

External Quality Assurance (EQA) of G6PD Quantitative Test

Survey No. : RH2018-04
 Sample sent : [25 set](#)

Sample sent on : 2018/10/15
 Results reported (%) : 25 (100%)

Reporting deadline : 2018/10/22

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- 2. [The distribution of G6PD reported in this survey](#)
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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/gHb)	D%	z score	SDI	(U/gHb)	D%	z score	SDI	(U/gHb)	D%	z score	SDI			
F02	F02	3	5	13.0	-0.8%	-0.1	0.1	8.5	2.4%	0.3	0.5	4.5	0.0%	0.0	0.4	1.9	1.8	2.0
F03	F03	5	5	13.1	0.0%	0.0	0.2	8.2	-1.2%	-0.2	-0.2	4.5	0.0%	0.0	0.4	1.9	1.9	2.1
F04	F04	7	5	12.3	-6.1%	-0.9	-0.7	8.2	-1.2%	-0.2	-0.2	4.8	6.7%	1.0	1.4	2.2	2.0	2.3
F05	F05	3	5	12.3	-6.1%	-0.9	-0.7	8.1	-2.4%	-0.3	-0.5	4.3	-4.4%	-0.6	-0.4	1.9	1.8	2.0
F07	F07	7	5	13.5	3.1%	0.4	0.7	8.6	3.6%	0.5	0.7	4.6	2.2%	0.3	0.7	2.1	1.9	2.2
F08	F08	6	5	13.2	0.8%	0.1	0.3	8.7	4.8%	0.7	1.0	4.5	0.0%	0.0	0.4	2.1	1.9	2.3
F09	F09	5	5	14.2	8.4%	1.2	1.5	8.9	7.2%	1.0	1.4	4.8	6.7%	1.0	1.4	1.9	1.8	2.1
F10	F10	2	5	12.7	-3.1%	-0.4	-0.2	8.2	-1.2%	-0.2	-0.2	4.4	-2.2%	-0.3	0.0	2.1	2.0	2.2
F11	F11	7	5	12.9	-1.5%	-0.2	0.0	8.3	0.0%	0.0	0.0	4.4	-2.2%	-0.3	0.0	2.0	2.0	2.2
F12	F12	7	5	14.1	7.6%	1.1	1.4	8.9	7.2%	1.0	1.4	5.3	17.8%	2.5	3.2	2.1	2.0	2.3
F13	F13	7	5	13.3	1.5%	0.2	0.5	8.6	3.6%	0.5	0.7	4.7	4.4%	0.6	1.1	2.3	2.1	2.5
F14	F14	7	5	13.2	0.8%	0.1	0.3	8.0	-3.6%	-0.5	-0.7	4.4	-2.2%	-0.3	0.0	1.4	1.4	1.5
F15	F15	4	5	12.6	-3.8%	-0.5	-0.3	8.3	0.0%	0.0	0.0	4.6	2.2%	0.3	0.7	2.1	1.9	2.2
F17	F17	4	5	13.9	6.1%	0.9	1.1	8.9	7.2%	1.0	1.4	4.6	2.2%	0.3	0.7	1.8	1.8	2.1
F18	F18	3	5	13.2	0.8%	0.1	0.3	8.2	-1.2%	-0.2	-0.2	4.5	0.0%	0.0	0.4	1.9	1.9	2.1
F19	F19	3	5	13.4	2.3%	0.3	0.6	8.2	-1.2%	-0.2	-0.2	4.6	2.2%	0.3	0.7	1.9	1.8	2.1
F20	F20	5	5	10.6	-19.1%	-2.7	-2.6	6.8	-18.1%	-2.6	-3.6	3.8	-15.6%	-2.2	-2.1	2.4	2.2	2.4
F21	F21	7	5	13.1	0.0%	0.0	0.2	8.4	1.2%	0.2	0.2	4.2	-6.7%	-1.0	-0.7	1.9	1.8	2.2
F22	F22	4	5	11.7	-10.7%	-1.5	-1.4	8.4	1.2%	0.2	0.2	4.5	0.0%	0.0	0.4	1.7	1.8	2.1
F24	F24	7	5	13.2	0.8%	0.1	0.3	8.7	4.8%	0.7	1.0	4.6	2.2%	0.3	0.7	2.0	1.8	2.1
F25	F25	7	5	12.0	-8.4%	-1.2	-1.0	8.0	-3.6%	-0.5	-0.7	4.0	-11.1%	-1.6	-1.4	2.0	2.0	2.0
F26	F26	4	5	12.5	-4.6%	-0.7	-0.5	7.7	-7.2%	-1.0	-1.4	4.1	-8.9%	-1.3	-1.1	2.0	1.9	2.1
F27	F27	3	5	13.3	1.5%	0.2	0.5	8.3	0.0%	0.0	0.0	4.3	-4.4%	-0.6	-0.4	2.0	1.9	2.2
F28	F28	9	5	11.4	-13.0%	-1.9	-1.7	7.8	-6.0%	-0.9	-1.2	4.2	-6.7%	-1.0	-0.7	2.0	1.9	2.2
F29	F29	7	5	10.4	-20.6%	-2.9	-2.9	6.8	-18.1%	-2.6	-3.6	3.7	-17.8%	-2.5	-2.5	2.1	2.2	2.3

