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Weqas Connect

Samantha Jones

Weqas

Summary Report

Analyte:
Overall Performance Category:
Running PI analyte –sample scores:

Standard Report

Analyte results table:
Scoring Table:
Running PI scores:
Bias Chart (Absolute):
Bias Chart (Relative):
Precision Scores:
Sample Histograms:
Method Summary Data:

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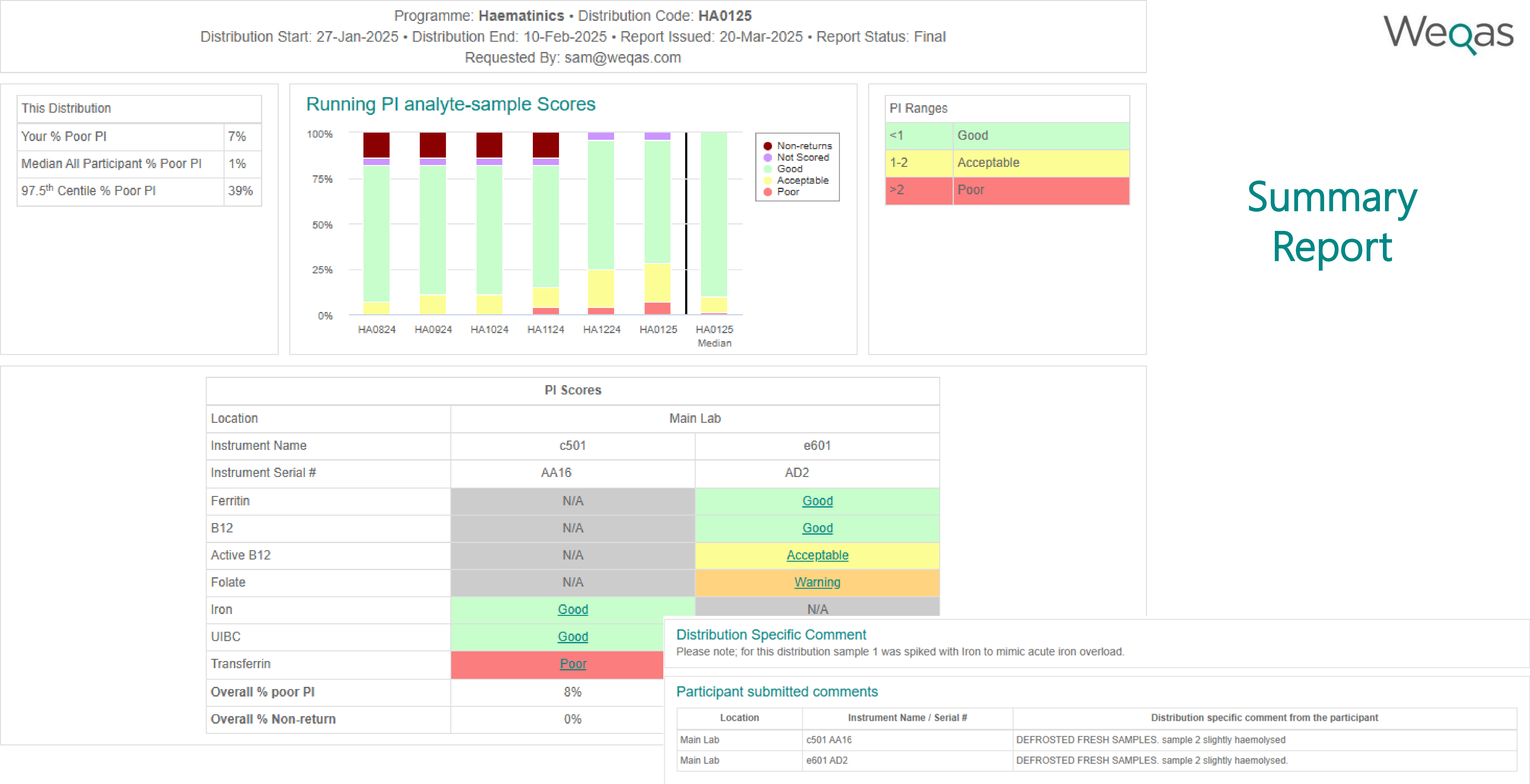
Case 1 – Haematinics - Transferrin

Summary Report



Programme: **Haematinics** • Distribution Code: **HA0125**
Distribution Start: 27-Jan-2025 • Distribution End: 10-Feb-2025 • Report Issued: 20-Mar-2025 • Report Status: Final
Requested By: sam@weqas.com

This Distribution	
Your % Poor PI	7%
Median All Participant % Poor PI	1%
97.5th Centile % Poor PI	39%

Running PI analyte-sample Scores

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

PI Scores		
Location	Main Lab	
Instrument Name	c501	e601
Instrument Serial #	AA16	AD2
Ferritin	N/A	Good
B12	N/A	Good
Active B12	N/A	Acceptable
Folate	N/A	Warning
Iron	Good	N/A
UIBC	Good	
Transferrin	Poor	
Overall % poor PI	8%	
Overall % Non-return	0%	

Distribution Specific Comment

Please note; for this distribution sample 1 was spiked with Iron to mimic acute iron overload.

