

**External Quality Assurance (EQA) of G6PD Quantitative Test**

Survey No. : RH2014-10  
Sample sent : [17 set](#)

Sample sent on : 2014/09/23  
Results reported (%) : 15 (88%)

Reporting deadline : 2014/09/30

- |   |   |
|---|---|
| 1. <a href="#">Summary report on this EQA survey</a>                | 4. <a href="#">Long term observation of inter laboratory CV vs. surveys</a>         |
| 2. <a href="#">The distribution of G6PD reported in this survey</a> | 5. <a href="#">Long term observation of inter laboratory CV vs. G6PD activities</a> |
| 3. <a href="#">The distribution of Hb reported in this survey</a>   | 6. <a href="#">Deviation graph for individual laboratory</a>                        |

**Referral Hosp. 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)
F01	F01	1	11.2	7.7%	1.1	1.1	5.7	7.5%	1.1	0.8	6.5	10.2%	1.5	1.5	2.1	1.9	2.4
F02	F02	2	11.2	7.7%	1.1	1.1	5.3	0.0%	0.0	-0.3	6.3	6.8%	1.0	1.0	2.1	1.9	2.3
F03	F03	4	10.4	0.0%	0.0	0.0	5.3	0.0%	0.0	-0.3	5.9	0.0%	0.0	0.0	2.1	1.9	2.4
F04	F04	7	9.9	-4.8%	-0.7	-0.7	5.3	0.0%	0.0	-0.3	5.7	-3.4%	-0.5	-0.5	2.2	2.0	2.4
F05	F05	6	10.9	4.8%	0.7	0.7	5.8	9.4%	1.3	1.0	6.2	5.1%	0.7	0.8	2.1	1.8	2.3
F06	None	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.	N.R.
F07	None	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.	N.R.
F08	F08	3	9.8	-5.8%	-0.8	-0.9	5.3	0.0%	0.0	-0.3	5.7	-3.4%	-0.5	-0.5	2.1	1.9	2.5
F09	F09	6	9.5	-8.7%	-1.2	-1.3	5.0	-5.7%	-0.8	-1.0	5.4	-8.5%	-1.2	-1.3	2.2	2.0	2.5
F10	F10	2	10.2	-1.9%	-0.3	-0.3	5.3	0.0%	0.0	-0.3	5.8	-1.7%	-0.2	-0.3	2.1	1.9	2.3
F11	F11	2	11.3	8.7%	1.2	1.3	5.5	3.8%	0.5	0.2	6.2	5.1%	0.7	0.8	2.1	2.0	2.1
F12	F12	3	11.1	6.7%	1.0	1.0	5.5	3.8%	0.5	0.2	6.0	1.7%	0.2	0.2	2.2	2.0	2.3
F13	F13	3	10.5	1.0%	0.1	0.1	6.1	15.1%	2.2	1.8	6.5	10.2%	1.5	1.5	1.9	1.6	2.0
F14	F14	7	9.7	-6.7%	-1.0	-1.0	4.9	-7.5%	-1.1	-1.3	5.6	-5.1%	-0.7	-0.8	2.1	1.9	2.4
F15	F15	4	9.7	-6.7%	-1.0	-1.0	5.2	-1.9%	-0.3	-0.5	5.6	-5.1%	-0.7	-0.8	2.2	2.0	2.3
F16	F16	7	9.7	-6.7%	-1.0	-1.0	5.0	-5.7%	-0.8	-1.0	5.5	-6.8%	-1.0	-1.0	1.9	2.0	2.3
F17	F17	6	10.5	1.0%	0.1	0.1	5.8	9.4%	1.3	1.0	6.3	6.8%	1.0	1.0	2.1	1.9	2.4
Total participating laboratories = 17																	
Xa (Median)	-	4	10.4				5.3				5.9				2.1	1.9	2.3
σ <sub>p</sub>	-	-	0.728				0.371				0.413				-	-	-
Range	-	1-7	9.5-11.3				4.9-6.1				5.4-6.5				1.9-2.2	1.6-2.0	2.0-2.5
n	-	-	15				15				15				15	15	15
Mean	-	-	10.4				5.4				5.9				2.1	1.9	2.3
S.D.	-	-	0.7				0.4				0.4				0.0	0.1	0.1
C.V.	-	-	6.7%				7.4%				6.8%				0.0%	5.3%	4.3%
Note:																	
1. $D\% = [(X - X_a) / X_a] \times 100\%$ ; X = Your Results , X <sub>a</sub> = Assigned value																	
2. $z \text{ score} = D / \sigma_p$ ; D = X - X <sub>a</sub> , $\sigma_p$ = SD for proficiency assessment																	
3. $SDI = (X - \text{Mean}) / SD$ ; SD = standard deviation of peer group																	
4. The assigned value ( X <sub>a</sub> ) is the <b>median</b> of all the results reported of this EQA sample																	
5. 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																	
6. Robust results ( Mean and SD ) were calculated by Algorithm A according to ISO 13528:2005																	
7. Acceptable : $ z  \leq 2$ ; Caution : $2 <  z  \leq 3$ ; Unsatisfactory : $ z  > 3$																	
8. Maximum Allowable Deviation ( MAD ) = 3 x ( $\sigma_p / X_a$ ) x 100%																	

