

External Quality Assurance (EQA) of G6PD Quantitative Test

Survey No. : RH2017-04  
 Sample sent : [24 set](#)

Sample sent on : 2017/11/20  
 Results reported (%) : 24 (100%)

Reporting deadline : 2017/12/04

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- 2. [The distribution of G6PD reported in this survey](#)
- 3. [The distribution of Hb reported in this survey](#)
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- 6. [Deviation graph for individual laboratory](#)

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

Lab	Referral Hosp.	Report (day)	Sample 1				Sample 2				Sample 3				Hb 1	Hb 2	Hb 3
			(U/gHb)	D%	z score	SDI	(U/gHb)	D%	z score	SDI	(U/gHb)	D%	z score	SDI	(g/dL)	(g/dL)	(g/dL)
F02	F02	8	13.6	3.0%	0.4	1.0	5.0	8.7%	1.2	1.5	2.3	0.0%	0.0	0.8	2.0	2.0	2.0
F03	F03	7	13.4	1.5%	0.2	0.7	4.8	4.3%	0.6	0.7	2.3	0.0%	0.0	0.8	2.1	2.2	2.1
F04	F04	7	13.5	2.3%	0.3	0.8	4.9	6.5%	0.9	1.1	2.3	0.0%	0.0	0.8	1.9	2.0	2.0
F05	F05	7	11.6	-12.1%	-1.7	-1.8	4.3	-6.5%	-0.9	-1.1	2.2	-4.3%	-0.5	0.0	2.1	2.3	2.1
F07	F07	7	12.3	-6.8%	-1.0	-0.8	4.7	2.2%	0.3	0.4	2.3	0.0%	0.0	0.8	2.4	2.5	2.3
F08	F08	7	12.1	-8.3%	-1.2	-1.1	4.5	-2.2%	-0.3	-0.4	2.2	-4.3%	-0.5	0.0	1.9	2.2	2.1
F09	F09	7	13.7	3.8%	0.5	1.1	4.4	-4.3%	-0.6	-0.7	2.3	0.0%	0.0	0.8	1.9	1.4	1.9
F10	F10	7	12.2	-7.6%	-1.1	-1.0	4.4	-4.3%	-0.6	-0.7	2.0	-13.0%	-1.5	-1.7	2.2	2.3	2.1
F11	F11	14	11.3	-14.4%	-2.1	-2.2	4.1	-10.9%	-1.6	-1.9	2.1	-8.7%	-1.0	-0.8	2.2	2.4	2.0
F12	F12	14	13.8	4.5%	0.6	1.2	5.1	10.9%	1.6	1.9	2.3	0.0%	0.0	0.8	2.1	2.2	2.1
F13	F13	7	12.4	-6.1%	-0.9	-0.7	4.5	-2.2%	-0.3	-0.4	2.2	-4.3%	-0.5	0.0	2.1	2.2	2.0
F14	F14	7	13.2	0.0%	0.0	0.4	4.7	2.2%	0.3	0.4	2.0	-13.0%	-1.5	-1.7	1.9	2.1	2.1
F15	F15	7	12.4	-6.1%	-0.9	-0.7	4.1	-10.9%	-1.6	-1.9	2.1	-8.7%	-1.0	-0.8	2.0	2.3	2.1
F16	F16	7	12.1	-8.3%	-1.2	-1.1	4.6	0.0%	0.0	0.0	2.5	8.7%	1.0	2.5	2.3	2.2	2.0
F17	F17	8	13.4	1.5%	0.2	0.7	4.6	0.0%	0.0	0.0	2.2	-4.3%	-0.5	0.0	2.0	2.2	2.1
F18	F18	4	13.3	0.8%	0.1	0.5	4.9	6.5%	0.9	1.1	2.5	8.7%	1.0	2.5	2.0	2.0	2.0
F19	F19	7	13.1	-0.8%	-0.1	0.3	4.6	0.0%	0.0	0.0	2.3	0.0%	0.0	0.8	2.0	2.0	2.0
F20	F20	4	13.3	0.8%	0.1	0.5	5.0	8.7%	1.2	1.5	2.3	0.0%	0.0	0.8	2.3	2.4	2.5
F21	F21	7	13.5	2.3%	0.3	0.8	4.9	6.5%	0.9	1.1	2.3	0.0%	0.0	0.8	1.9	2.2	2.1
F22	F22	15	13.5	2.3%	0.3	0.8	4.8	4.3%	0.6	0.7	2.1	-8.7%	-1.0	-0.8	1.8	2.1	2.0
F24	F24	7	13.1	-0.8%	-0.1	0.3	4.5	-2.2%	-0.3	-0.4	2.2	-4.3%	-0.5	0.0	2.0	2.2	2.1
F25	F25	7	12.7	-3.8%	-0.5	-0.3	4.7	2.2%	0.3	0.4	2.7	17.4%	2.0	4.2	2.1	2.4	2.1
F26	F26	3	13.2	0.0%	0.0	0.4	4.6	0.0%	0.0	0.0	2.2	-4.3%	-0.5	0.0	1.9	2.1	2.0
F27	F27	7	12.3	-6.8%	-1.0	-0.8	4.5	-2.2%	-0.3	-0.4	2.2	-4.3%	-0.5	0.0	2.0	2.2	2.0
Total participating laboratories = 24																	
Xa (Median)	-	7	13.2				4.6				2.3				2.0	2.2	2.1
u <sub>Xa</sub>	-	-	0.164				0.061				0.027				-	-	-
σ <sub>p</sub>	-	-	0.924				0.322				0.200				-	-	-
σ' <sub>p</sub>	-	-	-				-				-				-	-	-
Range	-	3-15	11.3-13.8				4.1-5.1				2.0-2.7				1.8-2.4	1.4-2.5	1.9-2.5
n	-	-	24				24				24				24	24	24
Mean	-	-	12.9				4.6				2.2				2.0	2.2	2.1
S.D.	-	-	0.73				0.27				0.12				0.15	0.16	0.07
C.V.	-	-	5.7%				5.9%				5.5%				7.5%	7.3%	3.3%

