IEQAS

Irish External Quality Assessment Scheme

Annual Participants' Conference 6th October 2016

Programme & Book of Abstracts

Publication sponsored by

LABQUALITY

Contents

Welcome

Welcome to this year's IEQAS Participants' Conference. Now in its 35th 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

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

IEQAS Committees

Steering Committee

Murphy, Dympna[4]	Chair Chief Medical Scientist, Tallaght Hospital
Barrett, Ned[2]	Formerly Consultant Clinical Biochemist, University Hospital, Limerick
Brady, Jennifer[2]	Principal Clinical Biochemist, Mater University Hospital
Brady, John[1]	Formerly Laboratory Manager, Our Lady's Children's Hospital
Driscoll, Therese[4]	Senior Medical Scientist, Tallaght 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]	Formerly Chief Medical Scientist, Tallaght Hospital
Kane, Anne[4]	IEQAS Scheme Manager
McGing, Peadar[4]	Principal Biochemist, Mater University 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
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

Registration Tea/Coffee from 09:15

First Plenary Session

Chair: Ms Dympna Murphy#, Tallaght Hospital

09:45 **Opening Address**
Ms Dympna Murphy#, IEQAS Chair

09:50 **National Patient ID**
Mr Cathal Ryan, Office of the Data Protection Commissioner

10:25 **Pre-analytical EQA & Update from Nordic region**
Ms Jonna Pelanti, Labquality

11:00– 11:30 Tea/Coffee

Second Plenary Session

Chair: Dr Damian Griffin#, University Hospital Galway

11:30 **Health Identifiers Act**
Ms Sarah Reid, Barrister-at-Law

12:05 **Histopathology Interpretive EQA, Individualised Peer Review Model**
Dr John O'Dowd, Scheme Organiser (Faculty of Pathology**)**

12:15 **National MedLIS update**
Dr Miriam Griffin, National MedLIS Project

Member of IEQAS Steering Committee * Specialist Advisor to IEQAS

12:30 – 14:00 LUNCH

Carvery lunch will be available in the Chesterfields Restaurant on Ground Floor (main course, dessert and tea/coffee). Gluten free & vegetarian options will also be available.

Take a seat and tables will be invited up for service. Please be patient as there will be >160 people for lunch.

TAKE PERSONAL ITEMS WITH YOU DURING LUNCH

Afternoon Workshops (parallel: each 14:00 – 16:30 approx)

CLINICAL CHEMISTRY

Chair: Ms Rachel Cullen, Mater University Hospital

14:00 **I Qan C the Bigger Picture:** Ms Sinead McDermott, University Hospital Galway

14:30 **hCG Measurement in Ireland:** Ms Mary Stapleton, Cork University Hospital

15:00 **Serum Indices – The Story on the Ground:** Mr Mark Neville, St James's Hospital & Mr Micheál Ryan, St John's Hospital, Limerick

15:30 **MedLIS workshop:** led by Mr Neil O'Brien

HAEMATOLOGY

Chair: Ms Therese Driscoll[#], Tallaght Hospital

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

15:00 **Curing the Commonest Childhood Cancer. Acute Lymphoblastic Leukaemia: Are we there yet?:** Prof Owen Smith, UCD & OLCHC

15:30 **MedLIS workshop:** led by Mr Stuart Liptrot

MICROBIOLOGY

Chair: Dr Suzy Fitzgerald[#], SVUH

14:00 **Irrepressible carbapenemase-producing Enterobacteriaceae in the Mid-West of Ireland:** Dr Ciara O'Connor, Mater University Hospital

14:30 **ESBL Blood Stream Infections: Ongoing options for treatment:** Dr Ruth Waldron, St James's Hospital

15:00 **How to detect Carbapenemase Producers**: Ms Elaine McGrath, University Hospital Galway

15:30 **MedLIS workshop:** led by Ms Siobhan McCrea

TRANSFUSION

Chair: Mr Gerry Judge[#], Tallaght Hospital

14:00 **Blood Salvage - an overview:** Dr Niamh Hayes, Rotunda & Mater University Hospitals

14:30 **Changes in Biomedical Science education at the Dublin Institute of Technology:** Mr Fabian Mc Grath, DIT

15:00 **Mitigating Daratumumab Interference in the Laboratory:** Ms Julie Long, IBTS

15:30 **MedLIS workshop:** led by Ms Anne Geaney

Member of IEQAS Steering Committee * Specialist Advisor to IEQAS

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

5 CPD points: www.acslm.ie/cpd (select a one day event, upload supporting documentation & complete reflective practice report).

IEQAS Annual Report 2016

Now in our 35th year, IEQAS continues to provide and expand a wide-ranging EQA service. We currently have participants in over 95 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. 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 and we are also responsible for any queries you may have throughout the year. A presentation on 'Pre-analytical EQA and Update from Nordic region' by Ms Jonna Pelanti, 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. A presentation 'Histopathology Interpretive EQA, Individualised Peer Review Model' by Dr John O'Dowd, Scheme Organiser (Faculty of Pathology) is included in today's programme.
- 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 EQA Providers in Laboratory Medicine; IEQAS contributes to many EQALM surveys which assist in suggesting improvements for EQA schemes across Europe.
- National POCT Committee: IEQAS are represented on this committee.