Participant submitted comments

Location	Instrument Name / Serial #	Distribution specific comment from the participant
Main Lab	c501 AA16	DEFROSTED FRESH SAMPLES. sample 2 slightly haemolysed
Main Lab	e601 AD2	DEFROSTED FRESH SAMPLES. sample 2 slightly haemolysed.

Analyte Standard Report

Programme: Haematinics • **Distribution Code:** HA0125
Distribution Start: 27-Jan-2025 • Distribution End: 10-Feb-2025 • Report Issued: 20-Mar-2025 • Report Status: Final

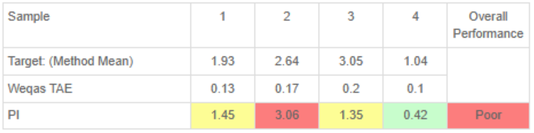
Participant Code: WQ00 • **Location:** Main Lab • **Analyser Name:** c501 • **Serial #:** AA16
Date Samples received: 10-Feb-2025 • Date of Analysis: 10-Feb-2025 • Operator Details: PJ • Storage Conditions:

Analyte: Transferrin • **Method:** Immunoturbidimetric • **Kit:** TRSF2 (03015050 122)

Transferrin g/L

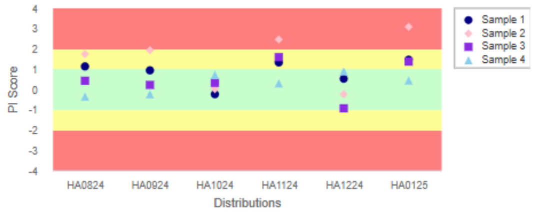
	Your reported result (g/L)		Method: Immunoturbidimetric	Instrument Model: cobas c 501	Overall
Sample 1	2.03	Mean	1.93	2.00	1.93
		SD	0.06	0.00	0.06
		Uncertainty	0.015	0.000	0.015
		n	26	4	26
Sample 2	2.90	Mean	2.64	2.73	2.64
		SD	0.07	0.17	0.07
		Uncertainty	0.017	0.106	0.017
		n	26	4	26
Sample 3	3.18	Mean	3.05	3.07	3.05
		SD	0.10	0.16	0.10
		Uncertainty	0.025	0.103	0.025
		n	26	4	26
Sample 4	1.06	Mean	1.04	1.04	1.04
		SD	0.04	0.06	0.04
		Uncertainty	0.010	0.035	0.010
		n	26	4	26

Scoring

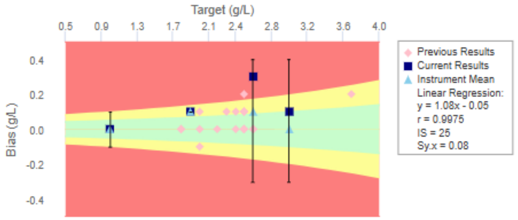


Sample	1	2	3	4	Overall Performance
Target: (Method Mean)	1.93	2.64	3.05	1.04	
Weqas TAE	0.13	0.17	0.2	0.1	
PI	1.45	3.06	1.35	0.42	Poor

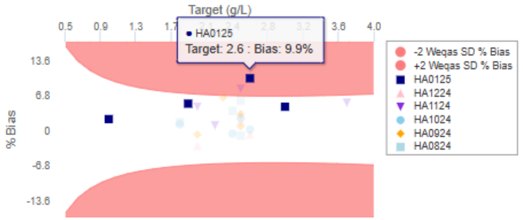
Running PI



Bias (Absolute)



Bias (Relative %)



Precision

	HA0824	HA0924	HA1024	HA1124	HA1224	This distribution: HA0125
Sy.x	0.09	0.08	0.04	0.08	0.06	0.08
IS	240	285	42	30	108	25

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)

Weqas

Analyte Standard Report

Precision

	HA0824	HA0924	HA1024	HA1124	HA1224	This distribution: HA0125
Sy.x	0.09	0.08	0.04	0.08	0.06	0.08
IS	240	285	42	30	108	25

