist at Barts Health in London. She first implemented an in-house algorithm to detect AKI in 2012 when at UCL Hospitals. She is the clinical scientist representative on the London AKI network and was on the development group for the NICE guideline on Acute Kidney Injury CG169 (2013). She sat on the NHS England AKI Detection Workstream and Algorithm subgroup that devised the current NHS England AKI algorithm that was later mandated by a National Patient Safety Alert (NHS/PSA/D/2014/010). She also represents the ACB on the UK Renal Registry and co-authors the annual report chapter auditing biochemical variables in the dialysis population.

## **Accelerated Chest Pain protocols**

*Dr Gareth McKeeman, Consultant Clinical Scientist, Clinical Biochemistry, Royal Victoria Hospital, Belfast.*

### **Abstract**

New ESC guidelines were published in 2015, which supported the use of a new algorithm combining clinical observations and high sensitivity troponin T (TnT<sub>hs</sub>) concentration changes over a 1-hour period to evaluate patients and identify those most at risk of MI, where the ECG pattern is equivocal. The guidelines, based on several multi-centre studies, proposed decision limits for 3 commercially available troponin assays and showed accelerated safe 'rule-out' and accurate 'rule-in' of those with suspected AMI. This presentation will summarise how a rapid one-hour protocol for the assessment of patients presenting to the Emergency Department with suspected cardiac chest pain was successfully piloted and implemented in Belfast. This will include focus on the Roche high sensitivity troponin T assay and how the laboratory continues to review assay performance to govern the clinical effectiveness of the current pathway.

### **Biography**

Gareth McKeeman is currently employed as a Consultant Clinical Scientist (Automation Laboratory) in the Clinical Biochemistry department at the Royal Victoria Hospital Belfast. He graduated from Queen's University Belfast in 1999 with a BSc (Hon) in Biomedical Science and then went on to complete a PhD (Queen's University Belfast, 2003). Gareth then worked as a Research Fellow for 4 years in the Department of Medicine at Queen's University Belfast, before moving to the Belfast Health and Social Care Trust to take up a Clinical Scientist position in 2007.

# Abstracts: Haematology Workshop

## **Blood Cell Morphology Scheme: Annual review**

*Dr Kanthi Perera, Consultant Haematologist, Midland Regional Hospital, Tullamore*

### **Abstract**

During the last year IEQAS circulated 6 morphology cases. The presentation will review some of the morphological abnormalities in each case with a brief review of the diagnosis, to include how one could arrive at the diagnosis.

### **Biography**

Dr Kanthi Perera graduated from the Faculty of Medicine, University of Colombo, Sri Lanka, initiated her post-graduate training in Sri Lanka and completed it at The Royal London Hospital in England. She was appointed as the first Consultant Haematologist in the National Cancer Hospital in Colombo and gave the leadership for the establishment of the first stem cell transplant unit in the country at the National Cancer Hospital. Dr Perera was hugely involved with both undergraduate and postgraduate teaching in the country. She moved to Ireland in 2001 and held a temporary consultant post in Mid-Western Regional Hospital, Limerick for 3 years and in UCH Galway for 9 months and is now Consultant Haematologist at the Midland Regional Hospital in Tullamore. Dr Perera carries out regular morphology teaching for SpRs and is a member of IEQAS Haematology Review Group.

## **Review of the Haematology Scheme 2017**

*Mr Ivan Shirley\*, Chief Medical Scientist, St Vincent's University Hospital, Dublin*

### **Abstract**

This was another busy year with new analysers, six surveys, fresh blood survey, stability survey and improvements to the report layout. These will all be discussed at the meeting.

The six Full Blood Count surveys were designed to cover both normal and abnormal results, similar to those analysed in a Haematology laboratory. A summary will be presented.

The introduction of new analysers and POCT analysers has brought new challenges for certain tests. With advice from the analyser supplier and assistance from laboratories, most of these issues have been resolved. The recommendations will be discussed.

A fresh blood survey was carried out for FBC, automated differential and Reticulocyte count on two samples. The findings will be compared with previous fresh blood surveys.

