IEQAS

Irish External Quality Assessment Scheme

2015 Participants' Conference

Programme and Book of Abstracts

Publication sponsored by LABQUALITY

Contents

IEQAS EQA Schemes 2016

IEQAS provides schemes directly, in addition to many from Labquality, our Finnish partners.

- ONE-STOP-SHOP for all orders and queries
- No VAT payment is required; prices in Euro

IEQAS-operated schemes

- Local advice & expertise
- Special Surveys

HbA_{1c}
2 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)
1 sample distributed monthly
>3 minimally processed patient pools
>1 with Reference Values

Full Blood Count
2 samples distributed every 2 months (analytes include RDW)
(Occasional fresh single-donor blood samples)

Blood Cell Morphology
1 sample distributed every 2 months
Educational (not scored)
Annual review at IEQAS Conference

PSA Pilot
for NCCP Designated Cancer Centres
1 sample distributed quarterly (minimally processed patient pool)
Participants use a common IQC material

POCT Lipids
1 sample distributed every 2 months
Suitable for pharmacies, clinics and health screening

General Histopathology

on behalf of Faculty of Pathology RCPI for
Histopathologists with full/part generalist practice

12 slides distributed twice annually

Peer review

CPD Certification

Labquality (Finland)

IEQAS is Labquality's sole partner in Ireland and deal with all orders and queries.

Over 150 schemes available.

Changes for 2016 will be listed on IEQAS Order Form and in 2016 Labquality Product Catalogue (p29) but include:

<u>New schemes & products</u>
5202 *C. difficile* extra samples
5201 *C. difficile* nucleic acid detection
6701 Gynaecological cytology (liquid based) virtual microscopy
4336 MicroINR POCT
5221 Mycobacterial nucleic acid detection.

<u>Changes- additional analytes</u>
3160 Urine quantitative chemistry: Cortisol-free
2050 Serum B&C: lipase
5594 Strep, group B (GBS) detection: nucleic acid detection.

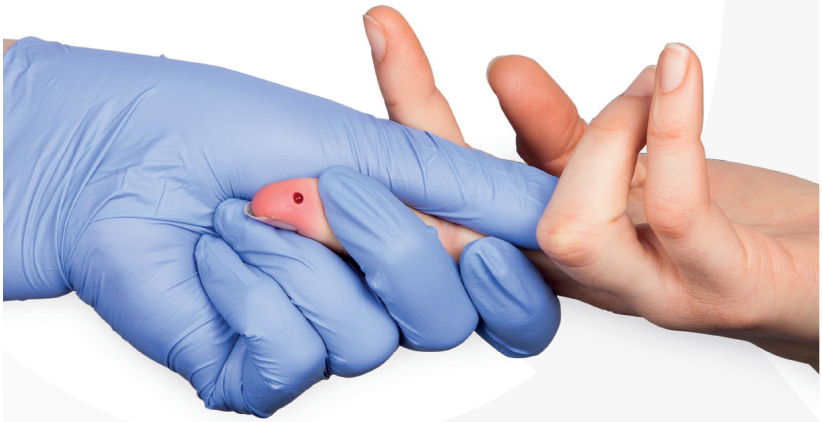
<u>Other Changes</u>
2540 Myocardial markers: discontinued analytes CK & LD
2410 Therapeutic drugs: new specimen vol 5ml
5950 Bordetella pertussis, antibodies: specimen vol >0.3ml

<u>Discontinued schemes</u>
5042 Gram stain, blood culture methods with C (use 5041)
2411 Therapeutic drugs + hydroxycarbazepine.

EQAS

Quality Assessment Services for Point-of-Care Testing

Labquality is a leading provider of External Quality Assessment services for point-of-care testing. The services can be used in diabetes clinics, emergency and surgical departments, home or community nursing, occupational healthcare centres and outpatient clinics.



LABQUALITY

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Welcome

Welcome to this year's IEQAS Participants' Conference. Now in its 34th 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

Dr Tom Smith, Chair
Ms Dympna Murphy, Vice-Chair

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

On behalf of the IEQAS Steering Committee

ISO 9001:2008 EQA QUALITY ASSURED COMPANY

EQALM European Organisation For External Quality Assurance Providers in Laboratory Medicine

Plenary Programme

Registration Tea/Coffee from 09:15

First Plenary Session

Chair: Dr Tom Smith[#], SVUH

09:45 **Opening Address**
Dr Tom Smith[#], IEQAS Chair

09:50 **IEQAS Annual Report**
Ms Patricia Howley[#], IEQAS

10:00 **Setting up a National Isolation Unit**
Dr Jack Lambert, Mater University Hospital

10:35 **Ensuring the quality of POCT – Example from Finland:** Mr Juha Wahlstedt, Labquality, Finland

11:00 – 11:30 Tea/Coffee

Second Plenary Session

Chair: Mr John Brady[#], IEQAS

11:30 **Implications of Data Protection Law for laboratory medicine**: Prof Denis Cusack, Forensic & Legal Medicine, UCD and Medical Bureau of Road Safety

12:05 **Implications of a National Laboratory Information Management (LIMS) system – the Welsh Experience:** Dr Andar Gunneberg, Abertawe Bro Morgannwg University Health Board, Wales

Member of IEQAS Steering Committee * Specialist Advisor to IEQAS

12:45 – 14:00 LUNCH

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

CLINICAL CHEMISTRY

Chair:

