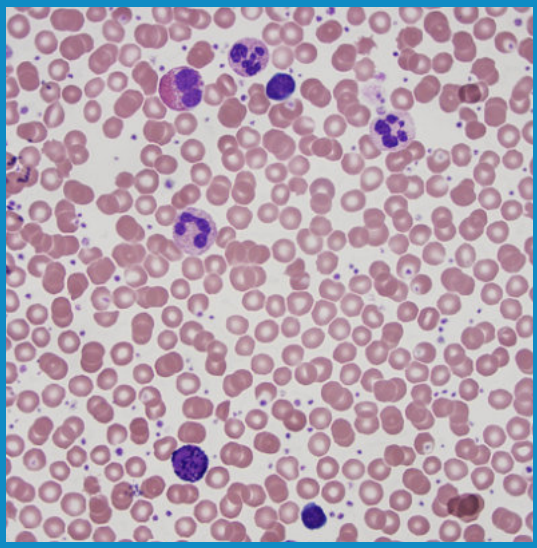
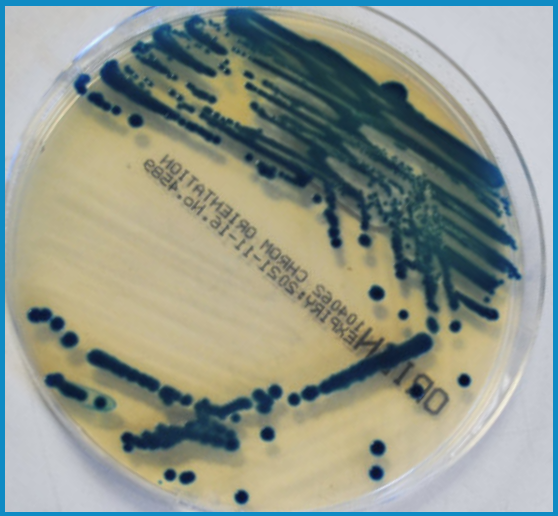
IEQAS

Irish External Quality Assessment Scheme

1981 to 2021

IEQAS Celebrates 40 Years





1981 to 2021
IEQAS Celebrates 40 Years

Hazel Graham & Peadar McGing

Acknowledgements

Archive documents, HbA1c diagrams: Ned Barrett
Conference photographs: Peadar McGing

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Preface

Since its inaugural survey in 1981, IEQAS has facilitated Irish medical laboratories in their pursuit of excellence. Educational in its ethos, it enables laboratories to demonstrate their fulfilment of the demanding standards required by external audit.

Key to the success of IEQAS is the personal touch provided by the IEQAS staff and many dedicated IEQAS volunteers. This booklet charts the journey of IEQAS from humble beginnings through many obstacles and difficulties (not to mention a global pandemic and a cyberattack) to the present day.

IEQAS has always been willing to become involved in special surveys and studies, many of which are detailed in the appendices that follow. Sometimes it is good to be a smaller local institution — it is easier to design studies using fresh material rather than manufactured material allowing more true interlaboratory comparisons. IEQAS is always willing to engage with its participants and we are keen to hear your ideas and comments. Fresh blood is always welcome in this organisation…in more ways than one!

As Chairperson of the IEQAS Steering Committee, I would particularly like to congratulate and thank Hazel Graham and Peadar McGing for undertaking the mammoth task of documenting the history of the IEQAS organisation and thanks also to the many volunteers who have lent their time, expertise and enthusiasm to the organisation over the past 40 years.

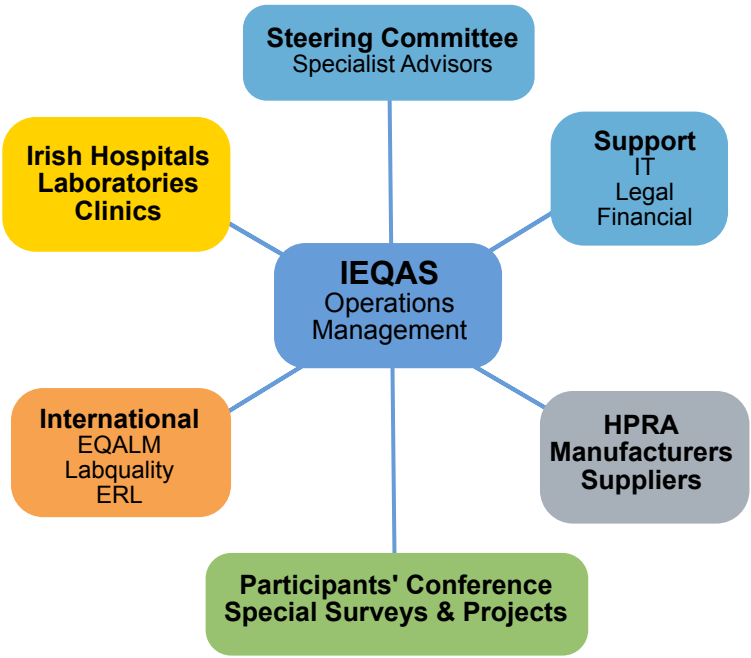
Therese Driscoll

IEQAS Chair

October 2021

Introduction

The Irish External Quality Assessment Scheme (IEQAS), established in 1981, is one of the longest-standing quality initiatives in the Irish health service.



IEQAS is a not-for-profit national independent professional association for the objective assessment of analytical performance in laboratory medicine and primary care in Ireland. IEQAS has been overseen by a Steering Committee which includes nominees from the major professional bodies involved in laboratory medicine in Ireland.

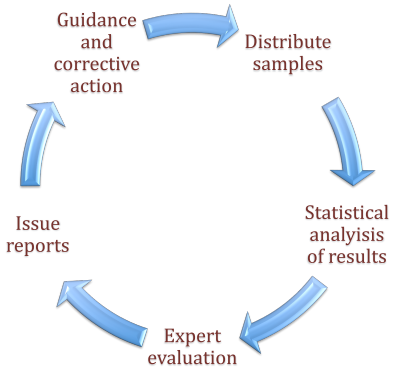
They, along with a wider group of Specialist Advisors, give their time voluntarily and are essential to the continued success of the scheme.

The associated professional bodies are:

- Academy of Clinical Science and Laboratory Medicine (ACSLM, previously AMLS)
- Association of Clinical Biochemists in Ireland (ACBI)
- Faculty of Pathology of the Royal College of Physicians of Ireland.

Quality assurance of clinical tests is crucial for patient safety. External quality assessment (EQA) is a procedure for the systematic assessment of the quality of analysis where unknown samples are tested at regular intervals. The aim of EQA is to ensure that test results are reliable and comparable no matter where they are performed.

The primary purpose of IEQAS is to offer EQA schemes to laboratory and extra-laboratory clinical analysis sites, along with professional advice and guidance, thus assisting participants with continuous quality improvement of their analytical and testing procedures.



The central concept behind EQA is the distribution of a stable and consistent sample for participants to analyse. The participant does not know beforehand what results to expect from the analysis. Results are returned to the EQA scheme organisers who then rate the result against the target value. The target value may be that determined by a Reference Laboratory or may be a consensus value (derived from all results).

Of itself, passive participation in EQA is not enough. Reports must be understood and interpreted correctly to prompt corrective actions and guide quality improvement.

IEQAS, along with its Finnish partner Labquality for over nearly three decades, now offers over 150 EQA schemes, to include all the disciplines in Irish Laboratory Medicine, and for settings outside the hospital system (e.g. Point-of-Care-Testing for Pharmacies and Clinics).

IEQAS also has long-established links with other European EQA providers through its membership of EQALM, the European Organisation for EQA Providers in Laboratory Medicine. IEQAS also maintains positive communication channels with the Health Products Regulatory Authority (HPRA) and many manufacturers/suppliers when quality issues arise.

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, e.g. the implementation of international standardisation of HbA1c in Ireland.

This publication is to celebrate the success of IEQAS through many difficult and challenging times. This success is largely due to the voluntary commitment of the Steering Committee and Specialist Advisors and to the dedicated full-time staff who carry out the day-to-day operations with (we hope!) the appearance of a smooth sea, despite occasional frantic paddling beneath the surface.

Throughout the 40 years, a network of hospitals has kindly provided storage facilities and bench space to allow us to package the samples. In addition, hospital staff routinely facilitate us in providing donor and/or pooled residual sample for use in our EQA schemes. As well as sourcing samples they also ensure that all donated pooled samples are suitably anonymised and compliant with all applicable regulations. We also thank others nationally who have provided similar support on an occasional basis, e.g. Blood Cell Morphology samples and Tumour Marker Project samples.

Hospitals with staff routinely providing IEQAS with samples (donor/pooled residual) and/or storage over the years include:

- Children's Health Ireland (CHI) at Crumlin*
- Mater Misericordiae University Hospital*
- Midland Regional Hospital Tullamore*
- St James's Hospital*
- St Vincent's University Hospital
- Tallaght University Hospital*
- University Hospital Limerick

*Current providers

IEQAS Annual Participants Conference

"Of itself, passive participation in External Quality Assessment is not enough to drive quality improvement. IEQAS reports must be understood and interpreted correctly so as to prompt corrective actions and guide quality improvement. The Annual Participants' Conference provides a valuable opportunity for all of us to learn from the experiences of our colleagues and the wisdom of our invited guest speakers."

Ned Barrett, then Chair of IEQAS,
introducing the 2011 Conference

L to R: Guest speakers Eve O'Toole and Dermot Gallagher, with then IEQAS Chair Dympna Murphy, 2017

2019 IEQAS Conference
Prof Luke O'Neill, before he became a household name during the Covid pandemic!

EQAS began holding Participants' Conferences during the 1980s, becoming an annual event from mid-90s. Initially, the Conference was focused on our one scheme for Clinical Chemistry but by 1998 we had added a parallel workshop for Haematology. The now annual review of Blood Cell Morphology samples by Kanthi Perera remains extremely popular. We soon added workshops for Microbiology and Transfusion, again proving extremely popular thanks largely to Suzi Fitzgerald, Gerry Judge and, more recently, Patsy Kelleher.

This multi-disciplinary conference gives participants an excellent opportunity to make contacts and share experiences. We thank our professional and industry colleagues for their ongoing support. The event is consistently over-subscribed and maintains excellent feedback scores from participants, thanks to our excellent speakers from home and abroad who kindly give their time to share their experiences.