Total participating laboratories = 25

X _a (Median)	-	5	-	13.1		8.3		4.5		2.0	1.9	2.2
u _{Xa}	-	-	-	0.191		0.092		0.062		-	-	-
σ _p	-	-	-	0.917		0.581		0.315		-	-	-
σ _p '	-	-	-	-		-		-		-	-	-
Range	-	2-9	-	10.4-14.2		6.8-8.9		3.7-5.3		1.4-2.4	1.4-2.2	1.5-2.5
n	-	-	-	25		25		25		25	25	25
Mean	-	-	-	12.9		8.3		4.4		2.0	1.9	2.2
S.D.	-	-	-	0.87		0.42		0.28		0.15	0.12	0.13
C.V.	-	-	-	6.7%		5.1%		6.4%		7.5%	6.3%	5.9%

Note:

1. $D\% = [(X - X_a) / X_a] \times 100\%$; X = Your Results , X_a = Assigned value
2. u_{Xa} = uncertainty of the assigned value. $u_{Xa} = 1.1 \times SD / n^{1/2}$
3. SD for proficiency assessment (σ_p) = 7% x X_a ; but while X_a < 2.9 U/gHb, σ_p = 0.2 U/gHb
4. Adjusted SD for proficiency assessment (σ_p') = (σ_p² + u_{Xa}²)^{1/2}. σ_p' is used for proficiency assessment when u_{Xa} ≥ 0.3σ_p
5. z score = D/σ_p ; D = X - X_a, σ_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_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 | ≤ 2; Caution : 2 < | z | ≤ 3; Unsatisfactory : | z | > 3
10. Maximum Allowable Deviation (MAD) = 3 x (σ_p / X_a) x 100% or 3 x (σ_p' / X_a) x 100% when u_{Xa} ≥ 0.3 σ_p

Reagent Kit	G6PD Reagent Code	Lab
Medicon	5	F02, F03, F04, F05, F07, F08, F09, F10, F11, F12, F13, F14, F15, F17, F18, F19, F20, F21, F22, F24, F25, F26, F27, F28, F29

Long Term Observation of Blood G6PD Quantitative Test EQA Survey Results

Survey No : RH2018-04 (in green ●)

