Overview of the JCTLM

Points arising from the JCTLM Executive Meetings

R I Wielgosz

http://www.bipm.org/en/committees/jc/jctlm/

Council Directives related to medical devices

- **90/385/EEC of 20 June 1990 relating to active implantablemedical devices**
- **93/42/EEC of 14 June 1993 concerning medical devices**
- **98/79/EC of 27 October 1998 on in vitro diagnostic medical devices**
- **2000/70 EC of 16 December 2000 on stable derivates of human bloodor human plasma as amended by 2001/104/EC**

(K. Howes, DG Enterprise: JCTLM Workshop 2002)

Basic elements of regulation

- Mandatory Essential Requirements
- Use of voluntary harmonized standards *
- Variety of conformity assessment procedures related to variousclasses of risks
- Choice of conformity assessment procedures
- CE marking
- Vigilance
- Safeguard clauses
- Precautionary principle

* Common technical specifications

(K. Howes, DG Enterprise: JCTLM Workshop 2002)

JCTLM

- ***".... the traceability of values assigned to calibrators and control materials must be assured through available reference measurement procedures and/or reference materials of a higher order ..."***

EC-IVD Directive Annex 1 (3)

IVD Manufacturers requested that NMIs:

- **develop reference materials and measurement procedures**
- **assist them in meeting this traceability requirement.**

Classification - by risk

- **High Risk in Annex II**
- **List A Blood typing i.e. ABO systems Blood born diseases i.e. HIV**
- **List B Specific tests i.e. HLA tissue groups**

Standards and Common Technical Specifications For Annex II List A and B

- **Performance evaluation and Re-evaluation**
- **Batch release criteria**
- **Reference methods**
- **Reference materials**

(K. Howes, DG Enterprise: JCTLM Workshop 2002)

Use of voluntary harmonized standards

- **Technological flexibility and choice**
- **European standards can provide presumption of conformity**
- **European standardization has close links with international standardization**

(K. Howes, DG Enterprise: JCTLM Workshop 2002)

Relevant ISO Standards

ISO 17511 In vitro diagnostic medical devices - Measurement of quantities in biological samples - Metrological traceability of values assigned to calibrators and control materials

ISO 15193 Presentation of reference measurement procedures

ISO 15194 Description of reference materials

ISO 15195 Reference Measurement Laboratories

ISO 18153 Metrological traceability of values for catalytic concentration of enzymes assigned to calibrators and control materials

JOINT COMMITTEE for TRACEABILITY in LABORATORY MEDICINE (JCTLM)

Declaration of co-operation

establishing

A framework for the international recognition of available higher-order reference materials, measurement procedures and reference measurement laboratories

JOINT COMMITTEE on TRACEABILITY in LABORATORY MEDICINE

Established in Sevres on 12 June 2002, to meet the need for a worldwide platform to promote and give guidance on internationally recognized and accepted equivalence of measurements in Laboratory Medicine and traceability to appropriate measurement standards.

The Declaration of Cooperation between the International Committee of Weights and Measures (CIPM), the International Federation for Clinical Chemistry and Laboratory Medicine (IFCC),and the International Laboratory Accreditation Cooperation (ILAC) for establishment of the JCTLM can be found at http://www.bipm.org/en/committees/jc/jctlm/declaration.html

JCTLM: Declaration of Cooperation

Mission Statement

Structure and operation

Appendix I: JCTLM Members

Appendix II: JCTLM WGs

Appendix III: JCTLM Framework – RMs, RMPs, RMLs

Appendix IV: Participation of organizations in the JCTLM

JCTLM - Structure

- **JCTLM Executive**

  Chair: J. Thijssen (IFCC)

  Executive Secretary: R. Wielgosz (BIPM)

  - *Priority setting*
  - *Approval of WG's results*

- **JCTLM Working Groups: Task oriented**

  1. Reference Materials and Reference Methods

  Co-Chairs: W.E. May (NIST), H. Schimmel (IRMM)

  2. Reference Laboratories - Networks

  Co-Chairs: L. Siekmann (U. Bonn), L. Thienpont (U. Gent)

