

External Quality Assurance (EQA) of G6PD Quantitative Test

Survey No. : RH2023-01

Sample sent on : 2023/02/13

Reporting deadline : 2023/02/20

Sample sent : [30 set](#)

Results reported (%) : 30 (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	5	S	3.1	-18.4%	-2.6	-3.2	6.1	0.0%	0.0	0.3	6.3	3.3%	0.5	0.5	2.1	1.9	1.9
F03	F03	6	S	3.7	-2.6%	-0.4	-0.5	6.2	1.6%	0.2	0.6	6.1	0.0%	0.0	0.0	2.3	2.1	2.1
F04	F04	7	S	3.8	0.0%	0.0	0.0	6.0	-1.6%	-0.2	0.0	9.0	47.5%	6.8	7.4	2.6	2.3	2.4
F05	F05	7	S	4.1	7.9%	1.1	1.4	6.3	3.3%	0.5	0.9	6.4	4.9%	0.7	0.8	2.2	2.0	2.0
F07	F07	7	S	4.0	5.3%	0.8	0.9	6.1	0.0%	0.0	0.3	6.1	0.0%	0.0	0.0	2.3	2.0	2.0
F09	F09	7	S	3.7	-2.6%	-0.4	-0.5	5.8	-4.9%	-0.7	-0.6	5.7	-6.6%	-0.9	-1.0	2.4	2.2	2.1
F10	F10	7	S	3.5	-7.9%	-1.1	-1.4	5.5	-9.8%	-1.4	-1.4	5.4	-11.5%	-1.6	-1.8	2.1	2.0	2.0
F11	F11	7	S	3.9	2.6%	0.4	0.5	6.4	4.9%	0.7	1.1	6.3	3.3%	0.5	0.5	2.2	1.9	2.0
F12	F12	7	S	4.0	5.3%	0.8	0.9	6.7	9.8%	1.4	2.0	6.0	-1.6%	-0.2	-0.3	2.2	1.9	2.3
F13	F13	4	S	3.4	-10.5%	-1.5	-1.8	5.6	-8.2%	-1.2	-1.1	5.5	-9.8%	-1.4	-1.5	2.1	1.9	2.0
F14	F14	7	S	3.6	-5.3%	-0.8	-0.9	5.6	-8.2%	-1.2	-1.1	5.4	-11.5%	-1.6	-1.8	2.7	2.4	2.5
F15	F15	7	S	3.9	2.6%	0.4	0.5	6.3	3.3%	0.5	0.9	6.4	4.9%	0.7	0.8	2.1	2.0	1.9
F17	F17	7	S	3.8	0.0%	0.0	0.0	5.9	-3.3%	-0.5	-0.3	6.1	0.0%	0.0	0.0	2.3	2.1	2.1
F18	F18	3	S	3.6	-5.3%	-0.8	-0.9	5.8	-4.9%	-0.7	-0.6	5.8	-4.9%	-0.7	-0.8	2.2	2.0	2.0
F19	F19	7	S	4.3	13.2%	1.9	2.3	6.8	11.5%	1.6	2.3	6.7	9.8%	1.4	1.5	2.1	1.9	1.9
F20	F20	7	S	3.8	0.0%	0.0	0.0	6.0	-1.6%	-0.2	0.0	6.1	0.0%	0.0	0.0	2.2	1.9	1.9
F21	F21	7	S	3.9	2.6%	0.4	0.5	6.2	1.6%	0.2	0.6	6.3	3.3%	0.5	0.5	2.1	2.0	2.0
F22	F22	4	S	3.8	0.0%	0.0	0.0	6.2	1.6%	0.2	0.6	6.0	-1.6%	-0.2	-0.3	2.1	1.9	1.9
F24	F24	4	S	3.9	2.6%	0.4	0.5	6.2	1.6%	0.2	0.6	6.2	1.6%	0.2	0.3	2.2	2.0	2.0
F25	F25	4	S	3.6	-5.3%	-0.8	-0.9	5.5	-9.8%	-1.4	-1.4	5.3	-13.1%	-1.9	-2.1	2.3	2.1	2.2
F26	F26	7	S	3.7	-2.6%	-0.4	-0.5	5.6	-8.2%	-1.2	-1.1	5.8	-4.9%	-0.7	-0.8	2.5	2.3	2.2
F27	F27	7	S	3.5	-7.9%	-1.1	-1.4	5.5	-9.8%	-1.4	-1.4	5.7	-6.6%	-0.9	-1.0	2.2	2.1	2.0
F28	F28	1	S	3.9	2.6%	0.4	0.5	6.2	1.6%	0.2	0.6	6.3	3.3%	0.5	0.5	2.1	1.9	1.9
F29	F29	7	S	4.0	5.3%	0.8	0.9	6.2	1.6%	0.2	0.6	6.2	1.6%	0.2	0.3	2.2	2.0	2.0
F30	F30	7	S	3.8	0.0%	0.0	0.0	5.9	-3.3%	-0.5	-0.3	6.2	1.6%	0.2	0.3	2.2	1.9	1.9
F31	F31	7	S	4.0	5.3%	0.8	0.9	6.2	1.6%	0.2	0.6	6.1	0.0%	0.0	0.0	2.2	2.1	2.0
F32	F32	4	S	3.7	-2.6%	-0.4	-0.5	6.1	0.0%	0.0	0.3	5.9	-3.3%	-0.5	-0.5	2.3	2.1	2.0
F33	F33	4	S	4.1	7.9%	1.1	1.4	6.3	3.3%	0.5	0.9	7.0	14.8%	2.1	2.3	2.3	2.0	2.0
F34	F34	7	S	3.7	-2.6%	-0.4	-0.5	5.7	-6.6%	-0.9	-0.9	5.8	-4.9%	-0.7	-0.8	2.2	2.0	2.0
F35	F35	5	S	3.7	-2.6%	-0.4	-0.5	5.8	-4.9%	-0.7	-0.6	6.3	3.3%	0.5	0.5	2.2	2.0	2.0
Total participating laboratories = 30																		
Xa (Median)	-	7	-	3.8				6.1				6.1				2.2	2.0	2.0
u _{Xa}	-	-	-	0.044				0.070				0.078				-	-	-
σ _p	-	-	-	0.266				0.427				0.427				-	-	-
σ _{p'}	-	-	-	-				-				-				-	-	-
Range	-	1-7	-	3.1-4.3				5.5-6.8				5.3-9.0				2.1-2.7	1.9-2.4	1.9-2.5
n	-	-	-	30				30				30				30	30	30
Mean	-	-	-	3.8				6.0				6.1				2.2	2.0	2.0
SD	-	-	-	0.22				0.35				0.39				0.11	0.11	0.10
CV	-	-	-	5.8%				5.8%				6.4%				5.0%	5.5%	5.0%