2008 IEQAS Conference
Ned Barrett and Minister for Health
Mary Harney share a joke

In 2020 due to the Covid pandemic, IEQAS linked up instead with the P.A.L.M. Study Day Webinar - Covid 19. The 28th conference returned again in 2021, albeit in webinar format again due to Covid pandemic uncertainties.

2008 IEQAS Conference

2013 IEQAS Conference

2010 IEQAS Conference

2013 IEQAS Conference

Fadó, fadó – Early pathology quality assurance

Quality assurance in medicine was not a priority through most of history. The earliest Quality Assurance in Pathology was probably the autopsy / post mortem. This procedure did encounter lots of resistance. This resistance was mainly on religious grounds but there were strong objections too of 'You're showing me up' from doctors who didn't like their diagnosis being questioned or even more so, shown to be wrong.

Later in nineteenth century post-mortems became more recognised as a teaching aid and as being very informative for inquests. One could say that inquests can be regarded as the earliest External Quality Assurance.

What of the laboratory? Specialist hospital laboratories began to appear in the second half of the nineteenth century, particularly the end of the century. A lot of chemistry laboratory methods were developed in the late 19th and early 20th centuries. However, many methods were relatively crude. Clear associations with disease took time to develop and the demand for such tests was small. The importance of laboratory biochemistry testing in specific conditions was well recognised, but sample requirement was large and tests quite time consuming so 'routine' testing was a long way in the future.

A key part of the work of the laboratory in the early 1900s was bacteriology. Methods to grow and identify bacteria were presented at scientific meetings, often illustrated by 'lantern slides', and then published in the literature. Though there were recognised quality issues it was considered that if you could grow a bacterium, and match its description to published accounts, you had identified it. Quality checking was more about the difficulties of growing organisms and also differentiating primary from secondary infections. An example of how important this was can be found in many of the recent books about the 1918 flu.

As the early part of twentieth century unfolded the emphasis in clinical chemistry laboratories was on being able to measure a substance, and to develop less labour-intensive methods. Inaccuracies were recognised but uniformity not a practical goal.

By the time the Second World War ended better more robust methods (by the standards of the day) had evolved in clinical chemistry and haematology. More samples were being tested and results used more in clinical practice.

But not everybody was happy with the quality of results.

The concept of EQA emerges: 1940s – 1980s

> *"We had been disturbed and dissatisfied over incidents in which a physician would take a specimen of blood, divide it into two test tubes, send it to two clinical laboratories for analysis, and obtain two divergent results."*

This is how F. William Sunderman described what prompted him and some colleagues to investigate the accuracy and reproducibility of laboratory tests and launch the first informal EQA exercise. The report of that survey dates back to 1946 and a snippet from the paper is reproduced here (Belk and Sunderman, Am J Clin Pathol 1947; 17: 853-861).

A SURVEY OF THE ACCURACY OF CHEMICAL ANALYSES IN CLINICAL LABORATORIES*

WILLIAM P. BELK, M.D.,† AND F. WILLIAM SUNDERMAN, M.D.†

In 1946 the Committee on Laboratories of the Medical Society of the State of Pennsylvania proposed a survey‡ to check the accuracy of some of the more common chemical measurements made in hospital laboratories throughout the state. It undertook to do this by distributing solutions which had been carefully

TABLE 1

NUMBER OF DETERMINATIONS CLASSED AS SATISFACTORY, UNSATISFACTORY AND GROSS ERROR

September Analyses

SUBSTANCE TESTED	SATISFACTORY LIMITS OF RESULTS PER 100 ML.	NUMBER SATISFACTORY	NUMBER UNSATISFACTORY**	GROSS ERROR**
Hemoglobin	9.8 ± 0.3 gm.	17	34	11
Hemoglobin	15.1 ± 0.5 gm.	21	31	3
Glucose	60 ± 10 mg.	33	19	5
Glucose	375 ± 30 mg.	27	24	4
Sodium chloride	456 ± 50 mg.	30	14	2
Total protein	6.6 ± 0.4 gm.	18	29	7
Albumin	4.6 ± 0.3 gm.	9	35	7

Concern for the quality of patient care was an important factor leading to the establishment of the NHS in the UK in July 1948. In a different field of endeavour in the years following the Second World War, Japan introduced a number of changes in business practices in a huge effort to rebuild the Japanese economy. Key components were the initiation of a quality movement (1946) and a Quality Control Research Group (1949), with the appointment of a US management consultant, Deming, as advisor.

Through the 1950s and '60s committed scientists in a number of countries distributed aliquots of the same blood samples to different labs within a local

region. The proper organisation of EQA into more formal schemes really started to happen in the late 1960s and into the '70s. By 1965, the NHS Pathology Laboratories were the first to consider setting in place measures to achieve consistency of results across hospitals and regions. They introduced the first National Inter-Laboratory Trial, which demonstrated a wide variability between laboratories, attributed to differences in standards, reagents and instrumentation (Ann Clin Biochem 1969; 6: 126-133). July 1969 saw the launch of the UK NEQAS for Clinical Biochemistry, led by Prof Tom Whitehead and funded by the Department of Health. Around the same time (1968) a scheme was set up in Cardiff which by 1971 involved most labs in Wales and later became WEQAS. Initial schemes focussed on clinical chemistry, but by 1981, there were multiple UKNEQAS schemes covering virtually all laboratory medicine disciplines. The establishment of NEQAS Advisory Panels representative of the professional bodies facilitated dealing with poor performers "effectively, with discretion and without legislation" (J Clin Pathol 1981; 34: 947-957). The published literature on quality assurance in healthcare is almost all from the years after 1980. The consumerist model of healthcare began to emerge in the 1990s.

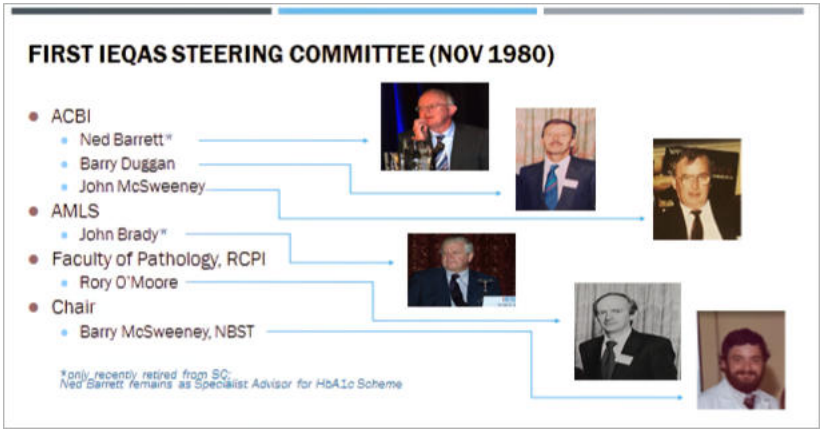
In the 1960s, Finnish Chemists Sakari Närvänen and Matti Nuutinen noted that the range between the lowest and the highest test results could be staggering. Jokingly, they stated that "a patient's anemia could be cured during transport from one hospital to another."

https://www.labquality.fi/en/eqas/about-us/all-began-with-strawberry/

1980s: IEQAS is born

By 1980, the importance of EQA was already appreciated by many scientists in Ireland. Of the 54 publicly funded hospital laboratories, 42 were members of UK or commercial EQA schemes. In November 1980, the National Board for Science and Technology (NBST), a government advisory body, formed an EQA Working Party representative of the three professional bodies (AMLS, ACBI, RCPI).

This Working Party was asked to plan and oversee a national EQA scheme, commencing with 16 biochemical analytes in May 1981. Their first meeting, on 15th December 1980, was Chaired by Barry McSweeney (NBST) and attended by Rory O'Moore, John Brady, Barry Duggan, John McSweeney and Ned Barrett (see minutes in Appendices).

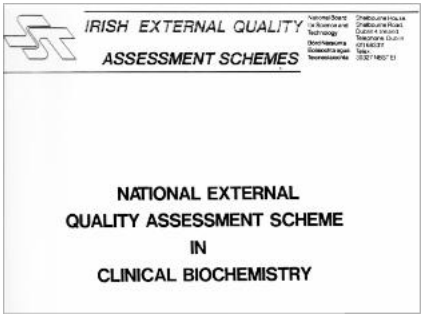


The expertise of Barry McSweeney was crucial to the launch of a national EQA scheme for Ireland, given his previous UK NEQAS experience with Prof Whitehead and David Bullock in Birmingham and his role in setting up the Dade European Commercial Quality Assessment Programme. The Irish scheme would be funded (initially) and staffed by the NBST, with their computer used to process the results.

The initial principles still remain at the core of IEQAS: participation would be voluntary, confidential, and educational rather than regulatory in nature.

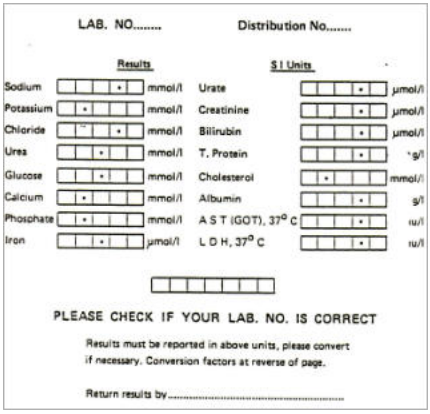
The first distribution in May 1981 had 16 analytes (compared to 31 now). There was a high level of participation (53 of 54 labs) in the scheme which was free of charge.

The first IEQAS reports were issued in June 1981, with some examples below (further examples are in the Appendices).



IRISH EXTERNAL QUALITY ASSESSMENT SCHEMES

NATIONAL EXTERNAL
QUALITY ASSESSMENT SCHEME
IN
CLINICAL BIOCHEMISTRY



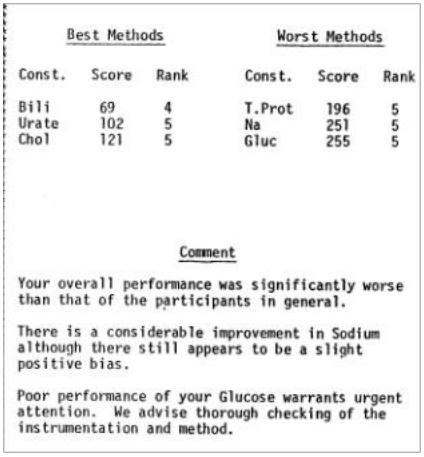
LAB. NO..... Distribution No.....

