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Weqas | GLOBAL PROVIDER OF QUALITY IN DIAGNOSTIC MEDICINE

EXTERNAL QUALITY ASSESSMENT

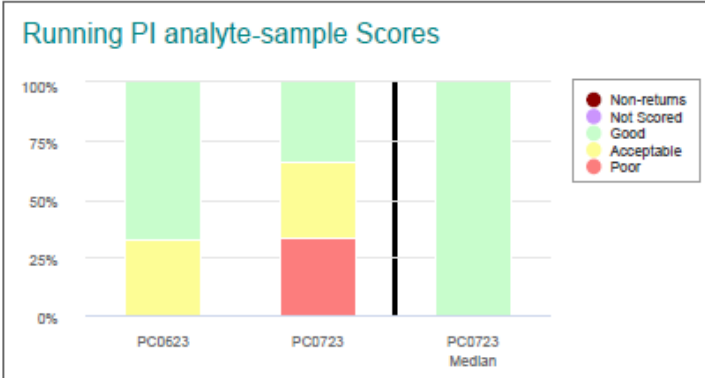INTERNAL QUALITY CONTROL

REFERENCE MEASUREMENT SERVICES

EDUCATION & TRAINING

Identifying Errors using Problem Solving Tools - a Practical Case Workshop

Sam Jones / Nicola Blount

Case study Example

Weqas

This Distribution	
Your % Poor PI	33%
Median All Participant % Poor PI	0%
97.5th Centile % Poor PI	55%

Running PI analyte-sample Scores

Legend: Non-returns, Not Scored, Good, Acceptable, Poor

PC0623, PC0723, PC0723 Median

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

Hyperlink to take you directly to the analyte report

Individual Sample PIs converted to performance category of 'warning'

PI Scores	
Location	
Instrument Name	
Instrument Serial #	1393-838R0
Procalcitonin	Warning
Overall % poor PI	33%
Overall % Non-return	0%

This instrument has 33% poor PI. Signifies that 1 sample out of the 3 samples for this distribution has a poor score (1 analyte, 3 samples).

No Weqas specific comment to note

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.

No Participant comment to note

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: WQ000 • **Location:** • **Analyser Name:** n/a • **Serial #:** 1393-838R0
Date Samples received: 19-Jul-2023 • **Date of Analysis:** 19-Jul-2023 • **Operator Details:** TH • **Storage Conditions:** 2 - 8 °C

Analyte: Procalcitonin • **Method:** Radiometer • **Kit:** PCT Test Kit (942-970)

Procalcitonin ng/ml					
	Your reported result (ng/ml)		Method: Radiometer	Instrument Model: AQT90 FLEX	Overall
Sample 1	0.58	Mean	0.575	0.575	0.485
		SD	0.024	0.024	0.038
		Uncertainty	0.0148	0.0148	0.0067
		n	4	4	52
Sample 2	4.4	Mean	4.525	4.525	3.551
		SD	0.251	0.251	0.294
		Uncertainty	0.1572	0.1572	0.0509
		n	4	4	52
Sample 3	9.5	Mean	9.325	9.325	7.291
		SD	0.457	0.457	0.615
		Uncertainty	0.2857	0.2857	0.1067
		n	4	4	52

Hyperlink here to drill down into instrument details for this method group.

Instrument Report

Distribution Code: PC0723
Distribution Date: 18-Jul-2023
Analyte: Procalcitonin (ng/ml)
Method: Radiometer
Manufacturer: All
Instrument Model: AQT90 FLEX
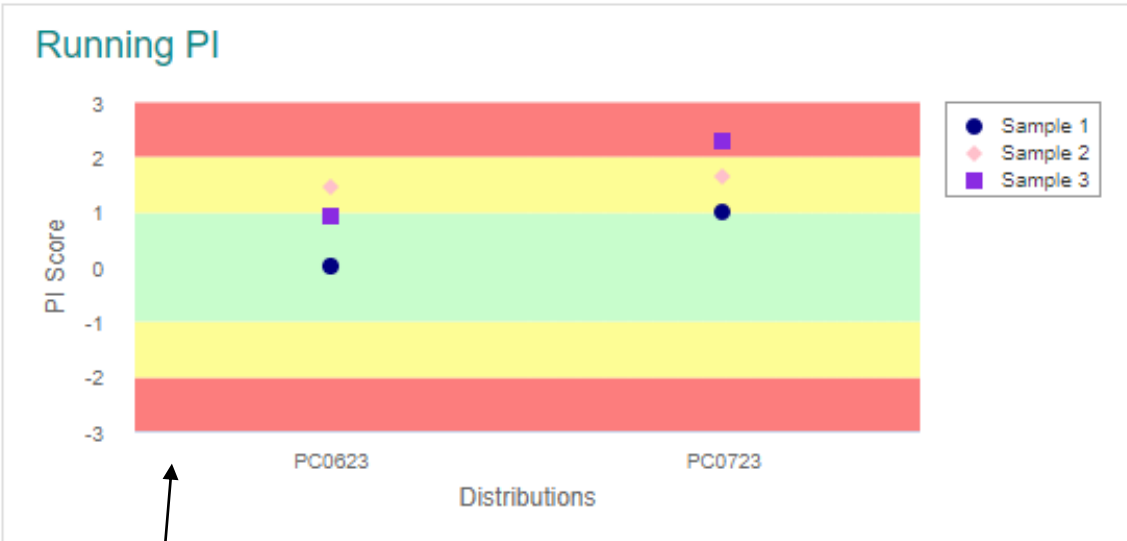**Kit:** All

Procalcitonin

Key

red	Outside Expected Range
*	Method Transformed

Participant Code	Location Name	Instrument Name	Instrument Serial Number	1	2	3
WQ0000			838R0	0.57	4.6	8.9
WQ00			1393-838R0	0.58	4.4	9.5
WQ0			I393-838R	0.55	4.3	9.1

Your result compared to Method and Overall Mean.

AQT90 Flex shows positive bias compared to the OM.

Target value shows whether you are scored against Overall Mean, Method Mean or Reference Value

Scoring

Sample	1	2	3	Overall Performance
Target: (Overall Mean)	0.485	3.551	7.291	
Weqas TAE	0.192	1.038	1.955	
PI	0.99	1.64	2.26	Warning

Running PI

Running PI shows worsening performance since PC0623
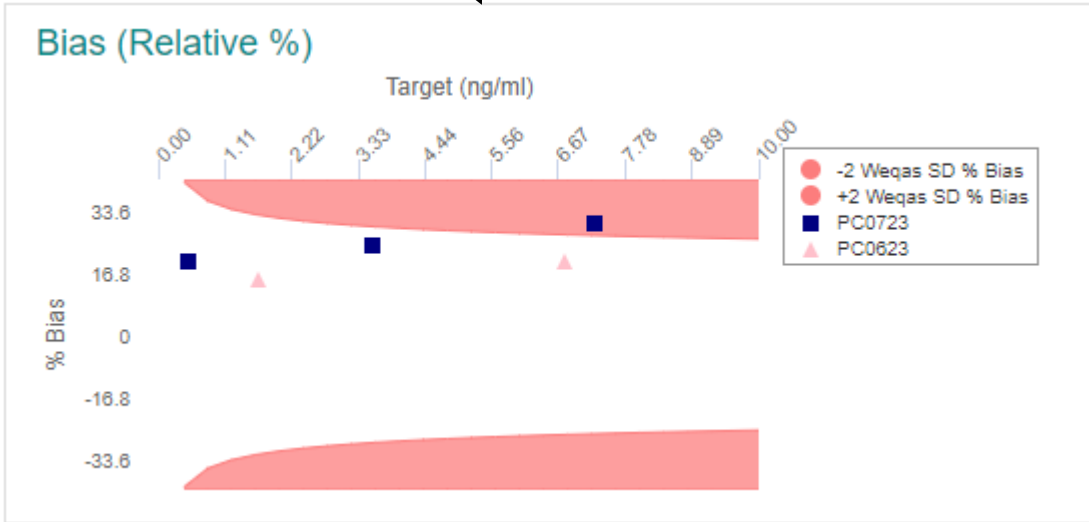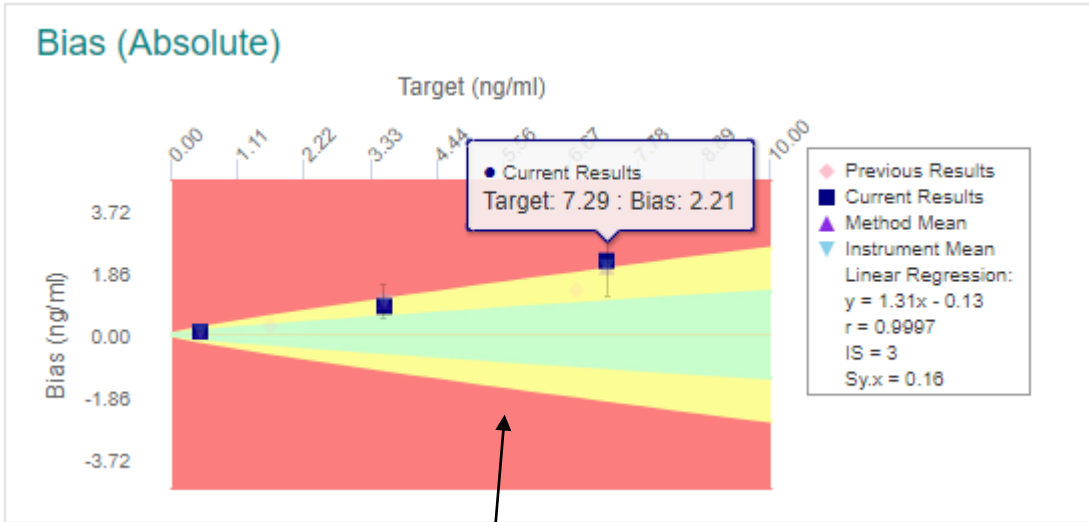
The histograms shows breakdown of results for each sample, showing the spread of results for All Results, 'My Method' and 'My Instrument'.

