

External Quality Assessment Scheme

Parasites in blood (5460-5461) Malaria screening (5462-5463) Rounds 1, 2023

Specimens

Please find enclosed two unstained, methanol-fixed thin blood films. The participants who have ordered Giemsa product (5460 or 5462) will receive samples S001 and S003 and participants who have ordered MGG product (5461 or 5463) will receive samples S002 and S004.

Caution

Quality control specimens derived from human blood must be handled with the same care as patient samples, i.e. as potential transmitters of serious diseases. The samples are fixed with methanol.

Background information

Samples S001 and S002

A 25-year-old French journalist was in Mali on a one-month trip to interview peacekeepers. After returning to his home country, he developed a fever, which is why he went to the emergency room. There they found a tired patient with a fever of 37.8°C. Laboratory tests revealed a low Hb (105 g/L) and platelet level (85 E9/L) but a normal leukocyte level (7.5 E9/L). CRP was elevated at 43 mg/L and the lactate dehydrogenase level was within the reference range (150 U/L).

Samples S003 and S004

A 3-year-old girl adopted from Cameroon was found to be anemic. She had also been tired, and during the initial examination a week earlier, she had also been diagnosed with a slight fever, 37.2°C. She had also had some diarrhea. The child seems cheerful now, but sometimes holds her stomach. Laboratory tests: platelets 110 E9/L, Hb 102 g/L, Leuk 3.1 E9/L.

Examinations

Giemsa or MGG staining according to the ordered product
Microscopical identification of blood parasites or Screening of malaria plasmodia

Storage and use

After arrival, the samples should be stored at room temperature. Before the examination of parasites, the slides must be stained according to the EQA product that has been ordered. Before the staining it is recommendable to treat the slides once more with methanol. Although the samples are methanol-fixed, the new methanol treatment has been found to improve the staining of the slides. Follow the laboratory's own routine staining procedure. The stained slides are analysed as patient samples.

Result reporting

Please enter the results and methods via LabScala (www.labscala.com).

Malaria screening (5462-5463)

The laboratories participating this product do not identify the malaria species, but merely report whether the sample is screening positive or negative regarding plasmodia. Also, the observed parasite developmental stages and parasitaemia percentage are to be reported for positive samples.

2023-02-07

INSTRUCTIONS

Product no. 5460-5463
LQ769323011-014/FI, US

Subcontracting: Sample pretesting

If the kit is incomplete or contains damaged specimens, please report immediately to info@labquality.fi.

The results should be reported no later than **March 7, 2023.**

The expected results of the round are published in LabScala in the View Reports section by March 10, 2023.

Inquiries

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Parasites in blood (5460-5461)

The laboratories report the observed findings, the parasite developmental stages and parasitaemia.

First report the finding and the parasite developmental stages you identified from the sample in question. When applicable, count also the parasitaemia percentage (instructions can be found below). Confirm the finding by pressing the plus sign (+) at the end of the row. If needed, you may report multiple findings from one specimen (mixed infection). Finally answer to the question whether you would send the specimen to a reference laboratory or not. You may report in the comments field whether you treated the slides with methanol prior the staining.

Estimation of the percentage of parasitaemia in thin blood film

When calculating the parasitaemia, count the percentage of infected red blood cells. You should view 1000-2000 red blood cells in a thin blood film. A red cell infected with multiple parasites, counts as one parasitized cell. Gametocytes are not counted. Example: 3 parasitized red cells/100 red blood cells = 3% parasitaemia.

Results reported in the Finding part will be scored.

S001



S002



S003



S004

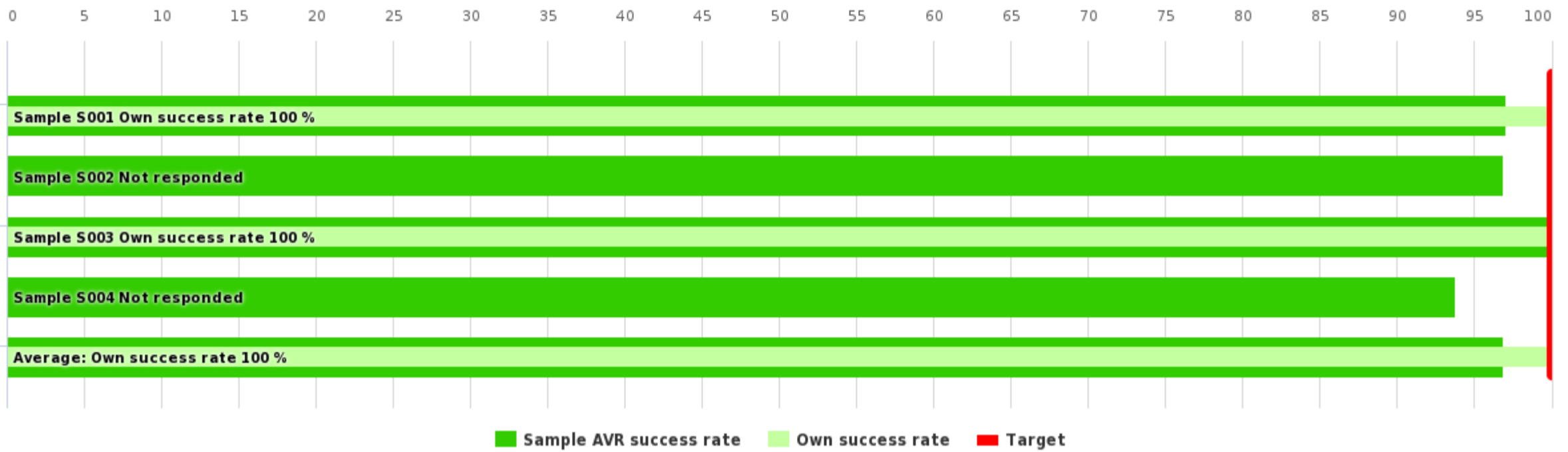


Client report

	No of participants	No of responded participants	Response percentage
Malaria screening, Giemsa stain, February, 1-2023	9	8	88.9 %
Malaria screening, MGG stain, February, 1-2023	5	4	80 %
Parasites in blood, Giemsa stain, February, 1-2023	9	9	100 %
Parasites in blood, MGG stain, February, 1-2023	14	12	85.7 %

