RANDOX

RANDOX INTERNATIONAL QUALITY ASSESSMENT SCHEME

RIQAS

RANDOX
QUALITY CONTROL

RIQAS

THE LARGEST INTERNATIONAL EQA SCHEME
WITH OVER 50,000 LAB PARTICIPANTS

BENEFITS

Delivering a comprehensive yet cost effective EQA solution, RIQAS will help meet regulatory requirements and increase confidence in test system accuracy.

Large Database of Users

- A high level of participation means peer group numbers are maximised whilst ensuring availability of data for a wide range of instruments and methods.

User-friendly Reports

- Simple, one page per parameter format, enables at-a-glance performance assessment, saving valuable laboratory time.
- Complimentary multi-instrument and interlaboratory reports allow comparative performance assessment of all laboratory systems and multiple connected laboratories.
- End-of-Cycle reports, summarising performance compared to the previous cycle, allow you to identify improvements in quality over time.

Cost Effective

- Our extensive range of multi-analyte programmes will reduce the number of individual programmes required to cover your test menu, saving both time and money.
- Reduced parameter options for selected programmes offer greater flexibility, ensuring suitability for laboratories of all sizes and budgets.
- Register up to five instruments per programme (volume permitting) at no extra cost for comparative performance assessment.

Frequency

- Frequent reporting allows early identification of system errors and implementation of any necessary corrective actions with minimum disruption to the lab.
- With a turnaround of less than 72 hours for most reports, corrective action can be implemented earlier, potentially reducing costly errors with patient results.

High Quality Samples

- Samples spanning clinically relevant levels allow identification of concentration related biases, helping to ensure accurate instrument performance.
- Human samples free from interfering preservatives increase confidence that EQA performance mirrors the performance of patient samples.
- Reference method values are provided in the Clinical Chemistry programme for selected parameters and lots, while for the Immunosuppressant programme they are provided for all parameters and lots.

Highly Accredited

- Programmes accepted by National and International accreditation bodies worldwide.
- Participant certificates provide evidence of participation in a reputable EQA scheme.

RIQAS is the largest international EQA scheme in the world. It is used by more than 50,000 laboratory participants in 139 countries. 33 programmes are currently available.

RIQAS Programmes

- Ammonia/Ethanol
- Anti-TSH Receptor
- Blood Gas
- BNP
- Cardiac
- Cardiac Plus *coming in 2021
- Cerebrospinal Fluid (CSF)
- Clinical Chemistry
- Coagulation
- CO-Oximetry
- CYFRA 21-1
- ESR
- Glycated Haemoglobin (HbA1c)
- Haematology
- Human Urine
- Immunoassay
- Immunoassay Speciality 1
- Immunoassay Speciality 2
- Immunosuppressant Drugs
- Lipid
- Maternal Screening
- Serology Epstein Barr Virus (EBV)
- Serology (HIV/Hepatitis)
- Serology (Syphilis)
- Serology (ToRCH)
- Specific Proteins
- Sweat Testing
- Therapeutic Drugs
- Trace Elements in Blood
- Trace Elements in Serum
- Trace Elements in Urine
- Urinalysis
- Urine Toxicology

Accreditation

- RIQAS provides certificates as proof of EQA participation and performance for laboratory accreditation purposes.
- RIQAS is a UKAS accredited Proficiency Testing Provider, No. 0010, and is accredited to ISO/IEC 17043:2010, 'Conformity Assessment- General Requirements for Proficiency Testing'.
- Accreditation to ISO/IEC 17043:2010 highlights the superior quality and excellence of RIQAS.

UK Performance Surveillance

- Recognised by the Joint Working Group on Quality Assurance (JWG QA).
- Recognised by various National Quality Assurance Advisory Panels (NQAAP).

Independent Advisory Panel

RIQAS participants have access to an independent advisory panel consisting of scientific and clinical experts. This ensures professional and ethical conduct of the scheme and participant confidentiality.

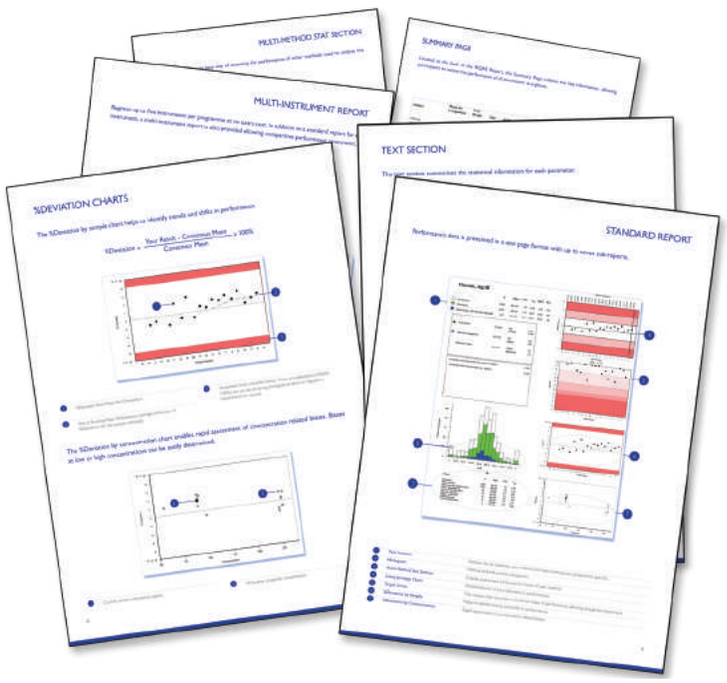
RIQAS support staff are on hand to offer advice and troubleshoot technical queries.

RIQAS REPORTS

RIQAS reports are presented in a user-friendly, one page per parameter format. This allows easy interpretation of your analytical performance.

RIQAS Reports

- Statistical breakdown by all methods, your method and, where applicable, your instrument, including running means for the last 10 samples.
- Compare your instrument group, method group and all methods using the histogram.
- Identify trends, biases and precision problems using the visual charts.
- The Target Score chart grades your performance in a moving window over the last 20 samples, including the previous cycle.
- At-a-glance summary page for all parameters in the programme.
- Compare your result with statistically robust consensus means.
- Identify acceptable and poor performance using fit-for-purpose performance indicators:
  - SDI
  - %Deviation
  - Target Score



Summary CSV Files

It is possible to receive an additional summary of your report statistics, acceptable limits and performance indicators as a .csv file for every sample.

Multi-Instrument Reports

Laboratories can register up to five instruments at no extra cost. Individual reports for each instrument plus a unique multi-instrument report are provided. The multi-instrument report plots the performance of each individual instrument on a single, colour coded Levey-Jennings chart, ensuring instant identification of any differences in instrument performance. Additional sample packs may be ordered as required if volume supplied is insufficient for the registered instruments.

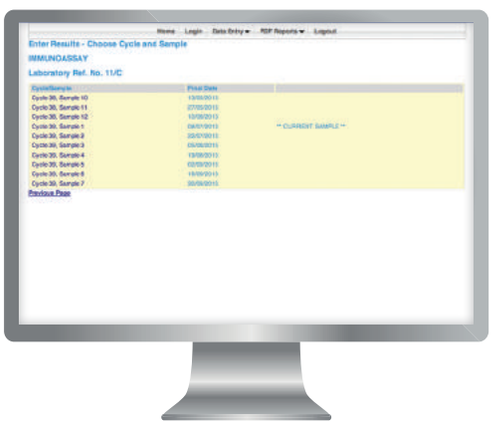
Laboratory Group Reports

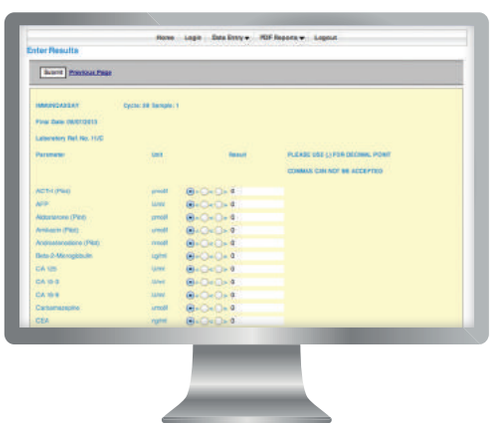
The Group Reporting facility enables laboratory groups or chains to monitor the performance of satellite sites. Each affiliated laboratory will receive their individual reports with the group supervisor also receiving a summary report comparing each laboratory in the network.

WEB-BASED DATA TRANSFER

RIQAS.Net offers easy, direct access for the submission of results and retrieval of reports direct from the RIQAS host server.

- Available in multiple languages.
- Confidentiality and security is maintained through the use of password protected access.
- Submit current, corrected and future results (normal policies apply), directly into the RIQAS database. Receipt of results is confirmed by e-mail.
- Multi-lingual registration identifier provides simple identification of multiple registrations.
- Additions and changes to assay details can be made quickly and easily online.
- Requests for new method, instrument and reagent codes can be made online.
- Reports are emailed in PDF format as soon as they are prepared.
- Reports for the previous two cycles can be downloaded from the website.
- View, print, store or distribute reports as you wish.
- Update your laboratory's certificate of participation details in multiple languages.
- All that is required is web access, Adobe Reader (for viewing reports) and a valid password to access the system.
- No additional software required.

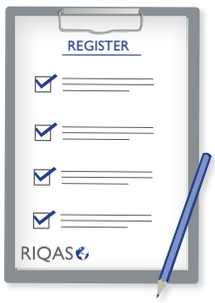




PARTICIPATION IN RIQAS

Participation in RIQAS follows these simple steps:

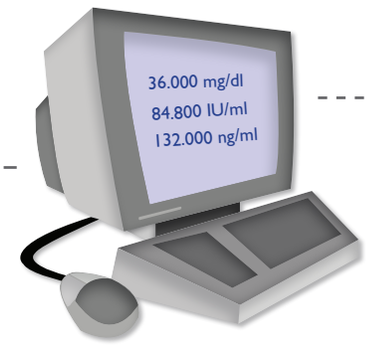
1 Register the instruments and methods used in your lab on RIQAS.net or by completing the enrolment document. Enrolment documents are available from riqas.com and should be submitted 3 weeks before the cycle starts. Check RIQAS policies in method questionnaire.



2 Receive a set of numbered samples along with a username/password to access RIQAS.Net.

3 Analyse the sample on the recommended date, carefully following the instructions for use.

4 Enter your results via RIQAS.Net and submit before the final deadline.

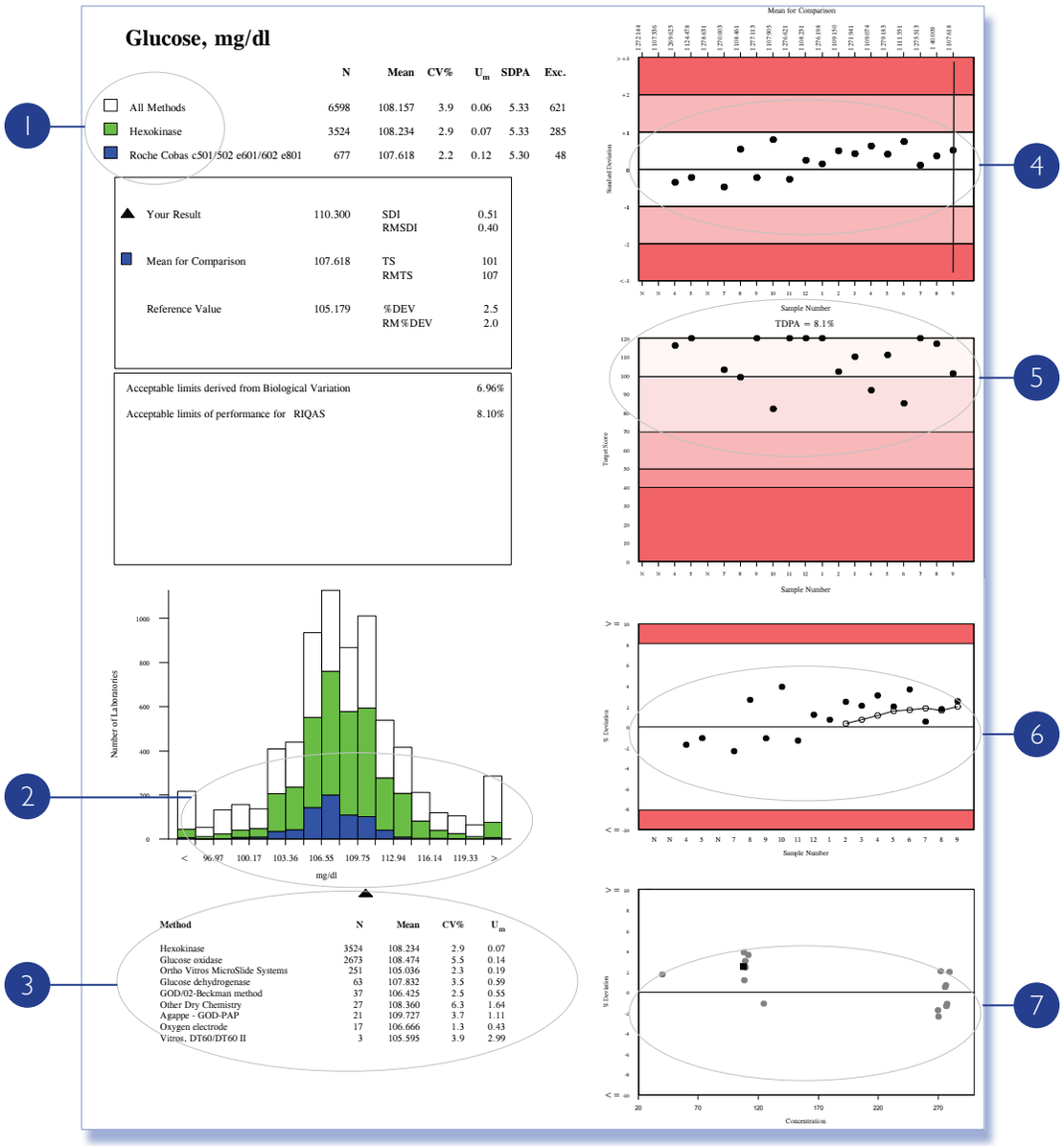


5 Receive report by email and review to assess performance.

6 Receive an end-of-cycle report, a certificate of acceptable performance and a certificate of participation at the end of the cycle, provided that more than half results are returned.

7 Method changes and registration of additional parameters can be submitted via RIQAS.Net.

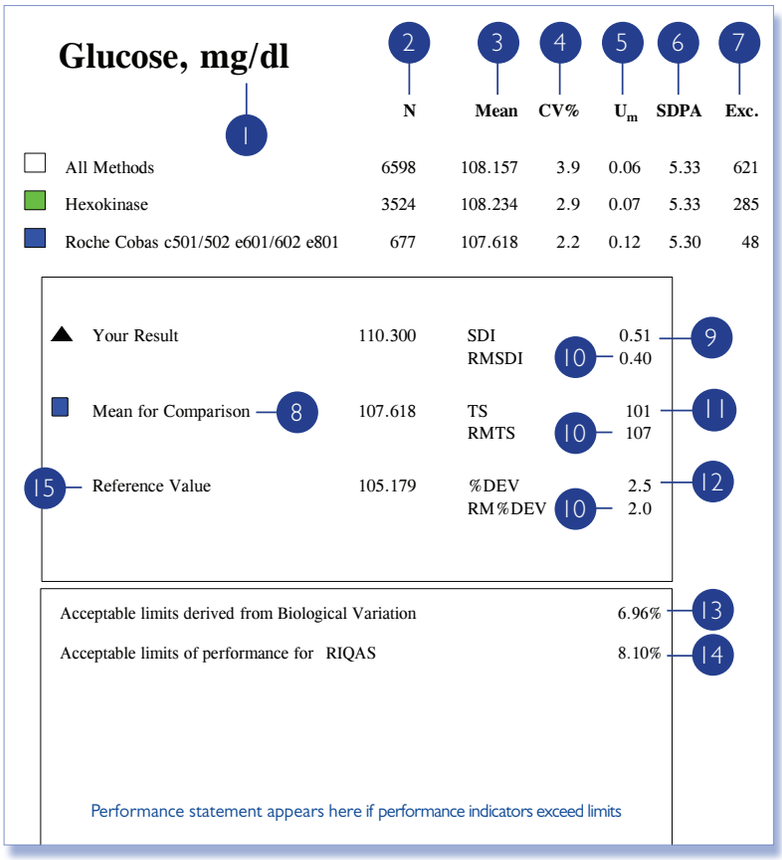
Performance data is presented in a one page format with up to seven sub-reports.



1	Text Section Chart:	Statistics for all methods, your method and instrument group (programme specific).
2	Histogram Chart:	Method and instrument comparison.
3	Multi-Method Stat Section Chart:	Enables assessment of the performance of each method.
4	Levey-Jennings Chart:	Details features of your laboratory's performance.
5	Target Score Chart:	This unique chart provides a numerical index of performance, allowing at-a-glance assessment.
6	%Deviation by Sample Chart:	Helps to identify trends and shifts in performance.
7	%Deviation by Concentration Chart:	Rapid assessment of concentration related biases.

TEXT SECTION

The text section summarises the statistical information for each parameter.



RIQAS performance indicators include SDI, Target Score and %Deviation.