Note:

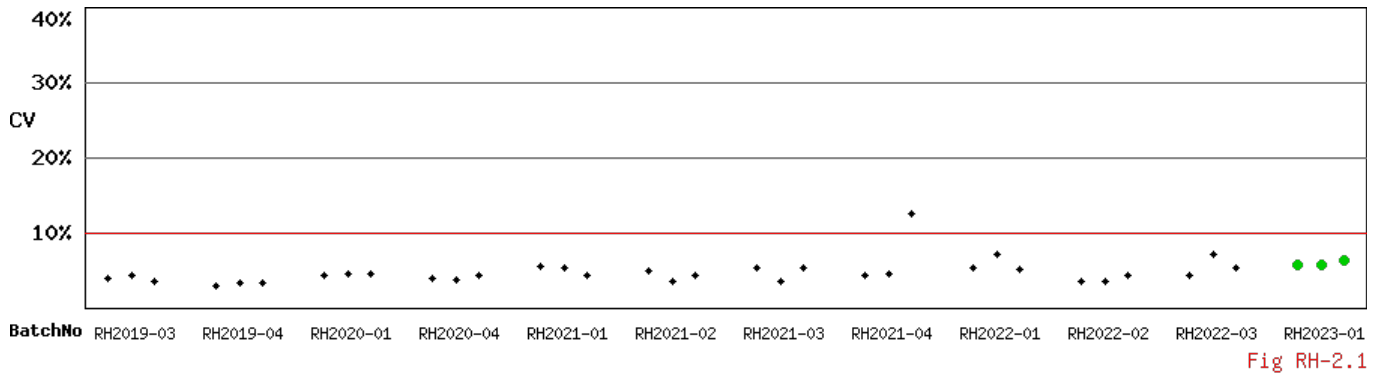
1. $D\% = [(X - X_a) / X_a] \times 100\%$; X = Your Results, X_a = Assigned value
2. u_{X_a} = uncertainty of the assigned value. $u_{X_a} = 1.1 \times SD / n^{1/2}$
3. SD for proficiency assessment (σ_p) = 7% x X_a; but while X_a < 2.9 U/g Hb, $\sigma_p = 0.2$ U/g Hb
4. Adjusted SD for proficiency assessment ($\sigma_{p'}$) = $(\sigma_p^2 + u_{X_a}^2)^{1/2}$. $\sigma_{p'}$ is used for proficiency assessment when $u_{X_a} \geq 0.3\sigma_p$
5. z score = D / σ_p ; D = X - X_a, σ_p = SD for proficiency assessment. When adjusted SD ($\sigma_{p'}$) is used for proficiency assessment, z score = $D / \sigma_{p'}$
6. SDI = $(X - \text{Mean}) / SD$; SD = standard deviation of peer group; SDI is not calculated when SD equals 0
7. The assigned value (X_a) is the **median** of all the results reported of this EQA sample
8. Robust results (Mean and SD) were calculated by Algorithm A according to ISO 13528
9. 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