Precision

	PC0623	This distribution: PC0723
Sy.x		0.16
IS		3

*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)

The orange dot shows where your result lies. An orange arrow signifies your result is outside of the graph limits.

Sample 1 — ng/ml

Sample 2 — ng/ml

Sample 3 — ng/ml

■ All Results   ■ My Method   ■ My Instrument   ● My Result

The Method Summary shows Mean and CV for each Method for each sample.
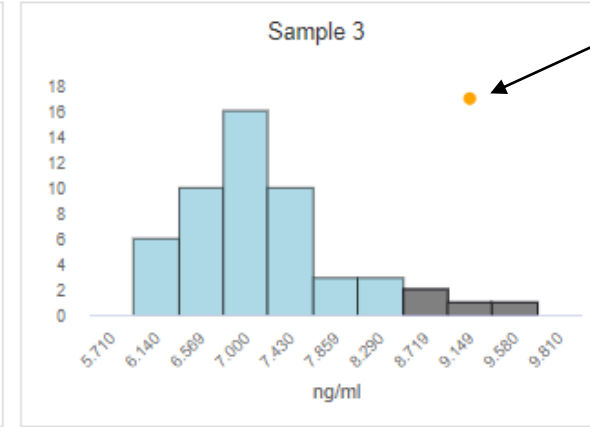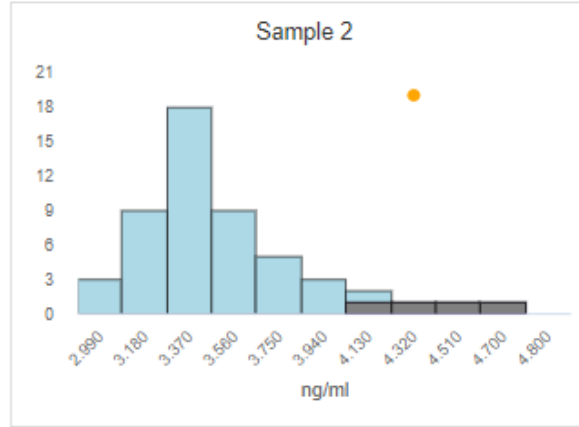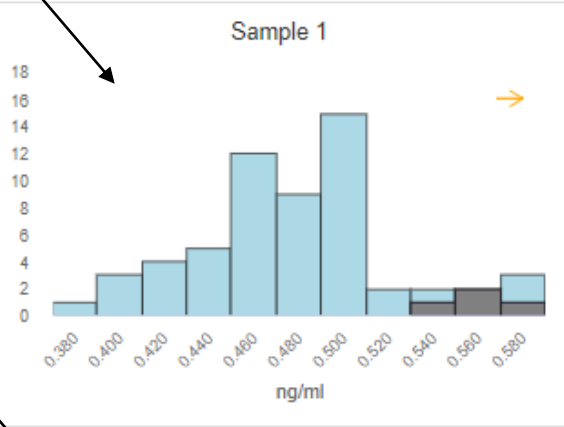
Method Summary

PC0723	Sample 1		Sample 2		Sample 3	
Method Name	Mean	CV%	Mean	CV%	Mean	CV%
Abbott (n=8)	0.326	19.1	2.519	10.8	5.025	11.4
Beckman (n=8)	0.469	8.4	3.745	6.5	7.706	7.2
Radiometer (n=4)	0.575	4.1	4.525	5.6	9.325	4.9
Roche ECLIA (n=29)	0.486	5.0	3.412	5.4	7.056	6.3
Siemens (n=3)	0.673	3.5	4.963	1.7	10.220	3.1

Any analyte specific comments from Weqas or the participant are shown here.

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

Simplified report for example case

Procalcitonin (ng/ml)			
	Sample 1	Sample 2	Sample 3
Your reported result (ng/ml)	0.58	4.4	9.5
Your results are scored against: (Overall Mean)	0.485	3.551	7.291

Good	
Acceptable	
Poor – discuss with POCT Coordinator	

Running Performance

Bias (Absolute)
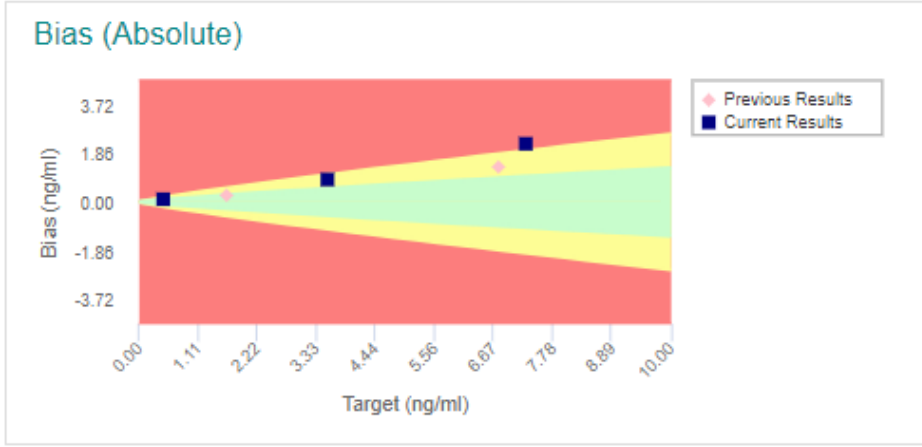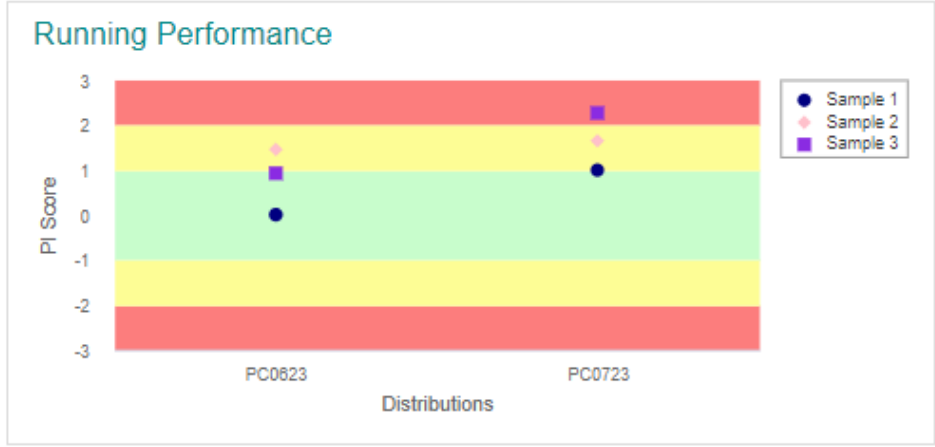
Your overall performance for this analyte is: Warning
- You have at least one sample in this distribution with a poor score: |score| > 2

