IEQAS

Irish External Quality Assessment Scheme

Contents

IEQAS Participants' Conference

Thursday 4th October 2012

Welcome

We would like to welcome you to this year's IEQAS Participants' Conference, which continues its focus on quality improvement in Irish laboratory medicine. This year, IEQAS celebrates 31 years of operation, making it one of the longest-standing quality initiatives in the Irish health service.

IEQAS offers External Quality Assessment (EQA) schemes to Irish laboratory medicine, with the aim of achieving and maintaining the best possible quality through a continuous process of monitoring, education, training and support.

IEQAS promotes inter-professional cooperation, with its Steering Committee consisting of nominees from the major professional bodies involved in laboratory medicine in Ireland. Laboratory medicine is a constantly evolving specialty and IEQAS now also provides an EQA service for Point-of-Care testing, taking it outside the traditional laboratory setting.

Dr Ned Barrett, Chairman
Mr Ivan Shirley, Vice-Chairman
Ms Hazel Graham, Quality Manager
Ms Patricia Howley Operations Manager
Ms Anne Kane, Scheme Administrator

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

Steering Committee

Barrett, Ned[2]	Chairman Formerly Consultant Clinical Biochemist, Mid-Western Regional Hospital, Limerick
Shirley, Ivan[1]	Vice-Chairman Chief Medical Scientist, St Vincent's University Hospital
Boran, Gerard[3]	Consultant Chemical Pathologist, AMNCH Tallaght
Brady, John[1]	Chief Medical Scientist, Our Lady's Children's Hospital
Carr, Alan[1]	Senior Medical Scientist, AMNCH Tallaght
Graham, Hazel[5]	IEQAS Quality Manager
Howley, Patricia[5]	IEQAS Operations Manager
Judge, Gerry[4]	Chief Medical Scientist, AMNCH Tallaght
Murphy, Dympna[4]	Chief Medical Scientist, AMNCH Tallaght
O'Sullivan, Niamh[3]	Consultant Microbiologist, Our Lady's Children's Hospital / Coombe Women's Hospital
Smith, Tom[2]	Principal Biochemist, St Vincent's University Hospital

Associated Professional Bodies

[1] Academy of Medical Laboratory Science
[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

Byrne, Eileen	Senior Clinical Biochemist, St Vincent's University Hospital
Clarke, Frank	Lecturer, School of Biological Sciences, DIT
Driscoll, Therese	Senior Medical Scientist, AMNCH Tallaght
McGing, Peadar	Principal Biochemist, Mater Misericordiae Hospital
Mulligan, Clare	Chief Medical Scientist, Midlands Regional Hosp Mullingar
O'Gorman, Paudy	POCT Manager, Mater Misericordiae Hospital
O'Kelly, Ruth	Principal Clinical Biochemist, Coombe Women and Infants University Hospital
O'Shea, Paula	Consultant Clinical Biochemist, Galway University Hospital
Perera, Kanthi	Consultant Haematologist, Midland Reg Hosp Tullamore
Quirke, William	Medical Scientist, Mid-Western Regional Hospital Limerick.
Reece, Rowland	Principal Biochemist, St Vincent's University Hospital

Operations Management

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

Acknowledgements

We would like to thank the following for their generous support towards the running of the Conference today

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

Plenary Programme

10:00 – 13:00 (approx)

Registration Tea/Coffee from 09:15

First Plenary Session

Chair: Ms Hazel Graham[#], IEQAS Quality Manager

10:00 **Chairman's Address**
Dr Ned Barrett[#], IEQAS

10:10 **Opening Address**
Dr Ambrose McLoughlin, Secretary General, Department of Health

10:35 **Ensuring Quality in Health Sector Procurement**
Mr Brendan White, HSE Procurement

11:00 – 11:30 Tea/Coffee

Second Plenary Session

Chair: Mr John Brady[#], OLCH Crumlin

11:30 **Update on Lab Modernisation Programme**
Dr Gerard Boran[#], HSE Programme Director for Pathology

11:55 **Implementation of ISO Accreditation across the Disciplines**
Ms Tina Coleman, Hermitage Clinic

12:20 **Demand Management**
Dr Michael Ryan, Antrim Area Hospital

12:30 **IEQAS Annual Review**
Ms Patricia Howley[#], IEQAS

IEQAS# Member of IEQAS Steering Committee

13:00 – 14:15 LUNCH

Afternoon Workshops (parallel)

14:15 – 16:00 (approx)

CLINICAL CHEMISTRY

Chair: Mr Frank Clarke, DIT*

14:15 **eGFR Preliminary EQA Data**
Mr Rowland Reece*, St Vincent's University Hospital

14:30 **HbA_{1c} Report Comments Survey**
Dr Tom Smith#, St Vincent's University Hospital

14:50 **Irish Reference Interval Harmonisation – Decision Time**
Dr Peadar McGing*, Mater Misericordiae Hospital

