



IEQAS CELEBRATES 40 YEARS

Peadar McGing
Hazel Graham
IEQAS Steering Committee

IEQAS Participants' Conference
7th October 2021

Fadó, fadó.

- Earliest Quality Assurance in Pathology was probably the autopsy / post mortem.
- Lots of resistance:
 - Religious grounds
 - “You’re showing me up”
- Later in 19th century became more recognised as teaching aid and for inquests
 - Inquests can be regarded as earliest External Quality Assurance

Laboratory development

- Chemistry laboratory methods were developed late 19th and early 20th centuries
- Many methods were relatively crude
- Clear associations with disease took time to develop
- Emphasis on being able to measure a substance
 - Inaccuracies were recognised but uniformity not a practical goal.
- By the time of the Second World War clinical chemistry and haematology had evolved better more robust methods (by the standards of the day) and were testing more samples and using results more clinically
 - But was everyone happy with the results?

Trustworthy results???

“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.”

- F. William Sunderman

This led to first EQA-type survey in 1946.

First EQA

- First EQA survey
- Belk and Sunderman, Am J Clin Pathol 1947; 17: 853-861.
- Bit of resistance

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 UN-SATISFACTORY**	GROSS ERROR**
Hemoglobin.....	9.8 ± 0.3 gm.	17	34	11
Hemoglobin.....	15.1 ± 0.5 gm.	21	31	3
Glucose.....	80 ± 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

The 1950s to the 1980s

- 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.
- Formal schemes began in the late 1960s and early 1970s
 - UKNEQAS for Clinical Chemistry was launched 1969 (Prof Tom Whitehead / funded by UK DoH).
- By 1980 in Ireland the importance of EQA was well recognised by laboratory scientists
 - of the 54 publicly funded hospital laboratories, 42 were members of UK or commercial EQA schemes.

The 1950s to the 1980s

- Concern about lack of a national EQA for Ireland
- November 1980 - an Irish EQA Working Party set up by government
 - Chaired by NBST (The National Board for Science and Technology)
 - Included representatives of the three associated Professional Bodies
 - Academy of Medical Laboratory Science (now ACSLM)
 - Association of Clinical Biochemists in Ireland (ACBI)
 - Faculty of Pathology, Royal College of Physicians of Ireland (RCPI).



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.

IEQAS is born.

- Decision to establish IEQAS
 - Steering Committee
 - Associated Professional Bodies
 - AMLS (now ACSLM), ACBI, FacPath RCPI.
- First Distribution
 - May 1981
 - Clinical Chemistry
 - 16 analytes; monthly



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Author: Karen Arnold

FIRST IEQAS STEERING COMMITTEE (NOV 1980)

- ACBI

- Ned Barrett*
- Barry Duggan
- John McSweeney



- AMLS

- John Brady*



- Faculty of Pathology, RCPI

- Rory O'Moore

- Chair

- Barry McSweeney, NBST

**only recently retired from SC;
Ned Barrett remains as Specialist Advisor for HbA1c Scheme*

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.

- We are grateful to Ned and John for extending a ‘three years’ commitment to EQA to four decades of actual service to the cause.

Early financial support

- 1981 – 1985 NBST
(no participant fee)
- 1987 – 1989 Dept. of Health; Admin support BioResearch Ireland
(no participant fee)
- 1990 – 1994 Participant fees; Admin support BioResearch Ireland

In 1990, funding from the Dept of Health ceased, despite their acknowledgement that

- *“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.”*

Early IEQAS Schemes

- For first 18 years IEQAS ran a Clinical Chemistry scheme.
 - Hazel will show some of the early reports and recount her experiences
- In 1999 a Haematology Scheme was added.
- Through the 1990s IEQAS conducted special surveys and reported the findings, including
 - Interferences in routine creatinine measurement (Kenny; 1993)
 - Interference due to lipaemia (Brady, O'Leary; 1994)
 - Interference due to haemolysis (Brady, O'Leary; 1998)
 - Blood cell morphology (O'Connor; 1999)

GOOD EQA REPORT - ACTION



GOOD EQA REPORT - ACTION



<u>Best Methods</u>			<u>Worst Methods</u>		
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

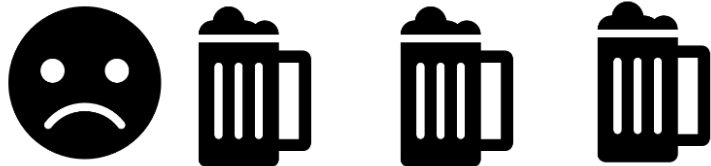
Comment

Congratulations, you are the top laboratory in the country.

