8th IFDC International Food Data Conference 2009

EuroFIR European Food Information Resource

EuroFIR quality framework to improve national food composition databanks.

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8th IFCD 1-3 October, 2009 , Bangkok, Thailand

EuroFIR

Outline

- Five years of work on Quality Management Systems
- EuroFIR Collaborations
- CEN Standard
- Recomendations from evaluators
- Audits Models

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8th International Food Data Conference

October 1-3, 2009

Bangkok, Thailand

Why Harmonization

Fiber, Same method ??

Protein, Factor reported??

VitaminB6, HPLC or Microbiological ??

Zinc AAS or ICP-MS (LoD) ??

Selenium Graphite or HPLC-ICP-MS ??

natural variations?

Artificial variations??

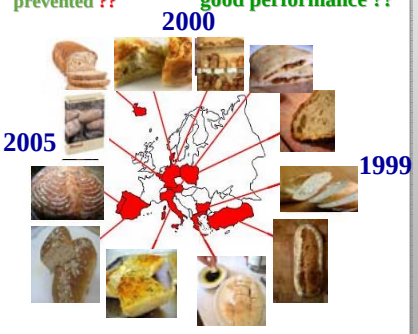
Sampling Plan ?

Description??

Compilation process: hazards identified and prevented ??

Laboratory?? poor or good performance ??

	Bread FCDB (1)	Bread FCDB (2)	Bread FCDB (3)
D. Fiber	4.0	8.2	5.6
Protein (g)	8.0	6.2	9.3
Vit B1 (mg)	0.118	0.21	0.192
Vit B6 (mg)	0.058	0.074	0.117
Zinc (mg)	0.626	1.6	0.964
Selenium (µg)	2.56	3.7	3.2



National values?

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World Health Organization

Evidence for risk factors and protective factors concerning CVD

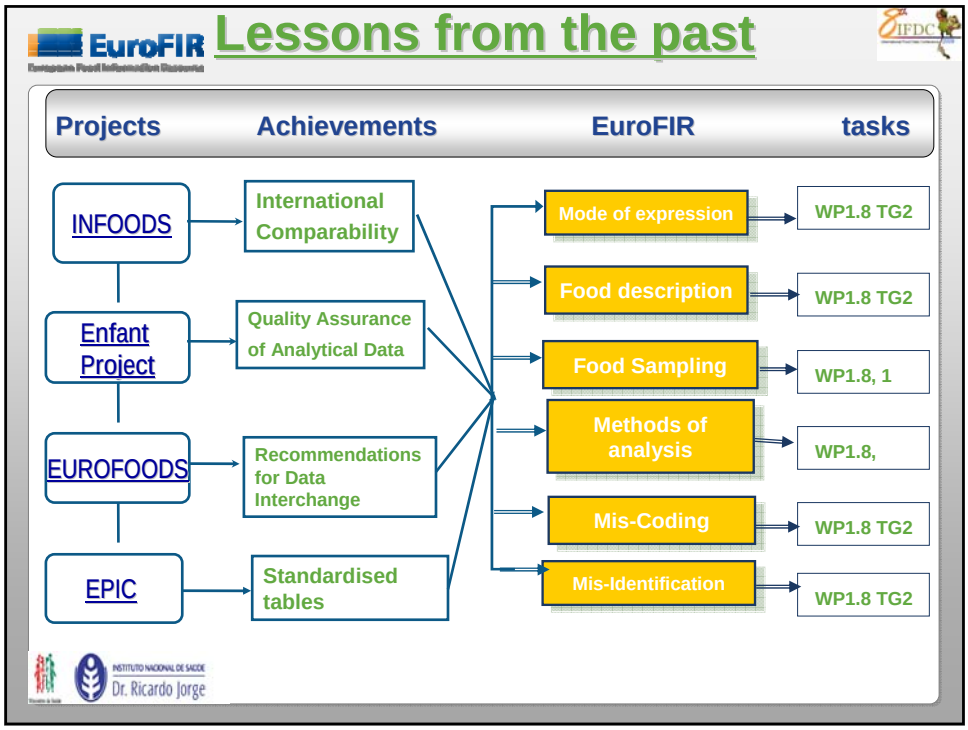
Risk **Convincing**

- Saturated fatty acids
- Trans-fatty acids
- Myristic & palmitic acid
- High sodium intake
- High alcohol intake
- Overweight & obesity