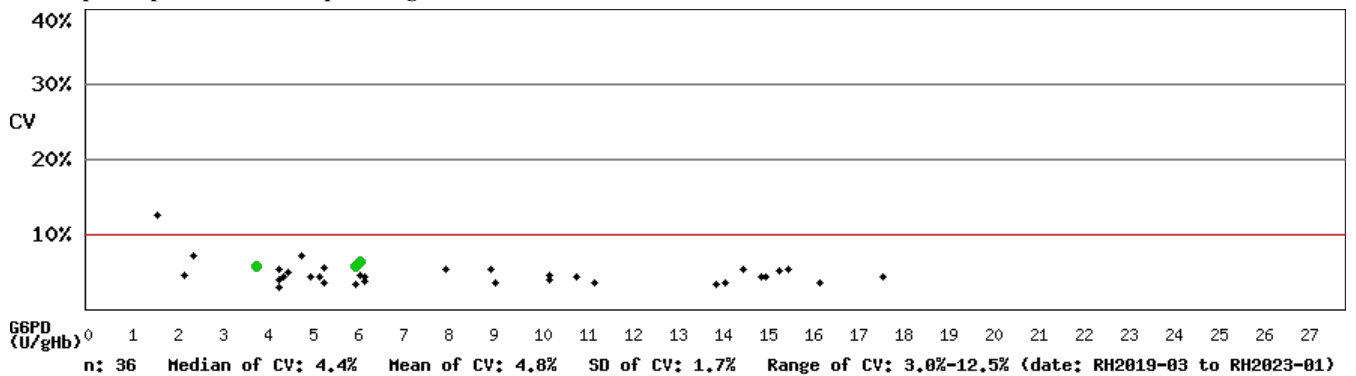
Long Term Observation of Blood G6PD Quantitative Test EQA Survey Results

Survey No : RH2023-01 (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 2023-02-20 17:23:03)

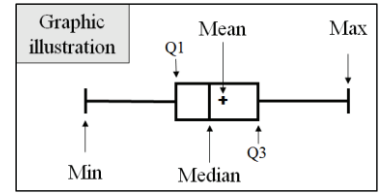
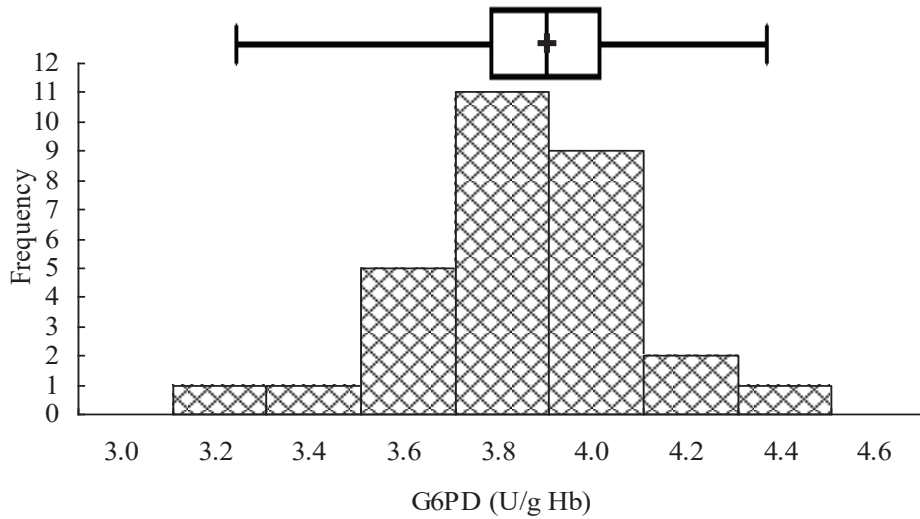
RH2023-01 Distribution of G6PD Test Results

