SCIENTIFIC DIVISION

52nd MEETING
Bali, Indonesia (2013 10 25-26)

MINUTES *(final draft)*

Members:	**Abbr.**	**Term and Time of Office**
Ian YOUNG (UK) (Chair)	IY	1st 2011 01 - 2013 12
Philippe GILLERY (FR) (Vice-Chair)	PG	1st 2011 01 - 2013 12
Gary MYERS (US) (Secretary)	GLM	2nd 2012 01 - 2014 12
Christa COBBAERT (NL)	CC	1st 2012 01 - 2014 12
Naotaka HAMASAKI (JP)	NH	2nd 2012 01 - 2014 12
Giampaolo MERLINI (IT)	GMl	1st 2011 01 - 2013 12
Joseph PASSARELLI (US) (Corporate Rep.)	JP	2nd 2013 01 - 2015 12
David BUNK (NIST Representative)	DB	Consultant
Heinz SCHIMMEL (IRMM Representative)	HS	Consultant
Mathias MÜLLER (JCTLM Representative)	MM	Consultant

EXECUTIVE SUMMARY - SCIENTIFIC DIVISION 52nd MEETING, BALI, INDONESIA, OCTOBER 25-26, 2013.

Present: Ian Young (Chair), Philippe Gillery (Vice-Chair), Gary Myers (Secretary), Christa Cobbaert, Naotaka Hamasaki, Joseph Passarelli (Corporate Representative), Mathias Müller (JCTLM Representative), Heinz Schimmel (IRMM Representative) and Ms Paola Bramati (IFCC Office) were in attendance. Apologies received from Giampaolo Merlini and David Bunk (NIST Representative).

5.4 EUROPEAN FEDERATION of CLINICAL CHEMISTRY and LABORATORY MEDICINE (EFLM): The EFLM Scientific Committee and SD leadership agreed there should be close liaison and communication between the two groups. Minutes of the SD meeting in Milano were provided to the EFLM. The SD was advised EFLM is planning a meeting November 24-25, 2014 in Milano, Italy titled, "Defining analytical performance goals 15 years after the Stockholm Conference". This conference will be dealing with analytical performance goals and quality requirements.

6.1 WORLD HEALTH ORGANIZATION (WHO): Greg Miller will attend next WHO meeting on behalf of SD to advance issues concerning commutability and harmonization.

6.2 CLSI: The complete list of cooperative IFCC/CLSI joint projects is available on the IFCC website.

6.22.1 JCTLM: A three day meeting of JCTLM (December 3-5, 2013) will be held in Paris; meeting of JCTLM Review Teams - 3 December; meeting of JCTLM Stakeholders and Members –

December 4-5 (a two day symposium on traceability, commutability and JCTLM activities is planned); meeting of the JCTLM Executive Committee – December 6.

6.22.2 JCGM: JCGM WG 1 (Expression of Uncertainty in Measurement) met at BIPM, Paris – 28th -31st May 2013. Graham White attended as IFCC Representative. Minutes of the meeting were distributed.

6.22.3 BIPM Consultative Committees

SD received no correspondence from CCQM. The CCU held its 21st meeting at BIPM, Paris on 11-13 June, 2013. Georges Férard attended as SD representative to the CCU. Minutes of the meeting were distributed.

6.31 INSTITUTE FOR REFERENCE MATERIALS AND MEASUREMENTS (IRMM):

IRMM will play a role in implementation of the new EU IVD legislation. Regulation is intended to be implemented in 2016.

6.33 NATIONAL INSTITUTE OF BIOLOGICAL STANDARD AND CONTROL (NIBSC)

SD was contacted by NIBSC to determine if there is interest in establishing a WG to develop a replacement material for WHO PSA 9010 reference material. The inventory for PSA 9010 material is very low.

6.37 NATIONAL INSTITUTE FOR STANDARDS AND TECHNOLOGY (NIST):

NIST is developing calibration materials for CRP and HSA for use with appropriate reference measurement procedures.

