Weqas
Unit 6, Parc Tŷ Glas
Llanishen, Cardiff, CF14 5DU

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EXTERNAL QUALITY ASSESSMENT

INTERNAL QUALITY CONTROL

REFERENCE MEASUREMENT SERVICES

EDUCATION & TRAINING

Weqas | GLOBAL PROVIDER OF QUALITY IN DIAGNOSTIC MEDICINE

POCT EQA Report Interpretation

Gareth Davies

Overview

- The Weqas Report - Statistical Indices
  - Imprecision
  - Inaccuracy
- How do we set Analytical Performance Specifications (APS) and Target Values
- Weqas Connect Reports
- Problem Solving and Cases
- Case Study Example

The Weqas Report
Statistical Indices

- Imprecision: Sy.x, r, IS
- Inaccuracy: Bias plot, y=mx+c

Interpretation of Imprecision

Sy.x is the deviation around the best fit line and is an indication of scatter. It is used as an index of within run imprecision. This is given in the units of the analyte in question.

Correlation coefficient (**r value**) is also an index of within run imprecision. The closer to 1.0 the value is, the better the precision (less scatter about the best fit line).

IS is derived from the correlation coefficient (IS = (1-r)*10,000).

'r' value	Imprecision score	
0.9990 to 1.0000	0 to 10	- Good
0.9850 to 0.9989	11 to 150	- Acceptable to Warning level
< 0.9850	> 150	- Unacceptable (including Curvilinear Data)

Imprecision indices

Standard deviation

$$SD = \sqrt{\frac{\Sigma\,(\bar{y}\text{-}y)^2}{\text{d.f.}}}$$

where
y = observed value
ȳ = expected value
d.f. = degrees of freedom

Standard dev of residuals

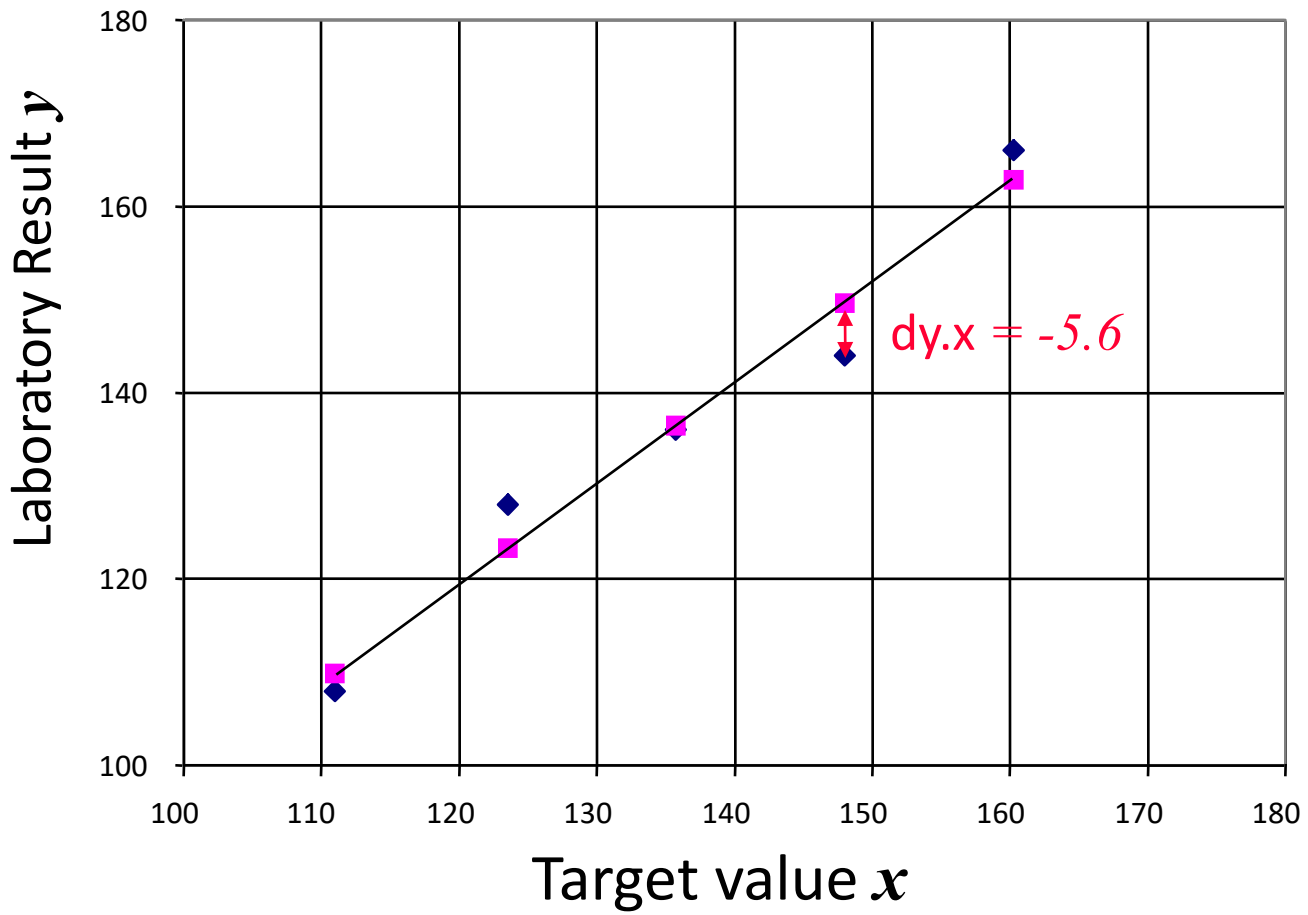
$$Sy.x = \sqrt{\frac{\Sigma\,(\tilde{y}\text{-}y)^2}{\text{d.f.}}}$$

where
ỹ = the value on the line of best fit

Imprecision – Scatter around the "best fit line", *Sy.x*

Sodium (mmol/l)

Measurement of scatter



r = 1.000
Sy.x = 0

All reported results are on the "best fit" line – no scatter

r = 0.9812
Sy.x= 4.1

Reported results are scattered around the "best fit" line – standard deviation of 4.1 mmol/L

Imprecision – how to calculate *Sy.x*

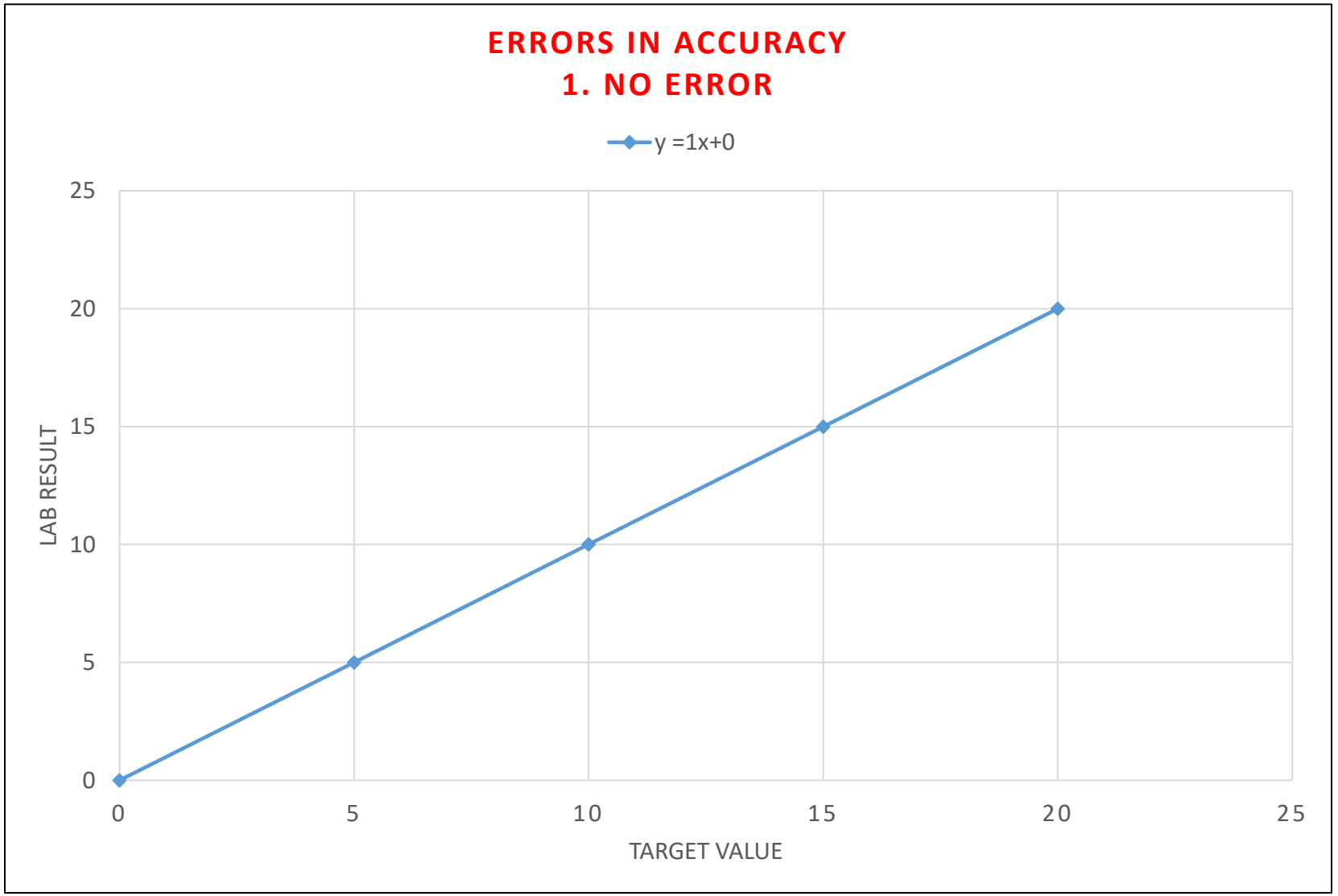
Target value	Lab result	Line of best fit	Deviation	
x	y	$\tilde{y}$	$y-\tilde{y}=dy.x$	$dy.x^2$
111	108	109.9	-1.9	3.62
123.5	128	123.3	4.7	21.97
135.7	136	136.4	-0.4	0.16
148	144	149.6	-5.6	31.30
160.3	166	162.8	3.2	10.31
slope	*1.07*		$\sum dy.x$	$\sum dy.x^2$
int	*-9.17*		0.0	67.36
			$d.f$ = n-1 = 4	
	$S_{y.x}$ =	$\sqrt{\sum dy.x^2/d.f}$	$\sqrt{67.4/4}$	*4.10*

Interpretation of Inaccuracy

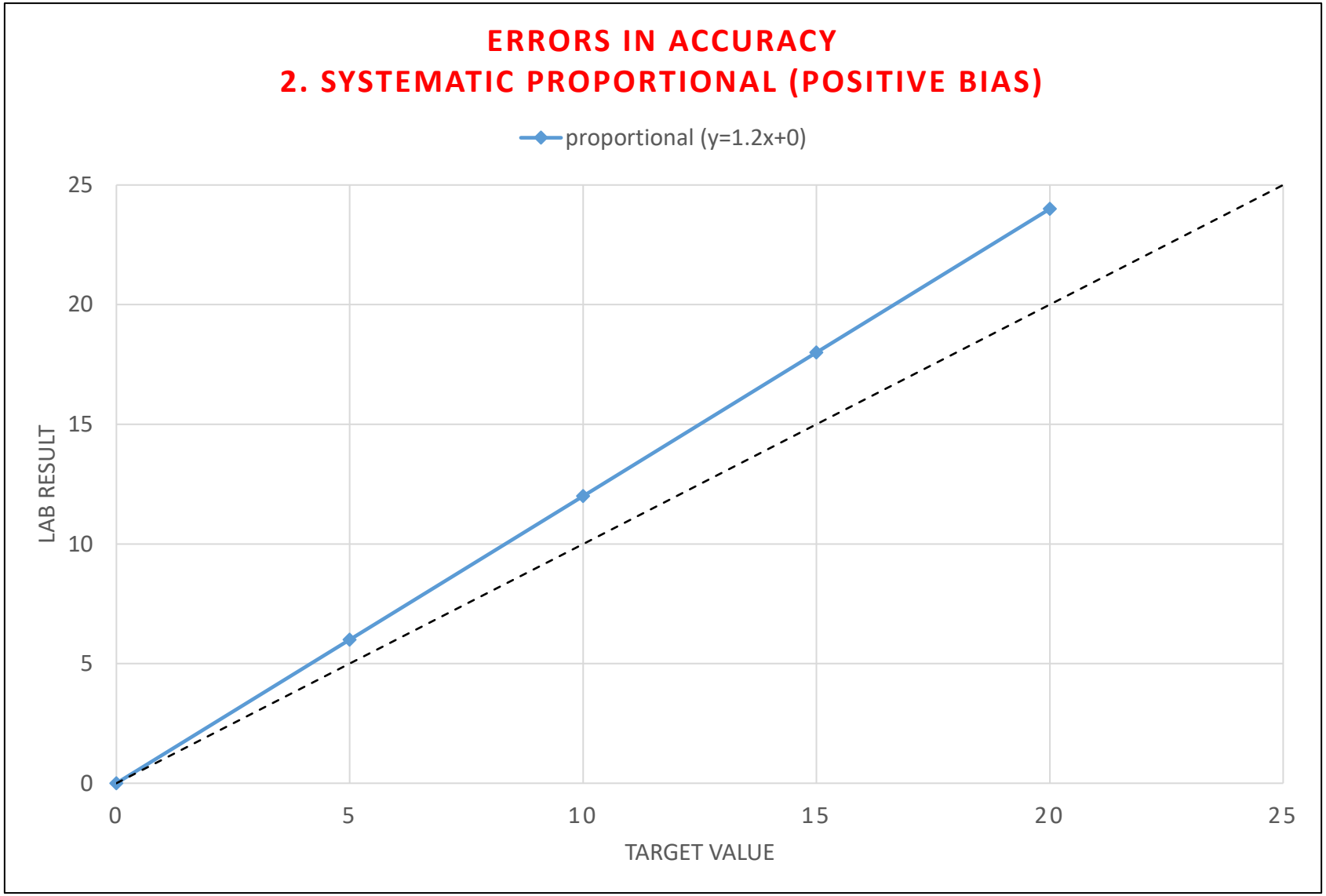
Represents the point at which the line crosses the y axis. This is shown in the units of measurement of each analyte. If deemed significant, this indicates a constant error.

$$y = mx + c$$

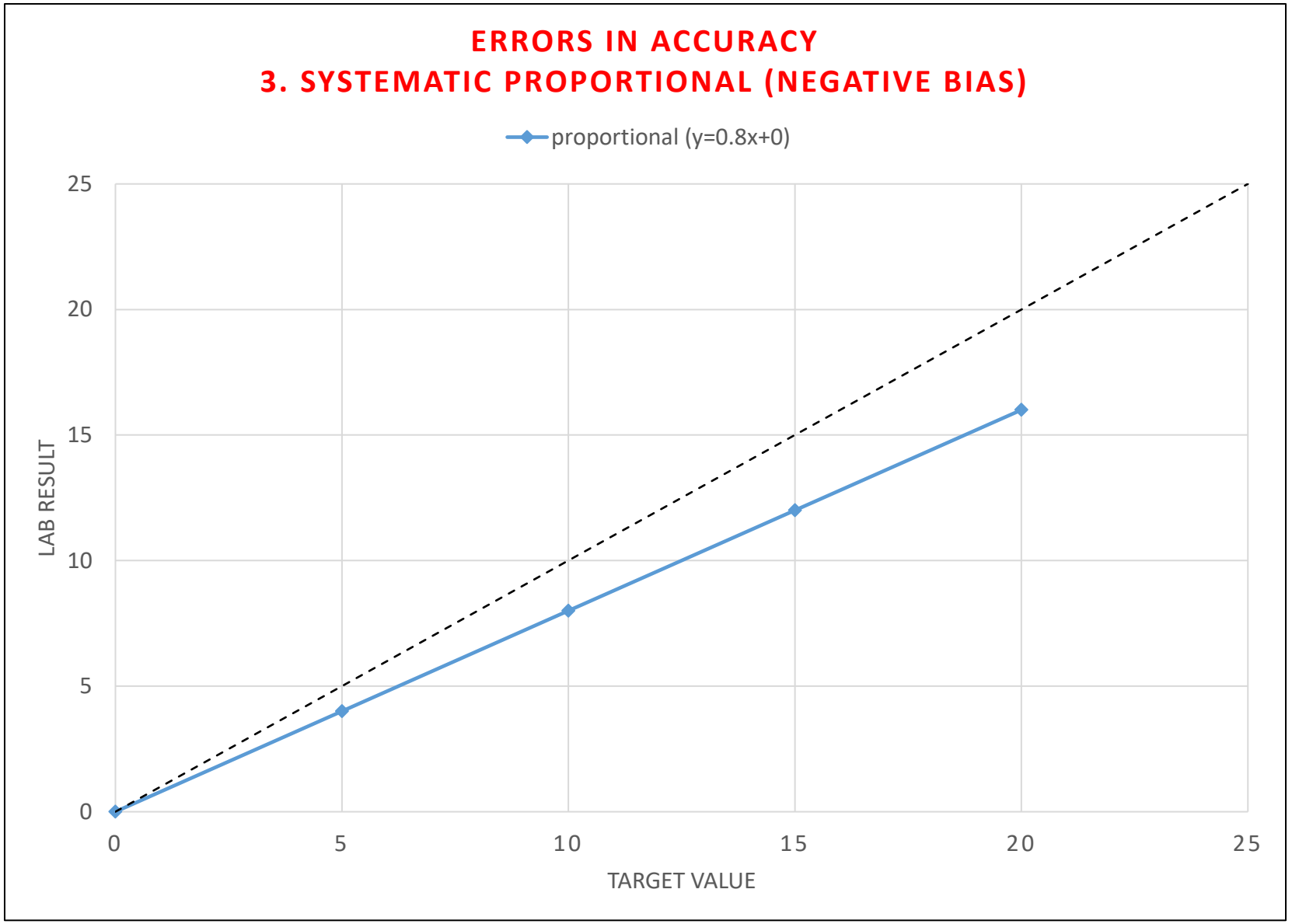
Represents the slope. If deemed significant - indicates a proportional error.