Summary

Overall success rate by samples

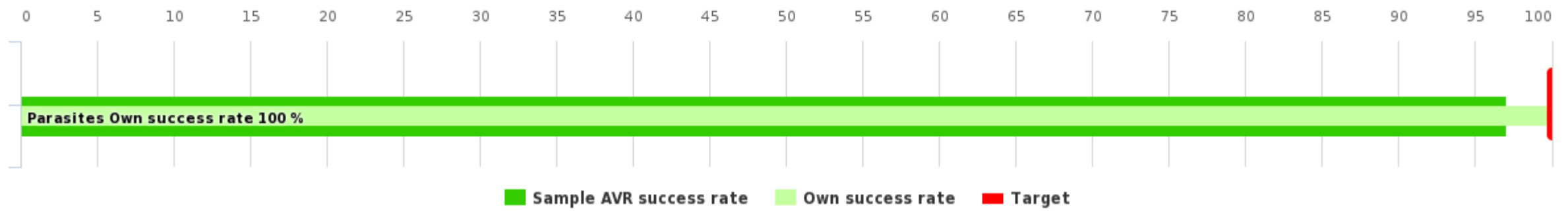


Summary	Own score	Max score	Own success rate	Difference	AVR success rate
Sample S001	4	4	100 %	2.9 %	97.1 %
Sample S002	-	-	-	-	96.9 %
Sample S003	4	4	100 %	0 %	100 %
Sample S004	-	-	-	-	93.8 %
Average:			100 %	3.1 %	96.9 %

History	Test nr.	Own success rate	Difference	AVR success rate
History not found				

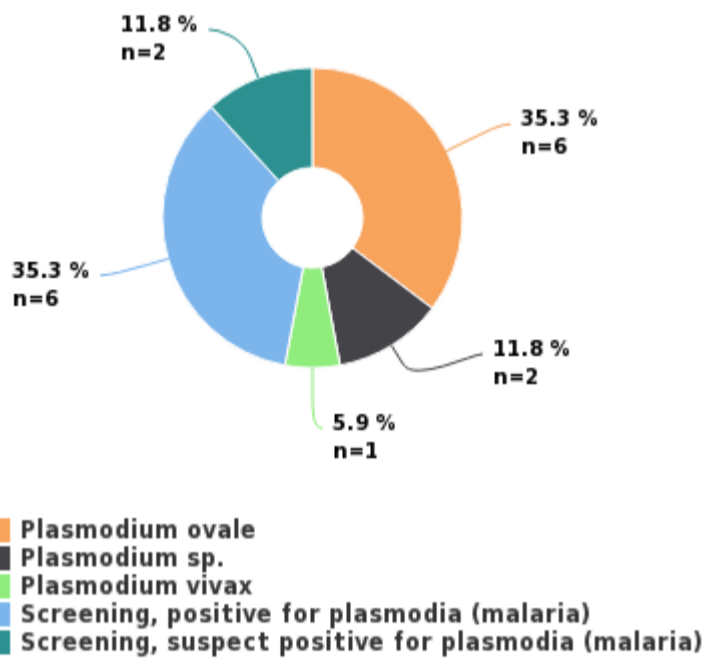
Sample S001 | Plasmodium ovale (Giemsa)

Sample S001 success rate



Sample S001 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Parasites	4	4	100 %	2.9 %	97.1 %	17
	Further action	-	-	-	-	-	17
	Total:	4	4	100 %	2.9 %	97.1 %	34

Sample S001 Expected finding: Plasmodium ovale



REPORT TO THE CLINICIAN

Finding group	Finding	Finding count	Own score	Max score	Own success rate	Difference	AVR success rate	Finding Score
Expected finding: Plasmodium ovale		17	4	4	100 %	2.9 %	97.1 %	
	Plasmodium ovale	6	-					4
	Plasmodium sp.	2	-					4
	Plasmodium vivax	1	-					2
	Screening, positive for plasmodia (malaria)	6	4	4	100 %	0 %		4
	Screening, suspect positive for plasmodia (malaria)	2	-					4
Total:		17	4	4	100 %	2.9 %	97.1 %	

LIFECYCLE

Finding group	Finding	Finding count	Result	Result count
Expected finding: Plasmodium ovale		17		
	Plasmodium ovale	6		
			Early trophozoites (ring stage)	4
			Gametocytes	5
			Mature trophozoites	5
			Schizonts	2
	Plasmodium sp.	2		
			Early trophozoites (ring stage)	2
			Gametocytes	1
	Plasmodium vivax	1		
			Early trophozoites (ring stage)	1
			Gametocytes	1
			Mature trophozoites	1

	<input checked="" type="radio"/> Screening, positive for plasmodia (malaria)	6		
			Early trophozoites (ring stage)	2
			<input checked="" type="radio"/> Gametocytes	3
			<input checked="" type="radio"/> Mature trophozoites	4
			Merozoites	1
			Schizonts	3
	Screening, suspect positive for plasmodia (malaria)	2		
			Not examined, sent to reference laboratory	2
Total:		17		