15:10 **HbA_{1c}Reference Intervals in Pregnancy**
Paula O'Shea*, Galway University Hospital

15:30 **Ensuring that Clinical Chemistry Analytical Systems are Compliant with ISO 15189**
Ms Gillian Daly, Nenagh General Hospital

HAEMATOLOGY/TRANSFUSION

Chair: Ms Therese Driscoll, AMNCH Tallaght*

14:15 **Blood Cell Morphology Scheme Review**
Dr Kanthi Perera*, MRH Tullamore

15:00 **FBC: Fresh Blood Survey/RDW Results**
Mr Ivan Shirley#, St Vincent's University Hospital

15:10 **Standardisation of Reporting Units in Haematology**
Mr Richard McCafferty, St James's Hospital

15:30 **How is the Changing Population Demographic Affecting Blood Transfusion in Ireland?**
Mr John Crumlish, IBTS Dublin

MICROBIOLOGY

Chair: Mr Eddie McCullagh, AMNCH Tallaght

14:15 **Susceptibility Testing**
Dr Michael Mulhern, Letterkenny Hospital

15:00 **Susceptibility Testing – Laboratory Perspective**
Ms Lisa Rose, St James's Hospital

15:30 **Discussion**

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

Abstracts

Chairman's Address

Dr Ned Barrett, IEQAS

Abstract

Participation in external quality assessment is the norm in laboratory medicine worldwide. The Irish External Quality Assessment Scheme for Laboratory Medicine (IEQAS) is the longest running quality assessment scheme in Irish health care. It monitors the quality of results reported in Irish Laboratory Medicine and offers professional advice and guidance as necessary. It supports quality improvements in the analytical and examination services provided by participating laboratories for the benefit and safety of their patients.

Each year, the Annual Participants' Conference provides a valuable opportunity for scheme participants to learn from the experiences of colleagues and invited speakers.

The opening address at this year's Conference will be delivered by Dr. Ambrose McLoughlin, Secretary General of the Department of Health.

The Conference Programme deals with important topics such as ensuring quality criteria in HSE Procurement, managing the demand for clinical laboratory services, and implementing ISO15189 accreditation across all disciplines. In the Plenary Sessions we also revisit the Laboratory Modernisation Programme for an update on developments and we have the annual review of IEQAS activity.

This year, for the first time, our afternoon workshop series includes a workshop on specialist microbiology topics. These discipline-specific workshops are a very important part of the Conference Programme and produce new ideas and promote discussion.

The support of all the professional bodies in Irish Laboratory Medicine has been crucial to the success of IEQAS. The organisation's Steering Committee coordinates the work of various Haematology, Clinical Chemistry and Transfusion Review Groups and Specialist Sub-Committees.

I hope that attendance at today's Conference will enhance your knowledge and understanding of the topics dealt with and contribute to your ongoing professional development.

Biography
Dr Ned Barrett is Chairman of the Steering Committee of the Irish External Quality Assessment Scheme for Laboratory Medicine (IEQAS). He retired as Consultant Clinical Biochemist at the Mid-Western Regional Hospital in Limerick earlier this year.

Opening Address

Dr Ambrose McLoughlin, Secretary General, Department of Health

Biography

Dr. Ambrose McLoughlin BDS, MBA was appointed Secretary General of the Department of Health on 17th April 2012.

He holds the following qualifications:
Masters in Business Administration from University College Cork, Business School (1986); Certificate in Public Administration, IPA (1979); BDS, NUI, Dublin Dental School (1974).

He has over 30 years' successful experience in the Health Service from Practitioner Level to Chief Executive. He was previously:
Registrar/Chief Executive of the Pharmaceutical Society of Ireland (PSI), the pharmacy regulator; CEO North Eastern Health Board (NEHB); Deputy CEO NEHB, responsible for Acute Hospitals and Community Services.

Ensuring Quality in Health Sector Procurement

Mr Brendan White, Assistant National Head of Portfolio and Category Management, HSE Procurement

Abstract

It is a basic tenet of health economics that *'in publicly funded healthcare systems, limited resources mean that every available intervention cannot be provided in every situation for all who need or want it. Choices must be made among effective healthcare interventions, and the decision to fund one means that others cannot be funded'* [1]. This is especially true in Ireland today which is in the grip of a severe austerity programme that has resulted in the public health system annual budgets being reduced by over €2Billion over the last two fiscal periods and further significant reductions are likely in the short to medium term.

In this environment, the importance of a strong cost conscious and value driven ethos in the public health sector, promulgated from the highest corporate levels and led by a focused professional Procurement Team is essential both to;

1. Minimise the impact to patient services through achieving efficiency, effectiveness and best value for money in terms of overall life-cycle costs for all products, services and equipment purchased.
2. Ensure that the appropriate levels of quality and supply assurance required to maintain safe and efficient services are never compromised by purchase price considerations solely i.e. that a total cost of ownership approach is applied to procurement including consideration of the following levers; >Strategy and Policy, >Demand, >Specification, and >Price.

