



International Federation of Clinical Chemistry and Laboratory Medicine

— 2000 —

ANNUAL REPORT

HIGHLIGHTS OF THE YEAR

- 8th International Congress on Laboratory Automation and New Technology - ANT (Mexico City)
- 8th Arab Congress in Clinical Biology (Rabat, Morocco)
- 6th Alps-Adria Congress of Clinical Chemistry and Laboratory Medicine (Opatija, Croatia)
- 50th Congress of the Hungarian Society of Clinical Pathology (Debrecen, Hungary)
- 8th Congress of the Balkan Clinical Laboratory Federation (Sinaia, Romania)
- IFCC/Roche Conference on Human Genomics: The Basis of the Medicine of Tomorrow (Kyoto, Japan)
- IFCC/Beckman Coulter European Conference on Cell Biology of Neuronal Dysfunction (Paris, France)
- Medica MediLab (Düsseldorf, Germany)
- Recommendations: Determination of Total Carbon Dioxide, ionized Calcium
- Reference Materials: Enzymes, PSA and Cortisol
- Handbook 2000-2002
- New IFCC Web Site

PRESIDENT'S MESSAGE

by Mathias M. Müller, IFCC President

As we enter the year 2001 and have successfully managed the odyssey into the new millennium, it is important to reflect on the past year. A kind of evaluation is usually done by individuals by comparing the objectives and expectations with the achievements. In an international organization this kind of retrospective evaluation is done by an annual report summarizing the highlights of the year 2000.

It is one of our goals to involve clinical chemists, clinical biochemists, and laboratory physicians from all over the world in the activities of the Federation. With the changing economy, health care systems, and globalization of industry, pressure is building on individuals in our profession. We will be required to run clinical laboratories more efficiently, at a higher standard of professional and technical competence, and for the benefit and interest of patients and society. A number of IFCC programs are related to these changes. Besides using new technologies, providing accurate measurements, and an excellent service, the interpretation of test results for diagnosis, prognosis and treatment of patients are becoming increasingly important in Laboratory Medicine. We should accept this challenge and the responsibility of being partners to the clinicians. The traditional professional competence and skills of the staff working in diagnostic laboratories must be adapted by continuous education in order to implement the vision of Clinical Chemistry and Laboratory Medicine as a bridge from basic, applied science to clinical service.

This Annual Report is the first from the Executive Board which has been elected for the period 2000-2002 and summarizes general new directions within the Federation and the achievements of the Divisions and their respective working parties.

International organizations might appear distant and unrealistic to the public. Following the advice of the Past-President Matthew McQueen members of the Executive Board and the Divisions have actively participated in several regional congresses and conferences in order to meet with the membership. These are occasions where the needs and mutual expectations can be discussed and friendships and collaborations established. These personal contacts with individuals from Member Societies and Corporate Members are important for communicating the Federation's activities, possibilities and expectations. In 2000 the Arabic Region, Europe, North and Latin America were the targets of official meetings.

The Scientific Division (Chair: Jean-Claude Forest) has increased the scientific reputation of the Federation in standardization issues such as the development of a reference system (reference measurement procedures, reference materials, reference laboratories) for clinically relevant analytes. Some of these projects are conducted in collaboration with international/regional organizations (WHO, BIPM, ISO, ISTM, IUPAC, IRMM, NCCLS,

etc.). The special and close working relationships with IRMM, IUPAC, NCCLS, ISTM and IATDMCT has been established through joint projects. IFCC and its experts have been welcomed in global initiatives related to quality improvement of IVD. These facts demonstrate that IFCC is considered by others as the global representative in Clinical Chemistry and Laboratory Medicine.

The Education and Management Division (Chair: Gerard Sanders) has been traditionally involved in training, education, and quality assurance program in Latin America. It has now expanded its activities to include projects related to evidence based Laboratory Medicine and to outcome studies. The Division will also expand its role by providing training courses in new technologies. Several of these new activities are being carried-out in close collaboration with the national societies, and regions and are supported by Corporate Members.

The Communication and Publications Division (Chair: Bernard Gouget) accepted the challenge of electronic communication and established the newly designed IFCC Web Site. On the new site (www.ifcc.org) all information regarding services, products and publications of the Federation can now easily be obtained. With this new site, IFCC will reach all colleagues worldwide and be able to better serve them. The electronic version of the IFCC Journal publishes review articles, news, and reports from IFCC working parties and program. The relationship with the Journal of Clinical Chemistry and Laboratory Medicine (CCLM) has further developed. "IFCC pages" of CCLM include recommendations, documents and news of the Federation. Such information will be available in both hard-copy and electronic versions of the Journal.

The Congress and Conference Division (Chair: Graham Beastall) has been heavily involved in the organization of the 2001 General Conference. The Conference has been organized to actively involve the representatives of National Societies and Corporate Members in various open sessions. The members of the Division are continuously in contact with organizers of regional and international congresses giving them advice and support. It is the intention of the Executive Board that this Division will be more involved in the organization and running of IFCC Conferences and Congresses.

The Federation is a voluntary organization depending not only on financial contributions from the membership but also on individuals ready to serve this organization. It is my deep belief that only the active participation of enthusiastic experts in IFCC programs has brought progress in the Federation's key elements such as standardization, training, and clinical utilization of laboratory tests. We all need to be thankful to these colleagues for their hard work on our behalf in meeting our needs and expectations, and in expanding the vision and role of the International Federation of Clinical Chemistry and Laboratory Medicine.

EXECUTIVE BOARD (EB) ACTIVITIES

Meetings

EB met twice in 2000, in Rabat, Morocco and Captiva Island, United States. The meeting in Rabat was held immediately prior to the 9th Arab Congress on Clinical Biology and the meeting in Captiva Island was held in conjunction with the Board of Directors of the AACC. Holding the EB meeting at a national, regional or international conference such as the ACCB increases the contacts between EB members and clinical chemists from national societies.

At the meeting in Rabat, the President welcomed the members of the new EB and outlined issues he would like the Federation to focus on over the next few years – the main two being Standardization and Education. As an example, he suggested that invited lectures given on behalf of the IFCC, as at regional meetings, should be on topics of relevance to the Federation and highlight the work of the IFCC.

Two issues that were discussed was widening the Corporate Membership and that in many countries, large numbers of laboratory workers are not members of the IFCC Societies but of other professional bodies. Efforts would be made to attract Corporate members such as scientific publishers and biotechnology companies. It was also decided that for a company to be involved in an IFCC project they must be IFCC members and that one way to attract new members was to increase the number of affiliated members.

There was a meeting between the EB and the Board of the AFCB. The AFCB President described the Federation and stated that a very significant number of the Arab countries are now members of the IFCC. The main problems they face are financial and at times communications. Often the problem with funding prevents members from AFCB from attending Conferences. This is also a problem for other regional organizations which have developing countries as members.

The meeting in Captiva Island was important for two aspects. The EB had the opportunity to meet formally and informally with the Board of Directors of the AACC. The meeting with the AACC clarified many issues that had been of concern to both organizations. It was agreed that there would be further meetings and cooperation between the two organizations.

This last meeting in 2000 was also used to set the priorities for next year and to reflect these priorities in the budget. In order to have an overall view of the various programs conducted all chairs of the Divisions were present.

