

External Quality Assurance (EQA) of G6PD Quantitative Test

Survey No. : RH2025-01

Sample sent on : 2025/02/17

Reporting deadline : 2025/02/24

Sample sent : [31 set](#)

Results reported (%) : 29 (94%)

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	7	5	15.9	3.9%	0.6	1.4	6.6	4.8%	0.7	1.2	8.9	6.0%	0.8	1.7	2.1	2.0	2.9
F03	None	N.R.	5	N.R.	N.R.%	N.R.	N.R.	N.R.	N.R.%	N.R.	N.R.	N.R.	N.R.%	N.R.	N.R.	N.R.	N.R.	N.R.
F04	F04	5	5	15.1	-1.3%	-0.2	-0.2	6.3	0.0%	0.0	0.0	8.2	-2.4%	-0.3	-0.7	2.0	2.0	2.9
F05	F05	6	5	15.3	0.0%	0.0	0.2	6.2	-1.6%	-0.2	-0.4	8.2	-2.4%	-0.3	-0.7	2.1	2.1	2.8
F07	F07	7	5	15.8	3.3%	0.5	1.2	6.6	4.8%	0.7	1.2	8.5	1.2%	0.2	0.3	2.2	2.2	3.0
F09	F09	6	5	15.5	1.3%	0.2	0.6	6.6	4.8%	0.7	1.2	8.5	1.2%	0.2	0.3	2.2	2.1	3.1
F10	F10	4	5	14.4	-5.9%	-0.8	-1.6	6.1	-3.2%	-0.5	-0.8	8.0	-4.8%	-0.7	-1.4	2.2	2.1	3.0
F11	F11	5	5	15.4	0.7%	0.1	0.4	6.4	1.6%	0.2	0.4	8.7	3.6%	0.5	1.0	2.0	2.0	2.5
F12	F12	3	5	16.2	5.9%	0.8	2.0	7.0	11.1%	1.6	2.8	8.9	6.0%	0.8	1.7	2.2	2.1	3.0
F13	F13	4	5	15.0	-2.0%	-0.3	-0.4	6.0	-4.8%	-0.7	-1.2	8.0	-4.8%	-0.7	-1.4	2.0	2.0	2.8
F14	F14	6	5	15.0	-2.0%	-0.3	-0.4	6.7	6.3%	0.9	1.6	8.6	2.4%	0.3	0.7	2.0	2.0	2.8
F15	F15	4	5	14.8	-3.3%	-0.5	-0.8	6.0	-4.8%	-0.7	-1.2	8.1	-3.6%	-0.5	-1.0	2.1	1.9	2.9
F17	F17	3	5	15.4	0.7%	0.1	0.4	6.6	4.8%	0.7	1.2	8.3	-1.2%	-0.2	-0.3	2.1	2.0	2.8
F18	F18	3	5	14.6	-4.6%	-0.7	-1.2	6.3	0.0%	0.0	0.0	8.3	-1.2%	-0.2	-0.3	2.1	2.1	3.0
F19	F19	8	5	15.2	-0.7%	-0.1	0.0	6.5	3.2%	0.5	0.8	8.4	0.0%	0.0	0.0	2.0	2.0	2.8
F20	F20	3	5	15.5	1.3%	0.2	0.6	6.2	-1.6%	-0.2	-0.4	8.4	0.0%	0.0	0.0	2.3	2.1	2.8
F21	F21	7	5	15.4	0.7%	0.1	0.4	6.3	0.0%	0.0	0.0	8.4	0.0%	0.0	0.0	2.1	2.1	2.9
F22	F22	7	5	13.5	-11.8%	-1.7	-3.4	5.8	-7.9%	-1.1	-2.0	7.9	-6.0%	-0.8	-1.7	2.2	2.0	3.0
F25	F25	4	5	15.1	-1.3%	-0.2	-0.2	6.4	1.6%	0.2	0.4	8.5	1.2%	0.2	0.3	1.9	1.9	2.6
F26	F26	7	5	14.8	-3.3%	-0.5	-0.8	6.2	-1.6%	-0.2	-0.4	8.2	-2.4%	-0.3	-0.7	2.1	2.0	2.8
F27	F27	7	5	15.6	2.0%	0.3	0.8	6.4	1.6%	0.2	0.4	8.5	1.2%	0.2	0.3	2.1	2.1	2.9
F28	F28	4	5	15.9	3.9%	0.6	1.4	6.6	4.8%	0.7	1.2	8.6	2.4%	0.3	0.7	1.9	1.9	2.6
F29	F29	7	5	15.6	2.0%	0.3	0.8	6.2	-1.6%	-0.2	-0.4	8.3	-1.2%	-0.2	-0.3	2.0	2.0	2.8
F30	None	N.R.	5	N.R.	N.R.%	N.R.	N.R.	N.R.	N.R.%	N.R.	N.R.	N.R.	N.R.%	N.R.	N.R.	N.R.	N.R.	N.R.
F31	F31	2	5	15.6	2.0%	0.3	0.8	6.5	3.2%	0.5	0.8	8.7	3.6%	0.5	1.0	2.0	2.0	3.0
F32	F32	3	5	15.4	0.7%	0.1	0.4	6.3	0.0%	0.0	0.0	8.0	-4.8%	-0.7	-1.4	2.0	2.0	2.9
F33	F33	6	5	14.7	-3.9%	-0.6	-1.0	6.3	0.0%	0.0	0.0	8.6	2.4%	0.3	0.7	2.1	2.0	2.7
F34	F34	6	5	15.5	1.3%	0.2	0.6	6.3	0.0%	0.0	0.0	8.3	-1.2%	-0.2	-0.3	2.1	2.0	2.8
F35	F35	4	5	15.0	-2.0%	-0.3	-0.4	6.0	-4.8%	-0.7	-1.2	8.0	-4.8%	-0.7	-1.4	2.0	2.0	3.0
F36	F36	4	5	14.5	-5.2%	-0.7	-1.4	6.3	0.0%	0.0	0.0	8.6	2.4%	0.3	0.7	2.2	2.1	3.0
F37	F37	4	5	15.2	-0.7%	-0.1	0.0	6.5	3.2%	0.5	0.8	8.5	1.2%	0.2	0.3	2.2	2.1	2.9
Total participating laboratories = 31																		
Xa (Median)	-	5	-	15.3				6.3				8.4				2.1	2.0	2.9
u <sub>Xa</sub>	-	-	-	0.102				0.051				0.059				-	-	-
σ <sub>p</sub>	-	-	-	1.071				0.441				0.588				-	-	-
Range	-	2-8	-	13.5-16.2				5.8-7.0				7.9-8.9				1.9-2.3	1.9-2.2	2.5-3.1
n	-	-	-	29				29				29				29	29	29
Mean	-	-	-	15.2				6.3				8.4				2.1	2.0	2.9
SD	-	-	-	0.50				0.25				0.29				0.10	0.00	0.13
CV	-	-	-	3.3%				4.0%				3.5%				4.8%	0.0%	4.5%

