

External Quality Assurance (EQA) of G6PD Quantitative Test

Survey No. : RH2024-03

Sample sent on : 2024/09/23

Reporting deadline : 2024/09/30

Sample sent : [32 set](#)

Results reported (%) : 32 (100%)

1. [Long term observation of inter laboratory CV vs. surveys](#)

4. [The distribution of G6PD reported in this survey](#)

2. [Long term observation of inter laboratory CV vs. G6PD activities](#)

5. [The distribution of Hb reported in this survey](#)

3. [Deviation graph for individual laboratory](#)

6. [Others](#)

Summary Report of G6PD and Hemoglobin (Hb) Quantitative Test Results

Lab	Referral Hosp.	Report (day)	G6PD Reagent Code	Sample 1				Sample 2				Sample 3				Hb 1 (g/dL)	Hb 2 (g/dL)	Hb 3 (g/dL)
				(U/g Hb)	D%	z score	SDI	(U/g Hb)	D%	z score	SDI	(U/g Hb)	D%	z score	SDI			
F02	F02	3	5	8.9	7.2%	1.0	2.1	16.5	1.9%	0.3	0.8	5.5	3.8%	0.5	0.9	3.5	2.3	3.2
F03	F03	4	5	8.4	1.2%	0.2	0.3	16.7	3.1%	0.4	1.1	5.5	3.8%	0.5	0.9	2.8	1.9	2.7
F04	F04	7	5	7.9	-4.8%	-0.7	-1.4	15.8	-2.5%	-0.4	-0.3	5.1	-3.8%	-0.5	-0.9	2.8	2.0	2.8
F05	F05	6	5	8.3	0.0%	0.0	0.0	16.3	0.6%	0.1	0.5	5.3	0.0%	0.0	0.0	2.8	2.2	2.7
F07	F07	4	5	8.5	2.4%	0.3	0.7	16.6	2.5%	0.4	1.0	5.4	1.9%	0.3	0.5	3.0	2.1	2.9
F09	F09	4	5	8.8	6.0%	0.9	1.7	15.5	-4.3%	-0.6	-0.8	5.4	1.9%	0.3	0.5	2.8	2.0	2.9
F10	F10	3	5	7.2	-13.3%	-1.9	-3.8	13.3	-17.9%	-2.6	-4.4	4.7	-11.3%	-1.6	-2.7	3.2	2.4	2.9
F11	F11	4	5	8.0	-3.6%	-0.5	-1.0	15.6	-3.7%	-0.5	-0.6	5.1	-3.8%	-0.5	-0.9	3.1	2.1	2.7
F12	F12	4	5	9.0	8.4%	1.2	2.4	17.5	8.0%	1.1	2.4	5.8	9.4%	1.3	2.3	2.8	2.0	2.6
F13	F13	7	5	8.0	-3.6%	-0.5	-1.0	14.5	-10.5%	-1.5	-2.4	5.4	1.9%	0.3	0.5	2.7	2.0	2.6
F14	F14	7	5	8.4	1.2%	0.2	0.3	16.4	1.2%	0.2	0.6	5.3	0.0%	0.0	0.0	2.8	2.0	2.6
F15	F15	7	5	8.3	0.0%	0.0	0.0	16.1	-0.6%	-0.1	0.2	5.4	1.9%	0.3	0.5	2.9	2.0	2.8
F17	F17	4	5	8.3	0.0%	0.0	0.0	16.4	1.2%	0.2	0.6	5.3	0.0%	0.0	0.0	2.8	2.0	2.8
F18	F18	2	5	8.1	-2.4%	-0.3	-0.7	15.3	-5.6%	-0.8	-1.1	4.9	-7.5%	-1.1	-1.8	3.1	2.2	3.0