14:00 **Newborn Screening for CF Update:** Prof Philip Mayne, Children's University Hospital, Temple St

14:40 **Lipid patterns in the West of Ireland 2004-14:** Dr Damian Griffin[#], UH Galway

15:15 **NCCP PSA Harmonisation Project Update:** Dr Vivion Crowley, St James's Hospital

15:30 **Strengths and limitations of EQA schemes:** Ms Anne Kane* and Ms Hazel Graham[#], IEQAS

HAEMATOLOGY

Chair: Ms Dympna Murphy[#], Tallaght Hospital

14:00 **Blood Cell Morphology scheme - Annual review** Dr Kanthi Perera*, MRH Tullamore

15:00 **IEQAS Fresh blood survey:** Mr Ivan Shirley[#], SVUH

15:10 **Medical emergencies in Haematology:** Dr Patrick Hayden, St James's Hospital

MICROBIOLOGY

Chair: Dr Suzy Fitzgerald[#], SVUH

14:00 **National molecular epidemiology of *Clostridium difficile*: preliminary results:** Ms Katharina Stein, SVUH

14:35 **VRE bloodstream infections in an Irish tertiary hospital:** Dr Laura Ryan, UH Waterford

15:10 **Hepatitis E in Ireland: an update:** Dr Joanne O'Gorman, National Virus Reference Laboratory

TRANSFUSION

Chair: Mr Gerry Judge[#], Tallaght Hospital

14:00 **Massive haemorrhage-how to stem the flow:** Prof Mary Cahill, Cork University Hospital

15:00 **Anti-e like antibody- a case study:** Mr David O'Keefe, OLCH Crumlin

15:30 **Strategies to confirm Blood Groups in the absence of Electronic Patient Identification (EPID):** Ms Adele Maguire, St James's Hospital

15:45 I**mplementation of Phase 111 Electronic Blood Track System:** Ms Anne Geaney, St James's Hospital

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

IEQAS

Steering Committee

Smith, Tom[2]	Chair Principal Biochemist, St Vincent's University Hospital
Murphy, Dympna[4]	Vice-Chair Chief Medical Scientist, Tallaght Hospital
Barrett, Ned[2]	Formerly Consultant Clinical Biochemist, University Hospital, Limerick
Brady, John[1]	Formerly Laboratory Manager, Our Lady's Children's Hospital
Fitzgerald, Susan[3]	Consultant Microbiologist, St Vincent's University Hospital
Graham, Hazel[5]	IEQAS Quality Manager
Griffin, Damian[3]	Consultant Chemical Pathologist, Galway University Hospital
Howley, Patricia[5]	IEQAS Operations Manager
Judge, Gerry[4]	Chief Medical Scientist, Tallaght Hospital
Shirley, Ivan[1]	Chief Medical Scientist, St Vincent's University Hospital

Associated Professional Bodies

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

Additional Specialist Advisors

Boran, Gerard	Consultant Chemical Pathologist, Tallaght Hospital
Clarke, Frank	Lecturer, School of Biological Sciences, DIT
Driscoll, Therese	Senior Medical Scientist, Tallaght Hospital
Kane, Anne	IEQAS Scheme Manager
McCafferty, Richard	Chief Medical Scientist, St James's Hospital
McGing, Peadar	Principal Biochemist, Mater University 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
Reece, Rowland	Formerly Principal Biochemist, St Vincent's University Hospital

Operations Management

Graham, Hazel (Quality Manager)
Howley, Patricia (Operations Manager)
Kane, Anne (Scheme Manager)

IEQAS
Irish External Quality Assessment Scheme

2015 Annual Conference supported by sponsorship from

MEDICON IRELAND LIMITED	Delegate bags
LABQUALITY	Book of Abstracts
Roche	First Plenary Session
BECKMAN COULTER	Morning coffee
ACBI	Clinical Chemistry Workshop
Aquilant Scientific	Microbiology Workshop
	Transfusion Workshop

Stationery provided by Accuscience and ACSLM

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

Book of abstracts edited by Patricia Howley with assistance from Hazel Graham and Anne Kane.

Abstracts: Plenary

IEQAS annual report 2014/2015

Ms Patricia Howley, Operations Manager, IEQAS

Now in our 34th year, IEQAS continues to provide and expand a wide-ranging EQA service. We currently have participants in over 85 different schemes run either by IEQAS directly or in collaboration with Labquality, the Finnish EQA scheme. IEQAS has ISO: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. Initiatives include:

- Labquality Finland: IEQAS is the sole distributor in Ireland for this international EQA provider, which has 4500 laboratories from more than 40 countries participating in their programme of >150 different schemes. Labquality schemes should be ordered directly from IEQAS, who are also responsible for any queries you may have throughout the year. A presentation on 'Ensuring the quality of POCT – Example from Finland' by Mr Juha Wahlstedt, Labquality is included in today's programme.
- Histopathology EQA scheme: administered by IEQAS on behalf of the Faculty of Pathology, Royal College of Physicians of Ireland, with over 80 participants.
- 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.
- EQALM: IEQAS is a member of the European Organisation for EQAP in Laboratory Medicine and provides our participants with occasional EQALM surveys.
- National POCT Committee: Patricia Howley represents IEQAS.

