

**Chapter 17**  
**IFCC Publications 2015-2017**



## IFCC Scientific Division (SD)

### IFCC and IUPAC Joint Committee for Nomenclature, Properties and Unit (C-NPU)

Ferard G., Dybkaer R. The NPU format for clinical laboratory science reports regarding properties, units, and symbols. *Chem Int.* 2015; 37: 24-25. <https://doi.org/10.1515/cclm-2012-0769>.

Nordin G. Before defining performance criteria, we must agree on what a “qualitative test procedure” is. *Clin Chem Lab Med.* 2015; 53: 939-941. <https://doi.org/10.1515/cclm-2015-0005>.

Campbell C, Caldwell G, Coates P., Flatman R, Georgiou A., Horvath AR., Lam Q., Schneider H. Consensus Statement for the management and communication of high risk laboratory results, *Clin Biochem Rev.* 2015; 36: 97-105.

Wikipedia page for the NPU Terminology2016. [https://en.wikipedia.org/wiki/NPU\\_terminology](https://en.wikipedia.org/wiki/NPU_terminology)

Flatman R, Férard G, Dybkaer R. Understanding the ‘Silver Book’ – An important reference for standardised nomenclature in clinical laboratory sciences. *Clin Chim Acta.* 2017; 467: 4-7. <https://doi.org/10.1016/j.cca.2016.06.035>.

Ferard G, Dybkaer R, Fuentes Arderiu X. Silver Book 2: Compendium of terminology and nomenclature of properties in clinical laboratory sciences: Recommendations 2016. Royal Society of Chemistry eBook.

Vocabulary on nominal property, nominal examination, and related concepts for clinical laboratory sciences. IFCC-IUPAC Recommendation 2016. IUPAC Project 2004-023-1-700 extended 2008-019-1-700 (in final review pending publication).

### IFCC Committee on Molecular Diagnostics (C-MD)

Payne DA, Baluchova K, Peoc’h KH, van Schaik RHN, ChanKC, Allen, Maekawa M, Mamotte C, Russomando G, Rousseau F, Ahmad-NejadP, on behalf of the IFCC Committee for Molecular Diagnostics (C-MD). Pre-examination factors affecting molecular diagnostic test results and interpretation: A case-based approach. *Clin Chim Acta.* 2017; 467: 59-69. <http://dx.doi.org/10.1016/j.cca.2016.06.018>.

Payne, DA, Baluchova, K, Russomando, G, Ahmad Nejad, P, Mamotte, C, Rousseau, F, van Schaik, RHN, Marriott, K, Maekawa, M, Chan, KC. Toward harmonization of clinical molecular diagnostic reports: Findings of an international survey. *Clin Chem Lab Med* 2018; 56: (in press). <https://doi.org/10.1515/cclm-2017-1080>.

### IFCC Committee on Traceability in Laboratory Medicine (C-TLM)

Kessler A. Mass spectrometry – a key technique for traceability in clinical chemistry: *Trends Anal Chem.* 2016; 84: 74-79. <https://doi.org/10.1016/j.trac.2016.03.017>.

## **IFCC Committee on Reference Intervals and Decision Limits (C-RIDL)**

Borai A, Ichihara K, Masoud A, et al. Establishment of reference intervals of clinical chemistry analytes for adult population in Saudi Arabia: a study conducted as a part of the IFCC global study on reference values. *Clin Chem Lab Med*. 2016; 54: 843-855. <https://doi.org/10.1515/cclm-2015-0490>.

Ichihara K, Ozarda Y, Barth JH, et al. A global multicenter study on reference values: 1. Assessment of methods for derivation and comparison of reference intervals. *Clin Chim Acta*. 2017; 467: 70-82. <https://doi.org/10.1016/j.cca.2016.09.016>.

Ichihara K, Ozarda Y, Barth JH, Klee G, Shimizu Y, Xia I, Hoffmann M, Shah S, Matsha T, Wassung J, Smit F, Ruzhanskaya A, Straseski J, Bustos DN, Kimura S, Takahashi A. A global multicentre study on reference values: 2. Exploration of sources of variation across the countries. *Clin Chim Acta*. 2017; 467: 83-97. <https://doi.org/10.1016/j.cca.2016.09.015>.