	Results		SI Units
Sodium	mmol/l	Urate	µmol/l
Potassium	mmol/l	Creatinine	µmol/l
Chloride	mmol/l	Bilirubin	µmol/l
Urea	mmol/l	T. Protein	g/l
Glucose	mmol/l	Cholesterol	mmol/l
Calcium	mmol/l	Albumin	g/l
Phosphate	mmol/l	A S T (GOT), 37° C	iu/l
Iron	µmol/l	L D H, 37° C	iu/l

PLEASE CHECK IF YOUR LAB. NO. IS CORRECT

Results must be reported in above units, please convert if necessary. Conversion factors at reverse of page.

Return results by.....



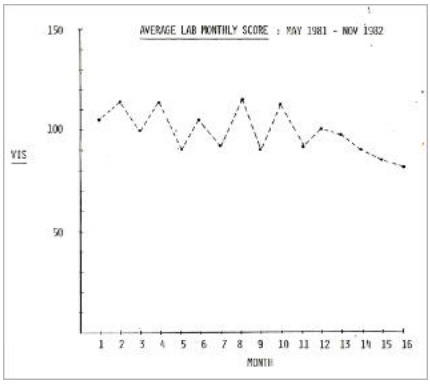
Best Methods			Worst Methods		
Const.	Score	Rank	Const.	Score	Rank
Bili	69	4	T.Prot	196	5
Urate	102	5	Na	251	5
Chol	121	5	Gluc	255	5

Comment

Your overall performance was significantly worse than that of the participants in general.

There is a considerable improvement in Sodium although there still appears to be a slight positive bias.

Poor performance of your Glucose warrants urgent attention. We advise thorough checking of the instrumentation and method.



As was to become a pattern for IEQAS over the decades, the NBST were no longer able to fund the scheme beyond 1985, so the Scheme operated in a very limited way without funds during 1986. The Department of Health acknowledged the importance of this national scheme and agreed to finance IEQAS from 1987 to 1989, when the scheme was temporarily suspended. It resumed with just three clinical chemistry distributions in 1989/90 with an interim grant from the Department of Health, primarily to allow the development of new software for analysis and reporting of results. During this period, IEQAS was based in BioResearch Ireland (a division of EOLAS). The leadership of then IEQAS Chair, Rory O'Moore proved vital through this period.

1981 - Founding members

Barrett, Ned
Brady, John
Duggan, Barry
McSweeney, Barry (Chair)*
McSweeney, John
O'Moore, Rory

Steering Committee 1980s (all or part of)

Barrett, Ned
Brady, John
Kenny, Des
McManus, John*
McSweeney, John
O'Connor, Gerard
O'Moore, Rory (Chair)
Tormey, Bill

* NBST/BioResearch Ireland

IEQAS in the 1990s

By April 1990, funding from the Department of Health ceased, despite acknowledging the value of IEQAS:

> *"There is little doubt but that the existence of the scheme has helped to improve the quality of results and methods in the hospital service and has made an important contribution to the overall quality of care available to patients.*
>
> *However, the Department feels that it is no longer appropriate that it should continue to fund the scheme directly and has suggested that, as with other schemes, the participating hospital laboratories should now meet the costs of maintaining the scheme."*

IEQAS continued with those laboratories willing to pay for participation, with office and clerical assistance provided by BioResearch Ireland. In 1992, Hazel Graham was appointed Operations Manager on a part-time basis, based in BioResearch Ireland.

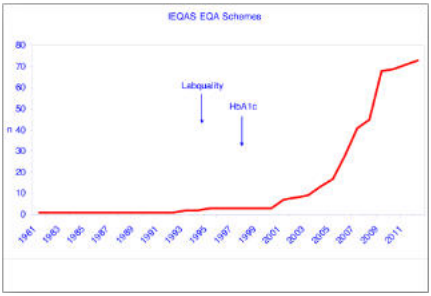
Special surveys were introduced, including:

- Interferences in routine methods for creatinine measurement (Kenny D. Scand J Clin Lab Invest 1993; 53:sup212, 43-47). A follow-up survey was carried out in 1999.
- Interference due to lipaemia in routine photometric analysis – survey of an underrated problem (Brady J, O'Leary N. Ann Clin Biochem 1994; 31: 281-288)
- Interference due to haemolysis in routine photometric analysis – a survey (Brady J, O'Leary N. Ann Clin Biochem 1998; 35: 128-134)
- Accuracy of creatinine measurement in aqueous material (Mr John Brady, Our Lady's Hospital for Sick Children).
- Blood Cell Morphology (Gerard O'Connor, AMNCH, Tallaght) – this resulted in the introduction of a routine scheme for Blood Cell Morphology in 2000.

Unfortunately, this BioResearch Ireland assistance was withdrawn in 1994, following an organisational restructuring. IEQAS continued without State support, albeit with a welcome one-year sponsorship from Abbott Diagnostics. Following the withdrawal of BioResearch support Hazel operated the scheme working from a home office. In 1999 she was joined by Patricia Howley to assist

with the introduction of EQA schemes for Haematology.

IEQAS developed links with other European EQA organisers, initially at an EU-funded meeting in Brussels, which led to our now 26-year partnership with Labquality (Finland).



By 1998, IEQAS had launched its own scheme for HbA1c. With a growing interest in Haematology schemes, led by Gerard O'Connor and Ivan Shirley (soon joined by Dympna Murphy and Kanthi Perera), IEQAS also launched its own schemes for Full Blood Count and Blood Cell Morphology.

To quote Ned Barrett:

"Rory O'Moore's wise and prudent chairmanship of the Steering Committee from 1987 to 1999, especially during the financially difficult 1990s, was vital to the success of IEQAS".

Labquality (Finland) – our partner EQA Provider

IEQAS has partnered with Labquality since 1995, when we first offered their Myocardial Markers scheme to Irish laboratories.

Labquality was founded in 1971 by the Finnish Society of Clinical Chemistry, the Finnish Red Cross and the Professional Associations. It now offers more than 170 EQA schemes to over 50 countries in Europe, Asia, America and North Africa. Labquality has over 40 national partners, of which IEQAS is one.

This partnership has greatly assisted IEQAS to develop over the years. We have many participants in their schemes for all disciplines and is especially useful for those analyses carried out by few Irish laboratories. Participants benefit from an additional choice of schemes beyond the still popular UK-based schemes. IEQAS deal with ordering, invoicing, queries and complaints regarding Labquality schemes, allowing us to monitor trends and coordinate suggestions and improvements.

Steering Committee 1990s (all or part of)

Barrett, Ned
Brady, John
Graham, Hazel*
Kenny, Des (Chair)
McManus, John*
O'Connor, Gerard
O'Leary, Niall
O'Moore, Rory (Chair)

*IEQAS Operations team

IEQAS in the 21st century

The new century augured well for IEQAS. At last, very welcome funding from the Department of Health enabled the development in 2000 of a basic website www.ieqas.ie, with considerable input from then sub-committee member Alan Carr. It also enabled us to relocate in 2001 to our first formal independent (albeit tiny) office in Stillorgan.

Funding again in 2004/5 from the Health Board Executive allowed the development of an interactive website (where participants enter results instead of relying on post/fax/phone) and a re-write of our custom software for analysis and reporting of EQA data. We employed Alan Carr as a part-time temporary Project Manager. In late 2005, we finally moved to a more professional serviced office in the Nutgrove Enterprise Centre, in Rathfarnham, Dublin, where we remain today. Frances Fitzharris joined the Operations Management team to enter/double-enter lab results, until most participants migrated to the new website facility to submit their own results online.

Our conference in 2006, marking the 25th anniversary of IEQAS, was opened by Prof Brendan Drumm, then CEO of the HSE.

EQALM - European Organisation for EQA Providers in Laboratory Medicine

IEQAS has been a member of EQALM since 1999. EQALM is an umbrella organisation for European EQA organizers in laboratory medicine. It provides a forum for co-operation and exchange of knowledge on quality-related matters, especially with regard to EQA programs in Europe.

In 2017, IEQAS hosted the Annual EQALM Symposium in the Crowne Plaza Hotel, Santry, Dublin. This 2-day international event was an excellent opportunity for discussion about all-things-EQA, with 82 delegates from 27 different countries (mostly European, but also Australia, Brazil, Canada, India, Turkey, USA).

Through IEQAS, Irish laboratories participate in occasional EQALM surveys.

L to R: Alan Carr, John Brady, Hazel Graham, Ned Barrett, Brendan Drumm, Des Kenny, Patricia Howley.

L to R: Ned Barrett, Minister Mary Harney, Ivan Shirley.

The sudden death of IEQAS Chairman Des Kenny only 2 months later shocked many people and IEQAS felt his loss deeply. Des was a committed member of the IEQAS Steering Committee since 1987 and Chair since 2000. He was an incredible fount of knowledge and was actively involved in many EU scientific projects over the years. He was influential in sourcing state funding in the early 2000s. Fortunately, Ned Barrett, who had been on the Steering Committee since the very beginning in 1981, was on hand to take over the position of Chair from 2007 until 2013.

Further HSE funding was made available in 2006/7 which allowed IEQAS to continue to expand the schemes offered to participants and to develop our Quality Manual, which led to our ISO:9001:2008 Quality Management System certification in 2009. The 2008 conference was opened by the then Minister for Health, Mary Harney.

However, funding ceased abruptly with the deterioration of the state's financial situation towards the end of that decade and unfortunately no state funding has been available since, leaving IEQAS totally reliant on participant fees.

Steering Committee 2000s (all or part of)

Barrett, Ned (Chair)
Boran, Gerard
Brady, John
Carr, Alan
Graham, Hazel*
Howley, Patricia*
Kenny, Des (Chair)
Nolan, Beatrice
O'Connor, Gerard
O'Leary, John
O'Marcaigh, Aengus
O'Sullivan, Niamh
Shirley, Ivan (Vice-Chair)
Smith, Tom
Smyth, Edmond

*IEQAS Operations team

IEQAS from 2010

Despite this difficult financial period, IEQAS kept the show on the road thanks to the dedication of the Operations Management team with the able assistance of the Steering Committee and Professional Advisors. Labquality's Microbiology and Transfusion schemes attracted considerable interest, resulting in routine workshops for both disciplines at our Annual Conference since 2013.

Maria Phelan

Anne Cooke, who had joined us as Scheme Administrator in 2007, was replaced when she retired in 2012 by Anne Kane. Maria Phelan joined the team as Scheme Administrator in 2018, with Anne Kane taking a new role as Scheme Manager.
When Hazel Graham retired as Quality Manager in 2019, Patricia Howley added quality management to her responsibilities (Operations and Quality Manager).