- ICSH: Jointly with the ACSLM, IEQAS are affiliated with the International Council for Standardisation in Haematology; Richard McCafferty is the Irish representative.
- NCCP Pilot EQA and IQC for PSA, CA_{125}, hCG: IEQAS is continuing to assist the National Cancer Control Programme with PSA, and plans are in place to introduce CA_{125} and hCG. A presentation 'hCG Measurement in Ireland' by Ms Mary Stapleton, Cork University Hospital is included in today's programme.
- IFCC EurA1c-project for HbA1c: IEQAS plans to participate in this EQA project. Two fresh blood samples will be distributed simultaneously via multiple EQA organisers to establish a European-wide picture of HbA1c performance. This distribution is planned for October 2016. The project is part of the IFCC Committee for Education in the Use of Biomarkers in Diabetes (C-EUBD).
- 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.

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 Dympna Murphy and thank outgoing Chair Tom Smith, who has retired from the Steering Committee but will remain as a Specialist Advisor. We also welcome Therese Driscoll, Jennifer Brady, Peadar McGing and Anne Kane to the Steering Committee, and Cara Ward as a Specialist Advisor. Farewell and thanks to Rowland Reece who was a Specialist Advisor since 2005.

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 2017 will be sent out shortly. A summary of all schemes offered by IEQAS, and the changes for 2017, is included with this booklet.

Ms Patricia Howley, Operations Manager, IEQAS

LABQUALITY DAYS

9–10 FEBRUARY, 2017
HELSINKI, FINLAND

International Congress on Quality in Laboratory Medicine

Themes: **Impact of TQM** & **Evidence-Based Laboratory Medicine**

Labquality Days is one of the largest international congresses in 2017 focused on quality and laboratory medicine. The congress is held at Messukeskus Helsinki, Expo and Convention Centre. Congress themes in 2017 are Impact of Total Quality Management (TQM) and Evidence-Based Laboratory Medicine (EBLM). Welcome to Helsinki – a safe, cool and clean northern winter capital. More information at www.labqualitydays.com.

Under the auspices of

ifcc International Federation of Clinical Chemistry and Laboratory Medicine

EFLM European Federation of Clinical Chemistry and Laboratory Medicine

Image: Visit Helsinki

IEQAS EQA Schemes 2017

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

- IEQAS deal with all orders & queries for you, incl. Labquality
- No VAT payment is required; prices in Euro
- Pre-order Conference places 2017

IEQAS-operated schemes

- Local advice & expertise
- Special Surveys

HbA_{1c}

- 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)
- Special survey: fresh single-donor samples in January 2017

Blood Cell Morphology

- One sample, distributed every 2 months
- Educational (not scored)
- Annual review at IEQAS Conference

POCT Lipids

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

NCCP Pilot: PSA, Ca_{125}, hCG

(NCCP Designated Cancer Centres)

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

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

- 12 slides, distributed twice annually with peer review
- CPD Certification

Labquality (Finland)

Changes for 2017 will be listed on IEQAS Order Form and in 2017 Labquality Product Catalogue but include:

New Integrated EQA Schemes *Combining pre-analytical & post-analytical EQA to one scheme fulfilling ISO 15189 requirements.*
4420 ABO & Rh grouping
4440 Antiglobulin test, direct
4460 Antibody screening & compatibility testing
2610 Acid-base status & electrolytes
4388 D-dimer
5080 General Bacteriology 1 (aerobes & anaerobes)
5081 General Bacteriology 2 (aerobes)
2300 Hormones A: Basic analytes of hormone & immunochemistry

New schemes & products
2675 Allergan component (UKNEQAS)
5938 Autoimmune diagnostics, IFA interpretation
4480 Blood grouping, gel cards, virtual scheme
1541 CRP, low concentration
5635 Dengue virus, antibodies
5472 *Giardia & Cryptosporidium*, nucleic acid detection
5682 Hepatitis E, antibodies
5670 Influenza A+B & RS virus, nucleic acid detection
4339 INR, CoagSense, POCT
4337 INR, EuroLyzer, POCT
4338 INR, MicroINR, POCT
5675 Norovirus, nucleic acid detection
4336 POCT INR evaluation scheme
5593 *Streptococcus* group A, nucleic acid detection
5474 *Trichomonas vaginalis*, antigen detection
5473 *Trichomonas vaginalis*, nucleic acid detection
8610 Veterinary basic blood count
8530 Veterinary basic chemistry

Optional:
2221 Down's syndrome screening, quality assurance
(This will be organised if there are at least 10 participants)

Discontinued schemes
4392 Anticoagulants: Dabigatran
7803 Preanalytics, blood gas analysers

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IEQAS
Irish External Quality Assessment Scheme

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2016 Annual Conference is supported by

LABQUALITY	Book of Abstracts
biomnis YOUR PARTNER IN PATHOLOGY	Delegate bags
Roche	First Plenary Session
BECKMAN COULTER	Morning coffee
TECHNOPATH THOUSANDS OF POSSIBILITIES < ONE PATH	Second Plenary Session
MEDICON IRELAND LIMITED	Lunch-Main course
sysmex	Haematology Workshop
ACBI	Clinical Chemistry Workshop
BRENNAN & COMPANY	Transfusion Workshop
Accuscience A Pharmed Group Company	Stationery

Abstracts: Plenary

National Patient ID

Mr Cathal Ryan, Assistant Commissioner, Office of the Data Protection Commissioner

Abstract

In this presentation Cathal will be exploring the data protection considerations which could arise in the roll out of a national patient identity card with specific focus on the legal basis required, the assessments which would need to be carried out and the pitfalls to avoid.