JCTLM WG1 Review Process

Documents & Procedures issued in 2004

Quality policy and definitions: Listing of higher order reference materials and reference material procedures

http://www1.bipm.org/utils/en/pdf/jctlm_quality-manual.pdf

ISO 15193 Presentation of reference measurement procedures

ISO 15194 Description of reference materials

Updated Quality manual to be adopted for Cycle 3 nominations

BIPM
Bureau International des Poids et Mesures

JCTLM database: Laboratory medicine and *in vitro* diagnostics: Database of higher order reference materials and reference measurement procedures

JCTLM-DB summary
- General information
- Preamble
- JCTLM List I
- JCTLM List II
- Nomination of materials and procedures for review
- JCTLM Quality Manual

JCTLM
- Background information

Direct access
- USEFUL LINKS
- ACRONYMS
- CIPM MRA
- KCDB
- MEETINGS
- BIPM STAFF DIRECTORY
- PRACTICAL INFORMATION
- *METROLOGIA*
- FUNDAMENTAL PHYSICAL CONSTANTS

in French: *La base de données du JCTLM*

List I: Certified Reference Materials and Reference Measurement Procedures for well-defined chemical entities or internationally recognized reference method-defined measurands.

Reference Materials and Measurement Procedures included in this category are those that provide values that are traceable to the SI units; e.g., electrolytes, enzymes, drugs, metabolites and substrates, non-peptide hormones and some proteins

Preamble for JCTLM List I of higher order reference materials and reference measurement procedures

JCTLM List I (resulting from the Cycle I nomination process)

List II: Reference Materials value-assigned using an internationally agreed-upon protocol

(e.g. reference materials for blood typing, coagulation factors, microbial serology, nucleic acids and some proteins).
The values of the measurands in the reference materials on this List are not SI-traceable and/or no internationally-recognized reference measurement procedures exist. List II also contains a group of purified substances that due to the absence of reference measurement procedures should not be directly used for calibration unless commutability is established.

JCTLM List II (resulting from the Cycle I nomination process)

- Quality manual for the listing of higher order reference materials and reference measurement procedures
- Open call (Cycle II) for the nomination of reference materials and reference measurement procedures for review by the JCTLM
- JCTLM WG review teams and members
- Contact the JCTLM secretariat

A searchable database of the published lists will be available after December 2004.