ERRORS IN ACCURACY
1. NO ERROR
y =1x+0
25
20
15
10
5
0
LAB RESULT
0
5
10
15
20
25
TARGET VALUE

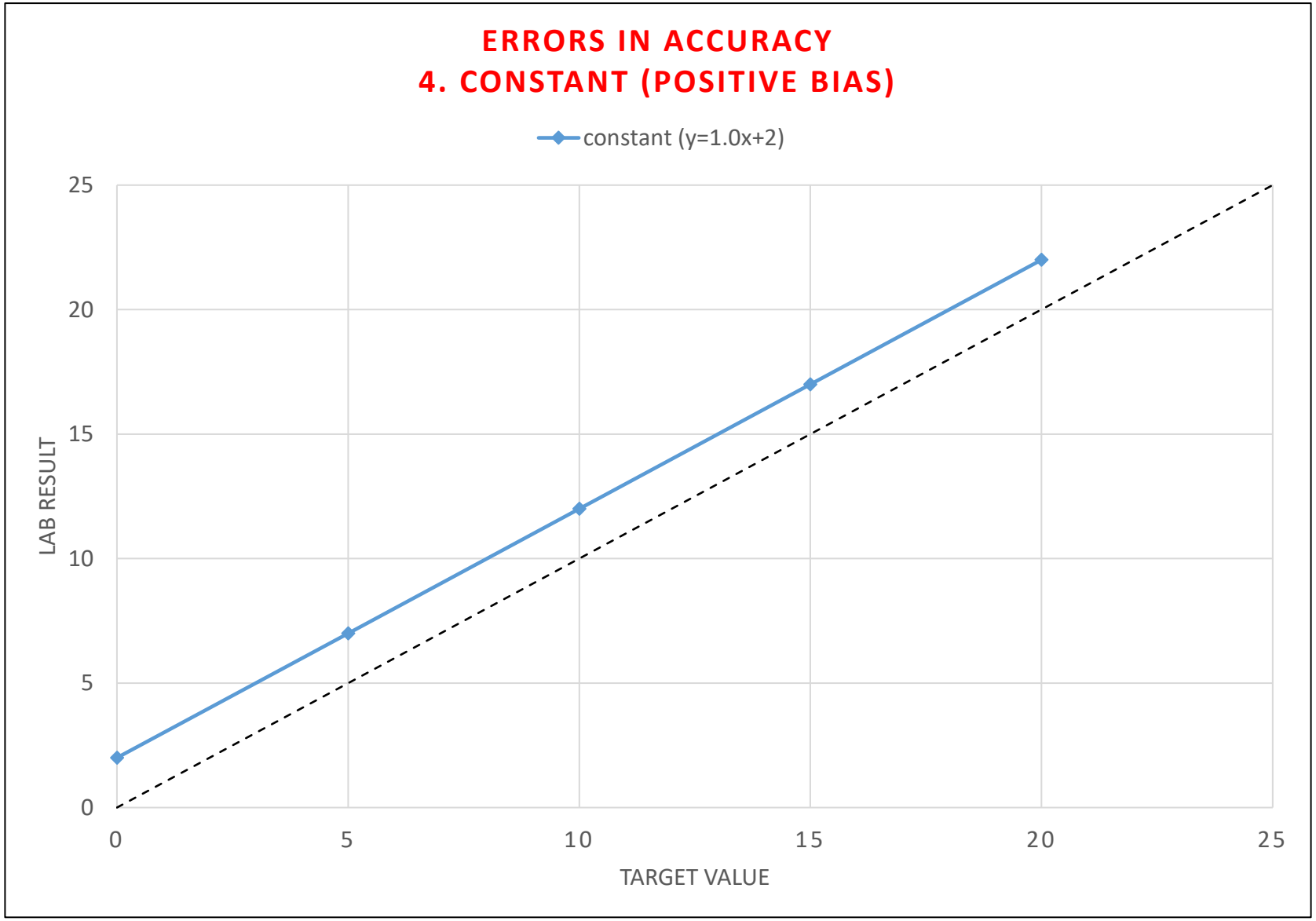
ERRORS IN ACCURACY
2. SYSTEMATIC PROPORTIONAL (POSITIVE BIAS)



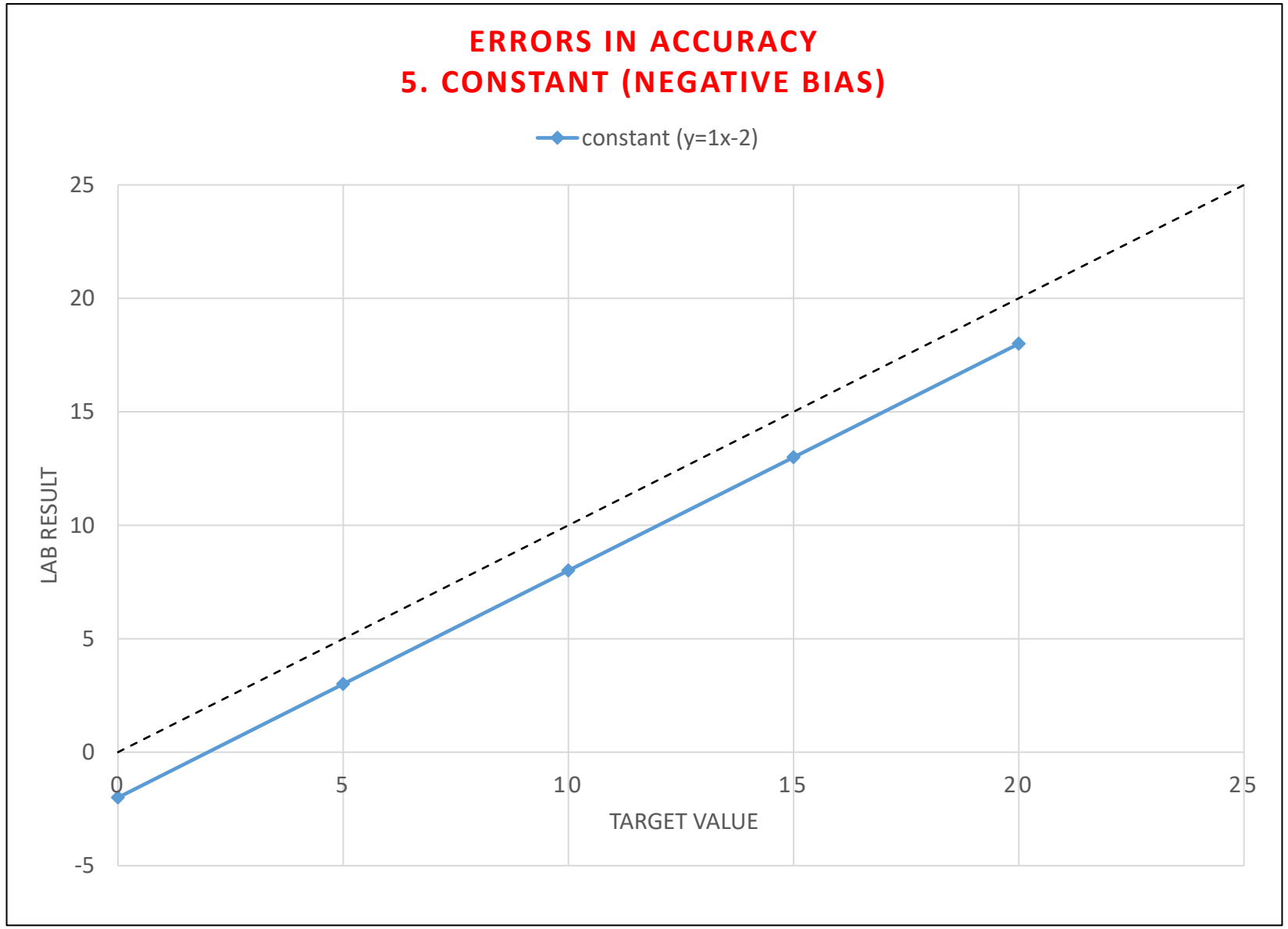
ERRORS IN ACCURACY
3. SYSTEMATIC PROPORTIONAL (NEGATIVE BIAS)

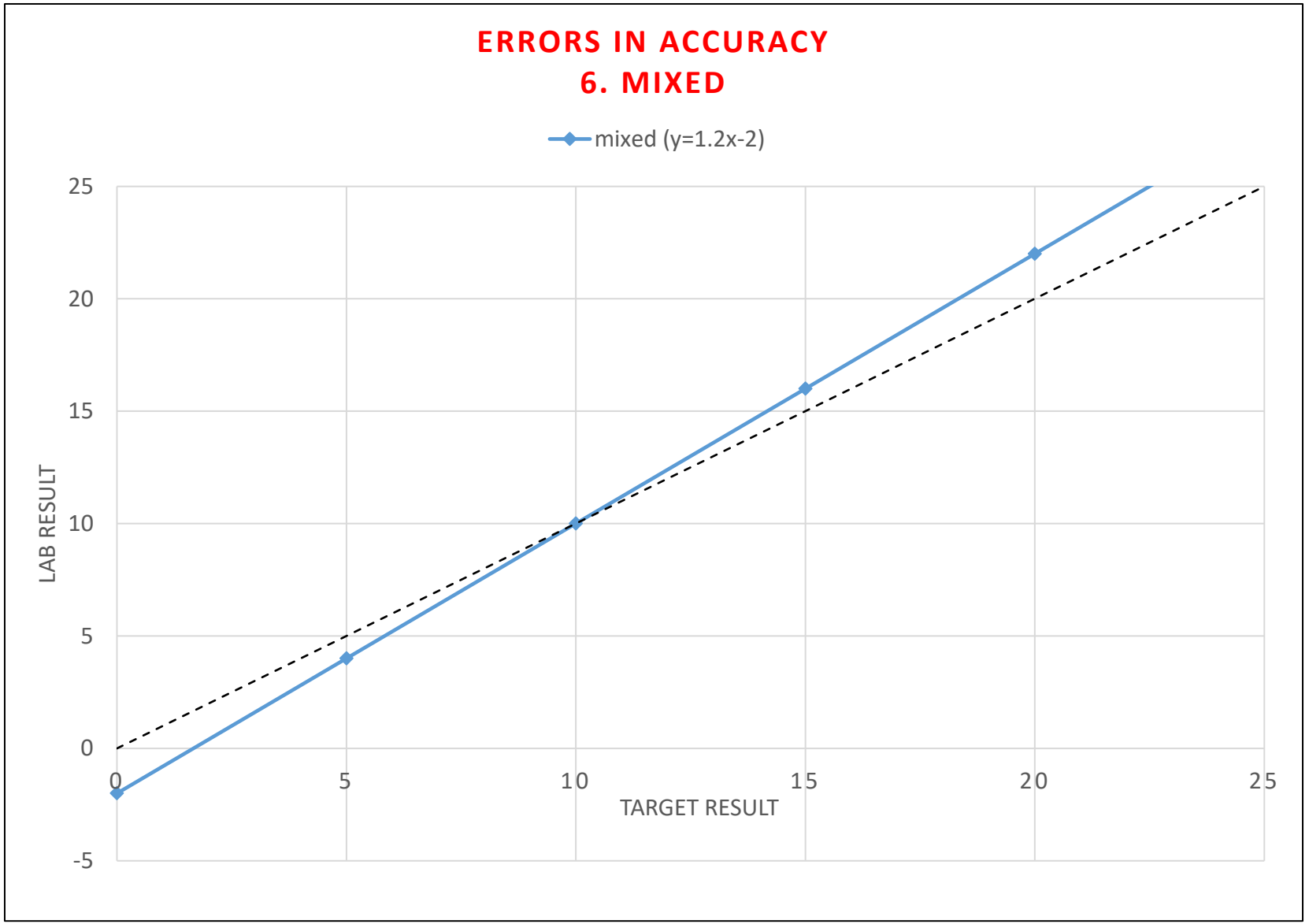


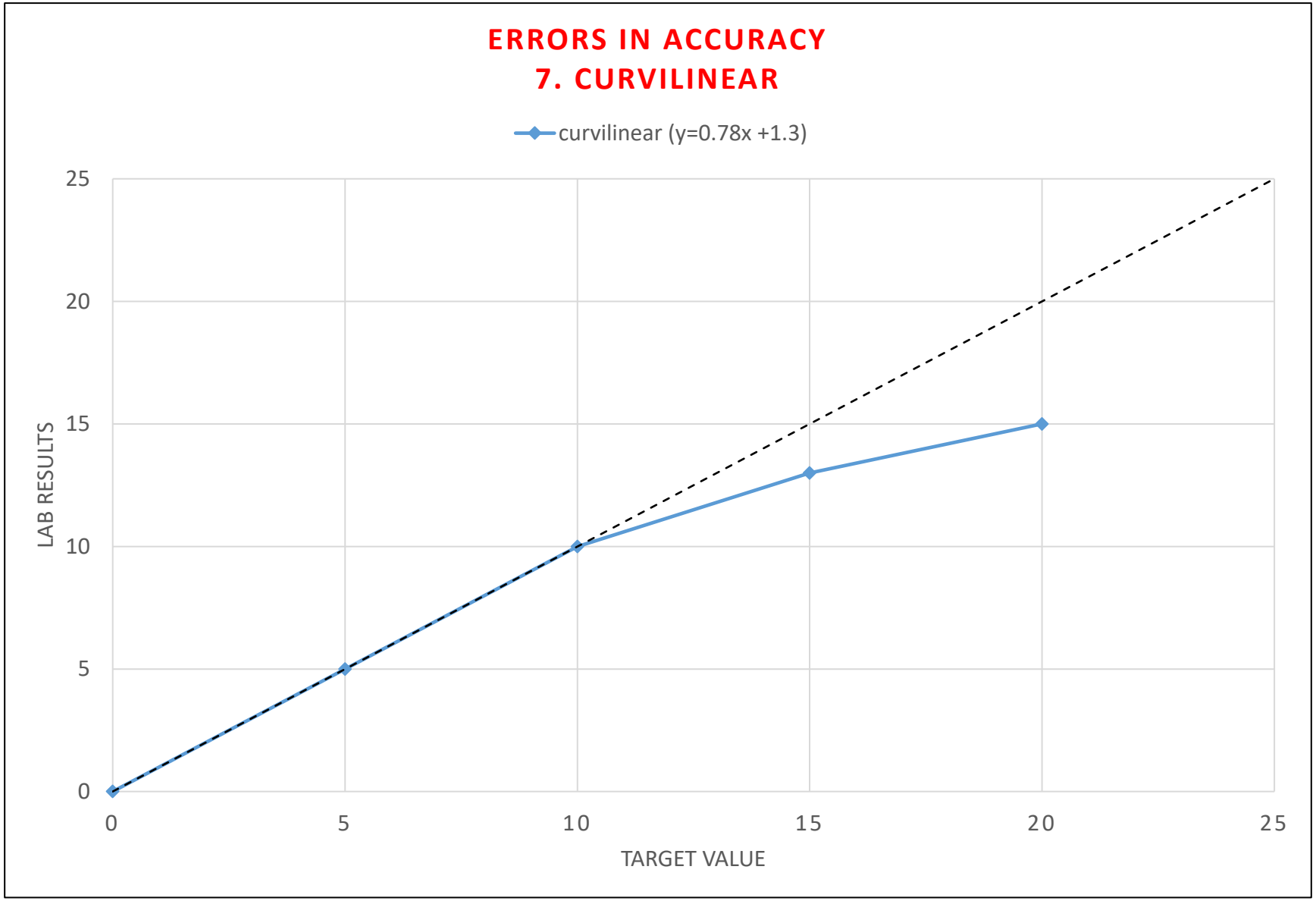
ERRORS IN ACCURACY
4. CONSTANT (POSITIVE BIAS)

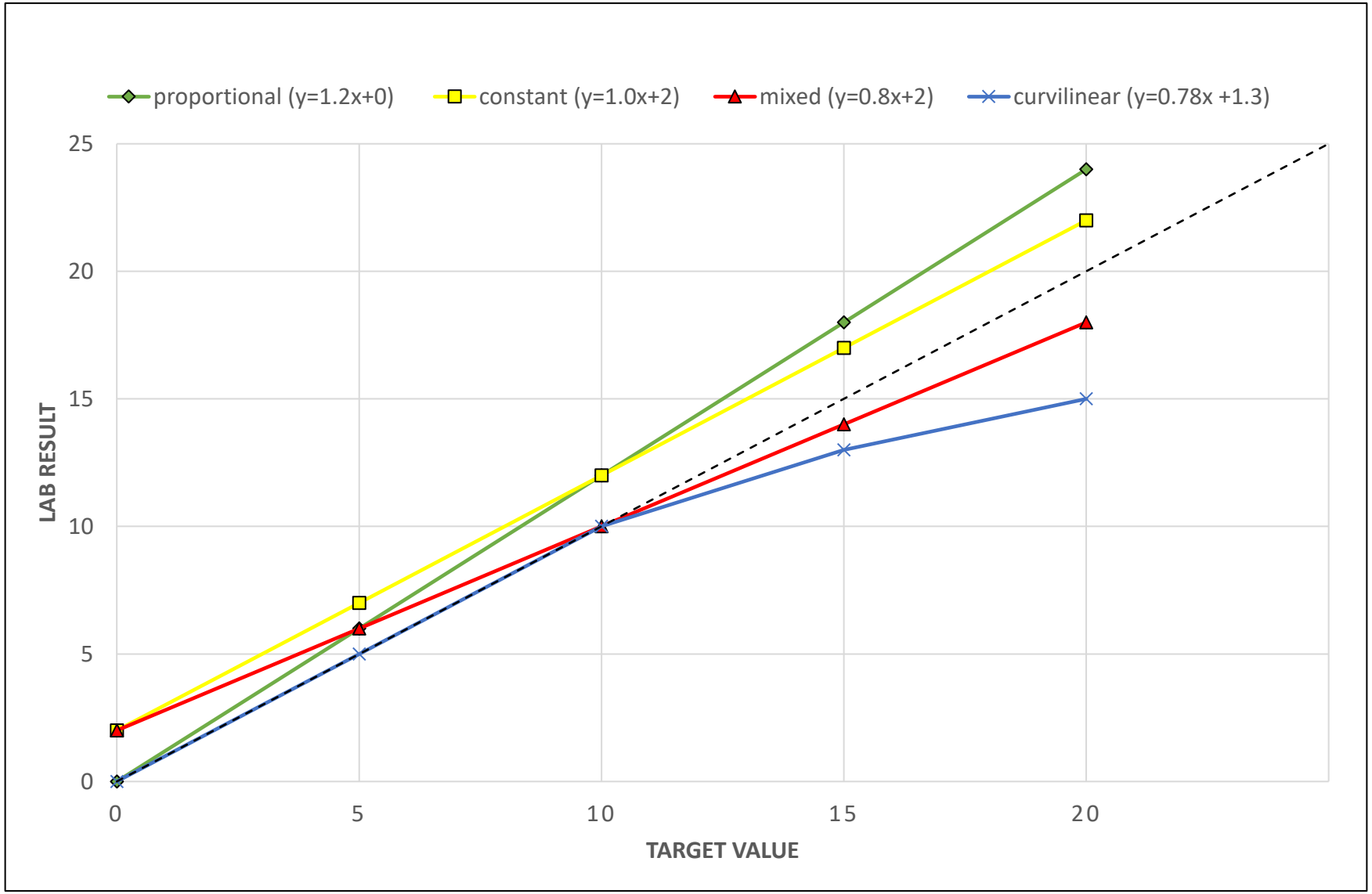


ERRORS IN ACCURACY
5. CONSTANT (NEGATIVE BIAS)




ERRORS IN ACCURACY
6. MIXED
mixed (y=1.2x-2)
LAB RESULT
TARGET RESULT
25
20
15
10
5
0
-5
0
5
10
15
20
25


ERRORS IN ACCURACY
7. CURVILINEAR
curvilinear (y=0.78x +1.3)
LAB RESULTS
TARGET VALUE
0
5
10
15
20
25


proportional (y=1.2x+0)
constant (y=1.0x+2)
mixed (y=0.8x+2)
curvilinear (y=0.78x +1.3)
LAB RESULT
TARGET VALUE
0
5
10
15
20
25

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EXTERNAL QUALITY ASSESSMENT

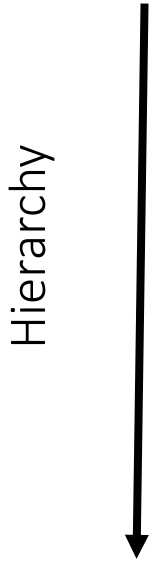
INTERNAL QUALITY CONTROL

REFERENCE MEASUREMENT SERVICES

EDUCATION & TRAINING

How do we set Analytical Performance Specifications (APS) and Target Values?