Note:

1.  $D\% = [(X - X_a) / X_a] \times 100\%$ ; X = Your Results, X<sub>a</sub> = 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 ( $\sigma_p$ ) = 7% x X<sub>a</sub>; but while X<sub>a</sub> < 2.9 U/gHb,  $\sigma_p = 0.2$  U/gHb
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 =  $D / \sigma_p$ ; D = X - X<sub>a</sub>,  $\sigma_p$  = SD for proficiency assessment
6.  $SDI = (X - Mean) / SD$ ; SD = standard deviation of peer group; SDI is not calculated when SD equals 0
7. The assigned value (X<sub>a</sub>) 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 :  $2 < |z| \leq 3$ ; Unsatisfactory :  $|z| > 3$
10. Maximum Allowable Deviation (MAD) =  $3 \times (\sigma_p / X_a) \times 100\%$  or  $3 \times (\sigma'_p / X_a) \times 100\%$  when  $u_{X_a} \geq 0.3\sigma_p$

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

Survey No : RH2017-04 (in green ●)

- Total participants' CV result plotted against surveys

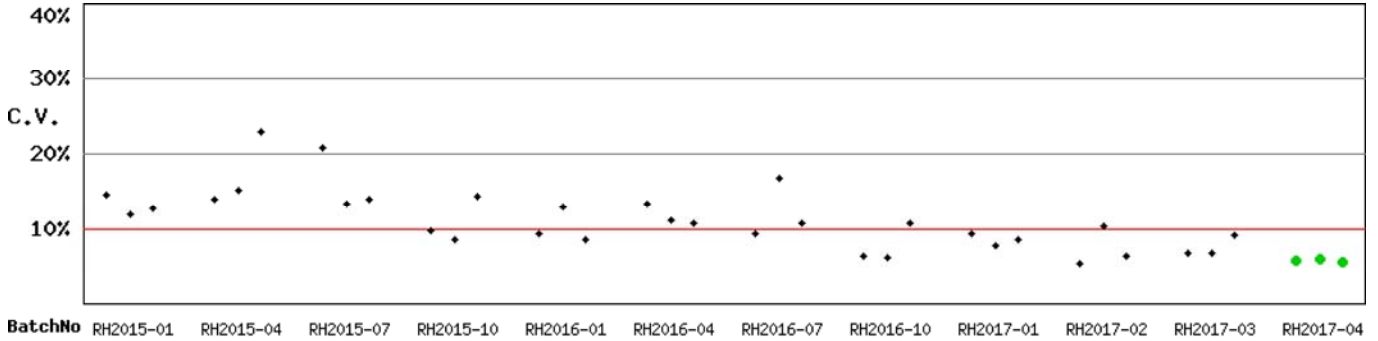


Fig RH-2.1

- Total participants' CV result plotted against G6PD activities

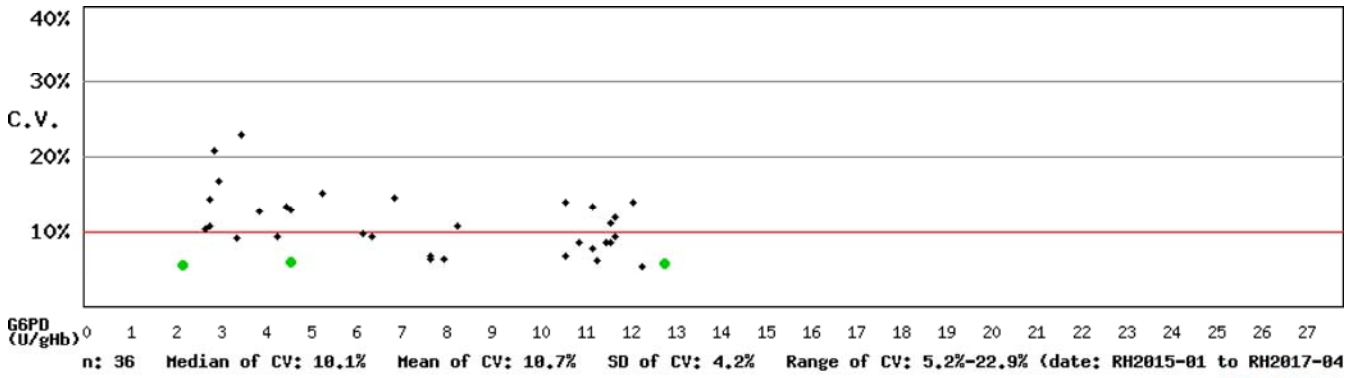


Fig RH-2.2

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

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(Report generated at 2017-12-05 20:40:22)

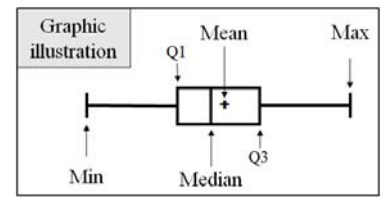
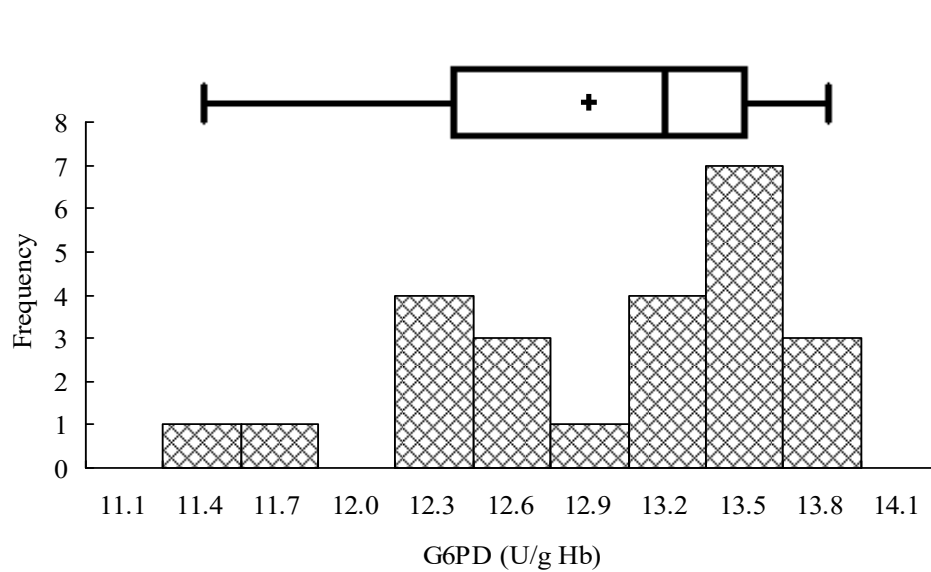
## RH2017-04 Distribution of G6PD Test Results