- Linoleic acid
- Fish and fish oils (EPA & DHA)
- Potassium
- Fruits (including berries) & vegetables
- Low to moderate alcohol intake
- Physical activity, regular

Dietary Composition

Dietary Factor	Recommended in TRS 916 (2003)	Recommended in TRS 797 (1990)
Cholesterol	< 300 mg/day	same
Sodium chloride (sodium)	<5 g/day (<2 g/day)	<6 g/day
Fruits and vegetables	≥ 400 g per day	
Total dietary fiber/Non-starch polysaccharides (NSP)	(>25 g, or 20g/d of NSP) from whole grain cereals, fruits, and vegetables	27 to 40 total 16 to 24 NSP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Lessons from the past
Projects
Achievements
EuroFIR
tasks
INFOODS
Enfant Project
EUROFOODS
EPIC
International Comparability
Quality Assurance of Analytical Data
Recommendations for Data Interchange
Standardised tables
Mode of expression
Food description
Food Sampling
Methods of analysis
Mis-Coding
Mis-Identification
WP1.8 TG2
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WP1.8 TG2
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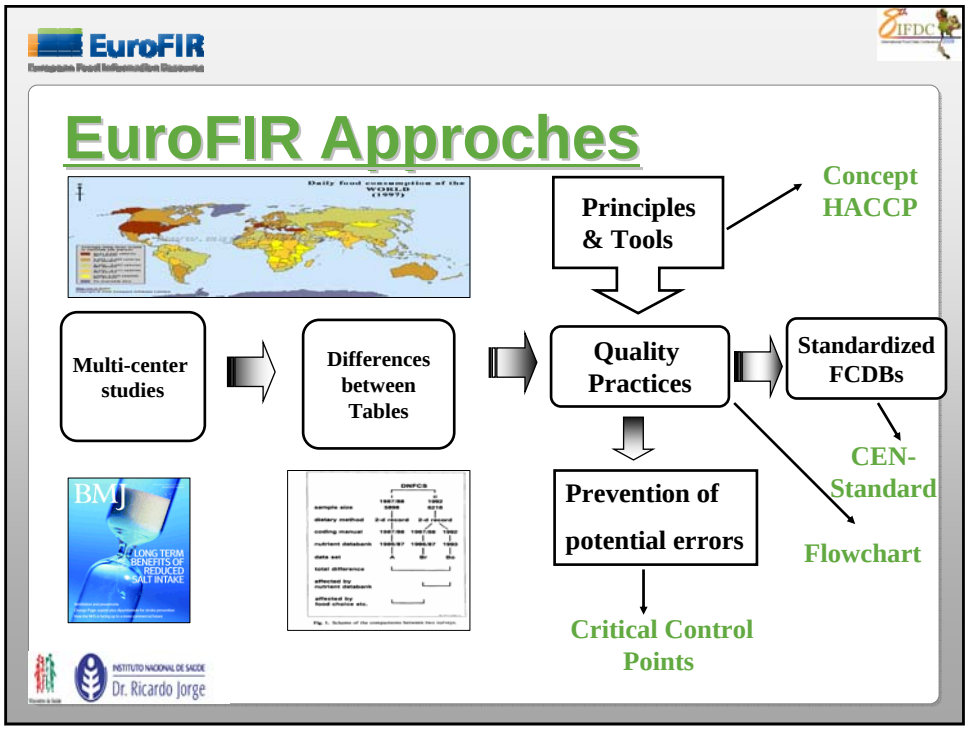
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EuroFIR Approches
Multi-center studies
Differences between Tables
Principles & Tools
Concept HACCP
Quality Practices
Standardized FCDBs
CEN-Standard
Flowchart
Prevention of potential errors
Critical Control Points
BMJ
LONG TERM BENEFITS OF REDUCED SALT INTAKE
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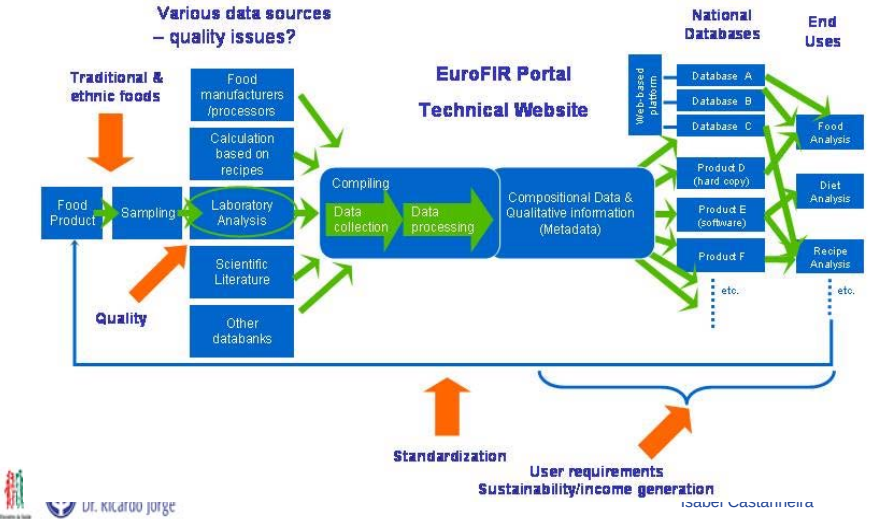
Quality & Traceability in EuroFIR