F19	F19	6	5	8.3	0.0%	0.0	0.0	15.7	-3.1%	-0.4	-0.5	5.2	-1.9%	-0.3	-0.5	2.7	2.0	2.8
F20	F20	4	5	8.2	-1.2%	-0.2	-0.3	16.3	0.6%	0.1	0.5	5.4	1.9%	0.3	0.5	2.9	2.2	2.7
F21	F21	7	5	8.3	0.0%	0.0	0.0	16.2	0.0%	0.0	0.3	5.3	0.0%	0.0	0.0	3.0	2.2	2.9
F22	F22	2	5	8.3	0.0%	0.0	0.0	15.8	-2.5%	-0.4	-0.3	5.3	0.0%	0.0	0.0	2.8	2.0	2.7
F24	F24	7	5	8.6	3.6%	0.5	1.0	17.1	5.6%	0.8	1.8	5.5	3.8%	0.5	0.9	2.8	1.9	2.7
F25	F25	4	5	8.7	4.8%	0.7	1.4	16.3	0.6%	0.1	0.5	5.6	5.7%	0.8	1.4	2.6	1.9	2.5
F26	F26	3	5	8.2	-1.2%	-0.2	-0.3	16.2	0.0%	0.0	0.3	5.2	-1.9%	-0.3	-0.5	2.9	2.0	2.8
F27	F27	4	5	8.7	4.8%	0.7	1.4	16.5	1.9%	0.3	0.8	5.8	9.4%	1.3	2.3	2.7	1.9	2.7
F28	F28	1	5	8.4	1.2%	0.2	0.3	15.9	-1.9%	-0.3	-0.2	5.4	1.9%	0.3	0.5	3.0	2.1	2.9
F29	F29	7	5	8.2	-1.2%	-0.2	-0.3	15.9	-1.9%	-0.3	-0.2	5.1	-3.8%	-0.5	-0.9	2.7	2.0	2.7
F30	F30	5	5	8.2	-1.2%	-0.2	-0.3	15.6	-3.7%	-0.5	-0.6	5.0	-5.7%	-0.8	-1.4	2.7	1.9	2.6
F31	F31	1	5	8.0	-3.6%	-0.5	-1.0	15.6	-3.7%	-0.5	-0.6	5.3	0.0%	0.0	0.0	2.9	1.8	2.8
F32	F32	4	5	8.3	0.0%	0.0	0.0	16.5	1.9%	0.3	0.8	5.2	-1.9%	-0.3	-0.5	2.8	2.0	2.6
F33	F33	4	5	8.6	3.6%	0.5	1.0	16.5	1.9%	0.3	0.8	5.4	1.9%	0.3	0.5	2.8	2.0	2.7
F34	F34	6	5	8.4	1.2%	0.2	0.3	16.4	1.2%	0.2	0.6	5.3	0.0%	0.0	0.0	2.8	2.2	2.7
F35	F35	5	5	8.0	-3.6%	-0.5	-1.0	15.0	-7.4%	-1.1	-1.6	5.0	-5.7%	-0.8	-1.4	3.0	2.0	3.0
F36	F36	2	5	8.0	-3.6%	-0.5	-1.0	15.3	-5.6%	-0.8	-1.1	5.0	-5.7%	-0.8	-1.4	2.0	1.4	1.9
F37	F37	7	5	8.2	-1.2%	-0.2	-0.3	15.4	-4.9%	-0.7	-1.0	5.2	-1.9%	-0.3	-0.5	2.8	2.0	2.8
Total participating laboratories = 32																		
Xa (Median)	-	4	-	8.3				16.2				5.3				2.8	2.0	2.7
uXa	-	-	-	0.056				0.121				0.043				-	-	-
σp	-	-	-	0.581				1.134				0.371				-	-	-
σp'	-	-	-	-				-				-				-	-	-
Range	-	1-7	-	7.2-9.0				13.3-17.5				4.7-5.8				2.0-3.5	1.4-2.4	1.9-3.2
n	-	-	-	32				32				32				32	32	32
Mean	-	-	-	8.3				16.0				5.3				2.8	2.0	2.8
SD	-	-	-	0.29				0.62				0.22				0.15	0.13	0.14
CV	-	-	-	3.5%				3.9%				4.2%				5.4%	6.5%	5.0%

Note:

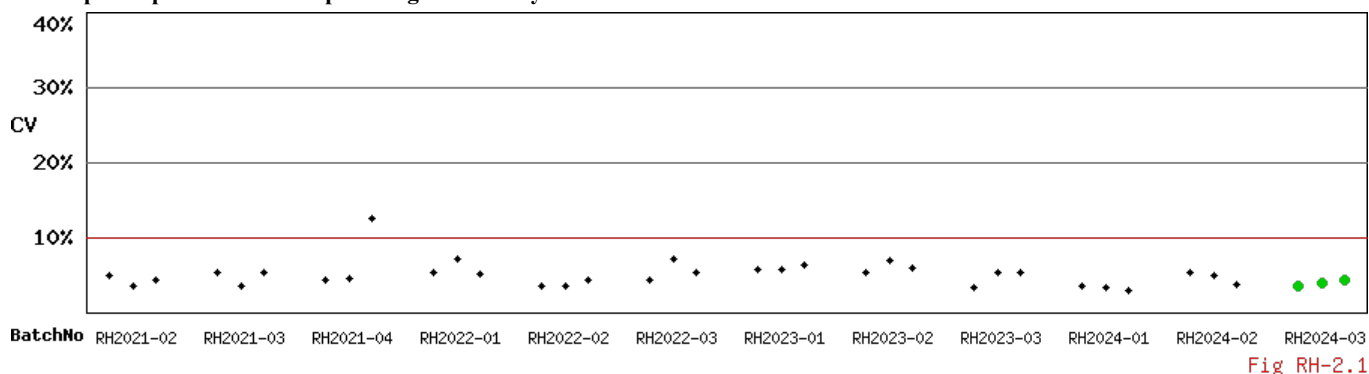
- $D\% = [(X - X_a) / X_a] \times 100\%$; X = Your Results, X_a = Assigned value
- u_{X_a} = uncertainty of the assigned value. $u_{X_a} = 1.1 \times SD / n^{1/2}$
- SD for proficiency assessment (σ_p) = 7% x X_a; but while X_a < 2.9 U/g Hb, $\sigma_p = 0.2$ U/g Hb
- Adjusted SD for proficiency assessment (σ_p') = $(\sigma_p^2 + u_{X_a}^2)^{1/2}$. σ_p' is used for proficiency assessment when $u_{X_a} \geq 0.3\sigma_p$
- z score = D / σ_p ; D = X - X_a, σ_p = SD for proficiency assessment. When adjusted SD (σ_p') is used for proficiency assessment, z score = D / σ_p'
- SDI = $(X - Mean) / SD$; SD = standard deviation of peer group; SDI is not calculated when SD equals 0
- The assigned value (X_a) is the **median** of all the results reported of this EQA sample
- Robust results (Mean and SD) were calculated by Algorithm A according to ISO 13528
- The evaluation criteria for measurement result of each specimen: Acceptable: $|z| \leq 2$; Caution: $2 < |z| < 3$; Unsatisfactory: $|z| \geq 3$

Reagent Kit	G6PD Reagent Code	Lab
Medicon	5	F02, F03, F04, F05, F07, F09, F10, F11, F12, F13, F14, F15, F17, F18, F19, F20, F21, F22, F24, F25, F26, F27, F28, F29, F30, F31, F32, F33, F34, F35, F36, F37

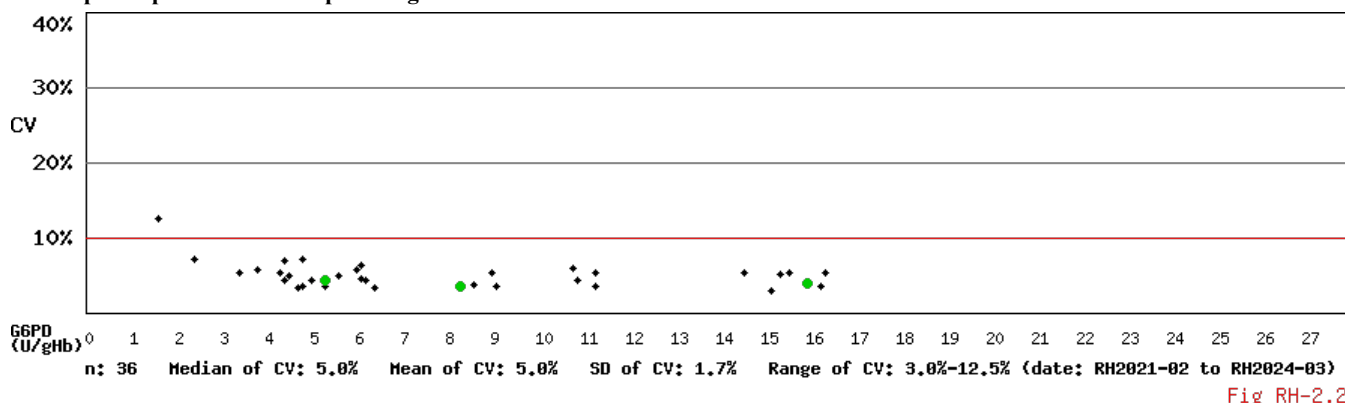
Long Term Observation of Blood G6PD Quantitative Test EQA Survey Results

