

External Quality Assurance (EQA) of G6PD Quantitative Test

Survey No. : RH2014-01

Sample sent on : 2014/01/13

Reporting deadline : 2014/01/20

Sample sent : [15 set](#)

Results reported (%) : 15 (100%)

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

Referral Hosp. G6PD and Hemoglobin(Hb) Quantitative Test Results

| Lab | Referral Hosp. | Receive (day) | Report (day) | S 1 | | S 2 | | S 3 | | Hb 1 | | Hb 2 | | Hb 3 | |
|-----|----------------|---------------|--------------|---------|------|---------|------|---------|------|--------|------|--------|------|--------|------|
| | | | | (U/gHb) | SDI | (U/gHb) | SDI | (U/gHb) | SDI | (g/dL) | SDI | (g/dL) | SDI | (g/dL) | SDI |
| F01 | F01 | 0 | 2 | 9.7 | 1.7 | 9.3 | 0.9 | 3.6 | 1.4 | 1.8 | -1.5 | 1.9 | -2.0 | 1.9 | -3.0 |
| F02 | F02 | 1 | 1 | 7.7 | -0.6 | 8.8 | 0.3 | 3.2 | 0.6 | 2.5 | 2.0 | 2.2 | 1.0 | 2.3 | 1.0 |
| F03 | F03 | 1 | 2 | 9.5 | 1.4 | 9.5 | 1.1 | 5.4 | 5.0 | 2.4 | 1.5 | 2.5 | 4.0 | 2.5 | 3.0 |
| F04 | F04 | 1 | 4 | 7.9 | -0.3 | 7.9 | -0.7 | 2.3 | -1.2 | 1.9 | -1.0 | 2.0 | -1.0 | 2.2 | 0.0 |
| F05 | F05 | 2 | 7 | 8.1 | -0.1 | 8.8 | 0.3 | 2.9 | 0.0 | 2.0 | -0.5 | 2.2 | 1.0 | 2.2 | 0.0 |
| F06 | F06 | 2 | 10 | 9.0 | 0.9 | 9.5 | 1.1 | 3.1 | 0.4 | 2.0 | -0.5 | 2.1 | 0.0 | 2.2 | 0.0 |
| F07 | F07 | 1 | 7 | 6.2 | -2.2 | 7.1 | -1.6 | 1.8 | -2.2 | 2.2 | 0.5 | 2.2 | 1.0 | 2.2 | 0.0 |
| F08 | F08 | 1 | 4 | 8.3 | 0.1 | 8.3 | -0.2 | 2.7 | -0.4 | 2.0 | -0.5 | 2.1 | 0.0 | 1.9 | -3.0 |
| F09 | F09 | 4 | 8 | 7.0 | -1.3 | 7.0 | -1.7 | 2.3 | -1.2 | 2.1 | 0.0 | 2.2 | 1.0 | 2.3 | 1.0 |
| F10 | F10 | 1 | 1 | 8.3 | 0.1 | 8.4 | -0.1 | 2.8 | -0.2 | 2.0 | -0.5 | 2.2 | 1.0 | 2.3 | 1.0 |
| F11 | F11 | 1 | 4 | 8.7 | 0.6 | 8.9 | 0.4 | 3.0 | 0.2 | 2.1 | 0.0 | 2.2 | 1.0 | 2.3 | 1.0 |
| F12 | F12 | 1 | 4 | 8.6 | 0.4 | 9.1 | 0.7 | 3.1 | 0.4 | 2.2 | 0.5 | 2.1 | 0.0 | 2.3 | 1.0 |
| F13 | F13 | 1 | 4 | 7.9 | -0.3 | 8.1 | -0.4 | 2.9 | 0.0 | 2.0 | -0.5 | 2.2 | 1.0 | 2.3 | 1.0 |
| F14 | F14 | 1 | 7 | 8.3 | 0.1 | 8.9 | 0.4 | 2.9 | 0.0 | 1.9 | -1.0 | 2.1 | 0.0 | 2.1 | -1.0 |
| F15 | F15 | 1 | 4 | 7.2 | -1.1 | 7.5 | -1.1 | 2.4 | -1.0 | 2.0 | -0.5 | 2.1 | 0.0 | 2.3 | 1.0 |