Acceptable performance criteria:

SDI < 2
Target score ≥ 50
%Deviation < defined acceptable limits

1. Report is presented in your chosen unit.
2. Number of returned results used to generate Mean for Comparison.
3. Average value of all laboratories' results.
4. Coefficient of Variation.
5. Uncertainty associated with the Mean for Comparison.

$$U_m = \frac{1.25 \times SD}{\sqrt{n}}$$

6. SDPA = Standard Deviation for Performance Assessment, calculated from the Target Deviation for Performance Assessment (TDPA) and the Mean for Comparison.

$$SDPA = \frac{TDPA \times \text{Mean for Comparison}}{\text{t-value} \times 100}$$

t-value = factor which represents the % of poor performers reflected in the TDPA (t-value ~ 1.645 when ~10% laboratories achieve poor performance), SDPA is combined with U_m, where appropriate.

If $U_m > (0.3 \times SDPA)$ then $SDPA_{adjusted} = \sqrt{(U_m^2 + SDPA^2)}$ and the reported value is suffixed with "a"

If U_m is less than $(0.3 \times SDPA)$ then $SDPA_{adjusted} = SDPA$

7. After statistical reduction, some results are excluded from the mean for comparison.
8. Ideally this will be your instrument group mean. If N<5 for instrument group, your method group mean is selected as mean for Comparison.
9. Standard Deviation Index = $\frac{\text{Your Result - Mean for Comparison}}{SDPA_{adjusted}}$
10. Running Mean average of the last 10 performance indicators is used to monitor performance over time and concentration range.
11. Target Score - The closer a value is to 120, the better the performance.

$$TS = \log_{10}\left(3.16 \times \frac{TDPA}{|\%Dev|}\right) \times 100$$

12. %Deviation from the Mean for Comparison -

$$\%Dev = \frac{\text{Your Result - Mean for Comparison}}{\text{Mean for Comparison}} \times 100$$

The closer the value is to zero, the better the performance.

13. Biological Variation stated for information purposes only.
14. Performance limit set for this parameter.
15. Reference values quoted for information purposes, where applicable.

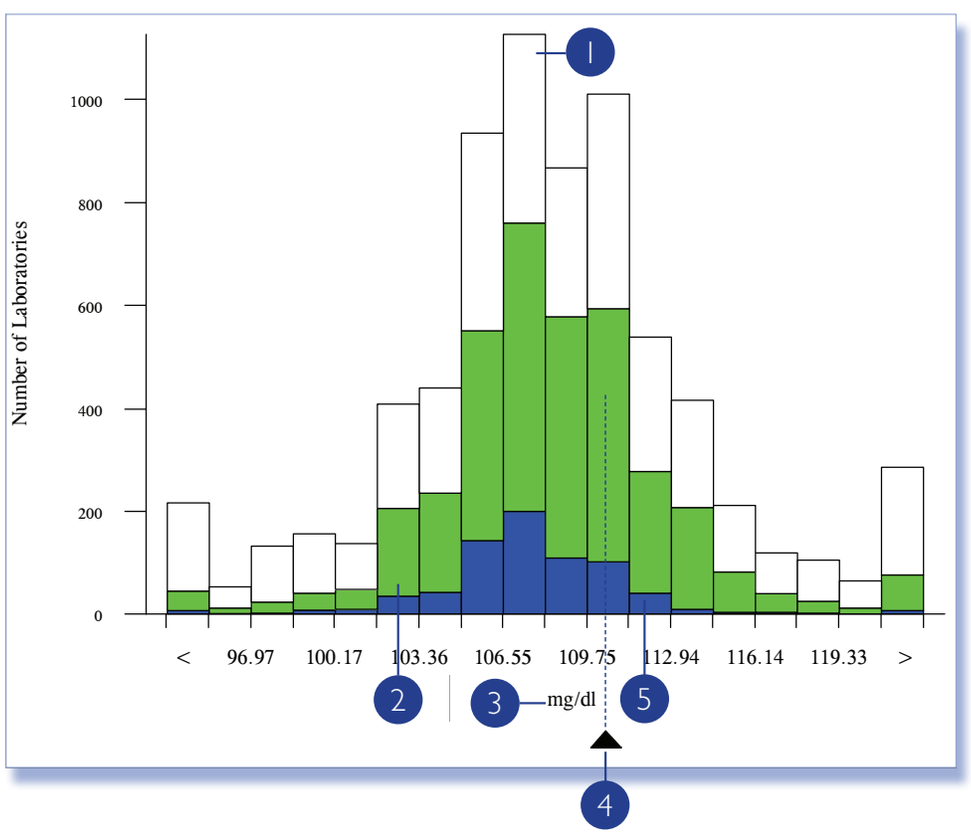
HISTOGRAM

The Bar Graph is intended as a quick visualisation of how your lab's result compares to the method mean, instrument mean and all method mean.

All methods

Your method group

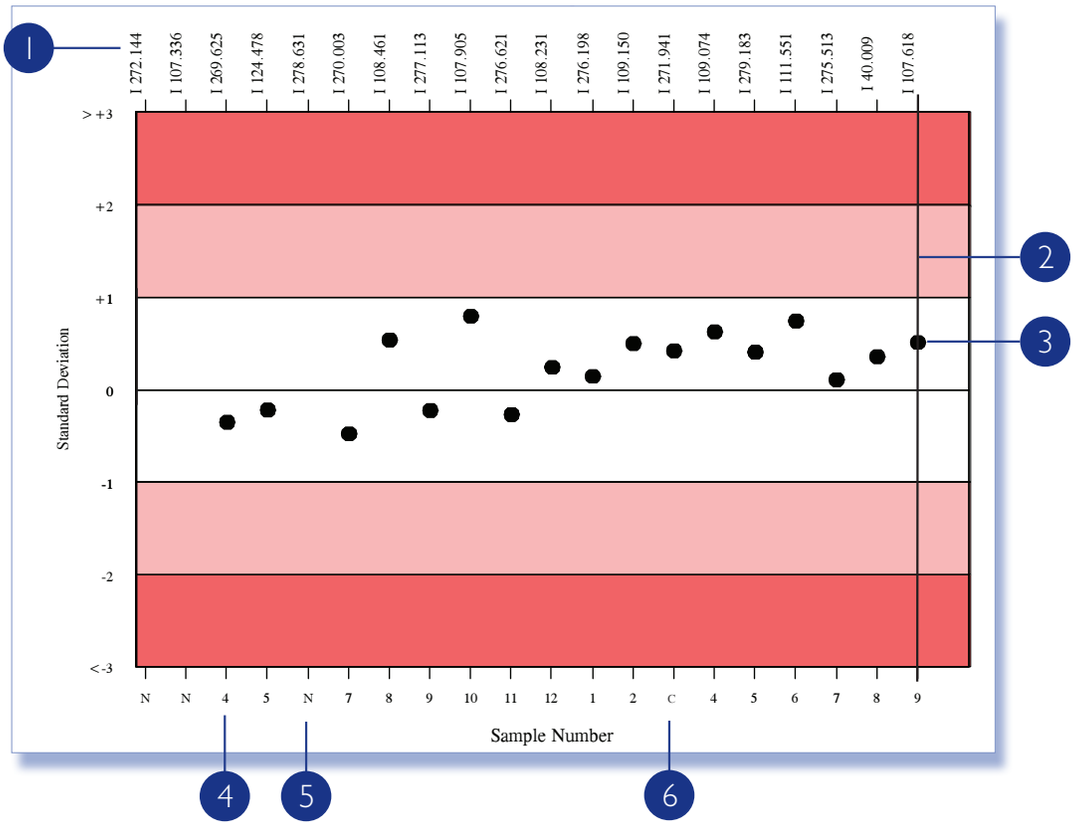
Your instrument group (programme specific)



1. Total of 1126 laboratories reported values between 106.55 and 108.15.
2. 200 laboratories reported values between 101.77 and 103.36 in your method group.
3. RIQAS reports show your unit of measurement.
4. Your result is indicated by the black triangle.
5. 41 laboratories reported values between 111.35 and 112.94 in your instrument group.

LEVEY-JENNINGS CHART

SDIs reflect laboratory performance in relation to fit-for-purpose SDPAs and are useful to monitor performance over time. Acceptable performance is SDI < 2.

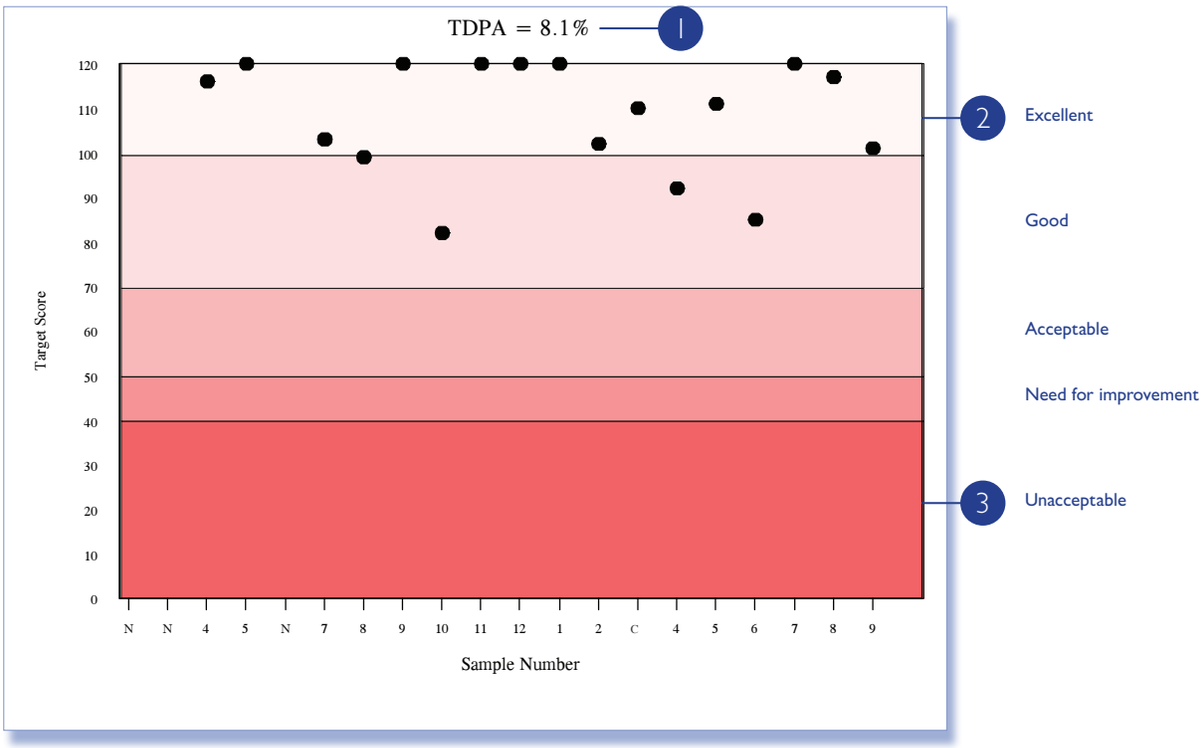


1. The Mean for Comparison for each sample is indicated at the top of the chart. This allows easy assessment of concentration related bias:
   - I: Instrument mean
   - M: Method mean
   - A: All method mean
2. This line indicates a change in registration details for this parameter.
3. Your SDI (Standard Deviation Index).
4. Sample number.
5. N = No result returned from your laboratory.
6. C = Corrected results will be accepted for non-analytical errors. Corrected results will be accepted up to 4 weeks after the final submission deadline, on application, with evidence of analysis. Late results are only accepted if there has been a Randox error.

   R = Incorrect results can be removed retrospectively on request.

TARGET SCORE CHART

The Target Score (TS) allows you to assess your performance at a glance. The TS relates the %Deviation of your result from the Mean to a Target Deviation for Performance Assessment (TDPA). TDPAs are set to encourage participants to achieve and maintain acceptable performance. TDPAs are fit-for-purpose performance criteria which are set taking guidance from ISO/IEC17043, ISO13528 and IUPAC. Target Deviations for Performance Assessment are also used to calculate the Standard Deviation for Performance Assessment (SDPA).



1 This is the upper deviation limit of performance for this parameter. TDPAs are reviewed regularly and deemed fit for purpose by the RIQAS Advisory Panel.

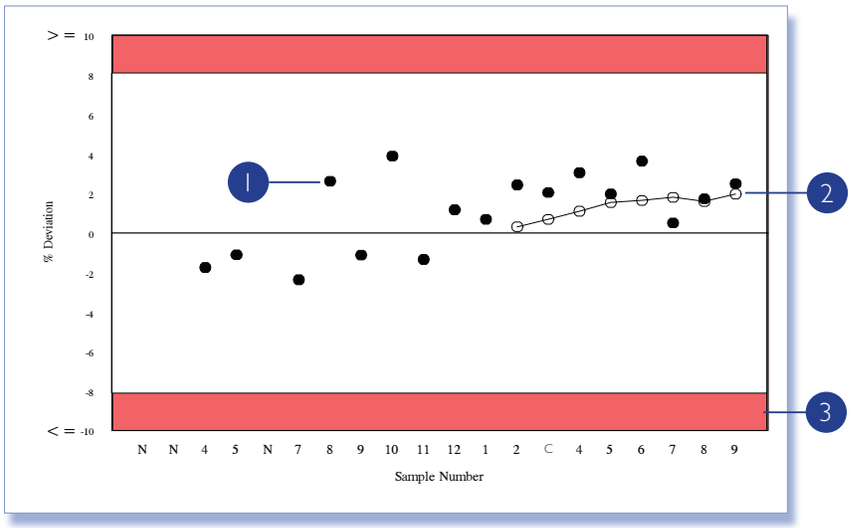
2 High scores ≥50 in the lighter shaded area represent acceptable, good or excellent performance.

3 Heavy shading for values 10 to 50 signifies poor performance.

%DEVIATION CHARTS

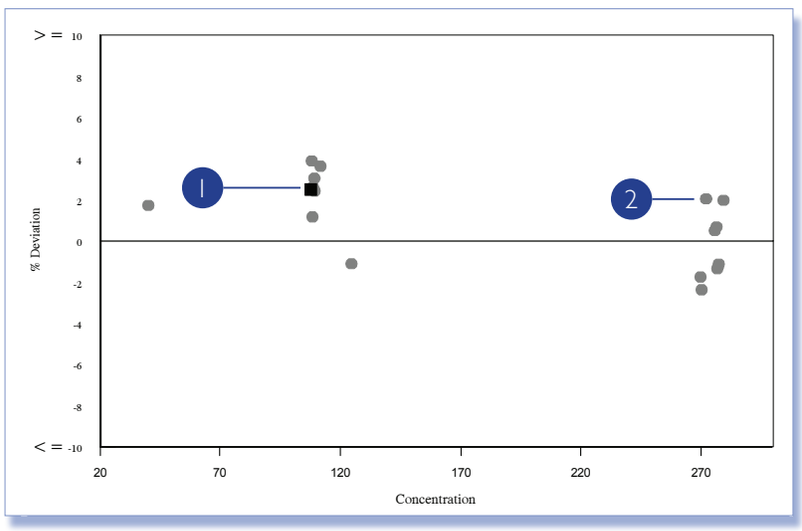
The %Deviation by sample chart helps to identify trends and shifts in performance.

$$\%\text{Deviation} = \frac{\text{Your Result - Consensus Mean}}{\text{Consensus Mean}} \times 100\%$$



1. %Deviation from Mean for Comparison.
2. Plot of Running Mean %Deviations (average of the last 10 %Deviations for the sample indicated).
3. Acceptable limits of performance. These are defaulted to RIQAS TDPAs but can be set to e.g. biological variation or regulatory requirement on request.

The %Deviation by concentration chart enables rapid assessment of concentration related biases. Biases at low or high concentrations can be easily determined.



1. Current sample indicated by square.
2. %Deviation at specific concentration.

MULTI-METHOD STAT SECTION

This section provides an easy way of assessing the performance of other methods used to analyse the parameter in question.