Included in this fresh blood survey, certain labs were involved in a stability survey. The findings should be useful for any laboratory performing samples that may be more than 24 hours old.

During the year the reports were improved to enable the user to view analysers and results more easily. These will be explained as well as other result information available on the website.

### **Biography**

Ivan Shirley FACSLM is Chief Medical Scientist in the Haematology Department in St Vincent's University Hospital, Dublin 4. He has served on the IEQAS Haematology Review group for 19 years and on the Steering Committee for 16 years. He has also been Vice Chairman of the Steering Committee.

## **Peripheral Blood Immunophenotyping in MDS**

*Ms Vicky Murphy, Medical Scientist, Tallaght Hospital*

### **Abstract**

Myelodysplastic syndrome (MDS) is a heterogeneous group of haematological disorders. MDS is characterised by clonal and ineffective haematopoiesis, dysplasia, peripheral blood cytopenia(s), progressive bone marrow failure and a genetic instability which are closely related to acute myeloid leukaemia (AML).

The 2013 European LeukemiaNet guidelines for diagnosis and treatment of MDS reported that flow cytometry (FCM) can have a substantial application in disease characterisation, diagnosis and prognosis in MDS, and may also be useful in predicting treatment responses and monitoring novel and standard therapeutic regimens, if performed according to the standard European LeukaemiaNet guidelines.

To date, the majority of studies have focused on immunophenotyping performed on bone marrow aspirates, although a small number of studies have suggested that immunophenotyping performed on peripheral blood may be informative.

The results of a study undertaken, in part fulfilment of MSc in Biomedical Science from University of Ulster, will be presented. This study was designed to determine if surface antigen expression levels on circulating granulocytes and monocytes in the peripheral blood could be used to differentiate between MDS patients, non-MDS cytopenic patients and normal patients, and also to determine if a flow cytometry scoring system could be applied to peripheral blood samples. A FCM scoring system based on the number of aberrant abnormalities in antigen expression for both granulocytes and monocytes observed for each patient was used.

The study was accepted for presentation at the 14th International Symposium on Myelodysplastic Syndromes (May 2017).

### **Biography**

Vikki Murphy is a Medical Scientist in the Haematology Department at Tallaght Hospital.

# Abstracts: Microbiology Workshop

## **From Bench to Bedside: Clinical Cases**

*Dr Suzy FitzGerald\*, Consultant Microbiologist, St Vincent's University Hospital, Dublin*

### **Abstract**

Case studies emphasizing the importance of the microbiology laboratory in management of clinical cases 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.

## **Introduction of Molecular Testing for Influenza into the Laboratory; the Beaumont Experience**

*Ms Vanessa Newman, Medical Scientist, Beaumont Hospital*

### **Abstract**

The use of molecular diagnostics in the diagnosis of influenza A and B viral infections has become the gold-standard of care. By the provision of such technologies on site at Beaumont Hospital, a reduction in turnaround times have optimised antimicrobial treatment and stewardship and improved patient clinical management. This has resulted in prompt isolation and cohorting of patients with transmissible respiratory viral infections. This presentation will discuss the detection of influenza A and B by the laboratory and the rapid response to the growing need for a reduction in turnaround times. It will include the comparison of platforms, challenges that were encountered and how the laboratory managed to deliver a 24/7 service.

### **Biography**

Vanessa Newman is a medical scientist in the microbiology department in Beaumont Hospital. Vanessa began her career in 2011 after graduating from Dublin Institute of Technology. She has completed an MSc in Biomedical Science (2015) in the University of Ulster, Coleraine.

## **Evaluation of *Clostridium Difficile* - Associated Costs**

*Ms Mairead Skally, Surveillance Scientist, Beaumont Hospital*

### **Abstract**

The main aim of this project was to ascertain the additional financial cost per routine case of *Clostridium difficile* infection (CDI) and the cost of a CDI outbreak in Beaumont hospital. The methods undertaken and main findings of this project will be presented.