- ICSH: Jointly with the ACSLM, IEQAS are affiliated with the International Council for Standardisation in Haematology; Richard McCafferty is the Irish representative.
- NCCP Harmonisation of PSA assay: IEQAS is continuing to assist the National Cancer Control Programme with this project. The NCCP Designated Cancer Centres now all use a common IQC material and participate in a quarterly EQA scheme. A document of Agreed Outcomes was established following a NCCP PSA Harmonisation Workshop, attended by representatives from national laboratories in December 2014. Thanks to staff in Tallaght, Mater University Hospital, Beaumont & St James's for providing EQA samples. Dr Vivion Crowley will present an update in the Clinical Chemistry Workshop later today.

We wish to thank all members of the Steering Committee and other IEQAS Specialist Advisors for their continued support and commitment. We welcome new Chair: Tom Smith and new Vice-Chair: Dympna Murphy and thank outgoing Chair: John Brady for all his work and dedication to IEQAS.

Thanks also to retiring Steering Committee member, Alan Carr, Tallaght Hospital, for his long standing work with IEQAS.

Thanks also to the staff in Tallaght, SVUH, Mater University Hospital and OLCH Crumlin for facilitating IEQAS with sample preparation, storage and distribution.

Our order forms for 2016 will be sent out shortly. A summary of all schemes offered by IEQAS, and the changes for 2016, is included with this booklet.

Biography

Patricia Howley has a BSc in Chemistry from UCG and an MSc (Quality & Safety in Healthcare) from RCSI. She joined IEQAS in 1999 as Scheme Administrator and became Operations Manager in 2007. Previous work includes teaching, QC/laboratory analyst roles in confectionery & pharmaceutical industries and being a full-time mum. Patricia represents IEQAS on the National POCT Group.

Setting up a National Isolation Unit

Dr Jack Lambert, Director of the National Isolation Unit of Ireland and Consultant in infectious diseases at Mater, Rotunda & UCD

Abstract

The 12-bed National Isolation Unit officially opened in December 2008. It is designed to admit, isolate and treat patients with a suspected or diagnosed highly infectious disease. The Unit was commissioned following a series of international events that highlighted Ireland's vulnerability to bioterrorism and international highly-infectious epidemics. Initially an expert committee to the Minister of Health met from late 2001 in the aftermath of the attack on the World Trade Centre to discuss the threat of bioterrorism such as smallpox, tularaemia and anthrax. Following this, epidemics such as Severe Adult Respiratory Syndrome (SARS) in early 2003, avian influenza H5N1 in 2005 and outbreaks of viral haemorrhagic fever in sub-Saharan Africa expedited Ireland's national isolation strategy.

Currently two of the six isolation rooms in the unit are of high specification and are separate from the rest of the unit with different air-handling systems. Staff are protected by the negative pressure, the use of standardized Personal Protective Equipment, rigorous training in infection control and strict flow through a clean ante-room and a decontamination room. The unit abides by guidelines for infection containment as outlined by the European Network of Highly Infectious Diseases (EuroNHID). Ambulance transfer occurs direct to the Unit through an on-street entrance. All routine bloods are processed on site under strict infection control precautions through the use of point of care testing. Blood samples for external processing for example for diagnosis of VHF are packaged in category – A containers and couriered to the National Virus Reference Laboratory. If required, the rooms can be used to provide intensive care to a deteriorating patient with a hazardous condition.

The Mater Infectious Diseases consultants provide the clinical lead for this unit. There are a number of routes by which a patient could be admitted including transfer from the within the Mater or another healthcare facility, and overseas repatriation. The Health Protection Surveillance Centre provides guidance to clinicians on how to assess patients who recently return from high-risk areas. A risk assessment algorithm and form assists clinicians in stratifying cases according to risk (no risk, low risk, high risk). The WHO and CDC websites offer detailed maps of affected areas,

and regular situational updates. If appropriate, the on-call Infectious Disease consultant will "Activate" the unit. Immediate ambulance transfer to the unit will occur with paramedics who have been appropriately trained. The unit will be cleared of all other patients, and the staff will prepare for arrival of patient. The staff of the National Isolation Unit have all undergone PPE training and have been certified as competent by the Infection Control Team at the Mater prior to being allowed to don and doff their PPE equipment as part of training in the National Isolation Unit. In addition they require to have undergone training in POCT while wearing PPE, which is the likely clinical scenario if a patient with confirmed EVD was hospitalised at the National Isolation Unit.

Biography

Dr Jack Lambert, consultant infectious diseases at Mater, Rotunda and UCD, has been working as a consultant for the last 10 years in Dublin. Qualifying with a MD in the USA in Michigan, with specialty training in Adult and Pediatrics Infectious Diseases in Rochester NY and Johns Hopkins, he was a faculty member of the JHU School of Medicine and Hygiene and Public Health, subsequently Assistant professor in Medicine and Pediatrics at the University of Maryland Institute of Human Virology under Dr Robert Gallo (discoverer of HIV) before moving back to the UK in 1999, where he working in St Mary's Hospital, the Institute of Child Health at UCL, and Kings College Hospital in Camberwell, prior to his arrival in Dublin in 2005. Since that time he has managed the outpatient services at the Mater in STDs and HIV and Hepatitis B and C and runs the PEP for blood borne virus exposures at the Mater ID clinic, and is consultant to the Rotunda SATU programme.