[Ordered by Referral Hosp.](#)



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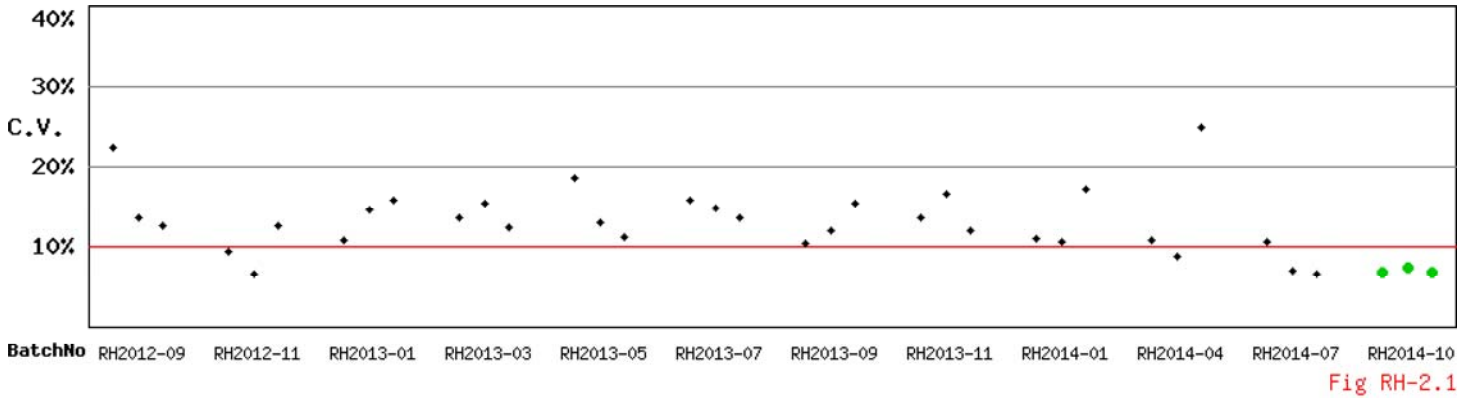
Fax : + 632-522-4396; [info@nsrc-nih.org.ph](mailto:info@nsrc-nih.org.ph)