Total participating laboratories = 15

| | | | | | | | | | |
|------------|---|-----|------|---------|---------|---------|---------|---------|---------|
| Median | - | 1 | 4 | 8.3 | 8.8 | 2.9 | 2.0 | 2.2 | 2.3 |
| Range | - | 0-4 | 1-10 | 6.2-9.7 | 7.0-9.5 | 1.8-5.4 | 1.8-2.5 | 1.9-2.5 | 1.9-2.5 |
| n for Mean | - | - | - | 15 | 15 | 15 | 15 | 15 | 15 |
| Mean | - | - | - | 8.2 | 8.5 | 2.9 | 2.1 | 2.1 | 2.2 |
| S.D. | - | - | - | 0.9 | 0.9 | 0.5 | 0.2 | 0.1 | 0.1 |
| C.V. | - | - | - | 11.0% | 10.6% | 17.2% | 9.5% | 4.8% | 4.5% |
| Reference | - | - | - | 9.2 | 10.6 | 3.9 | 2.2 | 2.3 | 2.4 |

Note:

- 1). ██████ : Outlier (this result has been dropped and was not included in calculation of Mean, SD and CV).
- 2). Standard Deviation Index (SDI) = (Individual Result - Mean) / SD
- 3). The reference values were determined by using [Trinity Biotech 345-UV](#) reagent at the QC reference Lab.

[Ordered by Referral Hosp.](#)



Newborn Screening QA Program

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Long Term Observation of Blood G6PD Quantitative Test QA Survey Results

Survey No : RH2014-01 (in green ●)