This presentation will describe HSE Procurement, our values and principles, our organisational construct, how procurement strategies are formed, what procurement procedures are available and how these are selected. The presentation and discussion will demonstrate that QUALITY considerations are fundamental to HSE Procurement activities and underpin every aspect of our work in pursuing the optimal use of available funds, thereby enabling us to contribute significantly to HSE's Mission;

'Enabling people lead healthier and more fulfilled lives'

[1] *Guidelines for the economic evaluation of health technologies: Canada [3rd Edition]. Ottawa.*

Biography

Brendan White, Assistant National Head of Portfolio and Category Management, has responsibility for the Equipment, Laboratory and Diagnostics portfolio for the Irish public health sector including the coordination of equipping services to support the Health Service Capital Plan and commissioning of health services. Brendan has extensive private sector and public sector experience and related qualifications, and has recently successfully attained a MBS (hons) in Strategic Procurement at Dublin City University.

Update on Lab Modernisation Programme

Dr Gerard Boran, HSE Programme Director for Pathology

Abstract

This year has seen widespread change in the HSE and Department of Health and in turn significant impact on many of the clinical programmes including pathology. Parallel developments such as the proposals for hospital groups and plans around the smaller hospitals will also have an impact on the direction of laboratory modernisation. This presentation will review the progress to date on both laboratory modernisation and the development of guidelines including the national laboratory medicine handbook. The 10 principles of laboratory medicine modernisation remain a core component in plans.

Ten Principles for Modernisation of Laboratory Medicine

1. Accreditation of all laboratories
2. Provide Clinical Input in all pathology disciplines
3. Networks – develop a network of National, Regional, Local laboratories
4. Manage Demand in Primary and Secondary Care
5. Improved ICT Connectivity – upgrade ICT to support new network/hot and cold lab
6. Improved work practices
7. Use Core Labs Technology
8. Improved Phlebotomy and Transport Logistics
9. Develop a charging/ cost/workload model using standardised test codes
10. Regulated Point of Care Testing – support implementation of National POCT Guidelines

The handbook is expected to contain a number of sections aimed at users of the laboratory services and other sections intended for use within the laboratory dealing with topics such as selected aspects of quality assurance, reference ranges, and procedures. In particular, sets of guidelines for common laboratory investigation pathways in primary and secondary care are being planned. Aspects of demand management will be addressed. A collaborate approach is being adopted in their development, with involvement from all stakeholders.

Biography

Dr Gerard P Boran MB, MSc (Lond.), FRCPI, FRCPath, has been consultant chemical pathologist at AMNCH Tallaght Hospital since

1997. He trained in chemical pathology at St James's Hospital, the Royal Free Hospital London, Lewisham Hospital London and the United Medical and Dental School and was appointed consultant in chemical pathology at the Hull Royal Infirmary in 1993. He has previously served as Dean of the Faculty of Pathology of the RCPI and was appointed HSE Programme Director for the National Clinical Programme in Pathology. Areas of publication include pathology informatics, endocrine and metabolic biochemistry, and point of care testing.

Implementation of ISO Accreditation across the Disciplines

Ms Tina Coleman, Laboratory Manager, Hermitage Clinic, Dublin

Abstract

The legal requirement for Blood Transfusion laboratories to obtain ISO 15189 accreditation in order to comply with SI No's 547 of 2006 and 562 of 2006 in November 2008 was a massive stimulus to accept accreditation as a way of life.

The requirement for all laboratories to implement and maintain a quality management system in order to comply with standards has proven challenging for many laboratories. This is undoubtedly linked to the many other changes which laboratories now have to engage e.g. limited staffing, restricted resources (financial or otherwise), logistics such as IT, environmental conditions etc.

For some laboratories, the need to attain accreditation is beyond their control e.g. legal requirement for Blood Transfusion laboratories, accreditation requirement for tendering proposals for laboratory based activities such as cytology and virology etc. For other laboratories, accreditation provides enhanced public confidence through ensuring consistently high standards, ensured capability and reliability, better international standing among fellow associated laboratories etc.

This presentation will discuss topics such as extension of scope to laboratories which were not accredited previously, as well as laboratories that are faced with having to change from CPA accreditation to ISO 15189 accreditation. The presentation will also cover topics such as limitations and challenges in the exciting journey to accreditation to all laboratory areas.

