

healthy all life long

# EQALM CENTRAL DATABASE

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# The EQALM CENTRAL DATABASE

What?

A data base aiming at collecting and centralizing EQA results for answering questions that are hard to answer when EQA data from only one provider are involved





#### Managed by EQALM



- EQALM has final responsability over database
- Content remains ownership of EQA providers
- EQALM board approves projects
- EQALM representatives in external initiatives
- Work coordinated by a new working group



## Application of EQALM centra data base

- Service to EQA providers
  - Helping EQA providers in running their EQA scheme

- Internal projects
  - Someone wants to investigate something using a large data set

- External projects
  - EQALM acts as a partner in projects with other organizations



## Service to EQA providers

• Benchmarking own results

Are the results of my EQA participants comparable to those from other participants ?

• Obtaining expected EQA variability

I want to start a new EQA program. I need to assess homogeneity of my samples. What is the expected EQA variability ?

*I want to evaluate my laboratories taking into account state of the art. Which variability can I expect ?* 



# Using statistical techniques

Checking data quality

My data should be unimodal. Can I check for this ?

• Alternative statistical evaluation techniques

What would it give if I use other statistical approaches to evaluate my data than the ones that I am currently using ?



#### Internal projects

- Examples of recent projects using EQALM Central database
  - EQALM SARS-CoV-2 antibody study
    - Various EQA providers, all using same samples
    - Data centralized and analyzed via EQALM central data base
  - Resilience of laboratories with respect to Covid crisis
    - Various EQA providers, reporting response rate and success rate of their laboratories
    - Article being written



#### **External projects**

- HALMA (with ICHCLR): Harmonisation of Measurands in Laboratory Medicine through Data Aggregation
  - By combining results from various EQA providers using commutable samples to assess and monitor harmonization of selected measurands
  - Starting with Creatinin, Albumin, Calcium

- RMS4IVDR: Reference Measurement Systems for clinically relevant biomarkers to support the effective implementation of the IVDR
  - By combining results from various EQA providers using the same comumutable sample to assess harmonization and trueness of IVDs
  - Alternative approaches and statistical models for commutability assessment



#### Lessons learnt

- Huge hetereogeneity of reported results
  - Format of results

Data template not always followed

• Language of results

Names of measurands in own local language

• Character set of results

Not always Latin characters: мкг/мл ,  $\mu$ g/ml,  $\mu$ g/ml, ug/ml

• Naming of methodology

Manufacturer confused with distributor

• Level of detail of methodology

Some up to manufacturer, others detail up to calibrator



# Solutions so far

- Format of results:
  - Desigining web page where user can give translation of own column names to uniform column names
- Different languages
  - Translation tables
- Aligning peer groups:
  - Web page to easily define and attribute uniform peer groups
  - Definition of peer groups on different levels



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#### Limitations of data base

- Limitations on character encoding
  - Excel files are not the best format to handle non-English characters
- Dependent on naming of methods by EQA provider
  - Not all data can be taken into account
  - Sensibilising EQA providers for using correct terminology
- Not all methods applied in all countries
  - When the aim is to compare methods, EQALM central database does not offer advantages for rarely used methods
  - Results will initially focus on measurement procedures used on a large scale



#### **Near future**

- Collecting data on a permanent basis
  - Services for EQA providers
- HALMA project
  - Collecting data from selected EQA providers using commutable samples



. . .

## Can I participate ?



- The samples I use are not commutable
  - Benchmarking EQA performance
- I use only a high level description of measurement procedures
  - Method evaluation is also done using high level description of measurement procedures
- I do not have much participants or EQA samples
  - All data are welcome, also small amounts
- I have some knowledge about SQL, Javascript, PHP and understand the content of the data
  - You are more than welcome to join us !