- Total participants' CV result plotted against surveys

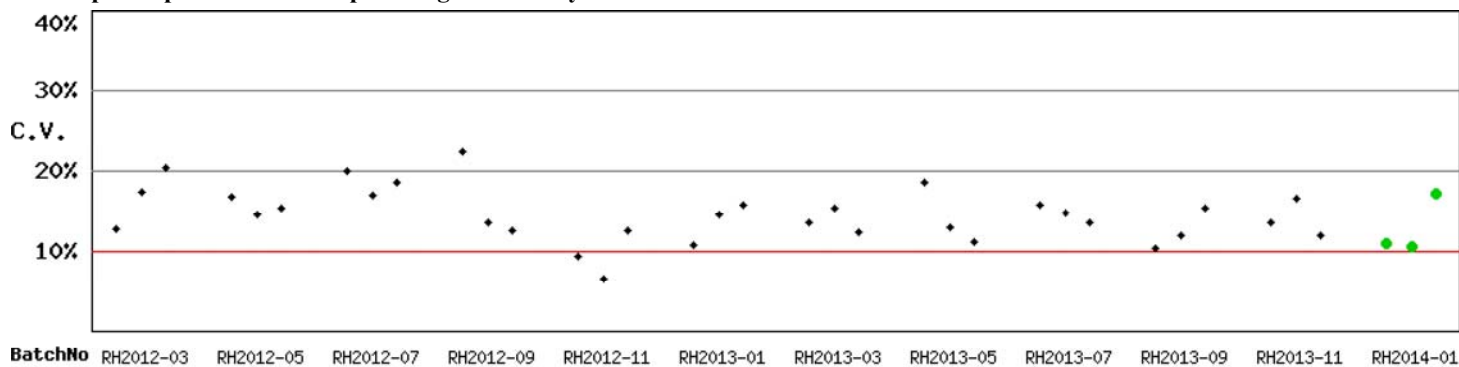


Fig RH-2.1

- Total participants' CV result plotted against G6PD activities

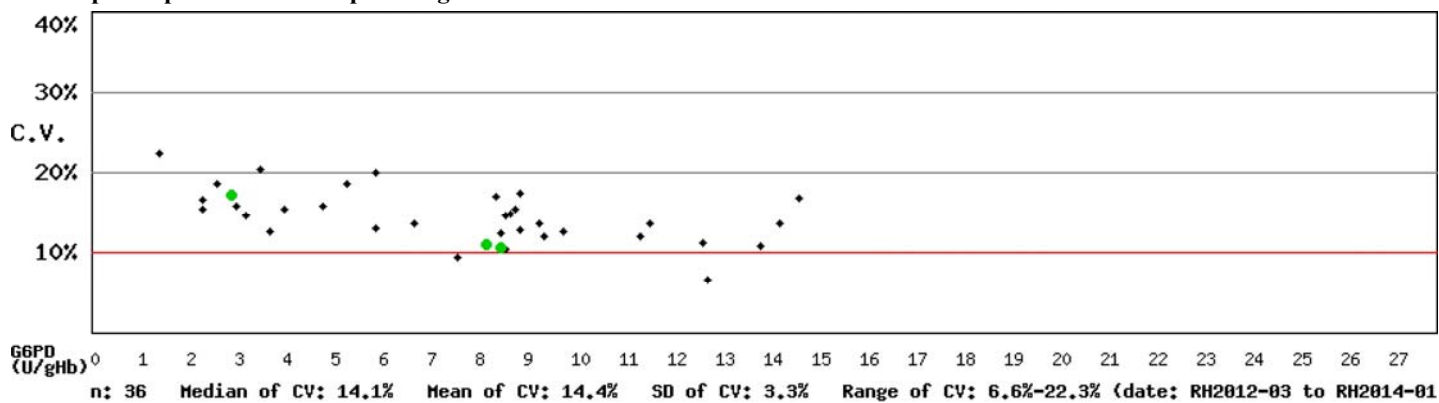


Fig RH-2.2

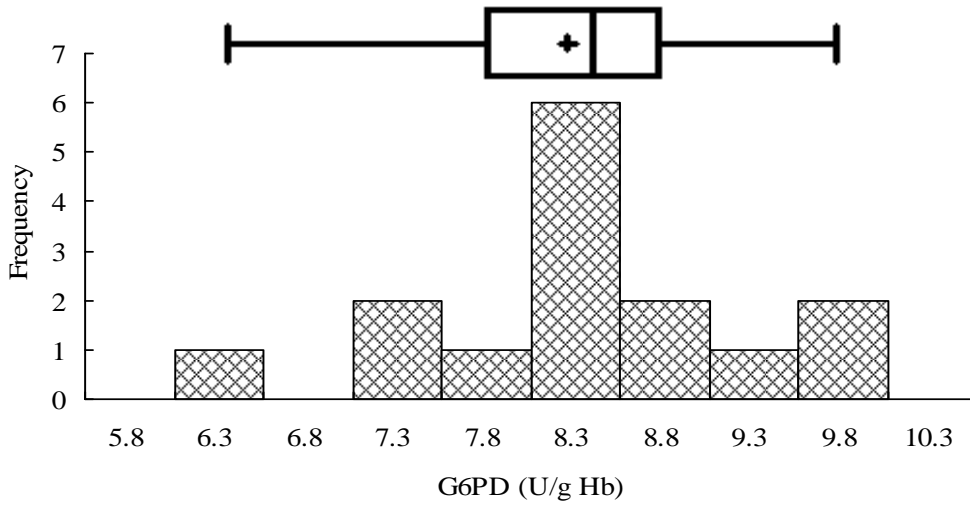
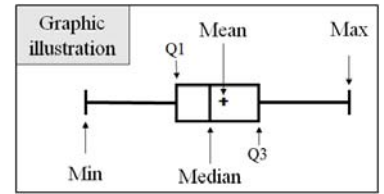
* Mean and SD are calculated by Robust method according to ISO 13528:2005 since 2014