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
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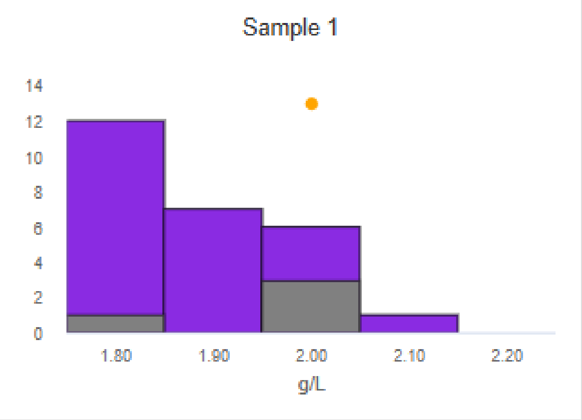
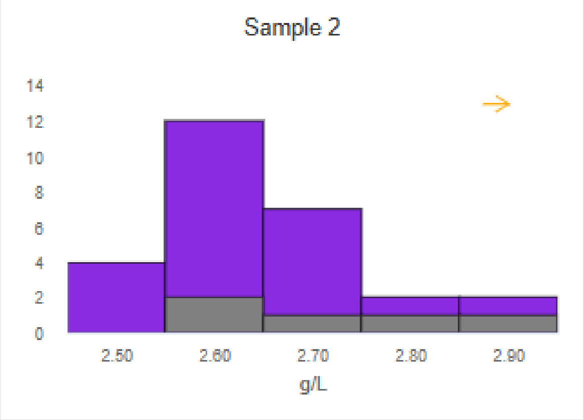
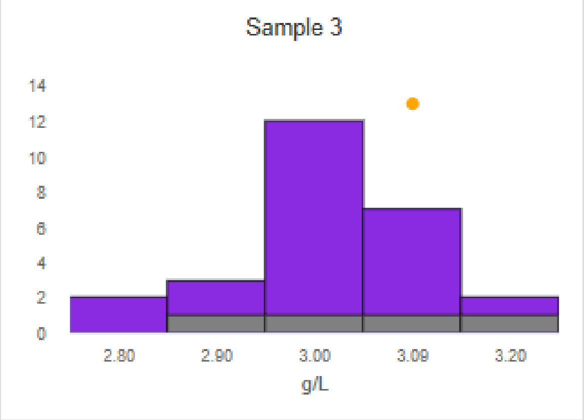
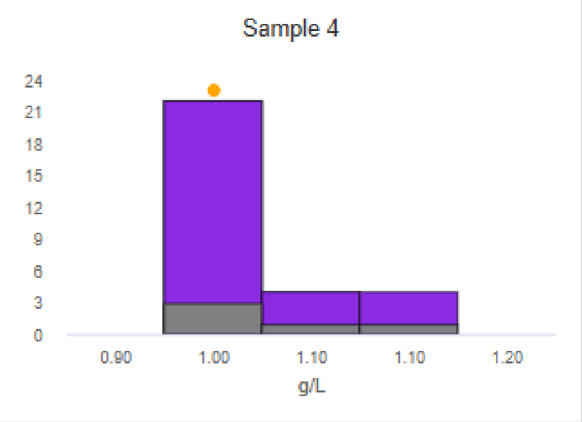

Sample 1


Sample 2


Sample 3


Sample 4

Method Summary

HA0125	Sample 1		Sample 2		Sample 3		Sample 4	
Method Name	Mean	CV%	Mean	CV%	Mean	CV%	Mean	CV%
Immunoturbidimetric (n=26)	1.93	3.1	2.64	2.6	3.05	3.3	1.04	4.1

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

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

Case 1

Summary Report
Analyte: Transferrin
Overall Performance Category: Poor
Running PI analyte –sample scores: mostly good, some acceptable, higher poor % than the median

*noted that comment shows sample 1 was spiked with iron to mimic acute iron overload.

Standard Report
Analyte results table: All samples show positive bias to method, instrument and overall mean. Sample 2 shows more pronounced positive bias.

Scoring Table: samples 1 and 3 acceptable (yellow, PI 1.45 and PI 1.35 respectively), sample 4 good (green, PI 0.42), sample 2 poor (red, PI 3.06). All positive PI. Overall – poor.

Running PI scores: In general, scores over past 6 months show positive bias with PI scores wavering between good and acceptable. HA1224 shows a negative trend. HA1124 and HA0125 show one sample in the poor category (positive scores).

