FOB1/24: Faecal Occult Blood

This EQA round was accomplished according to the document ***EQA Plan 2024***.

Typing conventions: *We are using comma as a decimal separator and dates in day.month.year format.*

Samples

We used commercial samples in this round.

Supervisor's comment

There were 200 participants in this round, 3 of them from Slovakia and 5 from Slovenia.

Assigned values

Assigned values were determined as robust means in the groups based on the manufacturer of the kit (code R).
Only the results in the groups containing 5 or more participants are evaluated.
The criterion (D_{max}) is set to 25 % according to the recommendation of the Ministry of Health (document https://www.mzcr.cz/wp-content/uploads/2023/08/Vestnik-MZ_11-2023.pdf, page 134).

Measurement results obtained from **the laboratory systems**

Eiken (code R = 208): Most members of this group are using homogeneous measuring systems (identical manufacturer of the kit and equipment, only 2 participants declared the use of Roche instrument).

Sentinel (code R = 116): The users of this kit are using wide range of measuring systems (Abbott, Beckman Coulter, Roche, Siemens and other). We asked what calibrator they used and obtained these answers:

FOB Gold Calibrator (Routine)	49
FOB Gold Calibrator Wide	5

The participants who declared the use of the "Wide" calibrator reported the results that were significantly lower (approximately -60 % compared to the Routine group, their results were consistent to the Eiken group) - we assessed these participants in separate group.

Measurement results obtained from **the POCT systems**

We remind all users of POCT systems to strictly follow the instructions given in the general instructions (you receive this document together with the samples), inclusive of the recalculation of the results to the unit µg/g!

Aidian (Orion) (QuikRead, code R = 57): The average of the results of this group was consistent with the results of the Eiken group, but their variance was almost 3 times greater.

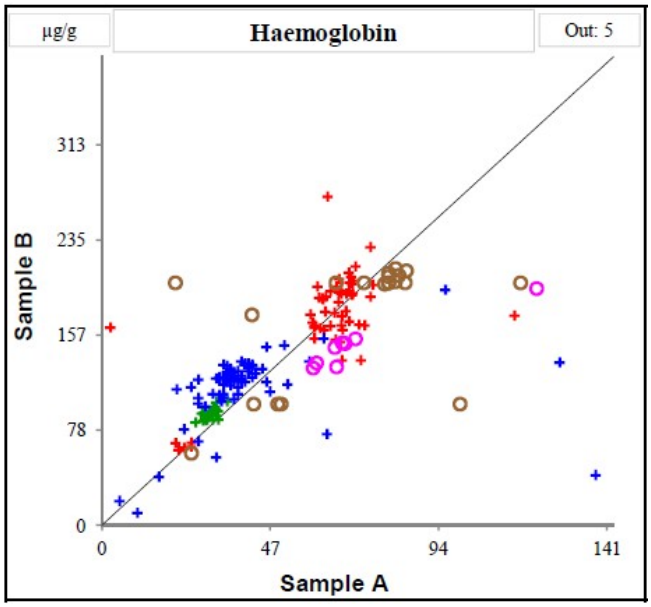
BodiTech (iChroma, code R = 200): Most participants reported the result of the sample B near 200 µg/g (measurement range limit). Several participants apparently did not respect the instructions given in the document *General instructions* and did not multiply the measurement result in µg/g shown on the device display by the dilution factor of 2 (we are sending them individual comments).

SD BIOSENSOR (Standard F, code R = 124): 2 participants out of 9 reported significantly higher results (approximately double for sample A, and 30 % higher for sample B).

The position of the results of the groups mentioned above shows the chart on the right.

The graph demonstrates the following facts:

1. The averages of the measurement results in the individual groups differ significantly (that is why we evaluate the results within individual groups in this programme).
2. Very good reproducibility of the results in the Eiken group.
3. There are 5 results out of the graph - these are mostly the results of the participants who did not convert the results to the unit µg/g or they have made gross errors in measurement.



Groups in the graph

Laboratory systems: + ... Eiken
+ ... Sentinel
POCT systems: + ... Aidian (Orion)
o ... BodiTech
o ... SD BIOSENSOR

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Unit of the results
The results are expressed in **the unit µg/g (i.e. µg of haemoglobin per gram of faeces)** in the FOB scheme.
The unit **µg/g** is particularly important for the determination of the test positivity (i.e. comparison with the cut-off value) - it is therefore clinically relevant. The instructions on how to recalculate the measurement result from the unit µg/L to µg/g were included in the documentation of the round.

Long term success rate
You can find the overview of the total success of the participants of this round over last 2 years in the following table. Particular ranges of success are defined in the column headers (percentage of the tests on which the participant reported the correct result). Next 2 lines contain both absolute and relative number of participants who reached the success from the header.

	Success	***0 %***	***1 - 74 %***	***75 - 79 %***	***80 - 89 %***	***90 - 94 %***	***95 - 99 %***	***100 %***
Success in words		unsatisfactory		acceptable	good	very good	excellent	
Count	absolute	11	46	30	0	0	0	102
	relative	5,8 %	24 %	16 %	-	-	-	54 %
Note: You can find your individual success over last 2 years in your result sheet.								

Two-thirds of the participants of this round show an overall success rate of 75 % or greater over the past 2 years.
But success rate of one-thirds of the participants is 50 % or less which is bad result. We recommend namely to these participants:

- Do not forget to recalculate results to the unit prescribed, **which is µg/g.**
- In case of "negative" result (i.e. the result out of the measurement range, below the LoQ) enter the result equal to the LoQ of your system (of course recalculated to the µg/g, e.g. for QuikRead go systems, where limit of quantification is 50 µg/L, it means to enter the result 10 µg/g). The instructions on how to report the results that are out of the measurement range you can find in the help of the web application Cibule.
- Carefully report both results and basic information about the test (especially the manufacturer of the kit).
- Strictly follow the instructions received from the manufacturer / supplier of your measuring system.

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Supplements

As a supplement to this report individual participants receive:

Name of the supplement	***Remark***
Confirmation of attendance	Issued only to those participants who sent us the results.
Result sheet	Issued only to those participants who sent us the results.
Complex statistics	Only for tests with quantitative results and two samples.

The supplements are identified by their name, EQA round identification and participant code and are intended for the needs of the participant.

Additional information

The final report, with the exception of the supplements, is public. Further information is freely available to the participants and other professionals at www.sekk.cz, in particular:

- The summary of the results of this round, including this final report.
- The criteria (D_{max}) for a quantitative results assessment.
- The document ***EQA Plan*** (contains information that applies both to this round and also the EQA in general).
- Explanation of the content of the particular supplements mentioned above.
- Contact to the EQA provider and the EQA coordinator and the list of all supervisors, including contacts.