The Weqas Report
Target values used in Statistical Analysis



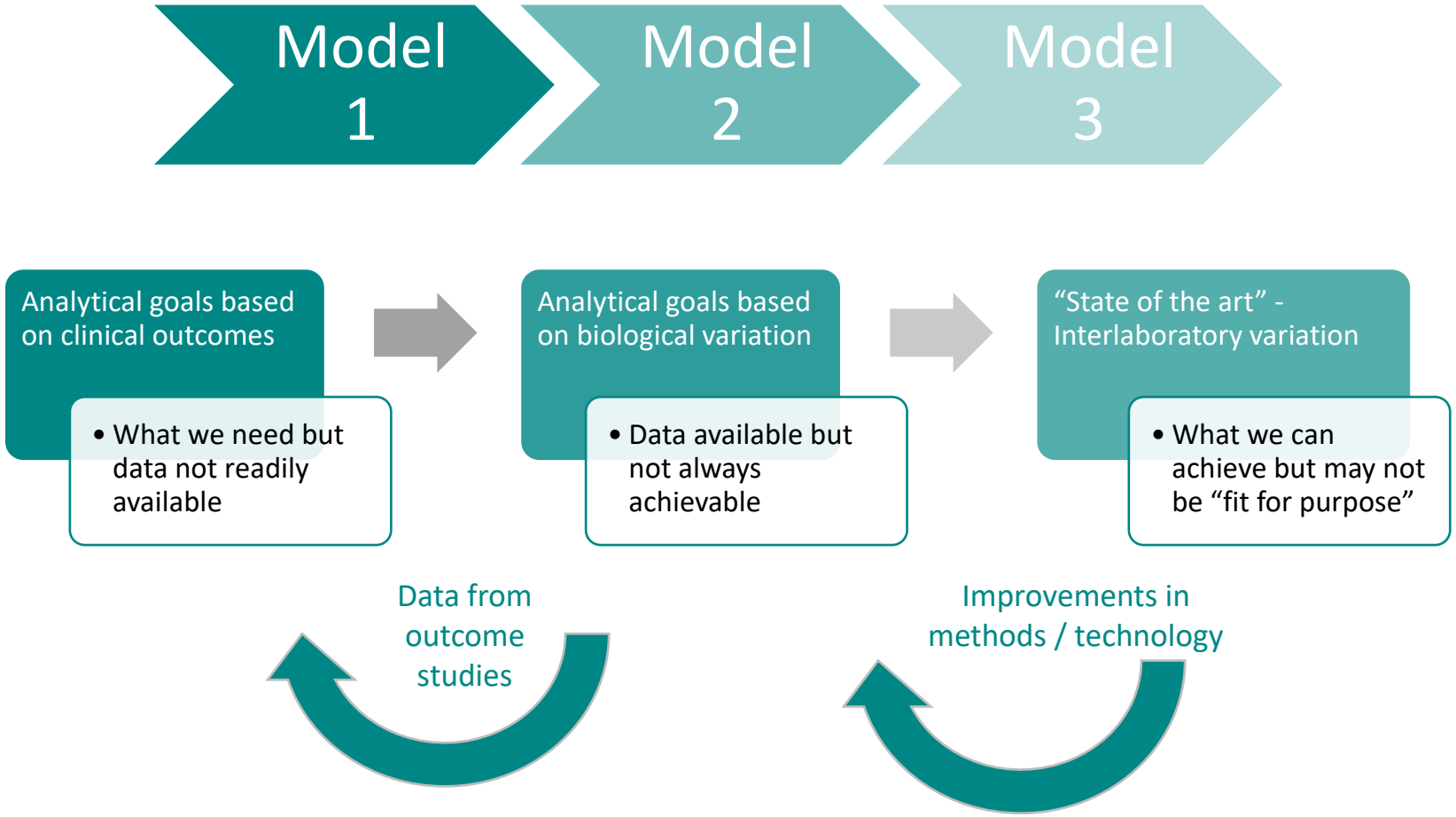
Reference values – used for bias plot & SDI / PI calculation

Method mean – used for SDI / PI calc if no ref value and n≥8

Overall mean – used for SDI / PI calc and bias plot if no ref value and n <8

Instrument mean – on report for information only

Hierarchy for setting APS



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EXTERNAL QUALITY ASSESSMENT

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REFERENCE MEASUREMENT SERVICES

EDUCATION & TRAINING

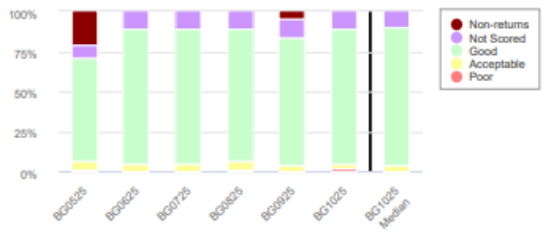
Weqas Connect Reports

Standard Quantitative Report – Managers Summary

Programme: **Blood Gas** • Distribution Code: **BG1025**
Distribution Start: 13-Oct-2025 • Distribution End: 29-Oct-2025 • Report Issued: 07-Nov-2025 • Report Status: Final
Requested By: gareth@weqas.com

This Distribution	
Your % Poor PI	2%
Median All Participant % Poor PI	0%
97.5th Centile % Poor PI	12%

Running PI analyte-sample Scores



PI Ranges	
<1	Good
1-2	Acceptable
>2	Poor

PI Scores

Location	A&E	ITU	Labour Ward	SCBU
Instrument Name				
Instrument Serial #	13127048	13127045	13127050	11115017
pH	N/S	N/S	N/S	N/S
[H+]	Good	Good	Good	Good
pCO2	Good	Good	Good	Good
pO2	Good	Good	Acceptable	Acceptable
Sodium	Good	Good	Good	Acceptable
Potassium	Good	Good	Good	Good
Chloride	Good	Good	N/A	Good
Ionized Calcium	Good	Good	N/A	Poor
Glucose	Good	Good	Good	Good
Lactate	Good	Good	Good	Good
Overall % poor PI	0%	0%	0%	7%
Overall % Non-return	0%	0%	0%	0%

PI Code	Meaning
N/A	Not enrolled for this analyte
NRR	Analyte enrolled but no results returned
N/S	This quantitative analyte not scored for this distribution

***** Please note********

The NQAAP expects 100% compliance on EQA returns. If you are enrolled for an analyte and have not returned a result (denoted by NRR in your PI table), this will be treated as a poor performance score. Please let us know as soon as possible if you are no longer providing this analyte as part of your diagnostic service.

Weqas are a UKAS ISO 17043 accredited EQA provider. Our accredited programmes are described on our UKAS schedule of accreditation which is available here: WEQAS 17043 Schedule of Accreditation

Distribution Specific Comment
There is no specific comment for this distribution.

No participant comments have been submitted for any instruments for this distribution.

Participant Code

Participant Code: WQ00000
###########
###########
###########
#######
#######

Distribution details and report status.

Weqas

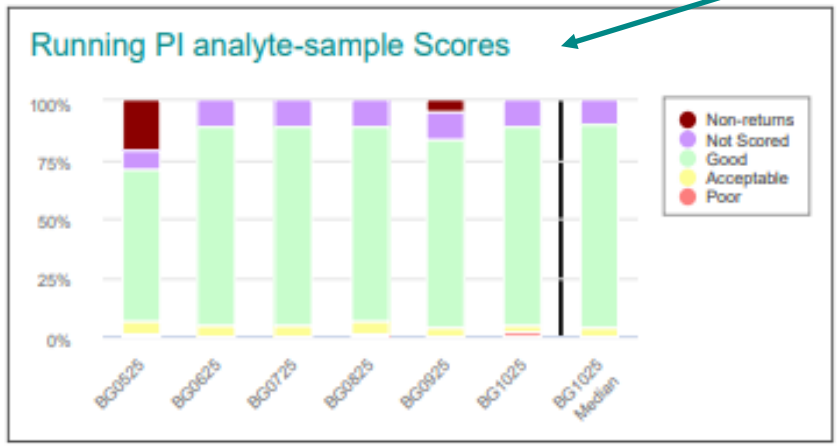
Unit 6, Parc Ty Glas
Llanishen
Cardiff
United Kingdom
CF14 5DU
Tel: 02920 314750
Email: office@weqas.com
Programme Organiser: Mrs Annette Thomas

Your % Poor PI (Performance Index) across all samples for all instruments, the Median All Participants % Poor PI and the 97.5th Centile % Poor PI.

The running table shows the current distribution PI scores, and the previous 5 distribution PI scores for all analytes, for your Participant Code, plus all-Participant Median performance.

Programme: **Blood Gas** • Distribution Code: **BG1025**
Distribution Start: 13-Oct-2025 • Distribution End: 29-Oct-2025 • Report Issued: 07-Nov-2025 • Report Status: Final
Requested By: gareth@weqas.com

This Distribution	
Your % Poor PI	2%
Median All Participant % Poor PI	0%
97.5th Centile % Poor PI	12%



PI Ranges	
<1	Good
1-2	Acceptable
>2	Poor

The PI Scores table shows performance for all analytes and all instruments.

PI Scores are converted into performance categories and colour coded.

Overall % Poor PI across all analytes for each instrument, and Overall % non return for each instrument.

Any Weqas comments or Participants comments are shown here

PI Scores

Location	A&E	ITU	Labour Ward	SCBU
Instrument Name				
Instrument Serial #	13127048	13127045	13127050	11115017
pH	N/S	N/S	N/S	N/S
[H+]	Good	Good	Good	Good
pCO2	Good	Good	Good	Good
pO2	Good	Good	Acceptable	Acceptable
Sodium	Good	Good	Good	Acceptable
Potassium	Good	Good	Good	Good
Chloride	Good	Good	N/A	Good
Ionized Calcium	Good	Good	N/A	Poor
Glucose	Good	Good	Good	Good
Lactate	Good	Good	Good	Good
Overall % poor PI	0%	0%	0%	7%
Overall % Non-return	0%	0%	0%	0%

PI Code	Meaning
N/A	Not enrolled for this analyte
NRR	Analyte enrolled but no results returned
N/S	This quantitative analyte not scored for this distribution

***** Please note********

The NQAAP expects 100% compliance on EQA returns. If you are enrolled for an analyte and have not returned a result (denoted by NRR in your PI table), this will be treated as a poor performance score. Please let us know as soon as possible if you are no longer providing this analyte as part of your diagnostic service.

Weqas are a UKAS ISO 17043 accredited EQA provider. Our accredited programmes are described on our UKAS schedule of accreditation which is available here: WEQAS 17043 Schedule of Accreditation

Distribution Specific Comment

There is no specific comment for this distribution.

No participant comments have been submitted for any instruments for this distribution.

Standard Quantitative Report – Analyte Page

Programme: Blood Gas • **Distribution Code:** BG1025
Distribution Start: 13-Oct-2025 • Distribution End: 29-Oct-2025 • Report Issued: 07-Nov-2025 • Report Status: Final

Participant Code: [redacted] • **Location:** A&E • **Analyser Name:** n/a • **Serial #:** 13127048
Date Samples received: 14-Oct-2025 • Date of Analysis: 15-Oct-2025 • Operator Details: [redacted] • Storage Conditions: Ambient Temperature (18 - 30 °C)

Analyte: pO2 • **Method:** Gem Premier 4000 • **Kit:** na

pO2 kPa

	Your reported result (kPa)		Method: Gem Premier 4000	Instrument Model: Gem Premier 4000	Overall
Sample 1	22.9	Mean	22.73	22.73	22.40
		SD	0.94	0.94	0.89
		Uncertainty	0.132	0.132	0.022
		n	80	80	2573
Sample 2	12.6	Mean	13.17	13.17	12.44
		SD	0.51	0.51	1.13
		Uncertainty	0.071	0.071	0.028
		n	80	80	2568
Sample 3	16.9	Mean	17.60	17.60	17.17
		SD	0.67	0.67	0.71
		Uncertainty	0.094	0.094	0.017
		n	80	80	2568

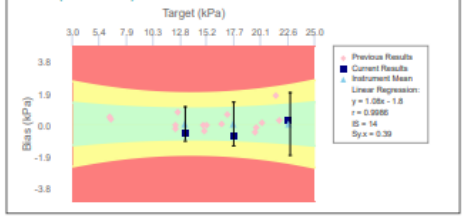
Scoring

Sample	1	2	3	Overall Performance
Target: (Method Mean)	22.73	13.17	17.6	
Weqas TAE	2.34	1.85	1.94	
PI	0.15	-0.62	-0.72	Good

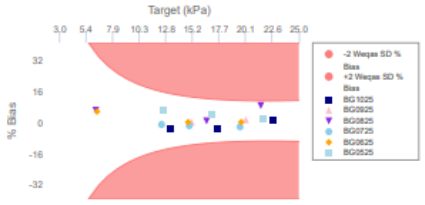
Running PI



Bias (Absolute)



Bias (Relative %)

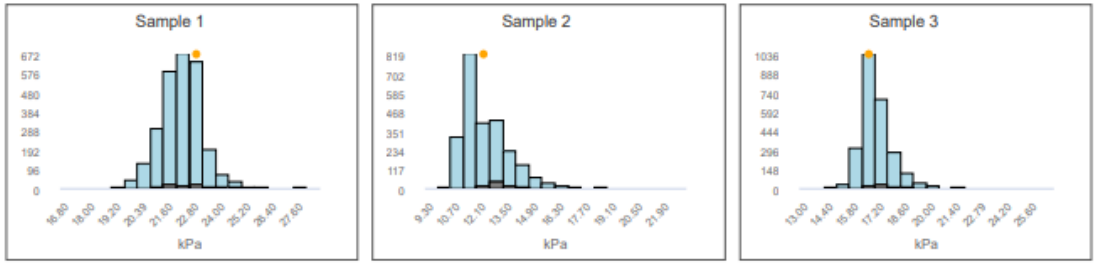


Precision

	BG0525	BG0625	BG0725	BG0825	BG0925	This distribution: BG1025
Sy.x	0.13	0.08	0.03	1	0.04	0.39
IS	2	0	0	37	0	14

Sy.x is the average deviation from the best fit line and is an index of scatter.

IS Score	Interpretation
0 to 10	Good
11 to 150	Acceptable to Warning level
> 150	Unacceptable (incl. Curvilinear Data)



All Results · My Method · My Instrument · My Result

Method Summary

BG1025	Sample 1		Sample 2		Sample 3	
Method Name	**Mean**	**CV%**	**Mean**	**CV%**	**Mean**	**CV%**
ABL 800 Series (n=17)	22.74	2.6	13.56	1.6	17.81	2.3
ABL 90 FLEX (n=1027)	22.81	2.6	11.54	2.8	17.02	2.8
cobas b 123 (n=22)	22.48	4.2	11.89	3.8	16.72	3.8
cobas b 221 (n=22)	22.83	2.6	15.44	1.6	18.35	1.7
epoc (n=163)	23.02	4.4	13.65	9.2	18.23	5.5
Gem Premier 4000 (n=80)	**22.73**	**4.1**	**13.17**	**3.9**	**17.60**	**3.8**
Gem Premier 5000 (n=538)	21.68	3.4	12.18	5.0	16.82	3.6
i-STAT (n=393)	22.11	4.5	14.25	6.0	17.95	5.0
RAPIDLab 1200 System (n=6)	22.17	4.7	12.59	4.4	16.46	4.3
Rapidpoint 500/500e (n=300)	22.06	3.2	12.90	2.6	16.89	2.4

There are no Weqas or Participant supplied comments for pO2 for this distribution.