PARASITAEMIA

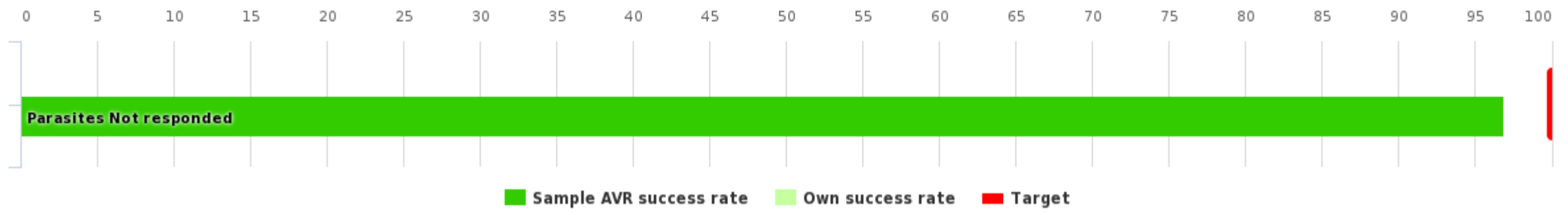
Finding group	Finding	Finding count	Result	Result count
Expected finding: Plasmodium ovale		17		
	Plasmodium ovale	6		
			< 0,1%	3
			0.1-1.9%	1
	Plasmodium sp.	2		
			2,0-4,0%	1
	Plasmodium vivax	1		
			2,0-4,0%	1
	<input checked="" type="radio"/> Screening, positive for plasmodia (malaria)	6		
			<input checked="" type="radio"/> < 0,1%	4
			0.1-1.9%	1
	Screening, suspect positive for plasmodia (malaria)	2		
			< 0,1%	1
			0.1-1.9%	1
Total:		17		

FURTHER ACTION

Result	Result count
<input checked="" type="radio"/> Not referred for further action	4
Referred for further action	13
Total:	17

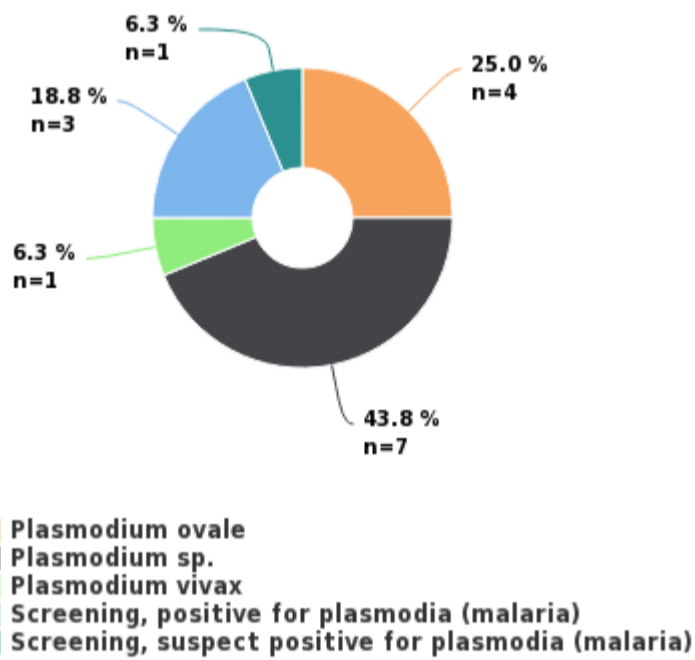
Sample S002 | Plasmodium ovale (MGG)

Sample S002 success rate

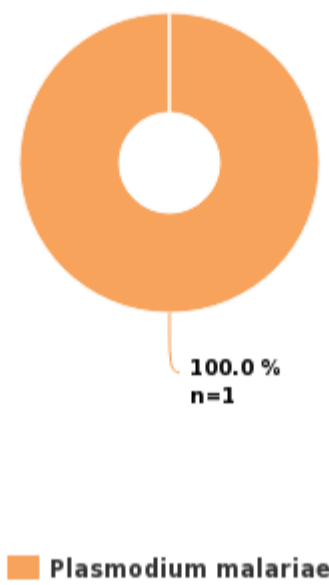


Sample S002 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Parasites	-	-	-	-	96.9 %	17
	Further action	-	-	-	-	-	16
	Total:	-	-	-	-	96.9 %	33

Sample S002 Expected finding: Plasmodium ovale



Sample S002 Additional findings



REPORT TO THE CLINICIAN

Finding group	Finding	Finding count	Own score	Max score	Own success rate	Difference	AVR success rate	Finding Score
Expected finding: Plasmodium ovale		16	-	-			96.9 %	
	Plasmodium ovale	4	-	-				4
	Plasmodium sp.	7	-	-				4
	Plasmodium vivax	1	-	-				2
	Screening, positive for plasmodia (malaria)	3	-	-				4
	Screening, suspect positive for plasmodia (malaria)	1	-	-				4
Additional findings		1	-	-			-	
	Plasmodium malariae	1	-	-				-
Total:		17	-	-	-	-	96.9 %	

LIFECYCLE

Finding group	Finding	Finding count	Result	Result count
Expected finding: Plasmodium ovale		16		
	Plasmodium ovale	4		
			Early trophozoites (ring stage)	3
			Gametocytes	1
			Mature trophozoites	3
			Schizonts	2
	Plasmodium sp.	7		
			Early trophozoites (ring stage)	4
			Gametocytes	4
			Mature trophozoites	3
			Schizonts	1

	Plasmodium vivax	1		
			Early trophozoites (ring stage)	1
			Mature trophozoites	1
			Schizonts	1
	Screening, positive for plasmodia (malaria)	3		
			Early trophozoites (ring stage)	2
			Mature trophozoites	1
	Screening, suspect positive for plasmodia (malaria)	1		
			Not examined, sent to reference laboratory	1
Additional findings		1		
	Plasmodium malariae	1		
			Early trophozoites (ring stage)	1
			Gametocytes	1
Total:		17		