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

Summary Report
Analyte: Procalcitonin
Overall Performance Category: Warning
Running PI analyte –sample scores: 1 sample with poor PI, 1 sample with acceptable PI, 1 sample with good PI

Standard Report
Analyte results table: Your results seem to fit in well with method and instrument but not overall
Scoring Table: 1 sample with poor PI, 1 sample with acceptable PI, 1 sample with good PI, Overall Performance Category: Warning
Running PI scores: Last dist 2 good, 1 acceptable, this dist 1 good, 1 acceptable , 1 poor
Bias Chart (Absolute): Positive bias, proportional bias of 31%
Bias Chart (Relative): Positive bias, can see this dist worse than last dist
Precision Scores: Sy.x 0.16, IS 3 – both good – no issue with precision
Sample Histograms: Sample 1 off the chart, samples 2 and 3 toward right hand side of chart, results seem to fit with 'my instrument'
Method Summary Data: My method, Radiometer, higher than all other methods except Siemens

Simplified Report
Traffic Light: Amber
**Overall Performance score:** Warning
Running Performance: Last dist 2 good, 1 acceptable, this dist 1 good, 1 acceptable , 1 poor
Bias (Absolute): positive bias, this dist and last (this dist maybe getting worse)

Case study 1

Left report

Programme: Blood Gas · Distribution Code: BG1024
Distribution Start: 14-Oct-2024 · Distribution End: 28-Oct-2024 · Report Issued: 08-Nov-2024 · Report Status: Final
Requested By: gareth@weqas.com

This Distribution	
Your % Poor PI	7%
Median All Participant % Poor PI	0%
97.5th Centile % Poor PI	13%

Running PI analyte-sample Scores
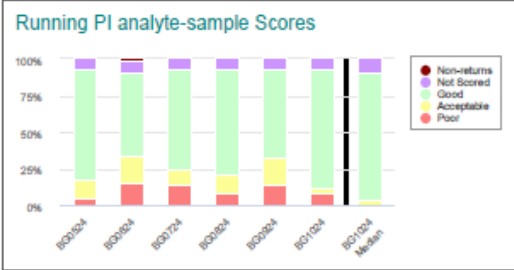
PI Ranges	
<1	Good
1-2	Acceptable
>2	Poor

PI Scores

Location	
Instrument Name	
Instrument Serial #	245
pH	N/S
[H+]	Good
pCO2	Acceptable
pO2	Poor
Actual Bicarbonate (aHCO3)	Good
TCO2	Good
Sodium	Good
Potassium	Good
Chloride	Good
Ionized Calcium	Good
Glucose	Warning
Lactate	Good
Urea	Good
Creatinine	Acceptable
Overall % poor PI	7%
Overall % Non-return	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.
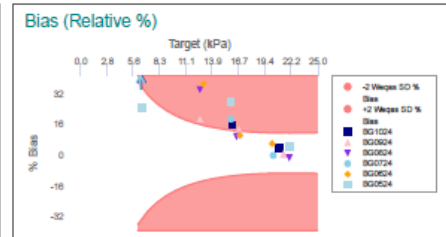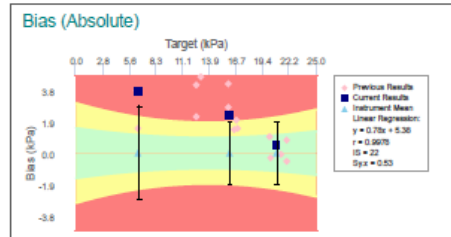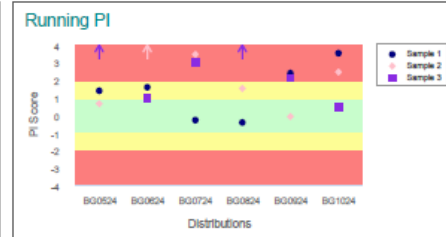
Distribution Specific Comment
There is no specific comment for this distribution.

Right report

Programme: Blood Gas · Distribution Code: BG1024
Distribution Start: 14-Oct-2024 · Distribution End: 28-Oct-2024 · Report Issued: 08-Nov-2024 · Report Status: Final

Participant Code: WQ00000 · Location: · Analyser Name: n/a · Serial #: 246
Date Samples received: 17-Oct-2024 · Date of Analysis: 18-Oct-2024 · Operator Details: D38 · Storage Conditions: Ambient Temperature
Analyte: pO2 · Method: epoc · Kit: epoc BGEM Test Card ((epoc BGEM) 22-347-440)

pO2 kPa

	Your reported result (kPa)		Method: epoc	Instrument Model: epoc	Overall
Sample 1	10.33	Mean	6.54	6.54	5.13
		SD	1.40	1.40	2.51
		Uncertainty	0.148	0.148	0.064
		n	139	139	2395
Sample 2	18.27	Mean	15.99	15.99	15.09
		SD	0.96	0.96	0.77
		Uncertainty	0.102	0.102	0.020
		n	138	138	2392
Sample 3	21.38	Mean	20.89	20.89	20.25
		SD	0.93	0.93	0.75
		Uncertainty	0.100	0.100	0.019
		n	137	137	2393

Scoring

Sample	1	2	3	Overall Performance
Target: (Method Mean)	6.54	15.99	20.89	
Weqas TAE	2.17	1.87	2.16	
PI	3.5	2.44	0.45	Poor

Running PI

Bias (Absolute)
Linear Regression:
y = 0.78x + 5.38
r = 0.9975
IS = 22
Syx = 0.53

Bias (Relative %)

Precision

	BG0524	BG0624	BG0724	BG0824	BG0924	This distribution: BG1024
Sy.x	2.55	1.02	1.43	0.63	0.73	0.53
IS	267	720	185	161	130	22

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 — kPa

Sample 2 — kPa

Sample 3 — kPa
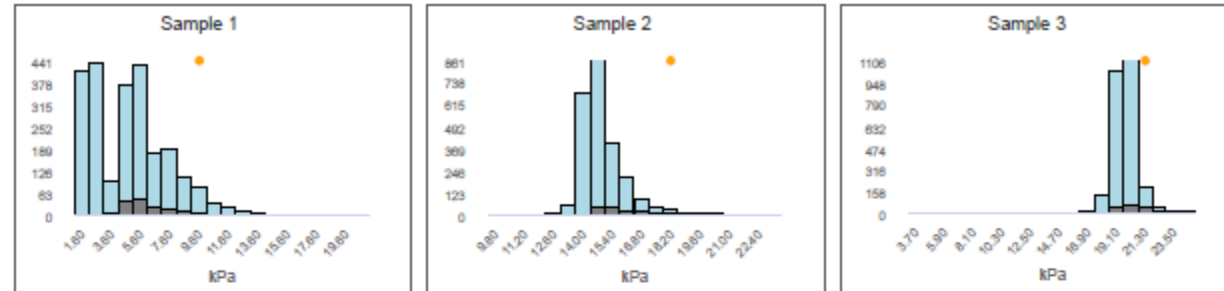
■ All Results   ■ My Method   ■ My Instrument   ● My Result

Method Summary

| BG1024	Sample 1		Sample 2		Sample 3	
Method Name	Mean	CV%	Mean	CV%	Mean	CV%
ABL 800 Series (n=25)	6.35	6.0	15.88	3.1	20.65	3.2
ABL 90 FLEX (n=912)	2.63	7.4	14.63	2.9	20.46	2.5
cobas b 123 (n=25)	4.21	7.0	14.50	3.5	19.95	3.5
cobas b 221 (n=52)	10.46	4.4	16.86	2.2	20.86	2.8
epoc (n=139)	6.54	21.4	15.99	6.0	20.89	4.5
Gem Premier 4000 (n=87)	6.57	6.7	15.57	3.0	20.51	3.2
Gem Premier 5000 (n=529)	5.37	12.1	14.90	3.3	19.88	3.0
I-STAT (n=350)	8.71	12.4	16.33	5.8	20.44	4.5
Prime + (n=9)	3.24	11.6	15.55	3.4	21.04	3.1
Rapidpoint 500/500e (n=254)	6.11	6.9	15.07	2.5	19.51	2.0