Programme: Blood Gas • **Distribution Code:** BG1025
Distribution Start: 13-Oct-2025 • Distribution End: 29-Oct-2025 • Report Issued: 07-Nov-2025 • Report Status: Final

Participant Code: • **Location:** A&E • **Analyser Name:** n/a • **Serial #:** 13127048
Date Samples received: 14-Oct-2025 • Date of Analysis: 15-Oct-2025 • Operator Details: • Storage Conditions: Ambient Temperature (18 - 30 °C)

Analyte: pO2 • **Method:** Gem Premier 4000 • **Kit:** na

pO2 kPa					
	Your reported result (kPa)		**Method: Gem Premier 4000**	**Instrument Model: Gem Premier 4000**	**Overall**
Sample 1	22.9	Mean	22.73	22.73	22.40
		SD	0.94	0.94	0.89
		Uncertainty	0.132	0.132	0.022
		n	80	80	2573
Sample 2	12.6	Mean	13.17	13.17	12.44
		SD	0.51	0.51	1.13
		Uncertainty	0.071	0.071	0.028
		n	80	80	2568
Sample 3	16.9	Mean	17.60	17.60	17.17
		SD	0.67	0.67	0.71
		Uncertainty	0.094	0.094	0.017
		n	80	80	2568

Your reported results for each sample

Method Mean, SD, uncertainty and n

Instrument Mean, SD, uncertainty and n

Overall Mean, SD, uncertainty and n

Target Value: This will show whether you have been scored against Reference value, method mean or overall mean

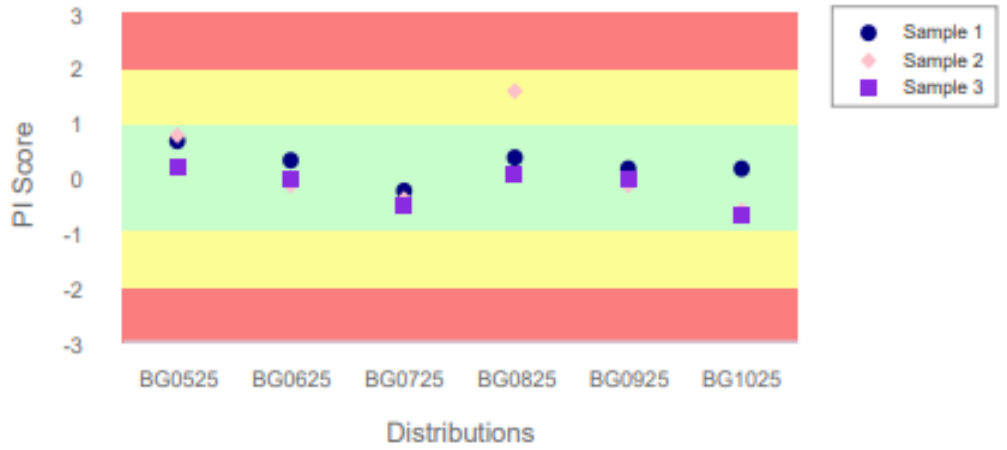
Overall Performance Category is assigned using an algorithm based on the individual sample PIs

Running PI chart shows the PI score for each sample for the current distribution and the last 5 distributions, with colour coding for each performance category

Scoring

Sample	1	2	3	Overall Performance
Target: (Method Mean)	22.73	13.17	17.6	
Weqas TAE	2.34	1.85	1.94	
PI	0.15	-0.62	-0.72	Good

Running PI



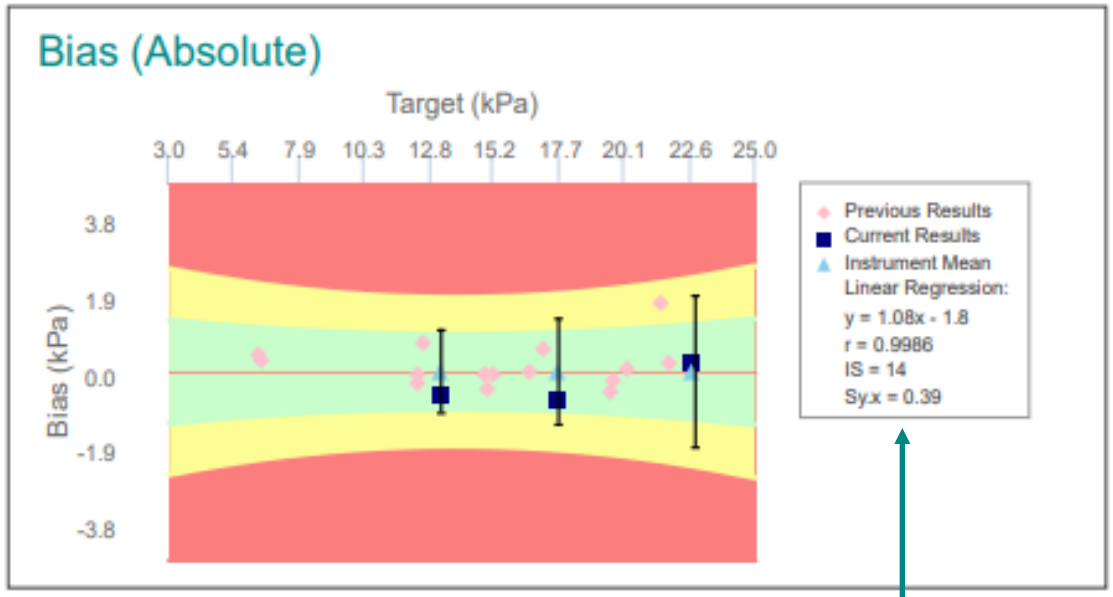
Weqas Total Allowable Error (TAE) (2 * Weqas SD)

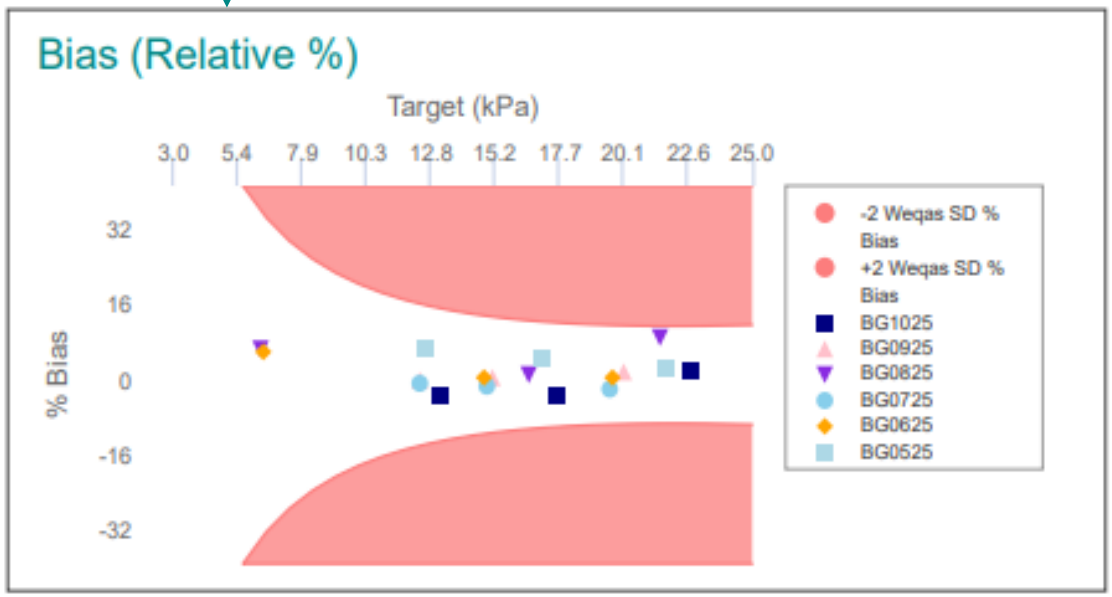
PI (Performance Index) score is shown for each sample

PI = (Reported Result – Target Value) / (Weqas TAE / 2)

The bias (Absolute) plot shows absolute bias in Weqas standard units for each sample for the current distribution and 5 previous distributions

The bias (Relative) plot shows the relative (%) bias to the target valuer the current results and the 5 previous distributions





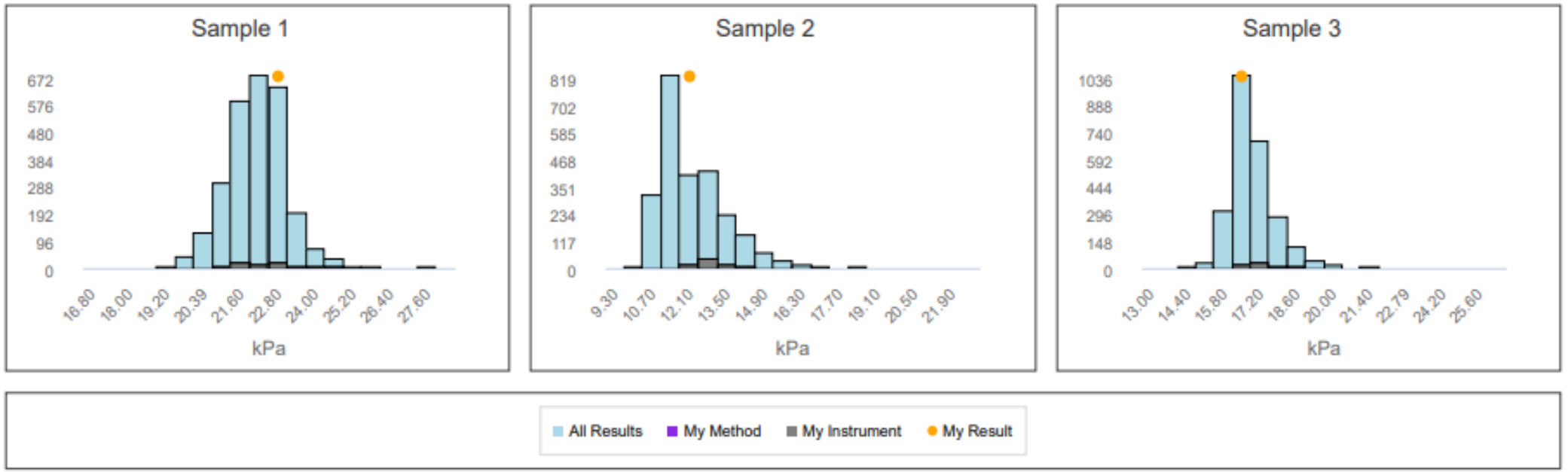
Linear regression analysis and indices of accuracy and precision are shown

Precision

	BG0525	BG0625	BG0725	BG0825	BG0925	This distribution: BG1025
Sy.x	0.13	0.08	0.03	1	0.04	0.39
IS	2	0	0	37	0	14

Sy.x is the average deviation from the best fit line and is an index of scatter.

IS Score	Interpretation
0 to 10	Good
11 to 150	Acceptable to Warning level
> 150	Unacceptable (incl. Curvilinear Data)


Sample 1
672
576
480
384
288
192
96
0
16.80
18.00
19.20
20.39
21.60
22.80
24.00
25.20
26.40
27.60
kPa
Sample 2
819
702
585
468
351
234
117
0
9.30
10.70
12.10
13.50
14.90
16.30
17.70
19.10
20.50
21.90
kPa
Sample 3
1036
888
740
592
444
296
148
0
13.00
14.40
15.80
17.20
18.60
20.00
21.40
22.79
24.20
25.60
kPa
All Results
My Method
My Instrument
My Result

Method Summary

BG1025	Sample 1		Sample 2		Sample 3	
Method Name	**Mean**	**CV%**	**Mean**	**CV%**	**Mean**	**CV%**
ABL 800 Series (n=17)	22.74	2.6	13.56	1.6	17.81	2.3
ABL 90 FLEX (n=1027)	22.81	2.6	11.54	2.8	17.02	2.8
cobas b 123 (n=22)	22.48	4.2	11.89	3.8	16.72	3.8
cobas b 221 (n=22)	22.83	2.6	15.44	1.6	18.35	1.7
epoc (n=163)	23.02	4.4	13.65	9.2	18.23	5.5
Gem Premier 4000 (n=80)	**22.73**	**4.1**	**13.17**	**3.9**	**17.60**	**3.8**
Gem Premier 5000 (n=538)	21.68	3.4	12.18	5.0	16.82	3.6
i-STAT (n=393)	22.11	4.5	14.25	6.0	17.95	5.0
RAPIDLab 1200 System (n=6)	22.17	4.7	12.59	4.4	16.46	4.3
Rapidpoint 500/500e (n=300)	22.06	3.2	12.90	2.6	16.89	2.4

There are no Weqas or Participant supplied comments for pO2 for this distribution.

Overall Performance

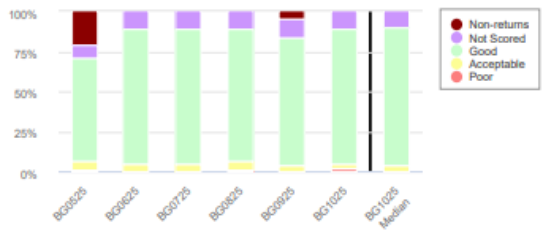
Traffic light colour	Performance category	Description
Red	Non-Return	(Any number of samples in distribution) and (No results submitted for any samples)
	Poor	(Any number of sample in distribution) and (one or more $\|PI\| > 3$)
		(number of samples in distribution = 1) and ($2 < \|PI\| \leq 3$)
		(number of samples in distribution > 1) and (2 or more $\|PI\| > 2$) *(Westgard 2_{2s})*
		(number of samples in distribution > 1) AND (sign $x_i \neq$ sign x_j)] AND $\|x_i\| > 2$ AND $\|x_j\| > 2$ * for at least one pair of scores x_i and x_j where x_n with $i \neq j$ are the individual sample-analyte scores for the instrument in question *(Westgard R_{4s})*
Orange	Warning	(number of samples in distribution > 1) and (single sample with $2 < \|PI\| \leq 3$) and (no sample with $\|PI\| > 3$)
Yellow	Acceptable	(any number of samples in distribution) AND ($1 <$ Max $\|PI\| \leq 2$)
Green	Good	$\|PI\| < 1$ for all samples Green is only assigned if all the individual samples are good.

Simplified Report – Managers Summary

Programme: **Blood Gas** • Distribution Code: **BG1025**
Distribution Start: 13-Oct-2025 • Distribution End: 29-Oct-2025 • Report Issued: 07-Nov-2025 • Report Status: Final
Requested By: gareth@weqas.com

This Distribution	
Your % Poor PI	2%
Median All Participant % Poor PI	0%
97.5th Centile % Poor PI	12%

Running PI analyte-sample Scores



PI Ranges	
<1	Good
1-2	Acceptable
>2	Poor

PI Scores

Location	A&E	ITU	Labour Ward	SCBU
Instrument Name				
Instrument Serial #	13127048	13127045	13127050	11115017
pH	N/S	N/S	N/S	N/S
[H+]	Good	Good	Good	Good
pCO2	Good	Good	Good	Good
pO2	Good	Good	Acceptable	Acceptable
Sodium	Good	Good	Good	Acceptable
Potassium	Good	Good	Good	Good
Chloride	Good	Good	N/A	Good
Ionized Calcium	Good	Good	N/A	Poor
Glucose	Good	Good	Good	Good
Lactate	Good	Good	Good	Good
Overall % poor PI	0%	0%	0%	7%
Overall % Non-return	0%	0%	0%	0%

PI Code	Meaning
N/A	Not enrolled for this analyte
NRR	Analyte enrolled but no results returned
N/S	This quantitative analyte not scored for this distribution

***** Please note********

The NQAAP expects 100% compliance on EQA returns. If you are enrolled for an analyte and have not returned a result (denoted by NRR in your PI table), this will be treated as a poor performance score. Please let us know as soon as possible if you are no longer providing this analyte as part of your diagnostic service.

Weqas are a UKAS ISO 17043 accredited EQA provider. Our accredited programmes are described on our UKAS schedule of accreditation which is available here: WEQAS 17043 Schedule of Accreditation

Distribution Specific Comment
There is no specific comment for this distribution.

No participant comments have been submitted for any instruments for this distribution.

Participant Code

Distribution details and report status.

Your % Poor PI (Performance Index) across all samples for all instruments, the Median All Participants % Poor PI and the 97.5th Centile % Poor PI.

The running table shows the current distribution PI scores, and the previous 5 distribution PI scores for all analytes, for your Participant Code, plus all-Participant Median performance.

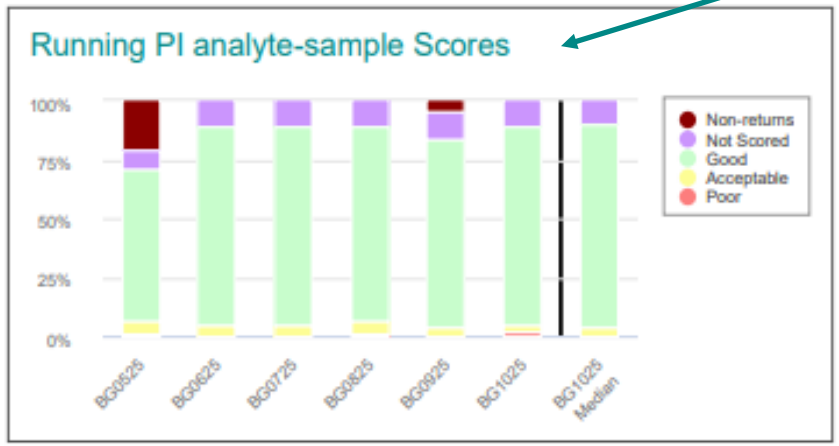
Participant Code: WQ00000
###########
###########
###########
#######
#######

Weqas

Unit 6, Parc Ty Glas
Llanishen
Cardiff
United Kingdom
CF14 5DU
Tel: 02920 314750
Email: office@weqas.com
Programme Organiser: Mrs Annette Thomas

Programme: **Blood Gas** • Distribution Code: **BG1025**
Distribution Start: 13-Oct-2025 • Distribution End: 29-Oct-2025 • Report Issued: 07-Nov-2025 • Report Status: Final
Requested By: gareth@weqas.com

This Distribution	
Your % Poor PI	2%
Median All Participant % Poor PI	0%
97.5th Centile % Poor PI	12%



PI Ranges	
<1	Good
1-2	Acceptable
>2	Poor

The PI Scores table shows performance for all analytes and all instruments.

PI Scores are converted into performance categories and colour coded.

Overall % Poor PI across all analytes for each instrument, and Overall % non return for each instrument.

Any Weqas comments or Participants comments are shown here

PI Scores

Location	A&E	ITU	Labour Ward	SCBU
Instrument Name				
Instrument Serial #	13127048	13127045	13127050	11115017
pH	N/S	N/S	N/S	N/S
[H+]	Good	Good	Good	Good
pCO2	Good	Good	Good	Good
pO2	Good	Good	Acceptable	Acceptable
Sodium	Good	Good	Good	Acceptable
Potassium	Good	Good	Good	Good
Chloride	Good	Good	N/A	Good
Ionized Calcium	Good	Good	N/A	Poor
Glucose	Good	Good	Good	Good
Lactate	Good	Good	Good	Good
Overall % poor PI	0%	0%	0%	7%
Overall % Non-return	0%	0%	0%	0%

PI Code	Meaning
N/A	Not enrolled for this analyte
NRR	Analyte enrolled but no results returned
N/S	This quantitative analyte not scored for this distribution

***** Please note********

The NQAAP expects 100% compliance on EQA returns. If you are enrolled for an analyte and have not returned a result (denoted by NRR in your PI table), this will be treated as a poor performance score. Please let us know as soon as possible if you are no longer providing this analyte as part of your diagnostic service.

Weqas are a UKAS ISO 17043 accredited EQA provider. Our accredited programmes are described on our UKAS schedule of accreditation which is available here: WEQAS 17043 Schedule of Accreditation

Distribution Specific Comment

There is no specific comment for this distribution.

No participant comments have been submitted for any instruments for this distribution.

Simplified Report – Analyte Page

Programme: Blood Gas • **Distribution Code:** BG1025
Distribution Start: 13-Oct-2025 • Distribution End: 29-Oct-2025 • Report Issued: 07-Nov-2025 • Report Status: Final

Participant Code: **Location:** A&E • **Analyser Name:** n/a • **Serial #:** 13127048
Date Samples received: 14-Oct-2025 • Date of Analysis: 15-Oct-2025 • Operator Details: • Storage Conditions: Ambient Temperature (18 - 30 °C)

Analyte: [H+] • **Method:** Gem Premier 4000 • **Kit:** na

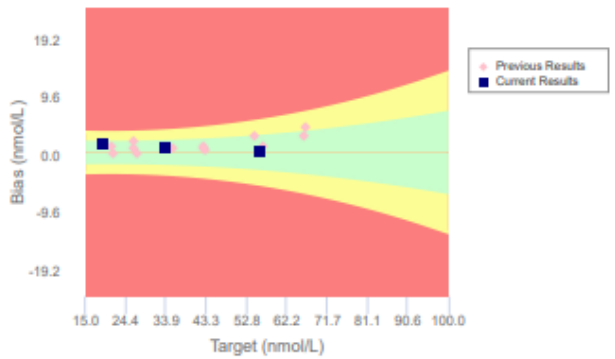
[H+] (nmol/L)	Sample 1	Sample 2	Sample 3
Your reported result (nmol/L)	20.42	56.23	34.67
Your results are scored against: (Method Mean)	19.15	56.06	33.85

Good
Acceptable
Poor – discuss with POCT Coordinator

Running Performance



Bias (Absolute)





Your overall performance for this analyte is: Good

- There are no current performance alerts for this analyte

There are no Weqas or Participant supplied comments for [H+] for this distribution.

