EVALUATION REPORT
INTERPRETATION GUIDE

This guide was made to facilitate the interpretation of Reports of evaluation submitted for the participants at the NQS Proficiency testing schemes organized by Nobis Labordiagnostica S.R.L.

Generalities:

Participant at the NQS Proficiency testing schemes receive the same samples and are ask to test them and input the results on the NQS online application (qc.com.ro), respectiv the deadline mentioned in the Information letter that they received together with the samples.

The samples must be processed according to the Instruction of Use received together with them. The participant is free to choose the analytes they would like to test.

If in the NQS online application you might not find the method and/or the instrument used for determining a certain analyte the participant, or you would like to test multi instruments, feel free to contact the organizer by e-mail (rezultate@nobissystems.com) mention the method and/or instrument used and the parameter they tested.

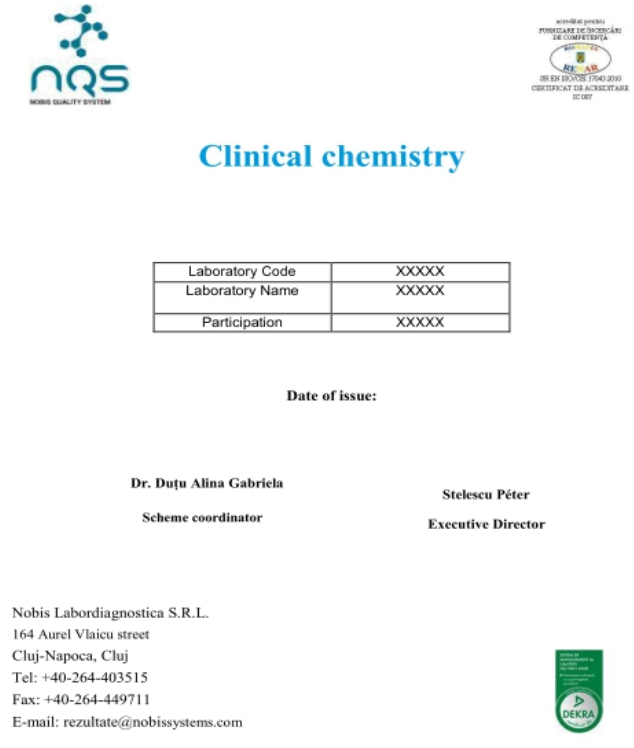
After the end of period of result submitting the results are analyzed statistically on three levels:

- global group
- method group
- instrument group

The present documents offers information regarding what information the report contains, grouping the schemes in three different categories:

- quantitative schemes
- qualitative schemes
- schemes in the field of microbiology

In case of some Proficiency testing schemes there might be some parameters that can be analyzed qualitatively and the evaluation is according to this.



Clinical chemistry

Laboratory Code	XXXXX
Laboratory Name	XXXXX
Participation	XXXXX

Date of issue:

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Quantitative reports:

Quantitative reports of evaluation may be found in the case of the following schemes: Clinical chemistry, Coagulation, Hematology, Immunology, Specific proteins, Urine chemistry, HBA1C, Electrophoresis, ESR, Reticulocyte count, Urine – strip and sedimentation (for pH and Specific gravity parameters only).

The cover of the report contains information regarding:

- name of the proficiency testing
- month and year of participation
- code and name of the participant laboratory
- date of report issuing
- contact details of the organizer.

Quantitative report of evaluation can be devided in 4 main parts:

- general data
- statistical data
- graphical representaion
- comparative data of different methods

1. *General data*

Clinical chemistry

Final Report

Client Code	NQS023
Participation	February 2018
Analyte	Alkaline Phosphatase ALP
Method	DGKC, SCE
Instrument	Hitachi series
U.M.	U/l

Contains information regarding:

- client code: the code of participant issued once they enrolled to one or more Proficiency scheme
- participation: Month of participation
- analyte: the analyte for which the statistical data refer to
- method: the method used for determining the analyte by the participant laboratory
- instrument: the instrument used by the laboratory to determine de analyte
- U.M.: unit of measurement in which the results were given. This unit is fixed.