Method	N	Mean	CV%	U_m
Hexokinase	3524	108.234	2.9	0.07
Glucose oxidase	2673	108.474	5.5	0.14
Ortho Vitros MicroSlide Systems	251	105.036	2.3	0.19
Glucose dehydrogenase	63	107.832	3.5	0.59
GOD/02-Beckman method	37	106.425	2.5	0.55
Other Dry Chemistry	27	108.360	6.3	1.64
Agappe - GOD-PAP	21	109.727	3.7	1.11
Oxygen electrode	17	106.666	1.3	0.43
Vitros, DT60/DT60 II	3	105.595	3.9	2.99

SUMMARY PAGE

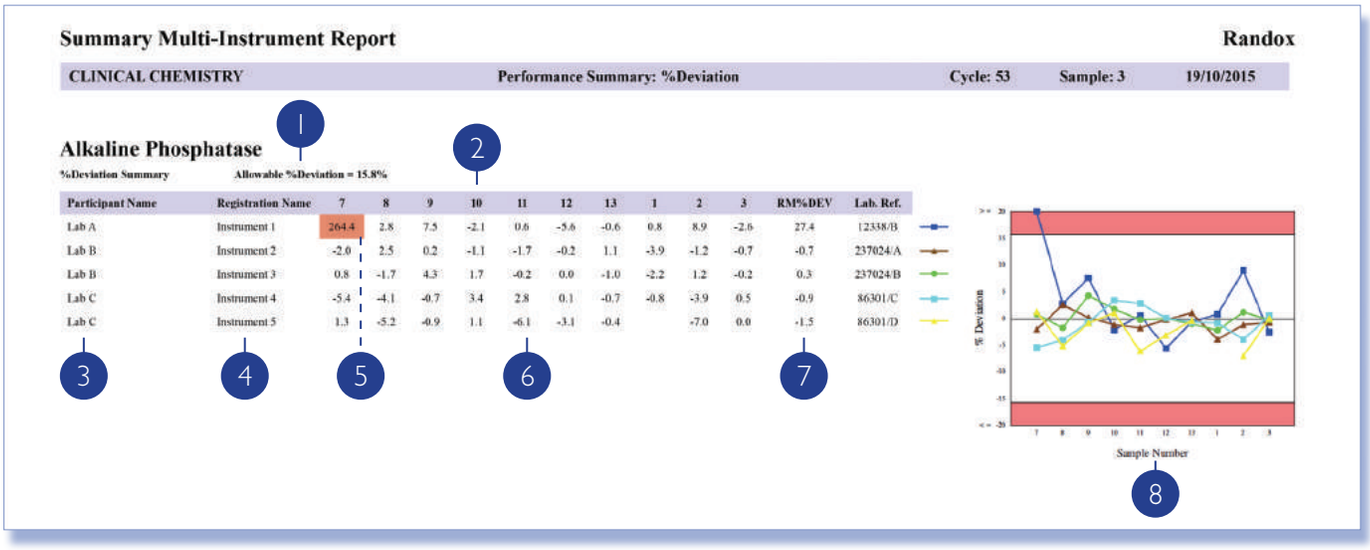
Located at the back of the RIQAS Report, the Summary Page collates the key information, allowing participants to review the performance of all parameters at-a-glance.

Analyte	Mean for Comparison	Your Result	SDI	RMSDI	%DEV	RM%DEV	TS	RMTS	Performance
Albumin	2.120	2.230	1.00	0.37	5.2	2.0	72	107	
Alkaline Phosphatase	17.705	19.000	0.61	-0.27	7.3	-2.9	93	105	
ALT (GPT)	12.387	12.000	-0.33	-0.47	-3.1	-3.8	119	103	
Amylase, Total	20.454	22.000	0.72	-0.29	7.6	-2.5	86	103	
AST (GOT)	11.976	11.000	-0.86	-0.03	-8.2	-0.4	78	100	
Bicarbonate	8.203	6.900	-1.48	0.15	-15.9	1.5	54	98	
Bilirubin, Direct	0.251	0.380	***2.57***	2.64	***51.3***	47.2	***31***	29	▲
Bilirubin, Total	0.701	0.640	-0.91	-0.29	-8.8	-2.9	76	101	
Calcium	6.074	6.020	-0.19	-0.40	-0.9	-1.8	120	92	
Chloride	76.353	77.000	0.30	-0.28	0.8	-0.8	120	98	
Cholesterol	112.696	110.000	-0.55	0.05	***2.4***	0.2	97	115	
CK, Total	111.659	111.000	-0.08	0.35	-0.6	2.5	120	107	
Creatinine	0.607	0.620	0.27	0.06	2.1	0.5	120	117	
Glucose	36.429	36.000	-0.26	-0.84	-1.2	-3.7	120	82	
HDL-Cholesterol	98.836	102.000	0.21	-0.04	3.2	-0.4	120	113	
Iron	97.374	99.000	0.28	0.01	1.7	0.1	120	114	
Lactate		No Result		Too Few		Too Few	N/A	N/A	
LD (LDH)	85.894	87.000	0.11	-0.70	1.3	-6.3	120	89	
Magnesium	1.313	1.390	0.79	-0.07	5.8	-0.5	82	107	
Phosphate, Inorganic	1.451	1.540	1.02	0.02	6.1	0.1	71	112	
Potassium	1.770	1.840	1.10	-0.25	3.9	-0.7	67	99	
Protein, Total	3.850	3.830	-0.11	0.07	-0.5	0.3	120	114	
Sodium	112.537	114.000	0.58	-0.01	1.3	-0.0	95	104	
TIBC	133.143	133.000	-0.01	-0.01	-0.1	-0.1	120	117	
Trig Total	23.626	24.000	0.18	-0.09	1.6	-0.6	120	114	
Urea	5.872	5.000	***-2.02***	-0.57	***-14.9***	-4.0	***41***	95	▲
Uric Acid (Urate)	3.135	3.100	-0.20	-0.44	-1.1	-2.4	120	107	
			ORMSDI -0.05		**ORM%DEV 0.8**		**ORMTS 102**		

1. RMSDI - is the Running Mean of the 10 previous SDIs (if fewer than 10 results on file, "Too Few" is printed).
2. RM %DEV - Average of the last 10 %DEV for this parameter.
3. RMTS - Average of the last 10 Target Scores for this parameter.
4. Red triangle appears when all performance indicators (SDI, %DEV and TS) exceed acceptable performance, i.e: when
   SDI > 2
   TS < 50
   %DEV > acceptable limits set
5. Overall RMSDI = average RMSDI for this sample distribution.
6. Overall RM%DEV = average RM%DEV for this sample distribution.
7. Overall RMTS = average RMTS for this sample distribution.

MULTI-INSTRUMENT REPORT

Register up to five instruments per programme at no extra cost. In addition to a standard report for each instrument, a multi-instrument report is also provided allowing comparitive performance assessment.



Summary Multi-Instrument Report — **Randox**

CLINICAL CHEMISTRY — **Performance Summary: %Deviation** — **Cycle: 53** — **Sample: 3** — **19/10/2015**

Alkaline Phosphatase

%Deviation Summary — **Allowable %Deviation = 15.8%**

Participant Name	Registration Name	7	8	9	10	11	12	13	1	2	3	RM%DEV	Lab. Ref.
Lab A	Instrument 1	264.4	2.8	7.5	-2.1	0.6	-5.6	-0.6	0.8	8.9	-2.6	27.4	12338/B
Lab B	Instrument 2	-2.0	2.5	0.2	-1.1	-1.7	-0.2	1.1	-3.9	-1.2	-0.7	-0.7	237024/A
Lab B	Instrument 3	0.8	-1.7	4.3	1.7	-0.2	0.0	-1.0	-2.2	1.2	-0.2	0.3	237024/B
Lab C	Instrument 4	-5.4	-4.1	-0.7	3.4	2.8	0.1	-0.7	-0.8	-3.9	0.5	-0.9	86301/C
Lab C	Instrument 5	1.3	-5.2	-0.9	1.1	-6.1	-3.1	-0.4		-7.0	0.0	-1.5	86301/D

1. Allowable %deviation for the parameter in question, based on the RIQAS TDPA.
2. Sample number.
3. Lab name.
4. Unique instrument ID.
5. Poor performance.
6. %Deviation for each individual sample.
7. RM %Dev - Average of the last 10 %Dev for this parameter.
8. %Deviation chart comparing the performance of each instrument.

URINE TOXICOLOGY REPORT

Laboratory performance is presented in both quantitative and qualitative screening formats, allowing for easy interpretation at-a-glance.

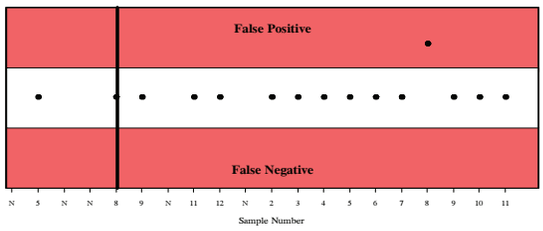
Screening Section

Quantitative Section

Amphetamines Group, ng/ml

Your Result Negative

Based on weighed-in value of 375
and your chosen cut-off value of 500
the correct response was Negative

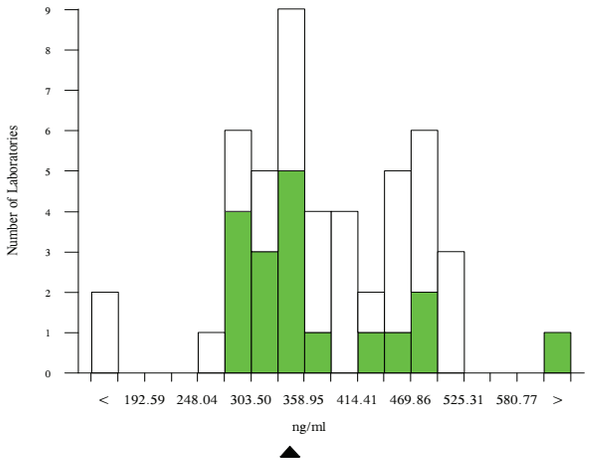


d-Amphetamine	375	ng/ml
Ethanol	45	mg/dl
LSD	1.25	ng/ml
EDDP	225	ng/ml
Buprenorphine	7.5	ng/ml

	Cut-off	TN	TP	FN	FP	RC	NT	Total
Your Result	**500**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
KIMS	300	0	1	0	0	0	0	1
	500	**12**	**0**	**0**	**0**	**0**	**0**	**12**
	1000	9	0	0	0	0	0	9
	All	21	1	0	0	0	0	22
All Methods	150	0	1	0	0	0	0	1
	300	0	7	0	0	0	0	7
	500	**31**	**0**	**0**	**3**	**0**	**0**	**34**
	1000	62	0	0	6	0	0	68
	All	93	8	0	9	0	0	110
Competitive Antibody Binding	**500**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
CEDIA	**500**	**4**	**0**	**0**	**0**	**0**	**0**	**4**
Chemiluminescence	**500**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
DRI-EIA	**500**	**4**	**0**	**0**	**1**	**0**	**0**	**5**
EMIT	**500**	**8**	**0**	**0**	**0**	**0**	**0**	**8**
FPIA	**500**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
Point of Care	**500**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
Randox Biochip Array Technology	**500**	**0**	**0**	**0**	**1**	**0**	**0**	**1**

	N	Mean	CV%	U_m	SDPA	Exc.
All Methods	45	386.683	19.1	13.78	73.94	4
KIMS	17	357.294	18.6	20.14	69.41a	1

Your Result	352.000	SDI	-0.08
		RMSDI	Too Few
Mean for Comparison	357.294		



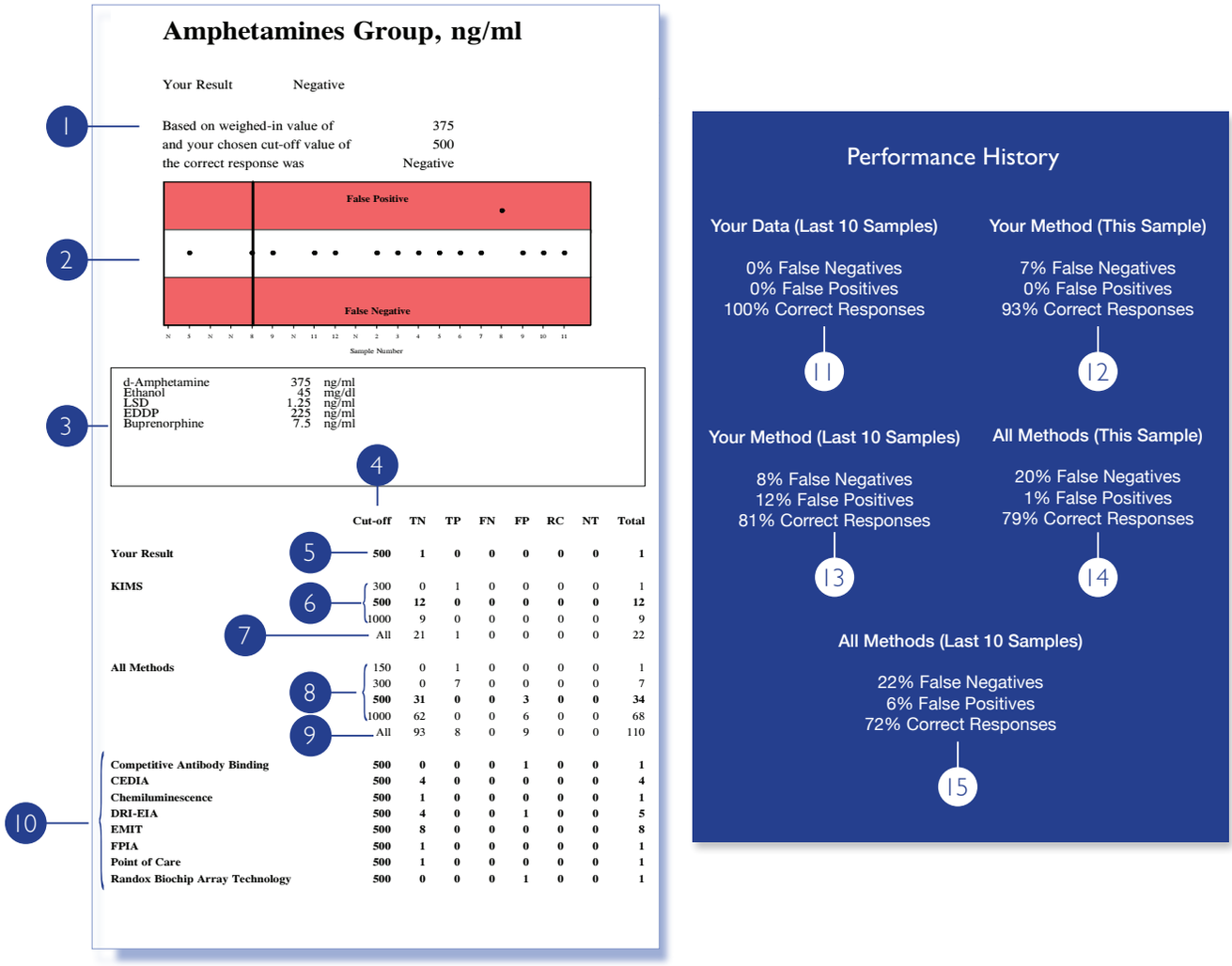
Method	N	Mean	CV%	U_m
KIMS	17	357.294	18.6	20.14
EMIT	9	344.440	12.4	17.74
Competitive Antibody Binding	7	460.857	8.9	19.30
DRI-EIA	7	433.767	17.2	35.31
CEDIA	2	410.000	11.7	42.25

Performance History

Your Data (Last 10 Samples)	Your Method (This Sample)	Your Method (Last 10 Samples)	All Methods (This Sample)	All Methods (Last 10 Samples)
0 % False Negatives	0 % False Negatives	1 % False Negatives	0 % False Negatives	8 % False Negatives
10 % False Positives	0 % False Positives	11 % False Positives	8 % False Positives	7 % False Positives
90 % Correct Responses	100 % Correct Responses	88 % Correct Responses	92 % Correct Responses	85 % Correct Responses

URINE TOXICOLOGY REPORT SCREENING SECTION

Qualitative comparison of screening results available for each parameter.