Reports are very interactive.

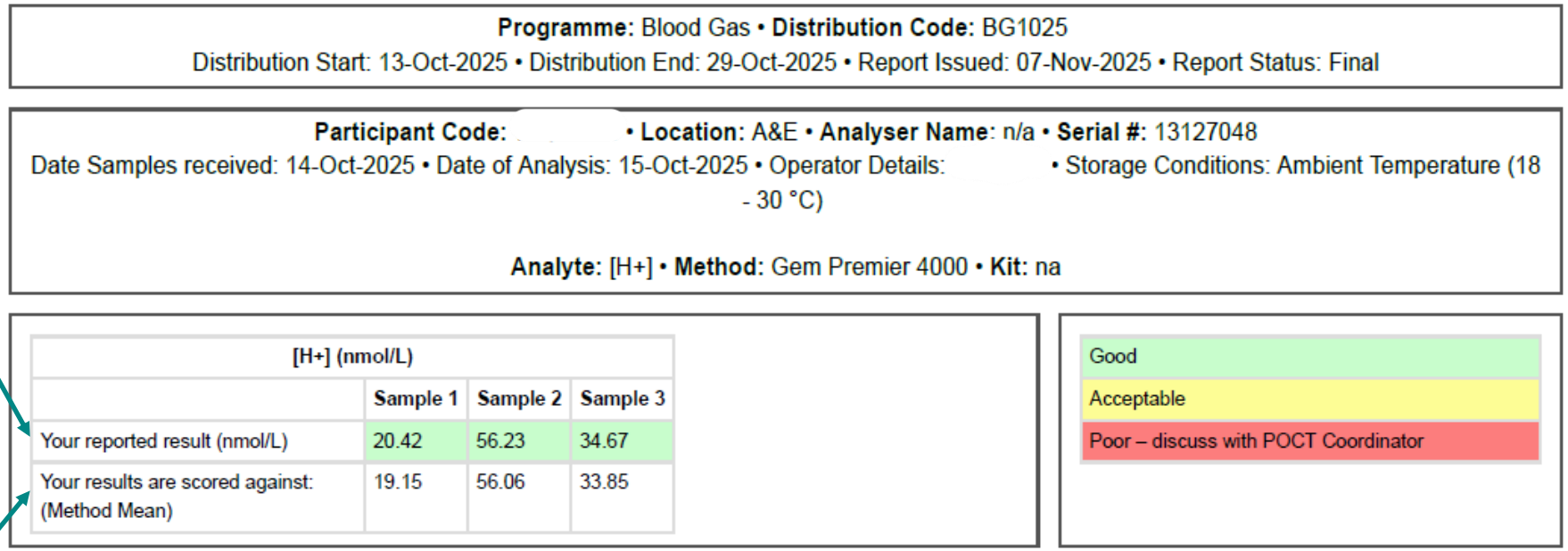
You can hover over various parts of any of the graphical displays within the reports to focus in on the element you wish to see.

[Sign in - Weqas Connect]

Simplified Reports

‘Your reported result’ will be shown in the units entered, in the Weqas standard units (if units entered are different from the Weqas standard units), and method corrected result (if appropriate for the analyte).

This will show whether you have been scored against Reference Value, Method Mean or Overall Mean and the actual target value will be shown here.



Programme: Blood Gas • **Distribution Code:** BG1025
Distribution Start: 13-Oct-2025 • Distribution End: 29-Oct-2025 • Report Issued: 07-Nov-2025 • Report Status: Final

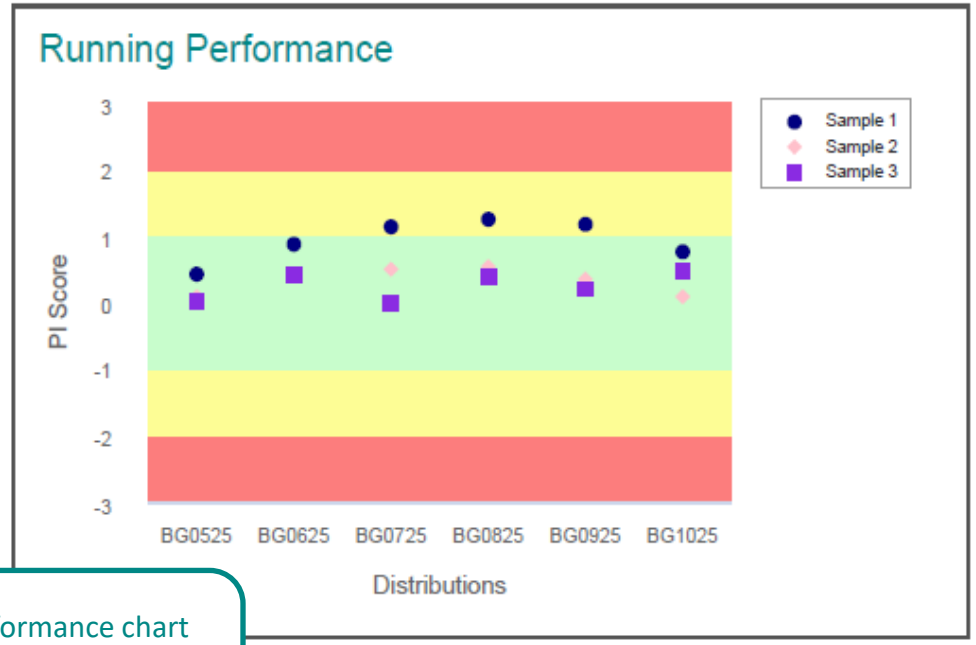
Participant Code: • **Location:** A&E • **Analyser Name:** n/a • **Serial #:** 13127048
Date Samples received: 14-Oct-2025 • Date of Analysis: 15-Oct-2025 • Operator Details: • Storage Conditions: Ambient Temperature (18 - 30 °C)

Analyte: [H+] • **Method:** Gem Premier 4000 • **Kit:** na

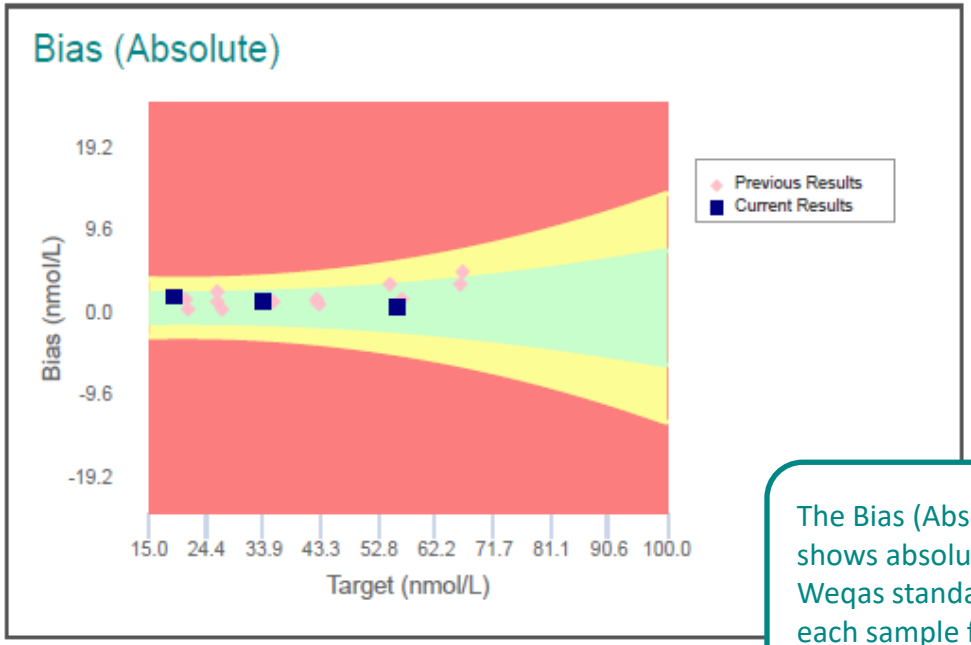
[H+] (nmol/L)			
	Sample 1	**Sample 2**	**Sample 3**
Your reported result (nmol/L)	20.42	56.23	34.67
Your results are scored against: (Method Mean)	19.15	56.06	33.85

Good
Acceptable
Poor – discuss with POCT Coordinator

Simplified Reports



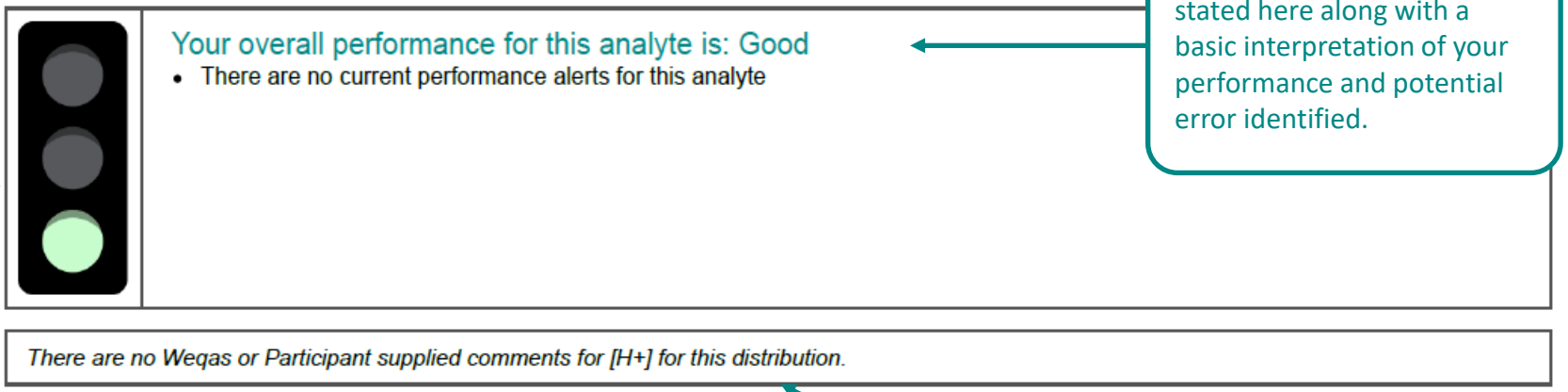
Running Performance chart shows the PI (Performance Index) score for each sample for the current distribution and the last 5 distributions, with colour coding for each performance category.



The Bias (Absolute) Plot shows absolute bias in Weqas standard units for each sample for the current distribution. The x-axis is the target value; if the target value is a Reference Value or the Overall Mean, your Method Means will be plotted.

Simplified Reports

Overall Performance is shown as a 'Traffic light', with performance colour coded to easily identify the performance category.



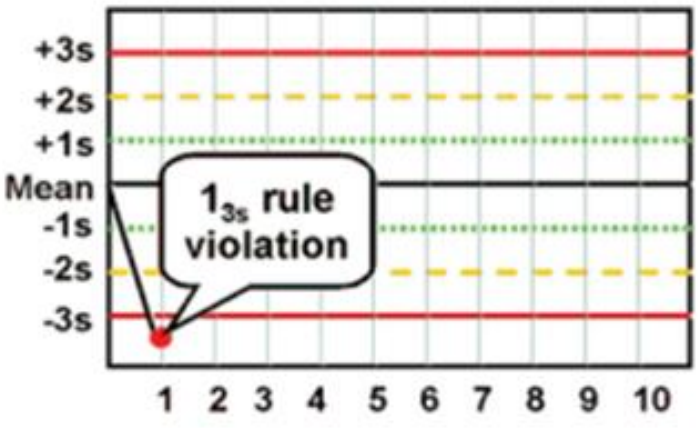
Overall Performance is stated here along with a basic interpretation of your performance and potential error identified.

Analyte Specific Comments from Weqas or participant.

Performance Comments

Your results for this distribution are acceptable
You have at least one sample in this distribution with a poor score: |score| > 2
You have at least two samples in this distribution with a poor score: |score| > 2
Your results show a consistent bias.
Please discuss your results with your EQA officer / POCT Co-ordinator
There are no current performance alerts for this analyte
Non-compliance: you have not reported results for this analyte
You have at least one sample in this distribution with a very poor score: |score| > 3
Your results suggest a potential bias
You have poor performance for this distribution due to a mixed positive and negative bias
Scoring is currently unavailable for your reported results
You have a poor score for this distribution: |score| > 2

Examples of rules used for the Performance Alert

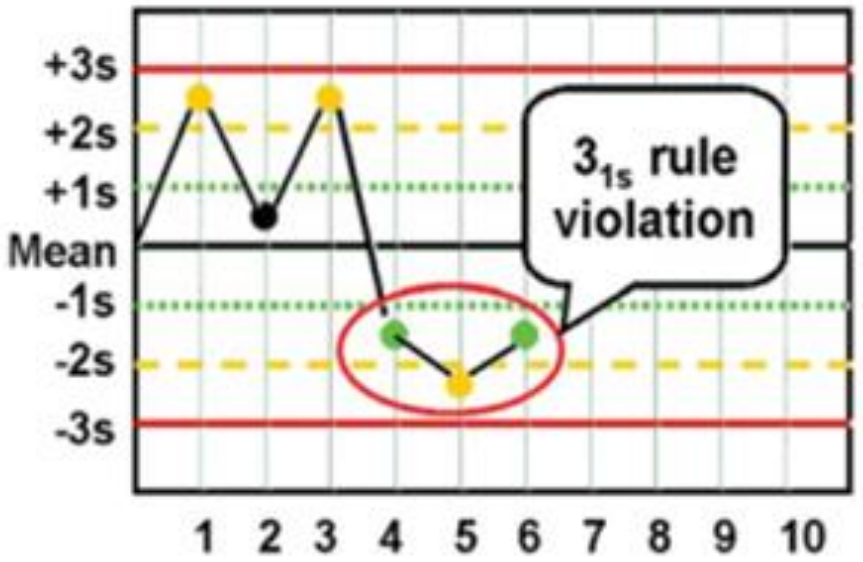


Comment:
You have at least one sample in this distribution with a very poor score: |score| > 3



Comment:
You have at least two samples in this distribution with a poor score: |score| > 2

Consistent Bias



Comment:
Your results show a consistent bias.

The rule is used when the distribution has a set of 3 or more samples.

If the PI (Performance Index) for all samples is >1 OR PI for all samples < -1

The rule does not show whether the bias is positive or negative, but indicates that there is a bias to be investigated.

This example shows a negative bias.

POCT Co-ordinators Report

Reports are very interactive.

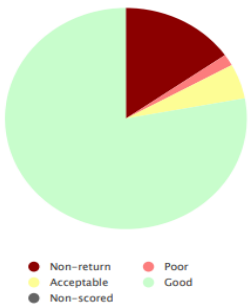
You can hover over various parts of any of the graphical displays within the reports to focus in on the element you wish to see.

[Sign in - Weqas Connect]

Participant Code:

Programme: **POCT Glucose and Ketones** • Distribution Code: **GK1025** • Analyte: **Glucose** • Units: **mmol/L**
Distribution Start: 30-Sep-2025 • Distribution End: 21-Oct-2025 • Report Issued: 31-Oct-2025 • Report Status: Final

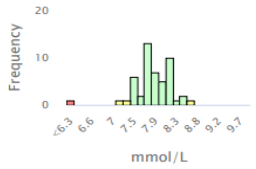
Overall



	Overall		Sample 1	
	n	%	n	%
Good	46	78	46	78
Acceptable	3	5.1	3	5.1
Poor	1	1.7	1	1.7
Non-Return	9	15.3	9	15.3
Non-scored	0	0	0	0
Total	59		59	

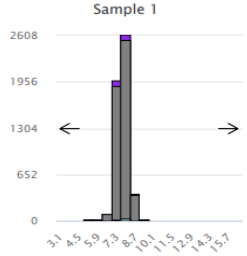
Hyperlinks on 'Poor' and 'Non Returns' to take you to further information.

Sample 1 – My Results – Nova StatStrip Connectivity



Method		Nova StatStrip Connectivity
Target Value Type		Method Mean
	Sample 1	
Target Value	8.05	
	My result(s)	Method
Mean	7.92	8.05
SD	0.41	0.41
Uncertainty	0.058	0.007
n	50	5107

Sample 1



Method: Nova StatStrip Connectivity
Instrument: StatStrip Glucose/Ketone
Your results

Weqas supplied comment for Glucose:

There is no comment for Glucose for this distribution

POCT Co-ordinators Report

Participant Code, Distribution details and report status.

Analyte specific breakdown of performance categories for all samples.

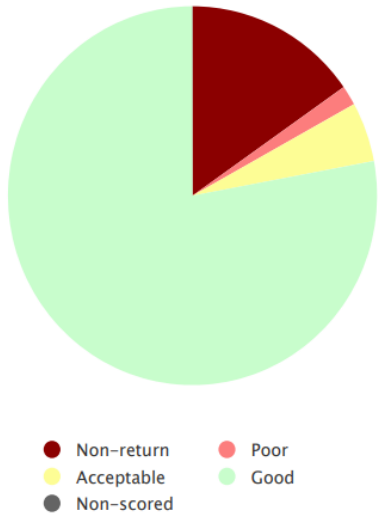
Numerical analyte specific breakdown of performance categories for each sample and overall for your Participant, Group or Super Group dependent on access level and report chosen.

Participant Code:

Programme: **POCT Glucose and Ketones** • Distribution Code: **GK1025** • Analyte: **Glucose** • Units: **mmol/L**

Distribution Start: 30-Sep-2025 • Distribution End: 21-Oct-2025 • Report Issued: 31-Oct-2025 • Report Status: Final

Overall



	Overall		Sample 1	
	n	%	n	%
Good	46	78	46	78
Acceptable	3	5.1	3	5.1
Poor	1	1.7	1	1.7
Non-Return	9	15.3	9	15.3
Non-scored	0	0	0	0
Total	59		59	

Poor Performance report from Hyperlink

Participant Code:

Programme: **POCT Glucose and Ketones** • Distribution Code: **GK1025** • Analyte: **Glucose** • Units: **mmol/L**

Distribution Start: **30-Sep-2025** • Distribution End: **21-Oct-2025** • Report Issued: **31-Oct-2025** • Report Status: **Final**

Location	Serial #	Name	Sample 1 result	Sample 1 score	Overall performance
			6	-3.49	Poor

Request PDF of Simplified Analyte reports for all poor performing instruments for this analyte Request PDF

PDF will be created only for the sites that have poor performance to allow full review of the individual reports.