Survey No : RH2024-03 (in green ●)

- Total participants' CV result plotted against surveys



- Total participants' CV result plotted against G6PD activities



* Mean and SD are calculated by Robust method according to ISO 13528 since 2014

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(Report generated at 2024-10-01 10:19:20)

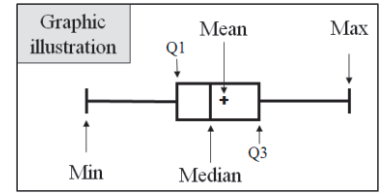
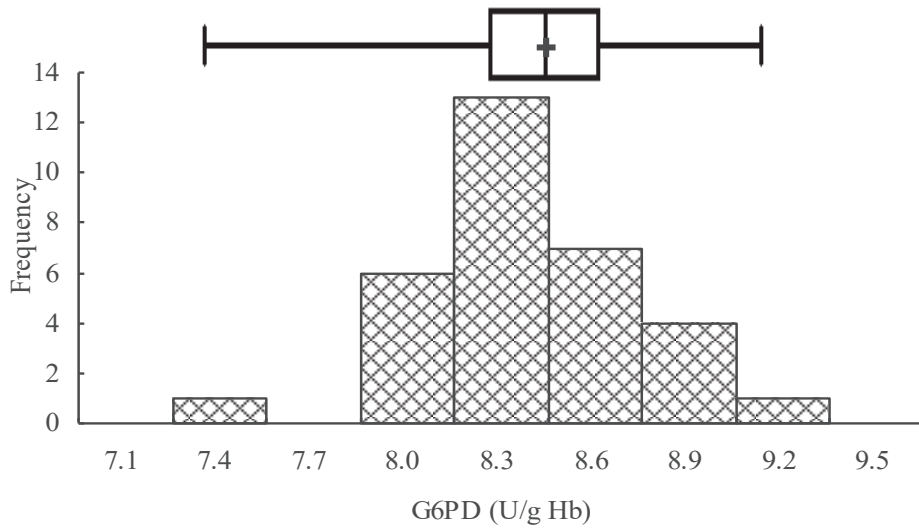
RH2024-03 Distribution of G6PD Test Results

Survey No. : RH2024-03

Sample sent on : 2024/09/23

Reporting deadline : 2024/09/30

Results reported (%) : 100%



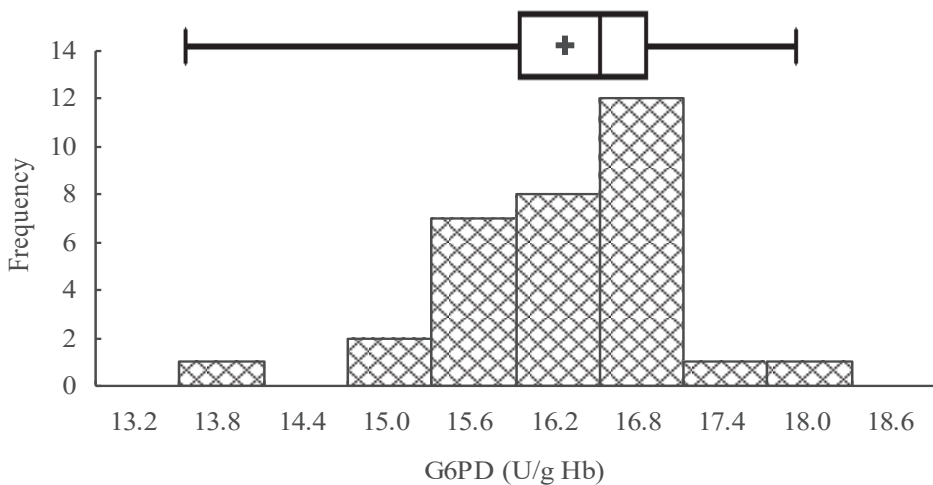
Sample 1

Median = 8.3 (n = 32)