7.40 OTHER BUSINESS

CCLM Special Issue

The following SD Cs/WGs contributed to a special issue of CCLM (2013; Vol 51 #5) to promote their work:

- Progress towards standardization: an IFCC Scientific Division Perspective (Editorial) – PG and IY.
- Recommendations for clinical laboratory science reports regarding properties, units, symbols: the NPU format. (C-NPU)
- External Quality Assessment Scheme for reference laboratories – review of 8 years' experience. (C-TLM)
- Utility of a panel of sera for the alignment of test results in the worldwide multicenter study on reference values. (C-RIDL)
- Protocol and standard operating procedures for common use in the worldwide multicenter study on reference values. (C-RIDL)
- Quantitative Clinical Chemistry Proteomics (qCCP) using mass spectrometry: general characteristics and application. (WG-cMSP)
- Analytical goals for the determination of HbA_2 (WG-SHbA_2)
- Glucose meters – fit for clinical purpose (WG-GPOCT)
- Defining acceptable limits for the metrological traceability of specific measurands. (WG-AETR)
- A reference system for urinary albumin: current status. (WG-SAU)
- Toward standardization of carbohydrate-deficient transferrin (CDT) measurments: III. Performance of native serum and serum spiked with disialotransferrin proves that harmonization of CDT assays is possible. (WG-CDT)

8.2 MAIN ACTIVITIES OF COMMITTEES:

8.2.6 C-NPU: The terminology database is now on the IFCC server and searchable via the web.

8.2.11 C-MD: The C-MD has been reorganized. The new Terms of Reference are: foster dynamic exchanges between IFCC and molecular diagnostic laboratories and industry; produce guidelines on clinical validation of tests, conduct and report on molecular diagnostic tests; provide reference materials; and create a network of locus-specific IFCC Molecular Diagnostics Centers. The C-MD Chair requested a report on activities from each of the Expert Molecular Diagnostic Centers Laboratories to establish whether they wish to renew their membership and participation in the network of Expert Molecular Diagnostic Laboratories. Three full reports and one partial report have been received.

8.2.21 C-RSE: A meeting of the C-RSE was held in conjunction with the EuroMedLab Congress in Milano, Italy. Minutes from the meeting were circulated. The C-RSE continues to work on the

development of a reference measurement procedure for pancreatic lipase. Results from experimental work by the Japanese group indicated the interference from hepatic lipase (and probably also lipoprotein lipase) were almost completely eliminated by a revised formulation of the reagents, whose main modification was the reduction of pH (7.0 instead of 7.95) and the changing of the bile salt (glycodeoxycholate instead of deoxycholate). It was also found that after examining a wider range of temperatures, the optimal temperature for the preparation of the substrate was 43 °C and not 37 °C. The evaluation of commutability for ALT, LDH, and CK as CRMs is being done in collaboration with IRMM. Nine laboratories participated in the commutability study (4 in Italy, 1 in Spain, 1 in France, 1 in USA, 1 in Ireland, and 1 in Germany) to include all the important manufacturers in the field and the most commonly used analytical systems. The materials were not completely commutable and therefore may be suitable for use in quality control but not for calibration or trueness assessment.

8.2.23 C-TLM: A meeting of the C-TLM was held in conjunction with EuroMedLab in Milano, Italy. Minutes of the meeting were distributed. The C-TLM continues to provide oversight for the IFCC external quality assessment program for reference laboratories (RELA). Currently there are 46 laboratories participating in the RELA program. The C-TLM also continues to provide an interface between IFCC and the JCTLM Working Groups. Currently C-TLM is collaborating with JCTLM to develop a process for de-listing reference measurement procedures from the JCTLM database.

8.2.24 C-RIDL: The C-RIDL continues to work to establish regional reference intervals. These regional reference intervals should be traceable to reference measurement procedures where possible.

