



**EFLM**  
EUROPEAN FEDERATION  
OF CLINICAL CHEMISTRY  
AND LABORATORY MEDICINE

European Commission  
Joint Research Centre  
**IRMM**  
Institute for Reference  
Materials and Measurements

**CIRME**  
Università degli Studi  
di Milano

Milan (IT)  
24-25 November 2014

**1<sup>st</sup> EFLM Strategic Conference**  
**Defining analytical  
performance goals  
15 years after the  
Stockholm Conference**  
8<sup>th</sup> CIRME International Scientific Meeting  
[www.efclm.eu](http://www.efclm.eu)

EFLM thanks the following companies for the kind and unconditional support

**Abbott** Diagnostics   **BIO-RAD**   **DeSironi**   **Roche**   **SIEMENS**

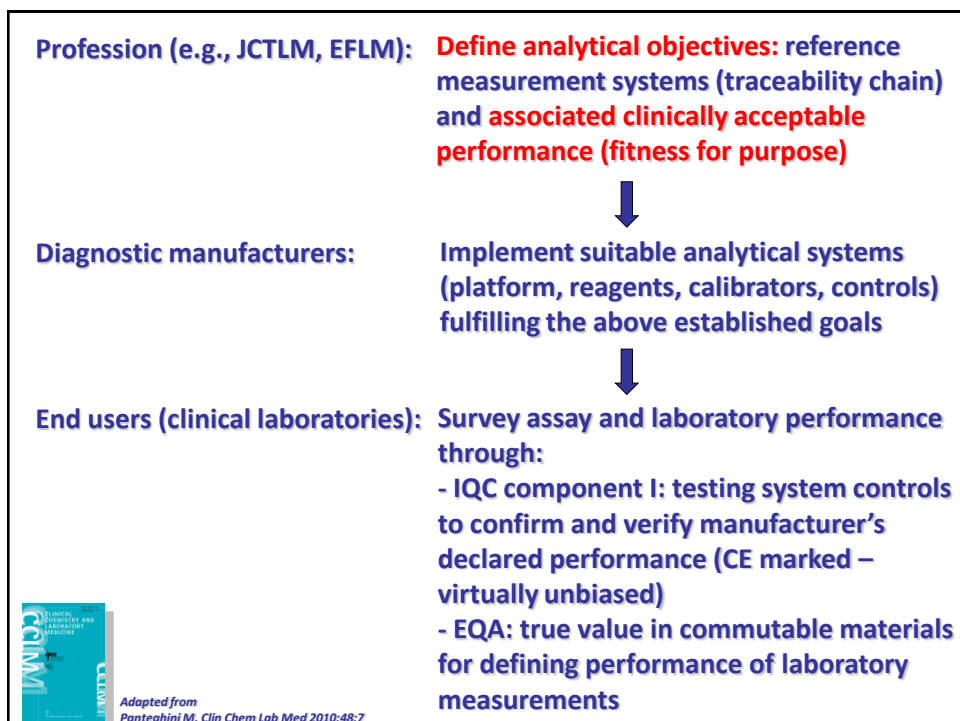
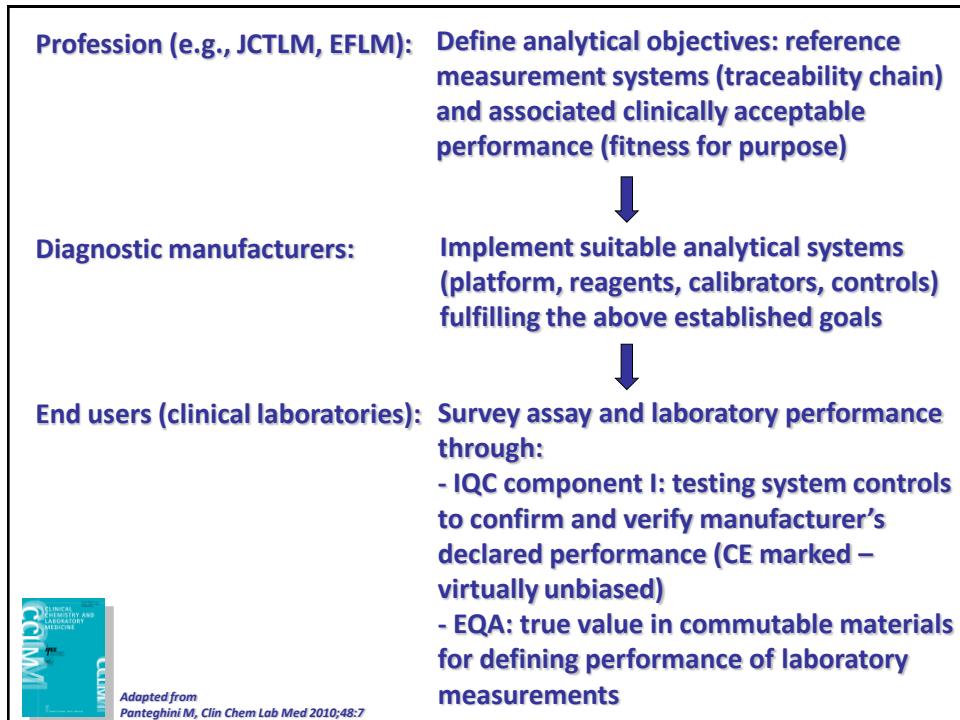