Bias Chart (Absolute): The 2 poor scoring samples over the last 6 months have been at concentrations between 2.4 to 2.6g/L approximately. Method shows wide SD bars for samples 2 and 3 for this dist (so MM of 2.64 and 3.05 respectively). Previous samples at these concs good show bias data in the good or acceptable range. Linear regression shows y = 1.08x + 0.05. 8% positive proportional bias, -0.05 g/L negative constant bias.

Bias Chart (Relative): Again, you can see 2 samples over the last 6 months at concentrations between 2.4 to 2.6g/L approximately are showing as higher % positive bias (and are in the red zone).

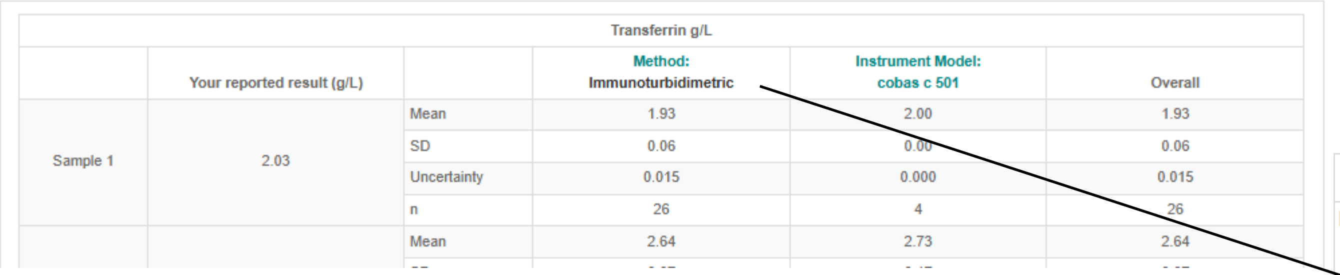
Precision Scores: r = 0.9975 (acceptable / warning), Sy.x 0.08, IS = 25 (acceptable / warning). IS 11 to 150 = acceptable / warning. Evidence of poor imprecision for previous distributions in the precision table.

Sample Histograms: Sample 2 shows result off the scale when compared to method and instrument data.

Method Summary Data: Only one method for all participants. If you click on the 'method' name in the analyte results table this would bring you up the instrument breakdown for the programme.

Error Identification: 8% positive proportional bias.

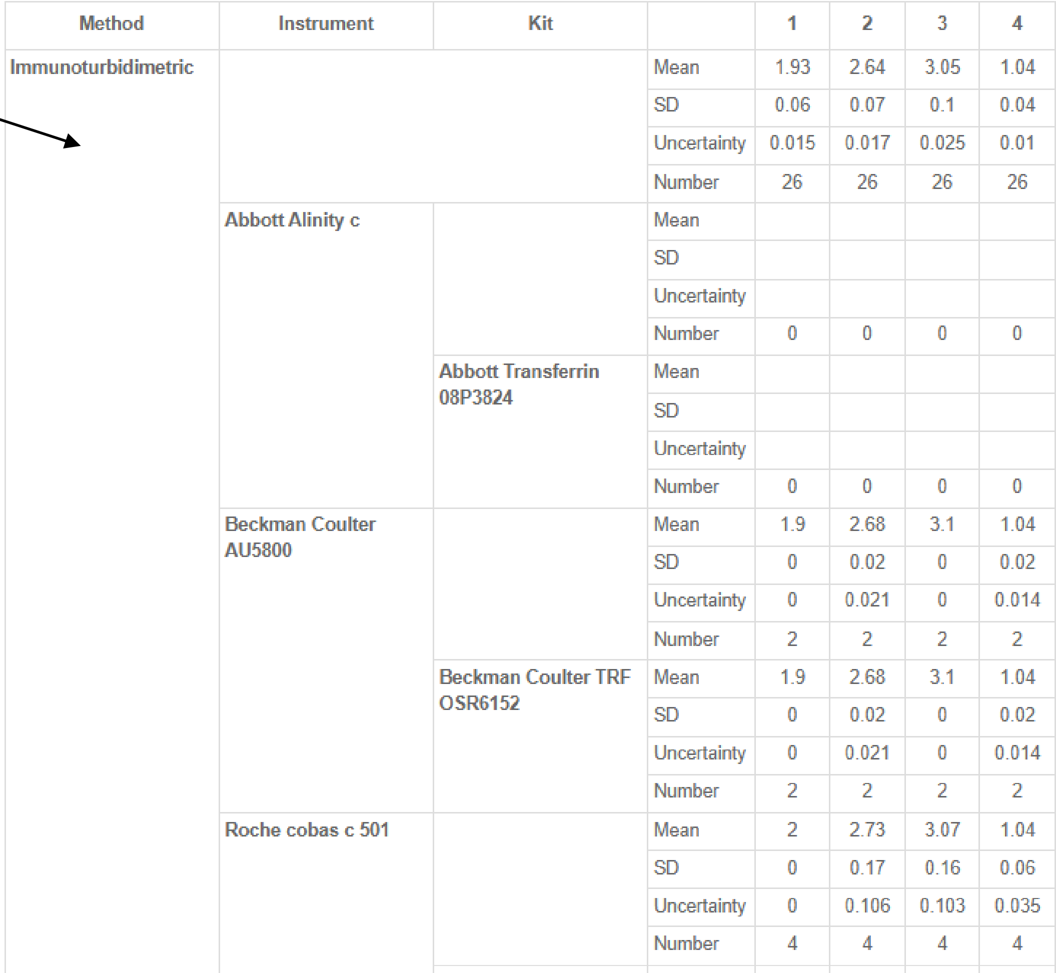
Troubleshooting performed by the lab: IQC reviewed and found to be acceptable, no Westgard rules broken. No obvious issues with reagent calibrator or QC. Repeat analysis 09/04/25 showed good performance for all samples. Further investigations for root cause pending (e.g. lot number review for reagent, QC and calibrators).