Patricia Howley

All have extensive clinical laboratory experience, and importantly, work well together, willingly providing cover for each other when needed.

We upgraded our customised data analysis/reporting software onto a more modern platform in 2019/20.

2019 saw a number of personnel changes, with the retirement of two influential Steering Committee members. John Brady was a founder member of IEQAS and served as IEQAS Chair from 2013 to 2015. His knowledge of Clinical Chemistry methodology was a great resource for IEQAS. Similarly, Ivan Shirley, who first joined IEQAS as a Specialist

Anne Kane

Advisor for Haematology in 1999 was a great support in getting the Full Blood Count and Blood Cell Morphology schemes up and running. Ivan served as IEQAS Vice-Chair from 2007 to 2013.

The Steering Committee lost another pivotal founding member Ned Barrett in 2020 but, happily for IEQAS, Ned remains as Specialist Advisor for our HbA1c Scheme. Ned mentioned recently that over the years, the shared sense of purpose, cohesiveness and comradeship of the Steering Committee and IEQAS staff is an abiding memory for him.

IEQAS continues to participate in national and international initiatives that have the objective of improving quality of analysis in laboratory medicine; all are listed in the Appendices. One important international initiative is the Implementation of International Standardisation of HbA1c in Ireland, completed in 2012. Other national initiatives in which IEQAS assisted include:

- National Near-Patient Testing (NPT) Consultative Group: Patricia Howley and Anne Kane represent IEQAS. This group produced the current Guidelines for safe and effective near patient testing (NPT), 2021 Update.
- International Council for Standardization in Haematology (ICSH): Richard McCafferty, St James's Hospital, represents IEQAS & ACSLM
- National Harmonisation Programme: Peadar McGing represents the ACBI and IEQAS
- National Cancer Control Programme Harmonisation Pilot Project for Tumour Markers: 2013 - 2019
- EQA Scheme for Histopathologists, on behalf of the Histopathology Working Group of the Faculty of Pathology (sponsored and supported by the RCPI Faculty of Pathology): 2012 – 2018.

The Covid pandemic since early 2020 caused specific challenges for IEQAS. Postal services deteriorated which led to delayed samples especially those from abroad, so IEQAS had to develop novel approaches to ensure that EQA samples arrived in adequate time from Labquality in Finland. There was a huge increase in enquiries to IEQAS staff, who suddenly found themselves working exclusively from home. Labquality were very pro-active in launching SARS-CoV-2 EQA schemes early in the pandemic, which proved to be very popular with IEQAS participants.

While IEQAS were thankfully not a direct target of the cyber-attack on the HSE in early 2021, it did increase our workload as normal electronic communication with participants was largely impossible.

We look forward to "getting back to normal", allowing us build on the experience of the last 40 years to take IEQAS into the next 40 years and more. IEQAS operates on behalf of the associated professional bodies and our participants so, as always, we welcome all suggestions and even better, offers of new blood to join IEQAS.

Steering Committee 2010 to date (all or part of)

Barrett, Ned (Chair)
Boran, Gerard
Brady, Jennifer
Brady, John (Chair)
Carr, Alan
Driscoll, Therese (Chair)
FitzGerald, Susan
Graham, Hazel*
Griffin, Damian
Howley, Patricia*
Judge, Gerry
Kane, Anne*
McGing, Peadar (Chair)
Murphy, Dympna (Chair)
Shirley, Ivan (Vice-Chair)
Ward, Cara

*IEQAS Operations team

In addition to the Steering Committee, IEQAS has many Specialist Advisors who volunteer to assist IEQAS, often as valuable long-standing members of IEQAS Scheme Review Groups.

Previous IEQAS Specialist Advisors (Current Advisors are listed on Page 4)

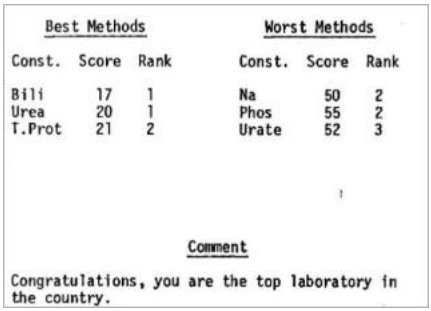
Blake, Ophelia
Byrne, Eileen
Byrne, Mary
Crowe, Basil
Kinsella, Nora
Mulligan, Clare
Nolan, John
O'Gorman, Paudy
O'Shea, Paula
Quirke, William
Reece, Roland
Ryan, Mary
Spencer, Roland

Some personal memories of IEQAS

Hazel Graham

(IEQAS Participant 1980s; IEQAS Operations Management team 1992 – 2019, current Steering Committee member)

I first encountered IEQAS as a participant in its inaugural distribution in 1981. I was working as a Biochemist in Warner Lambert General Diagnostics in Cabinteely, where we manufactured calibrators, controls and test kits for Biochemistry and Coagulation. My previous boss, Barry McSweeney, had returned from his travels abroad, having worked with UK NEQAS (Prof Whitehead and David Bullock in Birmingham) and later set up the Dade European Commercial QAP (Quality Assessment Programme). Barry was now involved in setting up an EQA Scheme in Ireland. We were well versed in EQA by then, participating enthusiastically in a number of them. This enthusiasm was not unrelated to the fact that EQA Schemes at that time often ranked each laboratory – we were frequently treated to free drinks at the local pub for coming first. I like to think that the lab in this IEQAS report was my lab! Admittedly, there was also a handsome budget for top-of-the-range equipment and staff training.



Best Methods			Worst Methods		
Const.	Score	Rank	Const.	Score	Rank
Bili	17	1	Na	50	2
Urea	20	1	Phos	55	2
T.Prot	21	2	Urate	52	3

Comment

Congratulations, you are the top laboratory in the country.

My next significant encounter with IEQAS was in a supermarket in 1992. I had been keen to work part-time as I had two small children, and a husband who was often away with work. While Warner Lambert was brilliant to work for, with excellent training and opportunities, American companies at that time were not known for their flexible hours and long holidays, and not at all enamoured with the notion of part-time staff. (That changed very soon after I left.). So there I was, stressed, two children in tow in Superquin Blackrock, when I bumped into Barry McSweeney. This led to an interview with John McManus (Bioresearch Ireland, who was managing IEQAS at that time) and I was shortly enjoying the part-time work I coveted. I suspect it helped that I had previously worked with Rory O'Moore (then IEQAS Chairman), who had been my supervisor in a Medical Research Council project in TCD/Sir Patrick Dun's Hospital in the mid-70s.

Barry, John, Rory and the other Steering Committee members then – Ned Barrett, John Brady, Des Kenny (who all remained on the Steering Committee

for many years) and Niall O'Leary - could not have been more helpful in settling me in to the newly created role of Operations Manager. They set the tone for the years to come, where each and every one of our Steering Committee members and other Specialist Advisors have been more than helpful in providing the professional expertise to allow IEQAS grow and develop from one scheme (Clinical Chemistry) to over 150 schemes 40 years later in 2021. This document lists all those who willingly volunteered their time over those 40 years. Thank you all, IEQAS could not survive without you!

Over the 40 years, IEQAS had many difficult times. Part-time work was initially essential as funding was limited, but has continued to work well for IEQAS.

We also embraced 'Working From Home' long before the Covid pandemic made it so popular – again originally out of necessity. In the 90s, when BioResearch Ireland (part of the state organisation Forbairt) restructured to become Enterprise Ireland, IEQAS found itself homeless, so I housed it in my spare room, along with the rather large computer kindly donated by BioResearch Ireland. I expect many of you fully understand the joys and frustrations of WFH, especially with small children around. And the 24/7 commitment, with results then coming in then by post, phone or fax (on rolls of old heat-sensitive paper that curled themselves on the floor and ran out of paper the second I left the office). Dial-up internet and email were still pretty basic.

I was happily joined in 1999 by Patricia Howley, a previous colleague from our Warner Lambert days. It had to be someone I got on well with, as we worked around my kitchen table and she needed access to my house when I was away. The relief of having a backup was immense, along with help setting up the new Haematology schemes. IEQAS was growing and we soon found a tiny office, above a butcher shop in Stillorgan. When Alan Carr joined us, on part-time secondment from Peamount Hospital for a year in 2005, we made space for him in the even tinier store room.

The sudden death of IEQAS Chairman Des Kenny in 2006 shocked many people and IEQAS felt his loss deeply. Des was active internationally and was influential in our involvement with European EQA organisations such as

EQALM. An excellent obituary was published in Clin Chem Lab Med 2007;45(2):148–149.

As a result of Des's doggedness, some well-needed State funding was forthcoming in the early noughties, and we moved to a 'proper' office in Nutgrove Enterprise Park, where IEQAS remains today. The joy of a manned reception desk, serviced toilets and small kitchen! And access to two small but adequate meeting rooms. Our partnership with the Finnish EQA provider Labquality also gave us a means of adding schemes that were not feasible for IEQAS to provide and the assurance of ongoing funding. Anne Cooke joined us in 2007, replaced when she retired by Anne Kane in 2012.

By the time I retired in 2019, Maria Phelan had joined the team (2018). All had extensive clinical laboratory experience and importantly, all have worked well together, willingly providing cover for each other through some difficult times of illness and family responsibilities. I remain in close contact with the Operations Management team and also on the IEQAS Steering Committee.

Patricia Howley

(IEQAS Operations Managerment team and Steering Committiee member since 1999)

Having worked for a number of years as a Quality Control Scientist in Warner-Lambert in Cabinteely, I took a career break to raise my three sons and one daughter. By 1999, I was keen to get back into part-time work again and by chance bumped into an ex-colleague from the Microbiology lab who told me that Hazel Graham was looking for someone to help with the then expansion of IEQAS into Haematology EQA schemes. So began my 22 year story with IEQAS.

Initially I was to work with the new schemes of Full Blood Count and Blood Cell Morphology, heading out to Gerard O'Connor, in Tallaght, to collect and package the samples. I worked with IEQAS initially in Hazel's back bedroom office and then expanded to her kitchen table! Results were received back then by post or by fax – the first job was to get under the desk to search for any faxes that slipped out of the fax machine. We honed our detective skills, examining post marks and fax numbers to figure out which lab the results had come from - before we started hand-writing the individual lab numbers on the sheets that accompanied the samples. My daughter, aged 9 when I started with IEQAS, has reminded me that she would often accompany me to Hazel's house in the summer holidays and entertained herself with Bugsy the rabbit, in the garden.