Shimizu Y, Ichihara K. Sources of variation analysis and derivation of reference intervals for ALP, LDH, and amylase isozymes using sera from the Asian multicenter study on reference values. *Clin Chim Acta*. 2015; 446: 64-72. <https://doi.org/10.1016/j.cca.2015.03.034>.

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Masuda S, Ichihara K, Yamanishi H, et al. Evaluation of menstrual cycle-related changes in 85 clinical laboratory analytes. *Ann Clin Biochem*. 2016; 53: 365-376. <https://doi.org/10.1177/0004563215617212>.

Xia L, Qiu L, Cheng X, Chen M, et al. Nationwide multicenter reference interval study for 28 common biochemical analytes in China. *Medicine*. 2016; 95: e2915. <https://doi.org/10.1097/MD.0000000000002915>.

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Bakan E, Polat H, Ozarda Y, Ozturk N, Baygutalp NK, Umudum FZ, Bakan N. A reference interval study for common biochemical analytes in Eastern Turkey: a comparison of a reference population with laboratory data mining. *Biochem Med*. 2016; 26: 210-223. <https://doi.org/10.11613/BM.2016.023>.

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## **IFCC Committee for Standardisation of Thyroid Function Tests (C-STFT)**

De Grande LAC, Van Uytvanghe K, Reynders D, Das B, Faix JD, MacKenzie F, Decallonne B, Hishinuma A, Lapauw B, Taelman P, Van Crombrugge P, Van den Bruel A, Velkeniers B, Williams P, Thienpont LM. Standardization of free thyroxine measurements allows the adoption of a more uniform reference interval. *Clin Chem*. 2017; 63:1642-1652. <https://doi.org/10.1373/clinchem.2017.274407>.

Thienpont LM, Van Uytvanghe K, De Grande LAC, Reynders D, Das B, Faix JD, MacKenzie F, Decallonne B, Hishinuma A, Lapauw B, Taelman P, Van Crombrugge P, Van den Bruel A, Velkeniers B, Williams P. Harmonization of serum thyroid-stimulating hormone measurements paves the way for the adoption of a more uniform reference Interval. *Clin Chem*. 2017; 63:1248-1260. <https://doi.org/10.1373/clinchem.2016.269456>.

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Thienpont LM, Faix JD, Beastall G. Standardization of FT4 and harmonization of TSH measurements: A request for input from endocrinologists and other physicians. *Clin Endocrinol*. 2015; 84: 305-306. <https://doi.org/10.1111/cen.12861>.

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Thienpont LM, Faix JD, Beastall G. Standardization of free T4 and harmonization of TSH measurements: A request for input from endocrinologists and other physicians. *Eur Thyroid J*. 2015;4: 271-272. <https://doi.org/10.1159/000440614>.

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De Grande LA, Goossens K, Van Uytvanghe K, Das B, MacKenzie F, Patru MM, Thienpont LM; De Grande LA, Goossens K, Van Uytvanghe K, Halsall I, Yoshimura Noh J, Hens K, Thienpont LM. Using “big data” to describe the effect of seasonal variation in thyroid stimulating hormone. *Clin Chem Lab Med*. 2017; 55: e34–e36. <https://doi.org/10.1515/cclm-2016-0500>.

### **IFCC Committee on Harmonization of Autoimmune Tests (C-HAT)**

Hutu DP, Tuddenham E, Monogioudi E, Meroni P, Schimmel H, Sheldon J, Zegers I. First steps in the standardization of immunoglobulin IgG myeloperoxidase-anti-neutrophil cytoplasmic antibody measurements. *Clin Exp Immunol.* 2016; 183: 193-205. <https://doi.org/10.1111/cei.12707>.

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### **IFCC Working Group on Standardisation of Hemoglobin A2 (WG-HbA2)**

Paleari R, Caruso D, Kaiser P, Arsene CG, Schaeffer-Reiss C, Van Dorsselaer A, Bissé E, Ospina M, De Jesús VR, Wild B, Mosca A. Developing a reference system for the IFCC standardization of HbA2. *Clin Chim Acta.* 2017; 467: 21-26. <https://doi.org/10.1016/j.cca.2016.05.023>.