IFCC-IUPAC Relationship

EB agreed that the formal relationship with IUPAC should be ended and this will be put to the members of IFCC by mail ballot so that the statutes can be changed accordingly. It was determined that cooperation with IUPAC would be along the same lines as with other International Organizations. The mail ballot changing the Statutes regarding IUPAC representation on the EB was passed by the majority of the 42 from a possible 78 National Societies who voted.

IFCC Office

At the meeting in Rabat, organizational and administrative matters of the IFCC Office in Nancy were discussed extensively – new personnel was recruited. This seemed

to be rationale since the expanding activities of IFCC needed to be supported.

During the year it became obvious that a change in the way the IFCC Office operates was needed. EB and the Divisions stressed that the new possibilities of electronic communication with the membership must be used more professionally. It was envisaged that recommendations, documents, booklets etc. be made available for the international community. The Office needed to be more professionally oriented and able to support the volunteer officers by taking over more administrative tasks. Thus, the decision was made to ask for Expressions of Interest from National, Corporate Members and professional service organizations to form a partnership in order to carry the administrative functions of the IFCC Office and to support more actively the EB and the Divisions. Initial interest has been encouraging with a number of proposals being received. It is envisaged that in 2001 there will be a period of transition from the present Office in Nancy to the new IFCC Office provided and run by a Professional Service Provider.

Special Projects

With the changes in molecular biology techniques (microarrays) the proper use of these findings becomes a greater challenge for the profession. Therefore a Task Force dealing with Ethics in Laboratory Medicine with special emphasis on Forensic DNA Fingerprinting and Serum and Tissue Banks was formed.

The EB decided that the IFCC should use its expertise to initiate a worldwide project of benefit to its members and society in general. The selected project is related to laboratory diagnosis and management of diabetes. A Task Force has been formed to organize a workshop during the General Conference where this global, interdisciplinary project will be launched.

Professional Scientific Exchange Program

This program supports twinning between laboratories by supporting training and scientific work on an individual basis. In 1998 this program was founded so that young colleagues could participate in visits abroad. During 2000, 8 applications were received and 7 approved. Due to overlap from fellowships granted in 1999, a total of 8 visits abroad took place (long-term visit: 2, short-term visits: 6). The scholarship recipients came from Bulgaria, Croatia, India, Macedonia, Mexico, Turkey, Vietnam, and Zimbabwe. They were trained in laboratories in Austria, Australia, Belgium, France, Germany, UK, and USA. The topics and techniques dealt with during these visits were related to oxidized lipids, bone turnover and bone markers, influence of pesticides on gene expression, molecular biology techniques, and flow-cytometry. Several of the reports received so far have been published in eJIFCC.

Awards Committee

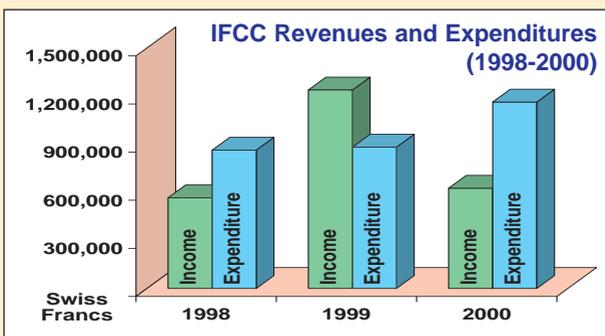
The IFCC Awards program includes the following five awards: Distinguished Clinical Chemist and Distinguished International Services -- Henry Wishinsky Awards (sponsored by Bayer); Distinguished Contributions to Education Award (sponsored by Beckman-Coulter); Award for Evidence of Effectiveness of Laboratory Tests (sponsored by the European Diagnostics Manufacturers Association); and the Award in Advances in Critical Care Medicine (sponsored by Roche). The IFCC is grateful to these sponsors for their continuing sponsorship of these awards.

Members of the 2000-2002 Awards Committee are Chairman Carl Burtis (Vice-

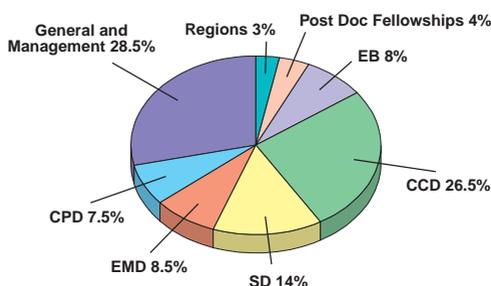
A QUICK VIEW OF IFCC FINANCES (1998-2000)

As shown in the Figure on the right, revenues and expenditure were broadly in balance over the three years 1998-2000. As usual, the year which contained the International Congress of Clinical Chemistry showed a positive outcome whereas in 1998 and 2000, expenditure exceeded revenues. The overall result across the 1998-2000 triennium was a deficit of 359.000 Swiss Francs.

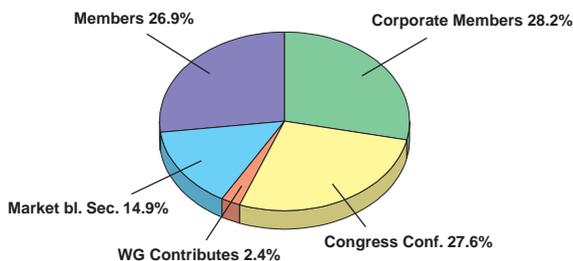
The major sources of revenue are Members' and Corporate Members' subscriptions, ICCS profits, and contributions towards Scientific Division projects and specialized conferences. The patterns of IFCC revenues and expenditure are shown in the two pie charts shown below. The major items of expenditure are within the Congress Conference Division (CCD) and the Scientific Division (SD), and in maintaining the infrastructure of our organization. The three other Divisions account for just over a third of the expenses. During 2000 a special high cost has been allocated to the IFCC office.



Allocation of IFCC Expenditures (2000)



Allocation of IFCC Revenues (2000)



President) and Drs Ann Gronowski (USA), Adolph Grünert (Germany) and John Whitfield (Australia). The Awards Committee is assisted by B van Weemen (Netherlands), Wieland Hölzel (Germany), and John Place (EDMA-BE) for the IFCC-EDMA Award and by Miriana Serdar-Obermeier (Roche-CH) and Andrew St. John (Roche-AU) for the IFCC-Roche Award.

Nominations for the IFCC-EDMA Award were solicited in 2000. This will be awarded in May 2001 at the European Congress of Clinical Chemistry in Prague. The first author of the award-winning paper will be invited to present the investigation at the Congress. For the other four awards, a call for nominations letter was sent to National Societies and Corporate Members in January 2001. These Awards will be bestowed at the triennial International Congress of Clinical Chemistry in October 2002 in Kyoto.

COMMUNICATION AND PUBLICATIONS DIVISION (CPD)

Throughout 2000, the hardcore of the Communication and Publications Division were Bernard Gouget (FR) (Chair), Andrew Wootton (AU) (vice-Chair), Johan Waldenstrom (SE) (Chief Editor eJIFCC), Craig Webster (UK) (Web Coordinator). In the course of the year Rosa Sierra Amor (MX) moved to the EMD, allowing Chris W Lam (HK) to replace her as EB liaison, Andreas Rothstein (CO) was appointed to the Nominations Committee allowing Ellis Jacobs (USA) to take up the position as News Editor, and Gordon Challand (UK), (Secretary, Liaison CCLM) and decided to devote himself entirely to continuing education under the auspices of the ACB. The CPD lost its Corporate Member, Stephanie Wells having left Bayer Diagnostics Division. These former members are heartily thanked for their contribution.