Survey No. : RH2023-01

Sample sent on : 2023/02/13

Reporting deadline : 2023/02/20

Results reported (%) : 100%



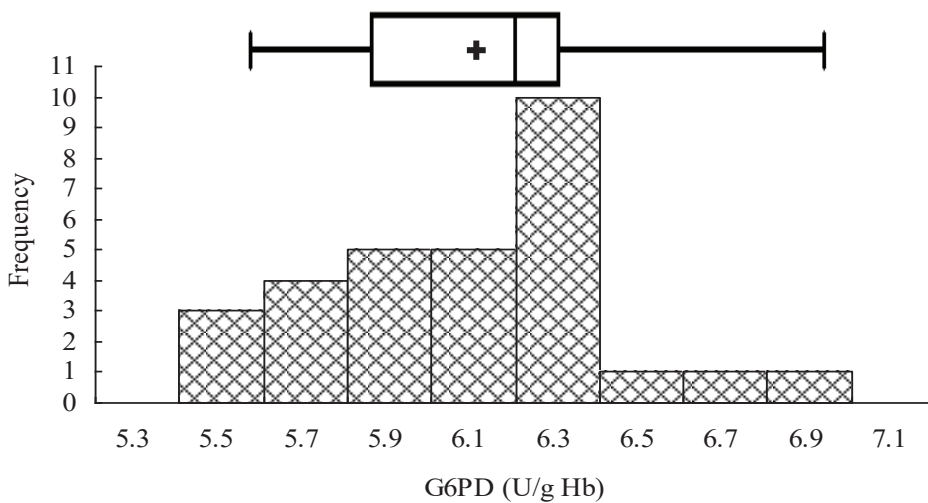
Sample 1

Median = 3.8 (n = 30)

Mean* = 3.8 (n = 30)

SD* = 0.22

CV = 5.8%



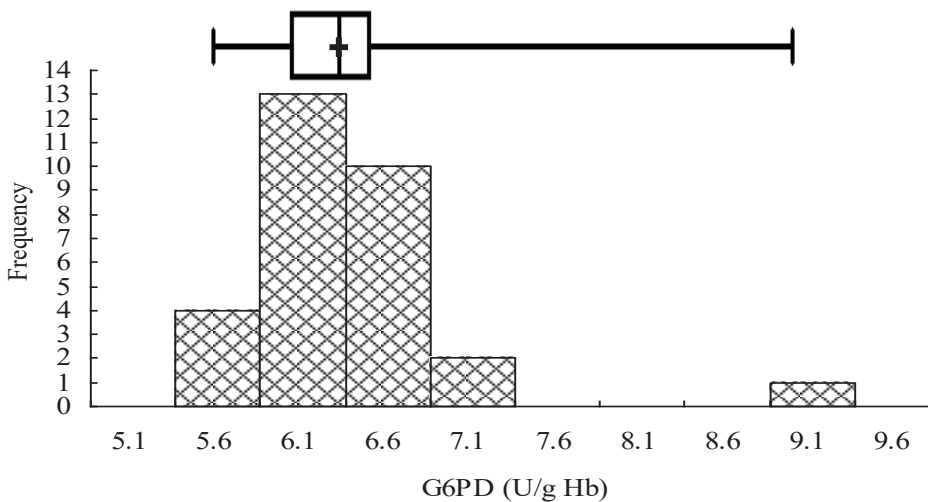
Sample 2

Median = 6.1 (n = 30)

Mean* = 6.0 (n = 30)

SD* = 0.35

CV = 5.8%



Sample 3

Median = 6.1 (n = 30)

Mean* = 6.1 (n = 30)

SD* = 0.39

CV = 6.4%

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

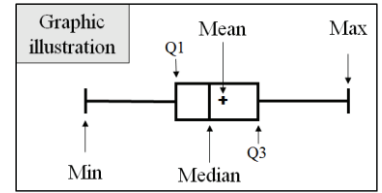
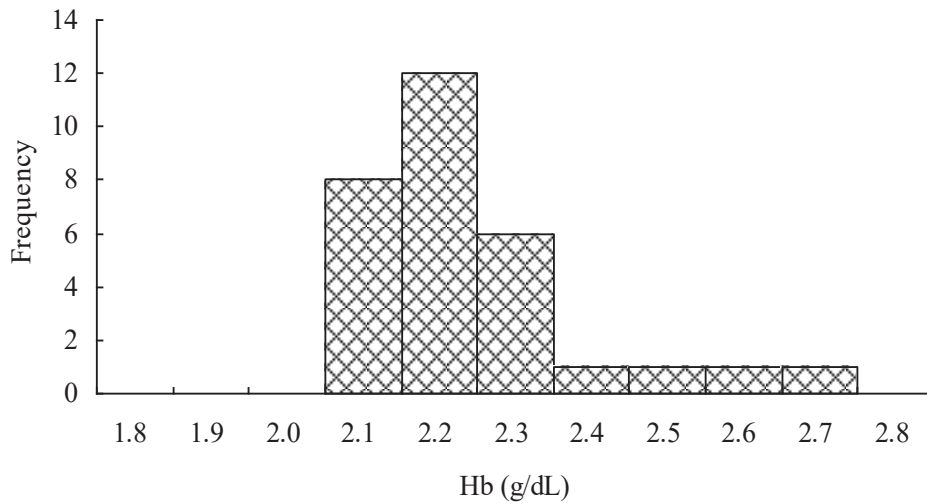
RH2023-01 Distribution of Hb Test Results