Mean* = 8.3 (n = 32)

SD* = 0.29

CV = 3.5%



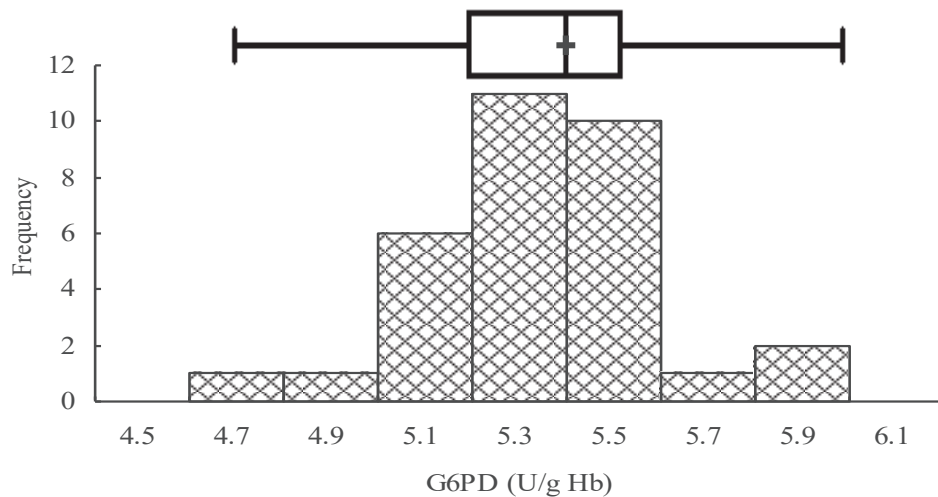
Sample 2

Median = 16.2 (n = 32)

Mean* = 16.0 (n = 32)

SD* = 0.62

CV = 3.9%



Sample 3

Median = 5.3 (n = 32)

Mean* = 5.3 (n = 32)

SD* = 0.22

CV = 4.2%

*Robust results (Mean and SD) were calculated by Algorithm A according to ISO 13528

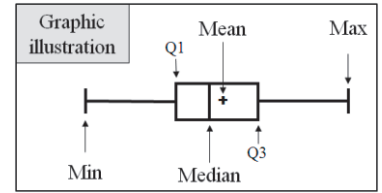
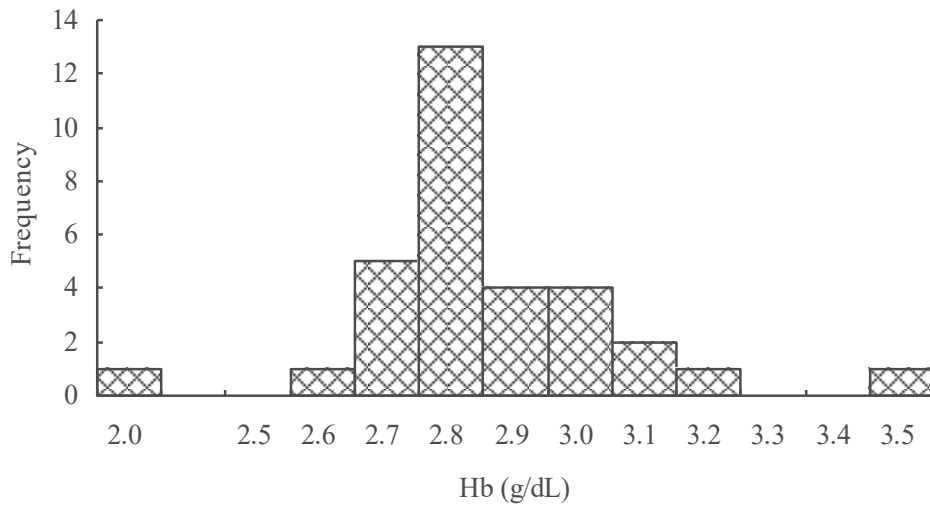
RH2024-03 Distribution of Hb Test Results