Non-Returns report from Hyperlink

Non-Returns Report

Participant: **WQ00001**

Programme: **POCT INR** •Distribution Code: **IN0922** • Analyte: **INR**

Distribution start: **13-Sep-2022** •Distribution End: **11-Oct-2022** • Report Issued: **26-Oct-2022** • Report Status: **n/a**

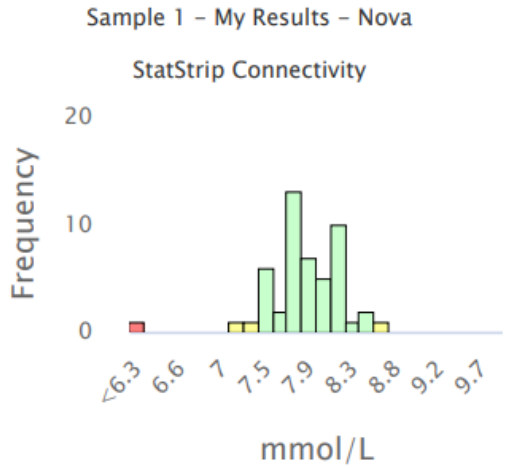
Participant Code	Location	Serial #	Name
WQ00001	POCT Lab		n/a
WQ00001	POCT Lab		n/a

POCT Co-ordinators Report

Method specific data table showing:

- Target Value to which the submitted result is compared against and Target Value type e.g. Method Mean.
- Mean and SD of your submitted results for this method / instrument.
- Method data (all participants within this method) is also supplied in the right-hand column.

If you have more than one meter type, this data will be shown in a separate table.

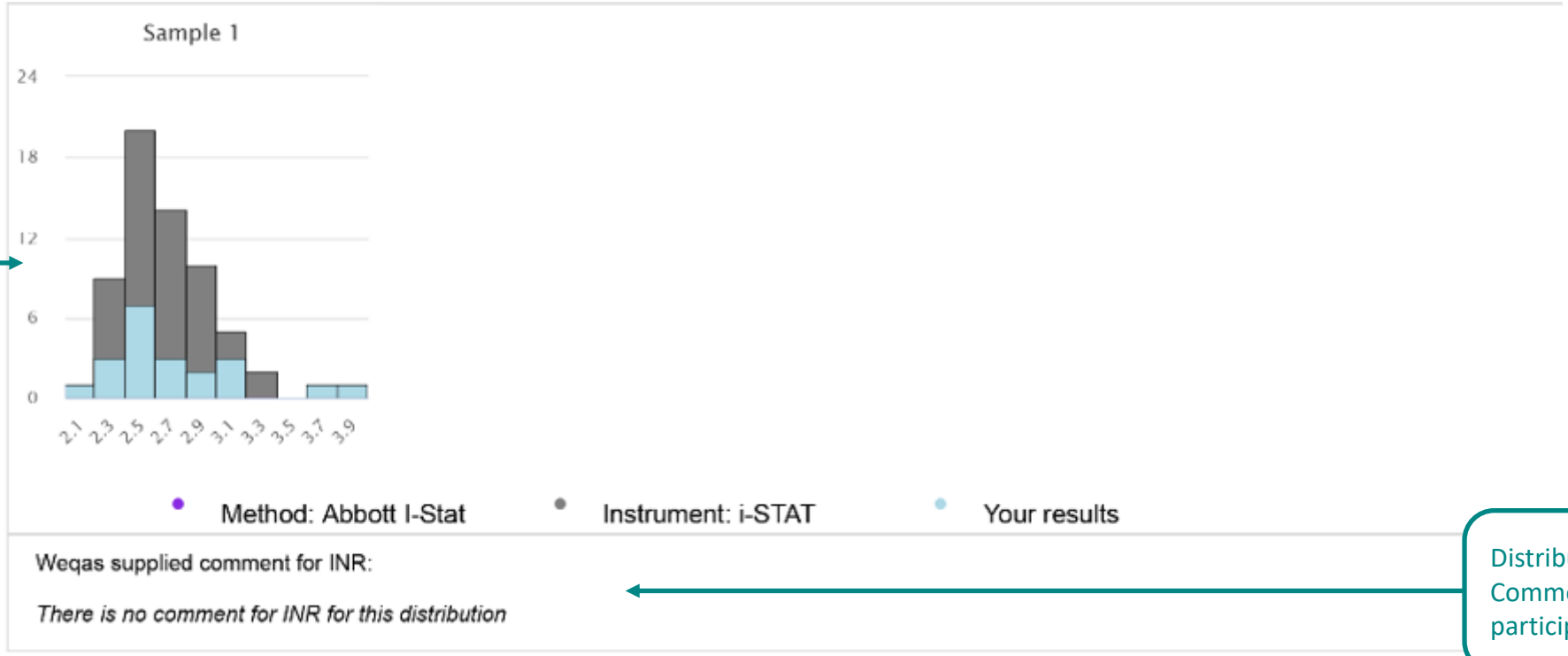


Histograms showing the spread of your results. Bars are colour coded to show performance categories across the range.

Method		Nova StatStrip Connectivity
Target Value Type		Method Mean
	Sample 1	
Target Value	8.05	
	My result(s)	Method
Mean	7.92	8.05
SD	0.41	0.41
Uncertainty	0.058	0.007
n	50	5107

POCT Co-ordinators Report

Histogram showing breakdown of results for each sample, showing the spread of results for your method, your instrument and your submitted results.

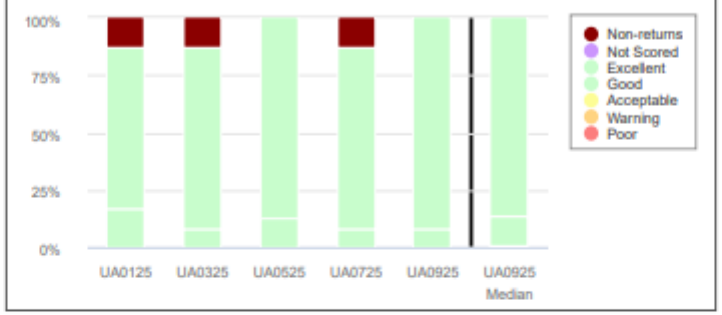


Distribution Specific Comments from Weqas or participant.

POCT Urinalysis Report – Managers Summary

Programme: **POCT Urinalysis** • Distribution Code: **UA0925**
Distribution Start: 08-Sep-2025 • Distribution End: 29-Sep-2025 • Report Issued: 10-Oct-2025 • Report Status: Final
Requested By: gareth@weqas.com

This Distribution	
Your % Poor PI	0%
Median All Participant % Poor PI	0%
97.5th Centile % Poor PI	3%



PI Ranges	
0	Excellent
1	Good
2	Acceptable
3	Warning
4	Poor

PI Scores

Location	POCT Lab	
Instrument Name	Clinitek	Urilyzer
Instrument Serial #	200124	6100072
Glucose	Excellent	Excellent
Ketones	Excellent	Excellent
Protein	Excellent	Excellent
Blood	Excellent	Excellent
Specific Gravity	Excellent	Good
pH	Good	Excellent
Bilirubin	Excellent	Excellent
Urobilinogen	Excellent	Excellent
Leucocytes	Excellent	Excellent
Nitrites	Excellent	Excellent
Albumin / Creatinine	Excellent	N/A
Urine Albumin (Microalbumin)	Excellent	N/A
Creatinine	Excellent	N/A
Ascorbic Acid	N/A	Excellent
Overall % poor PI	0%	0%
Overall % Non-return	0%	0%

POCT Urinalysis – Instrument / Strip Report

∗ indicates your selected response

Thick border indicates correct response(s)

Analyte	Kit	Responses	PI Score	Performance category
Glucose	10SG - 03536597 (2300)	100% (2143) **neg** ∗ | 0% (5) Trace (5.5 mmol/L) | 0% (2) 1+ (14 mmol/L) | 0% (1) 2+ (28 mmol/L) | 0% (0) 3+ (55 mmol/L) | 0% (0) 4+ (≥111 mmol/L)	0	Excellent
Bilirubin	10SG - 03536597 (2300)	99% (601) **neg** ∗ | 0% (2) 1+ | 0% (3) 2+ | 0% (1) 3+	0	Excellent
Ketones	10SG - 03536597 (2300)	17% (361) neg | 61% (1313) **Trace (0.5 mmol/L)** ∗ | 21% (458) 1+ (1.5 mmol/L) | 1% (16) 2+ (4 mmol/L) | 0% (1) 3+ (8 mmol/L) | 0% (2) 4+ (≥16 mmol/L)	0	Excellent
Specific Gravity	10SG - 03536597 (2300)	0% (2) 1 | 1% (22) 1.005 | 29% (526) **1.01** ∗ | 59% (1075) 1.015 | 9% (170) 1.02 | 1% (18) 1.025 | 0% (6) 1.03	0	Excellent

Instrument Report –

instrument / kit selection

Instrument Report

Distribution Code: **CR1023**
Distribution Date: **09-Oct-2023**
Analyte: **Creatinine (µmol/L)**
Method: **i-STAT**
Manufacturer: **Abbott**
Instrument Model: **i-STAT**
Kit: **Abbott 03P84-25 i-STAT CREA**

Creatinine

Key

red	Outside Expected Range
*	Method Transformed

Participant Code	1	2	3
WQ00074	380	1064	691
WQ00074	361	1118	673
WQ00074	362	1147	680
WQ00074	369	1068	682
WQ00074	378	1085	695
WQ00074	375	1054	689
WQ00074	354	1053	658
WQ00241	382	1114	674
WQ00291	346 *	1011 *	654
WQ00291	377	1138	663
WQ00295	344 *	1032 *	640
WQ00295	343 *	1050	627 *

Overall	1	2	3
Mean	243.7	702.8	432.3

SD	44.4	101.3	63.3
Uncertainty	4.32	9.86	6.19
Number	165	165	163
Reference Value			
Nonscoring Reference Value			

Method	Instrument	Kit		1	2	3
i-STAT			Mean	367.4	1096.4	672.1
			SD	12.2	40.2	23.2
			Uncertainty	1.64	5.38	3.15
			Number	87	87	85
	Abbott i-STAT		Mean	368	1090.2	669.3
			SD	12.7	50.2	25.5
			Uncertainty	2.86	11.47	5.81
			Number	31	30	30
		Abbott i-STAT CREA 03P84-25	Mean	368	1090.2	669.3
			SD	12.7	50.2	25.5
			Uncertainty	2.86	11.47	5.81
			Number	31	30	30