Transferrin g/L

	Your reported result (g/L)		Method: Immunoturbidimetric	Instrument Model: cobas c 501	Overall
Sample 1	2.03	Mean	1.93	2.00	1.93
		SD	0.06	0.00	0.06
		Uncertainty	0.015	0.000	0.015
		n	26	4	26
		Mean	2.64	2.73	2.64

Instrument Summary Report



Method	Instrument	Kit		1	2	3	4
Immunoturbidimetric			Mean	1.93	2.64	3.05	1.04
			SD	0.06	0.07	0.1	0.04
			Uncertainty	0.015	0.017	0.025	0.01
			Number	26	26	26	26
	Abbott Alinity c		Mean				
			SD				
			Uncertainty				
			Number	0	0	0	0
		Abbott Transferrin 08P3824	Mean				
			SD				
			Uncertainty				
			Number	0	0	0	0
	Beckman Coulter AU5800		Mean	1.9	2.68	3.1	1.04
			SD	0	0.02	0	0.02
			Uncertainty	0	0.021	0	0.014
			Number	2	2	2	2
		Beckman Coulter TRF OSR6152	Mean	1.9	2.68	3.1	1.04
			SD	0	0.02	0	0.02
			Uncertainty	0	0.021	0	0.014
			Number	2	2	2	2
	Roche cobas c 501		Mean	2	2.73	3.07	1.04
			SD	0	0.17	0.16	0.06
			Uncertainty	0	0.106	0.103	0.035
			Number	4	4	4	4

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Case 2 – pH Meter programme - pH

Summary Report

Programme: **pH Meter** • Distribution Code: **HX1224**
Distribution Start: 10-Dec-2024 • Distribution End: 24-Dec-2024 • Report Issued: 31-Dec-2024 • Report Status: Final
Requested By:

This Distribution	
Your % Poor PI	33%
Median All Participant % Poor PI	0%
97.5th Centile % Poor PI	64%

Running PI analyte-sample Scores

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

PI Scores		
Location		Main Lab
Instrument Name	pH Meter Oakton	pH Meter Hanna
Instrument Serial #	305	7
pH	Poor	Acceptable
Overall % poor PI	67%	0%
Overall % Non-return	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.

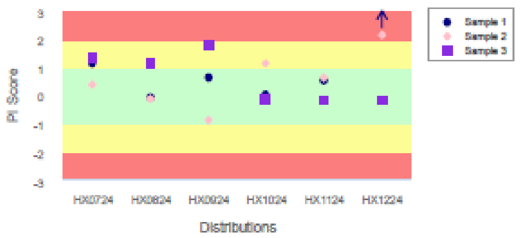
Analyte Standard Report

pH					
	Your reported result		**Method: Oakton**	**Instrument Model: pH 5+**	**Overall**
Sample 1	4.24	Mean	4.24	4.24	3.86
		SD	0.00	0.00	0.10
		Uncertainty	n/a	n/a	0.020
		n	1	1	40
Sample 2	6.69	Mean	6.69	6.69	6.48
		SD	0.00	0.00	0.07
		Uncertainty	n/a	n/a	0.014
		n	1	1	40
Sample 3	8.52	Mean	8.52	8.52	8.54
		SD	0.00	0.00	0.10
		Uncertainty	n/a	n/a	0.019
		n	1	1	39