Dr Lambert has established an 'infections in pregnancy' clinic at the Rotunda, developed a community HCV treatment project in North Dublin, runs the STIF course, a training course for GPs in STDS since 2006, and has educated approximately 1000 doctors and nurses on this course. Dr Lambert currently is running two HCV treatment programmes in Dublin, funded through Gilead and Abbvie, one with the Safety Net Homeless services, and a second in the drug treatment programmes and GP methadone prescribing physicians. He has two research projects ongoing in South Africa, one which is the development of an electronic medical record in resource poor settings, and investigating factors involved in successful HIV adolescent transition to adult clinics, which is

engaging other geographically diverse countries including Thailand, Brazil, Romania, South Africa, London, Jamaica, and Dublin.

Since 2008 Dr Lambert has been the Director of the National Isolation Unit of Ireland, and has been a member of the HPSC Viral Hemorrhagic Fever Working group, has assisted in the development of the National VHF guidelines, and also the local National Isolation Management Document. He has developed the protocols for management of at risk patients, including EVD disease, and has worked with multiple sectors including government, ambulance services, military services, laboratory services, and all stakeholders, to develop a robust plan for the management of patients with possible EVD who could potentially present on the doorsteps of Ireland for evaluation and possible treatment.

Ensuring the quality of POCT

Mr Juha Wahlstedt, Head of Sales, BLS, EQA solutions specialist, Labquality, Finland

Abstract

Point-of-care testing is spreading out everywhere in Europe. At the same time the number of clinical laboratories is decreasing due to consolidation and international private laboratory chains. Huge analysers and automated sample processing make consolidation economically tempting, but everything cannot be centralized. Specimen collection and emergency analytics have to stay near patient. There is a great need for point-of-care testing and it is growing out of control.

An increasing number of decisions concerning patient care and diagnosis are based on point-of-care test results. Therefore the results of rapid tests have to be as reliable and as accurate as traditional laboratory tests and the quality requirements have to be set on the same level. But how can we organize users training, orientation, instrument selection and validation, internal and external quality assessment? How we build the quality system and according to which standard?

By means of legislation and recommendations point-of-care test users can be forced to use controls and participate to external quality assessment programs, but reporting and certifying the results from analytical phase of the test doesn't tell the full story of the whole testing process. Most of the errors in point-of-care testing occur in pre-analytical phase, especially in specimen collection and specimen handling. To be able to ensure the quality of point-of-care testing, we need trained laboratory professionals and multi-professional co-operation.

Biography

Mr Juha Wahlstedt, Head of Sales, BLS, EQA solutions specialist, Labquality, Finland.

Implications of Data Protection Law for laboratory medicine

Prof Denis Cusack, Barrister-at-Law; Forensic & Legal Medicine, UCD and Medical Bureau of Road Safety

Abstract

Patient and subject confidentiality and privacy are central to the work of laboratory medicine. With data protection there is a balance to be struck between the necessity to process and transfer data and the privacy of living individuals. The issues of consent of the data subjects regarding their personal information being collected, fairly processed, accessed, disclosed and being securely held by data controllers are the kernel matters to be addressed in this presentation with special reference to "sensitive information" as defined in the legislative provisions. Data controllers in the field of laboratory medicine have strict obligations regarding these issues and must register with the Data Protection Office. That office has stringent registration requirements which a data controller must meet and aspects particularly applicable to laboratory medicine will be stressed in this presentation including data management. The importance of data security and good practice will be explored together with the operation of laboratory information systems in the clinical healthcare and forensic laboratory examinations, analyses and reporting processes. Specific aspects of the Data Protection Acts 1998-2003, the EU Directive of 1995, the European Convention on Human Rights and the Common Law principles of patient and subject confidentiality will be considered by reference to sound principles in clinical and forensic laboratory medicine practice. The 1995 EU Directive on Data Protection will soon be updated and replaced by the introduction of a new 28 EU Member State General Data Protection Regulation proposed in 2012 which will strengthen the protections for the individual citizen.

Biography

Denis Cusack qualified as a medical doctor in Dublin in 1980, trained in postgraduate clinical medicine in hospitals in Ireland and Boston, Massachusetts, and also qualified and practiced as a barrister at the Bar of Ireland. He has specialised in forensic and legal medicine for more than twenty years. He is Professor and Head of Section of Forensic and Legal Medicine at the School of Medicine, University College Dublin and at Penang Medical College, Malaysia; Director of the Medical Bureau of Road Safety (National Forensic Laboratory for Intoxicant Testing in Driving), Dublin; and Coroner for County Kildare. He is Head of the Graduate Diploma in

Forensic Medicine and of the Graduate Diploma in Healthcare Risk Management and Quality at University College Dublin. He is Founding Consultant Editor of the Medico-Legal Journal of Ireland. He is the current President of the Medico-Legal Society of Ireland and was President of the Coroners Society of Ireland 2008-2010. He is a member of the Executive of the European Council of Legal Medicine; International Representative of the Presidium of the International Academy of Legal Medicine; member of the international editorial board of the International Journal of Legal Medicine and of the Journal of Forensic and Legal Medicine. He serves on a number of national and international bodies and expert advisory committees on medico-legal, forensic and coronial issues on which he has also published research and academic papers with presentations at national and international meetings.