- Total participants' CV result plotted against surveys

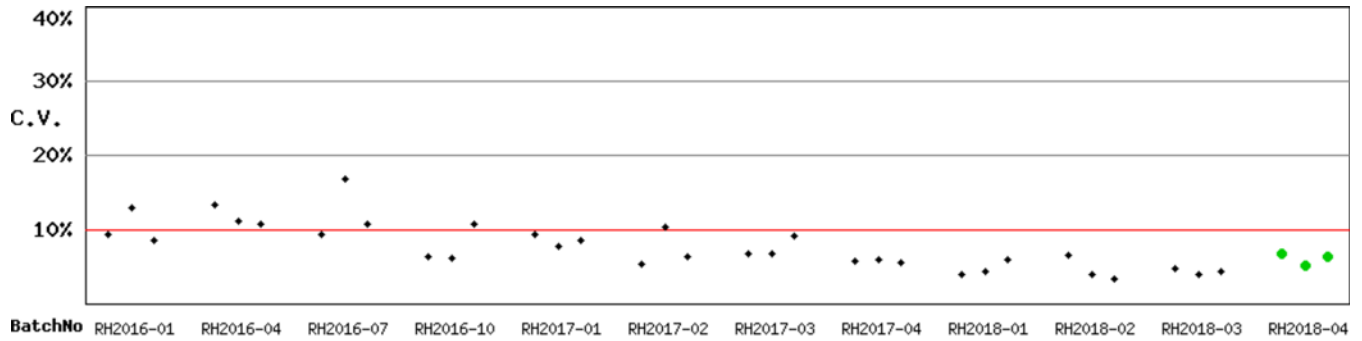


Fig RH-2.1

- Total participants' CV result plotted against G6PD activities

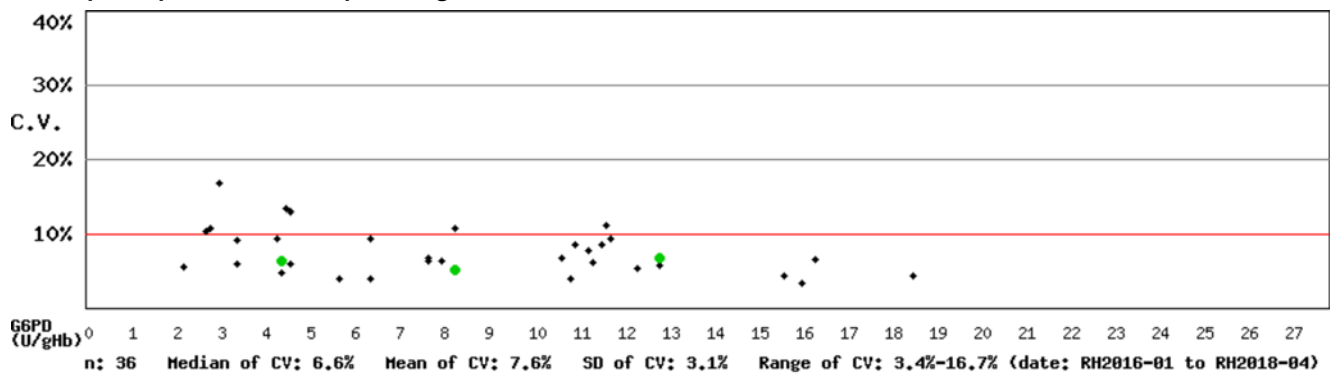


Fig RH-2.2

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

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(Report generated at 2018-10-24 18:42:18)

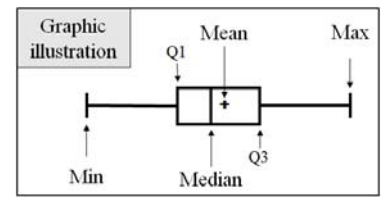
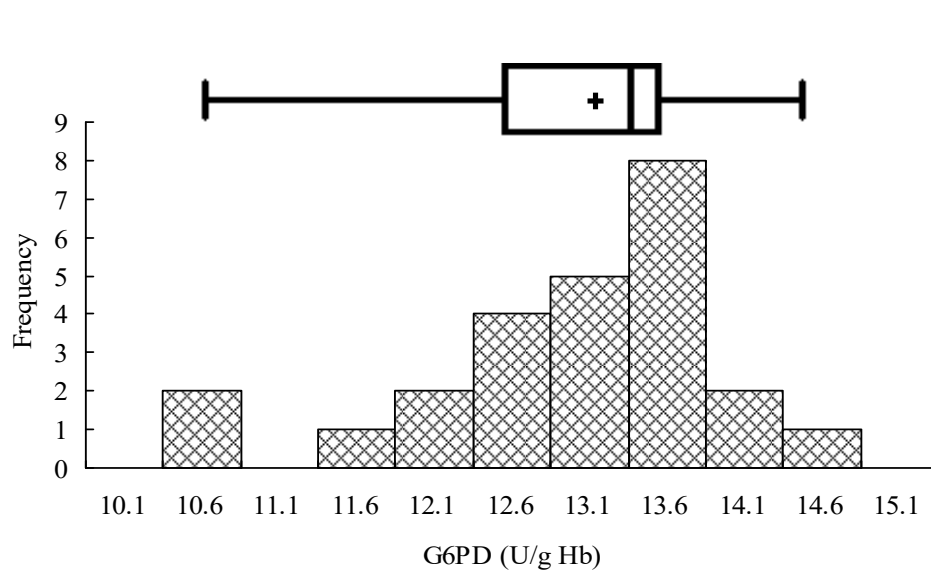
RH2018-04 Distribution of G6PD Test Results