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SOPs – Compilation Process

- Identification and comprehension of the data in the data sources
- Attribution of quality index to original data
- Coding original data before data entry
- Checking original data entry
- Physical storage of original data
- Selection of original data to be further used to determine aggregated data
- Validation of aggregated and compiled data

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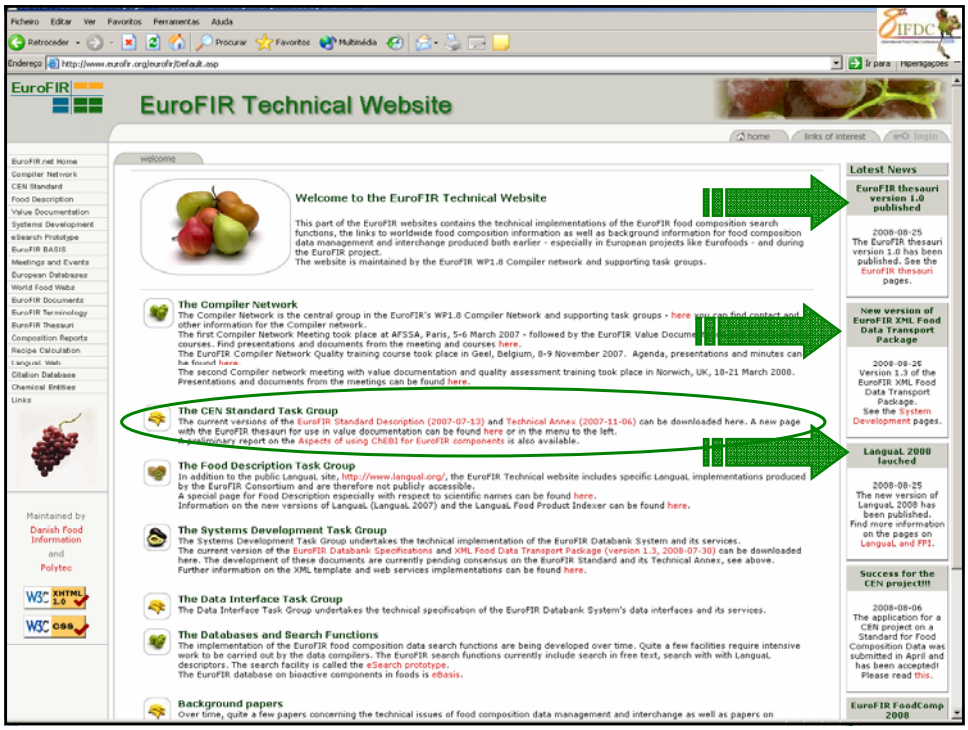