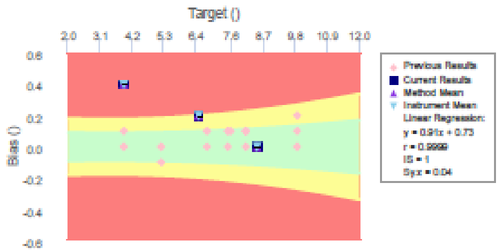
Scoring

Sample	1	2	3	Overall Performance
Target: (Overall Mean)	3.86	6.48	8.54	
Weqas TAE	0.18	0.2	0.23	
PI	4.34	2.13	-0.19	Poor

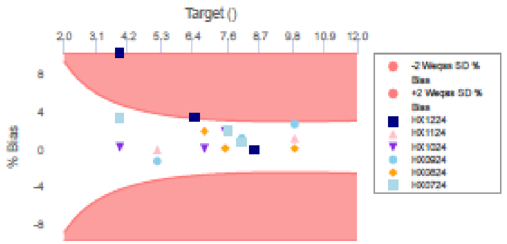
Running PI



Bias (Absolute)



Bias (Relative %)

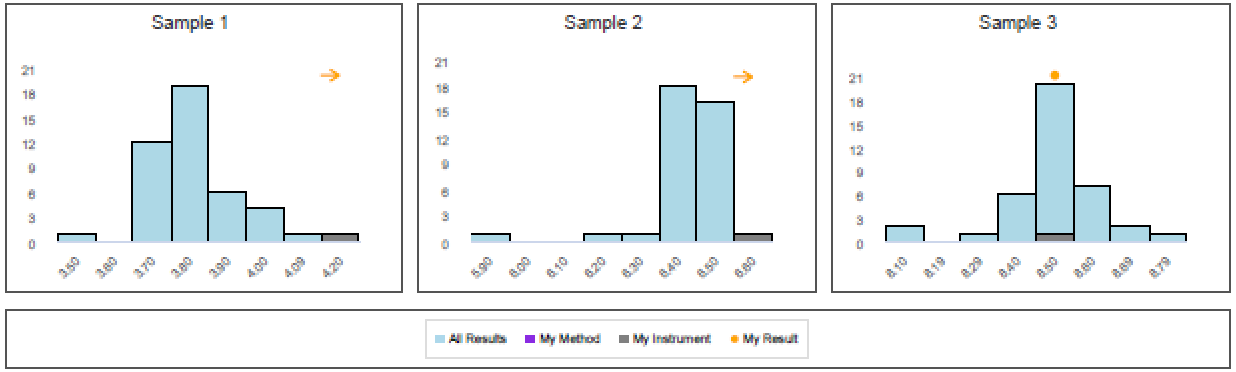


Precision

	HX0724	HX0824	HX0924	HX1024	HX1124	This distribution: HX1224
Sy.x	0.05	0.08	0.04	0.08	0.01	0.04
IS	1	6	1	5	0	1

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)



Method Summary

HX1224	Sample 1		Sample 2		Sample 3	
Method Name	**Mean**	**CV%**	**Mean**	**CV%**	**Mean**	**CV%**
EDT (n=1)	3.89	0.0	6.50	0.0	8.55	0.0
Hanna (n=23)	3.84	2.9	6.46	1.5	8.54	1.2
Jenway (n=3)	4.00	0.0	6.55	0.9	8.60	0.0
Mettler Toledo (n=6)	3.86	1.1	6.50	0.0	8.50	0.0
Oakton (n=1)	**4.24**	**0.0**	**6.69**	**0.0**	**8.52**	**0.0**
Radiometer (n=)	n/a	n/a	n/a	n/a	n/a	n/a
VWR (n=6)	3.86	1.1	6.45	0.5	8.60	0.0

Weqas supplied comment for pH:

Please note that we have treated each pH result as a number rather than expressed as the H+ ion concentration. The true relationship between the samples is logarithmic rather than linear. We have taken a pragmatic rather than scientific approach to undertake a simple performance assessment in line with the clinical utility and uncertainty around this analyte.

Participant supplied comment for pH:

There is no comment for pH for this distribution

Summary Report
Analyte: pH
Overall Performance Category: Poor
Running PI analyte –sample scores: 50% good, 17% acceptable, 33% poor – higher than the median % poor. HX1124 also shows approximately 20% poor PI.

No specific comments relating to this distribution.