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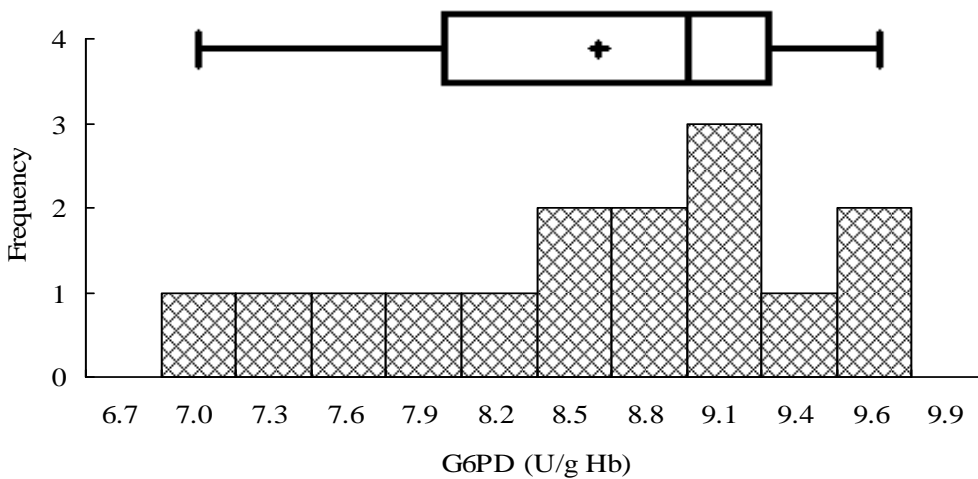
External Quality Assurance -G6PD

Survey No : RH2014-01



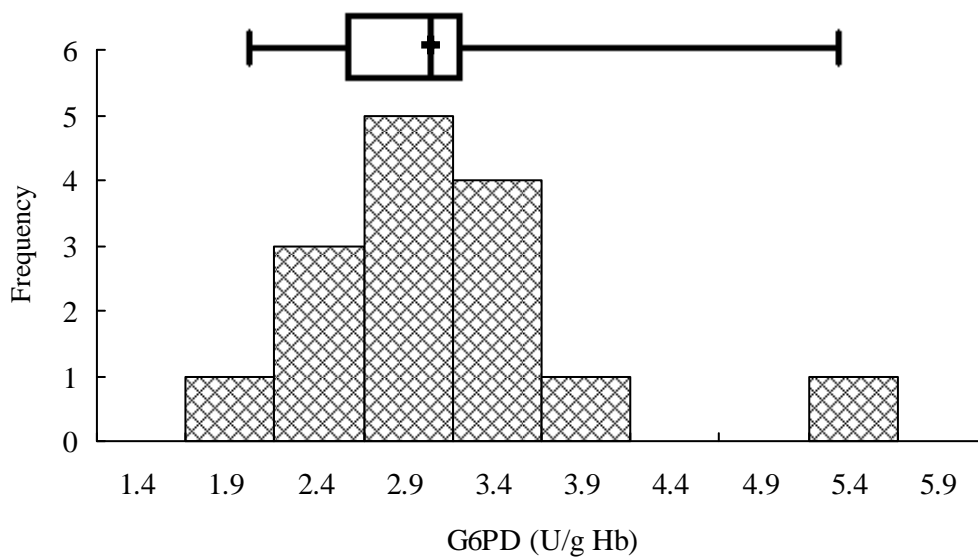
Sample 1

Median = 8.3 (n = 15)
Mean = 8.2 (n = 15)
S.D. = 0.9
Ref. Value* = 9.2



Sample 2

Median = 8.8 (n = 15)
Mean = 8.5 (n = 15)
S.D. = 0.9
Ref. Value* = 10.6



Sample 3

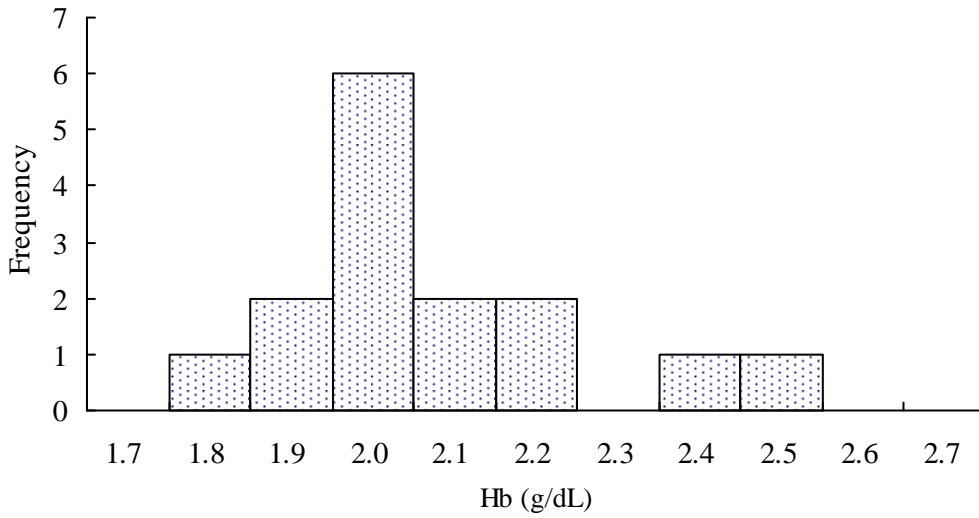
Median = 2.9 (n = 15)
Mean = 2.9 (n = 15)
S.D. = 0.5
Ref. Value* = 3.9