The CPD met as a whole group on two occasions. The first meeting took place in Mexico City at the time of the annual congress of the Mexican Society AMBC. At this meeting, the CPD focused on the means of integrating the new technologies of communication and learning for IFCC and to determine the role of the CPD to put in place interactive networks. The CPD intends to identify a strategy for development and organization integration of all sectors of laboratory medicine. The first objective was to document the complementarity of the groups and the experience of the professionals concerned in laboratory medicine. This was achieved by the organization of scientific workshops on telemedicine, telecommunication and networks in Mexico City and in Rabat, thanks to industrial support.

The second meeting was in Vienna, in the presence of the IFCC President, and centred on the challenges of the information networks which are capable of modifying knowledge management in medicine and new ways of evaluating the needs of IFCC members in terms of information services and products. The reorganization of the Web site represented the main body of work, comprising the visual design, terminology and labeling, design of interactions and workflow, information structures, and the email discussion forum. A systematic policy for interaction and participation is intended, so as to make sure that an effective system is in place to get updated information.

This year the CPD further developed interprofessional, interlinguistic and interregional interactions: the Ibero-Americano corner on the Web site, meetings with the Arab Federation of Clinical Chemistry (Rabat, MO), COLABIOCLI (Mexico City, MX) and Asuncion, PA), full meeting with the Corporate Members (San Francisco, USA in July) and closer contact with the Asia-Pacific Area Confederation through its President, Chris W Lam, for preparation of the 50th Anniversary of IFCC.

Promotion of IFCC was achieved through the publication of the new Handbook 2000-2002, the more widespread publication of the news in Lab Medica International in addition to CCLM. The CPD chair took part in 2 meetings with EB and a joint meeting of the AACC with the EB (Captiva Island, USA).

The CPD members brought their strengths in programs allowing improved access to IFCC activities, in order to obtain scientific knowledge, to exchange ideas and work with world-class scientists. The intention is to have a supportive culture with ample opportunity to learn and develop, providing continuing education in printed and electronic form, while at the same time promoting the image of the IFCC to its individual members, to industry and to the world at large.

Key aspects of the strategy of the CPD are:

- Strategies for improvement of the web site and electronic means of communication
- Changes in eJIFCC and IFCC News, Handbook, and collaboration with publishers
- New multimedia techniques
- Quality assurance for the website
- Communication with IFCC officers and IFCC members
- Public relations and promotion of the IFCC image

Activities at the Asociacion Mexicana de Bioquímica Clínica (AMBC) and Asociacion de Bioquímicos de Paraguay (ABP)

3 CPD members were invited as moderator and speakers by Dr Maria del Pilar Ortiz Hernandez, AMBC president. The symposia on information systems and automation and on telemanagement were organized conjointly with the NCCLS and experts in CLIA'88 and ISO standards. The intention of the CPD was to position the role of IFCC in the elaboration and diffusion of practical guidelines and standards for improved awareness of the tools for communication and how they can be used in practice in the context of current regulations. There was significant interest by the participants in the IFCC booth which showed IFCC posters, and distributed IFCC pens and IFCC booklets to colleagues from COLABIOCLI. These meetings allowed the correspondents for IFCC news and wwwWG to be identified. In the course of this meeting, it was decided to set up an Ibero-American Corner on the Web site, the coordination of which is Dr. Xavier Fuentes Arderiu. The chair met Pr Nelly Betances, President of COLABIOCLI, and her team during the annual meeting of the Asociacion de Bioquímicos de Paraguay to reinforce the collaboration with IFCC.

Activities at the 9th Arab Congress of Clinical Biology, Rabat, May 2000.

The CPD organized a workshop thanks to financial support from two industry members (Agilent Technologies and Hexaflux), on the topics of telemedicine and global information networks. The objectives were to inform the participants on the use of informatics and the means of telecommunications and to promote their value in the medical education and training. The use of computers, illustrated by navigation on the IFCC Web at the end of the session, made it possible to define the elements of a new approach to medical training and to emphasize interactivity by using the approach of medical electronic mail for the interpretation of results.

Collaboration with Corporate Members

The CPD was in charge of coordination of the local organization of the IFCC Beckman Coulter Conference in Paris (October, 2000) on Frontiers in the Molecular Basis of Disease. The proceeding are in the process of being published in a special issue of CCLM. This was the opportunity to thank Hartmut Wetzels of Beckman Coulter and present him with an IFCC plaque in recognition of important contributions to the IFCC as EB Corporate Member.

To reinforce the collaboration with the CM, an agreement was made, that for a small fee, the IFCC logo could be used in the scientific documents produced by CM's. We thank Radiometer Copenhagen for being first to implement this idea.

IFCC Web Site

The IFCC web site (www.ifcc.org) is an international resource of laboratory medicine: information, a newsletter, an email discussion group, an electronic journal (eJIFCC). It is planned to test internet conferencing software to further expand use of the site.

The site continues to generate interest. In the last five months there has been over 20,000 hits on the site. Since its inception, there are on average 13,060 hits per month. The home page has been accessed on average 2,599 times a month, and this rate is increasing. The eJIFCC continues to be the most popular section of the web site, with 2,300 accesses in November (30% of the traffic). The second most visited section of the web site is the new handbook. The shopping section has aroused some curiosity because of the new products for sale (10% is book sales). Traffic is 32% from the USA and unknown domains, and 25% European. All regions of the world are represented.

The IFCC web is the basis of communication for our membership, and we need to continue to expand its organization and how we can use it. Numerous resources are already in place: Email links to the secretariat, the IFCC handbook, annual report, links to corporate members, data base on scientific meetings, interactive address list, continuing education-clinical cases, the Ibero-Americano corner, the Diccionario Ingles-Espanol de Ciencias de Laboratorio Clinico.

A complete review of the Website was decided in September. Craig Webster, as web coordinator, ensures the management and functioning of the site and coordinates the www-WG. The website was transferred from the University of Nancy (FR) to a commercial web host. The advantages are: the ability to create searchable databases, the ability to implement an eCommerce solution and a reduction in the costs associated with the website. The contract with the French provider was terminated. IFCC also thanks Jean Marie Ziegler, the former web specialist in Nancy, for his efforts in support and improvement of the website.

The www-WG prepared a new layout for the site, creating a more dynamic look to aid in the promotion of the IFCC image. The layout of the website will be controlled by cascading style sheets. Official launching will take place at the time of the next General Conference.

The challenge is to get appropriate information to the IFCC members easily and in real-time. With rapid publication, since everyone is reading off the same page, they will be well informed and the relationship with members will be much stronger.

The IFCC shopping site

The list of publications is available on the web, and orders can be passed directly on the website.

Publication of Recommendations and other IFCC documents

Agreement with Walter de Gruyter: The agreement between IFCC and Clinical Chemistry and Laboratory Medicine (CCLM) allowed the publication of recommendations on the use of ISE for blood electrolyte analysis: one on nomenclature, definitions and conventions the two others on sodium and potassium and ionized calcium. Three issues of the news were published, as well as several papers jointly with FESCC and EC4. A special issue was dedicated to the proceedings of the Joint IFCC-Roche Conference, Kyoto, JA (April 2000), two editorials, one on Worldlab'99, the other on the Millennium 2000 Laboratory Medicine (From where to where?), as well as the lists of IFCC meetings and conferences have been published.