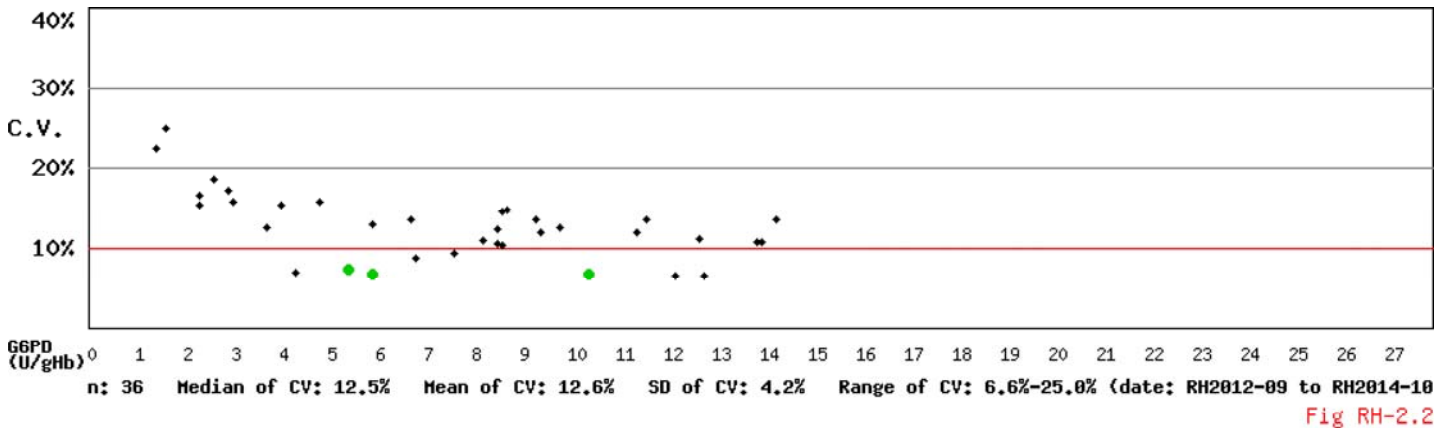
# Long Term Observation of Blood G6PD Quantitative Test QA Survey Results

Survey No : RH2014-10 (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 13528:2005 since 2014

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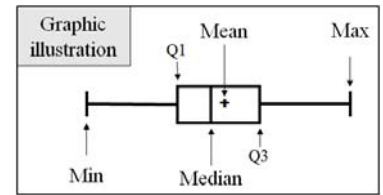
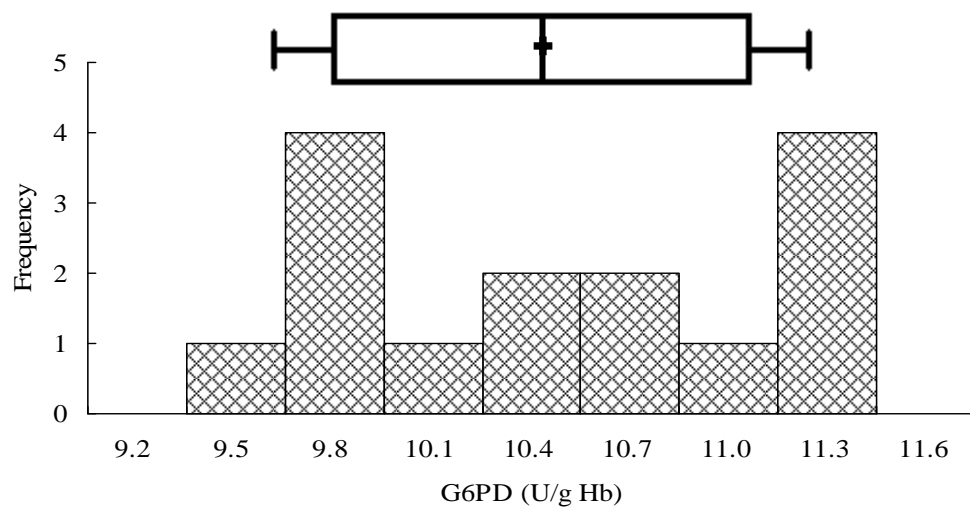
# RH2014-10 External Quality Assurance -G6PD