Survey No. : RH2023-01

Sample sent on : 2023/02/13

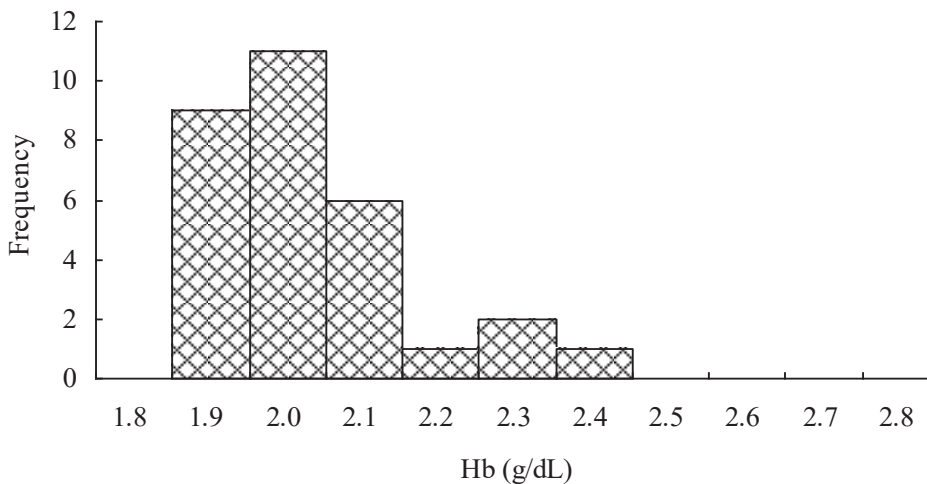
Reporting deadline : 2023/02/20

Results reported (%) : 100%



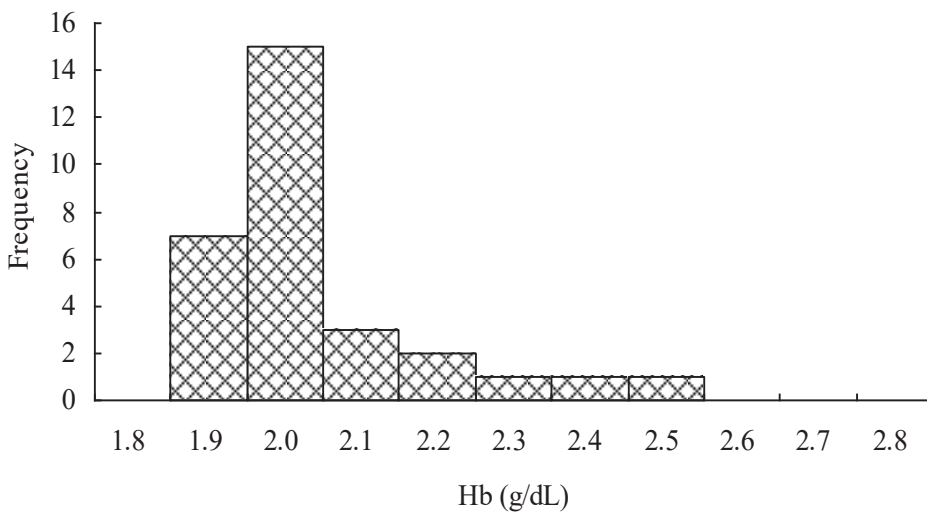
Sample 1

Median = 2.2 (n = 30)
Mean* = 2.2 (n = 30)
SD* = 0.11
CV = 5.0%



Sample 2

Median = 2.0 (n = 30)
Mean* = 2.0 (n = 30)
SD* = 0.11
CV = 5.5%



Sample 3

Median = 2.0 (n = 30)
Mean* = 2.0 (n = 30)
SD* = 0.10
CV = 5.0%

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