BAD EQA REPORT - ACTION

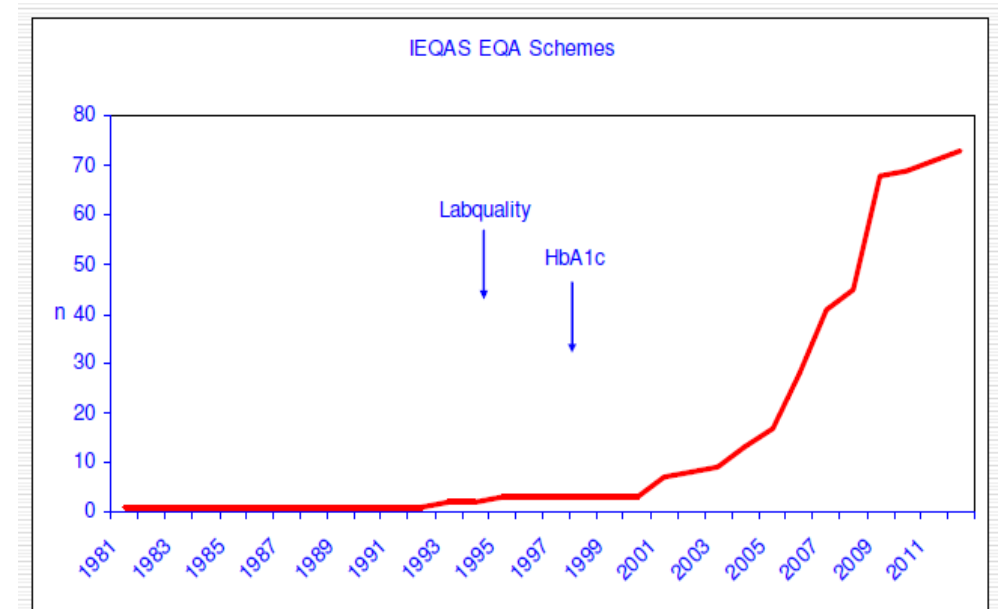
<u>Best Methods</u>			<u>Worst Methods</u>		
Const.	Score	Rank	Const.	Score	Rank
Bili	69	4	T.Prot	196	5
Urate	102	5	Na	251	5
Chol	121	5	Gluc	255	5

<u>Comment</u>
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.



1994 – 2000: IEQAS ‘WFH’

- Relocate from BioResearch Irl to ‘WFM’
 - Hazel Graham, computer, desk!
 - Patricia Howley from 1999
- Network of hospitals
 - Sample storage, staff, donors, samples
- Links with EU EQA Providers
 - Member of EQALM
- New schemes
 - HbA1c scheme
 - Partnership with Labquality (Finland)



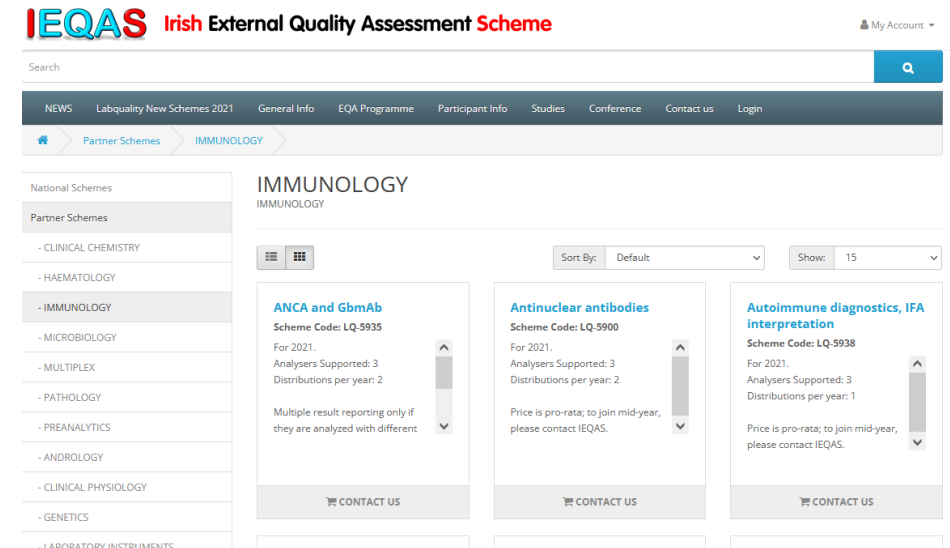
LABQUALITY (FINLAND)