Biography

Cathal Ryan is an Assistant Commissioner with the Office of the Data Protection Commissioner (the ODPC). A qualified lawyer with significant commercial and regulatory experience in the public sector, Cathal leads the ODPC's Public Sector and Health Consultation Section. This Section is responsible for overseeing the office's function of proactively providing data protection awareness and best practice guidance to all public sector and health bodies to ensure their activities, which include a personal data element, are carried out in compliance with data protection law. Cathal is also a member of the European eGovernment Article 29 Working Party Group which regularly contributes to published opinions in respect of data privacy and processing of personal data.

The ODPC is responsible for upholding the rights of individuals as set out in the Data Protection Acts 1988 and 2003 ("the Acts"), and enforcing the obligations upon data controllers. The Commissioner is appointed by Government and is independent in the exercise of her functions.

Individuals who feel their rights are being infringed can complain to the Commissioner, who will investigate the matter, and take whatever steps may be necessary to resolve it.

The ODPC has a number of important roles and functions provided under the Acts i.e. investigative powers, effective powers of intervention and the power to engage in legal proceedings. Another crucial role is to continually strive for compliance by raising awareness of data protection issues. This role is particularly important in ensuring that law makers and Departments are mindful of data protection considerations when

drafting legislation in compliance with the Acts. This role is provided in Article 28(2) of the Directive which states:

"Each Member State shall provide that the supervisory authorities are consulted when drawing up administrative measures or regulations relating to the protection of individuals' rights and freedoms with regard to the processing of personal data."

The ODPC has no powers to mandate consultation by public or private bodies, nor powers to authorise or refuse to authorise projects. Rather, the office provides early guidance in order that projects can be implemented using principles of privacy by design and default and taking into account all necessary data privacy considerations. Such an approach helps eliminate later risks for data subjects and organisations alike and means the ODPC avoids having to deploy enforcement resources after the fact.

Pre-analytical EQA & Update from Nordic region

Ms Jonna Pelanti, Head of EQA Production, Labquality, Helsinki

Abstract

The analytical process has been the focus of quality assessment for a long time. In countries with developed analytical procedures it is already a highly refined process and furthermore represents only a small part of the total measuring process. In the 21st century the focus has shifted to extra analytical phases. The majority of the errors in the measuring process have been published to occur before the samples arrive in the laboratory. Errors occur particularly in sampling and sample handling. Figures vary from one source to another, but approximately 60 % of measurement errors occur at preanalytical phase, a small amount in analytical phase and the rest at postanalytical phase.

The European Federation for laboratory medicine (EFLM) has a very active working group for preanalytics. This working group was established to lead the standardization and harmonization of the practices in the preanalytical phase at European level. This has led also to the emergence of national working groups and societies for preanalytical issues. The Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) have put their forces together and, in addition to the national working groups, a Nordic group for preanalytics has been established. The aim for this group is to promote the importance of the preanalytical phase, conduct surveys and studies to assess practices now in use and to publish recommendations.

In Finland, the working group for preanalytics has made a survey on the quality indicators used in Finland. Based on the survey findings also the laboratory information system providers in Finland were contacted and asked to complete their set of questionnaire. What kind of tools they provide in their systems to support the continuous and systematic follow-up on preanalytical quality indicators was asked. The near future aim is to publish a recommendation on quality indicators to be used in laboratories and also to have laboratory information system providers supporting laboratories with automated ways for doing this.

The Finnish external quality assessment provider, Labquality, has had specific preanalytical EQA schemes now for several years. These schemes have been found useful and popular, and to take this towards total process quality, Labquality is going to provide in 2017 a unique service called integrated EQA. Products belonging

to this group will have preanalytical and / or postanalytical parts integrated into the traditional scheme. These schemes are designed to support total quality management and fulfill ISO 15189:2013 requirements concerning the extra analytical phases.

In this talk the different aspects of quality assessment of the preanalytical phase will be presented and different ideas of the future possibilities will be explored.

Biography
Jonna Pelanti has a master of science in technology degree from Helsinki University of Technology and a clinical biochemist degree from Helsinki University faculty of medicine. She began her professional training in Helsinki University central hospital in 2001 when working with her master's thesis on measurement of nitric oxide in human samples. After graduating from Helsinki University of Technology she went on to work with the detection of forbidden substances in animals in the Finnish food safety authority Evira. In 2007 she began her specialization training as clinical biochemist in the hospital district of Helsinki and Uusimaa.

After graduating from Helsinki University faculty of medicine Jonna joined Labquality where she first started as an EQA coordinator and is now heading the company's EQA production and is part of the management team. Jonna's main responsibility is to develop Labquality's new IT-system LabScala which is a web based portal used by Labquality's customers and employees.

Jonna is interested in external quality assurance in general and as a science. She finds that it is important to work towards a more unified level of results in laboratory medicine through co-operation between EQA-providers, customers and relevant institutions and organisations. Developing new kinds of products for end-to-end quality assessment is one of her key interests. She has, thanks to her technology background, an interest and knowledge in information technologies. She is fascinated with developing external quality assurance and eventually patient safety through professional utilisation of modern IT solutions.

Health Identifiers Act

Ms Sarah Reid, Barrister-at-Law

Abstract

The Health Identifier Act 2014 was commenced in part in July 2015 and in so doing established a new framework for health service providers in the state. In her presentation to the conference, Sarah Reid BL will address what an Individual Health Identifier (IHI) actually is, why it's important for patient safety as well as going through the key provisions of the Act and the criminal sanctions & offences it imposes for non-compliance.