Standard Report
Analyte results table: Only this lab within the method group. Higher reported results for samples 1 and 2 compared to overall mean. Sample 3 aligns with OM.
Scoring Table: samples 1 and 2 poor (red, PI 4.34 and 2.13 respectively), sample 3 good (green, PI -0.19. Samples 1 and 2 positive PI. Overall performance is poor.
Running PI scores: In general, scores over past 6 months show either minimal bias or a mainly positive bias with PI scores wavering between good and acceptable. This distribution shows one result in the red zone and one result off the scale (indicated by an arrow).
Bias Chart (Absolute): You can clearly see the 2 lower pH results for this distribution show a different pattern to previous dists; a much higher bias is observed. Previous samples at these concentrations showed good performance. Linear regression is y = 0.91x + 0.73. 9% negative proportional bias, 0.73 positive constant bias.
Bias Chart (Relative): 2 samples over the last 6 months (this distribution) showing as higher % positive bias (and are in the red zone). Previous samples at these concentrations showed acceptable bias.
Precision Scores: Sy.x 0.04, IS 1, r=0.9999. Precision is good. Previous precision table shows good scores for the last 6 months.
Sample Histograms: Samples 1 and 2 shows results off the scale.
Method Summary Data: Shows samples 1 and 2 for this method (so this lab) are higher than any other method.
Error Identification: Mixed error – significant proportional and constant bias.

Troubleshooting performed by the lab:
Maintenance done in December but not logged. Maintenance/soak due Jan 20th so this was brought forward a few days to 16/01/25.
17/01/25 - monthly maintenance completed and IQC run. IQC still out of range. 6 monthly maintenance also due in February. This was also brought forward.
24/01/25 – Repeat samples assayed and no improvement following completion of 6 monthly maintenance (although IQC was within range). HX0125 performance to be reviewed before considering new probe.
29/01/25 – A direct observation of practice was carried out to review processes. This identified a training issue with the calibration process on the Oakton. SOP updated to clarify the process to prevent recurrence and further refresher training organised for all staff. Samples assayed again following correction of calibration process and results vastly improved.

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Case 3 – Urine Chemistry - Sodium

Summary Report

Programme: **Urine Chemistry** • Distribution Code: **UC0824**
Distribution Start: 20-Aug-2024 • Distribution End: 04-Sep-2024 • Report Issued: 20-Sep-2024 • Report Status: Final
Requested By:

This Distribution	
Your % Poor PI	5%
Median All Participant % Poor PI	0%
97.5th Centile % Poor PI	38%

Running PI analyte-sample Scores

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

PI Scores	
Location	Main Lab
Instrument Name	c501
Instrument Serial #	AA16
Sodium	Poor
Potassium	Acceptable
Chloride	Acceptable
Urea	Good
Creatinine	Acceptable
Glucose	Warning
Calcium	Good
Phosphate	Good
Protein	Warning
Albumin	Acceptable
Magnesium	Good
Urate	Good
Amylase	Acceptable
Overall % poor PI	5%
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.

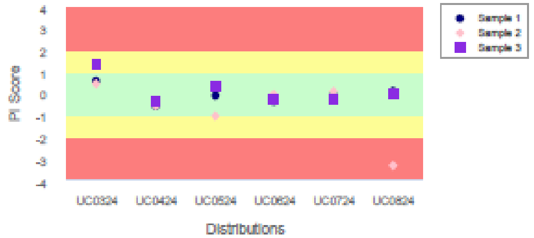
Analyte Standard Report

Sodium mmol/L					
	Your reported result (mmol/L)		Method: Indirect ISE	Instrument Model: cobas c 501	Overall
Sample 1	115	Mean	114.53	114.11	114.53
		SD	1.55	0.49	1.55
		Uncertainty	0.271	0.230	0.271
		n	51	7	51
Sample 2	143	Mean	157.41	156.63	157.41
		SD	2.05	1.11	2.05
		Uncertainty	0.363	0.569	0.363
		n	50	6	50
Sample 3	53	Mean	53.03	53.06	53.03
		SD	0.96	1.02	0.96
		Uncertainty	0.170	0.482	0.170
		n	50	7	50

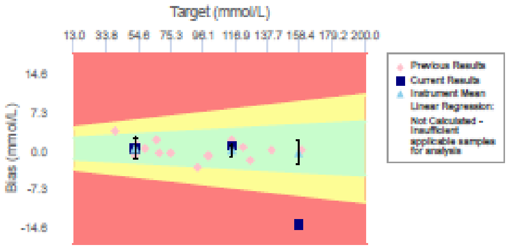
Scoring

Sample	1	2	3	Overall Performance
Target: (Method Mean)	114.53	157.41	53.03	
Weqas TAE	7.26	8.69	5.22	
PI	0.13	-3.32	-0.01	Poor