Survey No. : RH2014-10

Sample sent on : 2014/09/23

Reporting deadline : 2014/09/24

Results reported (%) : 88.2%



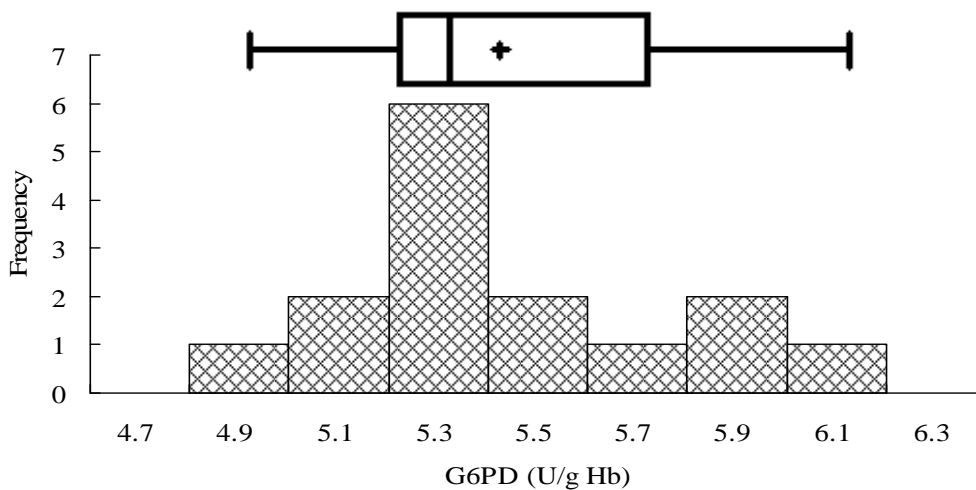
## Sample 1

**Median = 10.4 (n = 15)**

**Mean\* = 10.4 (n = 15)**

**SD\* = 0.7**

**CV = 6.7%**



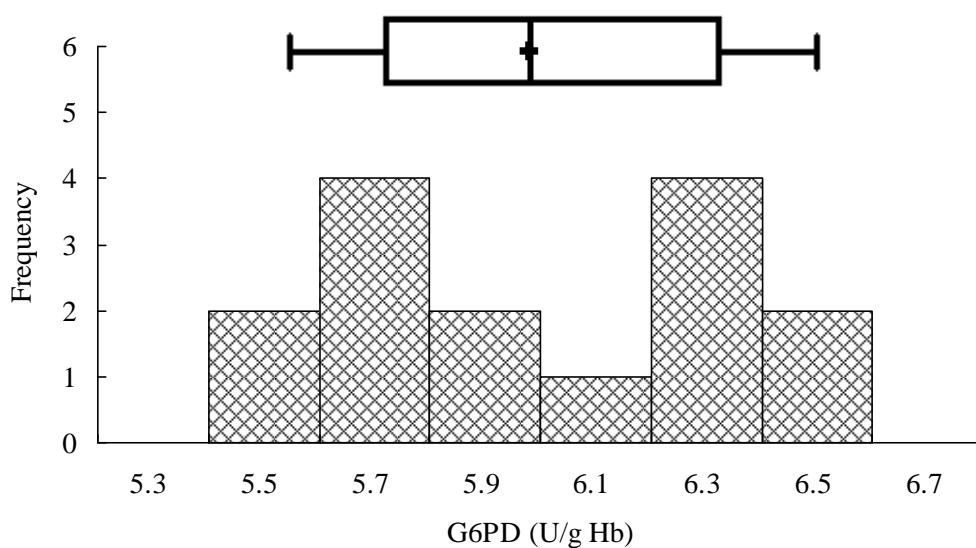
## Sample 2

**Median = 5.3 (n = 15)**

**Mean\* = 5.4 (n = 15)**

**SD\* = 0.4**

**CV = 7.4%**



## Sample 3

**Median = 5.9 (n = 15)**

**Mean\* = 5.9 (n = 15)**

**SD\* = 0.4**

**CV = 6.8%**

\*Robust results ( Mean and SD ) were calculated by Algorithm A according to ISO 13528:2005