Weqas
Unit 6, Parc Tŷ Glas
Llanishen, Cardiff, CF14 5DU

Tel: 02920 314750
Email: contact@weqas.com

EXTERNAL QUALITY ASSESSMENT

INTERNAL QUALITY CONTROL

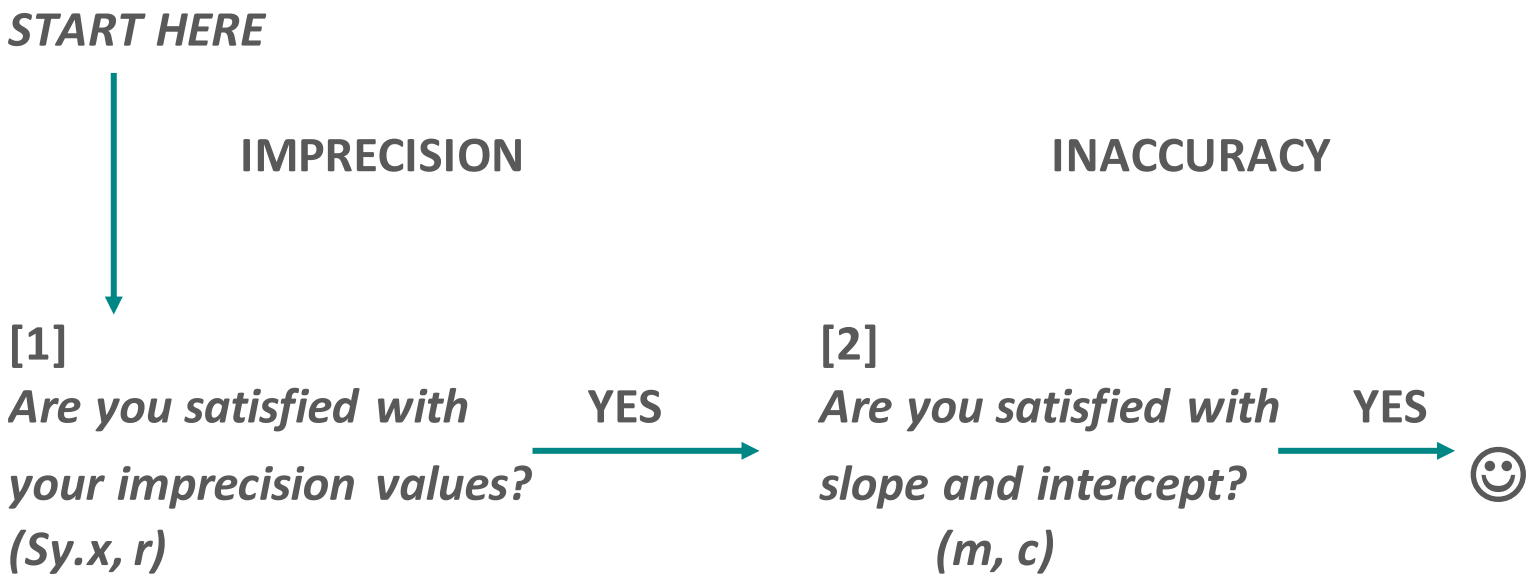
REFERENCE MEASUREMENT SERVICES

EDUCATION & TRAINING

Weqas | GLOBAL PROVIDER OF QUALITY IN DIAGNOSTIC MEDICINE

Problem Solving and Cases

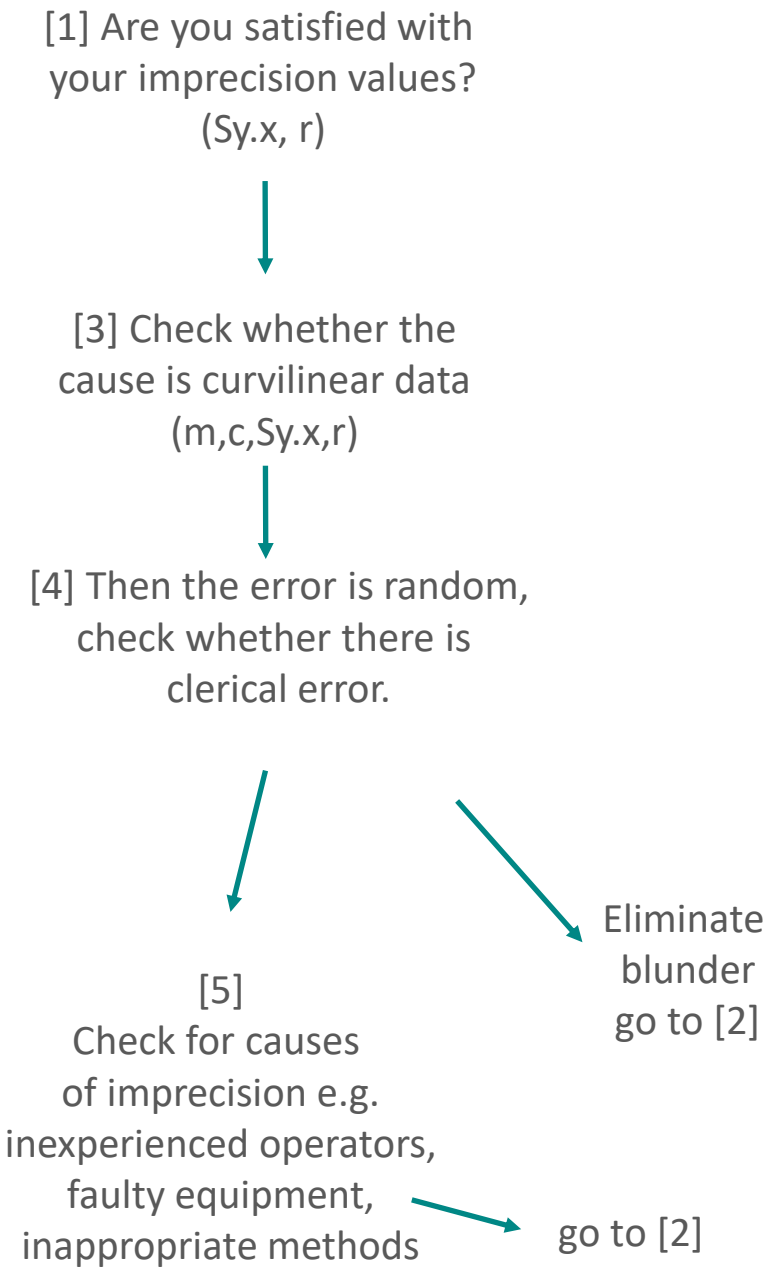
Problem Solving Flow Chart



Pages 18-19 of SP-QL1-IntLabEQA

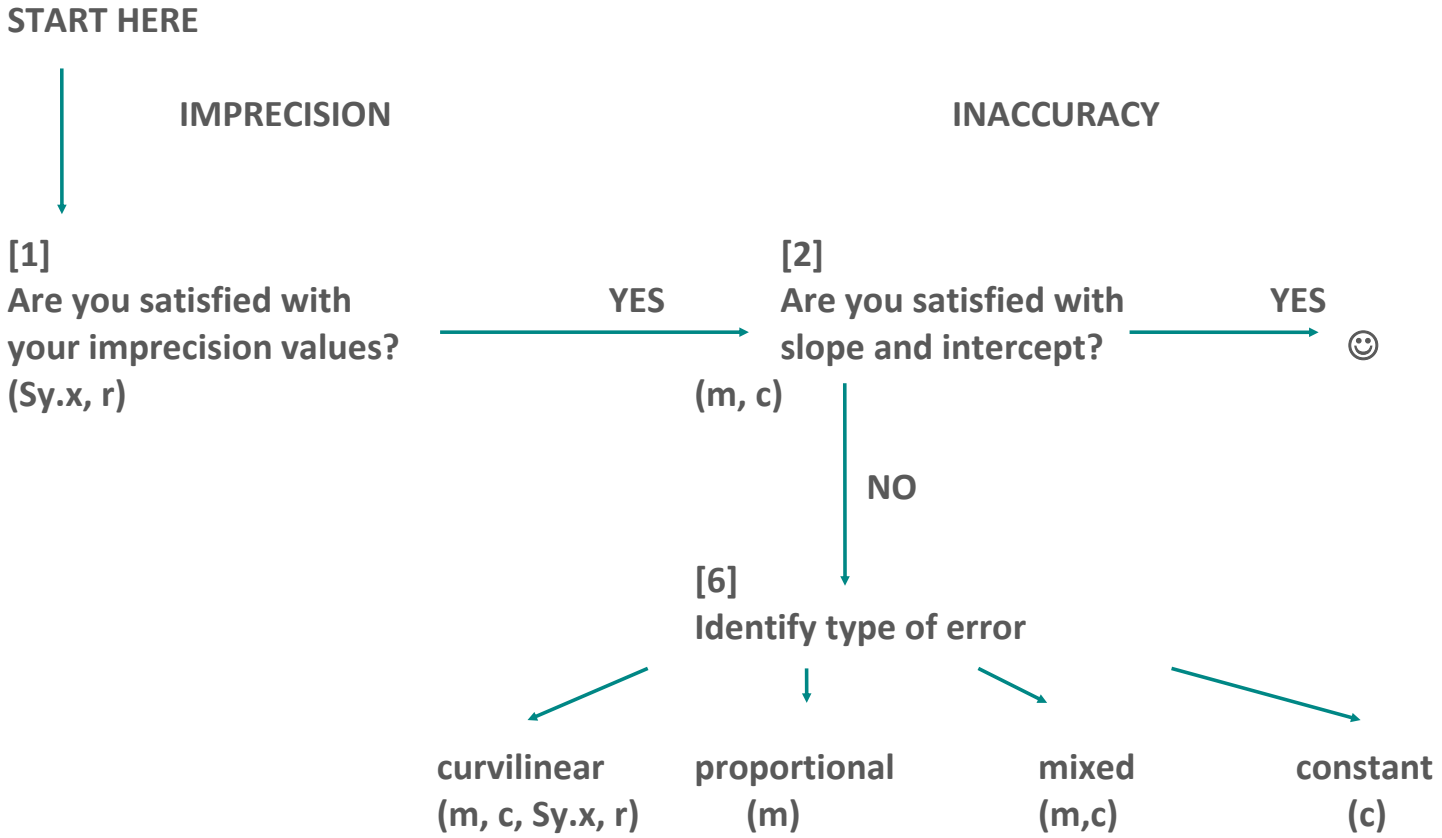
Problem Solving Flow Chart

IMPRECISION



Pages 18-19 of SP-QL1-IntLabEQA

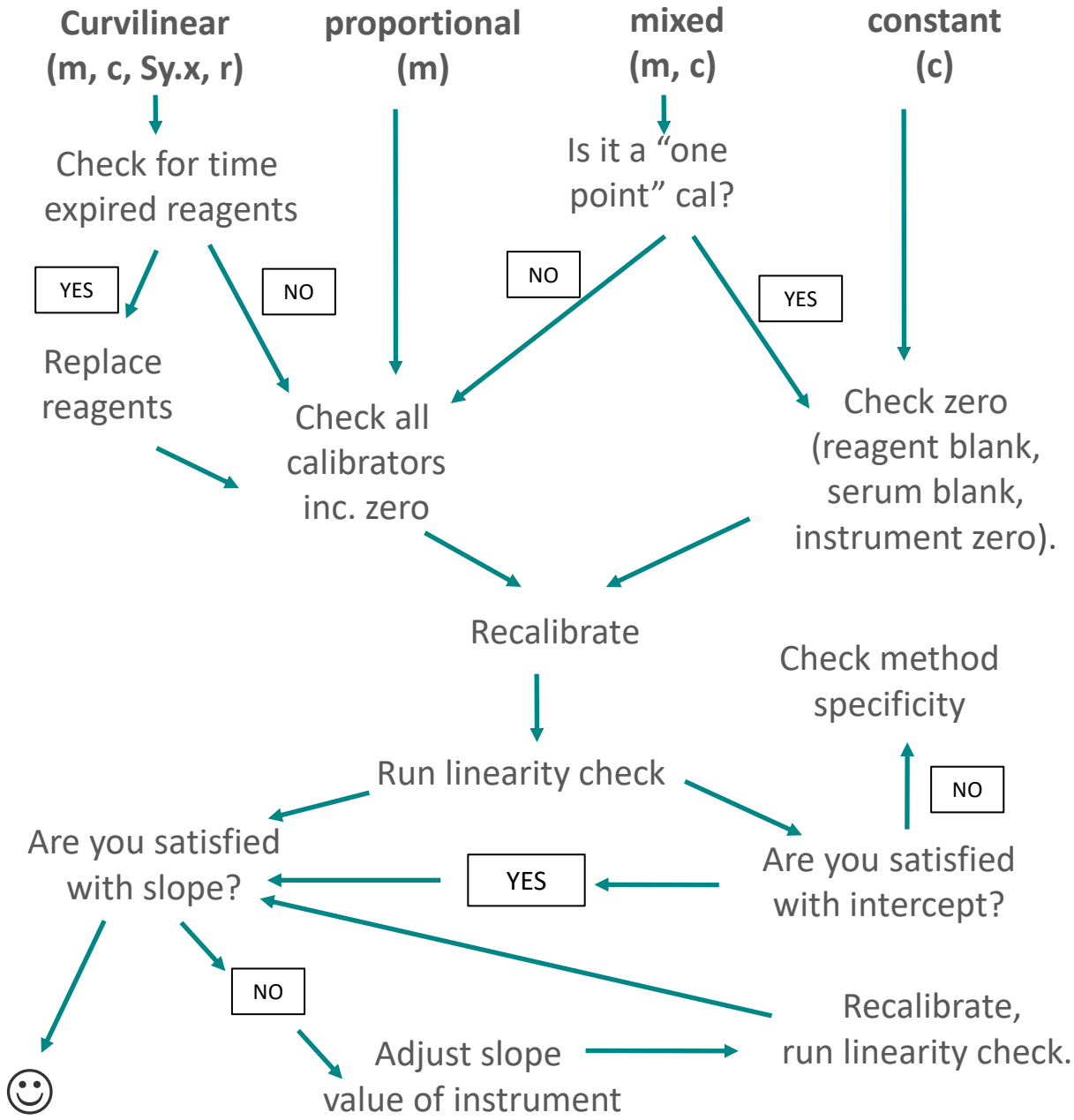
Problem Solving Flow Chart



Pages 18-19 of SP-QL1-IntLabEQA

Problem Solving Flow Chart

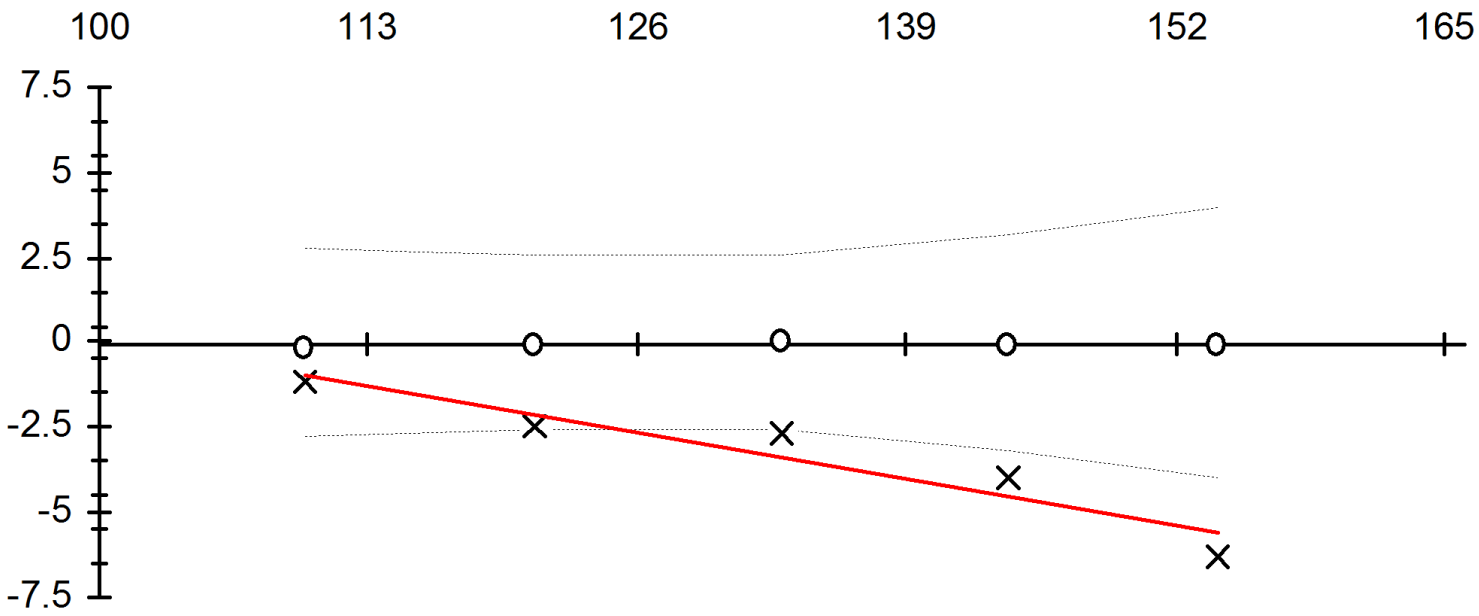
INACCURACY



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Bias plot (1)

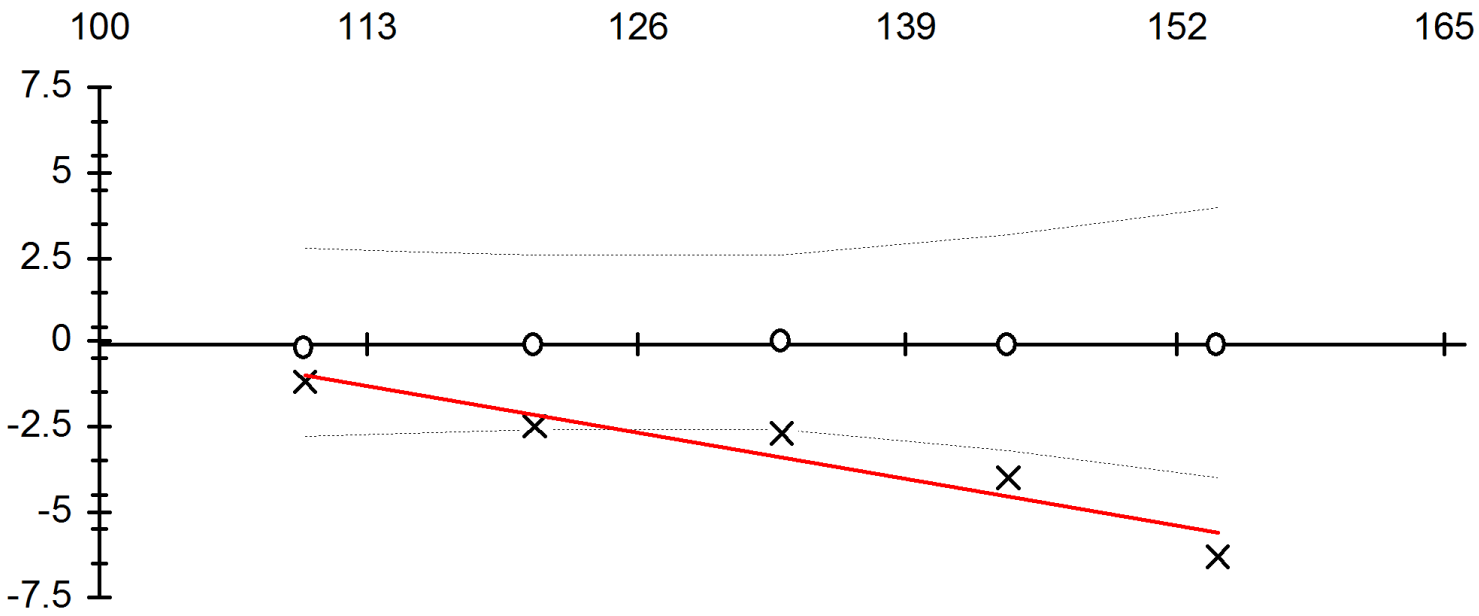
Sodium (mmol/l)



y = 0.9x + 9.6
r = 0.9995
IS = 5
Sy.x = 0.63

Bias plot (1)

Sodium (mmol/l)

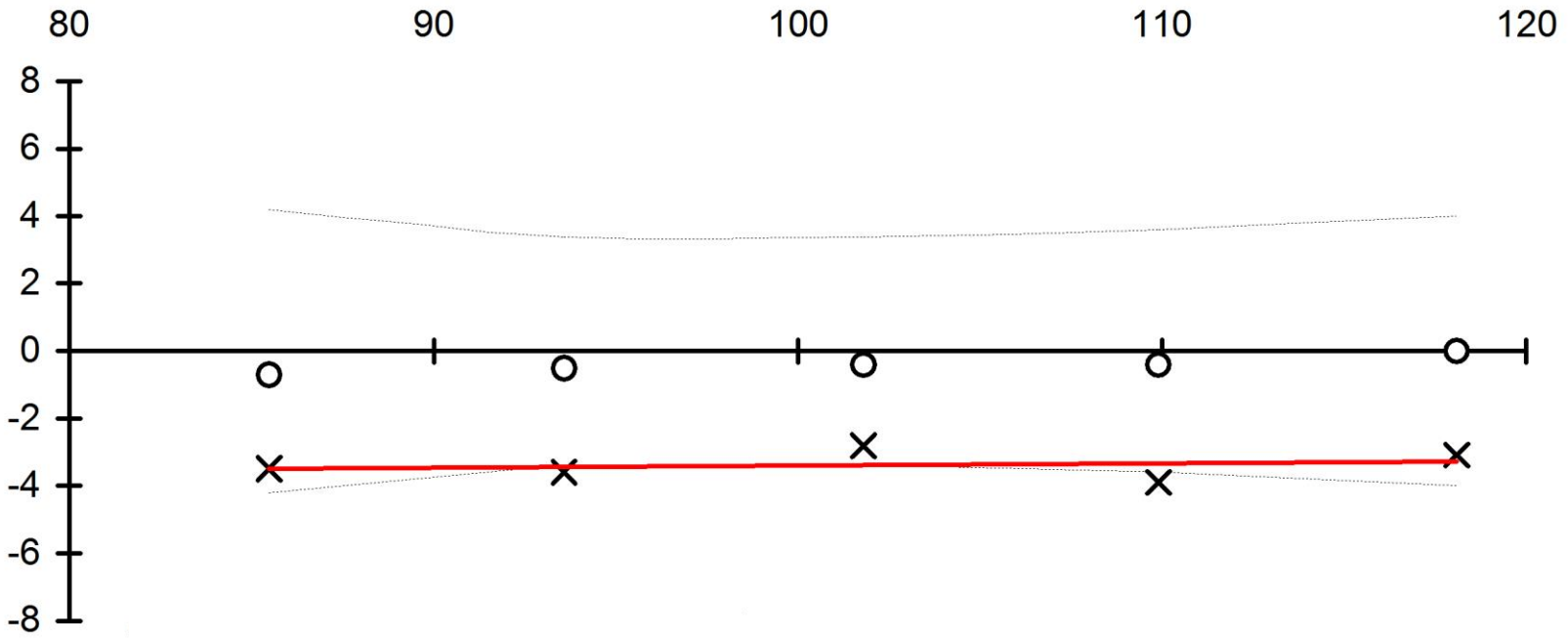


y = 0.9x + 9.6
r = 0.9995
IS = 5
Sy.x = 0.63

Imprecision – satisfactory
Inaccuracy – identify error
m= 0.9, c = +9.6 mmol/L – OK at 100 mmol/L
2.5% negative bias at 130 mmol/L, 4% negative bias at 160 mmol/L
Error – mixed. Two points calibration at 110 and 160 mmol/L
Cause – incorrect values for 160 mmol/L calibration

Bias plot (2)

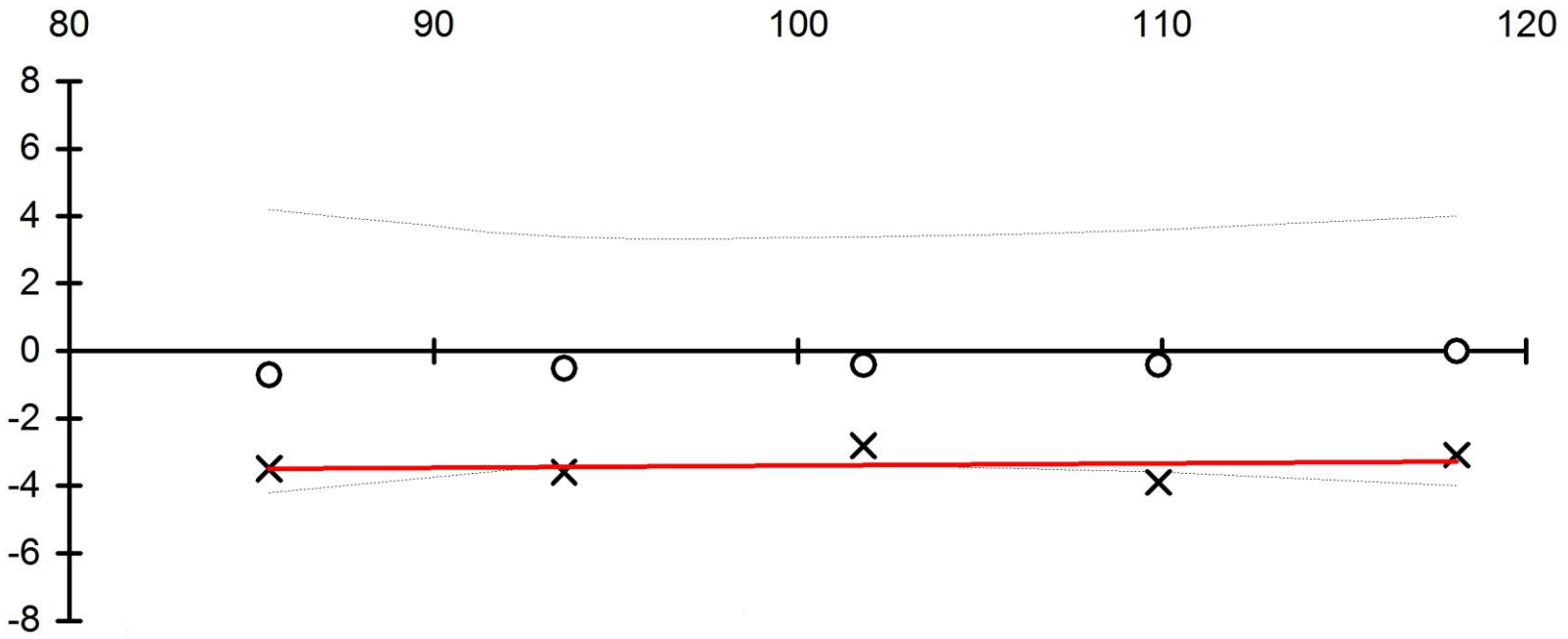
Chloride (mmol/l)



y = 1.01x -4.01
r = 0.9995
IS = 5
Sy.x = 0.49

Bias plot (2)

Chloride (mmol/l)