Implications of a National Laboratory Information Management (LIMS) system – the Welsh Experience

Dr Andar Gunneberg, Chemical Pathologist in Swansea & Clinical Lead for Laboratory Medicine, ABMU Health Board, Wales

Abstract

A standardised national Laboratory Information Management System (LIMS) was implemented in Wales during 2013-2015. Standardisation was seen by the Welsh Assembly Government as an enabler for the development of "Carter" networks with central core laboratories for non-urgent routine work with small local essential service laboratories for time critical urgent work. Key to this is the achievement of "transferability": The ability to request in one area, perform the analysis elsewhere and report or read the result in a third location without the need to re-label the sample or to re-enter the request. So far (September 2015) the expected benefits of the new system have not been realised, and the reasons for this are examined, with examples of the difficulties arising from suboptimal preparation and configuration. Problems encountered in attempting standardisation are explored including co-ordination between disciplines, variable engagement with the standardisation process and with clinical staff, effects of standardised profiles, different approaches to data entry, recording of clinical details and scanning of request forms, wrong or poorly completed request forms, reflex testing, demand management, autocomments, validation of results, and functional service fragmentation related to treating hospitals within networks as if they were distant referral laboratories. The importance of maintaining credibility with service users by transparent communication and the effects of simultaneous instrument procurement are explored. The most important lesson for the introduction of a standardised national LIMS is that all standardisation issues must be agreed (and ideally introduced in legacy systems) before LIMS implementation is attempted.

Biography

Dr Gunneberg is a Chemical Pathologist in Swansea and Clinical Lead for Laboratory Medicine in ABMU Health Board covering Swansea, Neath, Port Talbot and Bridgend and serving a population of 600,000. He provides Lipid and Diabetes clinics and has led transformational change in laboratory services intended to make better use of resources. He was born in West Germany but grew up and trained in Scotland, Wales and England. His interests include Celtic languages.

Abstracts: Clinical Chemistry Workshop

Newborn Screening for CF Update

Prof Philip D Mayne, Director National Newborn Bloodspot Screening Laboratory, Temple Street, Dublin 1

Abstract:
The benefits of early detection of Cystic Fibrosis have long been recognised. Bloodspot immunoreactive trypsinogen (IRT) newborn screening was introduced in New Zealand in 1979 and subsequently adopted by a many regions and countries worldwide, including Cambridge and Northern Ireland in the early 1980's. Despite having one of the highest incidence of CF in the world at between 1 in 1350 (Farrell P et al 2007) and 1 in 1460 (Devaney J et al 2003), newborn screening was only included into the Irish newborn screening programme in July 2011. The purpose was to identify infants with Cystic Fibrosis before they would present with significant respiratory symptoms and/or features of fat malabsorption.

The screening strategy, involving the measurement of IRT in a heel-prick sample obtained between 72 and 120 hours after birth and the subsequent screening for 38 CFTR mutations in those with a blood IRT above the 99th percentile, raises many challenges not associated with the other newborn screening programmes. These will be discussed.

During the first four years, in excess of 275,000 babies have been screening and just under 120 infants with two disease associated CFTR mutations identified, giving an overall incidence of CF in Ireland of 1 in 2,340, significantly less than previously identified. During this time just under 200 carriers have been detected, representing approximately 1.76% of the total number of carriers born during this period.

Biography
Professor Philip Mayne, MD, BA (Mod), MSc, FRCPI, FRCPath, FFPath (RCPI) retired in May 2015 but continues in a locum capacity as Director of the National Newborn Bloodspot Screening Laboratory and as consultant paediatric Chemical Pathologist at Temple Street Children's University Hospital, Our Lady's Children's Hospital, Crumlin and the Rotunda Hospital; he is an Associate Professor in Biochemistry and Paediatrics at the RCSI. He graduated in biochemistry and in medicine from the University of Dublin (Trinity College). Following clinical appointments in Dublin,

he pursued a career in chemical pathology in London and was appointed senior lecturer in Chemical Pathology at the Charing Cross and Westminster Medical School and consultant to the Westminster and Westminster Children's Hospitals before returning to Dublin in 1993. He has served on a number of international work groups on newborn screening and was past secretary to the Society for the Study in Inborn Errors of Metabolism (SSIEM). He is the current chair of the newly formed Irish Society of Inherited Metabolic Disorders (ISIMD)

Lipid patterns in the West of Ireland 2004-14

Dr Damian Griffin, Consultant Chemical Pathologist, Galway University Hospitals

Abstract

This is a review of lipid testing in the west of Ireland between 2004-2014. The workload has increased dramatically over the years studied. Differences in the distribution of results for a variety of lipid parameters with age & sex are considered. Temporal changes in results are also reviewed with reflections on why these changes may be happening and their significance in relation to patient management.

Biography

Dr Griffin is a Consultant Chemical Pathologist in Galway University Hospitals and a Clinical Lecturer in NUI Galway. He is a member of IEQAS Steering Committee.

He studied medicine in University College Cork before training as a Chemical Pathologist in St. James Hospital, Dublin and Southampton University Hospital Trust. He worked for three years as a Chemical Pathologist in the Abertawe Bro Morgannwg University Health Board in Swansea before taking up his present post.

He was awarded an MSc in Clinical Biochemistry with Molecular Biology by the University of Surrey and he was awarded an MD by the University of Southampton after completing his thesis on the genetic basis of renal stone disease. His has also been awarded an MSc in Computer Science by Trinity College Dublin for his work on distributed decision support systems for medical diagnosis.

His special interests include medical informatics and lipid metabolism.

NCCP PSA Harmonisation Project Update

Dr Vivion Crowley, Consultant Chemical Pathologist, St James's Hospital

Abstract

The NCCP sought to address the lack of harmonisation of PSA measurements around the country as indicated in a publication in the British Journal Urology International (BJUI)[1]. It was proposed that harmonisation of PSA assays around the country will lead to better decision-making particularly for PSA results in the narrow 3-7 ug/L range, where a decision to perform prostate biopsy may be taken and where it is thought that lack of standardisation may contribute to unnecessary biopsies.