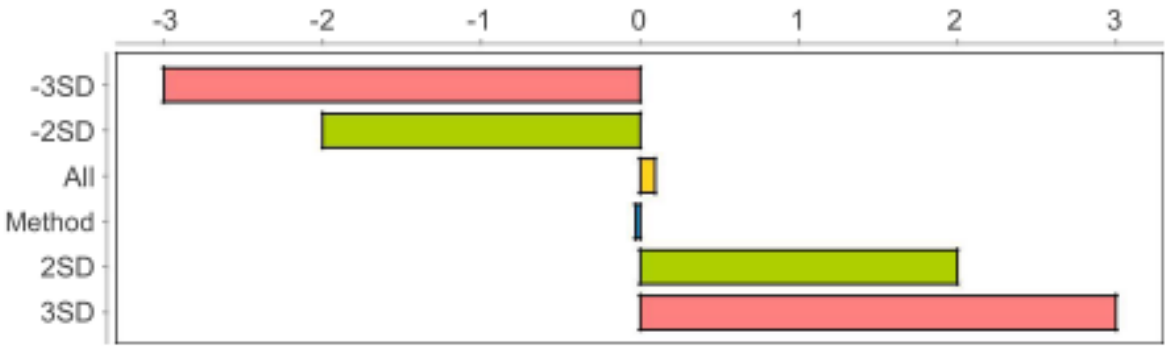
2. Statistical data

Name	All instruments and methods	Method: Bromcresol Green	Instrument: Olympus series
Measured value	2.6	2.6	2.6
Target value	2.57	2.61	2.45
Acceptance limit	1.96-3.18	2.04-3.18	2.15-2.75
Standard deviation	0.31	0.29	0.15
Coefficient of variation	23.84	21.86	12.24
Z score	0.09	-0.03	1
Diff%	1.13	-0.3	6.12
Uncertainty	0.11	0.11	0.11
Conclusion	Satisfactory	Satisfactory	Satisfactory

The table provides information regarding:
Measured value: result obtained by the client and reported on the web application
Target value: mean of comparision determined by robust statistic from the results obtained from participants
Acceptance limit: interval of accepted results in the range of mean +/- 2 SD
Standard devitation: calculated by robust statistic form the results obtained from participants
Coefficient of variation: the difference in percentage between target value and max/minimum of acceptance limit
Z score: performance score calculated from target value, measured value and standard deviation
Diff%: difference in percentage between measured value and target value
Uncertanty: the uncerctanty of taget value calculated using the following formula
Conclusion: conclusion regarding the performance of the participant:

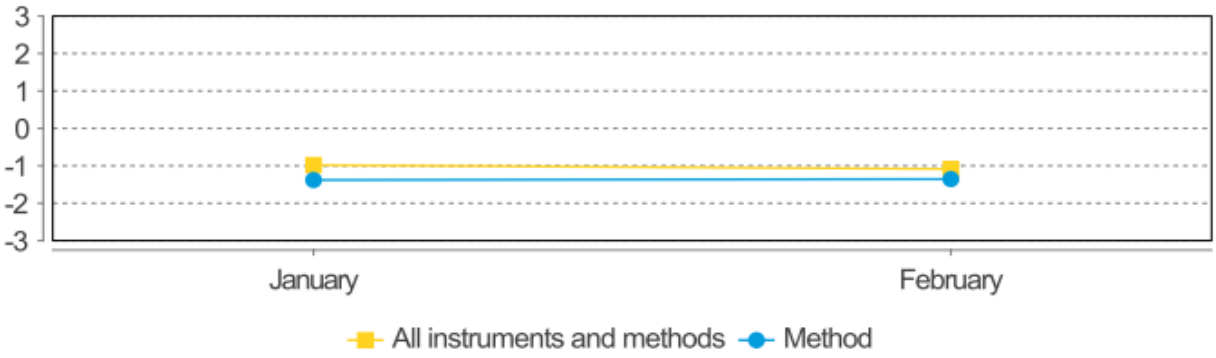
- satisfactory: if the Z score is between -2 and 2
- acceptable: if Z score is between -3 and -2 or 2 and 3
- unsatisfactory: if Z score is less then -3 or more then 3

3. Graphical representation



Graphical representation of the Z score obtained by the participant for global and method group of evaluation. The yellow line is for global group and the blue is for method group.

With green it is represented the limit of satisfactory results.
With red it is represented the limit of acceptable results.



Historical representation of performance.
For each participation in one year cylce it is graphically represented the performance of the laboratory for global and method group. By the end of the year the participant can see the evoluation of the parameter for a one year period.

4. Method comparision

Method	Mean	SD	CV
Diazo	1.66	0.2	23.5
Jendrassik Grof	1.61	0.17	21.33
DCA	1.35	0.19	27.79

The table shows comparative data for the most used three methods for assaying the parameter, showing data regarding the target value, standard deviation and coefficient of variation for each of them.