The copyright for these contributions is held by IFCC. In parallel with the paper version of CCLM, the IFCC web site has a link to the web site of CCLM which allows the IFCC documents to be consulted by all members at no cost. An updated list of publications is available on the website and in the new Handbook. Additional publishers have been solicited for the publication of IFCC scientific documents, or translations of them, after authorization from the CPD.

Electronic Journal of the IFCC (eJIFCC)

The eJIFCC is a wholly electronic publication, coordinated by the editor-in-chief and the eJIFCC-WG, which is comprised of representatives of the IFCC regions. Four issues were published. A subscription mailing list has been developed which allows readers to be quickly notified of a new issue. The eJIFCC is evolving more and more towards a journal for information and training. The objective of the journal was

revised in order to promote:

- A multidisciplinary approach (e.g.: the special issue on hemostasis, Vol 12.N°2)
- The patient-oriented approach to the clinical value of tests (Vol 12.N°3)
- Innovative ideas by an improved co-operation with industry: important trends in technology, diagnostics initiatives, benefits of new diagnostic tools and their impact on the quality of care (e.g.the special issue on Critical Care, Vol 12.N° 4)
- Brief news on the strategies of standardization and nomenclature (e.g.. properties and units in clinical laboratory sciences (Vol 12.N°1)
- Exchange of ideas on the problems of health care organization between countries (e.g.. the visiting lecturer program, Vol 12.N° 3).

The instruction to authors for eJIFCC was updated according to criteria for electronic communication

IFCC News

A Rothstein (News Editor) is to be congratulated for his efforts to bring together relevant information during these three last years. In the interim period, BG has coordinated the production of the news and has endeavored to enlarge the diffusion of the news through their publications in several ways. Globetech Publishing has accepted to provide regular information in print. Lab Medica International contains a section about IFCC, its current and forthcoming activities.

Three IFCC newsletters (circulation:26,000) were published in July, September and December Lab Medica International issues. The July issue also contained a copy of the 1999 Annual Report, printed in color. Although the electronic form is available on the IFCC website, the printed version of the newsletter in several journals is a significant additional channel of communication, intended to reach not only the laboratory professionals who are members, but also to reach a new readership. Moreover, it is now possible to directly upload news to the Web site. All are encouraged to do this! Ellis Jacob was named the new news editor.

Handbook 2000-2002

IFCC package and external communications

The handbook content has been entirely revised and improved in order to allow everyone to better know the objectives and missions of the IFCC. The standardized presentation of divisions using the numbering system facilitates contacts between working groups. The printed version of the handbook is updated once per annum, but is permanently on the Web site, and can be obtained as a CD-ROM on request. An up-to-date list of the publications of the scientific division over the past 10 years was added. The CPD defined a new graphic charter for the handbook, and made bookmarks and greetings cards, both electronic and in print.

A template and an example of a standard presentation using the IFCC model are also present on the site for the lecturers

Future Goals

CPD is continuously thinking about the technologic advances that can make IFCC more efficient in terms of internal communication and interaction with its membership. Already active with its website, electronic and printed publications, IFCC's cyberspace can be expected to continue in 2001. As e-communication and e-commerce tools become more reliable, more affordable, and more easily accessed around the globe, IFCC-CPD will evaluate and incorporate these tools that enable IFCC to satisfy the needs of its membership, and remain in a position of leadership in professional societies which use these tools.

CONGRESS AND CONFERENCE DIVISION (CCD)

During 2000 CCD activities were overseen by Graham Beastall (UK) (Chair), Albert Fraser (Canada), Joseph Lee (Hong Kong), Josefina Mora (Spain), Lasse Viinikka (Finland), Paul Whitlock (Corporate) and Hermann Wisser (Germany). CCD met twice during the year in Hong Kong (June) and in Dusseldorf (November).

International Congress

CCD received the final report from the highly successful 17th ICC (IFCC-WorldLab 1999) which had been held in Florence. This congress had attracted a huge attendance, set high standards for scientific content, been very enjoyable and generated a significant surplus. CCD also worked closely with the organizing committee for the 18th ICC (Kyoto 2002), including a joint meeting in Hong Kong. Finally, CCD communicated with the American Association of Clinical Chemistry regarding the organization and ethos of the 19th ICC (Orlando 2005).

Regional Congresses

During 2000 the only Regional Congress to take place was the AFCB Congress in Rabat – this was well attended and very successful. CCD worked with the organizing committees for the following forthcoming Regional Congresses (Prague, 2001; Barcelona 2003; Florianópolis 2001; New Delhi, 2001; Perth 2004).

Master Conferences

Two Master Conferences were held during the year. The IFCC Roche Conference on Human Genomics in Kyoto, and the IFCC/Beckman Coulter European Conference on Cell Biology of Neuronal Dysfunction in Paris. Both conferences were excellent from a scientific perspective and CCD will take a higher profile with organizer of future conferences to assist with marketing and financial control.

General Conference 2001

CCD facilitated the selection of Dubrovnik as the venue to host the IFCC General

Conference in 2001. CCD will continue to work with the Croatian Society and the IFCC office to ensure that this occasion is a major success in the development of IFCC and its relationship with its members.

Support to Organizers of Congresses and Conferences

CCD expanded the package of support materials that are available to organizers of congresses and conferences. These will be integrated into a user friendly package on the IFCC website. Two attractive mailers have been produced to publicize the support package – these will be distributed in early 2001.

Other Activities

CCD awarded IFCC Auspices to four conferences that took place during 2000. Thanks to the efforts of Dr Francesco Dati the five year rolling program of forthcoming conferences and meetings was updated and publicized via the IFCC website.

EDUCATION AND MANAGEMENT DIVISION (EMD)

In the year 2000 the Education and Management Division (EMD) started with a new structure. This meant that an Executive Committee was formed to which the different Committees and Working Groups will be responsible, leading to the structure indicated below.

The EMD presented its Mission Statement: EMD will provide IFCC members and health-care community with the best education relevant to Clinical Chemistry and Laboratory Medicine, directed at scientific, clinical, and managerial issues.

The EMD Strategy to accomplish its mission is by: Response to the need of IFCC members; Identification of relevant areas; Guidance of laboratory professional; Creation of and participation in programs; Production of educational documents.

EMD will implement this strategy by: Critically evaluated information (projects, courses, lectures, visits, documents); Covering all relevant topics (committees, WG's, VLP, specific projects); Reaching its target audience (IFCC members, students, governments, industry, general public).

The EC had its General meeting with the Chairs of the Committees and Working groups in October in Amsterdam, the Netherlands. From the EB Mathias Müller was present. In that meeting the present year was reviewed, different projects were discussed, and plans for the coming years were made. We have established the new structure and the roles and responsibilities of the EC, Committees and Working Groups were defined. During the year frequent contact has been useful to get acquainted to the new structure in which an EC set out the general lines in co-ordination with the Chairs. Due to this contact the meeting in October was successful.

As a general policy it was stated that Committees would seek as many Associate Members from the National Societies as possible. They are the key individuals We also discussed the importance of key advocates within National Societies when communicating and requesting input or support on a national level. Furthermore, EMD will use the Web as much as possible in the communication about its projects.