BIPM - Pavillon de Breteuil F-92312 Sèvres Cedex FRANCE

Results of search

Reference Measurement Procedures for Cholesterol in Serum/Plasma

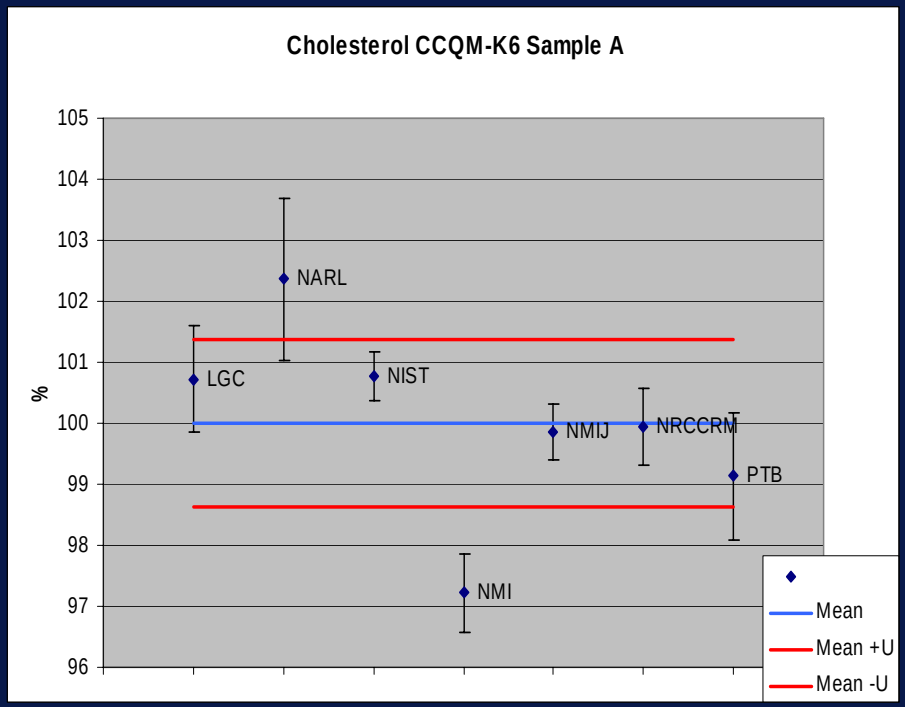
Reference Measurement Procedures					
Analyte Name	Procedure Name and/or ID #	Applicable Matrices	Measurement Principle	Reference Procedure Citation(s) or Document(s)	Reference Procedure Comparability Assessment Studies
cholesterol	DGKC definitive Method for Serum Cholesterol	lyophilized, fresh, or frozen human serum or plasma	ID/GC/MS	Siekmann et al., Z. anal. Chem. 279, 145-146 (1976)	PTB - National Key Comparison for Accredtation
cholesterol	CDCAbell-Kendall method for cholesterol	lyophillized, fresh or frozen human serum	Spectrophotometry	Cooper, GR, et al, Clin Chem 32: 921-929, 1986	Clin Chem 36, 370-375 (1990)
cholesterol	NIST definitive method for serum cholesterol	lyophilized, fresh, or frozen serum	ID/GC/MS	Anal Chem 61, 1718-1723 (1989)	CCQM-K6; http://kcdb.bipm.org/appendixB/appbresults/ccqm-k6/ccqm-k6_final_report.pdf; Clin Chem 36, 370-375 (1990)
cholesterol	U. Of Ghent reference method for cholesterol	lyphilized, fresh, or frozen serum	ID/GC/MS	Clin Chem 39,1001-6 (1993) [=part II of Clin Chem 39,993-1000 (1993)]; Eur J Clin Chem Clin Biochem 34, 853-60 (1996); Clin Chem 42, 531-5 (1996)	EUROMET 563

