

External Quality Assurance (EQA) of G6PD Quantitative Test

Survey No. : RH2019-04
 Sample sent : 27 set

Sample sent on : 2019/10/14
 Results reported (%) : 27 (100%)

Reporting deadline : 2019/10/21

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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	4	5	4.3	2.4%	0.3	0.0	6.1	0.0%	0.0	0.5	14.9	7.2%	1.0	2.0	2.3	1.9	2.1
F03	F03	2	5	4.3	2.4%	0.3	0.0	6.0	-1.6%	-0.2	0.0	13.9	0.0%	0.0	-0.2	2.5	2.0	2.3
F04	F04	5	5	4.2	0.0%	0.0	-0.8	5.9	-3.3%	-0.5	-0.5	14.2	2.2%	0.3	0.4	2.5	2.1	2.4
F05	F05	7	5	4.2	0.0%	0.0	-0.8	6.0	-1.6%	-0.2	0.0	14.0	0.7%	0.1	0.0	2.2	2.0	2.2
F07	F07	3	5	4.4	4.8%	0.7	0.8	6.1	0.0%	0.0	0.5	13.9	0.0%	0.0	-0.2	2.5	2.1	2.4
F09	F09	7	5	4.4	4.8%	0.7	0.8	6.0	-1.6%	-0.2	0.0	13.9	0.0%	0.0	-0.2	2.3	2.0	2.0
F10	F10	4	5	4.2	0.0%	0.0	-0.8	6.1	0.0%	0.0	0.5	13.7	-1.4%	-0.2	-0.7	2.4	2.0	2.2
F11	F11	7	5	4.2	0.0%	0.0	-0.8	6.2	1.6%	0.2	1.1	13.9	0.0%	0.0	-0.2	2.3	2.0	2.2
F12	F12	7	5	4.5	7.1%	1.0	1.5	6.4	4.9%	0.7	2.1	15.4	10.8%	1.5	3.1	2.4	2.0	2.2
F13	F13	7	5	4.2	0.0%	0.0	-0.8	6.0	-1.6%	-0.2	0.0	14.0	0.7%	0.1	0.0	2.3	2.0	2.2
F14	F14	7	5	4.6	9.5%	1.4	2.3	6.2	1.6%	0.2	1.1	14.3	2.9%	0.4	0.7	3.2	2.6	2.8
F15	F15	6	5	4.1	-2.4%	-0.3	-1.5	5.7	-6.6%	-0.9	-1.6	14.4	3.6%	0.5	0.9	2.6	2.6	2.6
F18	F18	4	5	4.2	0.0%	0.0	-0.8	6.1	0.0%	0.0	0.5	14.4	3.6%	0.5	0.9	2.0	2.0	2.0
F19	F19	4	5	4.4	4.8%	0.7	0.8	6.1	0.0%	0.0	0.5	14.7	5.8%	0.8	1.6	2.3	2.0	2.1
F20	F20	3	5	4.3	2.4%	0.3	0.0	5.9	-3.3%	-0.5	-0.5	13.6	-2.2%	-0.3	-0.9	2.4	2.0	2.2
F21	F21	7	5	4.1	-2.4%	-0.3	-1.5	5.7	-6.6%	-0.9	-1.6	13.8	-0.7%	-0.1	-0.4	2.3	2.0	1.9
F22	F22	1	5	4.1	-2.4%	-0.3	-1.5	5.9	-3.3%	-0.5	-0.5	13.8	-0.7%	-0.1	-0.4	2.4	2.0	2.3
F24	F24	4	5	4.2	0.0%	0.0	-0.8	6.1	0.0%	0.0	0.5	13.4	-3.6%	-0.5	-1.3	2.4	2.0	2.4
F25	F25	7	5	4.4	4.8%	0.7	0.8	6.2	1.6%	0.2	1.1	13.9	0.0%	0.0	-0.2	2.4	2.0	2.3
F26	F26	4	5	4.3	2.4%	0.3	0.0	5.7	-6.6%	-0.9	-1.6	14.5	4.3%	0.6	1.1	2.3	2.0	2.1
F27	F27	2	5	4.2	0.0%	0.0	-0.8	6.2	1.6%	0.2	1.1	14.0	0.7%	0.1	0.0	2.5	2.0	2.3
F28	F28	4	5	4.2	0.0%	0.0	-0.8	5.9	-3.3%	-0.5	-0.5	13.5	-2.9%	-0.4	-1.1	3.3	2.0	2.2
F29	F29	4	5	4.2	0.0%	0.0	-0.8	6.3	3.3%	0.5	1.6	13.9	0.0%	0.0	-0.2	2.1	2.0	2.2
F30	F30	6	5	4.4	4.8%	0.7	0.8	6.2	1.6%	0.2	1.1	15.6	12.2%	1.7	3.6	2.3	2.0	2.1
F31	F31	2	5	4.3	2.4%	0.3	0.0	6.0	-1.6%	-0.2	0.0	14.1	1.4%	0.2	0.2	2.4	2.0	2.2
F32	F32	4	5	4.2	0.0%	0.0	-0.8	6.1	0.0%	0.0	0.5	13.9	0.0%	0.0	-0.2	2.4	2.0	2.2
F33	F33	6	5	3.1	-26.2%	-3.7	-9.2	5.0	-18.0%	-2.6	-5.3	10.4	-25.2%	-3.6	-8.0	0.2	0.2	0.2