Biography

Tina Coleman, MSc, BSc Appl. Sc., FAMLS. Tina graduated in 2001 specialising in Blood Transfusion and Biochemistry and received her MSc in Molecular Pathology in 2005. She spent 8.5 years as a Medical Scientist/Senior Medical Scientist in AMNCH. Eighteen months of this was as Regional Quality Officer between AMNCH, Naas General Hospital and Coombe Women and Infants' University Hospital, a role which involved implementation of Quality Management Systems and included pre-, full- and IT assessments. In 2009, Tina became Pathology Laboratory Quality Manager in St Luke's Hospital, Rathgar which was subsequently one of the first public hospital laboratories to achieve ISO 15189 accreditation in

all disciplines. Tina has also been involved in numerous projects relating to ISO 15189, CPA, JCI, HIQA and RPI compliance regulation and best practice procedures. Her current role is Laboratory Manager, Hermitage Medical Clinic.

Demand Management

Dr Michael Ryan, Consultant Chemical Pathologist, Northern Health and Social Servcies Trust, Antrim Area Hospital

Abstract

Demand management is the process of influencing the volume of use of a service. Of itself it states nothing about over or underuse but the term 'management' applies to a process of control and rationalisation of service use. In the laboratory, the growth of the degree of reliance by clinicians on laboratory test results has led to a need to bring additional discipline to test requesting behaviour. This usually means the aim of demand management programs is to reduce the use of inappropriate test requesting and optimise the outcome from each test result for patients. I will discuss our experience in 2 particular areas of demand management, the use of minimum retesting intervals (MRI) and a traffic-light system. The MRI program, in particular illustrates the concept of a rationalisation of test requesting behaviour through processes agreed with users and implemented using the LIMS system. Demand management is a key concept that applies in a wide area of laboratory and clinical activity that I will also touch on in the presentation.

Biography

Dr Michael Ryan, BSc (Hons) 1976, PhD (NUI) 1980, MB, BCh, BAO 1984, MRCP(I) 1988, FRCPI (1999), FRCP (Ed) 1998, MRCPath 1992, FRCPath (2002)

Dr Ryan is currently Consultant Chemical Pathologist, Northern Health and Social Services Trust. The Lab at Antrim Area Hospital processes a workload of approximately 4 million tests per year and Causeway Hospital Laboratory processes approximately 1.2 million tests per year. The Trust has a catchment area population of approximately 420,000 people served by 2 acute hospital sites. His post involves a significant teaching and research component with primary and secondary care medical and non-medical staff. As he holds honorary lectureships in QUB and UUC, he is involved in teaching and training at undergraduate and postgraduate levels and in clinical and biochemical research projects.

Dr Ryan was Chair, NHSCT Point of Care Committee (2005); Clinical Director of Laboratory Services, NHSCT (2007–2010); Chair, Regional Specialty Forum for Clinical Biochemistry (2009-2010) and Chair Regional Pathology Network (Core Team) (2009).

IEQAS Annual Review 2011/2012

Ms Patricia Howley, Operations Manager, IEQAS

Schemes

This year marks the 31st anniversary of IEQAS. In 2012, seventy three different institutions (54 hospitals) participate in schemes with IEQAS. We now have 641 different analysers and POCT meters in 76 different schemes.

Seven new schemes were introduced this year, following requests from participants. IEQAS has continued to expand into the area of EQA for POCT meters: POCT Lipids and POCT HbA_{1c}.

The current schemes are:

ABO & Rh grouping
Alcohol in serum
Angiotensin Converting Enzyme
Antibody screening/compatibility testing
Antiglobulin test, direct
Antistreptolysin titre
APTT, fibrinogen
Bilirubin Conjugated
Blood Cell Morphology
Blood culture
Blood Gas
Bordetella pertussis antibodies
Borrelia burgdorferi antibodies
C Reactive Protein
C. difficile, cult & toxin detection
Coeliac disease
CSF
D-dimer
Drug abuse screen & confirmation in urine
Drug abuse screen in urine
Drug monitoring (therap drugs)
ESR
ESR for Alifax users
Faecal Blood
Full Blood Count
Fungal culture
General Bacteriology
General Clinical Chemistry
Gram stain Blood culture –
Gram stain Blood culture +
Gram stain colonies
H. pylori antibodies
H. pylori antigen detection
Haemoxymeter
HbA_{1c}
Herpes simplex 1 & 2 antibodies
Hormones/Haematinics
Infectious mononucleosis
Influenza virus A&B antigen
Lipids and Lipoproteins
LMW-Heparin/antiFXa
Measles virus antibodies
Mumps virus
Mycobacterial culture & smear
Mycobacterial smear
Myocardial Markers
Myocardial Markers + CRP
Natriuretic peptides, B-type
Neisseria gonorrhoea culture
Parasites in Faeces
Parathyroid Hormone
POCT Lipids scheme
Post Analytical Automated HT
Pregnancy Test
Protein in CSF
PSA
PT (INR)
Rheumatoid factor & citrullic antibodies

Rotavirus & adenovirus, antibody detection
RS virus, antigen detection
Synovial fluid crystals
Throat strep culture
Thyroid gland antibodies
TSH Receptor antibody
Tumour Markers
Urine strip test B
Urine, quantitative chemistry
Urine Culture, quantit screen
Varicella zoster virus

New for 2012

Blood Culture Screening
DNA Analysis
Human T-Cell lymphotrophic virus anti
Legionella antigen detection
Parvovirus
S. pneumoniae antigen in urine
Urine Culture, quantitative, screening, ID & susceptibility

Achievements and Plans

ISO 9001:2008: ISO 9001:2008: In January 2012, IEQAS passed the 3-year reassessment with no citations. We are preparing for accreditation against ISO 17043, the new standard for EQA providers.