Simplified Report

Participant Code: WQ00000 • Location: • Analyser Name: n/a • Serial #: 246
Date Samples received: 17-Oct-2024 • Date of Analysis: 18-Oct-2024 • Operator Details: • Storage Conditions: Ambient
Analyte: pO2 • Method: epoc • Kit: epoc BGEM Test Card ((epoc BGEM) 22-347-440)

pO2 (kPa)	Sample 1	Sample 2	Sample 3
Your reported result (kPa)	10.33	18.27	21.38
Your results are scored against: (Method Mean)	6.54	15.99	20.89

Good	
Acceptable	
Poor – discuss with POCT Coordinator	
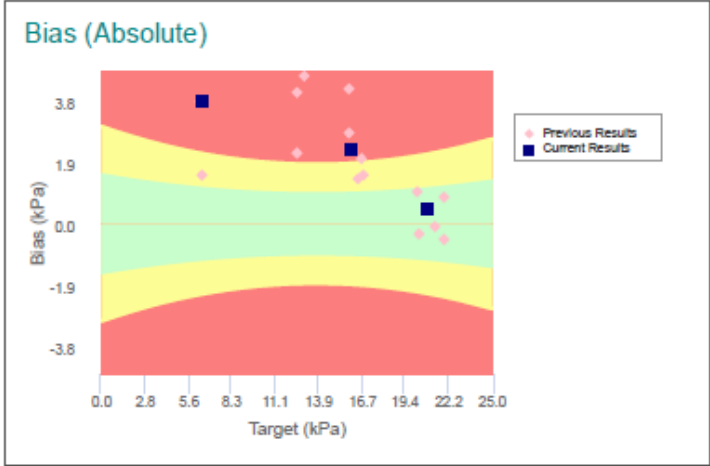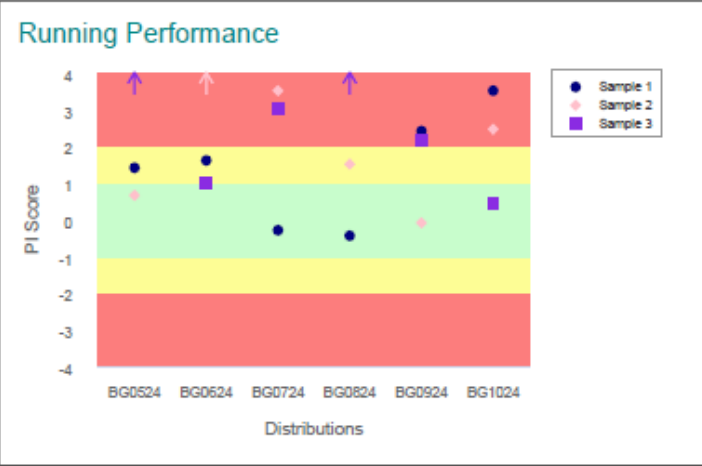
Running Performance

Bias (Absolute)

Your overall performance for this analyte is: Poor

- You have at least one sample in this distribution with a very poor score: |score| > 3
- You have at least two samples in this distribution with a poor score: |score| > 2

Please discuss your results with your EQA officer / POCT Co-ordinator

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

Summary Report

Analyte: pO_2

Overall Performance Category: Poor

Running PI analyte –sample scores: many previous poor and acceptable scores, very few good scores, majority showing significant pos bias

Standard Report

Analyte results table: Results high compared to method/instrument mean and overall mean

Scoring Table: Samples 1 and 2 poor PI, Overall Performance Category: Poor

Running PI scores: Consistently high positive PI scores, several higher than a PI of 4.

Bias Chart (Absolute): Linear regression analysis – 0.78x + 5.38. Indicates mixed error.

Bias Chart (Relative): Consistent pattern on more pronounced bias at lower concentrations.

Precision Scores: Sy.x 0.9978, IS 22. Acceptable to warning (precision actually better this dist compared to previous)

Sample Histograms: All samples are at the furthest 'right edge' so showing higher results compared to 'my instrument'

Method Summary Data: Method in question has relatively high CV% for sample 1.

Simplified Report

Traffic Light: Red

Overall Performance score: Poor

Running Performance: Consistently high positive PI scores, several higher than a PI of 4.

Bias (Absolute): Bias in the good category for samples at higher concentrations. Significant positive bias at lower concentrations.

Persistent Poor Performance Monitoring

- Letter issued highlighting poor performance with the pO$_2$ over the last 3 distributions several months prior to this distribution.
- Participant identified the most likely cause as pre-analytical issues when transferring the sample from the vial to the cartridge.
- Instructions were re-affirmed to the POCT site in question, which included reminders of which syringe types should be used for measurement of gas samples i.e. no additives.
- Poor performance continued for the next 3 distributions.
- Participant received samples for troubleshooting during this time and did also assay new samples for BG1024 obtaining results comparable to their instrument mean. These were submitted back to Weqas as evidence of improved performance.
- BG1124 results submitted as part of the normal distribution. Report showed a much improved performance with both samples having a good PI score, although it should be noted that these 2 samples were at the higher end of the range, so performance needs to be further reviewed when lower concentrations are distributed.
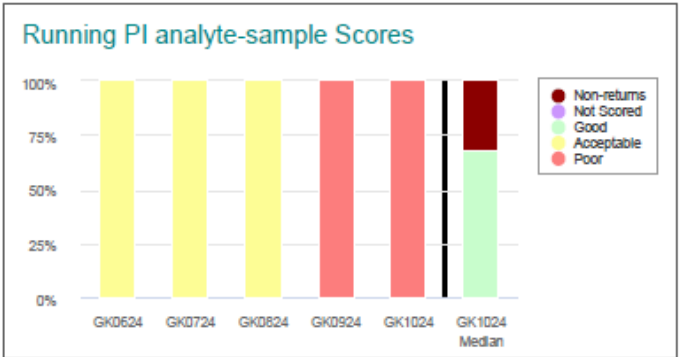
Scoring

Sample	1	2	Overall Performance
Target: (Method Mean)	17.7	22.82	
Weqas TAE	1.94	2.35	
PI	-0.47	0.11	Good

Case study 2

This Distribution	
Your % Poor PI	100%
Median All Participant % Poor PI	0%
97.5th Centile % Poor PI	13%

Running PI analyte-sample Scores

- Non-returns
- Not Scored
- Good
- Acceptable
- Poor

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

PI Scores	
Location	PRE-ASSESSMENT CLINIC
Instrument Name	
Instrument Serial #	080
Glucose	Poor
Overall % poor PI	100%
Overall % Non-return	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.