PARASITAEMIA

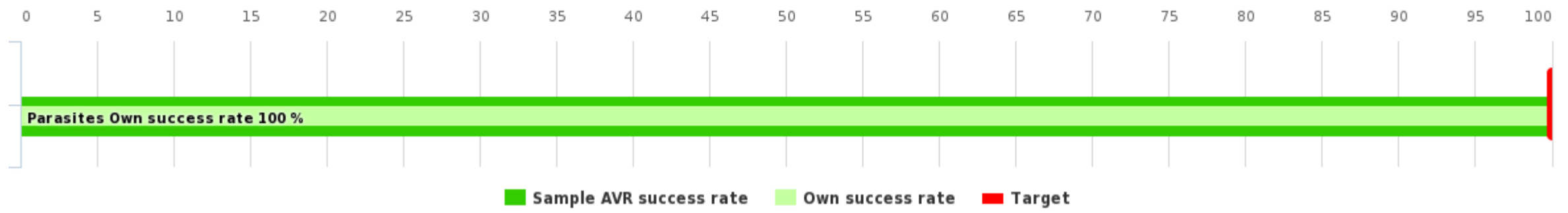
Finding group	Finding	Finding count	Result	Result count
Expected finding: Plasmodium ovale		16		
	Plasmodium ovale	4		
			< 0,1%	3
			0.1-1.9%	1
	Plasmodium sp.	7		
			< 0,1%	4
			0.1-1.9%	3
	Plasmodium vivax	1		
			0.1-1.9%	1
	Screening, positive for plasmodia (malaria)	3		
			< 0,1%	2
	Screening, suspect positive for plasmodia (malaria)	1		
			0.1-1.9%	1
Additional findings		1		
	Plasmodium malariae	1		
			< 0,1%	1
Total:		17		

FURTHER ACTION

Result	Result count
Not referred for further action	8
Referred for further action	8
Total:	16

Sample S003 | Negative (Giemsa)

Sample S003 success rate



Sample S003 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Parasites	4	4	100 %	0 %	100 %	17
	Further action	-	-	-	-	-	17
	Total:	4	4	100 %	0 %	100 %	34

Sample S003 Expected finding:
Negative



■ Negative, blood parasites
■ Screening, negative for plasmodia (malaria)

REPORT TO THE CLINICIAN

Finding group	Finding	Finding count	Own score	Max score	Own success rate	Difference	AVR success rate	Finding Score
Expected finding: Negative		17	4	4	100 %	0 %	100 %	
	Negative, blood parasites	9	-					4
	<input checked="" type="radio"/> Screening, negative for plasmodia (malaria)	8	4	4	100 %	0 %		4
Total:		17	4	4	100 %	0 %	100 %	

LIFECYCLE

Finding group	Finding	Finding count	Result	Result count
Expected finding: Negative		17		
	Negative, blood parasites	9		
			N/A	9
	<input checked="" type="radio"/> Screening, negative for plasmodia (malaria)	8		
			<input checked="" type="radio"/> N/A	8
Total:		17		

PARASITAEMIA

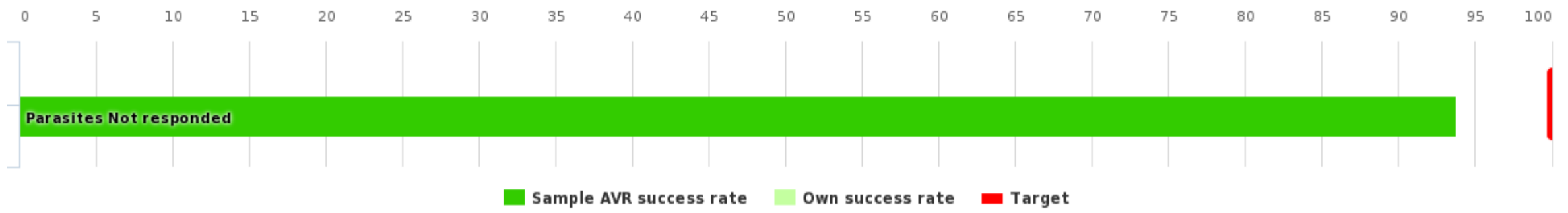
Finding group	Finding	Finding count	Result	Result count
Expected finding: Negative		17		
	Negative, blood parasites	9		
			N/A	6
	<input checked="" type="radio"/> Screening, negative for plasmodia (malaria)	8		
			<input checked="" type="radio"/> N/A	6
Total:		17		

FURTHER ACTION

Result	Result count
<input checked="" type="radio"/> Not referred for further action	10
<input type="radio"/> Referred for further action	7
Total:	17

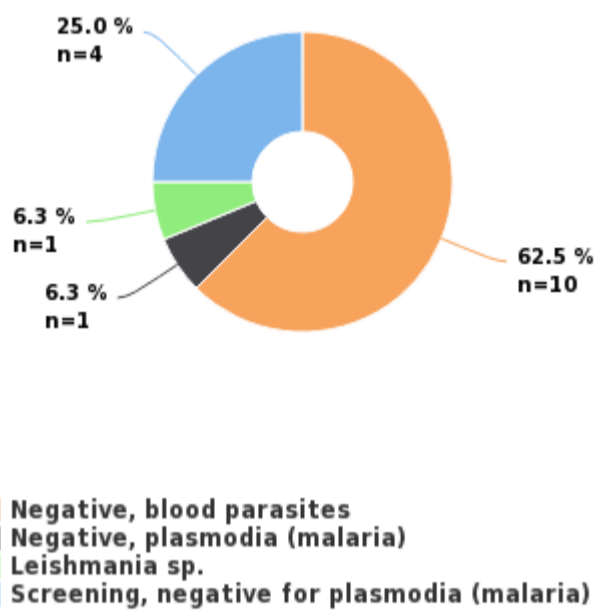
Sample S004 | Negative (MGG)

Sample S004 success rate



Sample S004 results	Responded	Own score	Max score	Own success rate	Difference	AVR success rate	Count
	Parasites	-	-	-	-	93.8 %	16
	Further action	-	-	-	-	-	16
	Total:	-	-	-	-	93.8 %	32

Sample S004 Expected finding: Negative



REPORT TO THE CLINICIAN

Finding group	Finding	Finding count	Own score	Max score	Own success rate	Difference	AVR success rate	Finding Score
Expected finding: Negative		16	-	-			93.8 %	
	Negative, blood parasites	10	-					4
	Negative, plasmodia (malaria)	1	-					4
	Leishmania sp.	1	-					0
	Screening, negative for plasmodia (malaria)	4	-					4
Total:		16	-	-	-	-	93.8 %	

LIFECYCLE

Finding group	Finding	Finding count	Result	Result count
Expected finding: Negative		16		
	Negative, blood parasites	10		
			N/A	10
	Negative, plasmodia (malaria)	1		
			N/A	1
	Leishmania sp.	1		
			Other lifecycle	1
	Screening, negative for plasmodia (malaria)	4		
			N/A	4
Total:		16		

PARASITAEMIA

Finding group	Finding	Finding count	Result	Result count
Expected finding: Negative		16		
	Negative, blood parasites	10		

			N/A	8
	Negative, plasmodia (malaria)	1		
	Leishmania sp.	1		
			N/A	1
	Screening, negative for plasmodia (malaria)	4		
			N/A	3
Total:		16		

FURTHER ACTION

Result	Result count
Not referred for further action	9
Referred for further action	7
Total:	16

Report Info

PARTICIPANTS

Altogether 31 laboratories from 12 countries participated in this EQA round.