Arsene CG, Kaiser P, Henrion A, Paleari R, and Mosca A. Candidate reference measurement procedure for the determination of HbA2 fraction in human blood using mass spectrometry. *Proceedings of the 14<sup>th</sup> International Symposium on Biological and Environmental Reference Materials, October 11-15, 2015, Maryland (USA), page 33.*

Paleari R, Ceriotti F, Harteveld CL, Strollo M, Bakker-Verweij G, ter Huurne J, Bisoen S, Mosca A. Calibration by commutable control materials is able to reduce inter-method differences of current high-performance methods for HbA2. *Clin Chim Acta* 2018; 477: 60-65. <https://doi.org/10/1016/j.cca2017.12.001>.

### **IFCC Working Group on Standardisation of Carbohydrate-Deficient Transferrin (WG-CDT).**

Helander A, Wielders J, Anton R, Arndt T, Bianchi V, Deenmamode J, Jeppsson JO, Whitfield JB, Weykamp C, Schellenberg F; Standardisation and use of the alcohol biomarker carbohydrate-deficient transferrin (CDT). *Clin Chim Acta.* 2016; 459:19-24. <https://doi.org/10.1016/j.cca.2016.05.016>.

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### **IFCC Working Group on Standardisation of Albumin Assay in Urine- in collaboration with NKDEP (WG-SAU)**

Miller WG, Seegmiller JC, Lieske JC, Narva AS, Bachmann LM. Standardization of urine albumin measurements: status and performance goals. *J App Lab Med* 2017; 2: 423-429. <https://doi.org/10.1373/jalm.2017.02361>.

### **IFCC Working Group on Standardisation Troponin I (WG-TNI).**

Tate, J.R., Bunk, D.M., Christenson, R.H., Barth, J.H., Katrukha, A., Noble, J.E., Schimmel, H., Wang, L., Panteghini, M., Evaluation of standardization capability of current cardiac troponin I assays by a correlation study: results of an IFCC pilot project. *Clin Chem Lab. Med.* 2015; 53: 677 -690. <https://doi.org/10.1515/cclm-2014-1197>.

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### **IFCC Working Group on Clinical Quantitative Mass Spectrometry Proteomics (WG-cMSP)**

Lehmann S, Brede C, Lescuyer P, Cocho JA, Vialaret J, Bros P, Delatour V, Hirtz C. Clinical mass spectrometry proteomics (cMSP) for medical laboratory: What does the future hold? *Clin Chim Acta.* 2017; 467:51-58. <https://doi.org/10.1016/j.cca.2016.06.001>.

### **IFCC Working Group on Parathyroid Hormone (WG-PTH)**

Sturgeon CM, Sprague S, Almond A, Cavalier E, Fraser WD, Algeciras-Schimmich A, Singh R, Souberbielle JC, Vesper HW. Perspective and priorities for improvement of parathyroid hormone (PTH) measurement - A view from the IFCC Working Group for PTH. *Clin Chim Acta.* 2017; 467:42-47. <https://doi.org/10.1016/j.cca.2016.10.016>.

### **IFCC Working Group on CSF proteins (WG-CSF)**

Kuhlmann J, Andreasson U, Pannee J, Bjerke M, Portelius E, Leinenbach A, Bittner T, Korecka M, Jenkins RG, Vanderstichele H, Stoops E, Lewczuk P, Shaw LM, Zegers I, Schimmel H, Zetterberg H, Blennow K. CSF A $\beta_{1-42}$  - an excellent but complicated Alzheimer's biomarker - a route to standardisation. *Clin Chim Acta.* 2017; 467: 27-33. <https://doi.org/10.1016/j.cca.2016.05.014>.

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Pannee J, Blennow K, Zetterberg H, Portelius E. Absolute quantification of A $\beta$ 1-42 in CSF using a mass spectrometric reference measurement procedure. *J Vis Exp*. 2017;(121). <https://doi.org/doi:10.3791/55386>.

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### **IFCC Working Group on Standardisation of Bone Markers Assays in collaboration with IOF (WG-BMA)**

Morris HA, Eastell R, Jorgensen NR, Cavalier E, Vasikaran S, Chubb SAP, Kanis JA, Cooper C, Makris K. Clinical usefulness of bone turnover marker concentrations in osteoporosis. *Clin Chim Acta*. 2017; 467:34-41. <https://doi.org/10.1016/j.cca.2016.06.036>.