Amphetamines Group, ng/ml

Your Result Negative

1 Based on weighed-in value of 375
and your chosen cut-off value of 500
the correct response was Negative

2 False Positive / False Negative

Sample Number

3

d-Amphetamine	375	ng/ml
Ethanol	45	mg/dl
LSD	1.25	ng/ml
EDDP	225	ng/ml
Buprenorphine	7.5	ng/ml

4

	Cut-off	TN	TP	FN	FP	RC	NT	Total
Your Result (5)	**500**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
KIMS (6)	300	0	1	0	0	0	0	1
	500	**12**	**0**	**0**	**0**	**0**	**0**	**12**
	1000	9	0	0	0	0	0	9
(7)	All	21	1	0	0	0	0	22
All Methods (8)	150	0	1	0	0	0	0	1
	300	0	7	0	0	0	0	7
	500	**31**	**0**	**0**	**3**	**0**	**0**	**34**
	1000	62	0	0	6	0	0	68
(9)	All	93	8	0	9	0	0	110
(10) **Competitive Antibody Binding**	**500**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
CEDIA	**500**	**4**	**0**	**0**	**0**	**0**	**0**	**4**
Chemiluminescence	**500**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
DRI-EIA	**500**	**4**	**0**	**0**	**1**	**0**	**0**	**5**
EMIT	**500**	**8**	**0**	**0**	**0**	**0**	**0**	**8**
FPIA	**500**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
Point of Care	**500**	**1**	**0**	**0**	**0**	**0**	**0**	**1**
Randox Biochip Array Technology	**500**	**0**	**0**	**0**	**1**	**0**	**0**	**1**

Performance History

Your Data (Last 10 Samples)
0% False Negatives
0% False Positives
100% Correct Responses
(11)

Your Method (This Sample)
7% False Negatives
0% False Positives
93% Correct Responses
(12)

Your Method (Last 10 Samples)
8% False Negatives
12% False Positives
81% Correct Responses
(13)

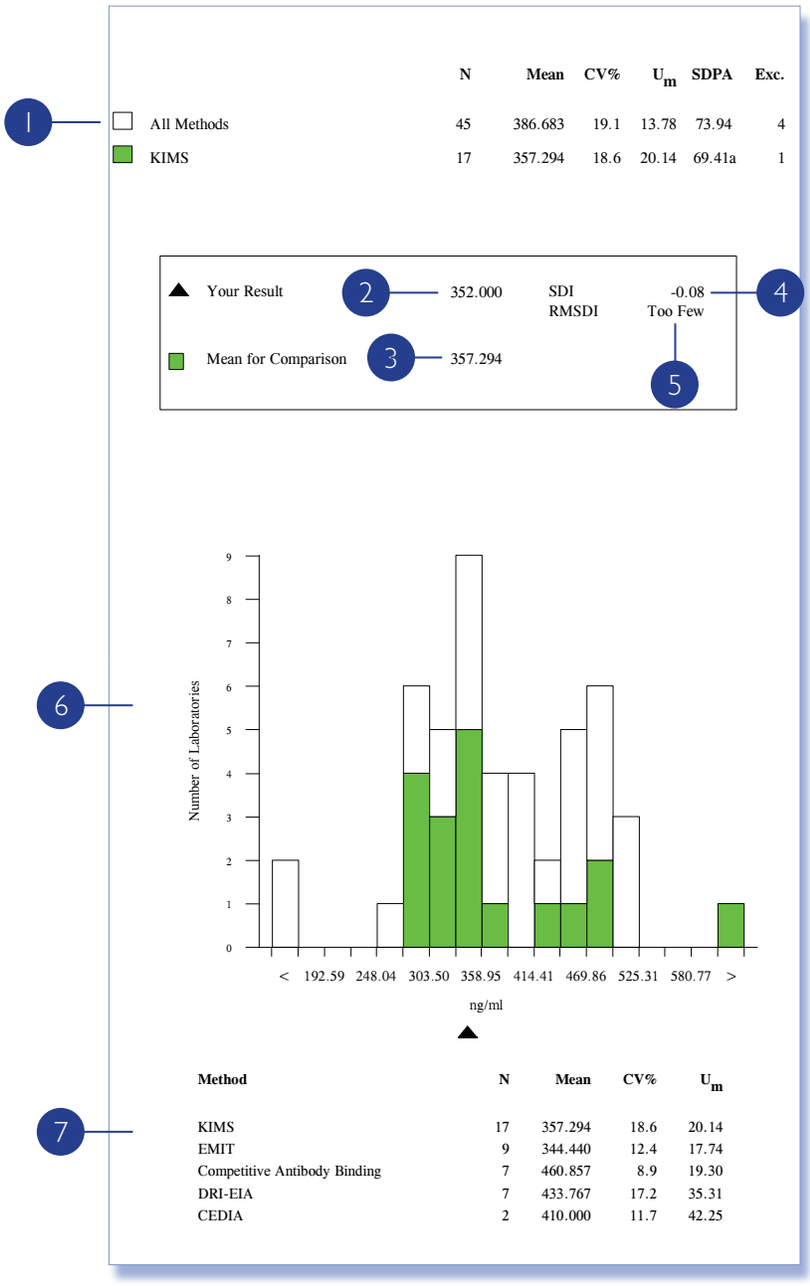
All Methods (This Sample)
20% False Negatives
1% False Positives
79% Correct Responses
(14)

All Methods (Last 10 Samples)
22% False Negatives
6% False Positives
72% Correct Responses
(15)

1. Text section shows the correct response for the lab based on a comparison between the weighed in value and the lab's cut off value.
2. **Screening Results:** This chart is a quick visualisation of your performance over the last 20 samples. A result in the white section indicates a correct response. A result in the upper red section indicates a False Positive response, and a result in the lower red section indicates a False Negative response.
3. Comment section for RIQAS to provide your laboratory with additional relevant information regarding this sample, such as spiked metabolite concentration.
4. Screening result response categories. All abbreviations indicated at the bottom of the report page.
   Key
   TN - true negative **TP** - true positive **FN** - false negative
   FP - false positive **RC** - sent for confirmation **NT** - not tested
5. **Screening Summary:** Your screening result shown in the appropriate response category and your cut off for this sample.
6. Screening results for all cut-offs returned for this sample within your method group.
7. Total screening results over all cut-offs for your laboratory's method.
8. Screening results for all cut-offs returned for this sample over all methods.
9. Total screening results over all cut-offs for all methods.
10. Screening results for other methods using same cut-off as your laboratory.
11. Performance history for this parameter, based on previous 10 samples.
12. Performance of your method over all cut-offs for this sample.
13. Performance history of your method over all cut-offs, based on the previous 10 samples.
14. Performance of all methods over all cut-offs for this sample.
15. Performance history of all methods over all cut-offs, based on the previous 10 samples.

URINE TOXICOLOGY REPORT QUANTITATIVE SECTION

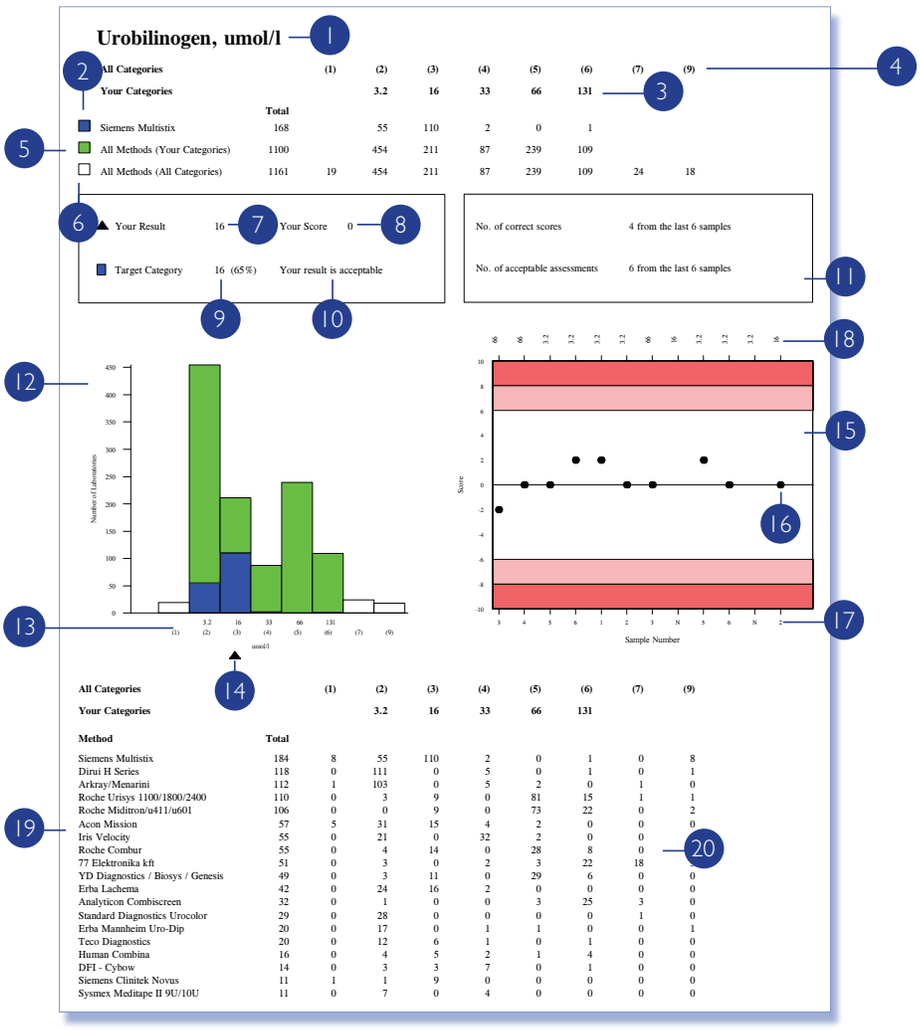
Quantitative statistical comparison available for each parameter.



1. **Quantitative Text Section:** Comparison statistics. Caution is needed when the N value is too small to support statistical significance.
2. Your Result.
3. Your Mean for Comparison.
4. **Standard Deviation Index** = $\frac{\text{(Your Result – Mean for Comparison)}}{\text{SD of Mean for comparison}}$
5. Running mean SDI = average of last 10 SDIs for this parameter (If fewer than 10 results, "Too Few" is printed).
6. **Quantitative Results Histogram:** This graph provides a quick visualisation of how your quantitative result falls into the overall picture for all methods and your method group.
7. All available method statistics for this sample.

Your performance for each parameter is presented in a simple, convenient report.

Screening Results



1. Categories are stated in your unit.
2. Your method group.
3. Your categories (available result options for chosen test strip and unit).
4. All categories (result options) available for this parameter for any method (test strip).
5. Results from all methods (test strips) returning results in the same categories as your lab.
6. Results from all methods for all available categories.
7. Your Result.
8. **Your Score:** Scores between 0-6 are acceptable, 7 borderline and 8 - 10 unacceptable.
9. Target category and percentage of submitted results in that category.
10. Performance Statement.
11. **Comments Box:** Provides number of correct scores and acceptable assessments for the last 6 samples.
12. **Categories Histogram:** A quick visualisation of how your lab's result falls into the overall picture for your categories.
13. Possible reporting categories for your method.
14. Your result is indicated by the black triangle.
15. **Levey-Jennings Chart:** Acceptable scores (0-6) have no shading, borderline scores (7) have light red shading, unacceptable scores (8-10) have dark red shading.
16. Score for each sample number.
17. Sample Number.
18. Target Categories.
19. All methods reported for this parameter.
20. **Detailed summary of results:** This table enables you to see how you compare to all other results.

SEROLOGY: SCREENING (QUALITATIVE) REPORT

Your performance for multiple samples is presented in a convenient single report per quarterly distribution.

Anti-HIV-1&2 Combi

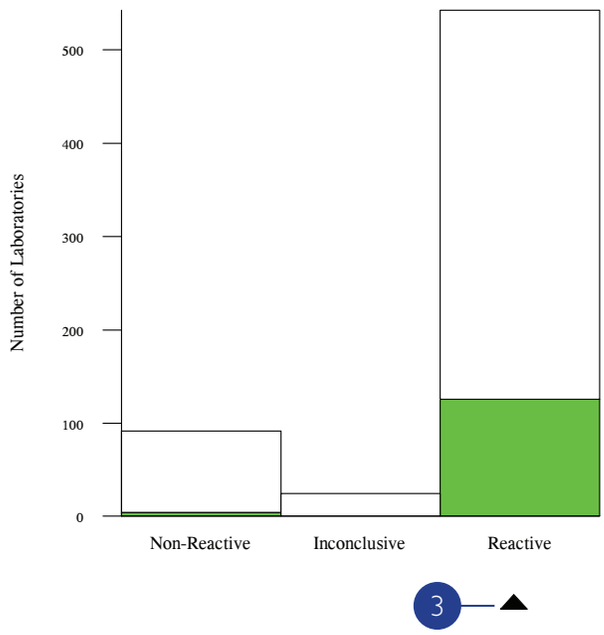
Sample 1

Your method: Roche Cobas 6000 / 8000
Your result: Reactive
Acceptable result (Method): Reactive

Overall results

Non-Reactive: 91
Inconclusive: 24
Reactive: 542

Method	N	Non-Reactive	Inconclusive	Reactive
Abbott Architect	212	4	13	195
Roche Cobas 6000 / 8000	129	4	0	125
Roche Cobas 4000/e411	118	2	3	113
Siemens Centaur XP/XPT/Classic	44	18	3	23
BioMerieux VIDAS	27	1	2	24
Ortho Vitros 3600/5600/ECi	22	20	0	2
Beckman DxI 600 / 800	17	0	0	17
Diasorin/Abbott Murex ELISA	10	9	1	0
Diasorin Liaison	10	0	0	10
Bio-Rad HIV assays	8	6	0	2
Alere Determine HIV-1/2	7	4	0	3
Siemens Enzygnost	7	2	0	5
Beckman Access/LXi725	6	0	1	5
Roche Elecsys	5	0	0	5
SD Bioline Rapid Test HIV	5	3	0	2
Roche Modular E170	4	0	0	4
Beckman Access/Biorad HIV Combo	3	0	1	2
Diagnostic BioProbes ELISA	3	0	0	3
Vector Based ELISA	3	2	0	1
Siemens Centaur CP	2	1	0	1
Diagnostic Automation Inc HIV1/2	2	2	0	0
J Mitra/Diagnostic Enterprises TRI-DOT	2	2	0	0
Fujirebio Serodia Particle Agg.	2	2	0	0



1. Your qualitative result and chosen method are presented along with the acceptable result based on an 80% consensus. This consensus will be at the method level if there are >5 labs in the group or if there are <5 labs, will be at the all method level.
2. Overall Summary shows the number of results for this parameter and sample which are non-reactive, inconclusive or reactive.
3. Your Result is shown as a black triangle on the category chart compared to other laboratories in groups:

   All Methods ☐ Your Method ■
4. Summary shows performance of all the methods used to analyse the parameter.

SEROLOGY: SCREENING (QUANTITATIVE) REPORT

Your performance for multiple samples is presented in a convenient single report per quarterly distribution.

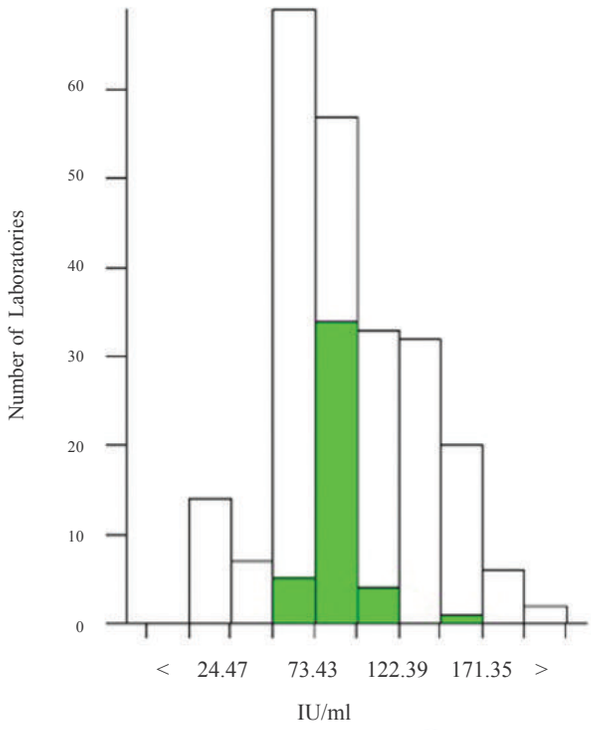
Anti-Rubella IgG, IU/ml

Sample 2

	N	Mean	CV%	U_m	SDPA	Exc.
All methods	210	92.574	37.2	2.97	34.42	31
Abbott Architect	39	83.219	8.7	1.46	7.27	5

1

Your Result	84.800	SDI	0.22
		RMSDI	Too Few
Mean for Comparison	83.219		

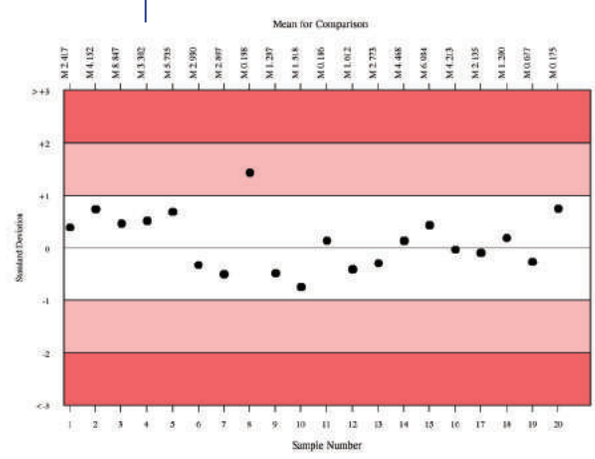


2

3

Method	N	Mean	CV%	U_m
Biomerieux VIDAS	48	150.979	9.8	2.97
Abbott Architect	44	83.219	8.7	1.46
Roche Cobas 6000/8000	18	58.792	3.6	0.68
Abbott Axsym	17	108.206	18.0	6.09
Siemens/DPC Immulite 2000/2500	17	90.800	6.2	1.94
Roche Cobas 4000/e411	17	59.973	7.0	1.35
Siemens/Bayer ADVIA Centaur	14	120.775	11.0	5.88
Roche Elecsys	11	57.043	3.9	1.05
Diasorin Liaison	9	52.388	18.0	4.16
Roche Modular E170	9	58.949	3.9	1.08
Beckman DxI 600/800	6	125.817	7.4	4.75

4



1 Quantitative statistics for All Methods and Your Method are presented in your chosen unit along with your result and your performance scores (SDI and RMSDI).

2 Your result is presented on the bar graph as a black triangle, showing how you compare to:

All Methods Your Method

3 Multi Method Statistics section provides an easy way of assessing the performance of the methods used to analyse the parameter.

4 **Levey-Jennings chart** - Your SDIs for previous 20 samples.

QUANTITATIVE (END-OF-CYCLE REPORT)

The End-of-Cycle Report is sent to labs receiving standard reports at the end of each cycle and provides a complete summary of statistics. Results can also be compared to the previous cycle.