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

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

WeQas

Participant Code: WQ00000 • Location: PRE-ASSESSMENT CLINIC • Analyser Name: n/a • Serial #: 0080
Date Samples received: 03-Oct-2024 • Date of Analysis: 08-Oct-2024 • Operator Details: n/a • Storage Conditions: Ambient

Analyte: Glucose • Method: Nova StatStrip Connectivity • Kit: Nova StatStrip Glucose Test Strips (42214)

Glucose mmol/L

	Your reported result (mmol/L)		Method: Nova StatStrip Connectivity	Instrument Model: StatStrip Glucose/Ketone	Overall
Sample 1	16.3	Mean	21.88	21.89	24.08
		SD	1.05	1.05	3.16
		Uncertainty	0.019	0.020	0.032
		n	4733	4498	14970

Scoring

Sample	1	Overall Performance
Target: (Method Mean)	21.88	
Weqas TAE	5.49	
PI	-2.03	Poor

Running PI
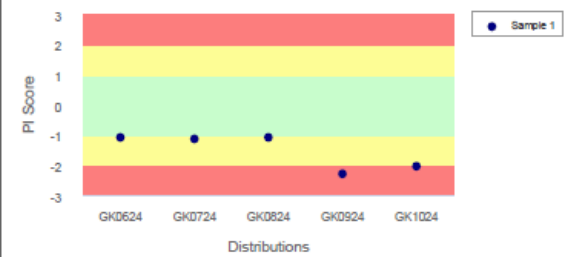
Bias (Absolute)
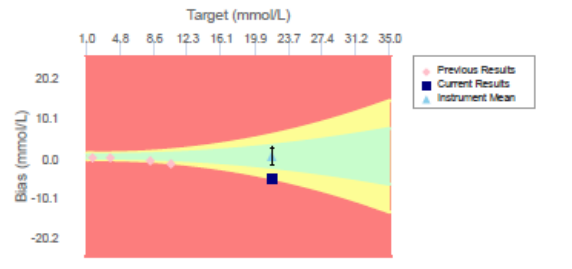
Bias (Relative %)
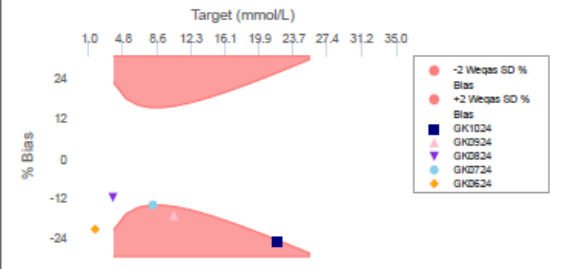
Precision

	GK0624	GK0724	GK0824	GK0924	This distribution: GK1024
Sy.x					
IS					

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)
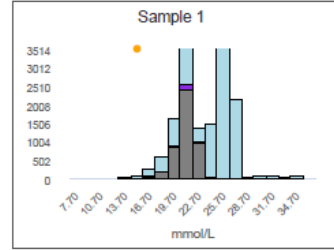
Sample 1

Method Summary

| GK1024	Sample 1	
Method Name	Mean	CV%
ACCU-CHEK Aviva (n=20)	26.24	2.2
cobas pulse (n=181)	25.75	0.8
FreeStyle Optium Neo H (n=809)	26.73	5.1
Freestyle Precision Pro (n=2172)	27.09	4.3
GLUCOTECH FIX GK (n=27)	31.20	4.4
Inform II / Performa (n=4375)	26.32	3.5
mylife Pura X (n=176)	21.47	10.4
Nova StatStrip Connectivity (n=4733)	**21.88**	**4.8**
Nova StatStrip Xpress (n=2352)	20.68	8.1
Procheck Advance (n=44)	30.98	3.5

There are no Weqas or Participant supplied comments for Glucose for this distribution.
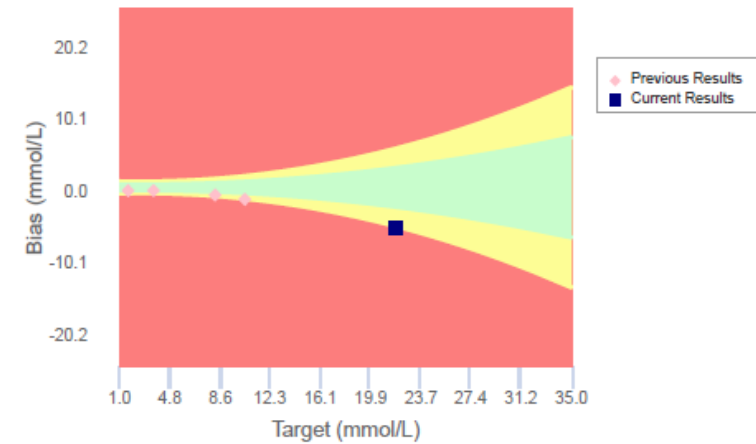
Simplified Report

Glucose (mmol/L)	
	Sample 1
Your reported result (mmol/L)	16.3
Your results are scored against: (Method Mean)	21.88

Good	
Acceptable	
Poor – discuss with POCT Coordinator	

Running Performance
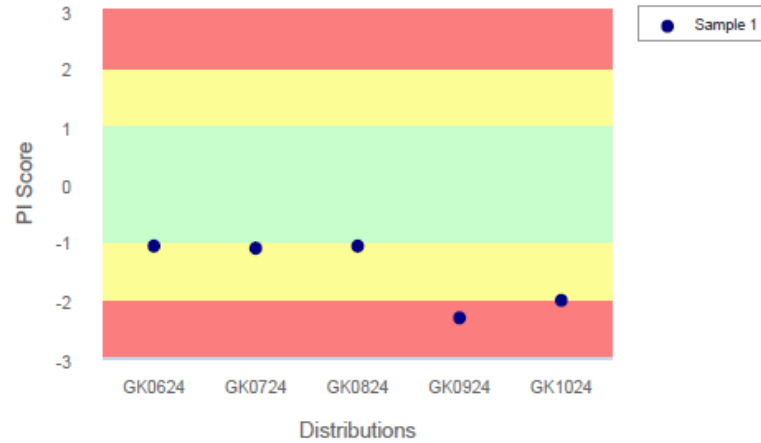
Bias (Absolute)

Your overall performance for this analyte is: Poor
- You have a poor score for this distribution: |score| > 2

Please discuss your results with your EQA officer / POCT Co-ordinator

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

Summary Report

Analyte: Glucose

Overall Performance Category: Poor

Running PI analyte –sample scores: Acceptable for earliest 3 distributions, then poor for GK0924 and this distribution GK1024.

Standard Report

Analyte results table: Your result low compared to method, instrument and overall means

Scoring Table: Sample PI > 2 (-2.03) = poor, Overall Performance Category: Poor

Running PI scores: Previous distributions: 3 acceptable, 2 poor

Bias Chart (Absolute): Current result positive bias, Previous results show very little bias but most show negative bias. This distribution shows slightly worse negative bias possibly, but all trending along margin of acceptable / poor.

Bias Chart (Relative): Negative bias between-12% and -24% for the 5 distributions shown.

Precision Scores: Not available - no linear regression analysis as <3 samples % and -

Sample Histograms: Shows 'My result' to the left of histogram demonstrating negative bias to 'My method', 'My Instrument' and 'All Results'.

Method Summary Data: My method slightly lower than most others but scored against method mean. CV% of the method group is 4.8%.

Simplified Report

Traffic Light: Red

Overall Performance score: Poor

Running Performance: Previous distributions: 3 acceptable, 2 poor (poor for GK0924 and current GK1024).

Bias (Absolute): Current result positive bias, Previous results show very little bias but most show negative bias. This distribution shows slightly worse negative bias possibly, but all trending along margin of acceptable / poor.

Review of next distribution

Standard Report

Glucose mmol/L

	Your reported result (mmol/L)		Method: Nova StatStrip Connectivity	Instrument Model: StatStrip Glucose/Ketone	Overall
Sample 1	8.0	Mean	8.54	8.55	9.47
		SD	0.32	0.32	1.10
		Uncertainty	0.008	0.008	0.013
		n	2716	2565	11173

Scoring

Sample	1	Overall Performance
Target: (Method Mean)	8.54	
Weqas TAE	1.24	
PI	-0.88	Good

Running PI

Bias (Absolute)

Bias (Relative %)
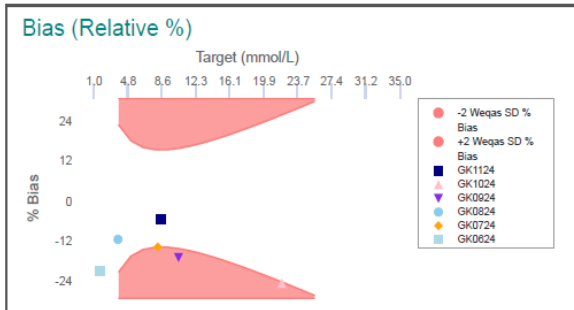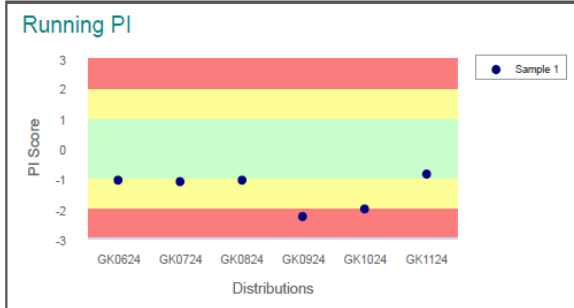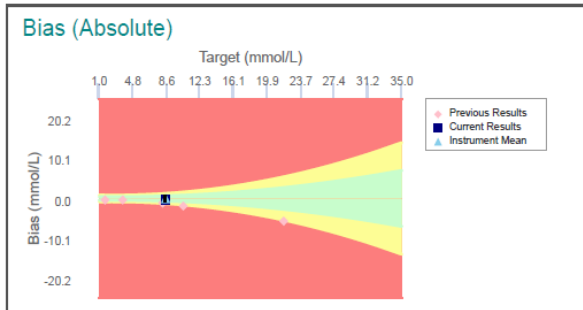
Simplified Report