REPORT INFO

On the front page you can see summaries of overall success rate and sample specific success rates which have been calculated from the scores.

In general, the expected results are marked with green color and for the screening laboratories with yellow color. Laboratory's own results are indicated with a black radio button . The findings reported by the participants have been grouped according to the expected findings of each sample. If a laboratory has reported multiple findings indicating a mixed infection, the additional findings have been grouped to a separate finding group.

If you have not reported results you will get a note: "You have not responded in time, only global report is available."

For information on report interpretation and performance evaluation, please see the "EQAS Interpretation guidelines" in LabScala User instructions. In case you have any questions regarding the reports, please contact the EQA Coordinator.

SCORING

The results in the "Report to the clinician" part can be scored when at least 60% of the participants have reported the correct/expected result and when there are at least three reported results. The report includes a sample specific scoring summary.

Laboratory's scores have been converted to percentage (own success rate, % from maximum scores) with a target at 100%. Own success rate is compared with the success rate of all results.

The following general rules are applied:

4 points is reached by reporting the expected result

1-3 points is given to results that are partly correct/insufficient regarding the expected finding

0 points is given for an incorrect/false result

GLOBAL REPORT

	No of participants	No of responded participants	Response percentage
Malaria screening, Giemsa stain, February, 1-2023	9	8	88.9 %
Malaria screening, MGG stain, February, 1-2023	5	4	80 %
Parasites in blood, Giemsa stain, February, 1-2023	9	9	100 %
Parasites in blood, MGG stain, February, 1-2023	14	12	85.7 %

Summary

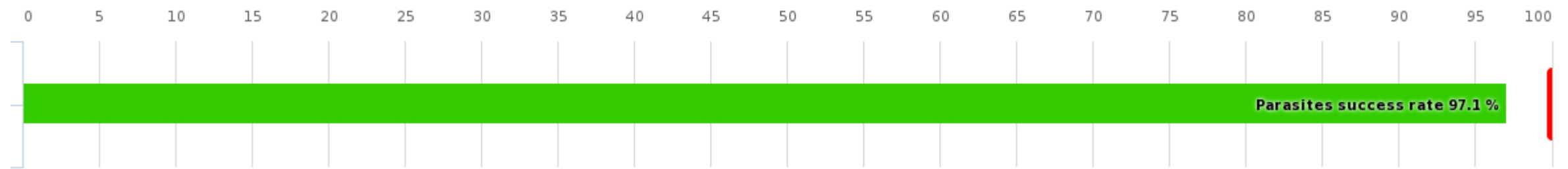
Overall success rate by samples



Summary	AVR success rate
Sample S001	97.1 %
Sample S002	96.9 %
Sample S003	100 %
Sample S004	93.8 %
Average:	96.9 %

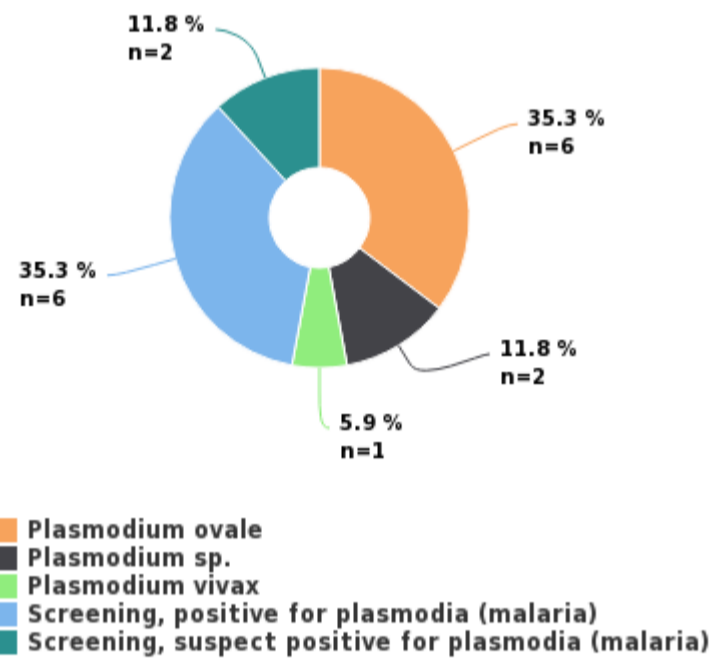
Sample S001 | Plasmodium ovale (Giemsa)

Sample S001 success rate



Sample S001 results	Responded	AVR success rate	Count
	Parasites	97.1 %	17
	Further action	-	17
	Total:	97.1 %	34

Sample S001 Expected finding: Plasmodium ovale



REPORT TO THE CLINICIAN

Finding group	Finding	Finding count	AVR success rate	Finding Score
Expected finding: Plasmodium ovale		17	97.1 %	
	Plasmodium ovale	6		4
	Plasmodium sp.	2		4
	Plasmodium vivax	1		2
	Screening, positive for plasmodia (malaria)	6		4
	Screening, suspect positive for plasmodia (malaria)	2		4
Total:		17	97.1 %	