Note:

- $D\% = [(X - X_a) / X_a] \times 100\%$ ; X = Your Results, X<sub>a</sub> = Assigned value
- $z'$  score =  $D / \sigma_p$ ; D = X - X<sub>a</sub>, σ<sub>p</sub> = SD for proficiency assessment. When adjusted SD (σ<sub>p</sub>') is used for proficiency assessment, z' score =  $D / \sigma_p'$ .
- SDI = (X - Mean) / SD; SD = standard deviation of peer group; SDI is not calculated when SD equals 0
- The assigned value (X<sub>a</sub>) is the **median** of all the results reported of this EQA sample
- SD for proficiency assessment (σ<sub>p</sub>) = 7% x X<sub>a</sub>; but while X<sub>a</sub> < 2.9 U/g Hb, σ<sub>p</sub> = 0.2 U/g Hb
- Adjusted SD for proficiency assessment (σ<sub>p</sub>') =  $(\sigma_p^2 + u_{X_a}^2)^{1/2}$ . σ<sub>p</sub>' is used for proficiency assessment when  $u_{X_a} \geq 0.3\sigma_p$
- 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, F04, F05, F07, F09, F10, F11, F12, F13, F14, F15, F17, F18, F19, F20, F21, F22, F25, F26, F27, F28, F29, F31, F32, F33, F34, F35, F36, F37