**Representatives from 38 European  
and extra-European Countries are  
attending the event**

<b>Australia</b>	<b>Iran</b>	<b>Czech Rep.</b>
<b>Austria</b>	<b>Ireland</b>	<b>Romania</b>
<b>Belgium</b>	<b>Italy</b>	<b>Russia</b>
<b>Bulgaria</b>	<b>Latvia</b>	<b>Serbia</b>
<b>Canada</b>	<b>Lebanon</b>	<b>Slovenia</b>
<b>Croatia</b>	<b>Lithuania</b>	<b>Spain</b>
<b>Denmark</b>	<b>Malaysia</b>	<b>USA</b>
<b>Estonia</b>	<b>Norway</b>	<b>South Africa</b>
<b>Finland</b>	<b>The Netherlands</b>	<b>Sweden</b>
<b>France</b>	<b>Poland</b>	<b>Switzerland</b>
<b>Germany</b>	<b>Portugal</b>	<b>Turkey</b>
<b>Ghana</b>	<b>Qatar</b>	<b>Ukraine</b>
<b>Greece</b>	<b>UK</b>	



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**The definition and use of the reference system concept for standardization of measurements must be closely associated with the setting of targets for uncertainty and error of measurement in order to make it clinically acceptable**

**If these goals are not objectively defined and fulfilled, there is a risk of letting error gain the upper hand, thus obscuring the clinical information supplied by the result and possibly nullifying the theoretical advantages of metrological traceability and even causing negative effects on patients' outcome.**

L Thienpont et al., Clin Chem Lab Med 2004;42:842  
Braga F & Panteghini M, Clin Chim Acta 2014;432:55

***STRATEGIES TO SET GLOBAL  
QUALITY SPECIFICATIONS IN  
LABORATORY MEDICINE***

WORLD HEALTH ORGANIZATION



ORGANISATION MONDIALE DE LA SANTE



*International Union of  
Pure and Applied Chemistry*



*International Federation  
of Clinical Chemistry  
and Laboratory Medicine*



**Nobelforum,  
Karolinska Institutet  
Stockholm April 24-26, 1999**

## 1999 Stockholm Consensus Conference on Quality Specifications in Laboratory Medicine

- 1 **Evaluation of the effect of analytical performance on clinical outcomes in specific clinical settings (e.g. misclassification in diagnosis)**
- 2 **Evaluation of the effect of analytical performance on clinical decisions in general**
  - a Data based on components of biological variation
  - b Data based on analysis of clinicians opinions
- 3 **Published professional recommendations from national and international expert bodies**
- 4 **Performance goals set by**
  - a Regulatory bodies
  - b EQAS organizers
- 5 **Goals based on the current state of the art (e.g. as demonstrated by data from EQAS)**



Scan J Clin Lab Invest 1999;49:475-585

## Acceptable performance 1999-2014 [definition & application]

...is like **teenage sex**

- Everybody is talking about it
- Everybody thinks everybody else is doing it
- Few people are doing it
- And those who are, are doing it badly



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SCIENTIFIC COMMITTEE

*Mauro Panteghini*, Italy - Co-Chair  
*Sverre Sandberg*, Norway - Co-Chair

*Callun Fraser*, UK  
*Andrea Rita Horvath*, Australia  
*Rob Jansen*, The Netherlands  
*Graham Jones*, Australia  
*Wytze Oosterhuis*, The Netherlands  
*Per Hyltoft Petersen*, Denmark  
*Heinz Schimmel*, Belgium  
*Ken Sikaris*, Australia

## 1999 Stockholm Consensus Conference revised in 2014

- 1 Evaluation of the **effect of analytical performance on clinical outcomes** in specific clinical settings (e.g. misclassification in diagnosis)
- 2 Evaluation of the effect of analytical performance on clinical decisions in general
  - a Data based **on components of biological variation**
  - b Data based on analysis of clinicians opinions
- 3 Published professional recommendations from national and international expert bodies
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- 5 Goals based **on the current state of the art** (e.g. as demonstrated by data from EQAS)



## 1999 Stockholm Consensus Conference revised in 2014

### Effect of analytical performance on clinical outcomes

- Advantage: to directly address the influence of measurement performance criteria on clinical outcomes.
- Disadvantage: it is only useful for examinations that inherently exert crucial effects on clinical decision-making. Furthermore, it may be influenced by the current measurement quality and results may vary according to the population investigated.



## 1999 Stockholm Consensus Conference revised in 2014

### Performance goals based on biological variation of the measurand

- Advantage: it can be applied to most measurands for which a “steady state” biologic model can be established.
- Disadvantage: need to carefully assess the relevance of the biological variation data.



## 1999 Stockholm Consensus Conference revised in 2014

### Performance goals based on the state of the art

- Advantage: numbers are readily available.
- Disadvantage: there may be no relationship between what is achievable and what is needed clinically.



## 2014 Milan Consensus Conference will also discuss:

### Performance criteria for extra-analytical phases

### Performance criteria for qualitative test procedures



**Publication of Proceedings of  
the Conference**