LIFECYCLE

Finding group	Finding	Finding count	Result	Result count
Expected finding: Plasmodium ovale		17		
	Plasmodium ovale	6		
			Early trophozoites (ring stage)	4
			Gametocytes	5
			Mature trophozoites	5
			Schizonts	2
	Plasmodium sp.	2		
			Early trophozoites (ring stage)	2
			Gametocytes	1
	Plasmodium vivax	1		
			Early trophozoites (ring stage)	1
			Gametocytes	1
			Mature trophozoites	1
	Screening, positive for plasmodia (malaria)	6		

			Early trophozoites (ring stage)	2
			Gametocytes	3
			Mature trophozoites	4
			Merozoites	1
			Schizonts	3
	Screening, suspect positive for plasmodia (malaria)	2		
			Not examined, sent to reference laboratory	2
Total:		17		

PARASITAEMIA

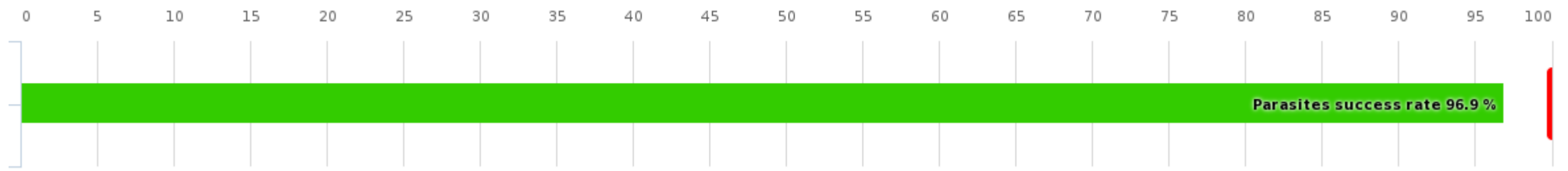
Finding group	Finding	Finding count	Result	Result count
Expected finding: Plasmodium ovale		17		
	Plasmodium ovale	6		
			< 0,1%	3
			0.1-1.9%	1
	Plasmodium sp.	2		
			2,0-4,0%	1
	Plasmodium vivax	1		
			2,0-4,0%	1
	Screening, positive for plasmodia (malaria)	6		
			< 0,1%	4
			0.1-1.9%	1
	Screening, suspect positive for plasmodia (malaria)	2		
			< 0,1%	1
			0.1-1.9%	1
Total:		17		

FURTHER ACTION

Result	Result count
Not referred for further action	4
Referred for further action	13
Total:	17

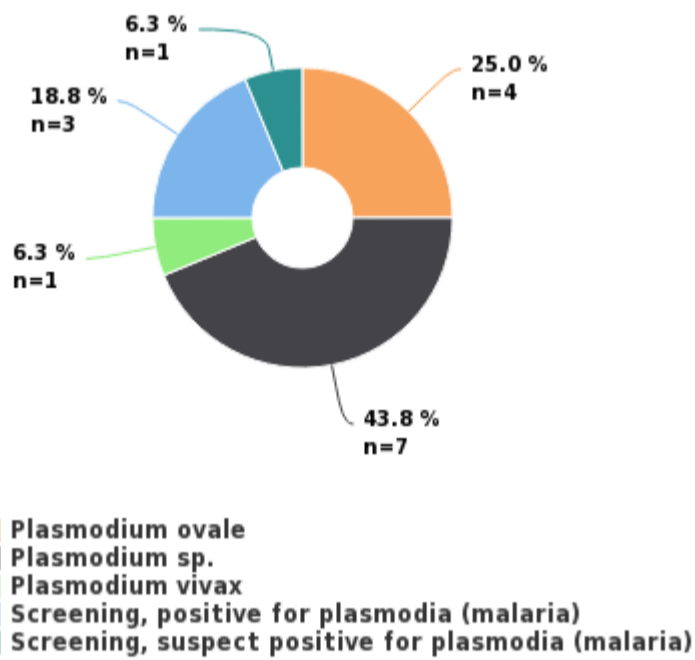
Sample S002 | Plasmodium ovale (MGG)

Sample S002 success rate

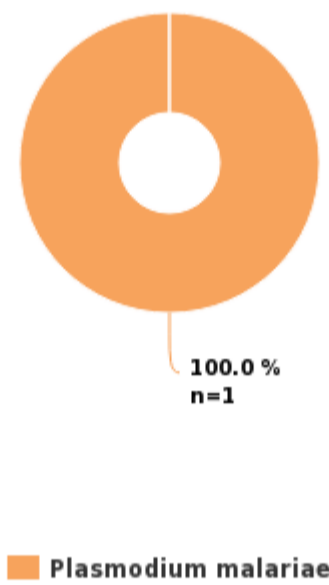


Sample S002 results	Responded	AVR success rate	Count
	Parasites	96.9 %	17
	Further action	-	16
	Total:	96.9 %	33

Sample S002 Expected finding: Plasmodium ovale



Sample S002 Additional findings



REPORT TO THE CLINICIAN

Finding group	Finding	Finding count	AVR success rate	Finding Score
Expected finding: Plasmodium ovale	Plasmodium ovale	4	96.9 %	4
	Plasmodium sp.	7		4
	Plasmodium vivax	1		2
	Screening, positive for plasmodia (malaria)	3		4
	Screening, suspect positive for plasmodia (malaria)	1		4
	Additional findings			1
	Plasmodium malariae	1		-
Total:		17	96.9 %	

LIFECYCLE

Finding group	Finding	Finding count	Result	Result count
Expected finding: Plasmodium ovale	Plasmodium ovale	4	Early trophozoites (ring stage)	3
			Gametocytes	1
			Mature trophozoites	3
			Schizonts	2
			Plasmodium sp.	7
	Plasmodium sp.	7	Early trophozoites (ring stage)	4
			Gametocytes	4
			Mature trophozoites	3
			Schizonts	1
			Plasmodium vivax	1

			Early trophozoites (ring stage)	1
			Mature trophozoites	1
			Schizonts	1
	Screening, positive for plasmodia (malaria)	3		
			Early trophozoites (ring stage)	2
			Mature trophozoites	1
	Screening, suspect positive for plasmodia (malaria)	1		
			Not examined, sent to reference laboratory	1
Additional findings		1		
	Plasmodium malariae	1		
			Early trophozoites (ring stage)	1
			Gametocytes	1
Total:		17		