Survey No. : RH2024-03

Sample sent on : 2024/09/23

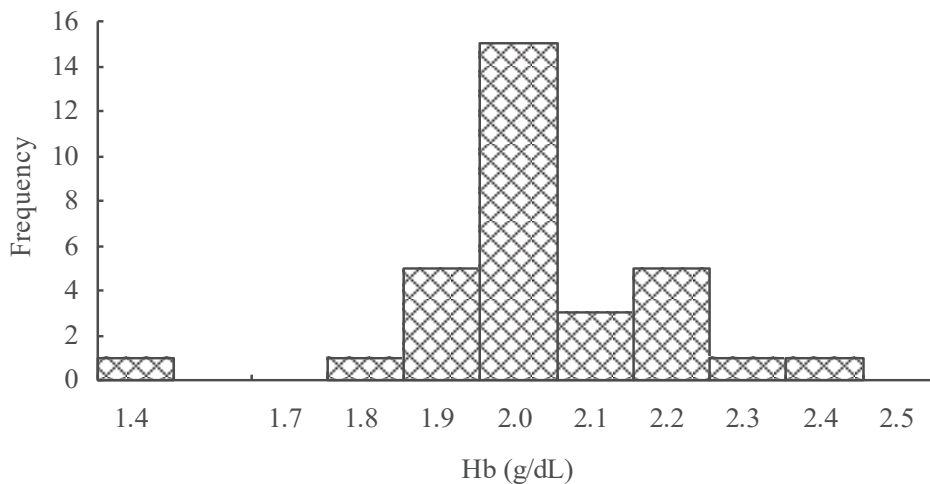
Reporting deadline : 2024/09/30

Results reported (%) : 100%



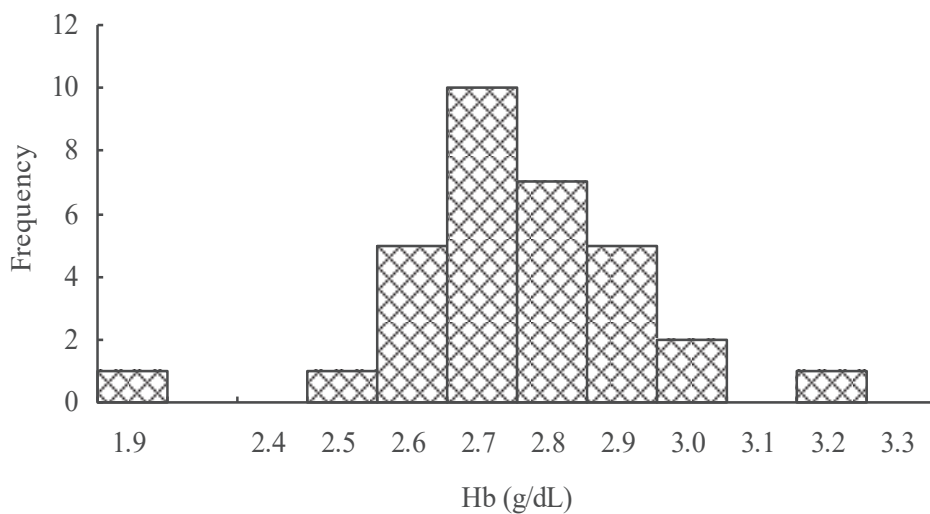
Sample 1

Median = 2.8 (n = 32)
Mean* = 2.8 (n = 32)
SD* = 0.15
CV = 5.4%



Sample 2

Median = 2.0 (n = 32)
Mean* = 2.0 (n = 32)
SD* = 0.13
CV = 6.5%



Sample 3

Median = 2.7 (n = 32)
Mean* = 2.8 (n = 32)
SD* = 0.14
CV = 5.0%

*Robust results (Mean and SD) were calculated by Algorithm A according to ISO 13528