International standardisation for HbA_{1c}: The HSE Project Team, chaired by Ned Barrett, has wound down activities after the cessation of dual reporting in January 2012. A recent follow-up survey shows that over 80% of laboratories and POCT sites have ceased using DCCT (%).

Fresh material for Clinical Chemistry scheme: Pooled fresh residual serum, supplied by Peadar McGing in the Mater Misericordiae Hospital, provides valuable information and will be continued two/three times annually.

Fresh material for Full Blood Count scheme: Two donated whole blood samples were distributed by courier in March 2012. Additional data collected included automated differentials and stability. The donations, kindly organised by Ivan Shirley in SVUH, required considerable additional work and are only carried out infrequently. Ivan will discuss some of the data at the Haematology workshop.

New analytes (RDW, eGFR): Following surveys, RDW has been included routinely in the Full Blood Count scheme since November 2011; data will be presented at the Haematology workshop. Data for eGFR has been collected since June 2012 and will be discussed at the Clinical Chemistry workshop.

HbA_{1c} Report Comments Survey: The aim of the survey was to gather information on the reporting of HbA_{1c} by laboratories when a variant haemoglobin has been detected. Tom Smith will discuss the findings at the Clinical Chemistry workshop.

Harmonisation of Reference Intervals: IEQAS is facilitating a joint initiative by ACBI, AMLS, and RCPI (Faculty of Pathology) in collecting information on currently used reference intervals for 10 common analytes in Clinical Chemistry. Peadar McGing will present the data at the Clinical Chemistry workshop. We have also assisted the AMLS Haematology Advisory Body in collecting information regarding harmonisation of FBC units of measurement. Richard McCafferty will present the data at the Haematology workshop.

Anaerobes online!: A new practical online course from Labquality in the cultivation and identification of anaerobic bacteria is running from 1 October - 2 November 2012. There are five Irish labs registered; the fee includes materials and up to five participants/lab.

Participant Satisfaction Survey 2012: This annual survey is again included with the Conference evaluation form today (also available online). Results from 2011 are available on IEQAS website.

New IEQAS Website: Updated IEQAS website will be available shortly.

We wish to thank all members of the Steering Committee and other IEQAS Specialist Advisors for their continued support and commitment. We welcome new Scheme Administrator Anne Kane, formerly of OLCH Crumlin, who joined us in January and we wish Anne Cooke full enjoyment of her retirement. Ned Barrett retired from his position in MWRH Limerick earlier this year but remains Chairman of IEQAS. Ophelia Blake has retired as IEQAS Specialist Advisor since her move as Consultant Clinical Biochemist in MWRH Limerick. We welcome Dympna Murphy and Gerry Judge, AMNCH, who were co-opted to the Steering Committee; both have been IEQAS Specialist Advisors for some time.

We would like to thank the laboratories and staff in AMNCH, St James's, Mater Misericordiae and OLCH Crumlin for facilitating IEQAS with sample preparation, storage and distribution.

Despite the difficult economic climate, we have managed to continue to provide and expand a wide-ranging EQA service. I would like to thank my colleagues Hazel Graham and Anne Kane

for their continued professionalism, attention to detail, hard work and dedication.

Biography
Patricia Howley BSc, MSc (Quality & Safety in Healthcare Management), joined IEQAS in 1999 as Scheme Administrator. She became Operations Manager in 2007.

Clinical Chemistry Workshop

eGFR Preliminary EQA Data

Mr Rowland Reece, Principal Biochemist, St Vincent's University Hospital

Abstract
Presentation of data for eGFR collected by IEQAS in 2012 to date.

Biography
Rowland Reece is a Principal Biochemist in the Clinical Biochemistry department of St Vincent's University Hospital Dublin. He has been working there since 2002. Prior to that, he worked in UCH Galway and in Beaumont Hospital, Dublin. He is a specialist advisor to IEQAS.

HbA1c Report Comments Survey

Dr Tom Smith, Principal Biochemist, St Vincent's University Hospital

Abstract

Anecdotally we know that laboratories take a variety of approaches to reporting Haemoglobin A1c results when a variant haemoglobin is detected. In this context, a survey was undertaken to gather specific information on HbA1c reporting strategies by individual laboratories measuring HbA1c levels in this country. Based on the findings of the survey, together with input from our Haematologist and Diabetologist colleagues, we hope to put forward a consensus strategy for reporting HbA1c by Irish laboratories in instances where variant haemoglobins are detected.