PARASITAEMIA

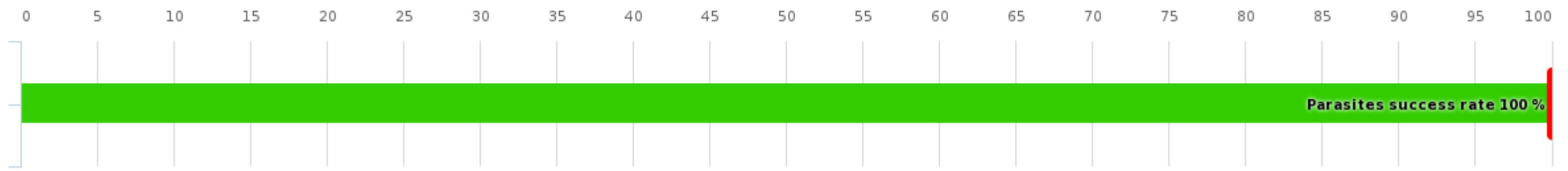
Finding group	Finding	Finding count	Result	Result count
Expected finding: Plasmodium ovale		16		
	Plasmodium ovale	4		
			< 0,1%	3
			0.1-1.9%	1
	Plasmodium sp.	7		
			< 0,1%	4
			0.1-1.9%	3
	Plasmodium vivax	1		
			0.1-1.9%	1
	Screening, positive for plasmodia (malaria)	3		
			< 0,1%	2
	Screening, suspect positive for plasmodia (malaria)	1		
			0.1-1.9%	1
Additional findings		1		
	Plasmodium malariae	1		
			< 0,1%	1
Total:		17		

FURTHER ACTION

Result	Result count
Not referred for further action	8
Referred for further action	8
Total:	16

Sample S003 | Negative (Giemsa)

Sample S003 success rate



Sample S003 results	Responded	AVR success rate	Count
	Parasites	100 %	17
	Further action	-	17
	Total:	100 %	34

Sample S003 Expected finding:
Negative



■ Negative, blood parasites
■ Screening, negative for plasmodia (malaria)

REPORT TO THE CLINICIAN

Finding group	Finding	Finding count	AVR success rate	Finding Score
Expected finding: Negative		17	100 %	
	Negative, blood parasites	9		4
	Screening, negative for plasmodia (malaria)	8		4
Total:		17	100 %	

LIFECYCLE

Finding group	Finding	Finding count	Result	Result count
Expected finding: Negative		17		
	Negative, blood parasites	9		
			N/A	9
	Screening, negative for plasmodia (malaria)	8		
			N/A	8
Total:		17		

PARASITAEMIA

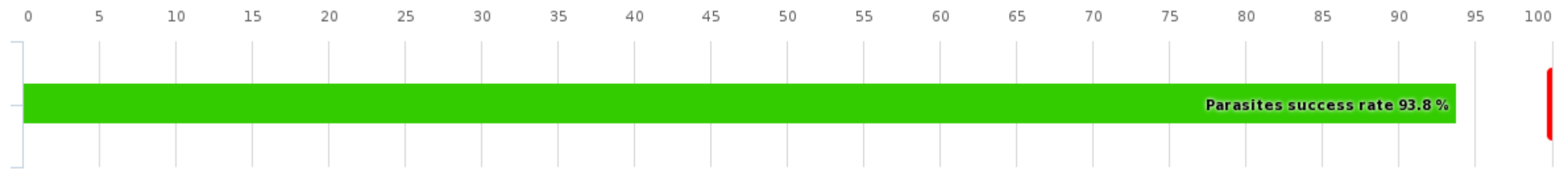
Finding group	Finding	Finding count	Result	Result count
Expected finding: Negative		17		
	Negative, blood parasites	9		
			N/A	6
	Screening, negative for plasmodia (malaria)	8		
			N/A	6
Total:		17		

FURTHER ACTION

Result	Result count
Not referred for further action	10
Referred for further action	7
Total:	17

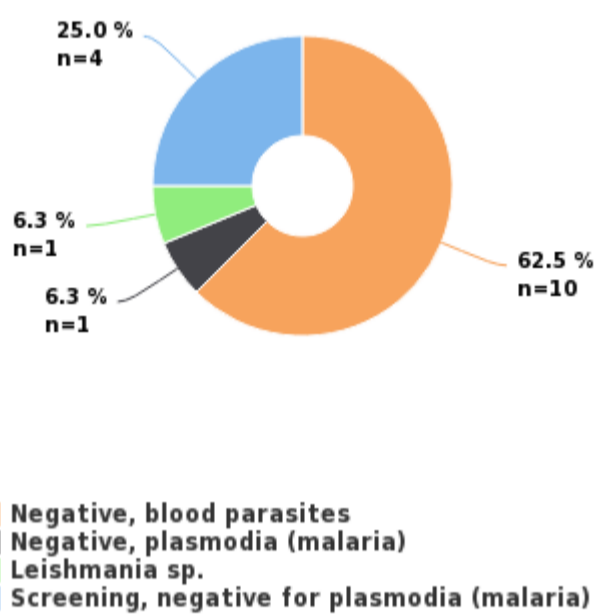
Sample S004 | Negative (MGG)

Sample S004 success rate



Sample S004 results	Responded	AVR success rate	Count
	Parasites	93.8 %	16
	Further action	-	16
	Total:	93.8 %	32

Sample S004 Expected finding:
Negative



REPORT TO THE CLINICIAN

Finding group	Finding	Finding count	AVR success rate	Finding Score
Expected finding: Negative		16	93.8 %	
	Negative, blood parasites	10		4
	Negative, plasmodia (malaria)	1		4
	Leishmania sp.	1		0
	Screening, negative for plasmodia (malaria)	4		4
Total:		16	93.8 %	

LIFECYCLE

Finding group	Finding	Finding count	Result	Result count
Expected finding: Negative		16		
	Negative, blood parasites	10	N/A	10
	Negative, plasmodia (malaria)	1	N/A	1
	Leishmania sp.	1	Other lifecycle	1
	Screening, negative for plasmodia (malaria)	4	N/A	4
Total:		16		

PARASITAEMIA

Finding group	Finding	Finding count	Result	Result count
Expected finding: Negative		16		
	Negative, blood parasites	10		

			N/A	8
	Negative, plasmodia (malaria)	1		
	Leishmania sp.	1		
			N/A	1
	Screening, negative for plasmodia (malaria)	4		
			N/A	3
Total:		16		

FURTHER ACTION

Result	Result count
Not referred for further action	9
Referred for further action	7
Total:	16

Report Info**PARTICIPANTS**

Altogether 31 laboratories from 12 countries participated in this EQA round.