### **IFCC Working Group on Commutability (WG-C)**

Miller WG, Schimmel H, Rej, R, Greenberg N, Ceriotti F, Burns C, Budd JR, Weycamp C, Delatour V, Nilsson G, Mackenzie F, Panteghini, M, Keller T, Camara JE, Zegers I, Vesper HW. IFCC Working Group Recommendations for Assessing Commutability. Part 1: General Experimental Design. *Clin Chem*. 2018;64: 447-454. <https://doi.org/10.1373/clinchem.2017.277525>.

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### **Education and Management Division (EMD)**

#### **IFCC Committee on Evidence-Based Laboratory Medicine (C-EBLM)**

Coenzyme Q10 and congestive heart failure: An evolving evidence base. Florkowski CM, Molyneux SM, Young JM. *Kardiologia Polska*. 2015; 73: 73-79. <https://doi.org/10.5603/KP.2015>.



Smit I, Zemlin AE, Erasmus RT. Demand management: An audit of pathology test rejections by an electronic gate-keeping system at an academic hospital in Cape Town. *Ann Clin Biochem.* 2015; 52: 481-487. <https://doi.org/10.1177/0004563214567688>.

Florkowski C, Don-Wauchope A, Giminez N, Rodriguez-Capote K, Wils J, Zemlin A.E. Point of care testing (POCT) and evidence-based laboratory medicine (EBLM) – does it leverage any advantage in clinical decision making? *Crit Rev Lab Med.* 2017; 54: 471-494. <https://doi.org/10.1080/10408363>.

### **IFCC Committee on Clinical Laboratory Management (C-CLM)**

Yenice S. Understanding quality management system: essential strategies to improve laboratory performance. *Rom J Lab Med.* 2017; 25: S21-22.

Yenice S. Role of proactive measures in the clinical laboratory practice. *Rom J Lab Med.* 2017; 25: S25.

Orth M, Khine-Wamono AA. Abstracts. Improvement in clinical laboratory services: Approaches to adding value. *Clin Chem Lab Med.* 2017; 55: S1215-1218.

### **IFCC Committee on Education in the Use of Biomarkers in Diabetes (C-EUBD)**

Lenters-Westra E, English E. Evaluating new HbA1c methods for adoption by the IFCC and NGSP reference networks using international quality targets. *Clin Chem Lab Med.* 2017; 55:1426-1434. <https://doi.org/10.1515/cclm-2017-0109>.

Lenters-Westra E, English E. Understanding the use of sigma metrics in HbA1c analysis. *Clin Lab Med* 2017; 37: 57-71. <https://doi.org/10.1016/j.cll.2016.09.006>.

Lenters-Westra E. Common Hb-variants no longer show interference on the Tosoh G8 after an update of the software. *Clin Chim Acta.* 2016; 463:73-74. <https://doi.org/10.1016/j.cca.2016>.

Weykamp C, Siebelder C, Evaluation of performance of laboratories and manufacturers within the framework of the IFCC model for quality targets of HbA1c. *J Diabetes Sci Technol.* 2017. <https://doi.org/10.1177/1932296817741320>.

### **IFCC Working Group on Laboratory Errors and Patient Safety (WG-LEPS)**

Sciacovelli L, Lippi G, Sumarac Z, West J, Garcia Del Pino Castro I, Furtado Vieira K, Ivanov A, Plebani M. Quality indicators in laboratory medicine: status of the progress of the IFCC Working Group 'Laboratory Errors and Patient Safety' project. *Clin Chem Lab Med.* 2017; 55:348-357. <https://doi.org/10.1515/cclm-2016-0929>.

Sciacovelli L, Aita A, Padoan A, Pelloso M, Antonelli G, Piva E, Chiozza ML, Plebani M. Performance criteria and quality indicators for the post-analytical phase. *Clin Chem Lab Med.* 2016; 54: 1169-1176. <https://doi.org/10.1515/cclm-2015-0897>.

Plebani M, Sciacovelli L, Aita A, Pelloso M, Chiozza ML. Performance criteria and quality indicators for the pre-analytical phase. *Clin Chem Lab Med.* 2015; 53: 943-948. <https://doi.org/10.1515/cclm-2014-1124>.

Sciacovelli L, Aita A, Plebani M. Extra-analytical quality indicators and laboratory performances. *Clin Biochem.* 2017; 50: 632-637. <https://doi.org/10.1016/j.clinbiochem.2017.03.020>.