### **Biography**

Mairead Skally is a Surveillance Scientist in Beaumont Hospital and has previously worked in national agencies including the Health Protection Surveillance Centre (HPSC) and the National Cancer Registry of Ireland (NCRI)

# Abstracts: Transfusion Workshop

## **National Audit of Antenatal Transfusion Testing Practices in Irish Maternity Units and Appraisal of 28 Week Screening of all Patients**

*Mr Eamon Clavin, Medical Scientist, Tallaght Hospital*

### **Abstract**

**Authors:** E. Clavin<sup>1</sup>, F. Guilfoyle<sup>2</sup>, F. McGrath<sup>1</sup>, C. Flynn<sup>2</sup>

<sup>1</sup>Dublin Institute of Technology, Kevin Street Lower, Dublin 2.

<sup>2</sup>The Coombe Women and Infants University Hospital, Dublin 8.

Compliance with guidelines issued by the British Committee for Standards in Haematology (BCSH), while considered good practice, is not mandatory. Decisions on whether to implement each recommendation are taken at an individual hospital level. The BCSH has issued a guideline recommending the screening of all pregnant patients at 28 weeks gestation, including non-alloimmunised RhD positive patients. The implementation of BCSH antenatal transfusion testing guidelines in Irish maternity units has not previously been assessed. The value of 28 week screening of all patients remains disputed.

A national survey of the transfusion laboratories of the 19 Irish maternity units was issued to ascertain the implementation of BCSH recommendations regarding antenatal transfusion testing in these centres. An audit of laboratory findings of all pregnant patients who booked in the Coombe Women and Infants University Hospital (CWIUH) in 2015 (n=8504) was performed to assess the potential benefit of 28 week screening of all RhD positive patients. The laboratory findings of neonates of women who produced antibodies was assessed to determine severity of haemolytic disease of the newborn (HDN).

The implementation of BCSH guidelines within 17 responding hospitals is variable. A total of 11 women with negative screens at booking produced clinically significant antibodies during pregnancy. Five of these women were RhD negative and produced anti-D (prevalence 0.4%) while six RhD positive women produced anti-f, -Fya,-Fyb, -c and two cases of anti-E (prevalence 0.3%). Only one neonate with HDN, whose mother who produced anti-c, received phototherapy as intervention.

Combinations of potentially incompatible policies in certain Irish maternity units suggest a need for individual hospital-based audits

of antenatal transfusion policies. Screening of all patients at 28 weeks would cost an additional €35,678 per year to potentially benefit a single patient per year.

### **Biography**

Eamon Clavin is a recent graduate of the BSc in biomedical sciences programme in Dublin Institute of Technology (DIT), majoring in haematology and transfusion science. He underwent clinical placement in the Central Pathology Laboratory in St James's Hospital between 2015 and 2016. In 2017 he undertook a transfusion science-related final year project in the Coombe Women and Infants University Hospital (CWIUH) under the supervision of Mr Fergus Guilfoyle (chief medical scientist), Mr Fabian McGrath (lecturer in DIT) and Dr Catherine Flynn (consultant haematologist), entitled "National Audit of Antenatal Transfusion Practices in Irish Maternity Units and Appraisal of the 28 week Screening of all Patients". Eamon has presented the findings of this investigation to clinical and laboratory staff in the CWIUH as well as to laboratory staff of other maternity hospitals. He also gave a poster presentation based on this investigation at the British Blood Transfusion Service Annual Conference 2017 in Glasgow. Since completing his final year in DIT, Eamon has been in employment as a medical scientist in the haematology laboratory in Tallaght Hospital.

## **Donors: Guidelines, Deferrals and Challenges**

*Dr Ellen McSweeney, Consultant Haematologist, IBTS*

### **Abstract**

**Legislation:** Commission Directive 2004/33/EC was transposed into Irish Law in 2005, S.I. No. 360/2005. This is the legal basis for donor selection in the European Union. It outlines the minimal standards that must be met by all Blood Establishments (B.E.s) in the EU. B.E.s in the E.U. can implement more stringent donor selection guidelines if they so wish; but they cannot legally be more lenient.