* The reference values were determined by using Trinity Biotech 345-UV reagent at the QC reference Lab.

Fig PHIQ-3

External Quality Assurance-Hb

Survey No : RH2014-01



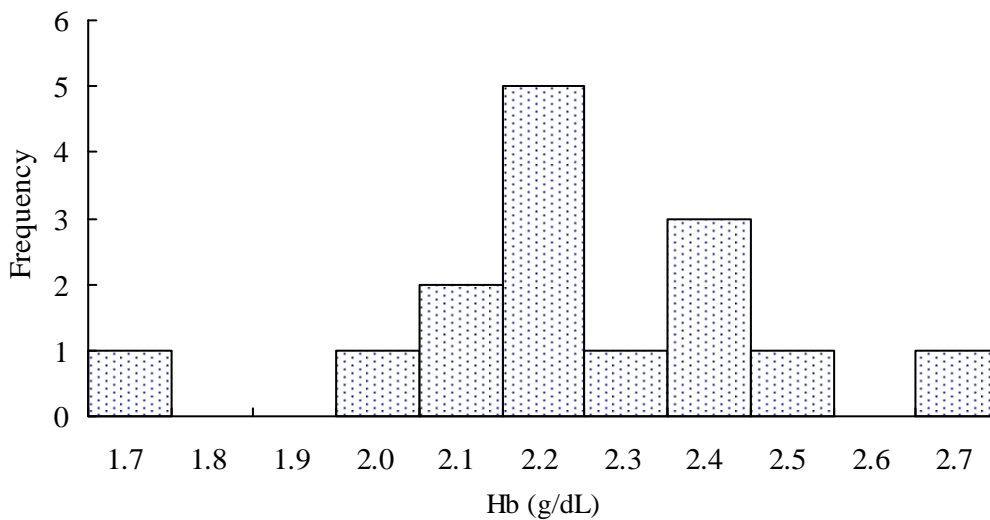
Sample 1

Median = 2.0 (n = 15)

Mean = 2.1 (n = 15)

S.D. = 0.2

Ref. Value = 2.2



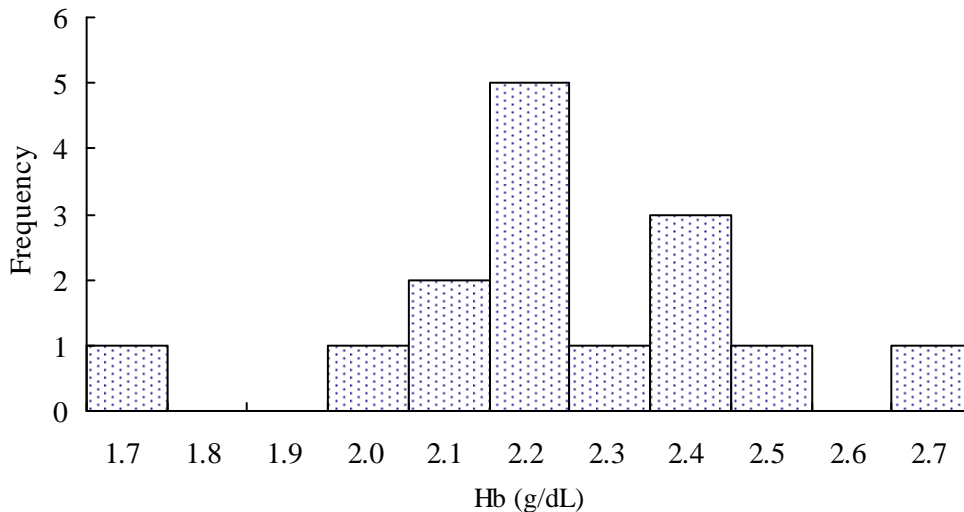
Sample 2

Median = 2.2 (n = 15)