Total participating laboratories = 27

Xa (Median)	-	4	-	4.2	6.1	13.9	2.4	2.0	2.2
u _{Xa}	-	-	-	0.028	0.040	0.095	-	-	-
σ _p	-	-	-	0.294	0.427	0.973	-	-	-
σ _p '	-	-	-	-	-	-	-	-	-
Range	-	1-7	-	3.1-4.6	5.0-6.4	10.4-15.6	0.2-3.3	0.2-2.6	0.2-2.8
n	-	-	-	27	27	27	27	27	27
Mean	-	-	-	4.3	6.0	14.0	2.4	2.0	2.2
S.D.	-	-	-	0.13	0.19	0.45	0.15	0.00	0.16
C.V.	-	-	-	3.0%	3.2%	3.2%	6.3%	0.0%	7.3%

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. $u_{X_a} = 1.1 \times SD / n^{1/2}$
3. SD for proficiency assessment (σ_p) = 7% x X_a; but while X_a < 2.9 U/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} ≥ 0.3σ_p

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

Long Term Observation of Blood G6PD Quantitative Test EQA Survey Results

Survey No : RH2019-04 (in green ●)

- Total participants' CV result plotted against surveys

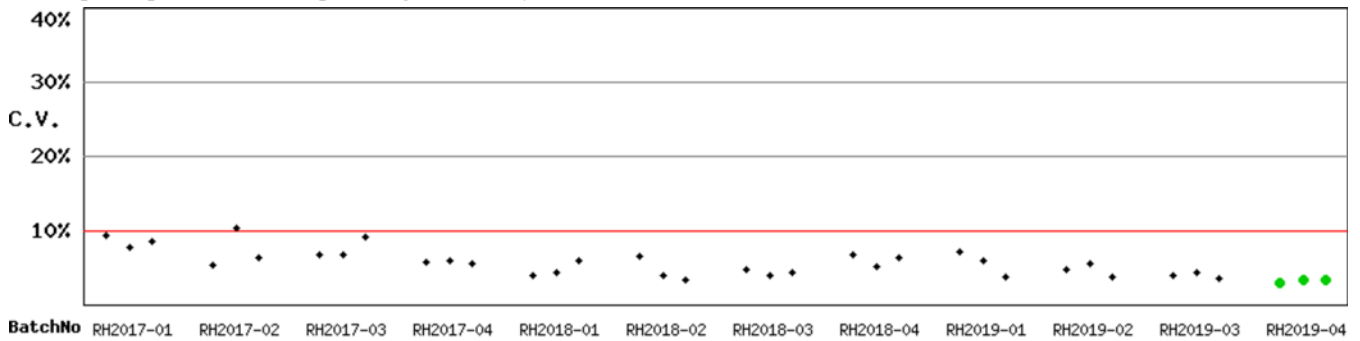


Fig RH-2.1

- Total participants' CV result plotted against G6PD activities

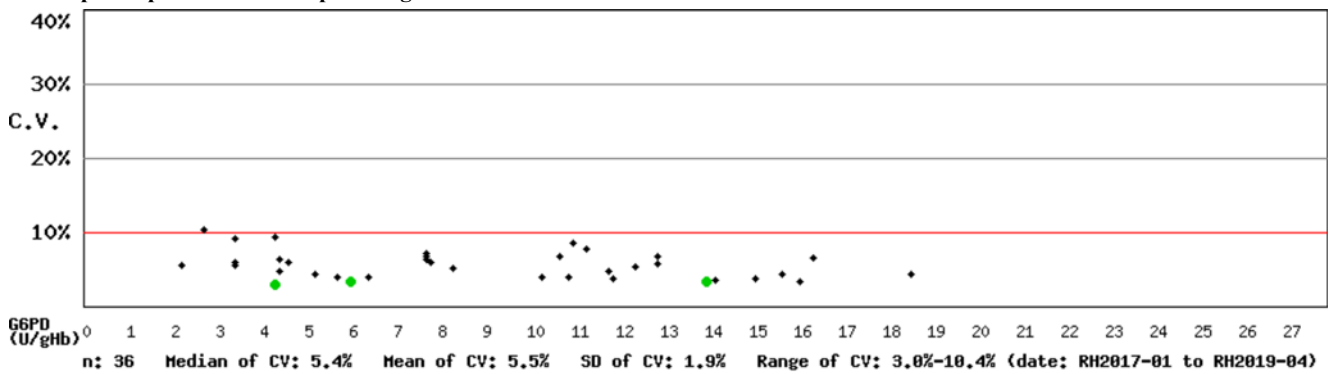


Fig RH-2.2

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

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(Report generated at 2019-10-22 09:59:36)

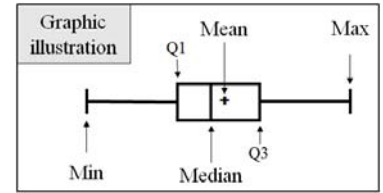
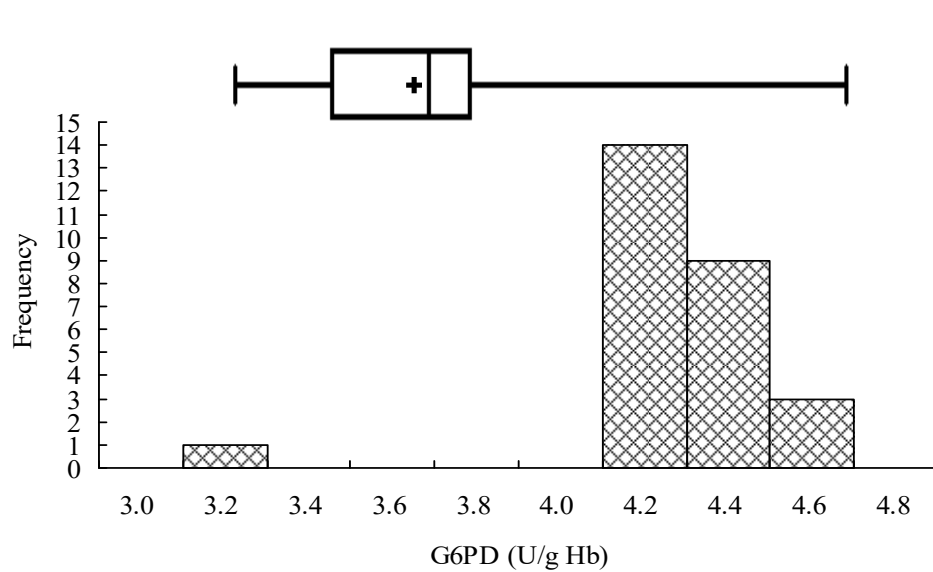
RH2019-04 Distribution of G6PD Test Results