Glucose (mmol/L)

	Sample 1
Your reported result (mmol/L)	8.0
Your results are scored against: (Method Mean)	8.54

Good
Acceptable
Poor – discuss with POCT Coordinator

Running Performance

Bias (Absolute)
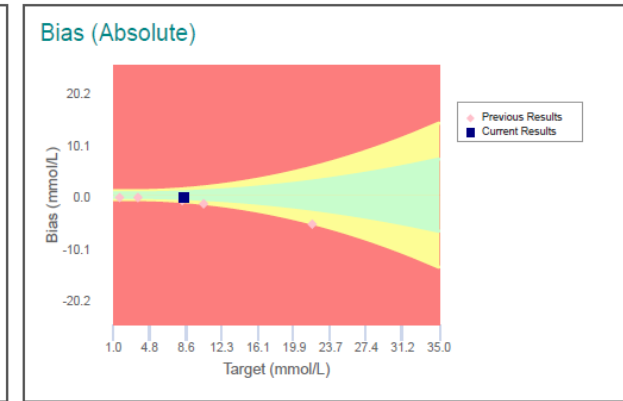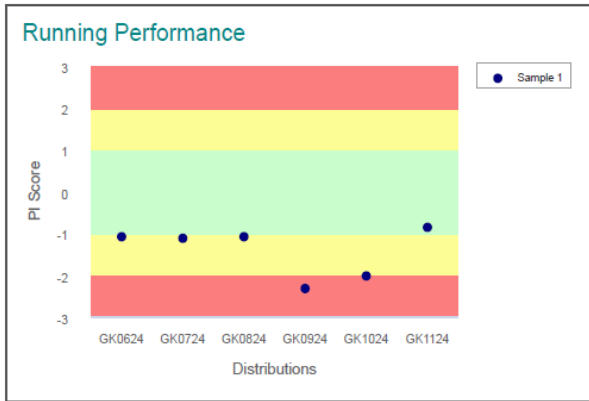
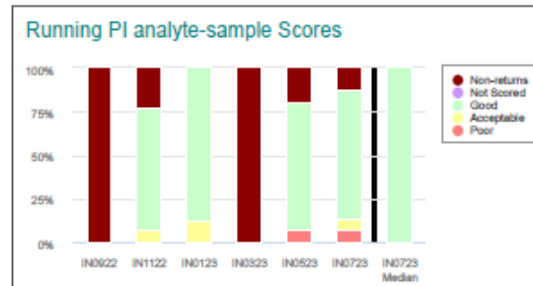Your overall performance for this analyte is: Good
- There are no current performance alerts for this analyte

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

Case study 3

This Distribution	
Your % Poor PI	7%
Median All Participant % Poor PI	0%
97.5th Centile % Poor PI	3%

Running PI analyte-sample Scores

Legend: Non-returns, Not Scored, Good, Acceptable, Poor

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

Location	Instrument Serial #	Instrument Name	INR	Overall % Poor PI	Overall % Non-Return
Location 1	TZ11232		Good	0%	0%
Location 2	TZ11214		Good	0%	0%
	TZ11215		Good	0%	0%
	TZ11218		Good	0%	0%
	TZ11227		Good	0%	0%
	TZ11228		Good	0%	0%
	TZ11234		Good	0%	0%
	TZ11256		Good	0%	0%
	TZ11259		Good	0%	0%
	TZ11301		Good	0%	0%
Location 3	TZ11244		NRR	0%	100%
Location 4	TZ11495		NRR	0%	100%
Location 5	TZ11181		Good	0%	0%
Location 6	U760136		Acceptable	0%	0%
Location 7	TZ11250		Poor	100%	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.

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

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

INR units

	Your reported result (units)		Method: CoaguChek Pro II	Instrument Model: CoaguChek Pro II	Overall
Sample 1	2.9	Mean	1.901	1.901	1.888
		SD	0.011	0.011	0.075
		Uncertainty	0.0004	0.0004	0.0022
		n	1475	1475	1861

Scoring

Sample	1	Overall Performance
Target: (Method Mean)	1.901	
Weqas TAE	0.304	
PI	6.57	Poor

Running PI

Bias (Absolute)

Bias (Relative %)
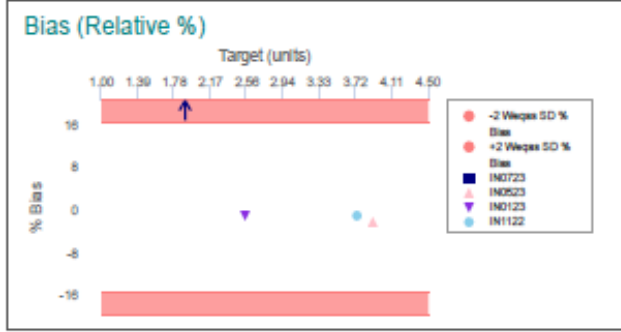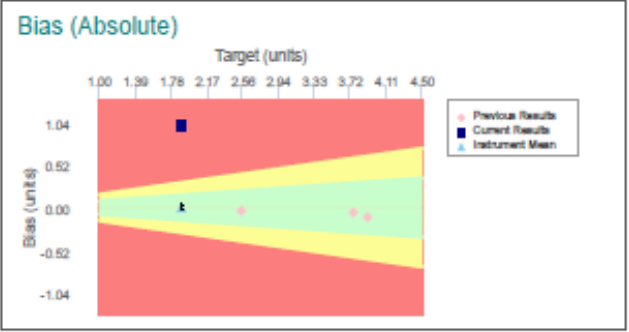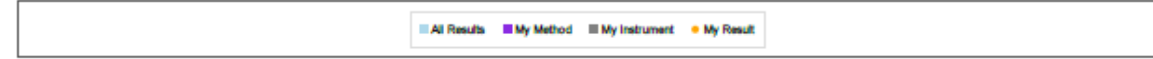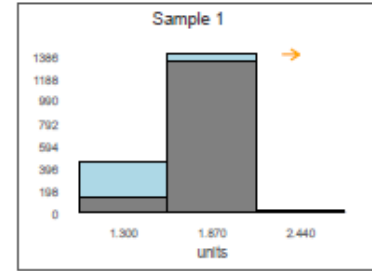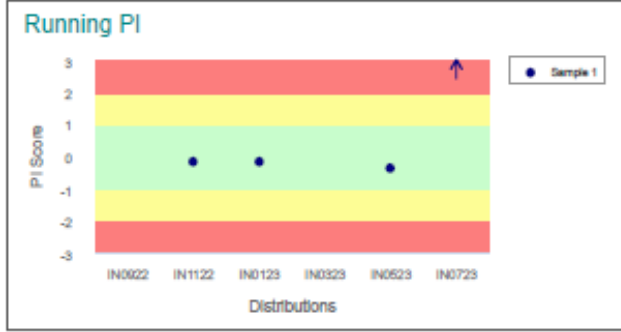
Precision

	IN0922	IN1122	IN0123	IN0323	IN0523	This distribution: IN0723
Sy.x						
IS						

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

All Results | My Method | My Instrument | My Result

Method Summary

IN0723	Sample 1	
Method Name	Mean	CV%
Abbott I-Stat (n=45)	2.508	8.8
CoaguChek INRange (n=2)	1.750	4.6
CoaguChek Pro II (n=1475)	1.901	0.6
CoaguChek XS (n=33)	1.746	3.6
CoaguChek XS Plus (n=249)	1.749	3.5
CoaguChek XS Plus / XS Pro (n=13)	1.800	5.8
CoaguChek XS Pro (n=38)	1.740	4.2
Siemens Xprecia (n=6)	1.805	0.8