The NCCP PSA Harmonisation Project Board was set up, and is chaired by Dr Vivion Crowley, Consultant Chemical Pathologist. IEQAS are a key partner in this important quality initiative. The goal is to further elucidate this matter and recommend the best approach to achieving optimal PSA harmonisation. A part of this project is the development of the Agreed Outcomes NCCP PSA Harmonisation Workshop Report. This was agreed at a NCCP PSA Harmonisation Workshop that was held on the 3rd December 2014, which was attended by representatives from national laboratories.

1 Forde, J. C., Marignol, L., Blake, O., McDermott, T., Grainger, R., Crowley, V. E. & Lynch, T. H. 2012. Standardization of assay methods reduces variability of total PSA measurements: an Irish study. BJU Int, 110, 644-50.

Biography

Dr Vivion Crowley is Consultant Chemical Pathologist in the Biochemistry Department, St James's Hospital. He is Chair of the NCCP PSA Standardisation Project Board.

Strengths and limitations of EQA schemes

Ms Anne Kane, Scheme Manager and Ms Hazel Graham, Quality Manager IEQAS

Abstract

IEQAS endeavours to provide quality samples and clearly presented reports for each of the three Clinical Chemistry schemes it runs directly (General Clinical Chemistry, HbA1c and NCCP PSA). The characteristics of each scheme will be discussed and participants will be encouraged to provide suggestions as to how they would like IEQAS-operated schemes to develop.

Biography

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

Hazel Graham has worked with IEQAS since 1992 and is currently the Quality Manager. Previous work experience included various laboratory/management roles in the diagnostics and pharmaceuticals manufacturing sectors. She has an honours degree in Biochemistry and a post graduate Diploma in Quality Control, both from Trinity College Dublin.

Abstracts: Haematology Workshop

Blood Cell Morphology Scheme: Annual review 2014-2015

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.

IEQAS Fresh blood survey

Mr Ivan Shirley, Chief Medical Scientist, SVUH

Abstract

IEQAS is one of the few EQA schemes that process fresh blood occasionally for FBC and white cell differential on EDTA samples. EQA schemes may encounter problems with FBC samples because the blood has to be stabilised so that the cells are preserved in near natural state. This stabilisation of whole blood can alter the cell components in such a manner that EQA samples can give significantly different results on analysers that have different cell counting technologies. The aim of this survey was to investigate if all analysers give similar results on fresh EDTA blood.

Also, included was a limited stability survey where samples were analysed over 48 hours to show the effects of storage at room temperature on FBC results.

Both of these aspects of the survey will be discussed.

Biography

Mr Ivan Shirley is Chief Medical Scientist, Haematology Laboratory, St Vincent's University Hospital and a member of IEQAS Steering Committee.

Medical emergencies in Haematology

Dr Patrick Hayden, Consultant Haematologist, Director Cryobiology Laboratory, St James's Hospital

Abstract

Potentially life-threatening emergencies are commonly encountered in clinical haematology and rapid intervention is often required. Among the challenges encountered in the initial treatment of haematological malignancies, for example, are hyperviscosity, tumour lysis syndrome and superior vena cava obstruction. More generally, patients with acute leukaemia or those undergoing stem cell transplantation are profoundly immunosuppressed and at risk of bacterial, fungal and viral infection. Their care requires strict adherence to febrile neutropenia protocols and pre-emptive monitoring for early evidence of infection. Haemoglobinopathies have become more common in Ireland over recent decades. Paediatric and adult sickle cell services are now in place to ensure that centralised care or guidance can be provided for patients presenting with sickle cell crises. Abnormalities of haemostasis leading to bleeding are among the most critical emergencies. Causes include haemophilia, anticoagulant therapy and trauma. The management of major bleeding requires the involvement of surgeons, anaesthetists, laboratory scientists and haematologists, among others, and recent years have seen refinements in our approach to the management of transfusion in major haemorrhage. In summary, haematological emergencies occur frequently and up-to-date local policies and regular training are necessary to ensure that prompt appropriate care is provided.

Biography

Dr Patrick Hayden is a consultant haematologist and clinical lead for the Myeloma Service at St. James's Hospital. He is also Medical Director of the Cryobiology Laboratory for the National Stem Cell Transplant Unit. He is a graduate of University College Dublin and completed a fellowship at the Jerome Lipper Myeloma Center at the Dana Farber Cancer Institute in Boston. He has been a consultant at St. James's Hospital since 2010. He is an experienced inspector for the European JACIE Transplant Accreditation Program and is a member of the Clinical Standards Subcommittee of JACIE.

Abstracts: Microbiology Workshop

National molecular epidemiology of *Clostridium difficile*: preliminary results

Ms Katharina Stein, PhD Candidate University College Dublin/St. Vincent's University Hospital

Abstract

In 2009, the first Irish national enhanced *Clostridium difficile* infection (CDI) surveillance, typing and antimicrobial susceptibility study was carried out to determine the epidemiology of CDI and its ribotype distribution. A second national study was started in 2014 to examine the epidemiology, ribotype distribution, antimicrobial susceptibility and presence of toxin genes of all CDI cases over a three-month period in 2014 and in 2015.