Biography

Dr Thomas Smith, BA mod, MA, MSc, PhD. Tom is Principal Clinical Biochemist in the Endocrine Laboratory at St Vincent's University Hospital where he directs the provision of a specialist Endocrine laboratory service. Prior to his current appointment, Tom worked in the Mater Hospital, St James Hospital and also Trinity College. Tom has previously served on the ACB Republic of Ireland Region Committee as Treasurer and more recently Chairman. He is currently a member of both the IEQAS steering committee and the HbA1c review group. Special research interests include the detection, aetiology, and clinical consequences of macroprolactin.

Irish Reference Interval Harmonisation – Decision Time

Dr Peadar McGing, Principal Biochemist, Mater Misericordiae Hospital

Abstract

Throughout the world efforts have been on-going to harmonise Reference Intervals (RIs) for many of the common clinical chemistry analytes. Progress to date has been slow but in some regions, such as in our near-neighbour the UK and not-so-near New Zealand, some degree of harmonisation has been agreed.

In the Republic of Ireland, a joint initiative by ACBI, AMLS, and RCPI (Fac.Path), in conjunction with IEQAS, has been reviewing possible harmonisation of reference intervals here. Following a pilot study of RIs for sodium, potassium and urea (presented and discussed at the 2010 IEQAS conference) information was gathered on ten clinical chemistry analytes for which reference ranges had been agreed in the UK (Pathology Harmony). These were sodium, potassium, urea, chloride, bicarbonate, phosphate, magnesium, albumin, total protein, and osmolality.

We have now gathered data from 41 (of 44) laboratories in the Republic of Ireland. Data collected includes Reference Intervals (RIs) for adults and sources of the RIs, as well as information on method and instrument used in each lab.

Our Working Group reviewed RIs from the 41 labs and from that data, and taking account of other agreed / harmonised ranges and clinical factors, we determined harmonised RIs for consideration. In this workshop we will communicate the data on current Irish Reference Intervals together with international agreed / proposed intervals. Harmonised Reference Intervals for the Republic of Ireland will be proposed and discussed.

Biography

Peadar McGing is a Principal Biochemist in the Mater Hospital, and a Fellow of the Royal College of Pathologists. Peadar is a Specialist Advisor to IEQAS; he is also a former member of IEQAS sub-committee and co-founder of Cardiac Markers scheme. He is editor and co-author of recent ACBI guidelines on Fluid Analysis and on Tumour markers (both downloadable from www.acbi.ie). Peadar is a member of the Scientific Committee of the Association of Clinical Biochemists in Ireland.

HbA1c Reference Intervals in Pregnancy

Paula O'Shea, Consultant Clinical Biochemist, Galway University Hospital

Abstract

We established trimester-specific reference intervals for IFCC standardised HbA1c in 311 non-diabetic Caucasian pregnant women (n=246) and non-pregnant women (n=65). A selective screening strategy based on risk factors for gestational diabetes was employed. Pregnancy trimester was defined as trimester 1 (T1, n=40) up to 12 weeks + 6 days, trimester 2 (T2, n=106) 13 to 27 weeks + 6 days, trimester 3 (T3, n=100) >28 weeks to delivery.

The normal HbA1c reference interval for Caucasian non-pregnant women was 29-37 mmol/mol (DCCT: 4.8-5.5%), T1: 24-36 mmol/mol (DCCT: 4.3-5.4%), T2: 25-35 mmol/mol (DCCT: 4.4-5.4%), and T3: 28-39 mmol/mol (DCCT: 4.7-5.7%). HbA1c was significantly decreased in trimesters 1 ($P < 0.01$) and 2 ($P < 0.001$) compared to non-pregnant women.

Retrospective application of selective screening to Caucasian women of the Atlantic DIP cohort determined that 5,208 met the criteria. 945 of those women (18.1%) were diagnosed with Gestational Diabetes Mellitus (GDM) using the International Association of Diabetes and Pregnancy Study Groups (IADPSG) glucose concentration thresholds. HbA1c measurement within 2 weeks of the diagnostic Oral Glucose Tolerance Test (OGTT) was available in 622 of 945 (66%). Applying the decision threshold for T2: HbA1c >35 mmol/mol (DCCT >5.4%) identified 287 of 622 (46%) of those with GDM.

HbA1c measurement in T2 (13 to 27 weeks) should be included in the diagnostic armamentarium for GDM. This would reduce the need for diagnostic OGTT in a significant number of women.

Biography

Paula O'Shea FIBMS, MSc, FRCPath, EurClinChem is a Consultant Clinical Biochemist at Galway Roscommon University Hospital Group.