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

Simplified Report

INR (units)	
	Sample 1
Your reported result (units)	2.9
Your results are scored against: (Method Mean)	1.901
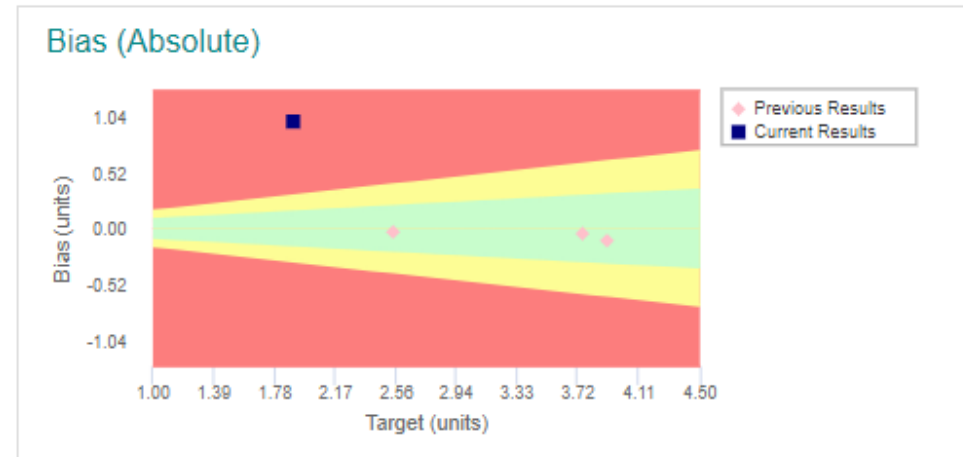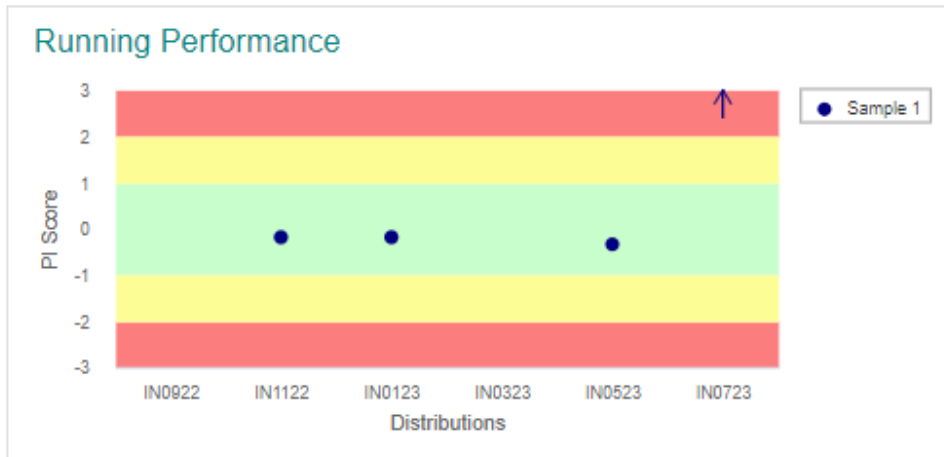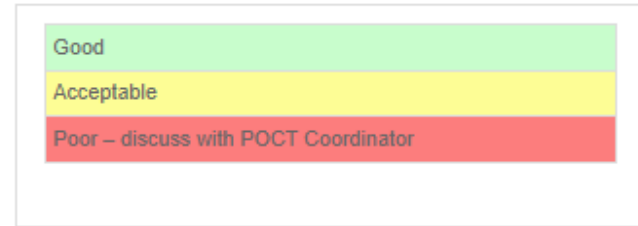
Good	
Acceptable	
Poor – discuss with POCT Coordinator	

Running Performance

Bias (Absolute)

Your overall performance for this analyte is: Poor
- You have at least one sample in this distribution with a very poor score: |score| > 3

Please discuss your results with your EQA officer / POCT Co-ordinator

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

- **<u>Summary Report</u>**
- **Analyte:** INR
- **Overall Performance Category:** Poor
- **Running PI analyte –sample scores:** Mainly good, some acceptable, some poor

- **<u>Standard Report</u>**
- **Analyte results table:** Your result very high compared to method, instrument and overall means
- **Scoring Table:** Sample PI > 2 = poor, Overall Performance Category: Poor
- **Running PI scores:** Previous distributions: 2 non-returns, 3 good
- **Bias Chart (Absolute):** Current result positive bias, previous results show very little bias (no linear regression analysis as <3 samples)
- **Bias Chart (Relative):** This sample off – Positive bias, previous results show very little bias
- **Precision Scores:** Not available - no linear regression analysis as <3 samples
- **Sample Histograms:** Sample result off chart – too positive to fit on chart
- **Method Summary Data:** My method slightly higher than most others, but scored against method mean

- **<u>Simplified Report</u>**
- **Traffic Light:** Red
- **Overall Performance score:** Poor
- **Running Performance:** Previous distributions: 2 non-returns, 3 good
- **Bias (Absolute):** Current result positive bias, previous results show very little bias

Case Study 3: Current Performance

Scoring

Sample	1	Overall Performance
Target: (Method Mean)	2.987	
Weqas TAE	0.388	
PI	0.58	Good

Running PI

Case study 4
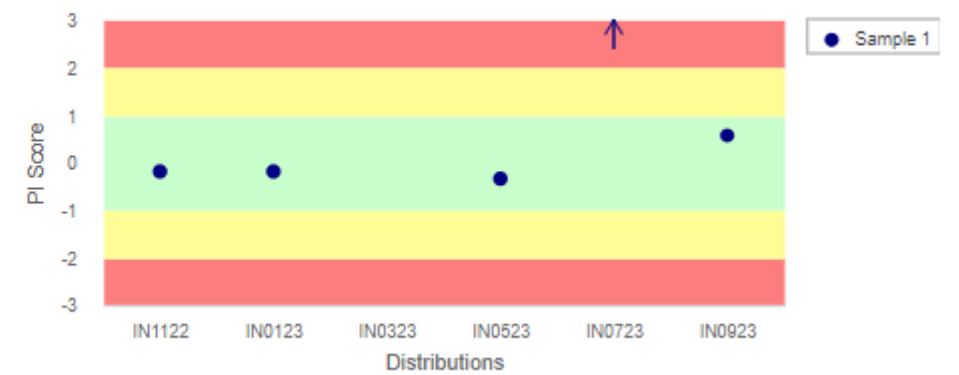
Programme: POCT CRP · Distribution Code: CX0823
Distribution Start: 23-Aug-2023 · Distribution End: 07-Sep-2023 · Report Issued: 25-Sep-2023 · Report Status: Final
Requested By: gareth@weqas.com

This Distribution

Your % Poor PI	13%
Median All Participant % Poor PI	0%
97.5th Centile % Poor PI	50%

Running PI analyte-sample Scores
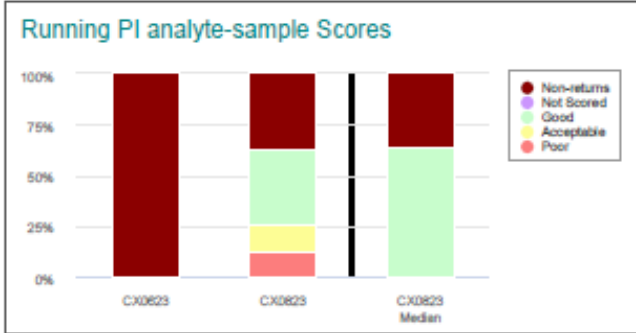
PI Ranges

<1	Good
1-2	Acceptable
>2	Poor

PI Scores

Location	Location 1		Location 2					Location 3
Instrument Name	Instrument 1	Instrument 2	Instrument 3	Instrument 4	Instrument 5	Instrument 6	Instrument 7	Instrument 8
Instrument Serial #	WEQ01001	WEQ01002	WEQ01003	WEQ01004	WEQ01005	WEQ01006	WEQ01007	WEQ01008
CRP	NRR	NRR	NRR	Acceptable	Good	Good	Good	Poor
Overall % poor PI	0%	0%	0%	0%	0%	0%	0%	100%
Overall % Non-return	100%	100%	100%	0%	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.