**Pillars of safety:** safety of the blood supply is based on a number of pillars including voluntary non-remunerated blood donation (VNRBD); self-deferral, it is important that people who are at higher risk are aware of the eligibility criteria and do not present themselves for donation; the selection process which includes appropriate educational material, completion of the Donor Healthy & Lifestyle Questionnaire (HLQ) and an interview with a staff member; donor compliance with eligibility criteria; testing of blood – we currently test for HIV, hepatitis B & C, syphilis and HTLV; pathogen inactivation technology (where available); bacterial testing of platelets; and post-donation reporting of illnesses by donors.

**Duty of care to donors:** donating blood is not a right. No person has a right to donate. Giving blood has been compared to offering a gift – a person can offer to donate, but that gift can be declined. The safety of blood for recipients is of paramount importance and takes precedence over obligations to donors. A donor may be deferred, but if he/she is deferred, then he/she is entitled to a valid explanation for that deferral. The deferral must be evidence based and must be proportionate (Leger case, Court of Justice, 2015). Donors have a right to confidentiality and autonomy; to informed consent; to protection from harm – this includes not being made to feel unhealthy when they are merely outside of donation specifications; to receive the results of tests when these are of significance to their health and to be counselled about these tests, and to be protected as much as is possible from adverse events or reactions to donation by the use of adequate facilities, trained staff, provision of clear and accurate information, and access to advice after donation.

In turn, donors have obligations (and are required by law in the EU) to identify themselves correctly, to answer the screening

questions accurately and honestly to the best of their ability – in some countries such as Australia, it is a criminal offence to deliberately give false information on the questionnaire; and to inform the blood service if they become unwell after donating.

**Deferrals:** the overall deferral rate in the Irish Blood Transfusion Service donor clinics varies from 16% to approx. 24%. The main reasons for deferral are: Hb levels lower than those needed to donate (12.5 g/dl in Females, 13.5g/dl in Males); medical investigations; recent infectious illnesses e.g. colds, sore throats and influenza; travel outside Ireland to areas at risk of illnesses such as Malaria, Tropical illnesses, Chagas' Disease, West Nile Virus (if we are not testing), Zika Virus, Chikungunya Virus; on medication; letter required from GP or Consultant to clarify eligibility; and no palpable veins. There is a seasonal variation in the Hb deferrals, with higher deferral rates in the summer months.

**Challenges:** blood services are under continuing pressure to balance supply and demand; to recruit and retain donors; to make the donation process as seamless and efficient as possible, without compromising on donor or recipient safety; to keep up with technology not only in the testing of donations, but for donors, for example by updating the website [www.giveblood.ie](http://www.giveblood.ie) (new website launched end of August 2017) and expanding the eligibility criteria thereon so that donors will be better informed and self-defer rather than be deferred on clinic, by introducing on-line registration and questionnaires, appointments for whole blood donation, stricter donor identification processes e.g. mandatory photographic ID, finger-scanning technology (if acceptable to the donating population) and electronic donor questionnaires on donor clinics; while at the same time keeping abreast of emerging and re-emerging threats to donation safety such as Chikungunya Virus in France and Italy, Malaria in Greece, West Nile Virus in Spain and Portugal, Zika Virus in South America and the Caribbean

### **Biography**

Dr Ellen McSweeney trained in University College Cork and moved to the United Kingdom to further her career in haematology and transfusion medicine.

She returned to Ireland in 1998 and took up her position as Consultant Haematologist in the Irish Blood Transfusion Service headquarters in Dublin, with responsibility for donor care and selection.

She was the chair of the British Blood Transfusion Society's Special Interest Group on Apheresis and Blood Collection for a number of years.

She represents the IBTS on international committees including the United Kingdom's Special Advisory Committee on the Care and Selection of Donors and the International Haemovigilance Network.

## **Hospital Blood Transfusion Laboratory Experience in Preparation for MedLIS**

*Mr John Crumlish, Chief Medical Scientist, Mater Misericordiae UH*

### **Abstract**

Aspects on the experiences of preparation for MedLIS

### **Biography**

John Crumlish BSc. MSc. is the Chief Medical Scientist in the Blood Transfusion Laboratory, Mater Misericordiae University Hospital, Dublin.



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