# Long Term Observation of Blood G6PD Quantitative Test EQA Survey Results

Survey No : RH2025-01 (in green ●)

- Total participants' CV result plotted against surveys

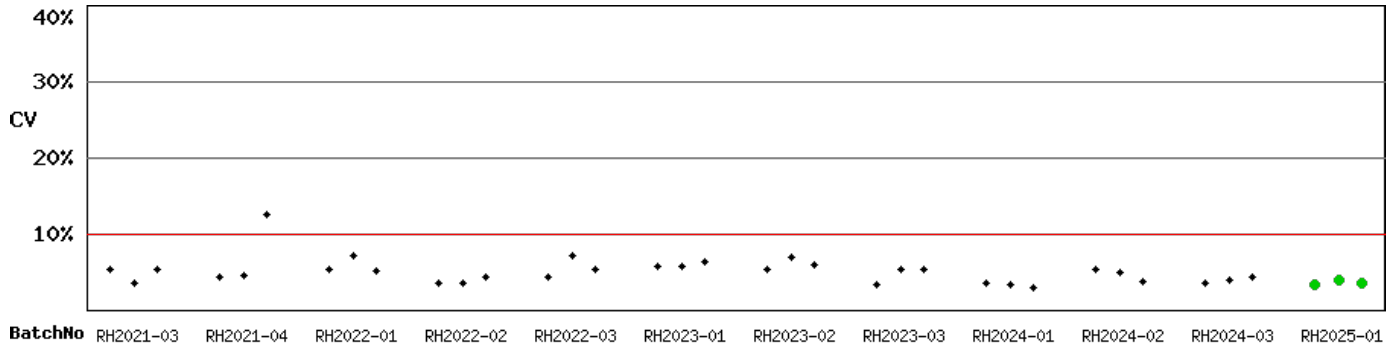


Fig RH-2.1

- Total participants' CV result plotted against G6PD activities

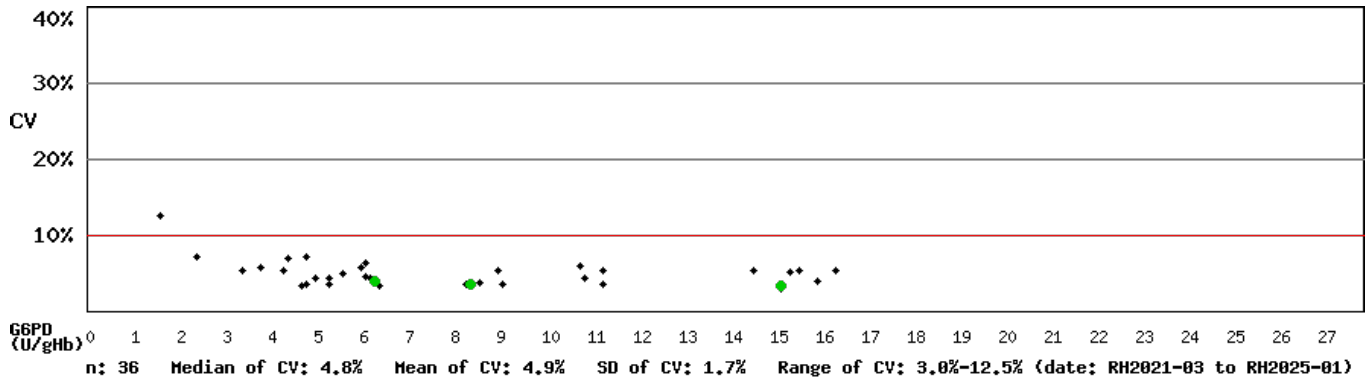


Fig RH-2.2

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

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(Report generated at 2025-03-03 10:13:51)