Survey No. : RH2018-04

Sample sent on : 2018/10/15

Reporting deadline : 2018/10/22

Results reported (%) : 100%



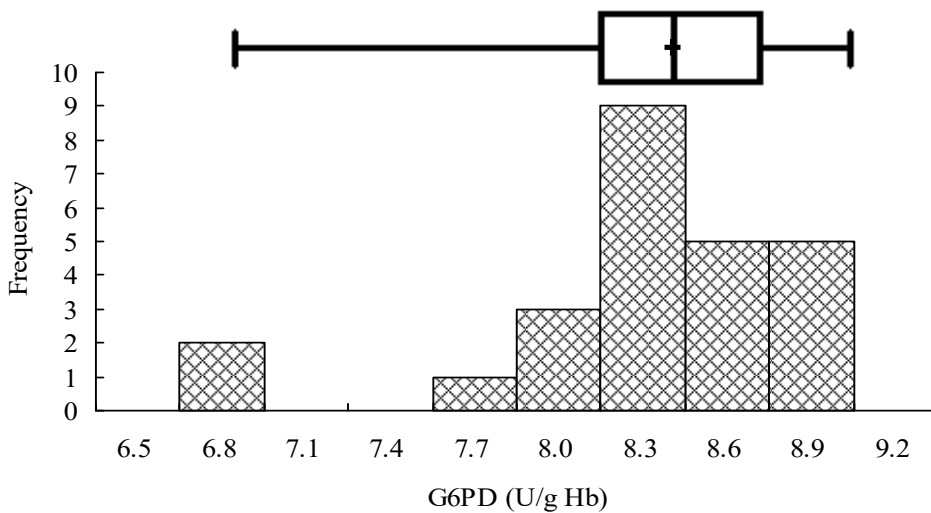
Sample 1

Median = 13.1 (n = 25)

Mean* = 12.9 (n = 25)

SD* = 0.87

CV = 6.7%



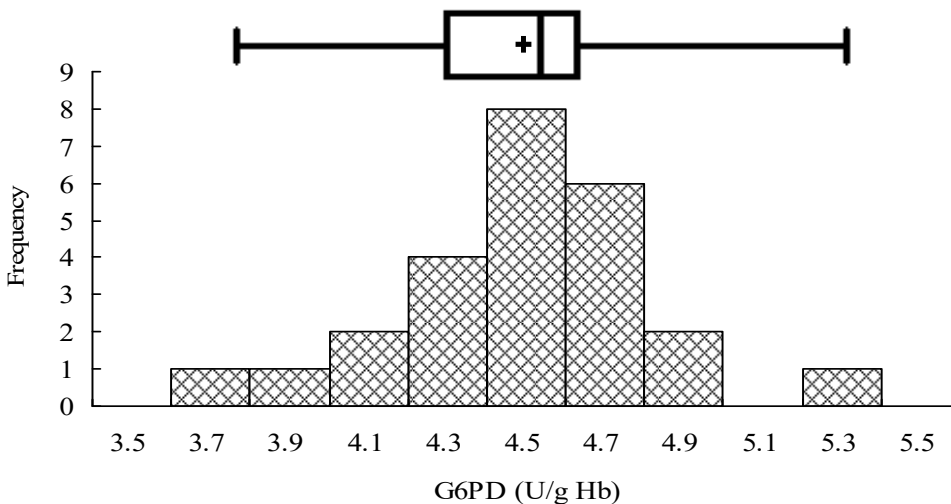
Sample 2

Median = 8.3 (n = 25)

Mean* = 8.3 (n = 25)

SD* = 0.42

CV = 5.1%



Sample 3

Median = 4.5 (n = 25)

Mean* = 4.4 (n = 25)

SD* = 0.28

CV = 6.4%

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

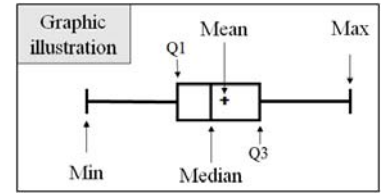
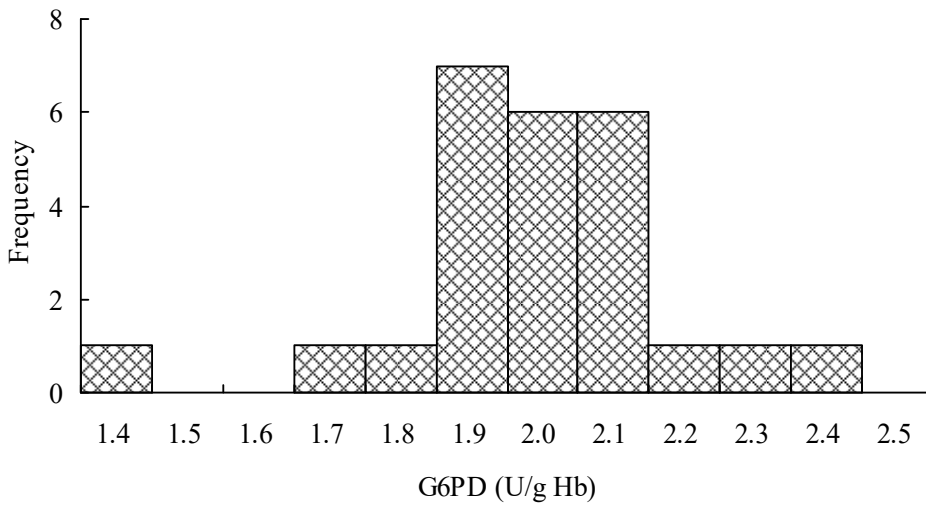
RH2018-04 Distribution of Hb Test Results