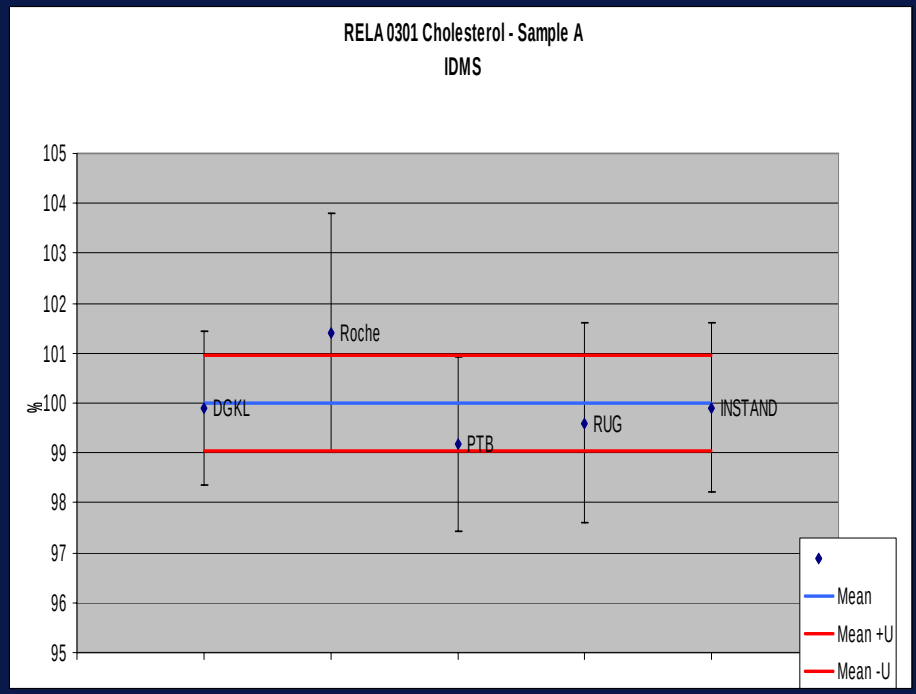
JCTLM Working Group 2

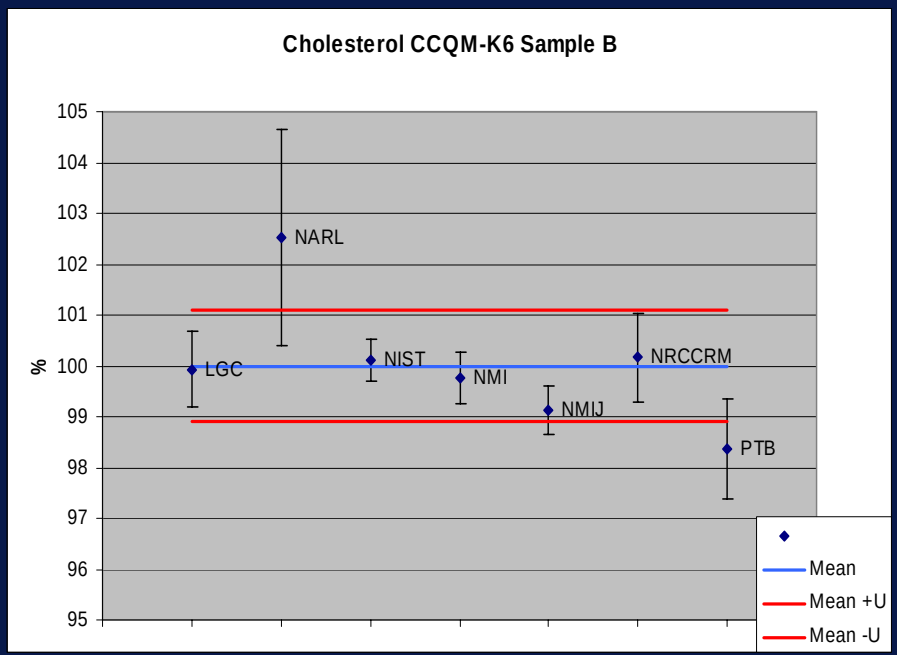
Reference Laboratory Networks

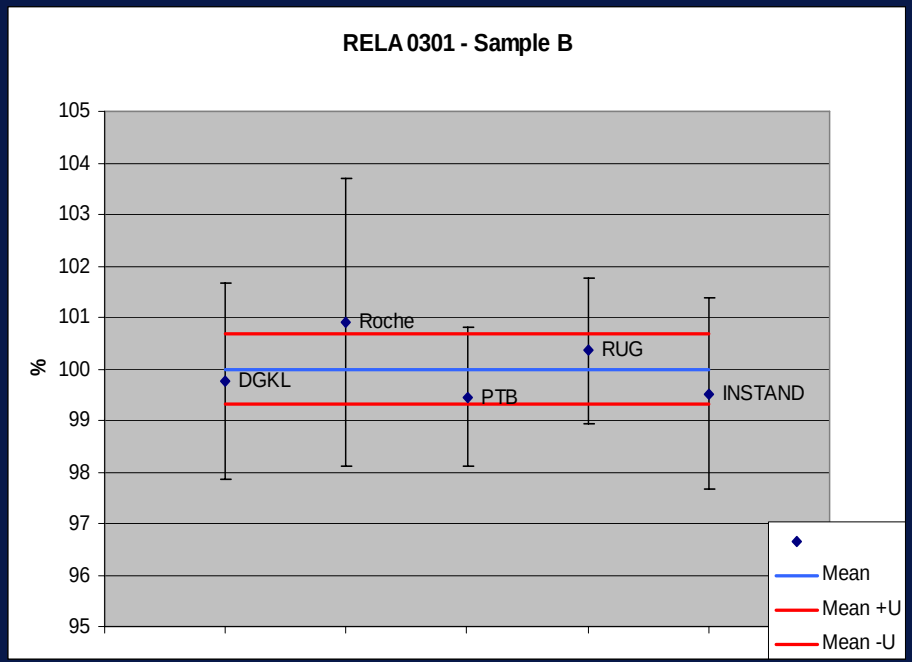
Quality manual

Procedures for identifying and listing Reference Measurement Services provided by Reference Laboratories


