

## **IEQAS Conference Report - 2000**

### **Review of the 8th Annual Participants'; Conference**

Reported by Dr. Sean Maguire, Mater Hospital, Dublin. Edited for web by Alan Carr.  
The 8th Annual Participants' Conference took place in the Sheldon Park Hotel, Kylemore Road, Dublin 12 on November 2, 2000. Despite awful weather, the attendance from all corners of the country was exceptional. I would guess that this is probably due to a greater general awareness of QC/accreditation in Irish hospitals, the Mater Hospital in Dublin having recently had its inspection by the CPA and other hospitals beginning to gear up to apply for same.

**Many thanks to the conference sponsors , Cruinn and DPC and also Eircom.net who provided the stationery for the day.**

#### **Chairmans Address, Mr. Des Kenny of Our Lady's Hospital, Crumlin -**

Mr. Des Kenny of Our Lady's Hospital, Crumlin opened the conference despite the vicissitudes of the powerpoint projector.

#### **Hazel Graham - Annual Review Of The Scheme**

Hazel Graham, the Operations Manager, reviewed the year 2000.

##### **The main events Hazel noted were:**

- Des Kenny has replaced Prof. Rory O'Moore as chairman this year.
- Dr. Edmond Smyth of Beaumont now represents the RCPI on the Steering Committee and Alan Carr replaces Niall O'Leary as representative for the AMLS.
- a new scheme was launched for blood film morphology
- the IEQAS Web site was introduced
- A new survey on macroprolactin was initiated
- Major projects have begun on upgrading the IEQAS software and on preparing for certification of the scheme
- 15 labs participate in the Myocardial Markers scheme and 14 labs in the HbA1c scheme
- On the Haematology front 32 labs now participate in the FBC scheme, and 27 labs in blood film morphology
- The year 2000 saw 80% of all Irish hospital labs participating in at least one IEQAS scheme

#### **How to use the IEQAS web site, Alan Carr, Peamount Hospital**

Alan gave further details on how to use the IEQAS web site and outlined some of the plans for the future such as improved form submission procedure and a FAQ page.

## **Dr. Edmond Smyth, Beaumont Hospital, Dublin on EQA in Microbiology.**

Schemes are available from UKNEQAS, WHO, CAP, KGGT (Netherlands) and Instand (Germany). There may be transport difficulties depending on the country, and homogeneity of material is another problem. Typical reactivity of EQA samples may also present problems and adequate QC of materials supplied may be suspect. EQA samples should only be examined once as with patient samples. Internal audit may need to be done if EQA results are wrong- who examined the specimen or which media and reagents were used? Were the media and reagents in date? Review of methodology may indicate problems with sensitivity or specificity.

## **Dr. Gerard O'Connor, AMNCH, Tallaght, spoke on the development plan for IEQAS Software.**

The current system records information about equipment in labs etc., prepares specimen results sheets, and keeps a record of same. The present project hopes to enhance the efficiency of IEQAS operations, e.g. improve information quality and to support long-term data analysis. A draft statement of requirements has been prepared and the data dictionary is part finished. The statistical analysis package and budgetary considerations are not yet finalised.

## **Dr Tom Smith of St. Vincent's Hospital - Clinical and laboratory relevance of macroprolactin.**

Hyperprolactinemia can be caused by hypothalamic/pituitary disease, drugs, or may be idiopathic in 20% of cases. In the circulation about 90% of prolactin is in the 23kDa monomer form, and less than 10% is in the 50-60 kDa dimer form. A macroprolactin consisting of prolactin bound to IgG occurs in a significant number of patients. The crux of the diagnostic dilemma is that most immunoassays for prolactin are unable to distinguish between the bioactive monomer and this bio-inactive macroprolactin complex. This complex is detected to different extents depending on the method used. Tom gave the example of an NEQAS sample that was measured at 250 U/l by the reference method (gel filtration).