C. difficile toxin positive faecal samples were submitted from 51 Irish healthcare facilities to St. Vincent's University Hospital. Culture for *C. difficile* was performed using an alcohol shock method and selective media on all samples. Isolated strains were identified using MALDI-TOF. The total DNA was extracted out of the samples with the help of a DNA extraction kit (Qiagen). The PCR-ribotyping was performed according to the method of Bidet et al. Gel images were analysed with the software of BioNumerics v7.1 and ribotypes (RT) assigned by comparison with fingerprint patterns of representatives from the LUMC in Leiden, the Netherlands. Enhanced epidemiological information was collected by the Health Protection Surveillance Centre on all cases of CDI and a comparison with the ribotyping data was done.

In Q2 of 2014, 449 *C. difficile* toxin positive faecal samples were received. *C. difficile* was isolated from 380 samples (85%). In total, 49 different PCR-RT were detected. The most common RTs were 078 (16%), 014/020 (12%), 015 (11%), 002 (7%) and 001 (7%).

The distribution of ribotypes in Ireland has changed considerably since 2009. RT027 was the predominant ribotype (19%) in 2009, but was uncommon (2%) in 2014, while RT078 increased from 9% to 16%. The prevalence of other ribotypes (106, 015) has also changed, while some new ribotypes (005) were detected in 2014. Similar changes have been seen in the UK during the same time period.

Biography

- BSc Graduate "Applied Biology" Fachhochschule Bonn-Rhein-Sieg, Germany
- PhD Candidate University College Dublin, School of Medicine and Medical Science / St. Vincent's University Hospital, Dublin, Ireland. Project: "Analysis of the epidemiology of *Clostridium difficile* infection in Ireland"
- Poster Presentation: Analysis of the epidemiology of *Clostridium difficile* infection in Ireland. 5th International *Clostridium difficile* symposium, May 2015, Bled, Slovenia

VRE bloodstream infections in an Irish hospital

Dr Laura Ryan, Microbiology SpR, University Hospital Waterford.

Abstract

Ireland has the highest rate of vancomycin-resistant *Enterococcus faecium* (VRE*fm*) isolated from blood of nosocomial patients in Europe. Our aim was to elucidate the reasons for this significantly higher rate in Ireland.

The epidemiology and molecular typing of VRE from bloodstream infections (BSIs) was examined.

The most common source of VRE BSIs was intra-abdominal sepsis, followed by line-related infection and febrile neutropenia. Most of the isolates were positive for vanA; 52% (43/83) possessed the *esp* gene and 12% (10/83) possessed the *hyl* gene. Genotyping by SmaI macrorestriction analysis (PFGE) of isolates revealed clonal relatedness between bloodstream isolates and environmental isolates. MLST revealed four STs (ST17, ST18, ST78 and ST203), all belonging to the clonal complex of hospital-associated strains.

Irish VRE BSI isolates have virulence factor profiles as previously reported from Europe. Apart from transmission of VRE within the hospital and transfer of colonized patients between Irish hospitals, no other explanation for the persistently high VRE*fm* BSI rate in Ireland has been found.

Biography

Laura is a microbiology SpR, currently working in University Hospital Waterford. She completed her degree (MB BAO BCh) in 2006 and had the pleasure of working in many hospitals, both in Ireland and abroad, with numerous wonderful colleagues since then. Postgraduate examinations completed include MRCSI in 2009 and FRCPath part I in 2012, with an aim to complete FRCPath part II in 2016 and continue her career in Clinical Microbiology.

Hepatitis E in Ireland: an update

Dr Joanne O'Gorman, Consultant Microbiologist and Deputy Director, National Virus Reference Laboratory

Abstract

In 2015 the National Virus Reference Laboratory (NVRL) introduced routine testing for Hepatitis E virus (HEV) as part of the panel of tests performed for the serological investigation of acute hepatitis. This presentation will focus on the rationale for this change in testing policy & how it contributes to a better understanding of the epidemiology of this emerging viral pathogen in Ireland.

Biography

Dr Joanne O'Gorman is a Consultant Microbiologist and Deputy Director of the National Virus Reference Laboratory (NVRL) University College Dublin.

Abstracts: Transfusion Workshop

Massive haemorrhage - how to stem the flow

Prof Mary Cahill, Consultant Haematologist, Cork University Hospital

Abstract

Massive haemorrhage is a frequent recurrence in our larger hospitals and even more frighteningly occurs in smaller hospitals infrequently but regularly. In her talk Prof Cahill will outline the common or clinical scenarios, the view from the clinical front end where often managing traceability is furthest from the teams mind and the necessary interdisciplinary support between transfusion laboratory, clinical team and Haemovigilance officers that is required to safely stem the flow and manage the patients transfusion requirements from commencement of massive haemorrhage to the safe fating of every unit. Prof Cahill will refer to transfusion product support, coagulation factors and outline the data on non blood product related therapeutics in massive haemorrhage.

Biography

Mary Cahill graduated from UCC in 1986. Having completed two years training in CUH she took up a training post in haematology in Leicester and then in the Royal London. During her time in London she completed two years of full time research on platelets and platelet function culminating in an MD award. She left London in 1997 to become the first (and only) Consultant Haematologist in the mid western health board from where she coordinated the set-up of the newly funded Haemovigilance system incorporating Nenagh, Ennis and St John's hospitals with the Mid Western Regional Hospital. She moved to CUH in 2004 and has a major interest in teaching and research and became a clinical Professor in 2014.