Ensuring that Clinical Chemistry Analytical Systems are Compliant with ISO 15189

Ms Gillian Daley, Chief Medical Scientist, Nenagh General Hospital

Abstract
The presentation will centre mainly around technical validation and what an inspector would like to see.

Biography
Gillian Daley FAMLS, MBA, MA Ed. Gillian has worked in both public and private, small and large laboratories over the years. She is Chief-in-Charge of Nenagh laboratory, is part of the HSE Mid West; and has undertaken Technical Assessments for UKAS over a number of years assessing to ISO standards 15189 and ISO 17025 standards.

Haematology/Transfusion Workshop

Blood Cell Morphology Scheme Review 2011-2012

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

Abstract

During the last year IEQAS circulated 6 morphology cases. Although the availability of slides is limited, we managed to send very informative slides to cover red cell, white cell and platelet abnormalities. The presentation will review some of the morphological abnormalities in each case with a brief review of the diagnosis, to include how you 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.

FBC: Fresh Blood Survey / RDW Results

Mr Ivan Shirley, Vice-Chairman IEQAS and Chief Medical Scientist, Haematology Laboratory, St Vincent's University Hospital

Abstract

During the year, two fresh blood samples were sent to all Laboratories for analysis. The tests included the Full blood count, automated differential, Reticulocyte count, RDW and Suspect flags. The aim of the study was to continue the investigation as to whether all analysers give comparable results on fresh blood. The findings of this survey will be discussed.

The RDW data from surveys during the last two years has been collected. It would appear that analysers with similar technologies need to be grouped together for statistical analysis. This should give more meaningful information to users. These groupings will be discussed

Biography

Ivan Shirley FAMLS is Chief Medical Scientist in the Haematology Department in St Vincent's University Hospital, Dublin 4. He has served on the IEQAS Haematology Review group for 14 years and the Steering Committee for 11 years. In 2007 he was appointed Vice Chairman of the Steering Committee.

Standardisation of Reporting Units in Haematology

Mr Richard McCafferty, *Chief Medical Scientist, St James's Hospital, Dublin*

Abstract

The UK Pathology Harmony Project, established in 2007, has been working with the relevant UK professional bodies under the auspices of the Department of Health towards the goal of standardisation of pathology testing, to include reporting units and reference intervals. This has been driven by a perceived danger that variation in test names, units and reference intervals can cause confusion among service users that poses a risk to patients. Furthermore it is considered desirable that clinicians can directly compare pathology results from various service providers.

In haematology, the reporting units used for the extended Full Blood Count (FBC) and differential have been the initial focus of the harmonisation group, who have formally agreed with the professional bodies to introduce standard reporting units by March 2013. The most significant changes in practice agreed are the adoption of SI units to report Haemoglobin and mean cell haemoglobin concentration (MCHC) (i.e., as g/L instead of as g/dL). In addition it is proposed that the differential white cell count, reticulocyte count and nucleated red blood cells (NRBCs) should be reported as absolute numbers (x 109/L) rather than as percentages, as or numbers per 100 white cells, respectively. Further initiatives aimed at standardisation of reporting units in haematology worldwide are planned, through the International Committee for Standardisation in Haematology (ICSH).

These moves towards standardisation in the UK and particularly internationally, will have implications for practice in the Republic of Ireland, not least given the international collaborations that already exist, for example in the context of clinical trials.

A collaboration between the relevant professional bodies here, which will include the Academy of Medical Laboratory Science, IEQAS, the Irish Haematology Society and the Royal College of Physicians of Ireland is planned to consider this issue further. As an initial step, the Academy and IEQAS have issued an online survey to establish current reporting practice in the State and seek the views of laboratory professionals in regard to the desirability of a move towards standardisation and any challenges this might

pose. The results of this survey will be presented and conference participants will have an opportunity to discuss the issue and express their views.

Biography
Richard McCafferty has been Chief Medical Scientist in Haematology at St James's Hospital since 1997 and has over 20 years experience at a senior level in haematology laboratory management.

Coincidentally his first post in laboratory haematology was at St James's before moving to the UK where he worked at University College Hospital, London. Richard gained Fellowship of the IBMS in haematology after studying at Paddington College and subsequently took up post as Senior Biomedical Scientist in haematology and blood transfusion at the National Hospital for Neurology and Neurosurgery, Queen Square. While there, he had a particular interest in screening for thrombophilia in young stroke patients. Subsequently he obtained an MSc in Medical Molecular Biology at the University of Westminster and completed a research project on the study of p53 tumour-suppressor gene expression in brain tumour cells by flow cytometry. He was later appointed Chief Biomedical Scientist in charge of the laboratory service, which gained CPA accreditation in 1996. Richard returned to Ireland to take up his current post at St James's Hospital and led the haematology laboratory to be among the first in Ireland to become CPA accredited in 2003.