Executive Committee

The Executive Committee (EC) met twice. In March in Jerusalem, Israel, and in June in Leuvenum, the Netherlands. The meetings were used to define the mission of EMD and to concretize the strategy and future initiatives for EMD. The terms of reference for the Committees and Working groups were reviewed, their activities were discussed and monitored, and information was exchanged with the chairs. It remains the concern of the EC that on one hand the flow of information is optimal to get informed about the ongoing activities, while on the other hand the level of administrative activities will increase for the Committee Chairs. This will be a topic of continued discussion as the Division continues to work and develop the communication channels and processes associated with the new structure.

Other issues the EC has taken care of were co-ordination with EB-IFCC and other divisions, and financial planning and budget management. With the EB Liaison the terms of reference were agreed.

In May 2000 a letter was sent to all national societies in which two issues were addressed:

- A catalogue of services of EMD was sent out. In it, all activities of EMD were compiled and the new structure and members were introduced.
- A request was made to ask the societies to come forward with candidates for our Committees. The replies were not many. We discussed the names and how to involve candidates in the activities of EMD, and for some Committees new enthusiast members could be appointed.

Also, the EMD tried to present itself better to the membership of IFCC: the Web pages were updated, the catalogue of services that EMD can provide was put on the Web.

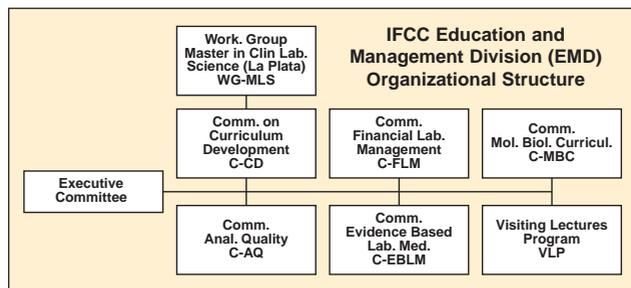
Committee on Programs and Courses

In the last year it was decided to stop the activities of this Committee.

Committee on Financial Laboratory Management

The objective of C-FLM is to promote the organizational, managerial and financial skills of laboratory managers by providing education and publishing articles on modern management issues in order to function optimally in healthcare. A symposium was organized in June in Bergen (Norway) around the central theme of "Managing the Change in Laboratory Medicine". Issues that were addressed consisted of: managing the (technological) changes in the field; managing basic research; presentation of test results; and the financial aspects of new laboratory structures.

The Committee brought forward an Action Plan for 2000-2002 in which present and future activities and plans were described. Topics are possible courses in Financial Management; Cost Utility Analysis and effective use of laboratory tests;



Field studies of laboratory Organization and Management, which are audits in the healthcare situation in a country.

Also, two new members were appointed to this committee.

Committee on Molecular Biology Curriculum

Terms of reference: To develop curriculum and training courses in Molecular Biology techniques, and to develop techniques for teaching Molecular Biology in Laboratory Medicine. Under the auspices of the Committee has organized a course in molecular biology in Kyoto was organized in April. For the rest this Committee acted on a low profile, therefore, no further activities can be reported over the year 2000. It was realized though that a lot of countries want a basic training course in Molecular Biology.

Committee on Analytical Quality

Terms of reference: The scope of C-AQ's activity includes the promotion of analytical quality, in its broadest sense, in the clinical laboratory, with a focus on developing countries.

The Committee had its annual meeting in Borås (Sweden).

The existing serum donation projects have been going on. Some National Societies are giving support to other countries: Denmark to Iran and Bulgaria; Belgium to Bulgaria; Argentina to Bolivia, Uruguay, Ecuador, Dominican Republic and Paraguay. Other countries involved in these projects are India, Slovakia and Lebanon.

The network for assigning values to EQAS control material for enzyme measurements in Argentina is running between Argentina and Germany. The project is now in its second stage and a new enzyme, GGT, has been added to it. Expanding the Network to other countries is being considered.

Experience with the software for EQAS management and data handling has been acquired in several countries among which Bolivia, Uruguay, Dominican Republic, Chile, Guatemala, Paraguay and Slovakia.

Training courses for EQAS Organization and Management have been continued and are currently given on a regional basis. It is being considered to extend this program with a training course for self preparation of control materials for EQAS.

A request from the Lebanon for support for the implementation of an EQAS there had to be denied due to lack of funding. Instead it was included in the Serum Donation Project as a candidate to receive control materials.

Different publications concerning the activities of C-AQ are in progress.

The C-AQ has become involved with the IRMM/IMEP-17 project (Institute for Reference Materials and Measurements/International Measurement Evaluation Program -17). This project is intended to promote standardization and traceability on a worldwide basis. It will comprise 40 countries and the following analytes will be requested to be analyzed: Sodium, Potassium, Calcium, Magnesium, Iron, Copper, Zinc, Lithium, Selenium, Glucose, Urea, Urate, GGT, Albumin, IgG, Triglycerides, T4 and Cholesterol. The material, frozen unmodified and modified human serum, will be distributed in several countries to be processed in selected laboratories. C-AQ will contact EQAS organizers which have possibilities to receive the materials and distribute it in frozen status to the participating laboratories.

Committee on Evidence Based Laboratory Medicine

This Committee has been renamed since the scope has been broadened from Systematic Reviewing to all aspects of Evidence Based Laboratory Medicine (EBLM). This enables activities to support efforts in Evidenced Based Laboratory Medicine and expands beyond the previous area of Systematic Review. On this change an (internal) position paper was produced.

Terms of reference: To promote the understanding and use of all modern epidemiological, statistical and analytical methods to support the implementation of the relevant use of diagnostic tests in daily practice among the membership of IFCC, in the interest of health-care.

The Committee met twice in 2000. During the Nordic Congress in Bergen (Norway) in June, a plan for new activities was developed. This and other items were further evaluated in October, during the meeting in Amsterdam, the Netherlands.

Committee membership is complete.

An activity has been started to establish its own database on EBLM and systematic reviews; this could go on the Web, and it could be linked with other such facilities.

A letter sent out to the National Societies in mid October. Its goal is to establish co-operation with the National Societies and to share information and projects if appropriate. The committee would distribute and share information across the network of National Societies with EBLM initiatives. It will also help C-EBLM prioritize topics.

Cooperation with Cochrane Collaboration was tighter linked. One of the Committee members attended the meeting in South Africa where guidelines for Systematic Review were discussed.

In September the so-called STARD Meeting took place in Amsterdam, the

Netherlands. This initiative was taken by a number of professionals in the field of evaluating and reporting of diagnostic tests.

The focus of STARD is to facilitate and improve the reporting of diagnostic studies. The reader of such a report should be able to identify the results from the study, the potential of bias of the study design, and the generalizability and applicability of the study. For this goal a checklist is being discussed. It is the intention that international journals are going to apply this checklist when judging scientific articles. EMD provided some financial support to the meeting.

Committee on Curriculum Development

Terms of reference: International education in Laboratory Medicine by curriculum design and by developing, disseminating and assessing educational materials, templates for teaching and training.

The membership of the Committee is complete. There are ten Associate Members. The Committee held a meeting in San Francisco.