Summary report:
At the end of each report of evaluation participants can find a summary report realised for group of all participants and group of method. The role of this is to offer in one page a summary of the

performance obtained by the participant for the specified scheme.
The table contains information regarding:

- tested analyte, target value, measured value, standard deviation, coefficient of variation, Z score, difference in percentage and conclusion.
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CLINICAL CHEMISTRY
SUMMARY REPORT
All instruments and methods

Client code: XXXXX **Participation:** XXXXX

Analyte	Mean of comparison	Measured value	SD	CV%	Z score	Diff%	Conclusion
Albumin	2.57	2.6	0.31	23.84	0.09	1.13	Satisfactory
Alkaline phosphatase (ALP)	458.59	616	152.56	66.54	1.03	34.32	Satisfactory
ALT/GPT	98.95	96	8.18	16.53	-0.36	-2.98	Satisfactory
Alpha Amylase	383.69	369	38.02	19.82	-0.39	-3.83	Satisfactory
AST/GOT	201.74	200	15.23	15.1	-0.11	-0.86	Satisfactory
Direct Bilirubin	1.6	1.59	0.29	35.85	-0.02	-0.34	Satisfactory

Qualitative reports

Qualitative reports of evaluation may be found in the case of the following schemes: Serology and Serology plus, Fecal Occult Blood and Helicobacter pylori.

The cover of the report contains information regarding:

- name of the proficiency testing
- month and year of participation
- code and name of the participant laboratory
- date of report issuing
- contact details of the organizer.

Serology

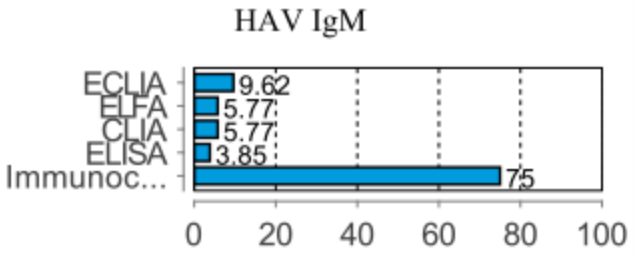
Analyte	Method	Your result	Expected result	Conclusion
HAV IgM	Immunochromatography	Negative	Negative (100%)	Satisfactory
HBsAg	Immunochromatography	Negative	Negative (100%)	Satisfactory
HCV	Immunochromatography	Negative	Negative (100%)	Satisfactory
HIV	Immunochromatography	Negative	Negative (93.33%)	Satisfactory
VDRL	Agglutination	Negative	Negative (100%)	Satisfactory
RPR	Agglutination	Negative	Negative (100%)	Satisfactory
TPHA	Agglutination	Negative	Negative (97.37%)	Satisfactory
HBsAb	Immunochromatography	Positive	Positive (77.78%)	Satisfactory
HIV 1-2	Immunochromatography	Negative	Negative (100%)	Satisfactory
Helicobacter Pylori Antibody	Immunochromatography	Negative	Negative (83.33%)	Satisfactory

In the quantitative report you may find information regarding:

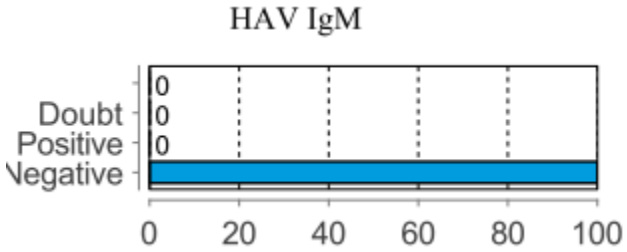
- analyte: name of the analyte
- method: the method the participant used for determining the analyte
- your result: result obtained and reported by the participant
- expected result: most freqent result obtained by the participant for the analyte using the same method. The percentage indicated how many participants obtained that specific result
- conclusion: conclusion regarding the performance of the participant

Graphical representations:

1. Graphical representation of the percentage of result according to the different methods that were used in assaying the specific analyte



2. Graphical representation of the percentage of results obtained by participants who are using the same method to determine the specific analyte



Urine strip and sedimentation – qualitative report

Analyte	Your result	Expected result	Conclusion
Microalbumin qualitative	Positive	Positive (85.71%)	Satisfactory
Bilirubin	Positive	Positive (100%)	Satisfactory
Leukocytes	Positive	Positive (83.33%)	Satisfactory
Glucose	Positive	Positive (100%)	Satisfactory
Ketones	Negative	Positive (91.67%)	Unsatisfactory
Nitrite	Positive	Positive (100%)	Satisfactory
Total protein	Positive	Positive (100%)	Satisfactory
Urobilinogen	Positive	Positive (91.67%)	Satisfactory
Blood	Positive	Positive (100%)	Satisfactory
Crystals in sediment	Present	Present (100%)	Satisfactory
Bacteria in sediment	Absent	Absent (80%)	Satisfactory
Cast in sediment	Absent	Absent (88.89%)	Satisfactory
Type of crystals	Cysteine Crystals	Cysteine Crystals (90%)	Satisfactory
RBC in sediment	Frequent	Frequent (100%)	Satisfactory
WBC in sediment	Frequent	Frequent (72.73%)	Satisfactory