Fig PHIQ-3

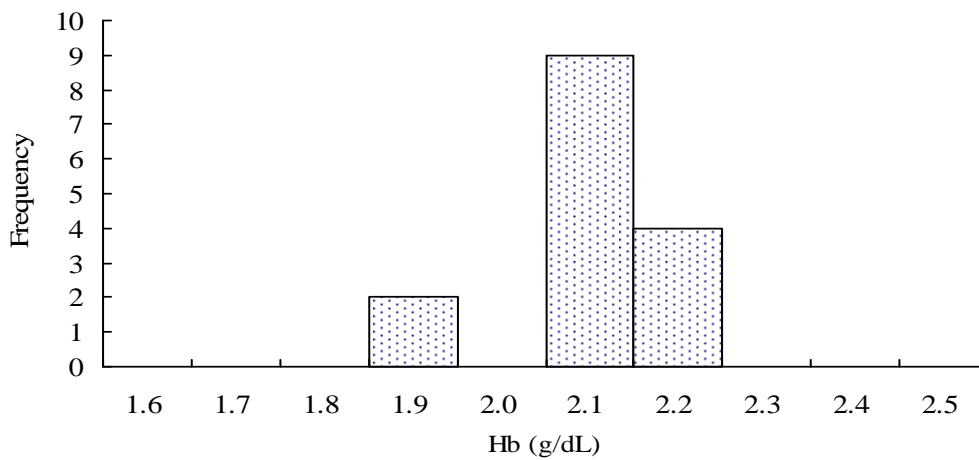
# RH2014-10 External Quality Assurance -Hb