The Committee continued its work consisting of: Evaluation of curricula worldwide; New guidelines for curriculum in Clinical Chemistry and Laboratory Medicine (e.g. for different regions, in collaboration with the regional IFCC organizations); Assisting countries in developing educational systems in Laboratory Medicine; Development of Educational Materials; Development of Core Curriculum in laboratory medicine; Think Tank role for the design innovative educational programs; Assessment of available educational materials; Distance Education.

The C-CD held a Template Course on Curriculum Development. Its result is a course that could be delivered on request in any region. Educational modules in laboratory medicine are being developed. These can either be published and used for distant learning or posted on the EMD Web pages.

A publication concerning the listing of educational materials containing clinical cases available worldwide has been prepared and submitted for publication.

Moreover, the Committee guided the Working Group on Master of Laboratory Science (La Plata project, see next item)

Working Group on Master in Clinical Laboratory Science

This 2-year course is a co-operation between the IFCC and the University of La Plata (Argentina). The aim of it is to provide advanced training in the theoretical and practical aspects of clinical laboratory science, leading to a Master Degree. After the preparations in the previous years had been finished and the curriculum had been finalized in the previous year, the necessary steps to start the program were taken. In April one of the members of the C-CD visited La Plata to support the start-up. In September 2000 the course really could start with the intake of the first students. Candidates were contacted, reviewed and selected, and the teaching commenced. In November the first visiting professor (from Canada) gave his lectures on molecular biology. For the semesters to come specifications for the visiting professors were developed. The Committee has also begun to identify sites for student visits and studies for the "abroad program" (Select 2001 - Start in 2002), in which four of the best students will be offered opportunities to visit overseas laboratories. It is the intention that with the experience from the La Plata project other such courses will be offered to the Membership of IFCC.

Visiting Lecturers Program

The Mission of the VLP is to promote and share knowledge and skills (professional, technical, managerial and educational) in Clinical Chemistry with all National Societies of the IFCC.

In 2000 a new chair in the person of Dr Mary Burritt (USA) was inaugurated. A document on guiding principles and aims has been written, clear rules are set, a time schedule was given, and the application form was redesigned. The main issues are: applications will be in English only, they will be accepted throughout the year, the lead time will be 4-5 months, and the maximum rate per visiting lecturership has been fixed to CHF 2000. The applications will be reviewed against objective criteria and granting will be based on merit.

The Web site related to the program has been revised and all this information is now available on the Web. A letter containing all this information was sent to the National Societies.

Two Visiting lecturerships were granted: one to Mexico dealing with the training of auditors for accreditation, and the second one was to Tunisia dedicated to the training on quality systems.

Working Group on Flow Cytometry

In accordance with the strategy of EMD to offer more courses on modern technologies to its membership, flow cytometry was chosen as the first subject for this initiative. A Working Group has been formed with Dr Rothe (DE) as Chair. The membership will consist of 3 IFCC experts and 3 experts from the University of Mainz and Beckman Coulter. This IFCC/University of Mainz course on flow cytometry sponsored by Beckman will be organized each year with one German and one English edition. The overall responsibility lies with the Working Group, which will set up the course and write the handbook for it.

It is the intention of EMD that for more technologies courses will be offered. EMD will not at all be able to run all these courses itself and the aim will be to co-operate with others in this matter.

Working Group to review ISO TC 212 Documents

The EB has formed a Working Group to focus on TC 212 activities and to keep the EB, Divisions, and National Societies informed of activities and concerns. This group should form the center of a network which keeps contacts with all interested regional and national societies. There are a number of draft documents circulating for review and

it is important to increase everyone's awareness of these standards and to comment where appropriate. Anders Kallner chairs this group that will consist of two members of SD and two members of EMD. EMD has nominated two persons for this group.

Future Plans

In 2000 EMD discussed how its relations with the different regions in IFCC, and the National Societies could be improved. For the years to come EMD is seeking more input from them. That means on one hand they can offer experts, on the other hand programs of EMD will be based on their requests. Co-operation with Industry will be sought, whenever possible. For every activity a Committee will perform, specific information will be available; concise forms for this are being developed.

SCIENTIFIC DIVISION (SD)

During 2000, the following members served on the SD Executive Committee: Jean-Claude Forest (Canada) (Chair); John Ratcliffe (UK) (Vice-Chair); Jos H. Thijssen (Netherlands) (Secretary); Yoshihisa Itoh (Japan); Thomas Moyer (USA); Andrew St. John (Switzerland); Rudolph Tauber (Germany). Two meetings of the SD were held in 2000, in Berlin (March 2000), Quebec City (September 2000).

Relationships with International Organizations

Harmonization of the activities of international organizations related to laboratory medicine is becoming essential. Specifically, IFCC can play a significant role in coordinating these efforts because of its structure and representation of all aspects of laboratory medicine. SD has been active during the year in developing and maintaining contacts and collaborations with many international organizations. These include:

- **Institute for Reference Material and Measurement (IRMM)**

A representative of IRMM has attended each SD meeting. This has proved valuable in coordinating activities between the two organizations and sharing priorities in relation to production of reference materials. Several joint projects are under discussion: DNA reference material on factor V Leiden, antithrombin reference material of recombinant origin, homocysteine, osteocalcin and cardiac markers including myoglobin and troponin I. The new project on standardization of thyroid function tests presented to the European Commission emerged from a meeting in Geel between SD/EB and IRMM representatives.

Collaboration between IFCC and IRMM lead during the year 2000 to the certification of Enzyme Reference Materials (gGT, CK, ALT, AST, ...) and of a panel of matrix based cortisol reference materials for the Standardization of Cortisol Measurement.

- **National Committee for Clinical Laboratory Standards (NCCLS)**

Information is now available on NCCLS project proposals 2000 with IFCC collaboration. Several joint projects involve SD-Committees and Working Groups.

- **National Institute of Biological Standards and Control (NIBSC)**

Direct collaboration between NIBSC and IFCC has led to the production of two new PSA-standards. These were established as International standards by WHO in 1999. A key paper describing the reference materials (Clin Chem 2000, 40,1310-17) was supported by an editorial (Clin Chem 2000, 46, 1291-92).

Direct collaboration between NIBSC and IFCC is currently on course to achieve submission of six new candidate HCG-related preparations to WHO as International Standards in November 2001. These will be assigned values in molar units (see WG-HCG).

- **International Association for Therapeutic Drug Monitoring and Clinical Toxicology (IATDMCT)**

Following the decision taken during the ICC in Florence, a joint Working Group on Immunosuppressive Drugs has been established.

- **International Society of Thrombosis and Haemostasis (ISTH)**

Activities of the Joint Committee on Standardization of Coagulation Tests (C-SCT) were continued by the preparation of a document on standardization of laboratory tests for haemostasis which may be a starting point to the development of reference methods based on metrological approaches. Discussions are underway to harmonize various points of view in relation to the future of standardization of laboratory tests for haemostasis.

- **European Commission**

A representative of the Scientific Division participated in meetings regarding European initiatives in the program "Competitive and Sustainable Growth - Dedicated call I-00 Topic III.27" IVD Directive: 98/79/EC. With regards to NON-SI-traceable compounds, a project proposal titled "In vitro Diagnostic Procedures in Diagnosis and Monitoring of Thyroid Disease" has been presented to the European Commission. IFCC is one of the seven principal contractors of the project.