At that time, EQA reports were all printed for each participant, stapled and posted.

We moved to a small office in Stillorgan in 2001, got two new computers, new software and many new schemes. Results sheets became personalized with the lab number and instrument printed on individual sheets, making life easier for all. Back then, all results had to be entered and double-entered manually, quite a tedious task. Frances Fitzharris, joined us in Stillorgan for a short period, to key in the data, which freed me up to prepare batches, collect samples and get involved with the data analysis.

As software improved, participants could now enter their own data and to receive reports by email. We moved to the current office in 2005 and Anne Cook joined us to help prepare and package samples. In 2007, I took the opportunity to pursue a part time Masters, with the support of IEQAS, in Quality and Safety in Healthcare Management with the School of Postgraduate Studies, RCSI and graduated in 2009. My final assignment was a change management project that I participated in, entitled 'ISO 9001:2008: The Road to Achieving Certification for the Irish External Quality Assessment Scheme (IEQAS)'.

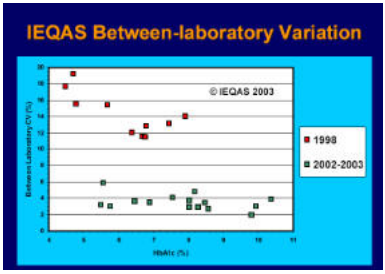
As Hazel tried to teach me all she knew (a mammoth task) about EQA, I took over as the Operations Manager, with Hazel as Quality Manager until her retirement in 2019, albeit remaining on the Steering Committee. Anne Kane ably joined us is 2012 and Maria Phelan in 2018. Hazel taught us the importance of working well together and supporting each other at all times. I hope I have passed on some of the skills that Hazel taught me to my peers in the IEQAS Operations Management team.

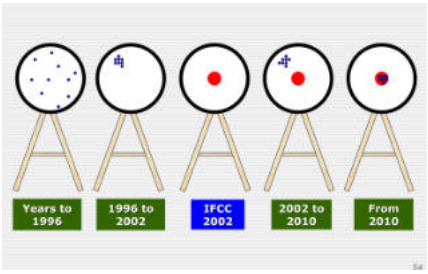
Appendices

IEQAS and "pioneering" metrological traceability of HbA1c

In Ireland, Ned Barrett was key to driving the improvement of HbA1c analysis from the late 1990s. He was also central to IEQAS's close involvement with the European Reference Laboratory (ERL) and the ongoing EurA1c project.

In 1998, when IEQAS began its HbA1c EQA scheme, the CVs averaged 15%. By 2002, this had improved to ~4% and the IFCC by then had developed their reference method and commutable calibrators.



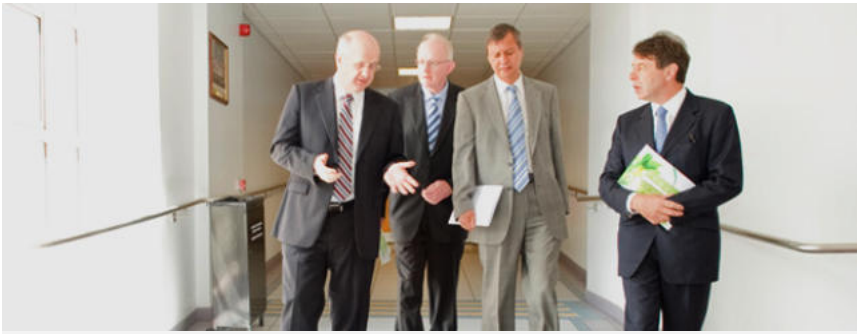


With this evidence of considerably improved precision, we were now keen to improve accuracy by implementing metrological traceability not only for IEQAS participants, but nationally.

Ned chaired the HSE Project Team for Implementation of International Standardisation of HbA1c in Ireland, which was formally launched in July 2010, with which IEQAS was actively involved alongside representatives of the laboratories, the HSE and industry partners

This led to "Dual Reporting" of HbA1c for a period, with the primary IFCC result alongside its converted DCCT value. An extensive verification process was carried out by IEQAS on all analysers and POCT meters in Ireland at that time. All non-conforming equipment was withdrawn with the excellent support of the suppliers and HSE procurement. There was an extensive communication process, with patient leaflets in English, Irish and Polish, in addition to leaflets for professionals.

The Project formally closed with the directive "Dual reporting should cease on 16th Jan 2012...unless there are very



July 2010, the launch of the implementation of the International standardisation of HbA1c measurement in Ireland, St James's Hospital

Prof Brendan Drumm, CEO HSE

Dr Ned Barrett, Consultant Biochemist, Chairman HSE HbA1c Project Teamc

Prof Richard Firth, National Clinical Lead for Diabetes

Dr Colm Costigan, Consultant Paediatric Endocrinologist

cogent local circumstances prevailing that would justify a minimal deferral period to attain an adequate state of readiness" (Diarmuid Smith, then Clinical Lead, HSE National Clinical Programme for Diabetes).

IEQAS, with Ned's guidance, remains highly involved with the maintenance of quality standards for HbA1c analysis. We work closely with the suppliers/ manufacturers to help maintain the quality standards set during this project.

Ongoing quality is enhanced by IEQAS participation in the EurA1c project since it began in 2016. This project, part of the IFCC Committee for Education in the Use of Biomarkers in Diabetes (C-EUBD), now involves 25 EQA providers in over 20 predominantly European countries. Two samples are distributed simultaneously via multiple EQA organisers to establish an international picture of HbA1c performance.

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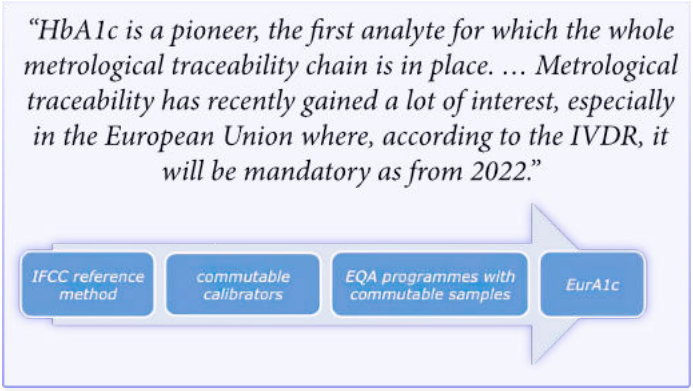


The Global Creating and Monitoring of the Traceability of Test Results in the Medical Laboratory, ERL Symposium, September 2021

IEQAS Haematology Schemes over two decades

Full Blood Count

IEQAS first introduced a 2-year pilot scheme for Full Blood Count in 1996 through our Partner EQA provider, Labquality. By 1998, IEQAS introduced our own scheme using existing software that had been developed for Clinical Chemistry and HbA1c, which allows lab-specific and more general comments from the Review Group as necessary.

Commercially sourced FBC samples using fixed cells have some major advantages over fresh blood: availability, stability and parameters at pathological levels. However, it had long been recognised that comparing analyser performance using fixed cell samples is not ideal, due to matrix effects particularly in the comparison of MCV, HCT and associated parameters. Fresh blood presents a logistical challenge as donors need to be sourced, blood collected, dispensed, distributed, and tested in each laboratory within 24 hours of collection, requiring more expensive courier delivery and coordination of all participating laboratories.

Haematology Scheme

The final sample of the 2-year pilot scheme for Basic Blood Count and Platelets has already been distributed by Labquality.

IEQAS plan to distribute a sample (free of charge), from a new manufacturer, to all Haematology laboratories in the autumn. Results will be available in time for the Haematology Workshop at the Participants' Conference, when we would appreciate your input into the future direction of the scheme.

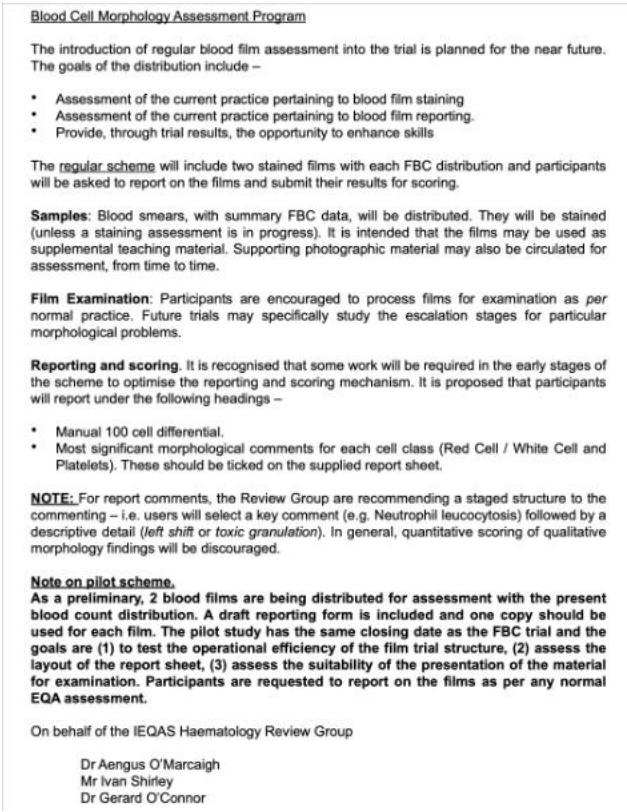
IEQAS Newsletter 1998

An example of the flexibility of small EQA providers such as IEQAS was the ability to provide Fresh Blood samples at intervals between 2002 and 2017. Since 2019, the FBC scheme uses couriered fresh blood samples instead of commercially sourced samples for one distribution annually, providing unique assurance that FBC results are comparable in any participating Irish laboratory.

The additional stability data of these fresh samples has also provided useful information for IEQAS participants.

Blood Cell Morphology

IEQAS introduced a Blood Cell Morphology scheme in 1999.



Blood Cell Morphology Assessment Program

The introduction of regular blood film assessment into the trial is planned for the near future. The goals of the distribution include –

- Assessment of the current practice pertaining to blood film staining
- Assessment of the current practice pertaining to blood film reporting.
- Provide, through trial results, the opportunity to enhance skills

The regular scheme will include two stained films with each FBC distribution and participants will be asked to report on the films and submit their results for scoring.

Samples: Blood smears, with summary FBC data, will be distributed. They will be stained (unless a staining assessment is in progress). It is intended that the films may be used as supplemental teaching material. Supporting photographic material may also be circulated for assessment, from time to time.

Film Examination: Participants are encouraged to process films for examination as *per* normal practice. Future trials may specifically study the escalation stages for particular morphological problems.