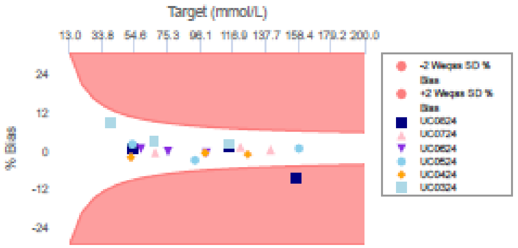
Running PI



Bias (Absolute)



Bias (Relative %)

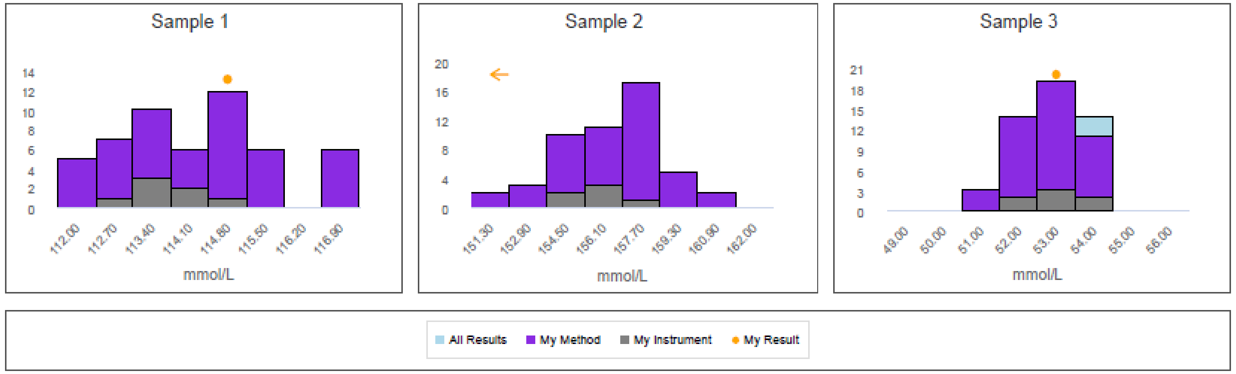


Precision

	UC0324	UC0424	UC0524	UC0624	UC0724	This distribution: UC0824
Sy.x	0.87	0.46	3.09	0.23	0.64	7.29
IS	1	0	8	0	1	63

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)



Method Summary

UC0824	Sample 1		Sample 2		Sample 3	
Method Name	**Mean**	**CV%**	**Mean**	**CV%**	**Mean**	**CV%**
Indirect ISE (n=51)	**114.53**	**1.4**	**157.41**	**1.3**	**53.03**	**1.8**

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

Summary Report

Analyte: Urine sodium
Overall Performance Category: poor
Running PI analyte: Generally good performance scores over the 6 months. This month 5% poor PI.

* PI scores table shows high % of acceptable and warning scores across all analytes. Only 5 analytes show good overall performance scores.

Standard Report

Analyte results table: Shows significantly lower results for sample 2 compared to the method, instrument and overall means.
Scoring Table: Samples 1 and 3 show very low PI scores. Sample 3 shows pronounced negative poor PI (-3.32).
Running PI scores: Shows mainly PI scores in the Good category for previous distributions, with only the one sample from this distribution in the red category.
Bias Chart (Absolute): Quite obviously shows an anomaly for this distribution's sample at a concentration of around 158 mmol/L. Bias indicated as around -15 mmol/L. Narrow SD bars for the method. Linear regression – not calculated .
Bias Chart (Relative): All previous samples show acceptable bias (in the white area). One sample from this distribution showing around -12% bias.
Precision Scores: Precision table shows Sy.x 7.29, IS 63 (11-150 is acceptable to warning).
Sample Histograms: Sample 2 result off the scale compared to all results, your method and your instrument.
Method Summary Data: all participants in same method group. If you click on the 'method' name in the analyte results table this would bring you up the instrument breakdown for the programme.
Error Identification: Significant negative bias for sample 2. Potential sample issue as sample 2 shows a negative bias for several other analytes (out of consensus with samples 1 and 2 scores).

Troubleshooting performed by the lab:

Repeat sample 2 requested and re-assayed for any analytes with acceptable/poor performance. Samples assayed by a different technician. Performance calculated by the lab 16/10/24 and found to show vastly improved scores (PI scores between -0.03 and 1.74 (most <0.6)).

Following discussion with the staff member, it transpired that this is likely a pre-analytical error. Potentially insufficient mixing of the sample prior to analysis. Root cause and troubleshooting discussed with the staff member as a re-training exercise.