Survey No. : RH2019-04

Sample sent on : 2019/10/14

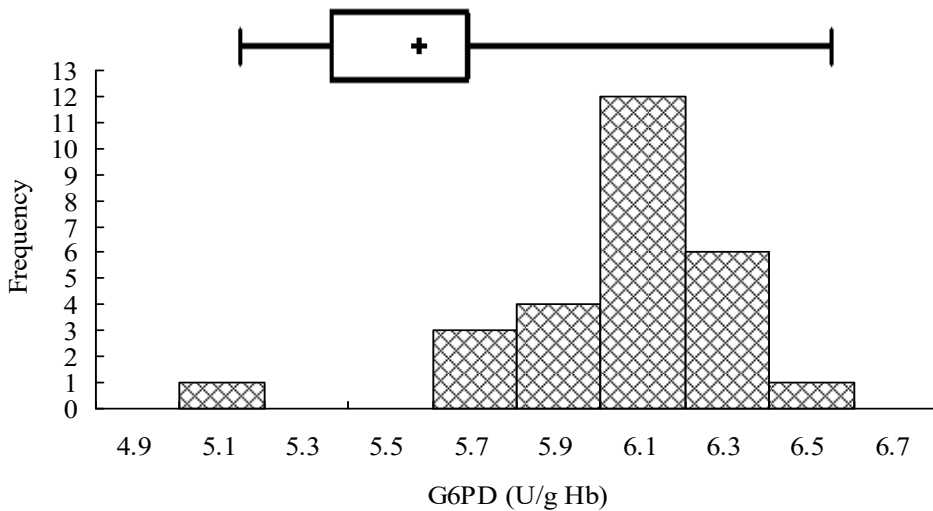
Reporting deadline : 2019/10/21

Results reported (%) : 100%



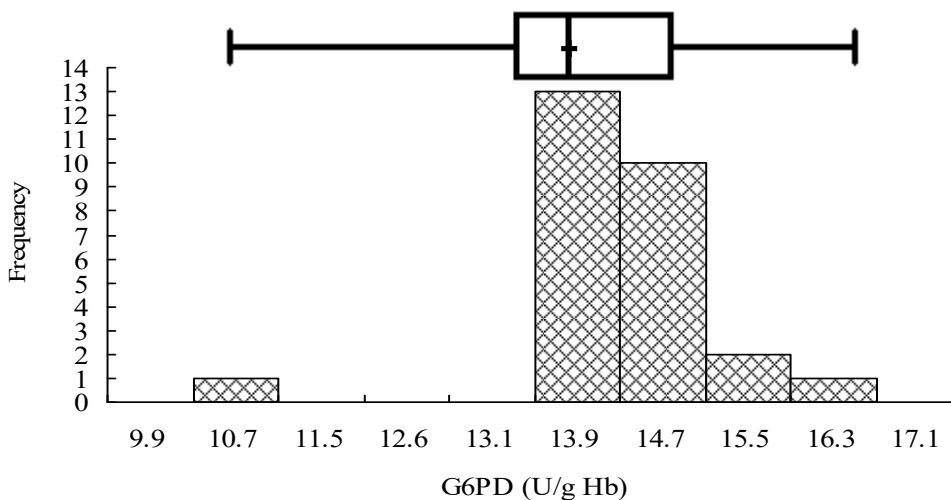
Sample 1

Median = 4.2 (n = 27)
Mean* = 4.3 (n = 27)
SD* = 0.13
CV = 3.0%



Sample 2

Median = 6.1 (n = 27)
Mean* = 6.0 (n = 27)
SD* = 0.19
CV = 3.2%



Sample 3

Median = 13.9 (n = 27)
Mean* = 14.0 (n = 27)
SD* = 0.45
CV = 3.2%

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

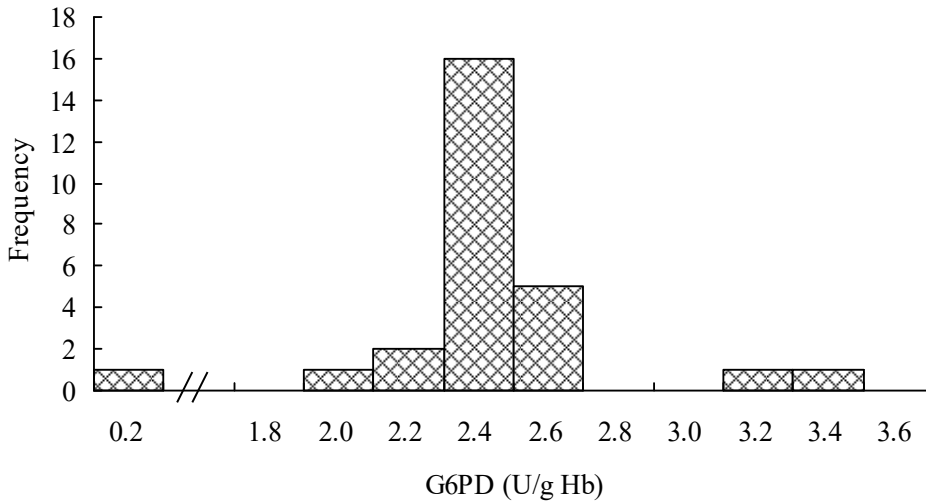
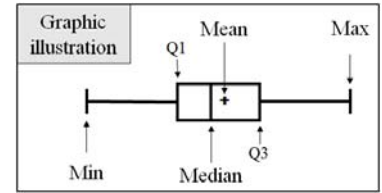
RH2019-04 Distribution of Hb Test Results