REPORT INFO

On the front page you can see summaries of overall success rate and sample specific success rates which have been calculated from the scores.

In general, the expected results are marked with green color and for the screening laboratories with yellow color. Laboratory's own results are indicated with a black radio button . The findings reported by the participants have been grouped according to the expected findings of each sample. If a laboratory has reported multiple findings indicating a mixed infection, the additional findings have been grouped to a separate finding group.

If you have not reported results you will get a note: "You have not responded in time, only global report is available."

For information on report interpretation and performance evaluation, please see the "EQAS Interpretation guidelines" in LabScala User instructions. In case you have any questions regarding the reports, please contact the EQA Coordinator.

SCORING

The results in the "Report to the clinician" part can be scored when at least 60% of the participants have reported the correct/expected result and when there are at least three reported results. The report includes a sample specific scoring summary.

Laboratory's scores have been converted to percentage (own success rate, % from maximum scores) with a target at 100%. Own success rate is compared with the success rate of all results.

The following general rules are applied:

4 points is reached by reporting the expected result

1-3 points is given to results that are partly correct/insufficient regarding the expected finding

0 points is given for an incorrect/false result

External Quality Assessment Scheme

Parasites in blood (5460-5461) Malaria screening (5462-5463) Rounds 1, 2023

Specimens

Samples of this EQA round were methanol-fixed unstained thin blood film specimens. Based on the pre-testing and the results obtained in the round, the samples were homogeneous, stable and suitable for the external quality assessment scheme. The materials were sent without temperature control packaging.

Giemsa staining: Samples S001 and S003
MGG staining: Samples S002 and S004

The content of the samples was as follows:

Samples S001 (LQ769323011) and S002 (LQ769323012)

Expected finding: *Plasmodium ovale*

Background information: A 25-year-old French journalist was in Mali on a one-month trip to interview peacekeepers. After returning to his home country, he developed a fever, which is why he went to the emergency room. There they found a tired patient with a fever of 37.8°C. Laboratory tests revealed a low Hb (105 g/L) and platelet level (85 E9/L) but a normal leukocyte level (7.5 E9/L). CRP was elevated at 43 mg/L and the lactate dehydrogenase level was within the reference range (150 U/L).

Samples S003 (LQ769323013) and S004 (LQ769323014)

Expected finding: Negative

Background information: A 3-year-old girl adopted from Cameroon was found to be anemic. She had also been tired, and during the initial examination a week earlier, she had also been diagnosed with a slight fever, 37.2°C. She had also had some diarrhea. The child seems cheerful now, but sometimes holds her stomach. Laboratory tests: platelets 110 E9/L, Hb 102 g/L, Leuk 3.1 E9/L.

The samples have been pre-tested in a reference laboratory. *Plasmodium* positive samples are confirmed with a PCR method.

Report info

Please see the description of the data analysis on the last page of the laboratory-specific reports and global reports. It is important to read the Final report first, because it contains important information of the samples and results in each round.

Comments – Expert

Samples S001 and S002

The samples were positive for malaria plasmodia and the expected finding according to the pretesting was trophozoites, gametocytes and schizonts of *Plasmodium ovale*. The parasitaemia level in these samples was low, approximately 0.05% in the pretesting.

All participants had identified these samples correctly as *Plasmodium* positive/suspect positive. Altogether 10 laboratories identified the correct species *P. ovale* and in addition 9 reported their finding on the genus level as *Plasmodium* sp. Two deviating *P. vivax* identifications were reported, one from

2023-03-23

FINAL REPORT

Product no. 5460-5463

Subcontracting: Sample pretesting

Samples sent	2023-02-07
Round closed	2023-03-07
Expected results	2023-03-10
Final report	2023-03-23

Request for correction

Typing errors in laboratory's result forms are on laboratory's responsibility. Labquality accepts responsibility only for result processing. Requests must be notified by writing within three weeks from the date of this letter.

Authorized by

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each staining. Also, mixed infection with *P. malariae* was reported by one participant. Overall, the success in the identification of this *P. ovale* sample was very good.

The *Plasmodium ovale* parasite causes approx. 5% of malaria cases and is not as dangerous as *P. falciparum*. *P. ovale* closely resembles *P. vivax* in staining for malaria parasites. Both parasites increase the size of the red blood cell. The cells infected by *P. ovale* are more regular in shape, oval and sometimes torn at one end. While *P. vivax* is amoeba-like, *P. ovale* inside the cell is larger and more compact in structure. Identification of *P. ovale* is important because this form (like *P. vivax*) can be associated with latent liver forms that can become active weeks or even months after infection. These so-called hypnozoite forms require additional medication (primaquine).

Samples S003 and S004

The samples were expected to be negative for blood parasites. The overall performance was excellent and almost all laboratories reported the samples correctly as negative. As a deviating result, one *Leishmania* finding was reported from S004 (MGG).

The patient's diagnosis remained open, but she may have had, for example, an intestinal bacterial infection or a viral infection.

Postanalytics

90% (28/31) of the laboratories returned their results in time.

68% (19/28) would have sent the sample S001/S002 and 39% (11/28) would have sent the sample S003/S004 to a reference laboratory.

Mix-up of the samples: No obvious mix-ups were observed.

Exceptions in scoring

No exceptions.

End of report

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