He has been Chair of the Haematology Advisory Body of the Academy of Medical Laboratory Science since 2006 and has led the organisation of blood cell morphology workshops and seminars or short courses in haemostasis, diagnosis of haematological malignancy, haemoglobinopathies and flow cytometry, presented by Irish and international speakers.

How is the Changing Population Demographic Affecting Blood Transfusion in Ireland?

Mr John Crumlish, Chief Medical Scientist, IBTS, Dublin

Abstract

There are >300 distinct blood group antigens named by the ISBT. As a result of blood group antigen polymorphism, distinctive antigen types have evolved in populations around the world. Finding rare blood antigen types for transfusion can be difficult in countries with large migrant populations. Ireland has experienced a large population increase (>1 million since 1996) due to both natural increases and immigration. The Diagnostics Laboratory, Natural Blood Centre, Irish Blood Transfusion Service, has experienced a significant increase in red cell antibodies that are not normally seen in Irish or Western European populations. Cases of anti-Jk3, anti-Inb, anti-U, anti-Fy3 and RHCE associated antibodies are discussed along with difficulty in sourcing suitable donations. In addition rare RhD types are discussed along with some interesting case studies.

Biography

John Crumlish BSc, MSc, is Chief Medical Scientist in the Diagnostics Laboratory, National Blood Centre, which is the National Reference Centre for Anti-D and anti-c Quantitation and acts as a reference laboratory for red cell immunohaematology.

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Microbiology Workshop

Susceptibility Testing

Dr Michael Mulhern, Consultant Microbiologist, Letterkenny General Hospital

Abstract

Antibiograms are cumulative reports that provide microbiologists and other healthcare professionals with a summary of resistance rates in their area. The rates can be individualised for various bug / drug combinations, hospital locations, and when compared over time can be used to monitor changes in resistance. Antibiograms are recommended by several national and international bodies as a useful tool to guide appropriate antimicrobial prescribing. This presentation will outline the key components of a good antibiogram, will look at examples of their local, national and international uses and examine whether they can and should be used to guide prescribing

Biography

Michael Mulhern graduated from medical school at Queen's University Belfast in 1997 having obtained an honours degree in Anatomy during the course of his medical studies. The majority of his postgraduate training in microbiology was undertaken jointly between the Royal Victoria Hospital, Belfast and the Belfast City Hospital. He has been working as a Consultant Clinical Microbiologist at Letterkenny General Hospital since 2006. Letterkenny General Hospital is a 360 bedded facility, its' Microbiology Laboratory achieved INAB accreditation last year and has maintained accredited status following subsequent inspections. Michael's work interests include: improvement of antimicrobial prescribing; resistance surveillance; infection prevention and control

Susceptibility Testing – Laboratory Perspective

Ms Lisa Rose, Microbiology Laboratory, St James's Hospital, Dublin

Abstract

The emergence and spread of antibiotic resistance is one of the most pressing global health concerns according to the WHO and CDC. Carbapenem non-susceptible Enterobacteriaceae (CNSE) with determinants such as NMD-1, KPC and OXA-48 are increasingly prevalent in many countries. The microbiology laboratory plays an essential role in the early detection of carbapenemase producers which can facilitate patient management and assist infection control.

The current national and international guidelines, including CLSI, EUCAST, HPA and SARI recommendations, for the phenotypic detection of CNSE are discussed. Clinical examples of the most commonly encountered CNSE are examined. Laboratory testing algorithms including phenotypic detection methods such as modified hodge, and synergy tests such as cloxacillin, boronic acid, dipicolinic acid, EDTA and molecular testing are outlined.

Future directions for antimicrobial susceptibility testing including rapid disc diffusion and molecular techniques such as real-time PCR and next-generation sequencing and the potential to enhance turn around times of AST reporting are examined. The limitations of both phenotypic antimicrobial susceptibility testing and genotypic antimicrobial resistance determination are discussed.

Biography

Lisa Rose is a Senior Medical Scientist, with a special interest in antimicrobial susceptibility testing, at St James's Hospital, Dublin. A Microbiology graduate of Trinity College Dublin, she also received her MSc in Clinical Microbiology by Research from TCD entitled "The detection and molecular characterisation of clinical isolates of Herpes Simplex Virus types 1 and 2". She is a Fellow of the Academy of Medical Laboratory Sciences (AMLS) and is a member of the AMLS Microbiology Advisory Body. She is currently involved in the development and implementation of phenotypic assays and a multiplex real-time PCR assay for the detection of carbapenemases in Enterobacteriaceae. Her current research interests include: multilocus sequence typing of *Klebsiella pneumonia* isolates in Ireland, sequence analysis of the promoter region of *Klebsiella oxytoca*, and molecular characterisation of tigecycline resistance in Enterobacteriaceae.

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