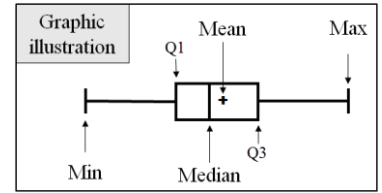
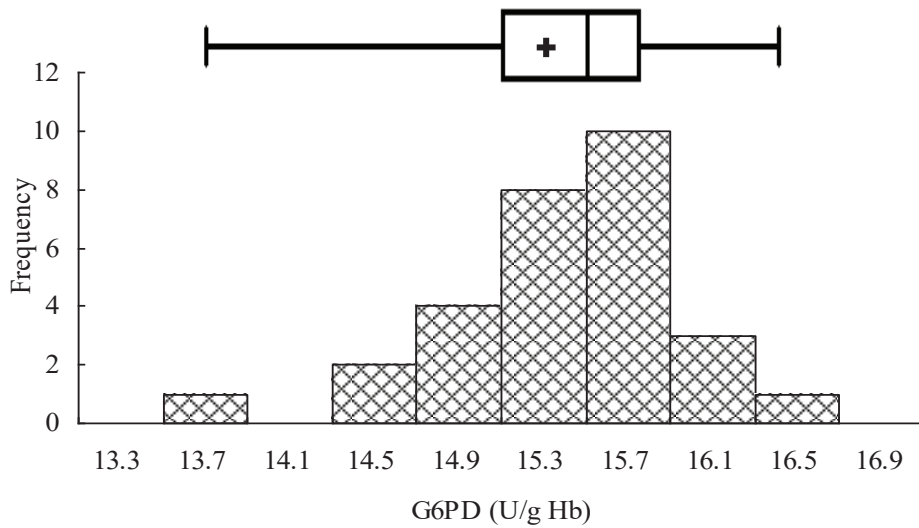
## RH2025-01 Distribution of G6PD Test Results