- Established 1971
 - Finnish Society of Clinical Chemistry
 - Finnish Red Cross
 - Professional Associations
- By 2021
 - >170 EQA schemes, all disciplines
 - 55 countries in Europe, Asia, America and North Africa
 - >40 national partners, of which IEQAS is one



LABQUALITY (FINLAND) PARTNERSHIP

- Advantages for IEQAS Participants
 - Increased choice
 - IEQAS provides local one-stop-shop
 - Ordering (www.ieqas.ie EQA Programme)
 - Invoicing
 - Complaints, queries and suggestions
 - IEQAS monitors trends within Irish participants
 - Coordinates feedback to Labquality



The screenshot shows the IEQAS website interface. The header includes the IEQAS logo and the text "Irish External Quality Assessment Scheme". A search bar is located in the top right. Below the header is a navigation menu with options like "NEWS", "Labquality New Schemes 2021", "General Info", "EQA Programme", "Participant Info", "Studies", "Conference", "Contact us", and "Login". The main content area is titled "IMMUNOLOGY" and displays a list of schemes. Three schemes are visible: "ANCA and GbmAb" (Scheme Code: LQ-5935), "Antinuclear antibodies" (Scheme Code: LQ-5900), and "Autoimmune diagnostics, IFA interpretation" (Scheme Code: LQ-5938). Each scheme card provides details for 2021, including the number of supported analysers and distributions per year, and a "CONTACT US" button.



EQALM



The European Organisation for External Quality
Assurance Providers in Laboratory Medicine

- Umbrella organisation for EQAP
- Forum for co-operation and exchange of knowledge
- Annual Symposium
 - 2-day international event, attended by IEQAS
 - 2017 hosted by IEQAS in Dublin
- EQALM surveys
 - Irish laboratory participation

2000 – 2008: STATE SUPPORT

State Financial support

- Upgrade of IT
- Launch of website
- Relocate
 - 2001: Stillorgan office
 - 2005: Rathfarnham office
 - Reception, Meeting rooms, Canteen



2000 – 2008: STATE SUPPORT

- 2006
 - IEQAS celebrates 25 years
 - IEQAS Conference opened by CEO of HSE, Prof Brendan Drumm
 - Sudden death of IEQAS Chair, Des Kenny
 - Founding member of IEQAS
- 2008
 - IEQAS Conference opened by Minister for Health, Mary Harney
- ISO:9001: 2008 Quality Management System



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- ISO:9001: 2008 Quality Management System
- **Financial crash: end of State support once more!**



2009 – 2021

- ISO 9001: 2015 Quality Management System
- IEQAS Annual Conference
- Hosted 2017 EQALM Annual Symposium Dublin
 - 82 delegates, 27 different countries
- Upgrade hardware/software
- Special Surveys
- National and International initiatives

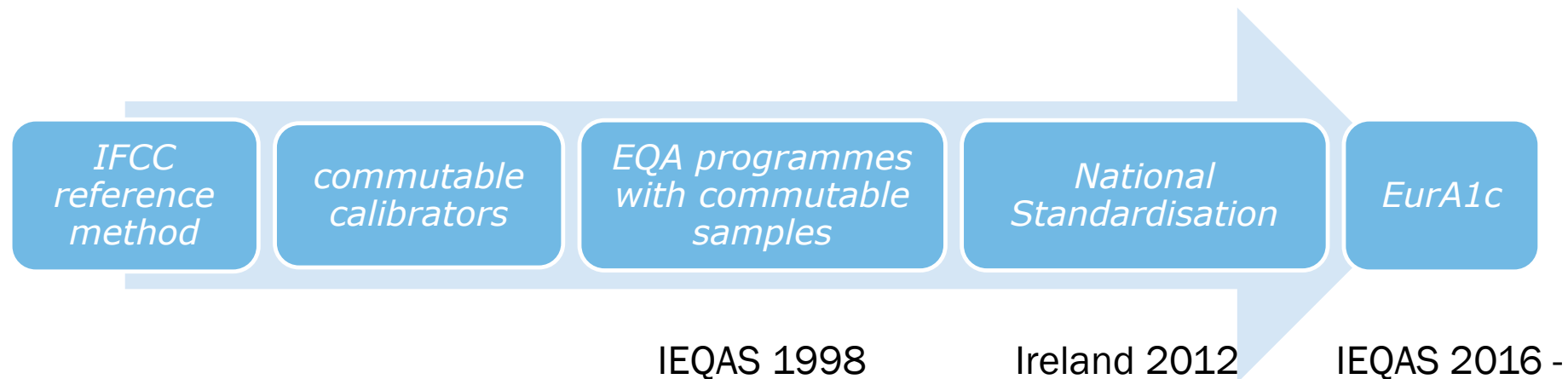
2009 – 2021: NATIONAL AND INTERNATIONAL INITIATIVES