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

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

CRP mg/L

	Your reported result (mg/L)		Method: AQT90 Flex	Instrument Model: AQT90 FLEX	Overall
Sample 1	9.2	Mean	13.07	13.07	12.77
		SD	0.98	0.98	1.16
		Uncertainty	0.406	0.406	0.162
		n	9	9	80
Sample 2	34.9	Mean	46.49	46.49	42.74
		SD	1.41	1.41	7.52
		Uncertainty	0.588	0.588	1.065
		n	9	9	78

Scoring

Sample	1	2	Overall Performance
Target: (Method Mean)	13.07	46.49	
Weqas TAE	2.23	6.91	
PI	-3.47	-3.35	Poor

Running PI
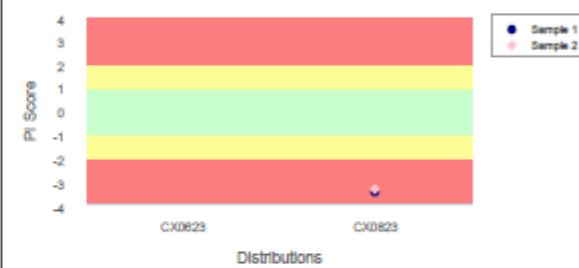
Bias (Absolute)
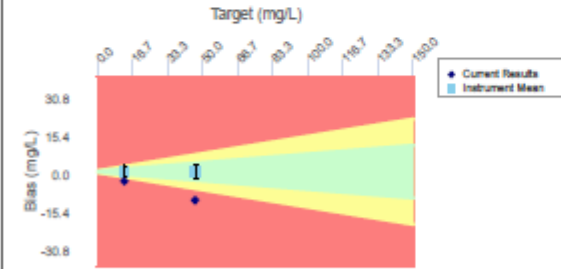
Bias (Relative %)

Precision

	CX0623	This distribution: CX0823
Sy.x		
IS		

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)
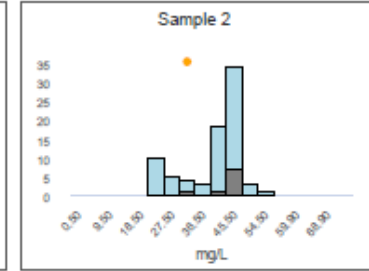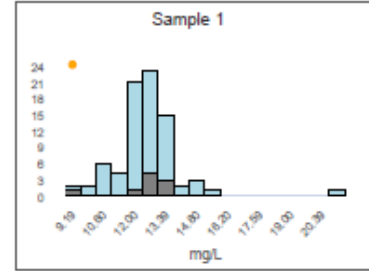
Sample 1

Sample 2

All Results ▪ My Method ▪ My Instrument ● My Result

Method Summary

CX0823	Sample 1		Sample 2	
Method Name	Mean	CV%	Mean	CV%
Afinion (n=28)	13.00	6.3	46.50	3.5
AQT90 Flex (n=9)	13.07	7.5	46.49	3.0
cobas b101 (n=2)	11.25	0.7	43.85	0.2
CUBE (n=1)	21.60	0.0	48.70	0.0
LumiraDx (n=21)	11.77	8.7	29.27	17.5
Microsemi (n=9)	13.09	8.2	49.03	8.4
Piccolo Xpress (n=8)	14.01	10.8	44.34	7.6
SmartTester (n=2)	13.66	5.2	42.92	11.7

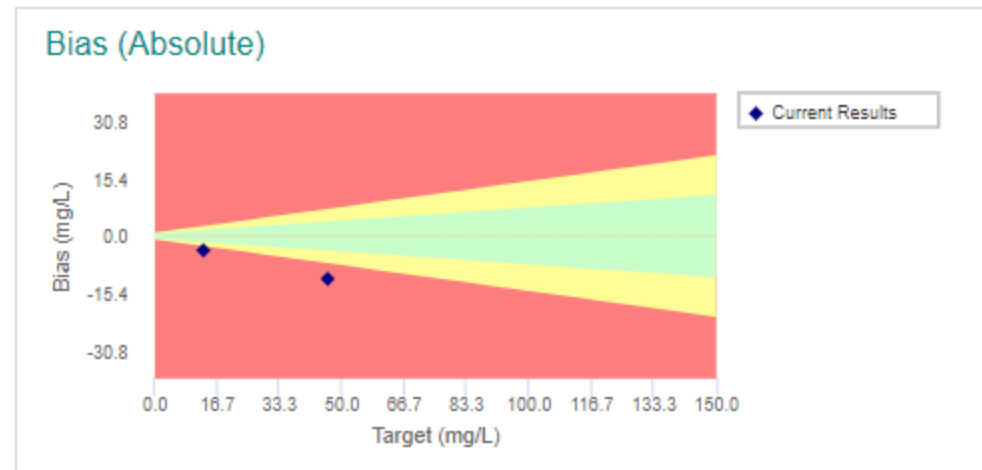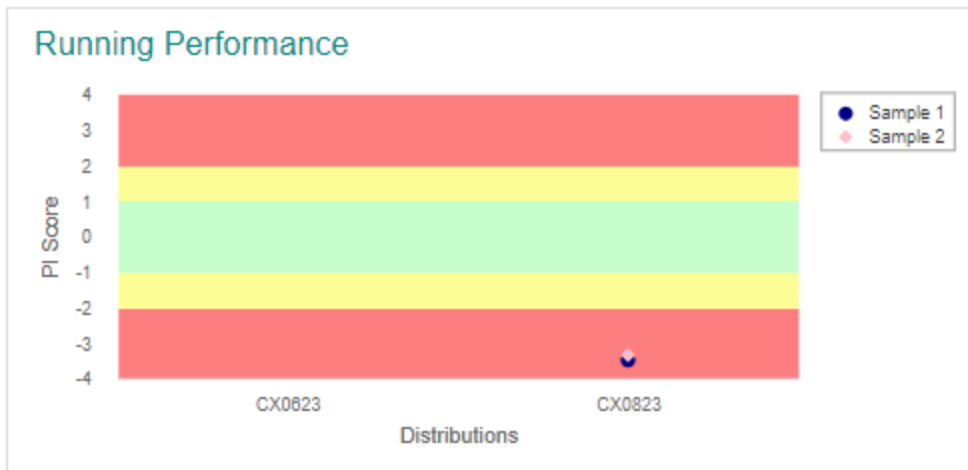*There are no Weqas or Participant supplied comments for CRP for this distribution.*

Simplified Report

CRP (mg/L)		
	Sample 1	Sample 2
Your reported result (mg/L)	9.2	34.9
Your results are scored against: (Method Mean)	13.07	46.49

Good
Acceptable
Poor – discuss with POCT Coordinator

Running Performance

Bias (Absolute)

Your overall performance for this analyte is: Poor
- You have at least one sample in this distribution with a very poor score: |score| > 3
- You have at least two samples in this distribution with a poor score: |score| > 2
- Your results suggest a potential bias

Please discuss your results with your EQA officer / POCT Co-ordinator

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

Summary Report
Analyte: CRP
Overall Performance Category: Poor
Running PI analyte –sample scores: lot of non returns, large proportion of good, some acceptable, a few poor

Standard Report
Analyte results table: Your results low compared to method mean, instrument mean, overall mean
Scoring Table: Both samples poor PI, Overall Performance Category: Poor
Running PI scores: No return for last distribution
Bias Chart (Absolute): Negative bias, (no linear regression analysis as <3 samples)
Bias Chart (Relative): Both samples off chart – Negative bias
Precision Scores: Not available - no linear regression analysis as <3 samples
Sample Histograms: Sample 1 very low, sample 2 seems within population but left of majority of participants. Left of my method
Method Summary Data: My method seems to fit in with other methods, 1 other method very low.

Simplified Report
Traffic Light: Red
Overall Performance score: Poor
Running Performance: No return for last distribution
Bias (Absolute): Negative bias