Biography

Sarah Reid LLB, LLM, BL is a practicing barrister specialising in personal injury and medical negligence. In recent years her area of specialisation has expanded to include the overlap between product liability laws, medical devices regulations and clinical negligence. In particular Sarah has focused her research on the defective PIP implants scandal and the ongoing DePuy recall of the ASR hip replacement system where she represents a large number of plaintiffs in this area.

Sarah is an Associate Legal Expert with the Institute of Public Administration where she delivers specialised training in medical law, judicial review and courtroom skills to the public sector. She also lecturers Product liability law to Bio-Mechanical engineer students in Trinity College Dublin and she is a guest lecturer in clinical negligence for the HSE and the Royal College of Surgeons in Ireland.

In 2015 Sarah was appointed as legal counsel to the Oireachtas Banking Inquiry advising on judicial review and conduct of public hearings under the Houses of the Oireachtas (Inquiries, Privileges and Procedures) Act, 2013 and she has recently published a second edition of 'The Devils Handbook' which is a practical guide to the Courts and courts services for junior barristers starting out in practice.

Histopathology Interpretive EQA, Individualised Peer Review Model

Dr John O'Dowd, Histopathology EQA Scheme Organiser (Faculty of Pathology)

Abstract

The EQA Scheme in General Histopathology has upwards of 86 members and circulates 12 cases as glass slides to members every 6 months. These cases are provided by members and are intended to reflect a routine general histopathology practice. Circulation 14 is about to be completed. Members have a confidential PIN that is used to identify their responses. Although the primary aim of the Scheme is to contribute to continuing medical education and maintenance of professional standards, the members' individual responses are assessed and scored at a Members Meeting and individual performance appraisal occurs based on the principle of peer review. Members receive individual feedback and are able to compare the scoring for their responses to that of the membership overall for each case. The significant limitations of any such interpretive EQA scheme to reflect or assess real life diagnostic practice are acknowledged. Our Scheme is modelled on similar interpretive EQA schemes in the United Kingdom, almost all in cellular pathology, guidance for which is provided by the Royal College of Pathologists. Our Scheme is sponsored and supported by the Faculty of Pathology of the Royal College of Physicians of Ireland and IEQAS has provided the administrative support for the Scheme since 2012.

Biography

John O'Dowd, is a Consultant Histopathologist, Bon Secours Hospital, Dublin and is Scheme Organiser for the EQA Scheme in General Histopathology.

National Medlis Update

Dr Miriam Griffin, Clinical Director & Project Manager, National MedLIS Project

An update will be provided.

Afternoon Workshop sessions will be led by:
Ms Anne Geaney- Transfusion
Ms Siobhan McCrea- Microbiology
Mr Stuart Liptrot- General Laboratory-Haematology
Mr Neil O'Brien General Laboratory- Chemistry

Abstracts: Clinical Chemistry Workshop

I Qan C the Bigger Picture

Ms Sinead McDermott, Medical Scientist, University Hospital Galway

Abstract:
This presentation details the methods employed in the Department of Clinical Biochemistry to review monthly IQC data. It reviews the approach adopted in Galway to evaluate IQC with a focus on analyte performance against quality specifications, analytically significant differences and, where multiple platforms are used for a particular analyte, the allowable difference between these platforms.

Biography
Sinead McDermott has been employed as a medical scientist in the Department of Clinical Biochemistry, University Hospital Galway, since 2004. Her current role in the department is that of Quality Coordinator. Prior to working in Galway, Sinead worked in various laboratories in the UK and the Middle East.

hCG Measurement in Ireland

Ms Mary Stapleton, Principal Clinical Biochemist, Cork University Hospital

Abstract

Human Chorionic gonadotrophin (hCG) is a product of syncytiotrophoblastic cells of the placenta but is also secreted in lesser quantities by cytotrophoblastic cells and several non-placental neoplasms. It is measured in the laboratory to confirm a normal pregnancy, a non-viable pregnancy or in the diagnosis and monitoring of neoplastic disease particularly gestational trophoblastic disease (GTD). The NCCP have recently published guidelines for the diagnosis and follow up of patients with GTD and it is proposed to establish a national register of these patients in quarter four 2016. The measurement of hCG plays an essential role in diagnosis and management of this condition. hCG exists in multiple molecular forms and this contributes to significant between method differences in results. The results of a recent survey of hCG measurement in this Ireland will be presented and recommendations on opportunities for harmonisation will be presented

Biography

Mary Stapleton is Principal Clinical Biochemist in Biochemistry Department at Cork University Hospital.

Serum Indices – The Story on the Ground:

Mr Mark Neville, Chief Medical Scientist, St James's Hospital & Mr Micheál Ryan, Senior Biochemist, St John's Hospital, Limerick

Abstract

An automated HIL detection system offers an objective and consistent methodology for assessing sample quality. HIL indices are calculations based on absorbance measurements that provide (semi) quantitative estimates of haemolysis, icterus, and lipaemia/turbidity.

Laboratories should treat HIL index measurements as another quantitative assay with HIL index verification and internal quality control procedures in place to ensure ongoing accuracy of results.

This presentation will give an overview of the HIL index set-up and its application on the Beckman AU680 Clinical Chemistry analyser.

The challenges faced in attempting to achieve harmonisation of HIL index results across different analyser platforms will also be addressed. The Roche Cobas systems and their HIL indices will also be examined and some examples of IQC/EQA schemes discussed. Day to day issues for both users with some specific analytes like AST and LDH will be raised with input invited from the floor from the attendees.