Anti-e like antibody - a case study

Mr David O'Keefe, Senior Medical Scientist, OLCH Crumlin

Abstract

Studies indicate that the rate of alloimmunisation greatly increases with the number of cumulative red cell transfusions, especially in Sickle Cell patients. Subsequent increases in the development of autoantibodies post alloimmunisation has also been noted within this population. OLCHC operates an extensive haemoglobinopathy transfusion programme. Therefore dealing with potential allo or autoimmunisation has become a major part of the routine day.

But what happens when your serological testing repertoire has been exhausted and the antibody specificity and status remains unresolved? Who do you turn to? Do you transfuse? What do you transfuse?

The application of testing at a molecular level can direct treatment of sickle cell patients on a more accurate scale than serological testing by allowing the prediction of molecular Rh variants and identification of associated high prevalence Rh antigens. The prediction of such variant Rh antigens dramatically reduces the donor pool of compatible RBCs, thus making long term transfusion support difficult to achieve.

Such difficulties have recently been encountered in OLCHC in a 5 year old African female with sickle cell disease participating in the transfusion programme. Five months after commencing the programme of a one unit transfusion every 2-3 weeks the first signs of an antibody appeared, reported simply as a non-specific antibody. Over the successive months the strength and status of the antibody changed to a non-specific autoantibody due to findings of a positive DAT, positive Auto and positive eluate. Difficulties in finding Ror/rr phenotyped, crossmatch compatible blood prompted a referral to the IBTS. Initial findings indicated an antibody with an anti-e like specificity. The possible presence of high prevalence e variant antigen associated antibodies such anti-hrB and anti-hrs were suspected. Therefore a sample was referred to the IBGRL for molecular DNA sequencing to investigate for polymorphisms within the RHCE gene. This would confirm the genetic alleles involved and thus accurately predict the patient's genotype. This information in conjunction with serological testing performed in the IBGRL with R2R2 cells, a panel of e variant cells, Rhnull cells and –D-/-D- allowed for definitive antibody classification.

Biography

David graduated from Cork Institute of Technology (CIT) with a Certificate in Medical Laboratory Science and progressed to the Bachelor's Degree in Biomedical Science, awarded jointly by University College Cork and CIT, which he completed in 2004. He then worked briefly in the Irish Blood Transfusion Service before becoming a permanent staff member in the Blood Transfusion Dept. at OLCHC. In 2008 he completed his MSc in Biomedical Science awarded by the University of Ulster. David has worked as a S.M.S in the blood Transfusion laboratory at OLCHC for the last 3 years.

Strategies to confirm Blood Groups in the absence of Electronic Patient Identification (EPID)

Ms Adele Maguire, Medical Scientist, St James's Hospital

Abstract

Wrong blood in tube 'WBIT' events are serious incidents and can lead to ABO incompatible transfusion. To prevent WBIT in the absence of a secure EPID system we evaluated alternative options: issuing group O red cells to non-group O patients with no historical group, using an FBC sample from a separate phlebotomy as a 'group check' and the increase of pre-assessment clinics.

We performed analysis of transfusion data over a 6 month period. Patient demographics, age, procedure type, availability of a valid FBC from a separate phlebotomy were determined.

Of 4201 patients, 420 were identified as non-group O, with no historical group and crossmatched. 45% were female of which 49% were <60 years. 74% of patients crossmatched were for elective procedures. 30% had a valid FBC sample from a separate phlebotomy that could be used as a 'group check'. By issuing group O to non-group O patients it would result in an 11.34% increase of overall group O stock to ensure adequate supplies. This would be equivalent of 1/4 days national supply. This would be reduced if an FBC sample was used for a 'group check'.

Issuing group O red cells to non-group O patients with no historical group could impact the national blood supply. It would not be sustainable if other hospitals were to adopt this policy. The use of a full blood count (FBC) sample as a 'group check' sample although not feasible at St James Hospital may be a useful/practical approach for other smaller hospitals. However, a hospital wide electronic patient identification system is the preferred option.

Biography

Adele Maguire graduated from UCC in 2006 and completed her MSc in Transfusion and Transplantation Sciences from the University of Bristol in 2015. She has been working as a medical scientist at St James' Hospital since 2007.

Implementation of Phase 111 Electronic Blood Track System

Ms Anne Geaney, Senior Medical Scientist, St James's Hospital

Abstract

Blood track is a modular blood management and bedside transfusion system. It combines software and hardware components to ensure that each link in the blood supply chain is secure. In Ireland, the EBTS Project is a national project funded by the HSE with the aim of implementing Blood Track in Irish Hospitals. There are three phases in Blood Track, the final phase being the bedside check. This presentation outlines the steps taken and problems encountered in implementing phase 111 in St James Hospital.

St James Hospital has more than 1,000 beds and provides treatment for over 25,000 inpatients, nearly 100,000 day care patients and over 200,000 outpatients. It's spread over a very large campus bringing its own difficulties when it comes to managing equipment, training etc. By the end of August 2015, more than 60% of transfusions were started using Blood Track PDAs. The target is to have all transfusion specimens taken and all transfusions started using Blood Track PDAs by the end of the year.

Biography

Anne Geaney, FACSLM, has been a Senior Medical Scientist is St James Hospital for over 15 years. She is the Project Lead for the Blood Track Implementation within St James Hospital and is also the Blood Transfusion Lead on the MedLIS project.

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