Survey No. : RH2017-04

Sample sent on : 2017/11/20

Reporting deadline : 2017/12/04

Results reported (%) : 100%



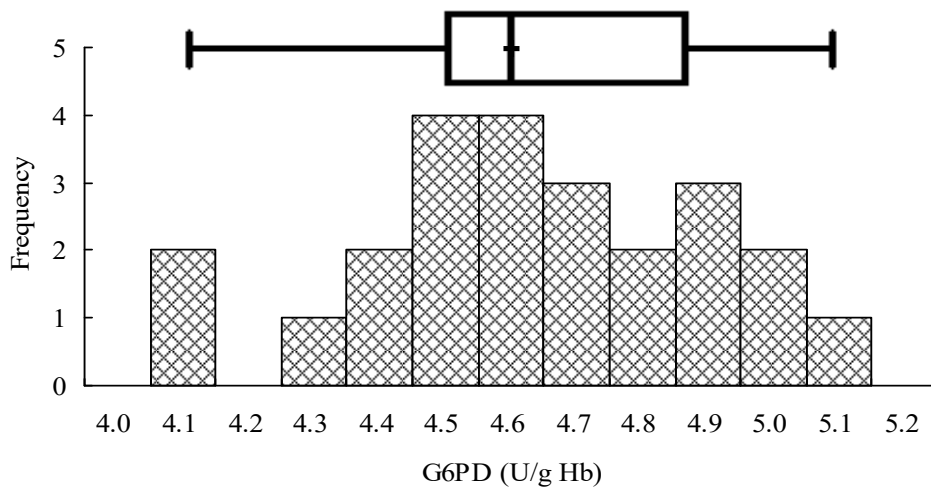
### Sample 1

**Median = 13.2 (n = 24)**

**Mean\* = 12.9 (n = 24)**

**SD\* = 0.73**

**CV = 5.7%**



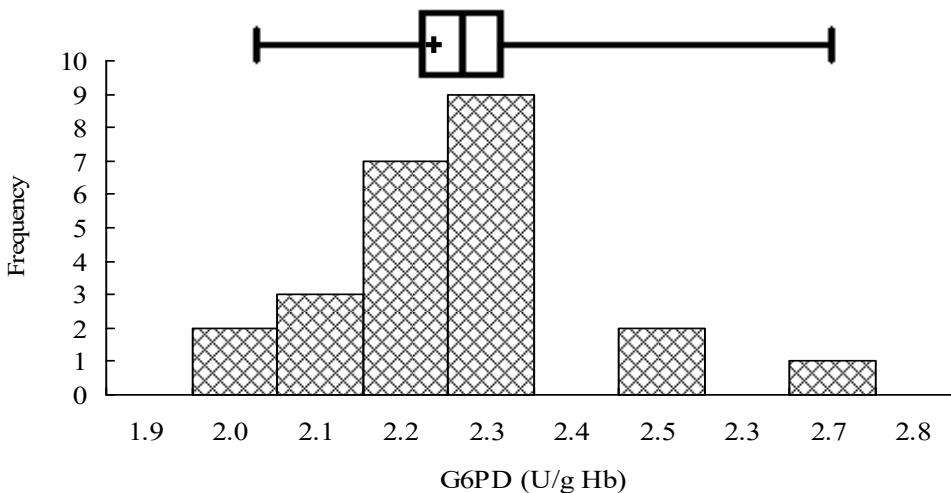
### Sample 2

**Median = 4.6 (n = 24)**

**Mean\* = 4.6 (n = 24)**

**SD\* = 0.27**

**CV = 5.9%**



### Sample 3

**Median = 2.3 (n = 24)**

**Mean\* = 2.2 (n = 24)**

**SD\* = 0.12**

**CV = 5.5%**

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

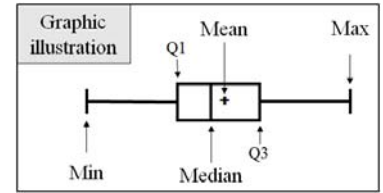
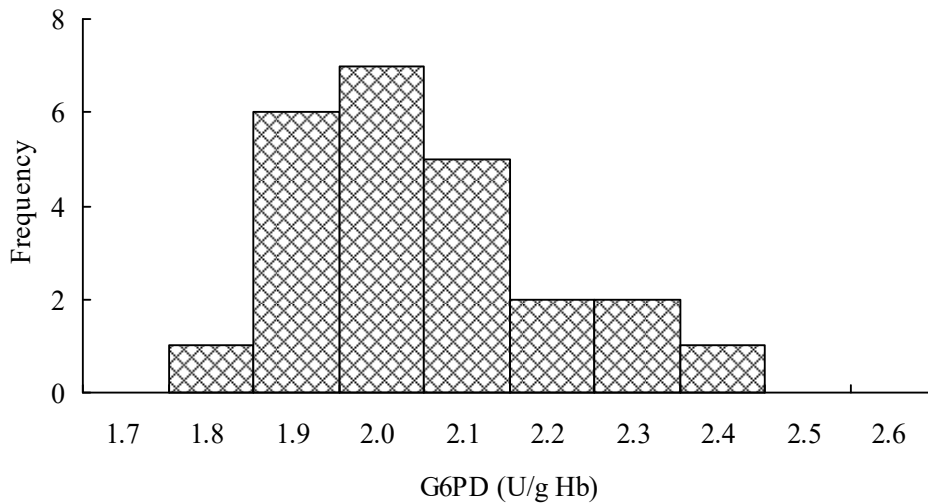
## RH2017-04 Distribution of Hb Test Results