Reporting and scoring. It is recognised that some work will be required in the early stages of the scheme to optimise the reporting and scoring mechanism. It is proposed that participants will report under the following headings –

- Manual 100 cell differential.
- Most significant morphological comments for each cell class (Red Cell / White Cell and Platelets). These should be ticked on the supplied report sheet.

NOTE: For report comments, the Review Group are recommending a staged structure to the commenting – i.e. users will select a key comment (e.g. Neutrophil leucocytosis) followed by a descriptive detail (*left shift* or *toxic granulation*). In general, quantitative scoring of qualitative morphology findings will be discouraged.

Note on pilot scheme.
As a preliminary, 2 blood films are being distributed for assessment with the present blood count distribution. A draft reporting form is included and one copy should be used for each film. The pilot study has the same closing date as the FBC trial and the goals are (1) to test the operational efficiency of the film trial structure, (2) assess the layout of the report sheet, (3) assess the suitability of the presentation of the material for examination. Participants are requested to report on the films as per any normal EQA assessment.

On behalf of the IEQAS Haematology Review Group

Dr Aengus O'Marcaigh
Mr Ivan Shirley
Dr Gerard O'Connor

The educational aspect of this very well subscribed scheme is enhanced not only by the detailed and informative review by Dr Kanthi Perera provided routinely on reports, but also by Dr Perara's review at the Haematology Workshop at the IEQAS Conference each October. This Morphology Session has been a feature of the IEQAS Conference since 2000 and remains for many the highlight of the event.

Samples were originally sourced commercially but are now anonymised 'interesting case' samples donated by Dr Perara and other participants, with the added advantage of first-hand knowledge of the case history of the patient, demonstrating once again an advantage of participating in a small flexible scheme.

Special Surveys and Projects

Clinical Chemistry

NCCP Harmonisation Pilot Project for Tumour Markers

2013 - 2019: IEQAS assisted the National Cancer Control Programme with this project, where the NCCP Designated Cancer Centres participated in a quarterly EQA scheme for PSA, CA125 and hCG. Recommendations were subsequently published in the HSE National Laboratory Handbook. This Pilot Project ended in late 2019.

Harmonisation of Reference Intervals

This ongoing national project was initiated as a collaboration between IEQAS and the ACBI, AMLS and Faculty of Pathology RCPI. The first phase began with an IEQAS survey to establish the reference intervals in use for non-pregnant adults for Na, K, Urea, Cl, Bicarbonate, Phosphate, Mg, Albumin, Total Protein and Osmolality. Results were discussed at the 2012 IEQAS Conference and as poster presentations at the ACBI 2014 Conference and the ACB (UK) Focus 2015 Conference. Recommendations were subsequently published in the HSE National Laboratory Handbook. Similar studies are ongoing for Clinical Chemistry and Haematology.

Pilot EQA for Clinical Chemistry of Atypical Fluids

2019/20: As no other scheme in Europe was available to assess quality of some 'routine' biochemistry tests in fluids other that the usual serum/plasma or urine, two pilot samples were distributed to IEQAS participants, The first was pleural fluid and followed in 2020 with peritoneal (ascitic) fluid. Distribution of a fluid and a plasma sample together also allowed assessment of clinically relevant fluid to plasma ratios. For the ascitic sample, the SAAG (Serum to Ascites Albumin Gradient) was assessed. Good performance was noted by all participants for both pilots. Results were presented at both the 2019 and 2020 Participants Conferences; the former also in poster format at the 2019 ACBI Annual Conference. These pilot distributions served both the quality assurance and educational roles of IEQAS. On review, the pilot was deemed a successful venture but it was decided not to upgrade to a routine scheme for the present.

2014: International Empower Project for Clinical Chemistry

A number of IEQAS participants took part in this international project by Prof Linda Thienpont (Ghent, Belgium), which provided a platform for laboratory/ manufacturer dialogue and assay improvement. The project was presented at the 2014 IEQAS Conference by Katleen Van Uytfanghe & Dietmar Stöckl.

2008-2009: Residual pooled serum for Clinical Chemistry EQA
Two surveys using residual pooled serum as an alternative to commercially prepared traditional EQA material, to study any matrix effects. Results were reported at IEQAS Conference 2009. IEQAS have since provided such samples regularly in their routine EQA scheme.

2009: All-Ireland audit of laboratory thyroid function testing.
A summary of the UK, NI and All Ireland survey was presented at the 2009 IEQAS Conference.

2001: Sweat Test Survey: screening for Cystic Fibrosis in the newborn
The survey established current practice in Ireland and was presented at the 2001 IEQAS Conference.

2001: Macroprolactin Survey
Presented at the 2001 IEQAS Conference and published: T Smith, J Clin Endocrinol Metab, Dec 2002, 87 (12): 5410-5415).

1999: Acetoacetate Interference revisited
Des Kenny, Our Lady's Hospital for Sick Children

1998: Effect of bilirubin in routine photoassays
John Brady, Our Lady's Hospital for Sick Children

1997: Accuracy of creatinine measurement in aqueous material
John Brady, Our Lady's Hospital for Sick Children

1997: HDL Cholesterol survey of methodologies
Marie McDonald, DIT Kevin Street

1994: Interference due to lipaemia in routine photometric analysis
Brady J, O'Leary N. Ann Clin Biochem 1994; 31: 281-288

1993: Interferences in routine methods for creatinine measurement
Kenny D. Scand J Clin Lab Invest 1993; 53 suppl. 212: 43-47

1993: Interference due to haemolysis in routine photometric analysis
Brady J, O'Leary N. Ann Clin Biochem 1998; 35: 128-134

HbA1c

2016 - to present: EurA1c Project

IEQAS remains as a collaborator in this project annually since it was established in 2016, now involving 25 EQA providers in over 20 predominantly European countries. Two samples are distributed simultaneously via multiple EQA organisers to establish an international picture of HbA1c performance. Samples are both fresh and lyophilised. The project is part of the IFCC Committee for Education in the Use of Biomarkers in Diabetes (C-EUBD). The success of this EurA1c project highlights the importance of EQA in driving analytical quality improvement and follows on from the successful 2011 implementation of International Standardisation of HbA1c in Ireland. Reports are all available on the IEQAS website.

2012: HbA1c for patients with variant haemoglobin

The aim of this survey was to gather information on the reporting of HbA1c by laboratories when a variant haemoglobin has been detected. The findings formed the basis of a minimum report comment for reporting HbA1c results in the case of variant haemoglobins.

2010–2011: International Standardisation of HbA1c project

As requested by the HSE Project Team, IEQAS distributed seven additional samples to verify the IFCC-calibration of HbA1c, prior to its implementation on 1st July 2010. Dual reporting (DCCT and IFCC) continued until 16th January 2012. The project involved manufacturers and suppliers of HbA1c analysers and POCT meters, diabetes nurses, consultants, endocrinologists, GPs, healthcare professionals and patients. Every analyser and POCT meter in the country was traced (many required replacement or an upgrade); all were eventually verified. Reports were presented at IEQAS Conferences in 2009 and 2010. IEQAS Chair Ned Barrett was a key driver of this process.

2006: Effect of variant haemoglobins on the measurement of HbA1c

This survey assessed the accuracy of HbA1c measurement in diabetic patients harbouring relatively common haemoglobinopathies. Results were reported at the IEQAS Conference 2006; also published IJMS Vol 175 No 4 Supplement 2: 35, 2006.

Haematology

2002 - 2017: Fresh blood surveys

IEQAS first provided a distribution with two freshly donated samples in 2002, with samples distributed by courier. The tests included the Full Blood Count, automated differential, Reticulocyte count, RDW and Suspect flags. It has long been recognised that comparing analyser performance using fixed cells is not ideal due to a matrix effect that is particularly apparent in the comparison of MCV /HCT and associated parameters. The survey was repeated in 2004, 2008, 2012, 2015 and 2017. The findings of this survey including stability data were discussed at IEQAS Conferences each year. Since 2019, the FBC scheme uses couriered fresh blood samples instead of commercially sourced samples for one distribution annually, providing unique assurance that FBC results are comparable in any participating Irish laboratory.

ICSH (International Council for Standardization in Haematology)

Richard McCafferty, St James's Hospital, represents IEQAS & ACSLM at ICSH meetings. Publications include:

- 2017: ICSH recommendations for modified and alternate methods measuring the erythrocyte sedimentation rate
- 2016: Standardization of haematology critical results management in adults: an International Council for Standardization in Haematology (ICSH) survey and recommendations
- 2016: Recommendation for standardization of haematology reporting units used in the extended blood count

2012: Standardisation of Reporting Units in Haematology

IEQAS assisted the AMLS Haematology Advisory Body in collecting information regarding harmonisation of FBC units of measurement. The data was reported at the Haematology Workshop at IEQAS Conference 2012 and later published: Recommendation for standardization of haematology reporting units used in the extended blood count, M Brereton, R McCafferty, K Marsden, Y Kawai, J Etzell, A Ermens, International Council for Standardization in Haematology: Int J Lab Hematol, 2016 Oct;38(5):472-82.

2011: RDW and Blood Cell Morphology survey

In preparation for introduction of RDW (Red Blood Cell Distribution Width) as an analyte for the Full Blood Count Scheme, the survey compiled baseline details of routine measurement and reporting, units and reference ranges. Results were reported at IEQAS Conference 2011.

2009–2010: Online post-analytical automated haematology - Pilot

Participants report on a case (with FBC results and a short case history) in two pilot surveys, developed by NOKLUS in cooperation with EQALM. Data was presented at EQALM Conference in October 2010 and at IEQAS Conference 2011.

2008-2010: Review of platelet counting methodology and EQA

The technologies employed for Platelet counting by different analysers had advanced significantly in the previous 10 to 15 years. These include electronic impedance, optical density and immunological methods. This has resulted in more accurate and valuable results for the patient but has led to difficulties with EQA schemes. Reported at IEQAS Conference 2010.

2005: Comparison of FBC results from 57 analysers on Patient (normal) and QC modes

Results were reported at IEQAS Conference 2005.

2001: Criteria for making blood films

Results were presented at the 2001 IEQAS Conference.

Coagulation

2013: EQALM International survey regarding pre-analytical practices on routine coagulation testing

This pre-analytical program was organised by the Hemostasis Working Group of the European Organisation for External Quality Assurance Providers in Laboratory Medicine (EQALM). Clin Chem Lab Med. 2019 Sep 25;57(10):1511-1521.