Survey No. : RH2025-01

Sample sent on : 2025/02/17

Reporting deadline : 2025/02/24

Results reported (%) : 93.5%



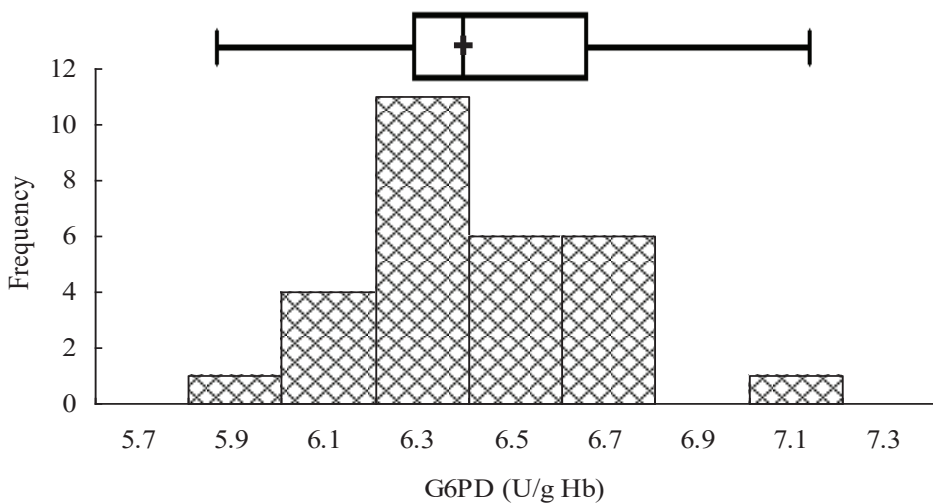
### Sample 1

**Median = 15.3 (n = 29)**

**Mean\* = 15.2 (n = 29)**

**SD\* = 0.50**

**CV = 3.3%**



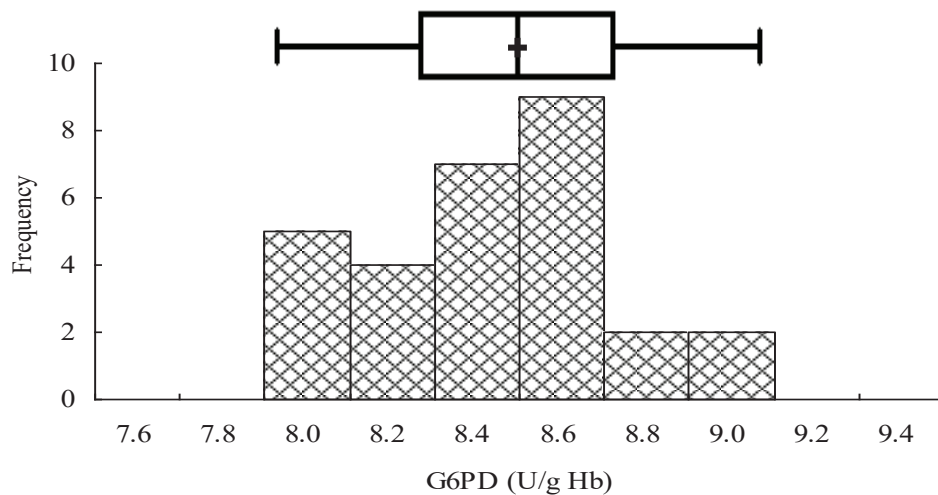
### Sample 2

**Median = 6.3 (n = 29)**

**Mean\* = 6.3 (n = 29)**

**SD\* = 0.25**

**CV = 4.0%**



### Sample 3

**Median = 8.4 (n = 29)**

**Mean\* = 8.4 (n = 29)**

**SD\* = 0.29**

**CV = 3.5%**

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

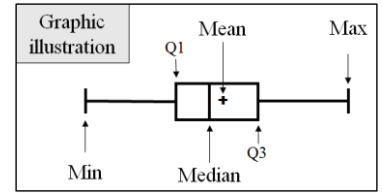
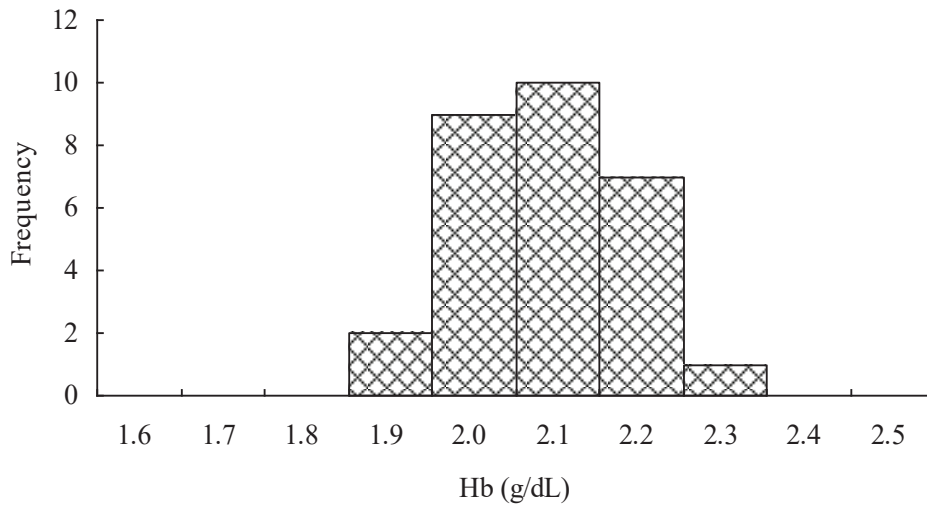
## RH2025-01 Distribution of Hb Test Results