Furthermore, a second large EU-proposal (Call 1/00, Topic III.37) has been prepared that is planned to create an "International Initiative on Global Traceability in Health Care (IIGTH)" by establishing a "Thematic Network" for information on traceability of measurements in health care. In this network IFCC is one of the contractors as well as IRMM. IFCC will play an essential role in setting up a network of reference laboratories.

- **National Institute of Standards and Technology (NIST)**

A workshop on "Measurement Traceability for Clinical Laboratory Testing and In Vitro Diagnostic Systems" was organized in Gaithersburg, MD, USA, November 2-3, 2000. Two representatives of SD attended. Coordination of efforts and joint certification were discussed.

- **Conductivity Industry Consortium (CIC)**

This new industrial consortium, to which IFCC is an affiliated member, intends to pre-

pare baseline standards for connectivity information systems. SD has delegated a representative to the CIC Provider Review Committee. A first meeting was held during the AACC Congress in San Francisco which discussed the communication needs of laboratories in relation to point of care testing.

International and Regional Congresses

During the 9th Arab Federation of Applied Biology Congress in Rabat, Morocco (May 2000), members of SD participated in various symposia related to genetics and technology. The Chair of SD (JCF) was invited to chair a symposium on genetics.

As member of the Steering Committee, JCF participated to the IFCC Beckman Coulter Conference in Paris (October 2000).

For the 14th European Congress of Clinical Chemistry and Laboratory Medicine (EUROMEDLAB, Prague 2001), SD will be responsible for a symposium in two parts entitled: "Global Aspects of Regulation for in vitro Diagnostics". The first part will be on general aspects of standardization while the second part will concentrate on IFCC achievements and projects in standardization.

SD will be represented at the Asian-Pacific Congress (New Delhi, November 2001) by the Chair who will present a lecture on standardization activities of IFCC.

SD is represented on the Scientific Advisory Board of the XVIII Congress in Kyoto 2002. SD will organize a symposium on "Standardization in Laboratory Medicine: A Global Approach". SD will also present an historical symposium and exhibit on IFCC standardization activities on the occasion of the 50th anniversary of the IFCC.

IFCC PUBLICATIONS 2000

- **Nomenclature, Properties and Units (C-NPU)**

Thirty-two projects have been finalized since 1985. Four projects are actually in progress, among them: "Properties and Units in Medical Molecular Biology" and "Properties and Units of Urinary Calculi". One new project will begin soon: "Properties and Units for the Transfusion Medicine and Tissue Typing". Discussions are underway with WHO to transfer in the near future the "elephant" under the auspices of WHO.

Participation of a representative of C-NPU in the Subcommittee on Vocabulary in Metrology (VIM) and Guides to Expression of Uncertainty of Measurement in Metrology (GUMM) of the Joint Committee on Guidelines in Metrology (JCGM) under the umbrella of the International Organization for Standardization (ISO) continues.

- **Molecular Biology Techniques in Clinical Chemistry (C-MBT)**

The questionnaire regarding the use of nucleic acid diagnostics in clinical laboratory has been sent to National Representatives and results are being compiled. The Chair, Prof. Mannhalter, participates in a EU project on CRMs for molecular biology testing. A project for the "Preparation of Reference Materials for PCR Analysis of the Factor V R:506Q Mutation in the Human Factor V Gene" has just begun.

- **Plasma Proteins (C-PP)**

At the end of 2000, JT Whicher was replaced as Chairman by Myron Johnson but will remain as member. A. Carlstrom becomes a consultant and is replaced as a member by G. Merlini.

Projects currently underway are: "Reference Ranges in Different Racial Groups", "Protocol for Value Assignment", "Plasma Proteins: Strategy for Determining Racial and Environmental Similarities and Differences". The second QA survey to assess the impact of CRM 470 is about to take place in Europe. Recently, SD has authorized a new project for the "Assignment of Soluble Transferrin Receptor Value to CRM 470".

A paper on Existing EQA Data has been published and the Committee has prepared a document titled "Plasma Proteins: Strategy for Determining Racial and Environmental Similarities and Differences" to be published in CCLM.

The project on "Calibration of BCR CRM 470 for Immunoglobulin IgG Subclasses" has been cancelled due to problems related to antibody heterogeneity.

- **Committee on Markers for Bone Turnover and Bone Disease (C-MBTBD)**

This Committee has been closed and replaced by Working Groups. A first Working Group on "Standardization of Osteocalcin" has been authorized and a project proposal is under review.

- **Standardization of Markers of Cardiac Damage (C-SMCD)**

The Committee has continued its work on three projects: One is an "International Survey on Cardiac Markers" which was presented as an abstract at the AACC Meeting in San Francisco, July 2000. A manuscript is being prepared for a special issue of Clinical Chemistry (March 2001) on "Heart Health and the Clinical Laboratory".

The Committee is working in close collaboration with an AACC Subcommittee on Troponin I. Ten candidate materials for troponin I are being studied. A study was performed, involving eight manufacturers and thirteen analytical systems, to identify objectively a manageable number of candidate RMs, resulting in targeting three RMs as preferred candidates. A commutability study will be done followed by a second study including serum pools for comparison.

In collaboration with IRMM, the Committee is working in developing myoglobin candidate reference materials. Some delay in collecting human specimens has been encountered. IRMM is acting as coordinating center for storage and distribution of the candidate reference materials.

- **Standardization of Coagulation Tests (C-SCT)**

This Committee is a Joint Committee of ISTH and IFCC. A position paper titled "A Reference System Approach to Future Standardization of Laboratory Tests for Hemostasis" has been accepted by SD but it is still under discussion within the Scientific Standardization of Coagulation Committee of ISTH. The objective is to publish the document as a position paper. A proposal for a "Mole Based Reference Preparation for Antithrombin" has been accepted by SD.

• **Calibrators in Clinical Enzymology (C-CCE)**

This Committee is the continuation of a previous Working Group (8.3.21) on the same subject. The Committee is under the co-chairmanship of Lothar Siekmann and Gérard Féraud. This newly formed Committee has conducted and completed in collaboration with IRMM certification of Reference Materials for a series of enzymes (LDH, gGT, ALT, AST, CK, ...). The Committee has also drafted New 37°C Recommendations for measurement of catalytic concentration of enzymes. The manuscript will be soon reviewed by SD. The Committee coordinates activities of a Network of Reference Laboratories on Enzymes.

WORKING GROUPS

• **Selective Electrodes (WG-SE)**

During the year, the Working Group has been involved in five projects:

1. Recommendation for measurement of and conversions for reporting ionized chloride by ion-selective electrodes in undiluted serum, plasma or whole blood.
2. Guidelines for the measurement of the substance concentration of ionized magnesium by ion-selective electrodes.
3. Recommendation on reporting results for blood glucose.
4. Revision of the pH document taking into account new buffers for calibration.
5. Manufacturing of reference material for ionized magnesium.

Two documents for publication on the IFCC Website have been approved by SD: one on "Determination of ionized calcium" and the other on "Reporting sodium and potassium measurements by selective electrodes in undiluted serum, plasma or whole blood" A manuscript titled: "Reference Measurement Procedure for Substance Concentration Determination of Total Carbon Dioxide in Blood, Plasma or Serum" was also received and accepted by SD.