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Plebani M, Sciacovelli L, Aita A. Quality indicators for the total testing process. *Clin Lab Med.* 2017; 37:187-205. <https://doi.org/10.1016/j.cl.2016.09.015>.

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Aita A, Sciacovelli L, Plebani M. Extra-analytical quality indicators - where to now? *Clin Chem Lab Med.* 2018; 56: (in press). <https://doi.org/10.1515/cclm-2017-0964>.

### **IFCC Working Group on Harmonisation of Interpretive Comments EQA (WG-ICQA)**

Vasikaran S, Sikaris K, Kilpatrick E, French J, Badrick T, Osypiw J, Plebani M. Assuring the quality of interpretative comments in clinical chemistry. *Clin Chem Lab Med.* 2016; 54: 1901-1911. <https://doi.org/10.1515/cclm-2016-0709>.

### **IFCC Working Group on Flow Cytometry (WG-FC)**

Lambert C, Sack U.: Monocytes and macrophages in flow cytometry. *Cytometry B Clin Cytom.* 2017; 92:178-179. <https://doi.org/10.1002/cyto.b.21530>.

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## **IFCC Task Forces**

### **IFCC Task Force on Paediatric Laboratory Medicine (TF-PLM)**

Grey VJ, Loh TP, Metz M, Lang T, Hersberger M. Paediatric laboratory medicine – Some reflections on the sub-specialty. (2017) *Clin Biochem.* 2017; 50: 648-650. <https://doi.org/10.1016/j.clinbiochem.2017.04.005>.

### **IFCC Task Force on Pharmacogenomics (TF-PG)**

Kalman LV, Agundez JA, Appell ML, Black JL, Bell GC, Boukouvala S, Bruckner C, Bruford E, Bruckner C, Caudle K, Coulthard S, Daly AK, Del Tredici AL, den Dunnen JT, Drozda K, Everts R, Flockhart D, Freimuth R, Gaedigk A, Hachad H, Hartshorne T, IngelmanSundberg M, Klein TE, Lauschke VM, Maglott DR, McLeod HL, McMillin GA, Meyer UA, MÅller DJ), Nickerson DA, Oetting WS, Pacanowski M, Pratt VM, Relling MV, Roberts A, Rubinstein WS, Sangkuhl K, Schwab M, Scott SA, Sim SC,

Thirumaran RK, Toji LH, Tyndale R, van Schaik RH, Whirl-Carrillo M, Yeo KJ, Zanger UM. Pharmacogenetic allele nomenclature: International workgroup recommendations for test result reporting. *Clin Pharmacol Ther.* 2016; 99:172-185. <https://doi.org/10.1002/cpt.280>.

#### **Task Force on Implementation of HbA1c Standardisation (TF-HbA1c)**

Weykamp C, John G, Gillery P, English E, Ji L, Lenters-Westra E, Little RR, Roglic G, Sacks DB, Takei I. Investigation of 2 models to set and evaluate quality targets for hb a1c: biological variation and sigma-metrics. *Clin Chem.* 2015; 61 :752-759. <https://doi.org/10.1373/clinchem.2014.235333>.

#### **Task Force on Clinical Applications of Cardiac Bio-Markers (TF-CB)**

Apple FS, Sandoval Y, Jaffe AS, Ordonez-Llanos J. Cardiac troponin assays: Guide to understanding analytical characteristics and their impact on clinical care. *Clin Chem.* 2017; 63 :73-81. <https://doi.org/10.1373/clinchem.2016.255109>.

Apple FS, Jaffe AS, Collinson P, Mockel M, Ordonez-Llanos J, Lindahl B, Hollander J, Plebani M, Than M, Chan MH. IFCC educational materials on selected analytical and clinical applications of high sensitivity cardiac troponin assays. *Clin Biochem.* 2015; 48: 201-203. <https://doi.org/10.1016/j.clinbiochem.2014.08.021>.

#### **Task Force on the Impact of Laboratory Medicine on Clinical Management and Outcomes (TF-ICO)**

Hallworth MJ, Epner PL, Ebert C, Fantz CR, Faye SA, Higgins TN, Kilpatrick ES, Li W, Rana SV, Vanstapel F; Current evidence and future perspectives on the effective practice of patient-centered laboratory medicine. *Clin Chem.* 2015; 61: 589-599. <https://doi.org/10.1373/clinchem.2014.232629>.