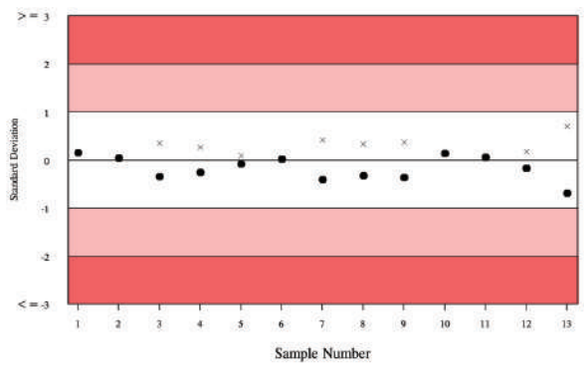
Albumin, g/l

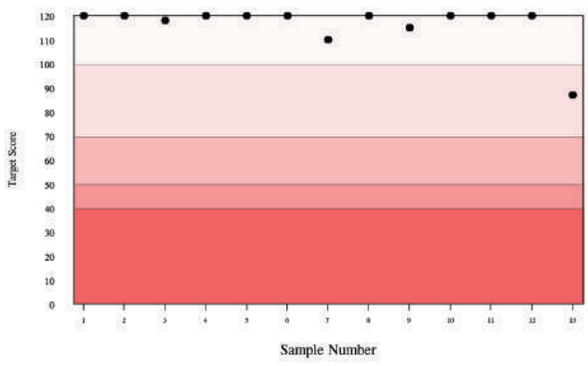
Method: Bromocresol Purple
Instrument: Siemens/Dade Dimension RxL/Max/Xpand
Reagent: Siemens/Dade Behring

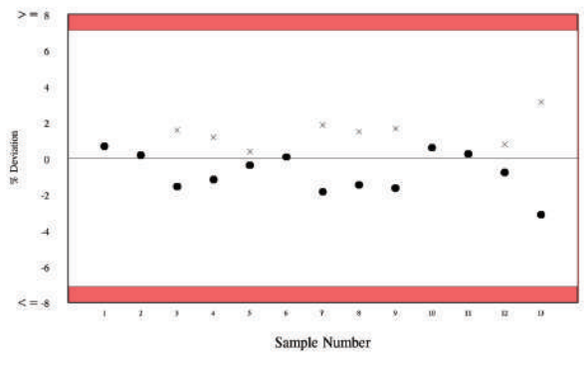
RIQAS TDPA: 7.1% **Biological Variation:** 3.9%

Sample	Result	Unit	N	Mean for Comparison	CV%	Um	SDPA	SDI	TS	%Deviation
1	28.200	g/l	68	I 28.013	2.4	0.10	1.26	0.15	120	0.67
2	26.900	g/l	87	I 26.853	2.7	0.10	1.21	0.04	120	0.17
3	39.900	g/l	71	I 40.531	2.5	0.15	1.82	-0.35	118	-1.56
4	19.200	g/l	81	I 19.429	2.5	0.07	0.87	-0.26	120	-1.18
5	41.700	g/l	67	I 41.859	2.0	0.13	1.88	-0.08	120	-0.38
6	57.300	g/l	87	I 57.257	2.7	0.21	2.58	0.02	120	0.08
7	45.000	g/l	72	I 45.850	2.1	0.14	2.06	-0.41	110	-1.85
8	27.600	g/l	87	I 28.013	2.5	0.09	1.26	-0.33	120	-1.47
9	41.200	g/l	70	I 41.891	2.2	0.14	1.88	-0.37	115	-1.65
10	26.900	g/l	83	I 26.742	3.3	0.12	1.20	0.13	120	0.59
11	40.700	g/l	71	I 40.601	2.2	0.14	1.83	0.05	120	0.24
12	45.100	g/l	80	I 45.456	2.2	0.14	2.04	-0.17	120	-0.78
13	27.300	g/l	63	I 28.179	2.0	0.09	1.27	-0.69	87	-3.12

	Cycle 45	Cycle 46
Cycle Average SDI	-0.23	-0.18
Cycle Average TS	110	116
Cycle Average %DEV	-1.05	-0.79
Cycle Average Absolute SDI	0.36	0.24
Cycle Average Absolute %DEV	1.63	1.06







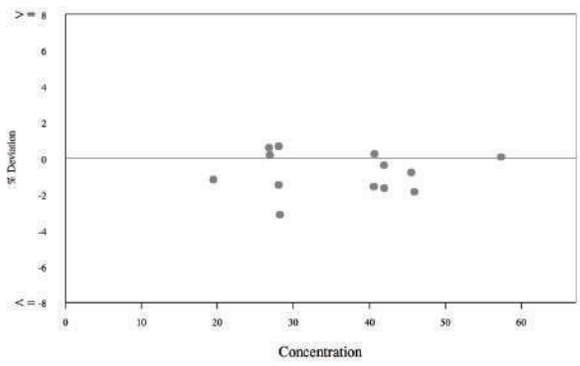
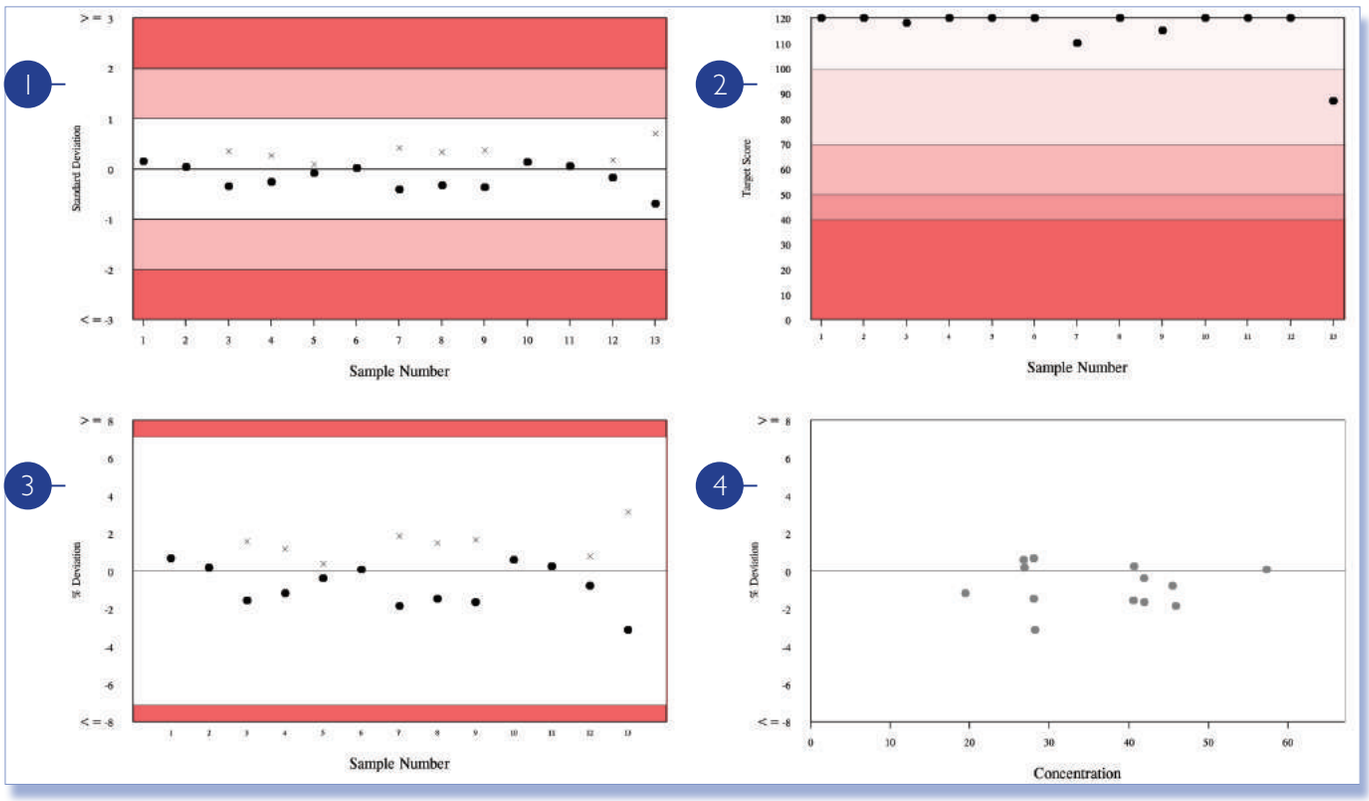


CHART SECTION (END-OF-CYCLE REPORT)

Your results for current cycle shown in various diagrams.



1	Levey-Jennings chart	Shows your SDIs for a full cycle. • Shows SDI (positive and negative) × Shows absolute SDI
2	Target Score chart	Shows your Target Scores for a full cycle.
3	%Deviation by sample chart	Shows your %Deviations for a full cycle. Acceptable limits equal to TDPA unless alternative limits are registered by the lab. • Shows %Deviation (positive and negative) × Shows absolute %Deviation
4	%Deviation by Concentration chart	Shows your results for a full cycle.

TEXT SECTION (END-OF-CYCLE REPORT)

The text section summarises the statistical information for all samples.

1 **Albumin, g/l**

2 **Method:** Bromocresol Purple
Instrument: Siemens/Dade Dimension RxL/Max/Xpand
Reagent: Siemens/Dade Behring

3 **RIQAS TDPA:** 7.1% **Biological Variation:** 3.9%

Your assay details at the end of the cycle. The RIQAS TDPA and biological variation for the parameter are shown if available.

4 5 6 7 8 9 10 11 12 13 14

Sample	Result	Unit	N	Mean	SDPA	Um	CV%	SDI	TS	% Deviation
1	28.200	g/l	68	I 28.013	1.26	0.10	2.4	0.15	120	0.7
2	26.900	g/l	87	I 26.853	1.21	0.10	2.7	0.04	120	0.2
3	39.900	g/l	71	M 40.531	1.82	0.15	2.5	-0.36	116	-1.5
4	19.200	g/l	81	I 19.429	0.87	0.07	2.5	-0.27	120	-1.2
5	41.700	g/l	67	I 41.942	1.88	0.13	2.0	-0.09	120	-0.4
6	57.300	g/l	87	I 57.257	2.58	0.21	2.7	0.02	120	0.1
7	45.000	g/l	72	I 45.850	2.06	0.14	2.1	-0.43	108	-1.8
8	27.600	g/l	87	I 28.011	1.26	0.09	2.5	-0.34	118	-1.5
9	41.200	g/l	70	I 41.823	1.88	0.14	2.2	-0.38	113	-1.6
10	26.900	g/l	83	I 26.742	1.20	0.12	3.3	0.14	120	0.6
11	40.700	g/l	71	I 40.601	1.83	0.13	2.2	0.06	120	0.2
12	45.100	g/l	80	I 45.119	2.05	0.14	2.2	-0.18	120	-0.8
13	27.300	g/l	63	I 28.454	1.27	0.09	2.0	-0.72	86	-3.1

Summary of your results and statistics are shown, including Mean for Comparison, SDPA, %CV, U_m, SDI, Target Score, %Deviation.

	Cycle 45	Cycle 46
15 **Cycle Average SDI**	-0.23	-0.18
Cycle Average TS	110	116
Cycle Average %DEV	-1.05	-0.79
16 **Cycle Average Absolute SDI**	0.36	0.24
Cycle Average Absolute %DEV	1.63	1.06

Table containing a summary of your performance for previous cycle and current cycle, including Average Absolute SDIs and %Deviations.

TEXT SECTION (END-OF-CYCLE REPORT)

1. Report presented in your chosen unit
2. Your assay details as of the last sample
3. RIQAS TDPA and Biological variation
4. Sample number
5. Your results for each sample
6. Unit your result was returned in
7. Number of results used for statistical analysis
8. Mean for Comparison (including comparison level)
9. SDPA = Standard Deviation for performance assessment
10. Uncertainty of Mean for Comparison
11. Coefficient of Variation (%)
12. Your Standard Deviation Index
13. Your Target Score
14. Your %Deviation

15. Cycle average of your performance indicators – Standard Deviation Index, Target Score and %Deviation.

$$\text{Cycle Average SDI} = \frac{\text{(Sum of SDIs returned for the completed cycle)}}{\text{(Number of samples returned in cycle)}}$$

$$\text{Cycle Average Target Score} = \frac{\text{(Sum of your Target Scores returned for the completed cycle)}}{\text{(Number of samples returned in cycle)}}$$

$$\text{Cycle Average \%Deviation} = \frac{\text{(Sum of your \%Deviations returned for the completed cycle)}}{\text{(Number of samples returned in cycle)}}$$

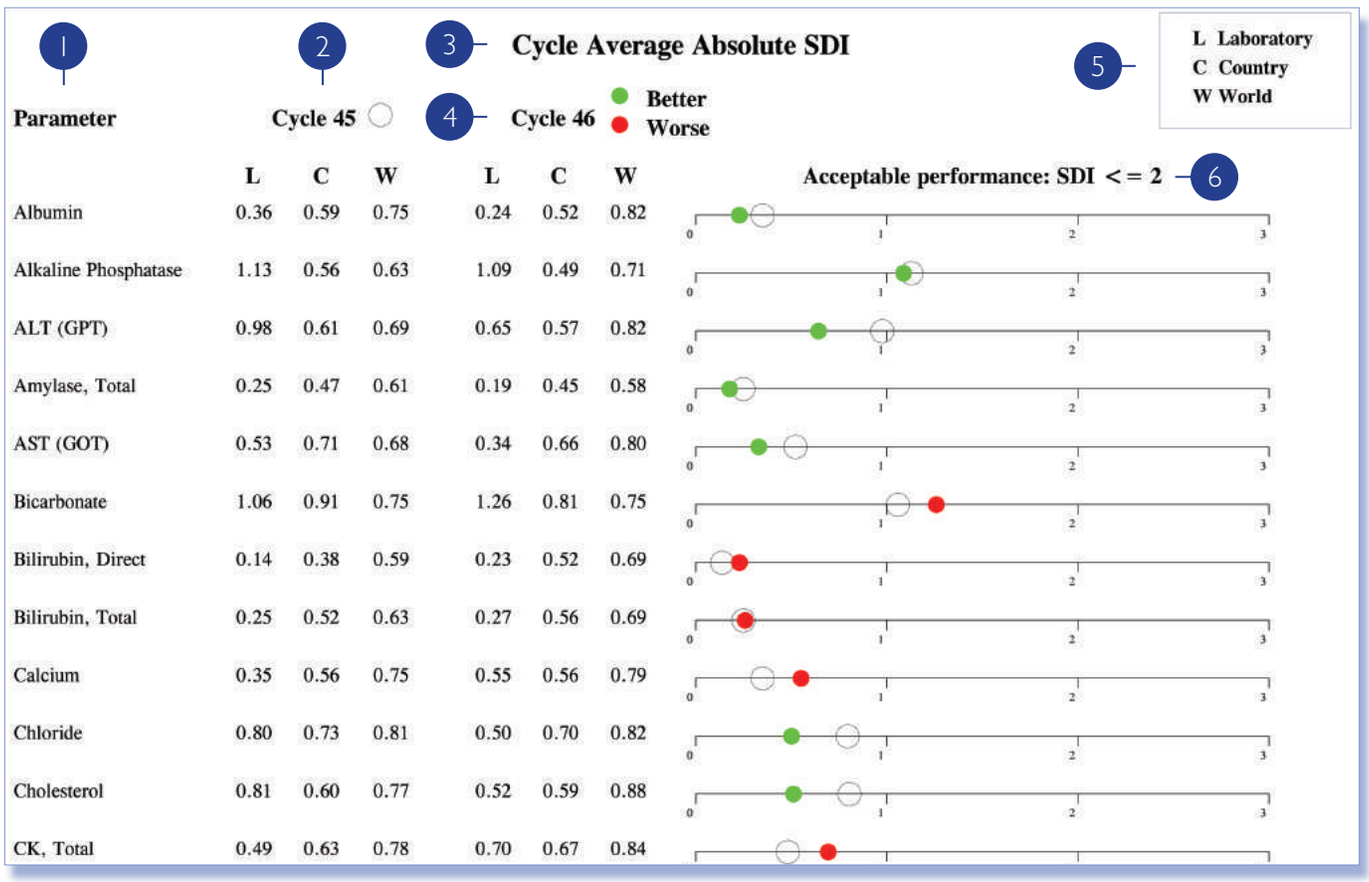
16. Cycle average for Absolute values of your SDI and %Deviation. Absolute values show how far a value is from zero regardless of the sign. This is an indication of the magnitude of accuracy.

$$\text{Cycle Average Absolute SDI} = \frac{\text{(Sum of your Absolute SDIs returned for the completed cycle)}}{\text{(Number of samples returned in cycle)}}$$

$$\text{Cycle Average Absolute \%Deviation} = \frac{\text{(Sum of your Absolute \%Deviations returned for the completed cycle)}}{\text{(Number of samples returned in cycle)}}$$

CURRENT & PREVIOUS CYCLE ABSOLUTE SDIs (END-OF-CYCLE REPORT)

Based on the cycle average absolute SDI, this chart provides a visual representation of your laboratory's performance compared to the previous cycle.



1	Parameter list	List of all parameters registered.
2	Results for previous cycle	Indicated by open circle on the chart.
3	Report title - Cycle Average Absolute SDI	This shows your performance this cycle compared to the previous cycle.
4	Results for current cycle	Indicated by a closed circle on the chart.
5	Legend	Cycle Average Absolute SDIs are shown for: L Your results throughout the cycle C All labs within your own country W All labs Worldwide
6	Graphical representation of Absolute SDIs	Acceptable performance is ≤ 2. If Absolute SDI for current cycle is less than that for the previous cycle, this is indicated by a green circle. If Absolute SDI for current cycle is greater than that for the previous cycle, this is indicated by a red circle. The closer the circle is to zero, the better the performance.