2002-2008: Feasibility studies

Five surveys were carried out to investigate the feasibility of introducing an EQA scheme for Irish laboratories. Results from the first two were reported at IEQAS Conference 2006. Two further samples were later distributed, in 2007 and 2008. It was concluded that the sample size for each analyser group was not large enough for a successful routine IEQAS-operated scheme. IEQAS now offers Labquality coagulation EQA schemes.

POCT/NPT

2008 and 2011: POCT in Irish hospitals

Designed and analysed by the POCT Consultative Group sub-committee (representing the AMLS, ACBI, RCPI (Pathology)). Results were reported at IEQAS Conference 2011 and published: Ir J Med Sci. 2011 Mar;180(1):237-40.

Preanalytics

2018: Monitoring and capturing patient identification errors in laboratory medicine

IEQAS assisted with this first PALMSoc study, a national online survey to identify the current practices on use of quality indicators for the preanalytical phase in the total testing process. Results were presented at the 2018 IEQAS Conference and published:Ann Clin Biochem. 2020 May;57(3):266-270.

2017: European survey on preanalytical sample handling

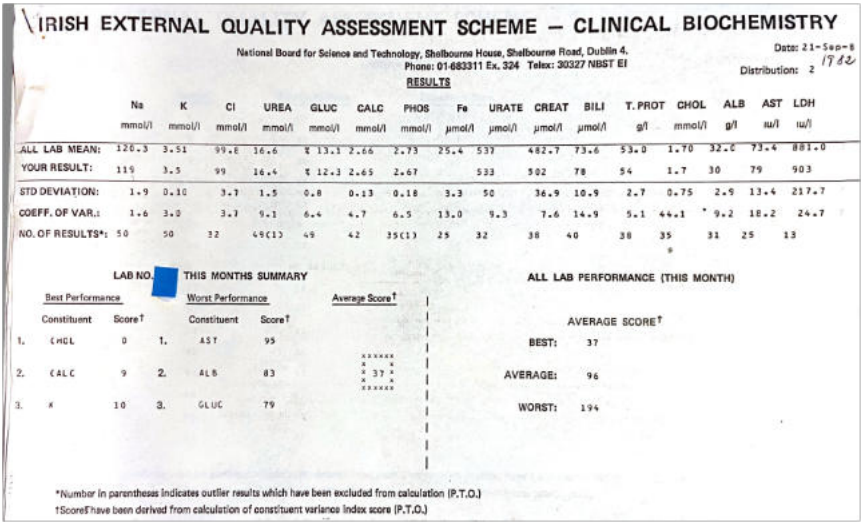
IEQAS assisted with this online survey on how laboratories monitor the preanalytical phase, with 18 replies from IEQAS participants. The survey was established by the European Federation of Clinical Chemistry and Laboratory Medicine (EFLM) Working Group for the Preanalytical Phase (WG-PRE). Results were published in Biochem Med (Zagreb), v.29(2); 2019.

Histopathology

From 2012, IEQAS administered an EQA Scheme for Histopathologists at the request of the Histopathology Working Group of the Faculty of Pathology, sponsored and supported by the RCPI Faculty of Pathology. There were two distributions of 12 samples per year. The scheme was educational, based on the principle of peer review. The scheme was suspended in 2018 by the Histopathology Working Group for internal operational reasons.

Archive documents

Examples from early IEQAS Reports



IRISH EXTERNAL QUALITY ASSESSMENT SCHEME – CLINICAL BIOCHEMISTRY

National Board for Science and Technology, Shelbourne House, Shelbourne Road, Dublin 4.
Phone: 01-683311 Ex. 324 Telex: 30327 NBST EI

Date: 21-Sep-8 1982
Distribution: 2

RESULTS

	Na mmol/l	K mmol/l	Cl mmol/l	UREA mmol/l	GLUC mmol/l	CALC mmol/l	PHOS mmol/l	Fe µmol/l	URATE µmol/l	CREAT µmol/l	BILI µmol/l	T. PROT g/l	CHOL mmol/l	ALB g/l	AST iu/l	LDH iu/l
ALL LAB MEAN:	120.3	3.51	99.8	16.6	₹ 13.1	2.66	2.73	25.4	537	482.7	73.6	53.0	1.70	32.6	73.4	881.0
YOUR RESULT:	119	3.5	99	16.4	₹ 12.3	2.65	2.67		533	502	78	54	1.7	30	79	903
STD DEVIATION:	1.9	0.10	3.7	1.5	0.8	0.13	0.18	3.3	50	36.9	10.9	2.7	0.75	2.9	13.4	217.7
COEFF. OF VAR.:	1.6	3.0	3.7	9.1	6.4	4.7	6.5	13.0	9.3	7.6	14.9	5.1	44.1	* 9.2	18.2	24.7
NO. OF RESULTS*:	50	50	32	49(1)	49	42	35(1)	25	32	38	40	38	35	31	25	13

LAB NO. [redacted] THIS MONTHS SUMMARY

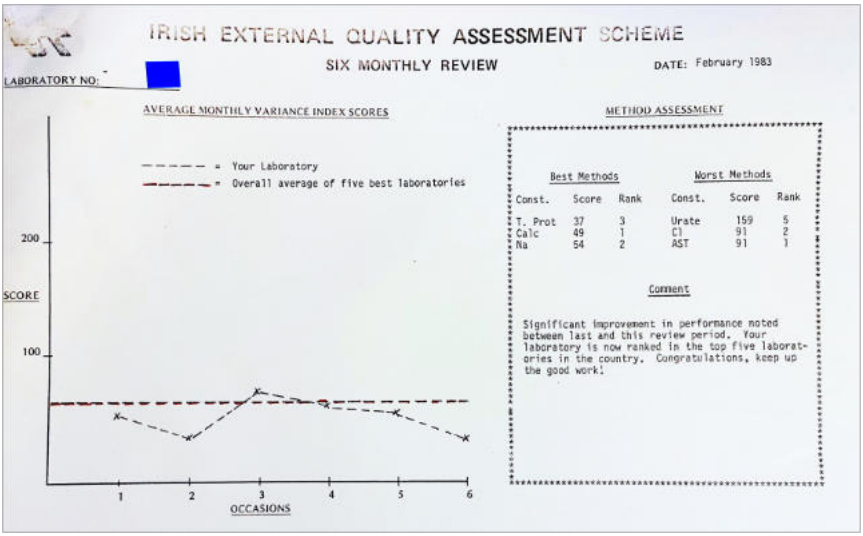
	Best Performance Constituent	Score†	Worst Performance Constituent	Score†	Average Score†
1.	CHOL	0	1. AST	95	
2.	CALC	9	2. ALB	83	x x x x x x x 37 x x x x x x x
3.	x	10	3. GLUC	79	

ALL LAB PERFORMANCE (THIS MONTH)

AVERAGE SCORE†

BEST:	37
AVERAGE:	96
WORST:	194

*Number in parentheses indicates outlier results which have been excluded from calculation (P.T.O.)
†Scores have been derived from calculation of constituent variance index score (P.T.O.)



IRISH EXTERNAL QUALITY ASSESSMENT SCHEME

SIX MONTHLY REVIEW

DATE: February 1983

LABORATORY NO: [redacted]

AVERAGE MONTHLY VARIANCE INDEX SCORES

- - - - - = Your Laboratory
——— = Overall average of five best laboratories

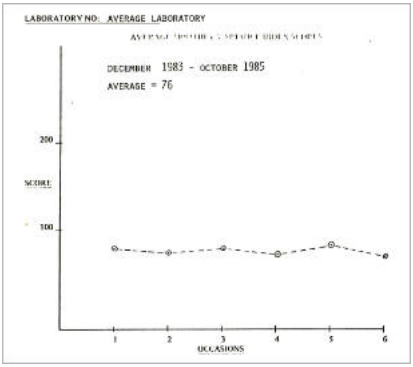
SCORE
200
100
1 2 3 4 5 6
OCCASIONS

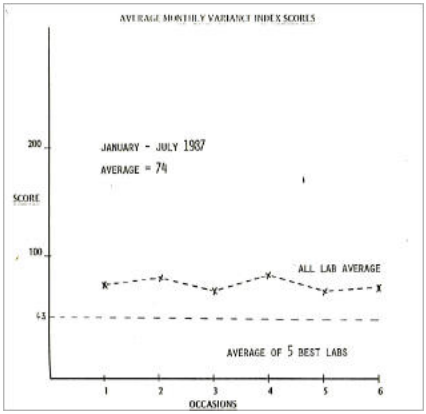
METHOD ASSESSMENT

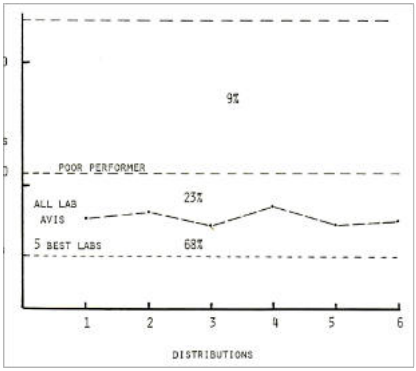
Best Methods Const.	Score	Rank	Worst Methods Const.	Score	Rank
T. Prot	37	3	Urate	159	5
Calc	49	1	Cl	91	2
Na	54	2	AST	91	1

Comment

Significant improvement in performance noted between last and this review period. Your laboratory is now ranked in the top five laboratories in the country. Congratulations, keep up the good work!







Best Methods			Worst Methods		
Const.	Score	Rank	Const.	Score	Rank
Bili	16	1	Gluc	68	3
K	29	1	Calc	82	4
Na	41	2	Creat	98	4

Comment

Good overall performance, slightly better than that of the average laboratory.