The various immunoassays gave the following results- Access 500, ACS 520, Immulite 1300, AxSym 2300, Delfia 2600. The IEQAS Prolactin Study plans to circulate specimens from macroprolactin patients to participating labs using the range of immunoassays available and also to assay by the reference method. The aim will be to determine the level of interference caused by macroprolactin in immunoassays, and to ascertain if the specificity of the antiprolactin antibodies varies from patient to patient.

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## **Round table discussions:**

At 11.45am, two round table sessions began simultaneously on Haematology and Clinical Chemistry- this format being the first of its kind in the 8 years since the first Participants' Conference took place. The haematology session was on blood film morphology and full blood count, and this was repeated after lunch. For clinical chemistry there were simultaneous sessions on 2 different topics -what to do with poor EQA results, and standardisation of HbA1c -agreeing a common approach. What to do with a poor EQA result was repeated in the afternoon together with a new topic - Myocardial markers - running simultaneously.

**Ned Barrett chaired the workshop on the standardisation of HbA1c.** Ned noted that EQA samples should be as like patients' samples as possible and should be as fresh as possible (glycation goes on all the time). Glycaemic control of diabetics is best measured by assay of HbA1c. The assay should have low CVs, less than 3% within assay and 5% between assay. Standardisation in the U.S. has been by aligning to the DCCT, in Europe to the IFCC. Both schemes have advantages and disadvantages. In studies it has been shown that HbA1c standardisation with the DCCT method (Goldstein Bio-rex 70 method) gives consistent QC data since 1984, with CVs between 1.2 -1.7%. The main drawback of the DCCT method is that it does not specify what entity is being measured, and there is no justification for assuming that HbA1c is being measured. The method is not specific for HbA1c and there is difficulty in aligning diverse measurement principles. If DCCT-aligned results are reported there should be an overlap. The consensus of the workshop was that diabetologists are not clamouring for DCCT alignment, and very few enquiries have ever been received. It was agreed that the IFCC calibrator would make its appearance in the near future.

**The workshop on what to do with poor EQA** results was very informative and dealt with some very basic aspects of QC. It was chaired by John Brady of Crumlin Hospital with major contributions from Des Kenny and Gerard Boran. They felt that there should be a designated QC Officer in each lab with responsibility for internal and external QC. The EQA samples should be assayed only once, exactly as for patient samples. Actions taken on receiving a poor EQA result should be logged on a specific Action Report Log that should be attached to the EQA report.

A question posed often is "how many clinical chemistry schemes should my lab participate in?" the answer being "more than one" as all schemes are imperfect and conflicting signals can be derived from various schemes. The quality of the water used to reconstitute EQA samples must be ultrapure, and this applies also to the water used to blank chemistries. Calcium and phosphate results may drift upwards if water quality for blanking is bad. It may make good economic sense to buy this water in from a commercial source.

Des Kenny presented compelling data to show that the consensus IEQAS mean is almost identical to the DGKC median on all chemistries except, surprisingly, cholesterol where the IEQAS mean is slightly higher. This can give us all confidence in the IEQAS mean results. A flow chart of what to do with single and multiple analyte problems has been devised by IEQAS and will be sent to all participants in the near future

The myocardial markers workshop, chaired by Dr. Peadar McGing, concluded that labs should access to troponin I or T assays. It was concluded that LDH should not be used as a marker of myocardial infarction in the previous few days, the troponins being superior (see separate report on this workshop).

**The full blood count workshop** noticed that the CV for MCV and haematocrit is rising on current returns. It was agreed that ESRs are currently poorly controlled in Irish Haematology labs.

**The Blood Film Morphology workshop** concluded that turnaround time has improved over the last year and that the reporting form is now simpler than before. It was agreed that more clinical details should be supplied with EQA samples. The nature of samples should not be too esoteric and the referees need to get together to decide the guidelines for morphology reporting. Samples should not arrive in labs at the same time as the UK NEQAS samples.