Cholesterol CCQM-K6 Sample A
%
105
104
103
102
101
100
99
98
97
96
NARL
LGC
NIST
NMIJ
NRCCRM
PTB
NMI
Mean
Mean +U
Mean -U


RELA 0301 Cholesterol - Sample A
IDMS
%
105
104
103
102
101
100
99
98
97
96
95
Roche
DGKL
PTB
RUG
INSTAND
Mean
Mean +U
Mean -U


Cholesterol CCQM-K6 Sample B
%
105
104
103
102
101
100
99
98
97
96
95
NARL
LGC
NIST
NMI
NMIJ
NRCCRM
PTB
Mean
Mean +U
Mean -U


RELA 0301 - Sample B
%
105
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102
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98
97
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95
Roche
DGKL
PTB
RUG
INSTAND
Mean
Mean +U
Mean -U

Points arising from the 3rd JCTLM Executive Meeting

July 2005, Orlando USA

Points arising (1/7)

Review of action points from the 2nd meeting

- **Review forms to be collected for Cycle II nominations**
- **IFCC EQAS procedure document approved by IFCC-CTLM**
- **WG-1 membership criteria addressed in quality manual**
- **‘Standard’ JCTLM presentation to be discussed in Sept WG1 meeting**

Points arising (2/7)

Review of action points from Executive and WG1 RTL meeting

- **Timescale of re-review of published Reference materials and methods to be discussed In September WG1 meeting**
- **IRMM to provide document comparing ISO 15194 and ISO Guide 34**
- **Procedurally defined measurands:**
  - **If internationally agreed upon RMP exists -only this will be published**
  - **Otherwise, one or more national RMPs can be published in the JCTLM DB, until international agreement reached**

Points arising (3/7)

- **JCTLM listed RMPs not applicable for forensics or sports drug testing fields (statement on website)**
- **IFCC policy statement on endorsement of RMPs that rely on patented substrates**
  - **Signed commitment from the patent holder to give access to the substrate for 'each individual and each company at a reasonable price'**
- **List II materials:**
  - **2 materials for nominally the same measurand but traceable to different conventional international standards - traceability of value on material must be stated, and difference between materials stated**

Points arising (4/7)

JCTLM DoC

- 4 new member organizations (20 total)
- Observers invited to JCTLM and Executive meeting by JCTLM Chair
- Observers at WG meetings, invited by WG Chairs
- JCTLM and Executive meeting held annually at BIPM
- Benefits in holding Stakeholder's meetings linked to other lab. Medicine events/conferences
- Chairmanship and membership of WGs to be reviewed on a 2 year timescale

Points arising (5/7)

- **WG1 to discuss use of ISO 15193 in the review of submitted Reference Methods (rather than Reference Procedures)**
- **Cycle II nominations to be submitted for approval to the Executive November 2005**
- **Frequency of calls for RMs and RMPs to be discussed by WG1**
- **Final version of WG1 updated quality manual to be submitted to Executive (November 2005) - major revisions not expected for a number of years**
- **Preamble to RM and RMP list to remain unchanged from currently published version**

Points arising (6/7)

- **JCTLM WG2 quality manual presented to Executive**
  - **Comments submitted- final version to be submitted to Executive (November 2005)**
- **Reference Laboratories accredited to ISO 17025 and 15195 (revision of 15195 may start in 2006)**
- **NIST /AACC workshop (accreditation for laboratories functioning in networks)**
- **WG 2 to set up group to draw up guidelines for ILCs appropriate for JCTLM use**

Points arising (7/7)

- **EQUALIS suggestion for JCTLM workshop on coagulation analysis**
- **JCTLM to write to EU competent authorities on JCTLM activities**
- **BIPM liaison established with ISO TC 212**
- **Publicity for JCTLM activities**