CERTIFICATE OF PERFORMANCE (END-OF-CYCLE REPORT)

An End-of-Cycle report will be issued for all registrations. However, the Certificate of Performance will only be available for parameters where results for at least 50% of samples in the cycle have been returned. Labs joining after the beginning of the cycle will only receive the Certificate of Performance if they meet this criterion. Any parameters not included on the Certificate of Acceptable Performance will be listed on the Notification of Unacceptable Performance.

RIQAS RANDOX INTERNATIONAL QUALITY ASSESSMENT SCHEME

CERTIFICATE OF ACCEPTABLE PERFORMANCE

RIQAS Department
Randox Laboratories
CRUMLIN
COUNTY ANTRIM
BT29 4QY
UNITED KINGDOM

2 **LABORATORY REF. NO.** XX/X

3 **CLINICAL CHEMISTRY - CYCLE 47**

4 **11/03/2013**

This is to certify that the above participant took part in a cycle of external quality assessment and achieved an acceptable level of performance (Cycle Average Absolute SDI < =2) for the following parameters:

5	6 Cycle Average Absolute SDI
Albumin - Bromocresol Purple - Siemens/Dade Dimension RxL/Max/Xpand	0.50
Alkaline Phosphatase - Dade Dimension, AMP buffer - Siemens/Dade Dimension RxL/Max/Xpand	1.22
ALT (GPT) - Tris buffer with P5P - Siemens/Dade Dimension RxL/Max/Xpand	0.53
Amylase, Total - Dade Behring 2-chloro-pNPG3 - Siemens/Dade Dimension RxL/Max/Xpand	0.34
AST (GOT) - Tris buffer with P5P - Siemens/Dade Dimension RxL/Max/Xpand	0.55
Bicarbonate - Enzymatic - Siemens/Dade Dimension RxL/Max/Xpand	1.08
Bilirubin, Direct - Diazo with Sulphanilic Acid - Siemens/Dade Dimension RxL/Max/Xpand	0.19
Bilirubin, Total - Diazo with Sulphanilic Acid - Siemens/Dade Dimension RxL/Max/Xpand	0.26
Calcium - Cresolphthalein complexone - Siemens/Dade Dimension RxL/Max/Xpand	0.49
Chloride - ISE, indirect - Siemens/Dade Dimension RxL/Max/Xpand	0.70
Cholesterol - Dimension-Dade Behring reagents - Siemens/Dade Dimension RxL/Max/Xpand	0.54
CK, Total - CK-NAC (IFCC) - Siemens/Dade Dimension RxL/Max/Xpand	0.26
Creatinine - Alkaline picrate no deprot. - Siemens/Dade Dimension RxL/Max/Xpand	0.44
GGT - Gamma glut'3-carb'4-nitro (IFCC) - Siemens/Dade Dimension RxL/Max/Xpand	0.25
Glucose - Hexokinase - Siemens/Dade Dimension RxL/Max/Xpand	0.70

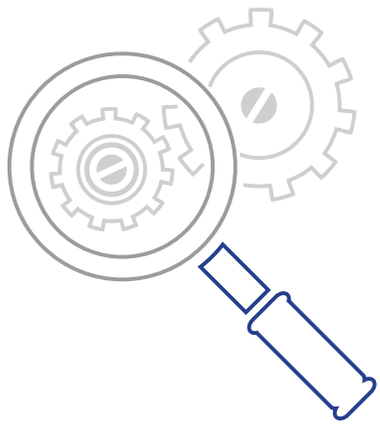
1	Full registration address	Your full registration address details.
2	Your lab reference number	Used to identify each lab.
3	Programme / cycle number	Programme and current, completed cycle number.
4	Date	Date End-of-Cycle report is issued.
5	Parameters	List of parameters including the assay details for which cycle absolute SDI is ≤ 2.
6	Average Absolute SDI	Your Cycle Average Absolute SDI.

MONITORING EQA PERFORMANCE

Each EQA report should be evaluated and any poor performance investigated. A step by step approach should be adopted consisting of the following three steps:

1. Investigate the source of the problem

In order to identify the source of the problem, it is useful to be aware of the most common causes of poor EQA performance. Errors can occur at any stage of the testing process; however, EQA is most concerned with detecting analytical errors i.e. errors that occur during the analysis of the sample.



Most analytical errors can be easily divided into three main areas; clerical errors, systematic errors and random errors. Systematic errors result in inaccurate results that consistently show a positive or negative bias. Random errors, on the other hand, affect precision and result in fluctuations in either direction.

It may be possible that, after extensive investigations, the root cause of the poor performance cannot be established. Poor performance for a single sample could be attributed to random error. If poor performance has been noted for several samples, a systematic error is the most likely cause and the analytical process should be reviewed.

Clerical errors

- Transcription errors
- Incorrect units used
- Incorrect sample tested
- Incorrect method classification
- Calculation/conversion error

Systematic errors

- Sample/Reagent prep/handling
- Reagent/calibrator/standardisation change
- Instrument/reagent/calibrator fault
- Inexperienced operators
- Reagent deterioration
- Inappropriate method

Random errors

- Bubbles in reagent
- Bubbles in reagent/sample pipette
- Temperature fluctuations
- Poor pipetting technique
- Poor operator technique

The flowchart (page 29) is designed to help you investigate any apparent poor performance.

2. Implement corrective actions

Some errors can be readily recognised as simple clerical errors and easily corrected. If there is evidence of systematic or random error however more detailed corrective actions must be taken.

Systematic Error

In the event of a systematic error, the following suggested actions may help to resolve the problem:

- Perform instrument maintenance
- Recalibrate instrument
- Review reagent/sample storage
- Check pipettes
- Prepare fresh reagents & re-run sample
- Perform staff training

Random Error

If all possible causes have been excluded, a single unacceptable result is most likely due to random error. Re-run the sample; if the result of repeat analysis is acceptable then corrective action is not required. If the issue persists, investigate possible sources of systematic error.

3. Check the effectiveness of corrective actions

The effectiveness or impact of any corrective actions taken can be assessed by continuing to monitor analytical performance over time.

MONITORING EQA PERFORMANCE

A checklist similar to the one below is extremely useful when investigating poor EQA performance and may help you to determine the root cause of the problem and initiate corrective actions.

Laboratory: .....

Cycle Number: ..... Sample Number: .....

Analysis Date: ..... Analyte: .....

Mean for Comparison: ..... Lab Result: ..... SDI: ..... %Dev: .....

1. Specimen Handling

a. Samples received in good condition (Y) (N)

b. Samples stored/prepared appropriately (Y) (N)

c. Integrity of the sample is acceptable (Y) (N)

2. Clerical

a. Correct result entered (Y) (N)

b. Correct use of decimal point and units (Y) (N)

c. Calculations, if any, performed correctly (even if automated) (Y) (N)

d. Conversion factors applied to results before submission (Y) (N)

3. Registration and Mean for Comparison

a. Registered in the correct method/instrument group (Y) (N)

b. Changed method or instrument without advising RIQAS (Y) (N)

c. Peer Group changed due to the number of participants returning results e.g. from method to instrument (Y) (N)

d. An obvious bias between method and instrument means (check histogram and stats sections) (Y) (N)

4. Internal Quality Control

a. %Deviation of IQC (at similar conc to that of EQA) on sample analysis date acceptable (Y) (N)

b. Shift in IQC in the periods just before and after EQA sample analysis (Y) (N)

c. Trends in IQC in the periods before and after EQA sample analysis (Y) (N)

d. Random IQC variation on sample analysis date (Y) (N)

e. Error due to imprecision; check IQC in terms of %Deviation compared to deviation observed in EQA (Y) (N)

f. IQC target correctly assigned (Y) (N)

5. Calibration

a. Date of last calibration ( )

b. Calibration frequency acceptable (Y) (N)

c. Last calibration acceptable (Y) (N)

6. Instrument

a. Daily maintenance performed on date of sample analysis (Y) (N)

b. Special maintenance performed prior to sample analysis (Y) (N)

c. Instrument operated correctly (Y) (N)

d. Operator fully trained (Y) (N)

7. Reagents

a. Reagents prepared and stored correctly (Y) (N)

b. Reagents within open vial stability (Y) (N)

8. EQA sample

a. Initial value ( )

b. Re-run value ( )

c. Issue observed in previous EQA samples at a similar concentration (check %Deviation by concentration and Levey Jennings charts) (Y) (N)

d. All parameters affected (to the same extent) - possible reconstitution error (check %Deviation on summary pages) (Y) (N)

Conclusion: .....

.....

.....

.....

Remedial Action: .....

.....

.....

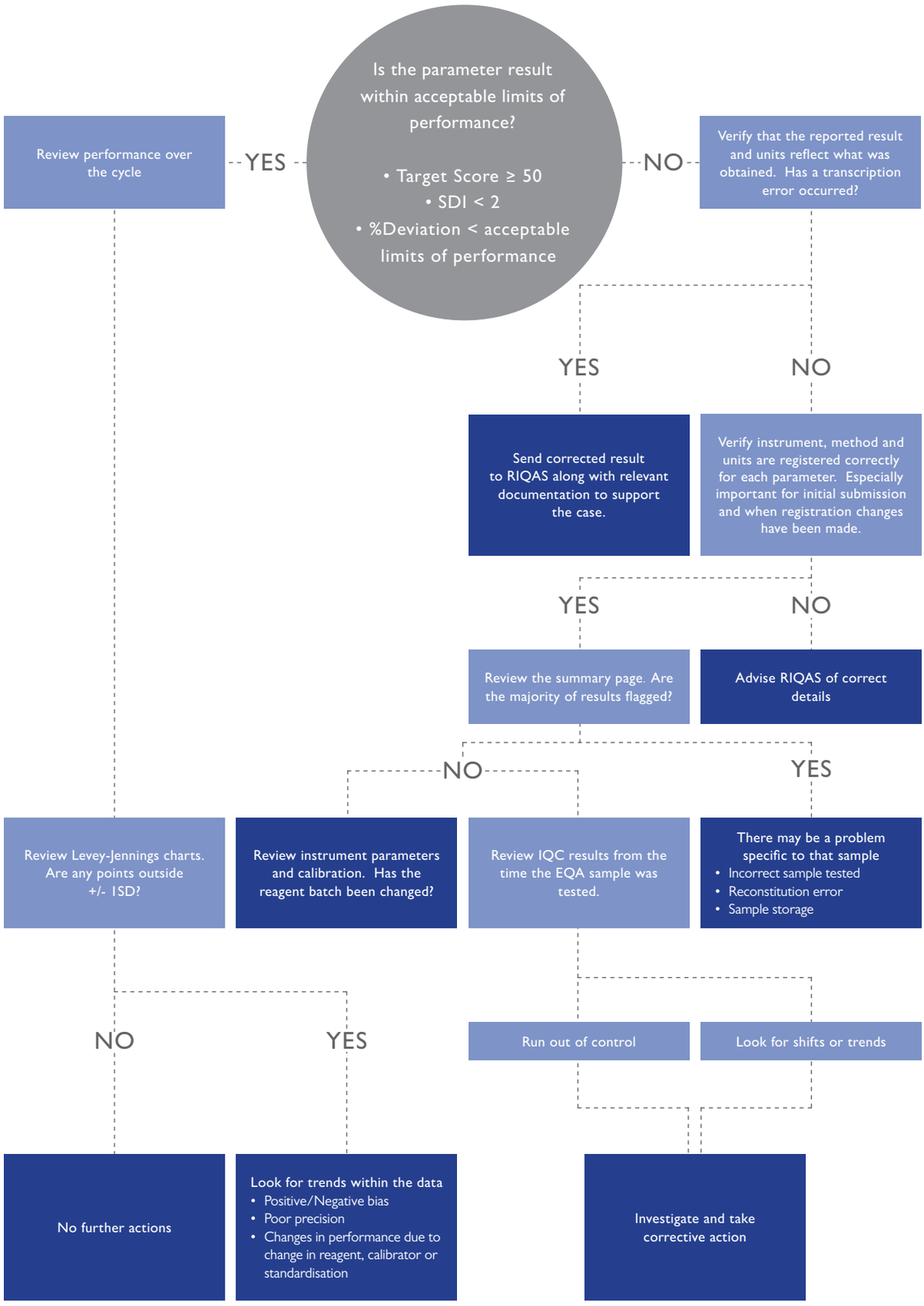
.....

Lab Manager: ..... Date: .....

Lab Director: ..... Date: .....

MONITORING EQA PERFORMANCE

The flow chart below can be used to help identify a possible root cause for poor EQA performance.



Ammonia/Ethanol Programme+ *With target scoring*

RQ9164 (2 ml)
2 Parameters
Samples every month, 1 x 12 month cycle, 12 month subscription

Ammonia
Ethanol

Anti-TSH Receptor Programme+ *With target scoring*

RQ9174 (1 ml)
1 Parameter
Samples every month, 1 x 12 month cycle, 12 month subscription

Anti-TSH Receptor (TRAb)

Blood Gas Programme *With target scoring*

RQ9134 (1.8 ml)
First registered instrument
11 Parameters
Samples every month, 1 x 12 month cycle, 12 month subscription

RQ9134/A (1.8 ml)
Subsequent instruments
11 Parameters

Bicarbonate
Ca++
Cl-
CO_2(Total)
Glucose
Lactate
K+
Na+
pCO_2
pH
pO_2

BNP Programme+ *With target scoring*

RQ9165 (1 ml)
1 Parameter
Samples every month, 1 x 12 month cycle, 12 month subscription

BNP

Cardiac Programme *With target scoring*

RQ9127/a (1 ml)
2 Parameters only (choose from 7)
Samples every 2 weeks, 2 x 6 monthly cycles, 12 month subscription

RQ9127/b (1 ml)
Full 7 Parameters

RQ9186 (1ml)
Full 7 Parameters
Samples every month, 1 x 12 monthly cycle, 12 month subscription

CK, Total
CK-MB (Activity)
CK-MB (Mass)
Homocysteine
Myoglobin
Troponin I
Troponin T

Cardiac Plus Programme • **coming in 2021*

RQ9190 (3 ml)
11 Parameters
Samples every month, 1 x 12 month cycle, 12 month subscription

CK, Total
CK-MB Activity
CK-MB Mass
D-dimer
Digoxin
Homocysteine
hsCRP
Myoglobin
NT proBNP
Troponin I
Troponin T

Cerebrospinal Fluid Programme+ *With target scoring*

RQ9168 (3 ml)
7 Parameters
Samples every month, 1 x 12 month cycle, 12 month subscription

Albumin
Chloride
Glucose
IgG
Lactate
Protein (Total)
Sodium

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RIQAS PROGRAMMES

Coagulation Programme *With target scoring*

RQ9135/a (1 ml)
5 Selected parameters only +1 pilot
(aPTT, PT, TT, Fibrinogen, Antithrombin III)

RQ9135/b (1 ml)
Full 16 Parameters + 1 pilot

Samples every month, 1 x 12 month cycle, 12 month subscription

aPTT	D-dimer*	Factor IX	Protein C
PT (including INR)	Factor II	Factor X	Protein S
TT	Factor V	Factor XI	
Fibrinogen	Factor VII	Factor XII	
Antithrombin III	Factor VIII	Plasminogen	

CO-Oximetry Programme+

RQ9177 (1.2 ml)
First registered instrument
7 Parameters

RQ9177/A (1.2 ml)
Subsequent instruments
7 Parameters

Samples every month, 1 x 12 month cycle, 12 month subscription

Carboxyhaemoglobin (COHb / HbCO)	Methaemoglobin (MetHb)	Oxygen Saturation (sO2 / Vol O2)	Total Haemoglobin (tHb)
Deoxyhaemoglobin (HHb)	Oxygen Content (O2CT)	Oxyhaemoglobin (O2Hb / HbO2)	

CYFRA 21-1 Programme+

RQ9175 (1 ml)
1 Parameter
Samples every month, 1 x 12 month cycle, 12 month subscription

CYFRA 21-1 (Cytokeratin 19)

ESR Programme+

RQ9163 (4.5 ml)
1 Parameter
2 samples per quarterly distribution, 1 x 12 month cycle, 12 month subcription

ESR (Erythrocyte Sedimentation Rate)

General Clinical Chemistry Programme *With target scoring*

RQ9112/a (5 ml)
10 Parameters + 4 pilots

RQ9112/b (5 ml)
17 Parameters + 4 pilots

RQ9112/c (5 ml)
Full 52Parameters + 4 pilots

Samples every 2 weeks, 2 x 6 monthly cycles, 12 month subscription, reference method values

RQ9128 (5ml)
Full 52 Parameters + 4 pilots
Samples every month, 1 x 12 monthly cycle, 12 month subscription

ACE (Angiotensin Converting Enzyme)	Calcium (Ionised)	Iron	TIBC
Acid Phosphatase (Prostatic)	Chloride	Lactate	T_3 (Free)
Acid Phosphatase (Total)	Cholesterol	LD (LDH)	T_3 (Total)
Albumin	Cholinesterase	LDL-Cholesterol*	T_4 (Free)
Alkaline Phosphatase	CK, Total (CPK)	Lipase	T_4 (Total)
ALT (ALAT)	Copper	Lithium	Triglycerides
Amylase (Pancreatic)	Creatinine	Magnesium	TSH
Amylase (Total)	D-3-Hydroxybutyrate	NEFA	UIBC
AST (ASAT)	eGFR (estimated glomerular filtration rate)*	Non-HDL Cholesterol*	Urea
Bicarbonate	Fructosamine	Osmolality	Uric Acid
Bile Acids	γGT	Phosphate (Inorganic)	Zinc
Bilirubin (Direct)	GLDH	Potassium	
Bilirubin (Total)	Glucose	Protein (Total)	
Calcium	HBDH	PSA	
Calcium, Adjusted*	HDL-Cholesterol	Sodium	