Survey No. : RH2018-04

Sample sent on : 2018/10/15

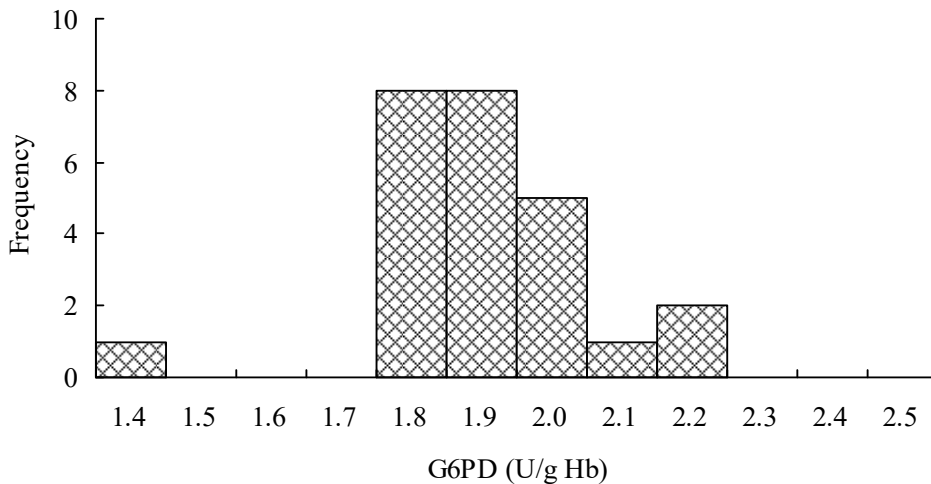
Reporting deadline : 2018/10/22

Results reported (%) : 100%



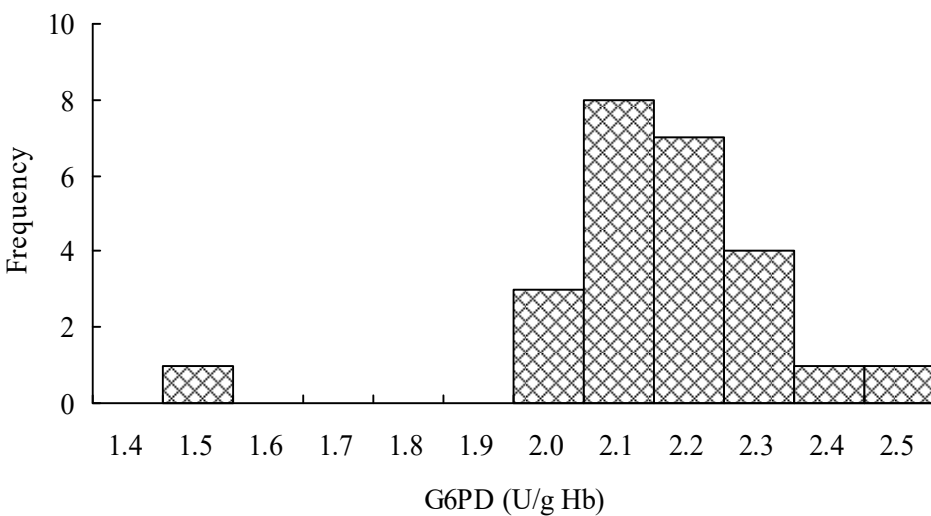
Sample 1

Median = 2.0 (n = 25)
Mean* = 2.0 (n = 25)
SD* = 0.15
CV = 7.5%



Sample 2

Median = 1.9 (n = 25)
Mean* = 1.9 (n = 25)
SD* = 0.12
CV = 6.3%



Sample 3

Median = 2.2 (n = 25)
Mean* = 2.2 (n = 25)
SD* = 0.13
CV = 5.9%

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