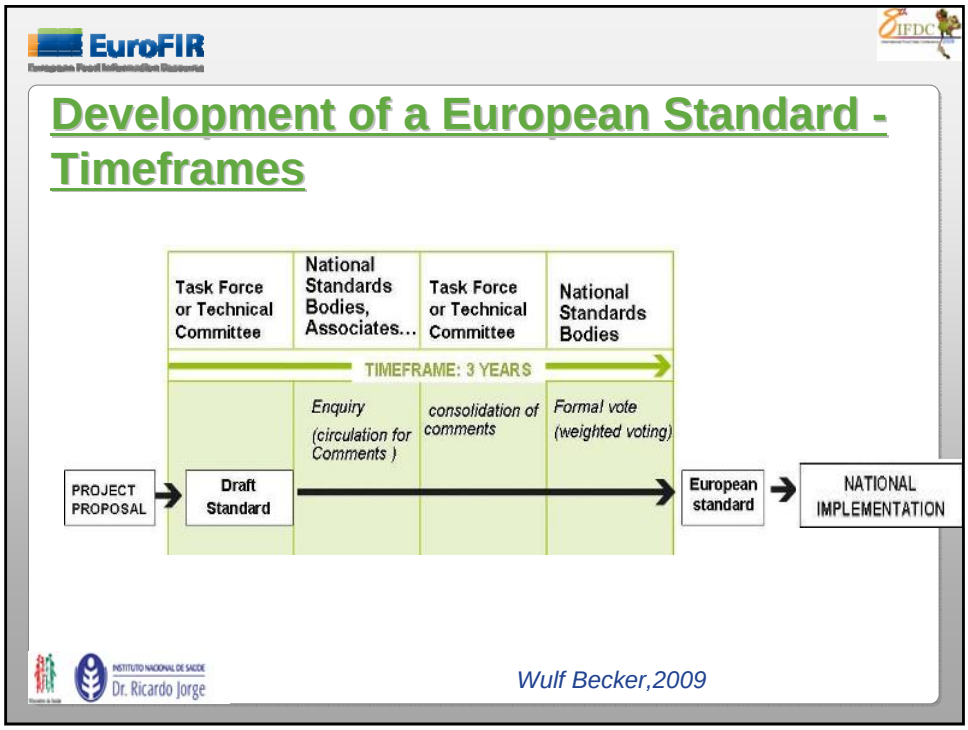

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CEN –Standard

- CEN-TC-387
  - SIS- Chair Swedish Organization for Standardization
- Organizations
  - EuroFIR partners representatives of National Standardization Organizations
  - GS1
  - Other members
- Aim
  - Establish a common European CEN-standard on food composition data enabling the unambiguous identification and description of food composition data and its quality in e.g. databases, for dissemination and interchange.

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Standardisation work – progress

- SIS TK505 committee ”Food data” established 2007
  - Members representing SIS Swedish Standards Institute, NFA, Swedish food manufacturers, retailers, consumers, dieticians
- CEN/TC387 ”Food composition data” Project Committe established April 2008
  - Led by SIS Swedish Standards Institute
  - Members from 9 national standardisation bodies
    - SE, F, DK, FIN, I, NL, P, B, UK (+ A, CY, D, NO observers)
  - *Programme of work* adopted
  - 2 plenary meetings + conference calls
  - Draft standard outline June 2009
  - First working draft August 2009