Survey No. : RH2019-04

Sample sent on : 2019/10/14

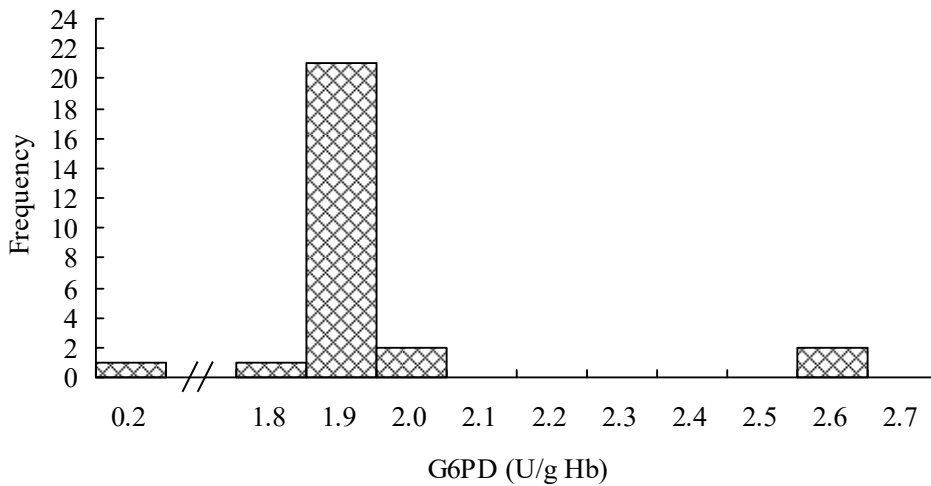
Reporting deadline : 2019/10/21

Results reported (%) : 100%



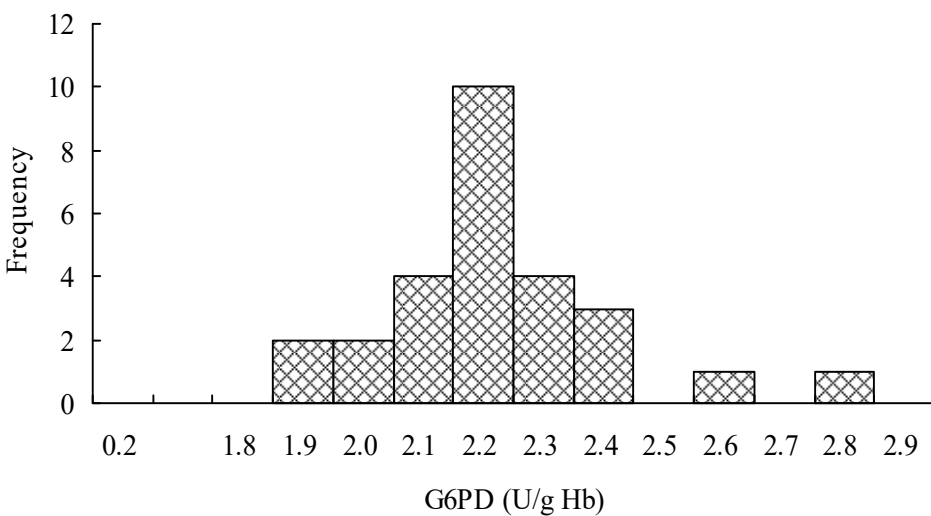
Sample 1

Median = 2.4 (n = 27)
Mean* = 2.4 (n = 27)
SD* = 0.15
CV = 6.3%



Sample 2

Median = 2.0 (n = 27)
Mean* = 2.0 (n = 27)
SD* = 0.00
CV = 0.0%



Sample 3

Median = 2.2 (n = 27)
Mean* = 2.2 (n = 27)
SD* = 0.16
CV = 7.3%

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