Glycated Haemoglobin Programme (HbA1c) *With target scoring*

RQ9129 (0.5ml)
2 Parameters
Samples every month, 1 x 12 month cycle, 12 month subscription

HbA1c	Total Haemoglobin

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Haematology Programme *With target scoring*

RQ9118 (2 ml) 11 Parameters Samples every 2 weeks, 2 x 6 monthly cycles, 12 month subscription	RQ9140 (2ml) 11 Parameters Samples every month, 1 x 12 monthly cycle, 12 month subscription

Haematocrit (HCT)
Haemoglobin (Hb)
Mean Cell Haemoglobin (MCH)
Mean Cell Haemoglobin Concentration (MCHC)
Mean Cell Volume (MCV)
Mean Platelet Volume (MPV)
Platelets (PLT)
Plateletcrit (PCT)
Red Blood Cell Count (RBC)
Red Cell Distribution Width (RDW)
Total White Blood Cell Count (WBC)

Human Urine Programme *With target scoring*

RQ9115 (10 ml) 25 Parameters Samples every 2 weeks, 2 x 6 monthly cycles, 12 month subscription	RQ9185 (10ml) 25 Parameters Samples every month, 1 x 12 monthly cycle, 12 month subscription

ACR
Albumin/Microalbumin
Amylase
Calcium
Chloride
Copper
Cortisol
Creatinine
Dopamine
Epinephrine
Glucose
Metanephrine
Norepinephrine
Normetanephrine
Magnesium
Osmolality
Oxalate
Phosphate (Inorganic)
Potassium
Protein (Total)
Sodium
Urea
Uric Acid
VMA
5-HIAA

Immunoassay Programme *With target scoring*

RQ9125/a (5 ml) 4 Parameters only + 2 pilots	RQ9125/b (5 ml) 13 Parameters only + 2 pilots	RQ9125/c (5 ml) Full 49 Parameters + 2 pilots	RQ9130 (5 ml) Full 49 Parameters + 2 pilots Samples every month, 1 x 12 month cycle, 12 month subscription (RQ9130)
Samples every two weeks, 2 x 6 monthly cycles, 12 month subscription (RQ9125/a, RQ9125/b, RQ9125/c)			

ACTH
AFP
Aldosterone
Amikacin
Androstenedione
β-2-Microglobulin
CA125
CA15-3
CA19-9
Carbamazepine
CEA
Cortisol
C-Peptide
DHEA-Sulphate
DHEA Unconjugated
Digoxin
Ferritin
Folate
FSH
Gentamicin
GH
hCG
IgE
Insulin
LH
Oestradiol
17-OH-Progesterone
Paracetamol
Phenobarbital
Phenytoin
Progesterone
Prolactin
PSA (Free)
PSA (Total)
PTH
Salicylate
SHBG
T_3 (Free)
T_3 (Total)
T_4 (Free)
T_4 (Total)
Testosterone (Free)*
Testosterone (Total)
Theophylline
Thyroglobulin
TSH
Valproic Acid
Vancomycin
Vitamin B12
1-25-$(OH)_2$-Vitamin D*
25-OH-Vitamin D

Immunoassay Speciality 1 Programme+ *With target scoring*

RQ9141 (2 ml) 9 Parameters + 1 pilot Samples every month, 1 x 12 month cycle, 12 month subscription

1-25-$(OH)_2$-Vitamin D*
25-OH-Vitamin D
C-Peptide
Anti-TG
Anti-TPO
IGF-1
Osteocalcin
Procalcitonin
PTH
Insulin

Immunoassay Speciality 2 Programme+ *With target scoring*

RQ9142 (1 ml) 5 Parameters Samples every month, 1 x 12 month cycle, 12 month subscription

Calcitonin
Gastrin
Procalcitonin
Plasma Renin Activity
Renin (Direct Concentration)

Immunosuppressant Programme+

RQ9159 (2 ml) 4 Parameters Samples every month, 1 x 12 month cycle, 12 month subscription, reference method values

Ciclosporin
Everolimus
Sirolimus
Tacrolimus

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RIQAS PROGRAMMES

Lipid Programme *With target scoring*

RQ9126/a (3 ml)
3 Parameters only (choose from 7)
Samples every 2 weeks, 2 x 6 monthly cycles, 12 month subscription

RQ9126/b (3 ml)
Full 7 Parameters
Samples every 2 weeks, 2 x 6 monthly cycles, 12 month subscription

Apolipoprotein A1
Apolipoprotein B
Cholesterol (Total)
HDL-Cholesterol
LDL-Cholesterol
Lipoprotein (a)
Triglycerides

Maternal Screening Programme *With target scoring*

RQ9137 (1 ml)
6 Parameters
Samples every month, 1 x 12 month cycle, 12 month subscription

AFP
free β-hCG
Total hCG
Inhibin A
PAPP-A
Unconjugated Oestriol

Serology (EBV) Programme+

RQ9153 (1 ml)
3 Parameters
Samples every month, 1 x 12 month cycle, 12 month subscription, Quantitative and Qualitative results

Anti-EBV VCA IgG
Anti-EBNA IgG
Anti-EBV VCA IgM

Serology (HIV-Hepatitis) Programme+

RQ9151 (1.8 ml)
10 Parameters + 7 pilots
Samples every month, 1 x 12 month cycle, 12 month subscription, Quantitative and Qualitative results

Anti-CMV (Total)
Anti-HAV IgM*
Anti-HAV (Total)*
Anti-HBc
Anti-HBc IgM*
Anti-HBe (Total)*
Anti-HBs (Total)*
Anti-HCV
Anti-HIV-1
Anti-HIV-2
Anti-HIV combined
Anti-HTLV I
Anti-HTLV II
Anti-HTLV combined
HBeAg*
HBsAg
P24*

Serology (Syphilis) Programme+

RQ9154 (1 ml)
1 Parameter
Samples every month, 1 x 12 month cycle, 12 month subscription, Quantitative and Qualitative results

Syphilis (Methods available include immunoassay RPR, VDRL and TPHA)

Serology (ToRCH) Programme+

RQ9152 (1 ml)
12 Parameters + 3 pilots
Samples every month, 1 x 12 month cycle, 12 month subscription, Quantitative and Qualitative results

Anti-CMV IgG
Anti-CMV IgM
Anti-HSV1 IgG
Anti-HSV1 IgM
Anti-HSV2 IgG
Anti-HSV2 IgM
Anti-HSV1/2 IgG
Anti-HSV1/2 IgM
Anti-Measles IgG*
Anti-Mumps IgG*
Anti-Rubella IgG
Anti-Rubella IgM
Anti-Toxoplasma IgG
Anti-Toxoplasma IgM
Anti-VZV IgG*

Specific Proteins Programme *With target scoring*

RQ9114 (3 ml)
26 Parameters
Samples every 2 weeks, 2 x 6 monthly cycles, 12 month subscription

RQ9187 (1ml)
26 Parameters
Samples every month, 1 x 12 monthly cycle, 12 month subscription

AFP
Albumin
α-1-Acid glycoprotein
α-1-Antitrypsin
α-2-Macroglobulin
Anti Streptolysin O
Antithrombin III
β-2-Microglobulin
Ceruloplasmin
Complement C_3
Complement C_4
C-Reactive Protein
Ferritin
Haptoglobin
IgA
IgE
IgG
IgM
Kappa Light Chain (Free)
Kappa Light Chain (Total)
Lambda Light Chain (Free)
Lambda Light Chain (Total)
Prealbumin (Transthyretin)
Retinol Binding Protein
Rheumatoid Factor
Transferrin

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Sweat Testing Programme+

RQ9173 (2 ml)
2 Parameters
Samples every month, 1 x 12 month cycle, 12 month subscription

Chloride
Conductivity

Therapeutic Drugs Programme *With target scoring*

RQ9111 (5 ml)
18 Parameters
Samples every 2 weeks, 2 x 6 monthly cycles, 12 month subscription, Weighed-in values

Amikacin
Caffeine
Carbamazepine
Ciclosporin
Digoxin
Ethosuximide
Gentamicin
Lithium
Methotrexate
Paracetamol (Acetaminophen)
Phenobarbital
Phenytoin
Primidone
Salicylic Acid
Theophylline
Tobramycin
Valproic Acid
Vancomycin

Trace Elements In Blood Programme+

RQ9172 (3 ml)
7 Parameters
Samples every month, 1 x 12 month cycle, 12 month subscription

Copper
Iodine
Lead
Magnesium
Manganese
Selenium
Zinc

Trace Elements In Serum Programme+

RQ9170 (3 ml)
10 Parameters
Samples every month, 1 x 12 month cycle, 12 month subscription

Aluminium
Chromium
Cobalt
Copper
Iodine
Lead
Manganese
Nickel
Selenium
Zinc

Trace Elements In Urine Programme+

RQ9171 (3 ml)
11 Parameters
Samples every month, 1 x 12 month cycle, 12 month subscription

Cadmium
Chromium
Cobalt
Copper
Iodine
Lead
Magnesium
Manganese
Molybdenum
Nickel
Thallium

Urinalysis Programme+ *With scoring*

RQ9138 (12 ml)
14 Parameters
Samples every 2 months, 1 x 12 month cycle, 12 month subscription

Albumin
Bilirubin
Blood
Creatinine
Galactose
Glucose
hCG
Ketones
Leucocytes
Nitrite
pH
Protein
Specific Gravity
Urobilinogen

Urine Toxicology Programme+

RQ9139 (5 ml)
20 Parameters
Samples every month, 1 x 12 month cycle, 12 month subscription

Benzoylecgonine
Buprenorphine
Cannabinoids (THC)
Cotinine
Creatinine
d-Amphetamine
d-Methamphetamine
EDDP
Ethanol
Free Morphine
Lorazepam
LSD
MDMA
Methadone
Nortriptyline
Norpropoxyphene
Oxazepam
Phencyclidine
Phenobarbital
Secobarbital

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Whilst every attempt is made to ensure that information is accurate and up-to-date, some information is subject to change, please contact RIQAS for current details.

PARAMETER INDEX

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		Ammonia / Ethanol +	Anti-TSH Receptor +	Blood Gas	BNP +	Cardiac	Cardiac Plus •	Cerebrospinal Fluid +	Coagulation	CO-Oximetry +	CYFRA 21-1 +	ESR +	General Clinical Chemistry	HbA1c	Haematology	Human Urine	Immunoassay	Immunoassay Speciality 1 +
#	1-25-$(OH)_2$-Vitamin D*																X	X
	17-OH-Progesterone																X	
	25-OH-Vitamin D																X	X
	5-HIAA															X		
A	α-1-Acid Glycoprotein																	
	α-1-Antitryspin																	
	α-2-Macroglobulin																	
	ACE (Angiotensin Converting Enzyme)												X					
	Acid Phosphatase (Prostatic)												X					
	Acid Phosphatase (Total)												X					
	ACR															X		
	ACTH																X	
	AFP																X	
	Albumin							X					X			X		
	Aldosterone																X	
	Alkaline Phosphatase												X					
	ALT (ALAT)												X					
	Aluminium																	
	Amikacin																X	
	Ammonia	X																
	Amylase (Pancreatic)												X					
	Amylase (Total)												X			X		
	Androstenedione																X	
	Anti Streptolysin O (ASO)																	
	Anti-CMV																	
	Anti-CMV IgG																	
	Anti-CMV IgM																	
	Anti-EBNA IgG																	
	Anti-EBV VCA IgG																	
	Anti-EBV VCA IgM																	
	Anti-HAV IgM*																	
	Anti-HAV (Total)*																	
	Anti-HBc																	
	Anti-HBc IgM*																	
	Anti-HBe (Total)*																	
	Anti-HBs (Total)*																	
	Anti-HCV																	
	Anti-HIV-1																	
	Anti-HIV-1 & 2 Combined																	
	Anti-HIV-2																	
	Anti-HSV-1 & 2 IgG Combined																	

Δ Pilot status only in certain programmes. Please check pages 30-34 for more information.

PARAMETER INDEX

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Immunoassay Speciality 2 +	Immunosuppressant +	Lipid	Maternal Screening	Serology (EBV) +	Serology (HIV / Hepatitis) +	Serology (Syphilis) +	Serology (ToRCH) +	Specific Proteins	Sweat Testing +	Therapeutic Drug	Trace Elements in Blood +	Trace Elements in Serum +	Trace Elements in Urine +	Urinalysis +	Urine Toxicology +		
																1-25-$(OH)_2$-Vitamin D*	#
																17-OH-Progesterone	
																25-OH-Vitamin D	
																5-HIAA	
								X								α-1-Acid Glycoprotein	A
								X								α-1-Antitryspin	
								X								α-2-Macroglobulin	
																ACE (Angiotensin Converting Enzyme)	
																Acid Phosphatase (Prostatic)	
																Acid Phosphatase (Total)	
																ACR	
																ACTH	
			X					X								AFP	
								X						X		Albumin	
																Aldosterone	
																Alkaline Phosphatase	
																ALT (ALAT)	
												X				Aluminium	
										X						Amikacin	
																Ammonia	
																Amylase (Pancreatic)	
																Amylase (Total)	
																Androstenedione	
								X								Anti Streptolysin O (ASO)	
					X											Anti-CMV	
							X									Anti-CMV IgG	
							X									Anti-CMV IgM	
				X												Anti-EBNA IgG	
				X												Anti-EBV VCA IgG	
				X												Anti-EBV VCA IgM	
					X											Anti-HAV IgM*	
					X											Anti-HAV (Total)*	
					X											Anti-HBc	
					X											Anti-HBc IgM*	
					X											Anti-HBe (Total)*	
					X											Anti-HBs (Total)*	
					X											Anti-HCV	
					X											Anti-HIV-1	
					X											Anti-HIV-1 & 2 Combined	
					X											Anti-HIV-2	
							X									Anti-HSV-1 & 2 IgG Combined	

Δ Pilot status only in certain programmes. Please check pages 30-34 for more information.

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		Ammonia / Ethanol +	Anti-TSH Receptor +	Blood Gas	BNP +	Cardiac	Cardiac Plus •	Cerebrospinal Fluid +	Coagulation	CO-Oximetry +	CYFRA 21-1 +	ESR +	General Clinical Chemistry	HbA1c	Haematology	Human Urine	Immunoassay	Immunoassay Speciality I +
A	Anti-HSV-1 & 2 IgM Combined																	
	Anti-HSV1 IgG																	
	Anti-HSV1 IgM																	
	Anti-HSV2 IgG																	
	Anti-HSV2 IgM																	
	Anti-HTLV-1 & 2 Combined																	
	Anti-HTLV-I																	
	Anti-HTLV-II																	
	Anti-Measles IgG*																	
	Anti-Mumps IgG*																	
	Anti-Rubella IgG																	
	Anti-Rubella IgM																	
	Anti-TG																	X
	Anti-VZV IgG*																	
	Antithrombin III								X									
	Anti-Toxoplasma IgG																	
	Anti-Toxoplasma IgM																	
	Anti-TPO																	X
	Anti-TSH Receptor (TRAb)		X															
	Apolipoprotein AI																	
	Apolipoprotein B																	
	aPTT								X									
	AST (ASAT)												X					
B	β-2-Microglobulin																X	
	Benzoylecgonine																	
	Bicarbonate			X									X					
	Bile Acids												X					
	Bilirubin (Direct)												X					
	Bilirubin (Total)												X					
	Blood																	
	BNP				X													
	Buprenorphine																	
C	CA15-3																X	
	CA19-9																X	
	CA125																X	
	Cadmium																	
	Caffeine																	
	Calcitonin																	
	Calcium												X			X		
	Calcium, Adjusted*												X					
	Calcium (Ionised)			X									X					

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							X									Anti-HSV-1 & 2 IgM Combined	A
							X									Anti-HSV1 IgG	
							X									Anti-HSV1 IgM	
							X									Anti-HSV2 IgG	
							X									Anti-HSV2 IgM	
					X											Anti-HTLV-1 & 2 Combined	
					X											Anti-HTLV-I	
					X											Anti-HTLV-II	
							X									Anti-Measles IgG*	
							X									Anti-Mumps IgG*	
							X									Anti-Rubella IgG	
							X									Anti-Rubella IgM	
																Anti-TG	
							X									Anti-VZV IgG*	
								X								Antithrombin III	
							X									Anti-Toxoplasma IgG	
							X									Anti-Toxoplasma IgM	
																Anti-TPO	
																Anti-TSH Receptor (TRAb)	
		X														Apolipoprotein AI	
		X														Apolipoprotein B	
																aPTT	
																AST (ASAT)	
								X								β-2-Microglobulin	B
															X	Benzoylecgonine	
																Bicarbonate	
																Bile Acids	
																Bilirubin (Direct)	
														X		Bilirubin (Total)	
														X		Blood	
																BNP	
															X	Buprenorphine	
																CA15-3	C
																CA19-9	
																CA125	
													X			Cadmium	
										X						Caffeine	
X																Calcitonin	
																Calcium	
																Calcium, Adjusted*	
																Calcium (Ionised)	