Survey No. : RH2025-01

Sample sent on : 2025/02/17

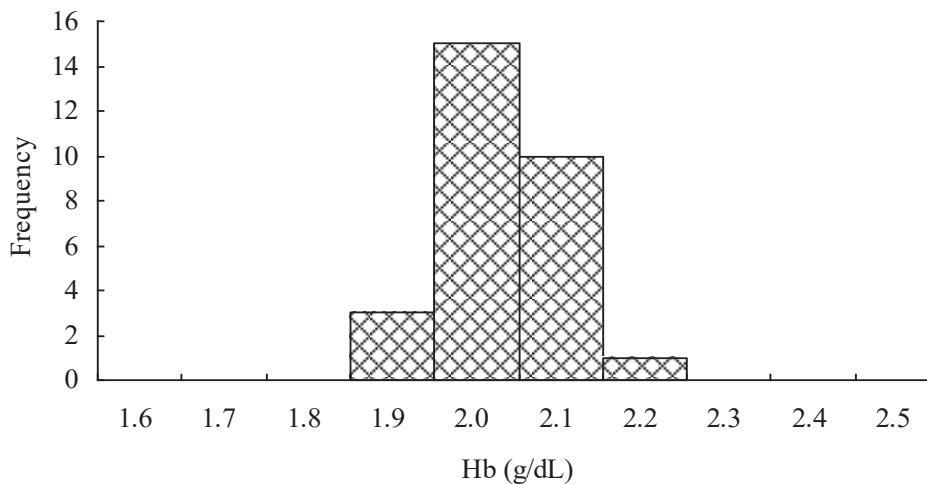
Reporting deadline : 2025/02/24

Results reported (%) : 93.5%



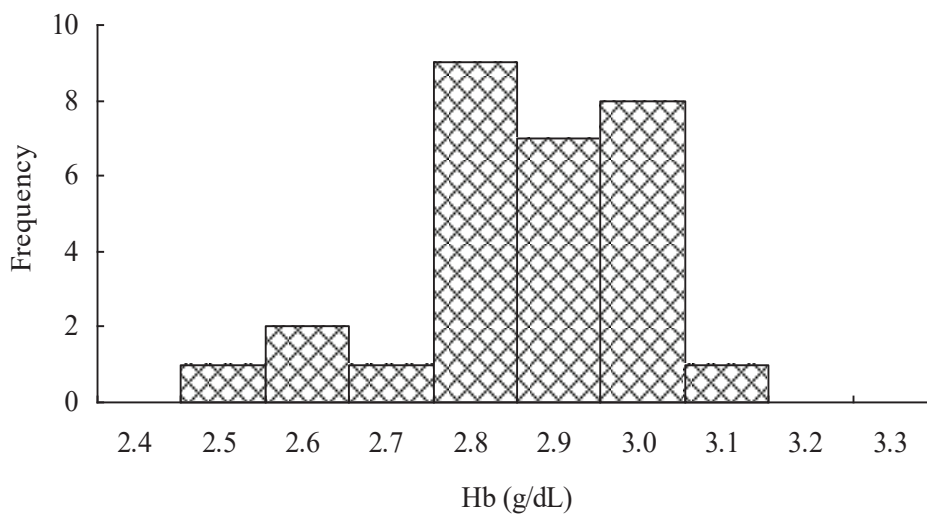
### Sample 1

**Median = 2.1 (n = 29)**  
**Mean\* = 2.1 (n = 29)**  
**SD\* = 0.10**  
**CV = 4.8%**



### Sample 2

**Median = 2.0 (n = 29)**  
**Mean\* = 2.0 (n = 29)**  
**SD\* = 0.00**  
**CV = 0.0%**



### Sample 3

**Median = 2.9 (n = 29)**  
**Mean\* = 2.9 (n = 29)**  
**SD\* = 0.13**  
**CV = 4.5%**

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