Mean = 2.1 (n = 15)

S.D. = 0.1

Ref. Value = 2.3



Sample 3

Median = 2.3 (n = 15)

Mean = 2.2 (n = 15)

S.D. = 0.1

Ref. Value = 2.4

Fig PHIQ-4

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

Survey No. : RH2014-01 Sample sent on : 2014 / 01 / 13 Reporting deadline : 2014 / 01 / 20

This Survey [S3](#) has been used in 2009-2014 (n = 7 ; Survey / Sample No.) :
[RH2009-09/S3](#) ; [RH2010-01/S3](#) ; [RH2011-05/S1](#) ; [RH2011-07/S3](#) ; [RH2012-05/S2](#) ; [RH2013-01/S3](#) ; [RH2014-01/S3](#);

Intermediate Measurement Precision of G6PD Quantitative Test

| Lab | Survey : RH2014-01 / Sample 3 | | Program period: 2009 ~ 2013² | | | |
|---------------------------------------|---|------------------|---|----------------|-----------|---------------|
| | U/gHb | SDI ² | Mean | n | SD | CV |
| F01 | 3.6 | 1.3 | 3.1 | 6 ⁴ | 0.4 | 12.9% |
| F02 | 3.2 | -0.5 | 3.3 | 7 | 0.2 | 6.1% |
| F03 | 5.4 | 1.2 | 3.8 | 7 | 1.3 | 34.2% |
| F04 | 2.3 | -1.3 | 2.8 | 6 ⁵ | 0.4 | 14.3% |
| F05 | 2.9 | -0.8 | 3.2 | 7 | 0.4 | 12.5% |
| F06 | 3.1 | -0.4 | 3.3 | 6 ⁶ | 0.5 | 15.2% |
| F07 | 1.8 | -2.0 | 3.4 | 7 | 0.8 | 23.5% |
| F08 | 2.7 | -1.0 | 3.2 | 7 | 0.5 | 15.6% |
| F09 | 2.3 | -0.3 | 3.7 | 6 ⁵ | 4.1 | 110.8% |
| F10 | 2.8 | 1.0 | 2.3 | 7 | 0.5 | 21.7% |
| F11 | 3.0 | -0.5 | 4.2 | 3 | 2.5 | 59.5% |
| F12 | 3.1 | 0.5 | 3.0 | 2 | 0.2 | 6.7% |
| F13 | 2.9 | - | - | 1 | - | - |
| F14 | 2.9 | - | - | 1 | - | - |
| F15 | 2.4 | - | - | 1 | - | - |
| Total participating laboratories = 15 | | | | | | |
| Median | 2.9 | -0.4 | 3.3 | — | 0.5 | 15.4% |
| Range | 1.8 ~ 5.4 | -2.0 ~ 1.3 | 2.3 ~ 4.2 | — | 0.2 ~ 4.1 | 6.1% ~ 110.8% |

- 1). Mean and SD are calculated by Robust method according to ISO 13528:2005
- 2). Standard Deviation Index (SDI) = (Individual Result - Individual Mean) / Individual SD
- 3). Survey / Sample No. : [RH2009-09/S3](#) ; [RH2010-01/S3](#) ; [RH2011-05/S1](#) ; [RH2011-07/S3](#) ; [RH2012-05/S2](#) ; [RH2013-01/S3](#) ; [RH2014-01/S3](#) ;
- 4). Not participated in the [RH2009-09](#) survey.
- 5). Results not reported for the [RH2009-09](#) survey.
- 6). Results not reported for the [RH2010-01](#) survey.
- 7). Intermediate Measurement Precision ; ISO 3534-2:2006

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