- National Near-Patient Testing Consultative Group
 - Patricia Howley and Anne Kane (IEQAS)
 - Guidelines for safe and effective Near Patient Testing (NPT), 2021 Update
- International Council for Standardization in Haematology
 - Richard McCafferty (IEQAS & ACSLM)
- National Harmonisation Programme
 - Peadar McGing (ACBI and IEQAS)
- NCCP Harmonisation Pilot Project for Tumour Markers 2013 – 2019
 - HSE National Laboratory Handbook (PSA)
- International Standardisation of HbA1c

INTERNATIONAL STANDARDISATION OF HBA1C

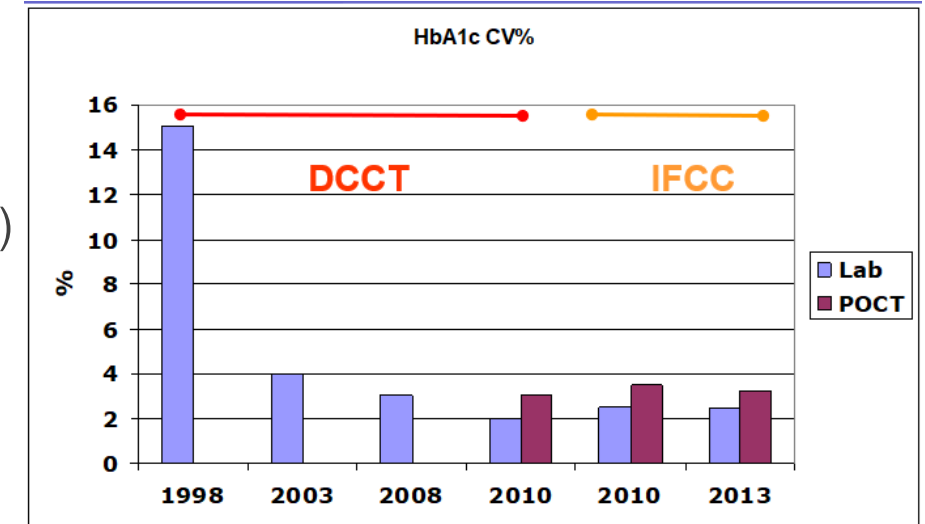
"HbA1c is a pioneer, the first analyte for which the whole metrological traceability chain is in place."

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



INTERNATIONAL STANDARDISATION OF HBA1C IN IRELAND

- International Standardisation in Ireland
 - 2010 - 2012
 - HSE Project Team, Chair Ned Barrett (then IEQAS Chair)
 - IEQAS, laboratories, diabetes nurses, endocrinologists, GPs, patients, industry partners
 - Laboratory and POCT meters
- EurA1c Project: ERL (NL)
 - Annual since 2016
 - 25 EQA organisations
- Ned Barrett
 - Founding member IEQAS
 - SC until 2020, Specialist Advisor HbA1c



2009 – 2021 PERSONNEL

- Steering Committee


- +Haematology, +Microbiology, +Transfusion
- Retirement
 - Founding members: John Brady (2019), Ned Barrett (2020)

- Operations Management

- Recruitment
 - Anne Kane (2012), Maria Phelan (2018)
- Retirement
 - Hazel Graham (1992 - 2019)
 - Anne Cooke (2007 - 2012)



ACKNOWLEDGEMENTS

- Too numerous to mention!
 - Publication due shortly  MEDICON IRELAND LIMITED
- Ned Barrett
 - archive IEQAS reports/documentation

“shared sense of purpose, cohesiveness and comradeship”