Best Methods			Worst Methods		
Const.	Score	Rank	Const.	Score	Rank
Na	16	1	Calc	126	5
Gluc	50	2	Alb	150	5
Creat	51	2	Urea	238	5

Comment

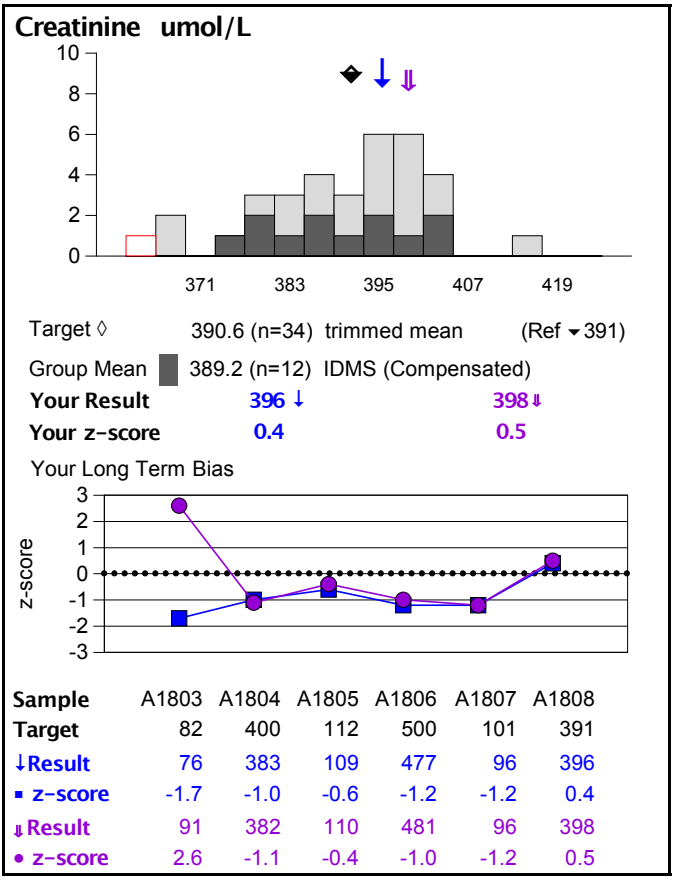
Overall performance seems to be disimproving. Negative bias at low urea values suggests calibration needs checking.

Best Methods			Worst Methods		
Const.	Score	Rank	Const.	Score	Rank
K	46	3	Gluc	209	5
Na	60	3	Urea	304	5

Comment

Your Sodium and Potassium appear to be well controlled. There is however, a serious negative bias on Glucose estimation. We suggest you check standardization of the instrument. Erratic Urea results may reflect method and/or instrument difficulties which should be investigated.

Current Clinical Chemistry Report



Sample	A1803	A1804	A1805	A1806	A1807	A1808
Target	82	400	112	500	101	391
↓Result	76	383	109	477	96	396
▪ z-score	-1.7	-1.0	-0.6	-1.2	-1.2	0.4
⇓Result	91	382	110	481	96	398
• z-score	2.6	-1.1	-0.4	-1.0	-1.2	0.5

Comments are added on an individual laboratory basis (confidential)

National Board
for Science and
Technology
Bórd Náisiúnta
Eolaíochta agus
Teicneolaíochta

Dr. E. Barrett Phd.,
Biochemistry Department,
Regional Hospital,
Dooradoyle,
CO LIMERICK.

Our ref.

Your ref.

2nd December, 1980

Shelbourne House,
Shelbourne Road,
Dublin 4. Ireland.
Telephone: Dublin
(01) 683311
Telex:
30327 NBST EI

Dear Ed,

The National Board for Science and Technology (NBST), would like to invite you to sit on a Working Party concerned with the development of Clinical Chemistry in Ireland. This group will be composed of Clinical Chemists, Chemical Pathologists and Medical Laboratory Technologists - with the NBST acting as coordinators.

The Clinical Chemistry Working Party will initially concern itself with the design, implementation and operation of a National Quality Assessment Scheme.

It is envisaged that this Working Party will eventually report to a Laboratory Development Advisory Group which will be composed of representatives of all the relevant professions. This Advisory Group will guide the Working Party in Clinical Chemistry and also the Working Parties in the other disciplines.

The National Board for Science and Technology is a Government advisory body set up under the National Board for Science and Technology Act 1977. It has national responsibility for the furtherance of science and technology and is in fact the principal source and focus of advice to Government for science and technology, and the central organisation for promotion and coordination in this area.

The first meeting of the Clinical Chemistry Working Party is planned to take place in the offices of the NBST on Monday December 15th. I should be grateful if you would confirm that you wish to accept the invitation to sit on this Working Party and that you will be free to attend on the 15th. It is envisaged that members will sit on the Working Party for three years.

I suggest we meet at my office, which is situated on the 1st floor of IPC House (also Shelbourne Road, opposite Ballsbridge Motors) at 12.30 p.m.

The National Board for Science and Technology will be responsible for the travelling expenses of members of the Working Party.

I look forward to meeting with you in the near future.

Yours sincerely,

Barry Mc Sweeney
HEALTH CARE DEPARTMENT

c.c. Dr. N. Gillatt, Dr. S. Nielsen,
Mr. P. Lynch

Received 2/1/81.

Minutes of

Clinical Chemistry Working Party Meeting

15th December, 1980

Shelbourne House

In Attendance : Dr. E. Barrett
Mr. John Brady
Dr. P. F. Duggan
Mr. J. R. Mc Sweeney
Dr. R. O' Moore
Mr. B. Mc Sweeney, NBST
Ms. M. Cahill, Executive Secretary

Minutes

It was agreed that Mr. Mc Sweeney would act as Chairman until the Laboratory Development Advisory Group would be set up. This Group will guide all relevant Working Parties and will be composed of Representatives from all the relevant professions, Department of Health, and of the N.B.S.T. The Group will be assembled early in 1981 and among its duties it will decide on the identity of the Chairmen of the Working Parties. It was decided to concentrate initially on the design, implementation and operation of a national quality assessment scheme. Other roles for the Working Party would be considered in consultation with the Laboratory Development Advisory Group early in the new year. The N.B.S.T services available to the Working Party were described; these consist of full secretarial service, data processing and data storage. The N.B.S.T intends to instal a deck PDP 11/40 computer system in February. In the event that this system will not be commissioned in time for the National Quality Control scheme, the services of Timon will be used. The immediate goal of the Working Party would be the provision of such a scheme which would induce the participation of at least 50 Irish laboratories. This goal was debated and it was felt that the scheme would have a good probability of success due to the involvement of all the professions in its operation.

/...

Mr. J. Brady raised the question of Poor Performers and this point was debated. It was felt that encouragement in education rather than policing and punishment should be stressed in the Working Party's approach. Mr. J. R. Mc Sweeney stressed the importance of clarity of direction in the circular letter which would be sent to all hospitals. Dr. Duggan stressed the concept of laboratory confidence to participate in the scheme, and that we should attempt to create conditions which would inspire confidence. Dr. O' Moore felt that it was necessary to consider what would happen the Poor Performers before we actually start the scheme.

Dr. Barrett raised the question of whether a fee would be charged for the scheme, and it was decided that no charge would be made. After a stimulating discussion it was decided that each member of the Working Party would formulate his ideas, and submit them in writing to the Secretary before the meeting which would take place on January, 19th.

Relationship with Professional Bodies and Groups

In answer to questions from Dr. Duggan and Dr. O' Moore, Mr. B. Mc Sweeney stated that the N.B.S.T would fund the operation of Working Parties and Advisory Groups for three to five years. However, as the N.B.S.T were primarily an advisory group, the aim would be for the Department of Health to take over the funding of these organisations at that time. It was agreed that as members of the Working Party were not representing their professional associations, that the workings of the group would be conveyed to their relevant associations as points of information.

The U.K. Quality Control Advisory Panel (Poor Performers Panel) is a panel of the joint working group on quality control which is convened by the Royal College of Pathologists; have recently written to the relevant associations in the U.K that they should contact their sister organisations in the Republic of Ireland as they are concerned about the high percentage of Irish participating laboratories on the U.K National Quality Control scheme who appear to be Poor Performers.

Quality See ACP (UK) to ACP (Ireland)

/...

The panel (U.K) have offered their help to any group which might like to address themselves to this problem in the Irish Republic. It was decided that we should inform the Quality Control Advisory Panel of our existance.

Outline of Work Programme

The Working Party will confine its activities to the establishment of the National Quality Assessment scheme. A detailed definition of the work programme involved in this area will be formalised at the next Working Party meeting - frequency of distribution, type of material to be used, possible use of common material with the U.K. National Quality Assessment Scheme, confidentiality or anonymity of scheme, scope of scheme i.e. how many constituents would be assessed, uses of scheme towards standardisation, mechanics of scheme (where will control material be stored) and design of stationery - these among other items will be discussed at the next meeting.

Other Business

B. Mc Sweeney noted that if the E.E.C sought from Ireland some detail of the standard of laboratory performance we would not be in a position to provide it. This deficiency should be remedied when the Assessment Scheme gets under way. Dr. Duggan pointed out that valuable data, particularly as regards to enzymes, generated by the A.C.B.I Quality Control Scheme was in his possession, and he would make it available to the Working Party. He also pointed out that as organiser of the A.CB .I Scheme he was receiving from Wellcome detailed breakdown of Irish participant results in their scheme, he suggested that this information should now be sent directly to the Working Party as the A.C.B.I Scheme no longer existed, this was agreed and Dr. Duggan will inform Wellcome of this decision. It was decided that a press release would be prepared by the Working Party - each member of the Working Party will draft a press release and will send it to the Secretary so that it can be discussed at the next meeting.

B. Mc Sweeney's draft press release will be sent to all members for consideration before the next meeting.

It was agreed that a circular be sent to all Clinical Chemistry laboratories in Ireland urging them to participate in the scheme. The aims and details of the scheme would be carefully outlined. Each member of the Working Party agreed to prepare a draft circular which will be submitted to the Secretary before the next meeting, so that it may be discussed at the meeting. B. Mc Sweeney agreed to draw up a list of clinical chemistry laboratories in the country for the next meeting.

The next meeting will be at IPC House, on Monday 19th January next, at 12.30 to 2.30 (working lunch).

M. Cahill

M. Cahill
Secretary

National Board
for Science and
Technology
Bórd Náisiúnta
Eolaíochta agus
Teicneolaíochta

Our ref. BMcS/ab
Your ref.

28th April 1981.

Shelbourne House,
Shelbourne Road,
Dublin 4, Ireland.
Telephone: Dublin
(01) 683311
Telex:
30327 NBST EI

Dear Colleague,

Thank you for agreeing to participate in the "Irish External Quality Assessment Scheme". Our response to this scheme has been excellent and we are pleased to advise that 55 laboratories throughout the country will be participating.

The first sample for analysis will be sent to the laboratories very early May. Full details and explanation booklet will follow in due course.

Looking forward to continuous cooperation.

Yours sincerely,

B.McSweeney M.Sc. Clin.Biochem.

Notes

www.ieqas.ie

Academy of Clinical Science & Laboratory Medicine

Association of Clinical Biochemists in Ireland

Faculty of Pathology of The Royal College of Physicians of Ireland