Wulf Becker, 2009

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CEN Standard Achievements

- Establishment of CEN project committee an important milestone
  - standard is a technical specification
- Liasion with GS1 initiative will enhance coverage and uptake of future standard
- Controlled vocabularies (thesauri) as informative annex
  - provide more flexibility (at international level)
  - require agreement among parties on which to use in data interchange
  - can be changed to normative in future
- More involvement in standardisation work appreciated

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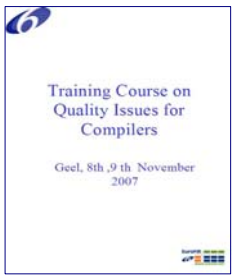
Training



- Initial Training to ensure that members can competently perform designated tasks with high level of confidence.
- Ongoing training sessions and periodic short courses to share experiences and to learn from each others
- Professional Development encouragement to participate in professional societies, conferences related with food science and human nutrition.

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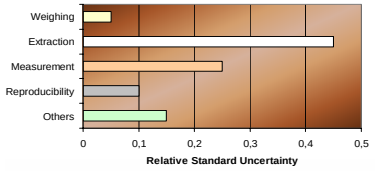
Measurement Uncertainty

- Metrological approach to express the dispersion of the results
- Uncertainty sources
  - Method of analysis
  - Sampling
- Types of Uncertainty
  - Standard uncertainty
  - Overall uncertainty
- Reporting uncertainty
  - U= K* combined uncertainty



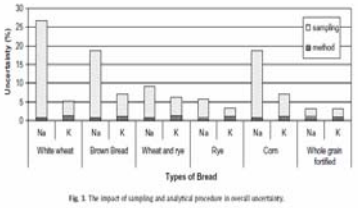
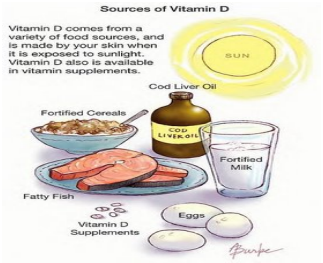


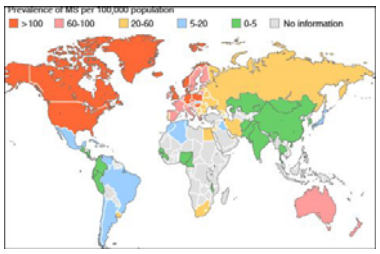
Fig. 1. The impact of sampling and analytical procedure in overall uncertainty.

Recommendation for Laboratories

IMEKO TC 23– EuroFIR Collaboration

IMEKO -TC 23 Food and Nutrition Metrology





Promote Metrology in Food Composition Databanks

Traceability to SI units

Use of Reference Materials

Sources of Uncertainty (variations in analytical process)

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Metrology in Clinical Nutrition

Relationship between Glaucoma and Selenium Levels in Plasma and Aqueous Humor

- Selenium intake estimated from FCDBs
- Selenium in plasma and Aqueous humor determined by determined by HPLC-ICP-MS

- Conclusion
  - limited nutritional data was collected, it was impossible to determine the subjects' long-term dietary intake of selenium
  - Metrology is necessary to evaluate qualititative issues
  - suggest selenium-related pathology

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Br. J. Ophthalmol. **published online 12 Jun 2008;**

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Compiler Certification

- **Formal certification, e.g. ISO 9001 ideal but not realistic within timescale**
- **Certification Plan based on consensus**
- **Informal standard based on generic compilation process best option**
  - **SOPs supporting individual organisation's compilation procedure**
  - **Records of management systems related to process e.g. training records, sub-contractor details, analytical quality control records**

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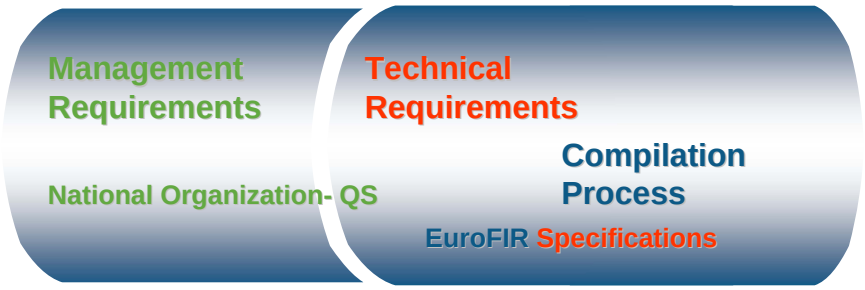
Quality System Implementation

- **Principle**

QMS should fit both EuroFIR and compiler organization quality management requirements.