Biography

Mark Neville is Chief Medical Scientist in St James's Hospital Biochemistry department and started work there in 1992. Before this he worked for five years in the Mercy Hospital Cork after his training year in CUH, Cork.

Biography

Micheál Ryan is currently Senior Biochemist in the Pathology Dept., St. John's Hospital, Limerick. Micheál graduated from the University of Limerick with a BSc. in Industrial Biochemistry (2003) and completed a MSc. in Biomedical Science (2007), University of Ulster, Coleraine. He returned to the University of Limerick and completed a Post-Graduate Diploma in Quality Management – Lean Health Systems (2009).

Abstracts: Haematology Workshop

Blood Cell Morphology Scheme: Annual review 2015-2016

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.

Curing the Commonest Childhood Cancer
Acute Lymphoblastic Leukaemia: Are we there yet?

Prof Owen Smith, UCD & OLCHC

Abstract

Acute lymphoblastic leukaemia (ALL) is the commonest malignancy in children, comprising about 30–35% of all childhood cancers. Only 50 years ago this disease was fatal within 6 months in the vast majority of children. In 1965, < 1% of children with ALL were expected to be long-term survivors, however, today approximately 80% - 90% of children and adolescents with ALL are cured. Furthermore, 10–20% of children with leukaemic relapse have a long-lasting second remission with the chance of cure with second-line treatment. This 'success story' was made possible by a series of carefully designed clinical trials both in the US and Europe, pioneered by Pinkel and colleagues at St Jude Children's Research Hospital in Memphis, and several groups in Europe. The four main components of therapy are remission induction, consolidation, maintenance and central nervous system-directed therapy, and usually last 3 – 3 years. Treatment intensity based on risk-based stratification has now become the cornerstone of treatment. Patients with more favourable disease are spared the more toxic effects of chemotherapy, whereas more aggressive regimens are reserved for those with higher-risk disease. Despite this progress in treatment outcome, the absolute number of children with ALL who relapse and eventually die of their leukaemia still exceeds the absolute number of children with newly diagnosed acute myeloid leukaemia. Although childhood ALL continues to contribute significantly to the overall mortality of childhood cancer this may be about to change with the incorporation of immune (molecular and cellular) therapeutics into clinical protocols and perhaps more importantly the more regular use of high-throughput genomic profiling and next-generation sequencing technologies that define novel subtypes of ALL with their associated candidate gene leading to the development of biologically based targeted therapy.

Biography

Professor Owen Patrick Smith is Professor of Paediatric and Adolescent Medicine at University College Dublin and Consultant Paediatric Haematologist at Our Lady's Children's Hospital, Crumlin, Dublin. Professor Smith also holds the titles, Honorary Regius Professor of Physic (1637) and Professor of Haematology [2002] in the School of Medicine, Trinity College Dublin.

Professor Smith entered Trinity College Dublin in 1976 to read Natural Sciences and graduated with a moderatorship in Biochemistry in 1980. He went on to graduate in Medicine from Trinity in 1985 and after 9 year postgraduate training at the Royal Free Hospital School of Medicine and Great Ormond Street Children's Hospital, University College London he was appointed Consultant Haematologist at the National Children's and St James's Hospitals, Dublin. Between 1995 and 1999 Professor Smith was successively lecturer in Haematology, senior lecturer in Haematology, before being appointed Professor of Haematology at the Faculty of Medical and Dental Sciences at Trinity College Dublin in 2002.

Professor Smith is a principal investigator at the National Children's Research Centre, Crumlin, and the Institute of Molecular Medicine, Trinity College Dublin. His two main areas of research have focused on evidence-based randomised peer-reviewed haemato-oncology clinical trials with a focus on clinical questions within all domains of paediatric and adolescent blood and cancer and the elucidation of the relationship between the protein C activation pathway and systemic inflammatory response sepsis syndromes.

One of Professor Smiths' major contributions to Irish medicine has been through the promotion of clinical research as evidenced by; a significant expansion of clinical paediatric scholarship with excellent research outputs, a strengthening of national and international academic collaborations, and the nurturing, education, and career development of the present generation of Irish consultant paediatric haematologists. In addition, Professor Smith's has a strong record of championing significant national developments in child and adolescent health in this country over the two decades. For example, he was project director for the creation of National Centre for Hereditary Coagulation Disorders [1997 – St. James's Hospital] and the National Paediatric Haematology-Oncology Programme [2002 – Our Lady's Children's Hospital, Crumlin]. He was a member of the National Paediatric Hospital Development Board [2009], the Dolphin Review Group on the National Children's Hospital [2012] and is currently Special Advisor to the Children's Hospital Group Board and member of the Strategic Advisory Group focusing on options to develop a Paediatric Academic Health Sciences Network at the request of the Children's Hospital Group Board. Professor Smith chaired the National Genetic and Genomic Medicine Network Strategy Group

[2015] and was a member of the Cancer Strategy 2016-2025 advising on child, adolescent and young adult cancers [2016].