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C	Cannabinoids (THC)																	
	Carbamazepine																X	
	Carboxyhaemoglobin (COHb / HbCO)									X								
	CEA																X	
	Ceruloplasmin																	
	Chloride			X				X					X			X		
	Cholesterol (Total)												X					
	Cholinesterase												X					
	Chromium																	
	Ciclosporin																	
	CK, Total					X	X						X					
	CK-MB (Activity)					X	X											
	CK-MB (Mass)					X	X											
	CO2, Total			X														
	Cobalt																	
	Complement C_3																	
	Complement C_4																	
	Conductivity																	
	Copper												X			X		
	Cortisol															X	X	
	Cotinine																	
	C-Peptide																X	X
	C-Reactive Protein (CRP)																	
	Creatinine												X			X		
	CYFRA 21-1 (Cytokeratin 19)										X							
D	D-3-Hydroxybutyrate												X					
	d-Amphetamine																	
	D-Dimer* $^{\Delta}$						X		X									
	Deoxyhaemoglobin (HHb)									X								
	DHEA Unconjugated																X	
	DHEA-Sulphate																X	
	Digoxin						X										X	
	d-Methamphetamine																	
	Dopamine															X		
E	EDDP																	
	eGFR (estimated glomerular filtration rate)*												X					
	Epinephrine															X		
	ESR											X						
	Ethanol	X																
	Ethosuximide																	
	Everolimus																	

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															X	Cannabinoids (THC)	C
										X						Carbamazepine	
																Carboxyhaemoglobin (COHb / HbCO)	
																CEA	
								X								Ceruloplasmin	
									X							Chloride	
		X														Cholesterol (Total)	
																Cholinesterase	
												X	X			Chromium	
	X									X						Ciclosporin	
																CK, Total	
																CK-MB (Activity)	
																CK-MB (Mass)	
																CO2, Total	
												X	X			Cobalt	
								X								Complement C_3	
								X								Complement C_4	
									X							Conductivity	
											X	X	X			Copper	
																Cortisol	
															X	Cotinine	
																C-Peptide	
								X								C-Reactive Protein (CRP)	
														X	X	Creatinine	
																CYFRA 21-1 (Cytokeratin 19)	
																D-3-Hydroxybutyrate	D
															X	d-Amphetamine	
																D-Dimer* [Δ]	
																Deoxyhaemoglobin (HHb)	
																DHEA Unconjugated	
																DHEA-Sulphate	
										X						Digoxin	
															X	d-Methamphetamine	
																Dopamine	
															X	EDDP	E
																eGFR (estimated glomerular filtration rate)*	
																Epinephrine	
																ESR	
															X	Ethanol	
										X						Ethosuximide	
	X															Everolimus	

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F	Factor II								X									
	Factor IX								X									
	Factor V								X									
	Factor VII								X									
	Factor VIII								X									
	Factor X								X									
	Factor XI								X									
	Factor XII								X									
	Ferritin																X	
	Fibrinogen								X									
	Folate																X	
	Free Morphine																	
	free β-hCG																	
	Fructosamine												X					
	FSH																X	
G	γ-GT												X					
	Galactose																	
	Gastrin																	
	Gentamicin																X	
	Growth Hormone (GH)																X	
	GLDH												X					
	Glucose			X				X					X			X		
H	Haematocrit (HCT)														X			
	Haemoglobin (Hb)														X			
	Total Haemoglobin (tHb)									X				X				
	Haptoglobin																	
	HbA1c													X				
	HBeAg*																	
	HBsAg																	
	HBDH												X					
	hCG																X	
	HDL-Cholesterol												X					
	Homocysteine					X	X											
	hsCRP						X											
I	IgA																	
	IgE																X	
	IGF-1																	X
	IgG							X										
	IgM																	
	Inhibin A																	
	Insulin																X	X

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																Factor II	F
																Factor IX	
																Factor V	
																Factor VII	
																Factor VIII	
																Factor X	
																Factor XI	
																Factor XII	
								X								Ferritin	
																Fibrinogen	
																Folate	
															X	Free Morphine	
			X													free β-hCG	
																Fructosamine	
																FSH	
																γ-GT	G
														X		Galactose	
X																Gastrin	
										X						Gentamicin	
																Growth Hormone (GH)	
																GLDH	
														X		Glucose	
																Haematocrit (HCT)	H
																Haemoglobin (Hb)	
																Total Haemoglobin (tHb)	
								X								Haptoglobin	
																HbA1c	
					X											HBeAg*	
					X											HBsAg	
																HBDH	
														X		hCG	
		X														HDL-Cholesterol	
																Homocysteine	
																hsCRP	
								X								IgA	I
								X								IgE	
																IGF-1	
								X								IgG	
								X								IgM	
			X													Inhibin A	
																Insulin	

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I	Iodine																	
	Iron												X					
K	Kappa Light Chain (Free)																	
	Kappa Light Chain (Total)																	
	Ketones																	
L	Lactate			X				X					X					
	Lambda Light Chain (Free)																	
	Lambda Light Chain (Total)																	
	LD (LDH)												X					
	LDL-Cholesterol* [Δ]												X					
	Lead																	
	Leucocytes																	
	Lipase												X					
	Lipoprotein (a)																	
	Lithium												X					
	Lorazepam																	
	LSD																	
	Luteinising Hormone (LH)																X	
M	Magnesium												X			X		
	Manganese																	
	MDMA																	
	Mean Cell Haemoglobin (MCH)														X			
	Mean Cell Haemoglobin Concentration (MCHC)														X			
	Mean Cell Volume (MCV)														X			
	Mean Platelet Volume (MPV)														X			
	Metanephrine															X		
	Methadone																	
	Methaemoglobin (MetHb)									X								
	Methotrexate																	
	Molybdenum																	
	Myoglobin					X	X											
N	NEFA												X					
	Nickel																	
	Nitrite																	
	Non-HDL Cholesterol*												X					
	Norepinephrine															X		
	Normetanephrine															X		
	Norpropoxyphene																	
	Nortriptyline																	
	NTproBNP						X											
O	Oestradiol																X	

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											X	X	X			Iodine	I
																Iron	
								X								Kappa Light Chain (Free)	K
								X								Kappa Light Chain (Total)	
														X		Ketones	
																Lactate	L
								X								Lambda Light Chain (Free)	
								X								Lambda Light Chain (Total)	
																LD (LDH)	
		X														LDL-Cholesterol* Δ	
											X	X	X			Lead	
														X		Leucocytes	
																Lipase	
		X														Lipoprotein (a)	
										X						Lithium	
															X	Lorazepam	
															X	LSD	
																Luteinising Hormone (LH)	
											X		X			Magnesium	M
											X	X	X			Manganese	
															X	MDMA	
																Mean Cell Haemoglobin (MCH)	
																Mean Cell Haemoglobin Concentration (MCHC)	
																Mean Cell Volume (MCV)	
																Mean Platelet Volume (MPV)	
																Metanephrine	
															X	Methadone	
																Methaemoglobin (MetHb)	
										X						Methotrexate	
													X			Molybdenum	
																Myoglobin	
																NEFA	N
												X	X			Nickel	
														X		Nitrite	
																Non-HDL Cholesterol*	
																Norepinephrine	
																Normetanephrine	
															X	Norpropoxyphene	
															X	Nortriptyline	
																NTproBNP	
																Oestradiol	O

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O	Osmolality												X			X		
	Osteocalcin																	X
	Oxalate															X		
	Oxazepam																	
	Oxygen Content (O2CT)									X								
	Oxygen Saturation (sO2 / Vol O2)									X								
	Oxyhaemoglobin (O2Hb / HbO2)									X								
P	P24*																	
	PAPP-A																	
	Paracetamol (Acetaminophen)																X	
	pCO_2			X														
	pH			X														
	Phencyclidine																	
	Phenobarbital																X	
	Phenytoin																X	
	Phosphate (Inorganic)												X			X		
	Plasma Renin Activity																	
	Plasminogen								X									
	Plateletcrit (PCT)														X			
	Platelets (PLT)														X			
	pO_2			X														
	Potassium			X									X			X		
	Prealbumin (Transthyretin)																	
	Primidone																	
	Procalcitonin																	X
	Progesterone																X	
	Prolactin																X	
	Protein (Total)							X					X			X		
	Protein C								X									
	Protein S								X									
	PSA (Free)																X	
	PSA (Total)												X				X	
	PT (Including INR)								X									
	PTH																X	X
R	Red Blood Bell Count (RBC)														X			
	Red Cell Distribution Width (RDW)														X			
	Renin (Direct Concentration)																	
	Retinol Binding Protein																	
	Rheumatoid Factor																	
S	Salicylic Acid																X	
	Secobarbital																	

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																Osmolality	O
																Osteocalcin	
																Oxalate	
															X	Oxazepam	
																Oxygen Content (O2CT)	
																Oxygen Saturation (sO2 / Vol O2)	
																Oxyhaemoglobin (O2Hb / HbO2)	
					X											P24*	P
			X													PAPP-A	
										X						Paracetamol (Acetaminophen)	
																pCO_2	
														X		pH	
															X	Phencyclidine	
										X					X	Phenobarbital	
										X						Phenytoin	
																Phosphate (Inorganic)	
X																Plasma Renin Activity	
																Plasminogen	
																Plateletcrit (PCT)	
																Platelets (PLT)	
																pO_2	
																Potassium	
								X								Prealbumin (Transthyretin)	
										X						Primidone	
X																Procalcitonin	
																Progesterone	
																Prolactin	
														X		Protein (Total)	
																Protein C	
																Protein S	
																PSA (Free)	
																PSA (Total)	
																PT (Including INR)	
																PTH	
																Red Blood Bell Count (RBC)	R
																Red Cell Distribution Width (RDW)	
X																Renin (Direct Concentration)	
								X								Retinol Binding Protein	
								X								Rheumatoid Factor	
										X						Salicylic Acid	S
															X	Secobarbital	

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S	Selenium																	
	SHBG																X	
	Sirolimus																	
	Sodium			X				X					X			X		
	Specific Gravity																	
	Syphilis																	
T	T_3 (Free)												X				X	
	T_3 (Total)												X				X	
	T_4 (Free)												X				X	
	T_4 (Total)												X				X	
	Tacrolimus																	
	Testosterone (Free)*																X	
	Testosterone (Total)																X	
	Thallium																	
	Theophylline																X	
	Thyroglobulin																X	
	TIBC												X					
	Tobramycin																	
	Total hCG																	
	Transferrin																	
	Triglycerides												X					
	Troponin I					X	X											
	Troponin T					X	X											
	TSH												X				X	
	TT								X									
U	UIBC												X					
	Unconjugated Oestriol																	
	Urea												X			X		
	Uric Acid												X			X		
	Urobilinogen																	
V	Valproic Acid																X	
	Vancomycin																X	
	Vitamin B12																X	
	VMA															X		
W	Total White Blood Cell Count (WBC)														X			
Z	Zinc												X					

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											X					Selenium	S
																SHBG	
	X															Sirolimus	
																Sodium	
														X		Specific Gravity	
						X										Syphilis	
																T_3 (Free)	T
																T_3 (Total)	
																T_4 (Free)	
																T_4 (Total)	
	X															Tacrolimus	
																Testosterone (Free)*	
																Testosterone (Total)	
													X			Thallium	
										X						Theophylline	
																Thyroglobulin	
																TIBC	
										X						Tobramycin	
			X													Total hCG	
								X								Transferrin	
		X														Triglycerides	
																Troponin I	
																Troponin T	
																TSH	
																TT	
																UIBC	U
			X													Unconjugated Oestriol	
																Urea	
																Uric Acid	
														X		Urobilinogen	
										X						Valproic Acid	V
										X						Vancomycin	
																Vitamin B12	
																VMA	
																Total White Blood Cell Count (WBC)	W
											X	X				Zinc	Z

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RELATED PRODUCTS

ACUSERA True Third Party Quality Controls

As a world leading manufacturer of multi-analyte true third party controls, thousands of laboratories rely on Randox to accurately assess test system performance and ultimately empower them with the confidence required to release patient test results. With more than 400 analytes available, the number of individual controls required to cover your test menu is significantly reduced while simultaneously reducing costs, time and storage space. A choice of formats is available, including liquid or lyophilised, which ensures flexibility and suitability for laboratories of all sizes and budgets. Many features of the Acusera range can help you to meet ISO 15189:2012 requirements:

- Designed to react to the test system in the same manner as a patient sample, helping to reduce inconvenient shifts in QC results when reagent batch is changed and ultimately providing a true indication of laboratory performance.
- The presence of analytes at key decision levels ensures accurate instrument performance and eliminates the need for additional low/high controls at extra expense.
- Manufactured independently from any instrument, the Acusera range delivers unbiased performance assessment with any instrument or method, while eliminating the need for multiple instrument specific controls.

Product Portfolio

Antioxidants | Blood Gas | Cardiac Markers | Routine Chemistry | Coagulation | Haematology | Diabetes | Immunoassay Immunology | Infectious Diseases (Serology) | Lipids | POCT | Therapeutic Drugs | Toxicology | Urine Chemistry

Uniquely combining more than 100 analytes conveniently in a single control, laboratories can significantly reduce costs and consolidate without compromising on quality. As true third party controls, unbiased performance assessment with any instrument or method is guaranteed.

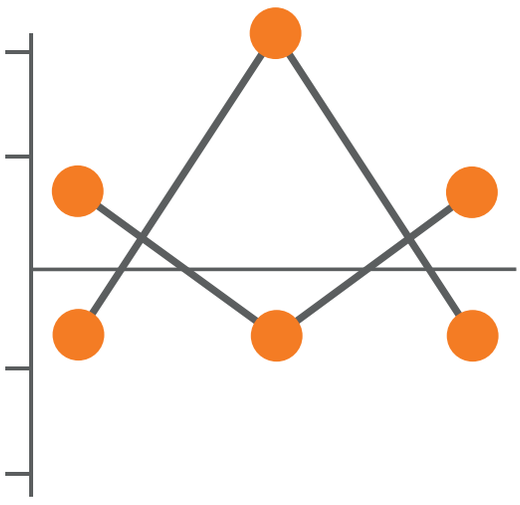
ACUSERA 24•7 Interlaboratory Data Management

Designed for use with the Acusera range of third party controls, the Acusera 24•7 software helps laboratories monitor and interpret their QC data. Access to an impressive range of features, including interactive charts, the automatic calculation of Measurement Uncertainty & Sigma Metrics and live peer group data generated from our extensive database of laboratory participants, ensures Acusera 24•7 is the most comprehensive package available.

- Advanced statistical analysis with automatic calculation of performance metrics including; Sigma, UM, TE & %Bias.
- Instantly discover how you compare to your peers with peer group statistics updated live in real-time reducing time and money spent troubleshooting.
- Interactive charts allowing you to add events and multiple data sets for quick and easy performance monitoring.
- Automated data import with bi-directional connection to LIMS (eliminating manual data entry).

Software Features

Dashboard | Result History | Interactive Levey-Jennings Charts | Interactive Histogram Charts Performance Summary Charts | Statistical Analysis Report | Statistical Metrics Report | Audit Trail Report Uncertainty of Measurement Report | Exception Report | Peer Group Statistics | Acusera Advisor



'The laboratory shall have a procedure to prevent the release of patient results in the event of quality control failure. When the quality controls rules are violated and indicate that examination results are likely to contain significant errors the results shall be rejected… Quality Control data shall be reviewed at regular intervals to detect trends in examination performance'.

ISO 15189:2012

RANDOX - A GLOBAL DIAGNOSTIC SOLUTIONS PROVIDER

Randox has been supplying laboratories worldwide with revolutionary diagnostic solutions for over 35 years. Our experience and expertise allow us to create a leading product portfolio of high quality diagnostic tools which offer reliable and rapid diagnosis. We believe that by providing laboratories with the right tools, we can improve healthcare worldwide.

RX SERIES

Renowned for quality and reliability, the RX series combines robust hardware and intuitive software with the world leading RX series test menu comprising an extensive range of high quality reagents including routine chemistries, specific proteins, lipids, therapeutic drugs, drugs of abuse, antioxidants and diabetes testing. The RX series offers excellence in patient care delivering unrivalled precision and accuracy for results you can trust, guaranteeing real cost savings through consolidation of routine and specialised tests onto one single platform.

REAGENTS

Randox offers an extensive range of third-party diagnostic reagents which are internationally recognised as being of the highest quality; producing accurate and precise results. At Randox, we re-invest significantly in R&D to ensure we meet the ever-changing needs of the laboratory. Consequently, Randox offer a range of novel and superior performance assays, including: sdLDL-C, Lipoprotein (a), H-FABP, Adiponectin, Copper and Zinc. Applications are available detailing instrument-specific settings for the convenient use of Randox Reagents on numerous clinical chemistry analysers.

EVIDENCE SERIES

In 2002, Randox invented the world's first, Biochip Array Technology, offering highly specific tests, coupled to the highly sensitive chemiluminescent detection, providing quantitative results instantly changing the landscape of diagnostic testing forever. The Randox Evidence Series of multi-analyte immunoanalysers provide an unrivalled increase in patient information per sample offering diagnostic, prognostic and predictive solutions across a variety of disease areas with a highly advanced clinical and toxicology immunoassay test menu including cardiac, diabetes, drugs of abuse, metabolic and renal markers.

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