8.2.25 C-STFT: A meeting of the Committee was held in conjunction with the AACC meeting in Houston, TX. Minutes of the meeting were distributed. The C-STFT continues to work on standardization of FT4. The UGent has identified 3 possible partners, who were invited to form, together with the reference lab of UGent, a network of FT4 reference laboratories. Currently two laboratories are already able to provide FT4 RMP services, i.e.,UGent and the Reference Material Institute for Clinical Chemistry Standards (ReCCS, Japan) (note: only UGent is JCTLM listed). The laboratories from CDC and Stanford University have committed to also establish the FT4 conventional RMP.

8.3 MAIN ACTIVITIES OF WORKING GROUPS:

8.3.35 WG-HbA2: The WG-HbA2 continues to work on analytical issues to develop a reference measurement procedure for HbA2. .The activities of the WG during the last months have mainly concerned the development of the reference measurement procedure based on isotope dilution-mass spectrometry (ID-MS). The results of efforts to reach stable digestion conditions for delta and alpha chains, although promising, were still far from acceptable with regard to the goals needed for a primary reference measurement procedure. Therefore, the WG is now considering a move to using recombinant hemoglobins as internal standards.

8.3.36 WG-CDT: The WG continues to work to develop a reference method for CDT. .A study (Study 5) was undertaken to confirm the harmonization potential of lyophilized and frozen calibrators determined in Study 4. After recalibration, the inter-method (HPLC, CZE, direct immunoassay) CV was reduced to 3.6% in individual patients. The WG is looking into the clinical impact of harmonization of CDT.

8.3.39 WG-SAU: All activities of the WG-SAU are a joint effort with the NKDEP Laboratory Working Group. The WG continues to focus on the following projects: validation of candidate reference measurement procedures developed at NIST and at Mayo Clinic; specifications for a SRM for albumin and creatinine in human urine. The WG-SAU and LWG of NKDEP will work with NIST to develop the specifications.

A manuscript on albumin adsorption to surfaces has been submitted to Clin Chim Acta., (Robinson MK, Caudill SP, Koch DD, Ritchie J, Hortin G4, Eckfeldt JH, Sandberg S, Williams D, Myers G, Miller WG. Albumin adsorption onto surfaces of urine collection and analysis containers).

A manuscript describing the status of harmonization among commercial immunoassays for UA (funded by NKDEP) has been submitted to Clin Chem., (Bachmann LM, Nilsson G, Bruns DE, McQueen MJ, Lieske JC, Zakowski JJ, Miller WG. State of the Art for Measurement of Urine Albumin: Comparison of Routine Measurement Procedures to Isotope Dilution Tandem Mass Spectrometry).