The co-author of more than 340 research original articles, letters, books, book chapters and papers, Professor Smith is a Fellow of the Royal College of Paediatrics and Child Health, Royal College of Pathologists, Royal College of Physicians of Dublin, Royal College of Physicians London, Royal College of Physicians Glasgow, and Royal College of Physicians Edinburgh. He is a member of numerous associations and societies, including; the Medical Research Council Childhood Leukaemia Working Party, Children's Oncology Group [USA], the International Berlin Frankfurt Munster Study Group for Childhood Leukaemia, the United Kingdom Children's Cancer Group, European Working Group on paediatric aplastic anaemia and myelodysplastic syndromes. He is an international advocate for children and adolescents with rare diseases and for expanded access to expensive drugs

Professor Smith has received numerous awards throughout his career that have included; Presidents Prize of the Dublin University Biological Association in 1984 and 1985, Postgraduate Travelling Scholarship in Medicine, Sheppard Memorial Prize in Medicine and the Sir John Banks Medical in Medicine from Trinity College in 1991. He was the recipient of the Junior Chamber Ireland's National Outstanding Young Person of the Year Award in the area of Scientific Development in 1998 and he delivered the 41st Graves Lecture and the 31st St Luke's Lecture to the Royal Academy of Medicine in Ireland in 2001 and 2006 respectively. He was admitted to Honorary Fellowship of Trinity College Dublin in 2009 and was awarded Honorary Professorship title of Regius Professor of Physic (1637) in the School of Medicine, Trinity College Dublin in 2014.

In 2015 Professor Smith was appointed Professor of Paediatric and Adolescent Medicine in the School of Medicine at University College Dublin. In the same year he was conferred honorary Commander in the Most Excellent Order of the British Empire (CBE) for his life-long work on cancer in children and adolescents by Queen Elizabeth, on the advice of the Foreign and Commonwealth Office.

Abstracts: Microbiology Workshop

Irrepressible carbapenemase-producing Enterobacteriaceae in the Mid-West of Ireland? A retrospective epidemiological and microbiological review of 140 isolates from 2009 to 2015.

Dr Ciara O'Connor, Clinical Microbiology Specialist Registrar, Mater Hospital

Abstract

Ciara O'Connor[1,2], Barbara Slevin[3], Alan O'Gorman[3], Marion Commane[3], Eimear O'Donovan[3], Roisin Connolly[1], Miranda G. Kiernan[2] , Sarah Ni Mhaolcatha[4], Cathriona Finnegan[1], James Powell[1], Regina Monahan[1], Lorraine Power[1], Nuala H. O'Connell[1,2], Colum P. Dunne[2]

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Background
There has been a rise in the number of CPE cases in the Mid-West of Ireland (2009- 2, 2010- 4, 2011- 11, 2012- 10, 2013- 8, 2014- 45, and 2015- 60).

Material/Methods
A manual search of the Laboratory Information Management System was performed to retrieve positive CPE âresults from clinical specimens; both routine and screens. For each positive CPE result, a confirmatory check of molecular results was performed. Every CPE positive patient was recorded once only during the study, irrespective of whether they repeatedly cultured CPE positive on multiple admissions.

Results
Between February 5th 2009 to December 31st 2015, 140 cases of CPE were detected: one IMI, 123 KPCs, 13 NDMs, and three OXA-48s. Rectal swabs accounted for 74% (n=103) of positive clinical specimens. There have been two KPC bacteraemias to date with a 100% mortaility. CPE has been isolated from theatre specimens (n=3). Two outbreaks have occurred; the first Irish KPC outbreak in 2011 (nine patients; three deaths) and the first Irish NDM-1 outbreak in 2014 (ten patients; one death). The largest number of cases to date (75%) have been recovered from University Hospital Limerick (438 beds: 104 cases). The median age of positive

patients is 72 years (range 7 to 94 years). Seasonality is evident with a peak in cases in the spring and summer months.

Conclusions
Despite the implementation of a CPE toolkit, hydrogen peroxide vapour decontamination post routine discharge cleaning, restricting the prescription of carbapenems, education and auditing of hand hygiene and an intensive screening programme, there continues to be a rise in the number of CPE cases. Contributing factors such as local infrastructural issues and overcrowding in the emergency department plus the lack of an integrated information technology system are hindering efforts to control CPE.

Biography
Dr Ciara O'Connor is a fourth year clinical microbiology specialist registrar currently working at the Mater Misericordiae University Hospital. She has recently completed an MD at the Graduate Entry Medical School University of Limerick examining the epidemiology of healthcare-associated infections in the Mid-West of Ireland.

ESBL Blood Stream Infections: Ongoing options for treatment

Dr Ruth Waldron, Clinical Microbiology Specialist Registrar, St James's Hospital

Abstract

Introduction

Invasive infections with Extended-spectrum ß-lactamase (ESBL)–producing Enterobacteriaceae are a significant issue in many hospitals. Recent guidance from both EUCAST and CLSI state that if an isolate tests susceptible to a beta-lactam by current criteria the agent may be used regardless of resistance mechanism. Nevertheless there is frequently some concern about implementing this recommendation so that resort to carbapenems for all ESBL Enterobacteriaceae remains common in some centres. We aimed to retrospectively review the use of the ß-lactam, piperacillin/tazobactam for treatment of ESBL blood stream infections (BSI) in this centre.

Methods

The number of ESBL BSI was reviewed using surveillance data and review of clinical notes. Susceptibility patterns and therapeutic choices for patients with ESBL blood stream infections over a 3 year period were investigated to examine outcomes for patients treated with piperacillin/tazobactam susceptible isolates treated with different beta-lactams.