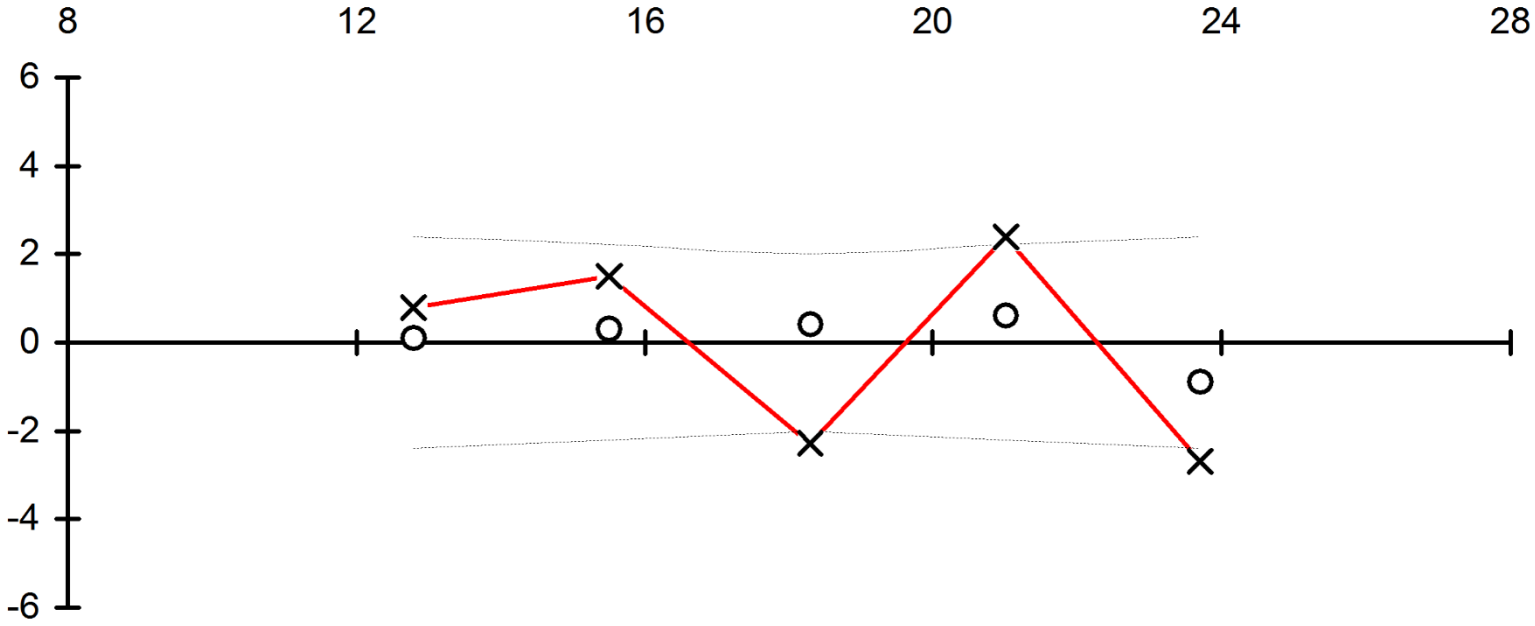


y = 1.01x -4.01
r = 0.9995
IS = 5
Sy.x = 0.49

Imprecision – satisfactory
Inaccuracy – identify error
c = -4.0 mmol/L
Error – systematic absolute. Results low by 4.0 mmol/L over whole range
Cause – incorrect serum blank compensation

Bias plot (3)

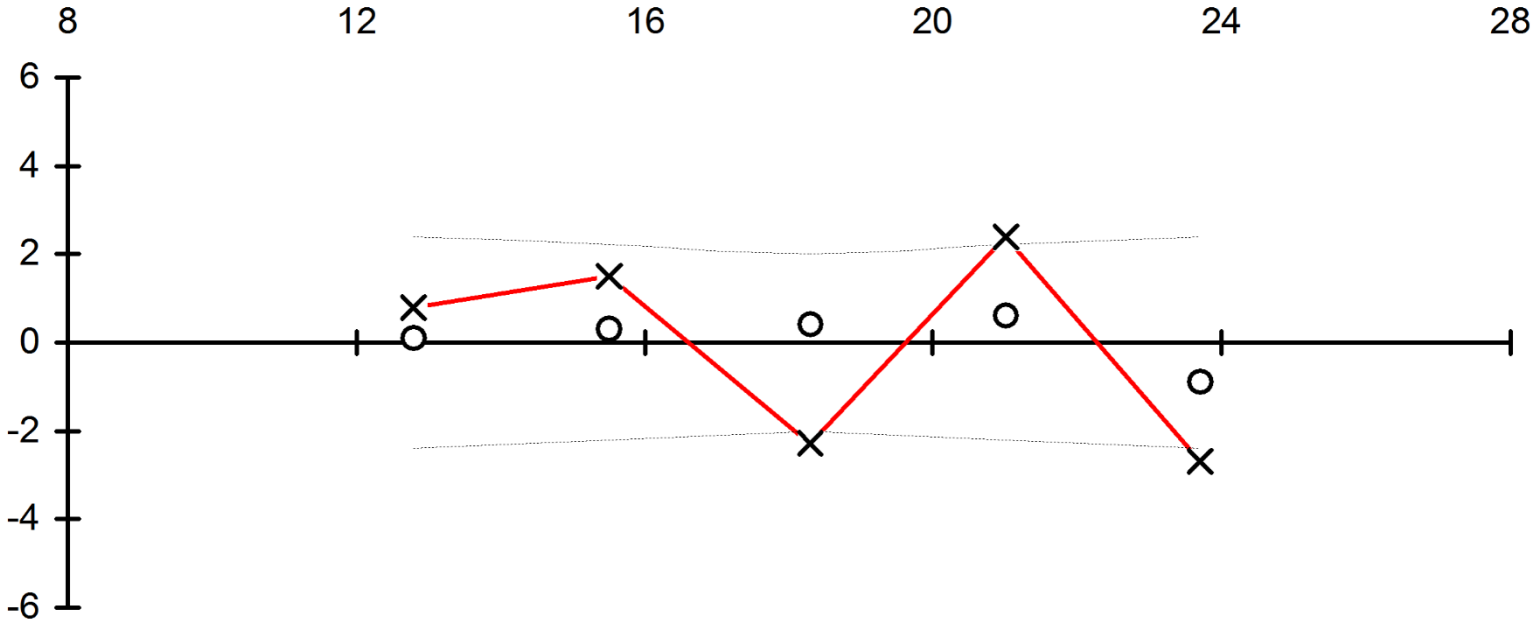
Bicarbonate (mmol/l)



y = slope not calculated
r = 0.8484
IS = 1516
Sy.x = 2.41

Bias plot (3)

Bicarbonate (mmol/l)

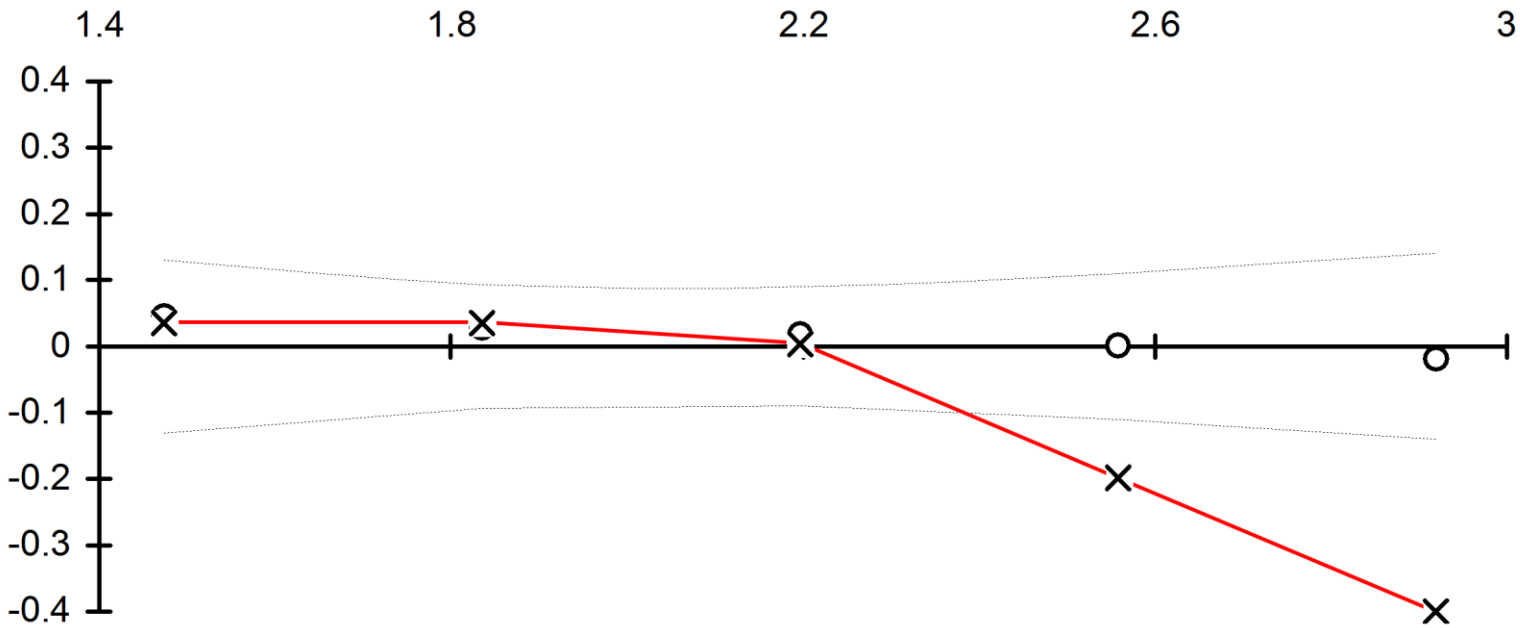


y = slope not calculated
r = 0.8484
IS = 1516
Sy.x = 2.41

Imprecision – unsatisfactory, r = 0.8484, Sy.x = 2.4 mmol/L
Not curvilinear
Error – random
Cause – faulty syringe on instrument

Bias plot (4)

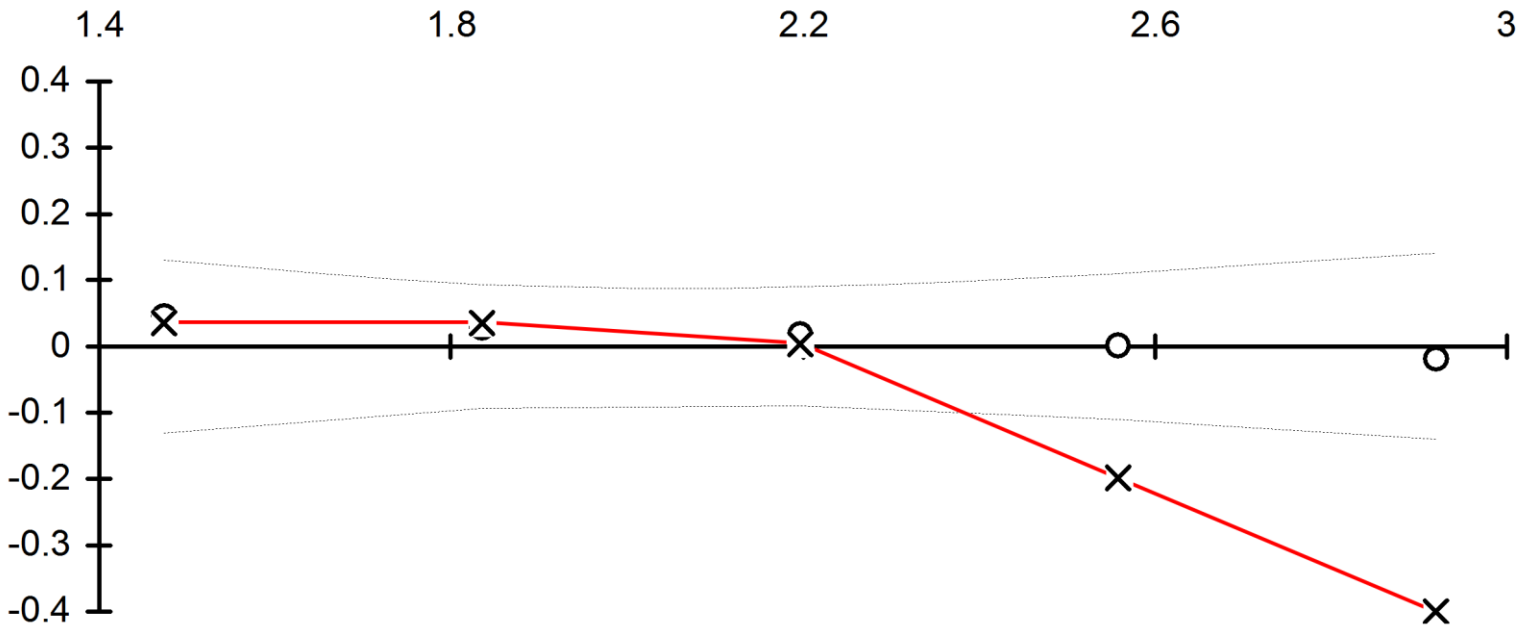
Calcium (mmol/l)



y = slope not calculated
r = 0.9810
IS = 190
Sy.x = 0.09

Bias plot (4)

Calcium (mmol/l)

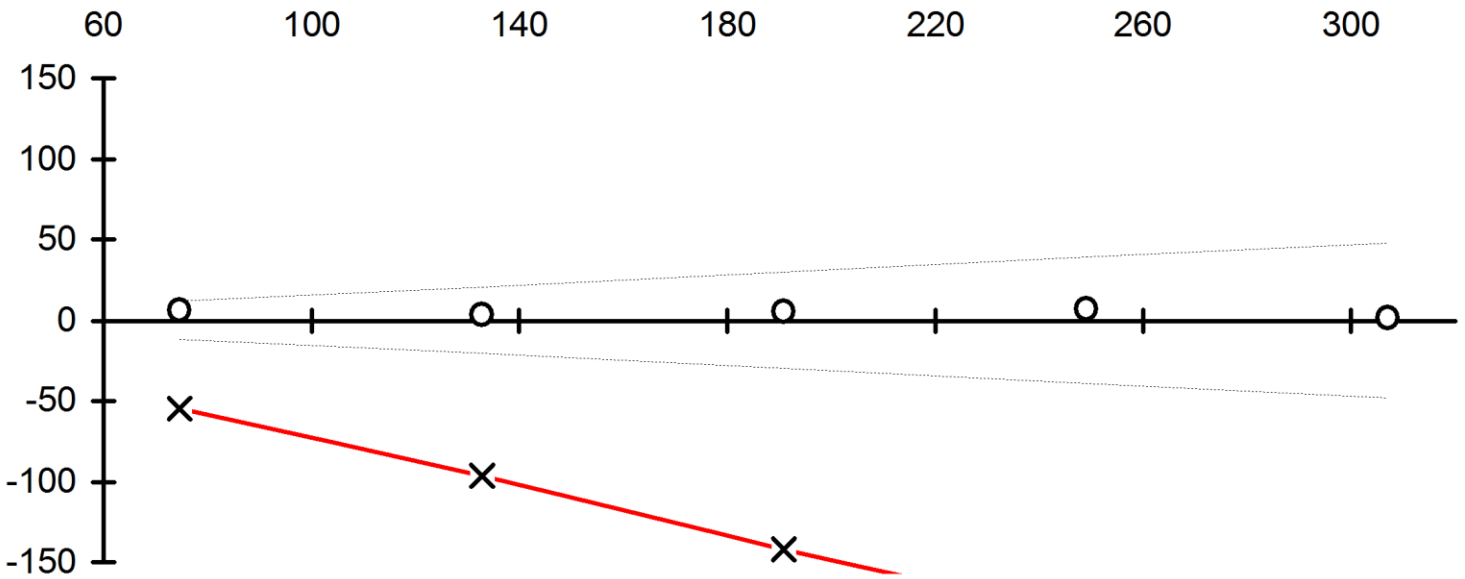


y = slope not calculated
r = 0.9810
IS = 190
Sy.x = 0.09

Imprecision – unsatisfactory, r = 0.9810, Sy.x = 0.09 mmol/L
Error – curvilinear data
Cause – time expired reagents

Bias plot (5)

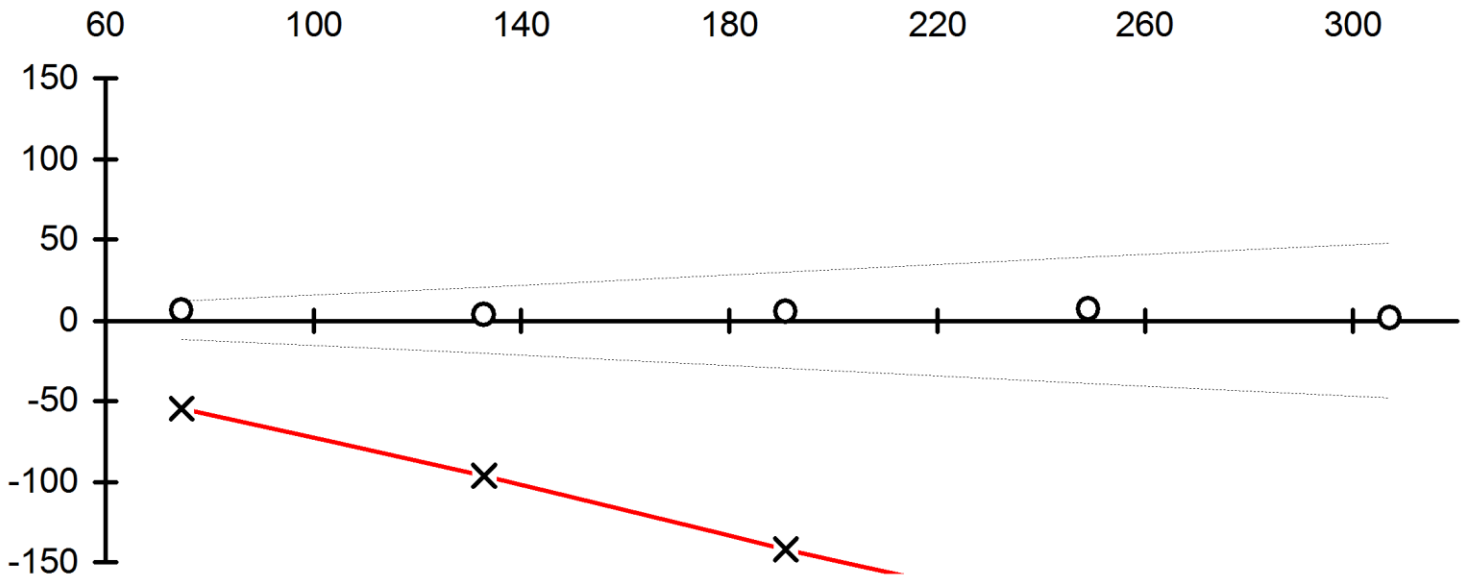
ALP (IU/L)



y = 0.50x +1.16
r = 0.9999
IS = 1
Sy.x = 1.30

Bias plot (5)

ALP (IU/L)



y = 0.50x +1.16
r = 0.9999
IS = 1
Sy.x = 1.30

Imprecision – satisfactory
Inaccuracy – identify error
m = 0.57
Error – systematic proportional error. Results low by 41% over the whole range
Cause – incorrect method group classification. The lab was using AMP not DEA buffer