8.3.40 WG-PAPPA: The WG continues to work to develop a reference system for standardisation of PAPP-A measurement employed as a marker for prenatal screening.
8.3.42 WG-SIA: Establishment of a reference measurement procedure for serum insulin is on-going.
8.3.43 WG-TNI: A meeting of the WG-TNI was held in conjunction with the AACC meeting in Houston, TX. Minutes from the meeting were distributed. Due to the large amount of data resulting from the cTnI pilot study, the study results will be presented in two papers side by side, paper 1 – harmonization status of cTnI assays; status post mathematical recalibration and paper 2 – commutability of cTnI candidate serum reference materials. The Troponin and Natriuretic Peptide tables on the IFCC website will continue to be updated by the WG-TNI. The WG proposes that results for serum troponin be reported in whole numbers and use nanogram per litre as the unit of measure which is acceptable to the Système International.
8.3.44 WG-AETR: The WG-AETR is being closed and the project activities will be assumed by the C-TLM.
8.3.45 WG-HAT: Update on MPO material: short term stability and homogeneity have been successfully evaluated and the material has behaved well, approx. 30mg of IgG anti MPO has been purified by affinity purification which is currently being characterized and calibrated against ERM DA 470K. Update on cardiolipin antibodies and beta-2 glycoprotein: more beta-2 glycoprotein is being purified, a method for quantification of IgG by mass spectrometry is under development, plasmaphoresis material for β2GP1 has been received and is waiting processing. Update on PR3 material: the data from the commutability study have been analyzed and some assays are giving non-correlating results.
8.3.47 WG–cMSP: A meeting of the WG-cMSP was held in conjunction with the EuroMedLab Congress in Milano, Italy. Minutes of the meeting were distributed. The WG continues to consider issues related to comparing mass spec methods with immunoassays available for measuring hepcidin and is it possible to establish a reference measurement procedure for hepcidin. The WG is also preparing an article for publication on trypsin digestion of blood, CSF, urine for the quantitative assessment of peptide/proteins for clinical applications. The article will contain review sections, and also some experimental illustrations.
8.3.48 WG-PTH: A meeting of WG–PTH was held in conjunction with the EuroMedLab Congress in Milano, Italy. Minutes of the meeting were distributed. The WG-PTH has undertaken preliminary work to assess the commutability of the 1st International Standard for Parathyroid Hormone (PTH) (WHO IS 95/646). Due to the instability of PTH both lyophilized and fresh frozen pools will be tested. A measurement procedure for 1-84 PTH by immunocapture coupled with LC-MS/MS developed by the Mayo Clinic has been validated for clinical use and is being considered as a reference measurement procedure for PTH.
8.3.49 WG–CSFP: The WG-CSFP has collected large amounts of CSF with the intent to develop a matrix-based reference material. A commutability study has been performed, in which the mass spec method for Aβ1-42 is compared with several immunoassays (ELISA, Luminex, and MesoScale), when analysing a large series of individual patient samples, as well as aliquots of the CSF reference material. The analyses show high correlations between the mass spec method and the immunoassays, and also very good commutability of the collected reference material, but not for different variants of artificial CSF. Four laboratories (Waters, PPD, UPenn, and UGOT) are working on setting up a reference measurement procedure for absolute quantification of Aβ in CSF. The assays have been compared in a detailed Round Robin study in which both human CSF samples and the calibrators have been analysed in all labs. The results show very good correlations and agreement between assays. In this Round Robin study, the candidate reference material was included as one sample, and if data from each laboratory were corrected based on this sample, the agreement between methods was excellent.
8.3.50 WG–SBMA: The WG on Standardization of Bone Marker Assays (WG-SBMA) is a joint activity with the International Osteoporosis Foundation. The Term of Reference is to standardize or harmonize (as technically feasible or appropriate at this time) clinical assays available for routine and research use, for the following two bone turnover markers; the serum assay for C-telopeptide fragments of collagen type I α1 chains containing the epitope Glu-Lys-Ala-His-Asp-ß-Gly-Gly-Arg in an isomerized form (also known as serum Crosslaps (CTx)) and the serum assay for N-terminal Propeptide of Type I Procollagen (P1NP).
8.3.51 WG-COMM: This is a new WG created by the SD and approved by the IFCC EB. The Terms of Reference for the WG are as follows:

- Establish operating procedures for the formal assessment of the commutability of a reference material intended for use as a calibrator, trueness control or EQA sample, taking into account different measurement procedure properties and categories of traceability described in ISO 17511.
- Establish how to define the degree of commutability which is required for a given reference material, taking into account its intended use and the intended use of the measurand. The degree of commutability becomes the criteria used in the assessment process.
- Propose standard terminology to describe the degree of commutability of a reference material, taking into account its intended use.
- Provide guidance to manufacturers and laboratories about what information should be provided by manufacturers in relation to the commutability of reference materials used to establish the calibration traceability of a measurement procedure.
- Advise IFCC Committees and Working Groups on how to assess the commutability of materials on which they are working.
- Develop educational materials regarding commutability for manufacturers, laboratories and users of laboratory results.

8.19 MEETINGS

8.19.52 52nd SD Meeting – Bali, Indonesia, October 25-26, 2013
8.19.53 53rd SD Meeting – Istambul, Turkey, June 20-21, 2014