In the quantitative report you may find information regarding:

- analyte: name of the analyte
- your result: result obtained and reported by the participant

- expected result: most freqent result obtained by the participant for the analyte using the same method. The percentage indicated how many participants obtained that specific result
- conclusion: conclusion regarding the performance of the participant

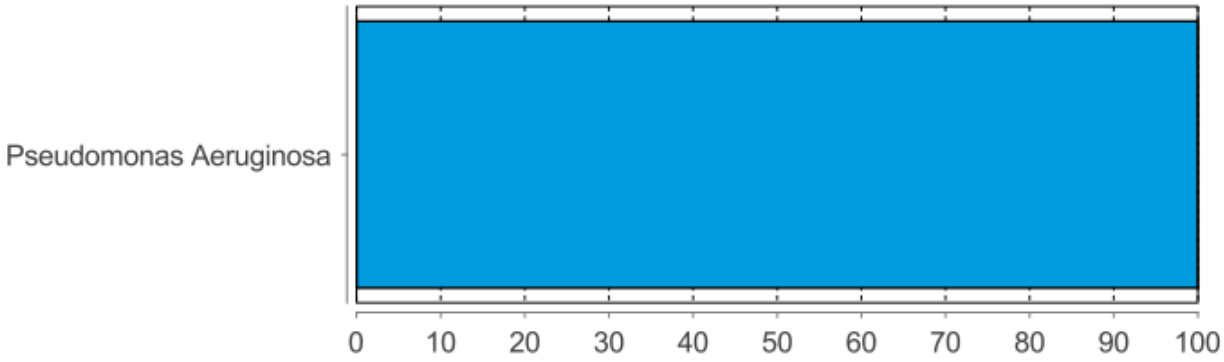
Microbiology reports:

Identification type: MANUAL

Bacteria identified	Bacteria expected	Conclusion
Pseudomonas Aeruginosa	Pseudomonas Aeruginosa	Pseudomonas Aeruginosa (100%)

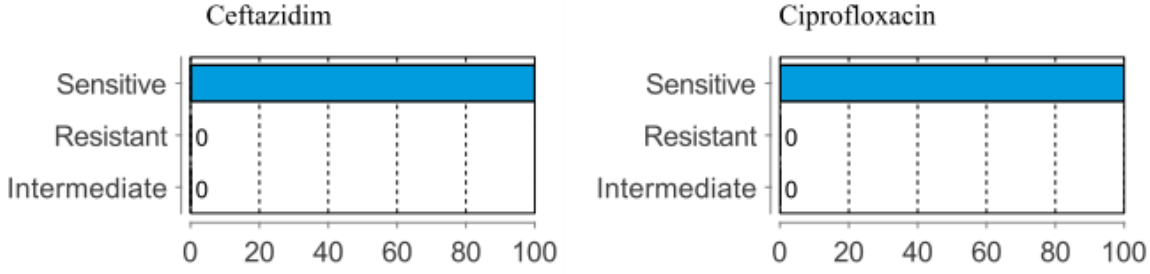
- identification type: how the test were done: automated system or manual method
- bacteria identified: the microorganism identified by the participant
- bacteria expected: most freqent result obtained by the participant for the analyte using the same method.

Graphical representation of the results introduced by the participants:



Antibiotic susceptibility testing:

Atibitotic	Method	Result	Expected result	Conclusion
Ceftazidim	CLSI	Sensitive	Sensitive (100%)	Satisfactory
Ciprofloxacin	CLSI	Sensitive	Sensitive (100%)	Satisfactory
Gentamicin	CLSI	Sensitive	Sensitive (100%)	Satisfactory
Imipenem	CLSI	Sensitive	Sensitive (100%)	Satisfactory



This part of the report contains information regarding:

- name of the antibiotic that was tested
- interpretation method used: CLSI or EUCAST
- result submitted by the participant
- expected result: most freqent result obtained by the participant for the analyte using the same method. The percentage indicated how many participants obtained that specific result
- conclusion: satisifactory if the submitted result is the same with the expected result, otherwise is unsatisfactory