Survey No. : RH2017-04

Sample sent on : 2017/11/20

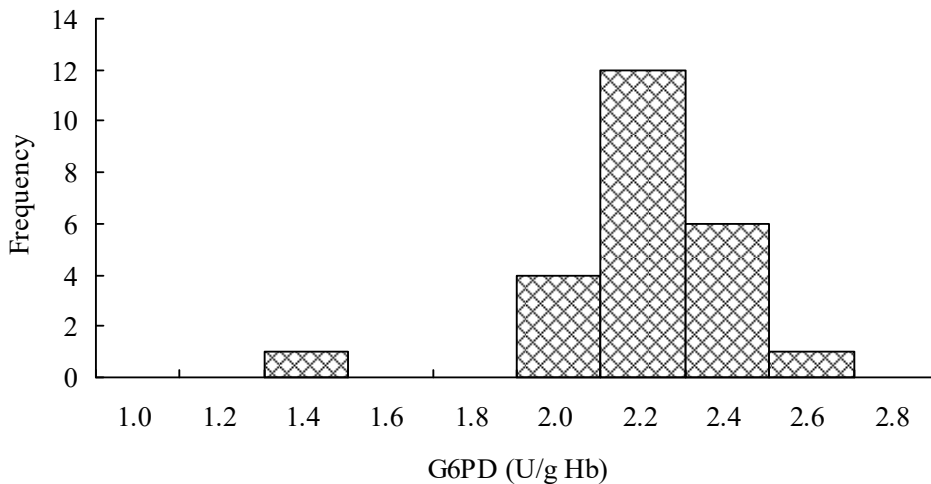
Reporting deadline : 2017/12/04

Results reported (%) : 100%



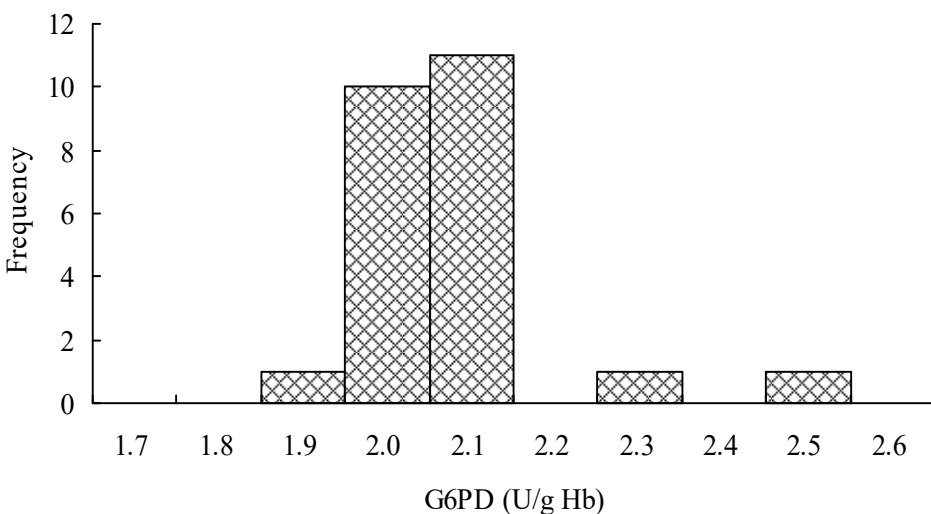
### Sample 1

**Median = 2.0 (n = 24)**  
**Mean\* = 2.0 (n = 24)**  
**SD\* = 0.15**  
**CV = 7.5%**



### Sample 2

**Median = 2.2 (n = 24)**  
**Mean\* = 2.2 (n = 24)**  
**SD\* = 0.16**  
**CV = 7.3%**



### Sample 3

**Median = 2.1 (n = 24)**  
**Mean\* = 2.1 (n = 24)**  
**SD\* = 0.07**  
**CV = 3.3%**

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