Survey No. : RH2014-10

Sample sent on : 2014/09/23

Reporting deadline : 2014/09/24

Results reported (%) : 88.2%



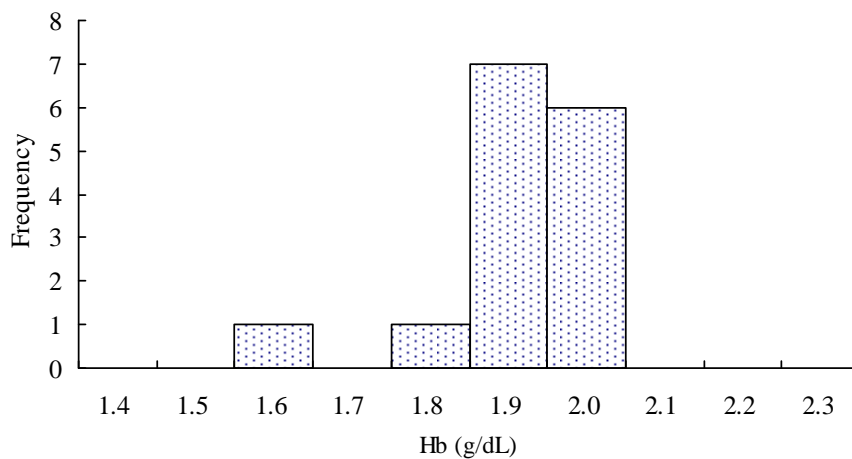
## Sample 1

**Median = 2.1 (n = 15)**

**Mean\* = 2.1 (n = 15)**

**SD\* = 0.0**

**CV = 0.0%**



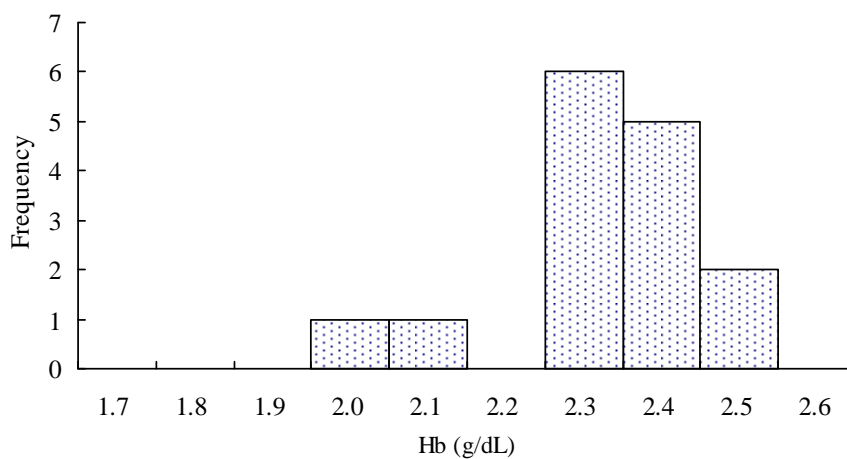
## Sample 2

**Median = 1.9 (n = 15)**

**Mean\* = 1.9 (n = 15)**

**SD\* = 0.1**

**CV = 5.3%**



## Sample 3

**Median = 2.3 (n = 15)**

**Mean\* = 2.3 (n = 15)**

**SD\* = 0.1**

**CV = 4.3%**

\*Robust results ( Mean and SD ) were calculated by Algorithm A according to ISO 13528:2005

Fig PHIQ-4

# External Quality Assurance (EQA) Program for G6PD Quantitative Test in Philippines

Survey No. : RH2014-10      Sample sent on : 2014 / 09 / 23

Reporting deadline : 2014 / 09 / 30

This Survey [S2](#) has been used in 2010-2014 (n = 6 ; Survey / Sample No.) :

[RH2010-07/S3](#) ; [RH2011-01/S1](#) ; [RH2011-09/S3](#) ; [RH2012-01/S1](#) ; [RH2013-09/S2](#) ; [RH2014-10/S1](#) ;

## Intermediate Measurement Precision of G6PD Quantitative Test

Lab	Survey : <a href="#">RH2014-10 / Sample 2</a>		Program period: <a href="#">2010 ~ 2014<sup>2</sup></a>			
	U/gHb	SDI <sup>1</sup>	Mean	n	SD	CV
F01	11.2	1.0	10.3	5	0.9	8.7%
F02	11.2	-0.3	11.8	<a href="#">5<sup>3</sup></a>	1.8	15.3%
F03	10.4	-1.0	12.7	6	2.3	18.1%
F04	9.9	0.0	9.9	6	1.6	16.2%
F05	10.9	-1.3	12.9	6	1.6	12.4%
F06	—	—	12.2	<a href="#">5<sup>4</sup></a>	1.2	9.8%
F07	—	—	12.2	<a href="#">4<sup>4</sup></a> <a href="#">5</a>	2.4	19.7%
F08	9.8	-0.6	11.4	6	2.9	25.4%
F09	9.5	0.0	9.6	<a href="#">4<sup>6</sup></a>	2.8	29.2%
F10	10.2	-0.6	11.3	6	1.8	15.9%
F11	11.3	0.3	11.0	3	1.0	9.1%
F12	11.1	-0.6	12.5	2	2.2	17.6%
F13	10.5	-0.7	11.1	2	0.9	8.1%
F14	9.7	0.6	9.2	2	0.9	9.8%
F15	9.7	-0.6	10.0	2	0.5	5.0%
F16	9.7	—	—	1	—	—
F17	10.5	—	—	1	—	—
Total participating laboratories = 15						
Median	10.4	-0.6	11.3	—	1.8	15.9%
Range	9.5 ~ 11.3	-1.3 ~ 1.0	9.2 ~ 12.9	—	0.9 ~ 2.9	8.7% ~ 29.2%

1). Standard Deviation Index (SDI) = (Individual Result - Individual Mean) / Individual SD

2). Survey / Sample No. : [RH2010-07/S3](#) ; [RH2011-01/S1](#) ; [RH2011-09/S3](#) ; [RH2012-01/S1](#) ; [RH2013-09/S2](#) ; [RH2014-10/S1](#) ;

3). Not participated in the [RH2012-01](#) survey.

4). Not participated in the [RH2014-10](#) survey.

5). An error result of [RH2011-01](#) was excluded.

6). An error result of [RH2011-09](#) and [RH2012-01](#) were excluded.

\*. Intermediate Measurement Precision ; ISO 3534-2:2006

\*\* . Robust results ( Mean and SD ) were calculated by Algorithm A according to ISO 13528:2005

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