Results

There were 55 cases of ESBL BSI, 44 of which were Escherichia coli and 11 were Klebsiella pneumoniae. A total of 24 (44%) of isolates were susceptible to piperacillin/tazobactam. These were separated into 3 groups, those treated with a full course of piperacillin/tazobactam (n=8), those initially treated with meropenem and subsequently deescalated to piperacillin/tazobactam (n=6) and finally those treated with meropenem (n=9). One patient died in the ED and was not included. Of those treated with meropenem, 2 were due to penicillin allergy, 4 were initially given another beta-lactam therapy but failed to settle. Of note these patients each had an uncontrolled focus of infection. There was deaths in groups treated with tazocin (n=1) and meropenem (n=1). Administration of an initial dose of gentamicin at 5mg/kg was common with any beta-lactam used.

Conclusion

ESBL blood stream infection is common. Limiting meropenem use is important given the emergence of carbapenemase producing enterobacteraciae. This review supports use of piperacillin/tazobactam for susceptible ESBL blood stream infections.

Biography

Dr Ruth Waldron is currently a 4th year clinical microbiology SpR in St James Hospital and has previously worked in St Vincent's University Hospital and Galway University Hospital. She completed medical memberships in Galway University Hospital and carried out undergraduate medical degree in training in NUIG.

How to detect Carbapenemase Producers?

Ms. Elaine McGrath, Senior Medical Scientist, University Hospital Galway

Abstract

One of the most serious problems for global public health today is the increasing incidence of antibiotic resistant bacterial infections. Of particular concern is the emergence of *Enterobacteriaceae* resistant to Carbapenems, the class of antibiotic considered the last resort for treating increasingly resistant organisms. While uncommon prior to 1992, their prevalence has risen at an alarming rate and infection with these resistant pathogens is associated with increased mortality. Timely and accurate detection of CPE is essential to guide antibiotic therapy and for infection control measures, especially in an outbreak setting.

Since the establishment of The National Carbapenemase Producing Enterobacteriaceae (CPE) Reference Laboratory Service (CPERLS) in 2012, there has been a continuous increase in the numbers of CPE. In 2015 the percentage of Carbapenemase producing isolates increased by 46.6% compared to 2014. KPC, OXA-48 and NDM remain the most common Carbapenemase genes detected in Ireland.

The presentation will review the status of CPE in Ireland to date and provide a brief overview of laboratory detection methods

Biography

Elaine McGrath is a Senior Medical Scientist in the department of Microbiology, University Hospital Galway (UHG).

Since graduating from UCC in 2004, she has worked in the Microbiology department UHG. She has completed MSc in Biomedical Science (2007) and Post Graduate Diploma in Quality Management (2011). Since 2010 she has specialised in the development of molecular assays in order to improve the diagnostic service within the department. In 2014 she was involved in the establishment of the National CPERLS and currently oversees the operations of this reference service.

Abstracts: Transfusion Workshop

Blood Salvage - an overview

Dr Niamh Hayes, Consultant Anaesthetist, Rotunda & Mater Hospitals

Abstract

Traditional attitudes to perioperative red cell transfusion were very liberal. Current attitudes consider concern re: mistransfusion of blood/blood components; acute and delayed transfusion reactions; transfusion-transmitted infection; transfusion-related acute lung injury and circulatory overload; transfusion-related immune modulation (of particular concern in cancer surgery); and the efficacy of red cell concentrate in relation to cellular oxygen delivery (and potential detriment with red cell storage defect).

These are reasons to avoid unnecessary allogeneic red cell transfusion where possible (acknowledging that transfusion is life-saving in some circumstances). In practice, adherence to evidence-based transfusion thresholds is limited and red cell concentrate transfusion for a given surgical procedure is often institution-dependent and inconsistent with published guidance.

A number of alternatives to allogeneic blood are available, only one of which is intraoperative cell salvage (IOCS). However, this was one of the elements targeted following the "National Blood Conservation Strategy" in the UK in 2004 - in response to problems relating to a diminishing blood donor pool (partly because of transfusion-transmitted infection) and identification of unsafe transfusion practices in SHOT.

IOCS scavenges blood from the operative field and re-infuses red cells suspended in saline after centrifugation and washing. Most transfusions occur in a perioperative setting and targeting this offers the best impact in terms of avoiding allogeneic red cell transfusion. The best evidence for IOCS is demonstrated for orthopaedic and cardiac surgery (although the potential benefit from "untapped" surgical procedures is huge), and there has been little published evidence of harm despite use in multiple clinical settings (since the 1940's). There are no substantial differences in performance from currently published evidence relating to individual manufacturers/equipment. Accordingly, I have no declared interest for this talk.

The IOCS process is described. Additional precautions in relation to "double-suction" to avoid initial contamination, "double-wash" to

eliminate undesirable soluble components, and the use of leucodepletion filters to eliminate both soluble and particulate contamination in certain circumstances is important. Much of my personal clinical experience with IOCS is in obstetric practice which will be the focus of much of the rest of this presentation. However, obstetric practice issues are illustrative of potential problems with controversial IOCS use, and therefore interesting to examine. General indications/contraindications to IOCS are discussed, published safety guidelines are referenced, and the evidence for IOCS clearance of undesirable soluble and particulate contaminants are discussed. Support for IOCS in obstetric practice is presented, along with considerations for Rhesus alloimmunisation in Rh-negative mothers.

Selection criteria for use of IOCS in obstetrics are not clearly established. Support of IOCS in special circumstances where there is no viable alternative for oxygen carriage is discussed with reference to specific examples from clinical practice. Selection of IOCS on the basis of expected high-volume blood loss at delivery (versus traditional approaches of routine cross-match - of note, the price of disposables for IOCS collection is less than the reagent cost for crossmatch of two perioperative units - IOCS use is supported by the AABB on the basis of this cost alone) is considered, but more than 50% of major peripartum haemorrhages occur in patients with no risk factors for haemorrhage so the predictability of massive obstetric haemorrhage is questionable. Studies to examine the efficacy and cost-effectiveness of IOCS in obstetric practice are underway.