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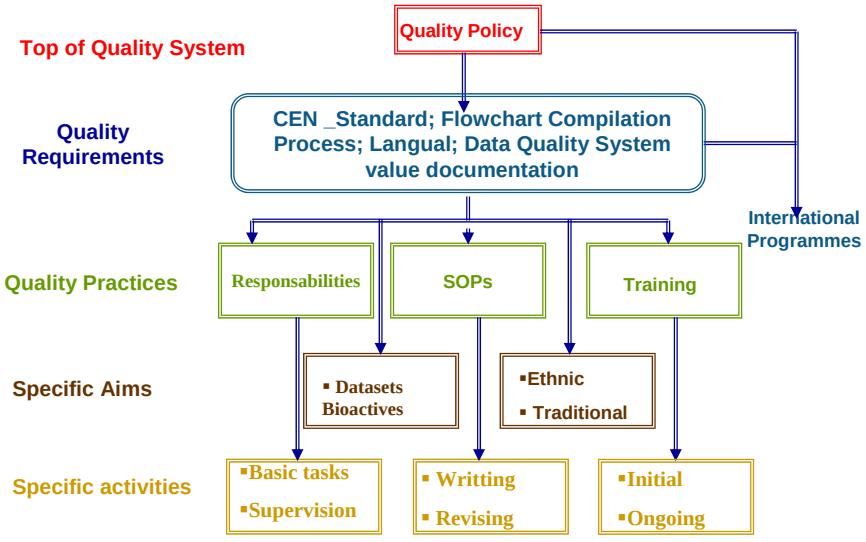
EuroFIR Quality System Structure



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Pilot Audits

- Co-operative audit conducted between EuroFIR partners and overseas for mutual beneficts
- A horizontal audit: an detailled assessment of each requirements applied to total activities
- Vertical audits a systematic evaluation of all requirements associated to each activity

Sweden

LIVSMEDELS VERKET

Portugal

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Beneficts of Quality

- Food Composition Databank
  - **"Combining quality systems and food composition activities endows FCDB with flexibility, consistency and transparency, and facilitates their monitoring and assessment.**
- Analytical Process
  - **"Without a defined quality assurance programme all analytical results must be suspected"**
- Compilation
  - **" Implementation of good scientific practice provide basis for transparency and confidence that data is comparable across diferent databases"**

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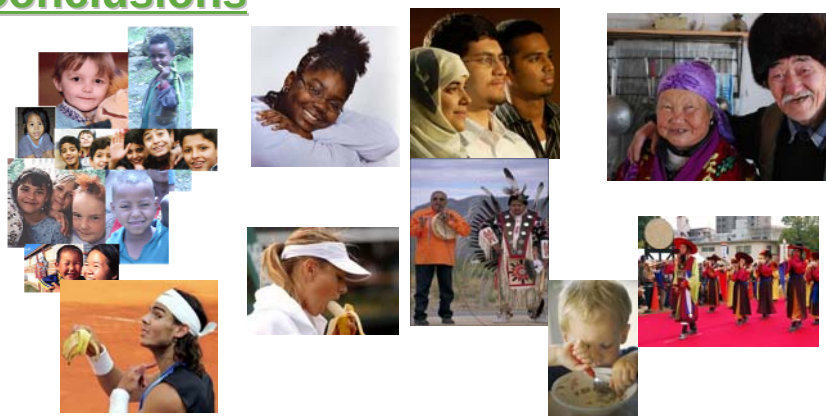
Conclusions



QMS are a contribution to reduce FCDBs artificial differences

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