• **Reference Methods for Apolipoproteins (WG-MA)**

This WG serves as a repository for WHO-IFCC 1st International Reference Reagent for Apolipoprotein A-1 and B. It is reported that the supply is now getting low and that the preparation of a new set of WHO-IFCC apolipoprotein A-1 and B first international reference reagents should be considered.

• **Standardization of Human Chorionic Gonadotropin (WG-SHCG)**

This important project is close to its aims of submitting six candidate HCG-related preparations to WHO for ratification as International Standards. NIBSC has coordinated the amino acid analyses, from which values will be assigned in molar units, and the International Collaborative study, from which immunoassay and bioassay values will be compared with present HCG standards and stability assessed. In addition the preparations in serum base have been evaluated in the UK External Quality Assessment Scheme. Final documentation is anticipated in the near future to meet the target for ratification by WHO in November 2001. A poster will be presented at Euromedlab 2001. If and when these preparations are accepted as International Standards, a major educational and publicity exercise will be required to encourage their adoption worldwide.

A decision is still pending on the fate of the materials 'excess' to standardization requirements. These materials are stored at NIBSC, awaiting ampouling, when information on the market requirements is available.

• **Standardization of LP(a) (WG-LP(a))**

The IFCC lipoprotein(a) standardization project aims to improve Lp(a) measurement in clinical laboratories by introducing a secondary Lp(a) reference material for use by manufacturers of diagnostic assays. The Working Group uses the selected reference material for Lp(a) (PRM 2B) to assess the comparability of Lp(a) values between different methods after uniform calibration. The study indicates that apo(a) size polymorphism is the main cause of poor comparability of Lp(a) values between methods. The WG concluded that the material has the characteristics of a suitable reference material with minimal matrix effects. Documentation is being prepared to submit a proposal for recognition of the material as reference material.

• **Standardization of HbA1c/Glycohemoglobin (WG-HbA1c)**

The IFCC established the WG-HbA1c with the goal of developing a scientifically based reference system that will act as the basis for ultimate standardization of all HbA1c assays. In their continuing project on the standardization of HbA1c, the Committee has succeeded in defining the analyte, in producing a primary reference material and in establishing two reference methods that have now been evaluated and accepted by an international network of reference laboratories. Discussions about transfer protocols, clinical studies and worldwide implementation have started. The Committee has proceeded to the evaluation of the Stability of whole blood panels for method comparison (Florence II study). Pools of blood and single donations have been used. The IFCC reference methods compared well with routine methods of different manufacturers, using the pools as calibrators. The draft document for the HbA1c reference method has been forwarded to SD, is reviewed and will soon be voted upon.

Secondary reference materials: The Working Group is now considering the preparation of secondary reference materials. The lyophilized hemolysate appears to be superior to frozen whole blood preparation with regard to matrix effects and would therefore be the best candidate. The intention is to develop eight pools in the range of 4-12 % HbA1c.

Reference range studies are currently underway. This is the first attempt to measure HbA1c in reference samples from different sources. Results will become available soon.

• **PSA Standardization (WG-PSA)**

This Working Group has completed its work, WHO having officially approved the two preparations as International Standards. SD-IFCC thanks NIBSC for its collaboration as well as Prof. Stamey for his exceptional input to this project.

• **Standardization of Cortisol Measurement (WG-SCM)**

The aim of this WG was to explore the critical areas of sample misidentification as part of the analytical process. After three years, the WG has completed its work. It has prepared a document related to the problem of patient/sample identification in collaboration with the Technical Committee on Medical Informatics of CEN (TC 251). The document is titled: "Safety Procedures for Identification of Patients and Related Objects".

• **Patient Sample Identification (WG-PSI)**

The aim of this WG was to explore the critical areas of sample misidentification as part of the analytical process. After three years, the WG has completed its work. It has prepared a document related to the problem of patient/sample identification in collaboration with the Technical Committee on Medical Informatics of CEN (TC 251). The document is titled: "Safety Procedures for Identification of Patients and Related Objects".

• **Nanotechnology (WG-NT)**

The name of this WG has been changed from Micro- to Nano-technology. The recruitment of members and associate members has continued. The WG has begun to assemble a database on microarray chips to cover the period up until the end of 1999, which contains over 600 references. Corrections and cross-checking of the material received and final literature search are underway. This compilation will be published as a current awareness article as a prelude to a review of this topic.

• **Standardization of Osteocalcin Measurements (WG-SOM)**

This WG will focus on standardization of osteocalcin measurements and will work in close collaboration with other organizations such as IRMM and NCCLS. The WG Chair and one other member serve on the NCCLS Subcommittee on Biochemical Markers of Bone Disease, in addition to the Vice-chair SD.

• **Laboratory Practice Guidelines on Monitoring Immunosuppressive Drugs (WG-MID)**

This WG is a joint activity with IATDM. WG-MID will prepare practice guidelines for laboratory scientists seeking information on methodology and for clinicians seeking information on the values given by the various assays, together with the interpretation of the results. Guidelines will be confined to cyclosporine, tacrolimus, sirolimus and mycophenolate. The order of preparation will be: 1. Cyclosporine (which will be used as a model for the other manuscripts), 2. mycophenolate, 3. sirolimus, and 4. tacrolimus. Format of the reports will be standardized. The cyclosporine manuscript is due to be completed before the end of the first quarter, 2001. Remaining manuscripts will follow on six month intervals.

• **Standardization of Total Plasma Homocysteine Measurements (WG-SHM)**

This newly formed WG is composed of representatives of CDC and NIST. The possibility of creating a formal link to a Subcommittee of NCCLS on the same topic is under discussion. The first meeting of this WG will be in June 2001 in Italy.

SURVEY

SD conducted a survey amongst the national representatives and the corporate members on priorities for reference materials. This resulted in a list clearly pointing to the fact that choices should be made on basis of the needs. A total of 42 individual participants responded. Based on the received questionnaires, a frequency order of most important compounds requiring standardization can be made, resulting in HbA1c having the highest priority (23 responders) and troponins the second place with 17 responders mentioning its importance. C-reactive protein, PSA and TSH have been named 6 times and cholesterol HDL/LDL and enzymes 5 times. The results played an important role in the choice of the project proposal to the European Commission.

CONFERENCES

The second IFCC /Roche Conference took place April 16-19, 2000, in Kyoto, Japan. Its topic was "Human Genomics: The Basis of the Medicine of Tomorrow". A successful IFCC Beckman Coulter European Conference was held October 12-14, 2000, in Paris. The title of the Conference was "Frontiers in Molecular Basis of Disease: Cell Biology of Neuronal Dysfunction".

IFCC PUBLICATIONS 2000

The following publications appeared in 2000 as a result of IFCC projects. A number of other papers are in progress and may be available through the IFCC Web Site.

- Oosterhuis WP, Niessen RWLM, Bossuyt PMM, Sanders GTB, Sturk A. Diagnostic value of the mean corpuscular volume in the detection of vitamin B12 deficiency. *Scand J Clin Lab Invest* 2000;60:9-18.
- Oosterhuis WP, Niessen RWLM, Bossuyt PMM. The Science of Systematic Reviewing Studies of Diagnostic Tests. (Review). *Clin Chem Lab Med* 2000;38:577-588.
- Watine J. Prognostic evaluation of primary non-small cell lung carcinoma patients using biological fluid variables. A systematic review. *Scand J Clin Lab Invest* 2000;60:259-73.

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