IOCS may have expanded uses in non-operative circumstances e.g. vaginal delivery in obstetrics. This will present new problems relating to potential bacterial contamination of the "surgical" field. IOCS does not remove the requirement for traditional dependence on transfusion laboratory facilities for group and cross match for "at risk" patients, nor a dependence on coagulation product support in the setting of haemorrhage & IOCS utilisation. Nonetheless, it does have potential for substantially reducing dependence on allogeneic red cell concentrate with little additional resource utilisation.

IOCS is not without reported complications (although these are limited in terms of number of adverse reactions and clinical significance of those reactions given current usage patterns). There are certain challenges with implementation of IOCS in current practice without dedicated resources at the coal face. This

should not dissuade attempts to introduce/expand use of the technology.

Biography

Dr Niamh Hayes, MB BAO BCh BMedSCi FCAI MSc. Graduate of University College Cork medical school 1998. Completion of MSc Anaesthesia (Medical Professionalism) in 2005 and Completion of Specialist Training in Anaesthesia (College of Anaesthetists of Ireland) 2006. Special clinical interests in Obstetric Anaesthesia and medical education. Fellowship in Obstetric Anaesthesia in Mercy Hospital for Women in Melbourne, Australia in 2006 - 2007. Previously co-director of the Simulation Training programme at the College of Anaesthetists of Ireland. Currently working as a consultant anaesthetist in the Rotunda and Mater Misericordiae Hospitals, Dublin.

Changes in Biomedical Science education at the Dublin Institute of Technology

Mr Fabian Mc Grath, Lecturer in Transfusion Science, DIT

Abstract

This talk will discuss changes to the undergraduate degree in Biomedical Science and open discussion on the way forward for the MSc in Clinical Laboratory Science which will shortly be reviewed. It will also look at Transfusion Science education in Ireland versus the UK and ask if there is anything we can learn or are there any improvements that are desirable. Finally it will place this in the context of the changing situation in 3rd level education.

Biography

Fabian Mc Grath is lecturer in Transfusion Science at Dublin Institute of Technology Kevin St. Having started as a student in DIT 1986, he did the old certificate and diploma courses in Medical Laboratory Science before continuing on to a BSc in Biomedical Science and MSc in Molecular Pathology where he received the Derek Cullen award for highest overall result on that program. He started his career as a medical scientist as a student in St James before working in the Irish Blood Transfusion Service and the Mater Misericordia Hospital in Dublin. In 1998, Fabian was appointed Senior Medical Scientist in the Adelaide and Meath incorp. the National Children's Hospital Tallaght. This was followed by a period doing research in Amsterdam at Sanguin Blood Transfusion Centre and in the Nephrology department at Leiden University Medical Centre. He is author on a number of papers in the field of immuno-haematology and on the complement system in particular. Fabian has been in his current role since 2007. He is a member of the Transfusion Transplantation Advisory Body of the Academy of Clinical Science and Laboratory medicine for many years and is Chair of the MSc in Clinical Laboratory Science at DIT.

Mitigating Daratumumab Interference in the Laboratory

Ms Julie Long, Medical Scientist, IBTS

Abstract

Multiple Myeloma is an incurable haematological cancer characterised by abnormal plasma cells in the bone marrow. Daratumumab (DARA) is a monoclonal antibody directed against CD38, a cell surface protein that functions as a receptor and as an enzyme and is weakly expressed on haematological and solid tissues. The expression of CD38 is uniformly increased on malignant cells in MM. However, low levels of CD38 are also expressed on red cells, which becomes problematic in pre-transfusion serological testing. DARA in the patient's plasma causes pan-reactivity with reagent red cells by the indirect antiglobulin test. This interference can prevent blood compatibility testing being performed.

Three different methods were evaluated to mitigate the effects of DARA: allo-adsorption studies, DTT treatment of reagent red cells and cord cells as reagent cells.

The optimum adsorption technique was found to be the LISS addition method using a ratio of 4:1:1 with untreated cells. This removed DARA spiked plasma (conc. of 1µg/ml) following four adsorptions but not at a concentration of 35µg/ml which was equivalent to that found in patient samples. DTT treatment was successful at mitigating DARA interference and allowing for the presence of underlying antibodies to be identified. Underlying antibodies could be detected using reagent DTT treated red cells or phenotyped cord cells.

Of the three methods tested, DTT treatment of reagent red cells proved the most robust method for identification of underlying alloantibodies. However, the DTT treatment process is labour intensive taking approximately 4 hours and DTT treatment of red cells removes some red cell antigens including Kell system, Lutheran, Dombrock and YT antigens (and therefore antibodies to these antigens will not be detected using this method).

Biography

Ms Julie Long graduated from Dublin Institute of Technology with an honours degree in biomedical science in 2016. She chose to major in haematology and transfusion science as this is where her interests mostly lie. She completed her undergraduate thesis titled "Resolving the interference caused by daratumumab in pre transfusion serological testing", in the diagnostic laboratory in the

IBTS. Today she will discuss her research and findings throughout the thesis in greater detail. She is now employed as a medical scientist in the HLA laboratory in the national blood centre, in the Irish blood transfusion service.

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