

EQA/PT CATALOGUE

HuQAS
Human Quality Assessment Services

Version: 07



Delivering trusted Proficiency Testing samples to laboratories in multiple countries, helping ensure accurate, reliable, and internationally recognized test results.

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INTRODUCTION

HuQAS (Human Quality Assessment Services) is Non-Governmental Organization (NGO) that has been offering Proficiency Testing Services (EQA) and related technical training to Public and Private Medical Laboratories since the year 2000. HuQAS is headquarted in Nairobi, Kenya with the EQA services spread in various African Countries and collaborations in North America and Europe.

The organization has dedicated resources and facilities to enable seamless operations of its core functions and these include an administrative office, ultramodern research and development laboratory, a training center, storage facilities, a nerve center for technical support and above all a well trained and experienced sta ffincluding a mix of technical experts.

Accreditation to ISO/IEC 17043:2023 has enabled the organization establish a robust quality management system, build a culture of excellence, fault-proofing mechanisms and focus on the customer as the epicenter of its activities.

HuQAS Objectives. As an external assessment scheme, HuQAS objectives include:

- To assist in the determination of the quality performance of individual clinical laboratories as well a monitoring their continuing performance improvement.
- To offer objective evidence of laboratories' analytical performance.
- To identify inter-laboratory differences in various test parameters.
- To identify specific problems within participating laboratories that may relate to instruments, reagents or personnel and initiating remedial actions.
- To build confidence in the quality status of the laboratories among doctors and patients.
- To assess laboratories' ability to perform tests competently as per their stated internal quality goals and the requirements of regulatory and/or accreditation bodies

HuQAS Annual Scientific Conference.

www.huqas.org/conference

SAVE THE DATE

Welcome to the Annual Scientific Conference, a premier annual scientific event where laboratory excellence meets healthcare transformation . This dynamic event brings together scientists, technologists, healthcare providers, policymakers and industry leaders to exchange insights, inspire innovations and forge impactful partnerships.



Through focused sub-themes ranging from EQA and QC best practices, clinical methods advancement and disease survaillance to POCT, QMS culture and emerging lab technologies, innovations, the conference champions the critical role of laboratory science in improving patient outcomes and strengthening health systems.

Join us in shaping the future of diagnostics and advancing quality across every level of core.







CONTINUOUS PROFESSIONAL DEVELOPMENT JOURNEY TO LEARNING

Unlock and discover new skills through HuQAS continuous professional Trainings and education.HuQAS has trainings options to suit every participant from new courses in a classroom environment at our HuQAS Training Center to customized on site training by our experienced scientisrts in the comfort of your own lab.

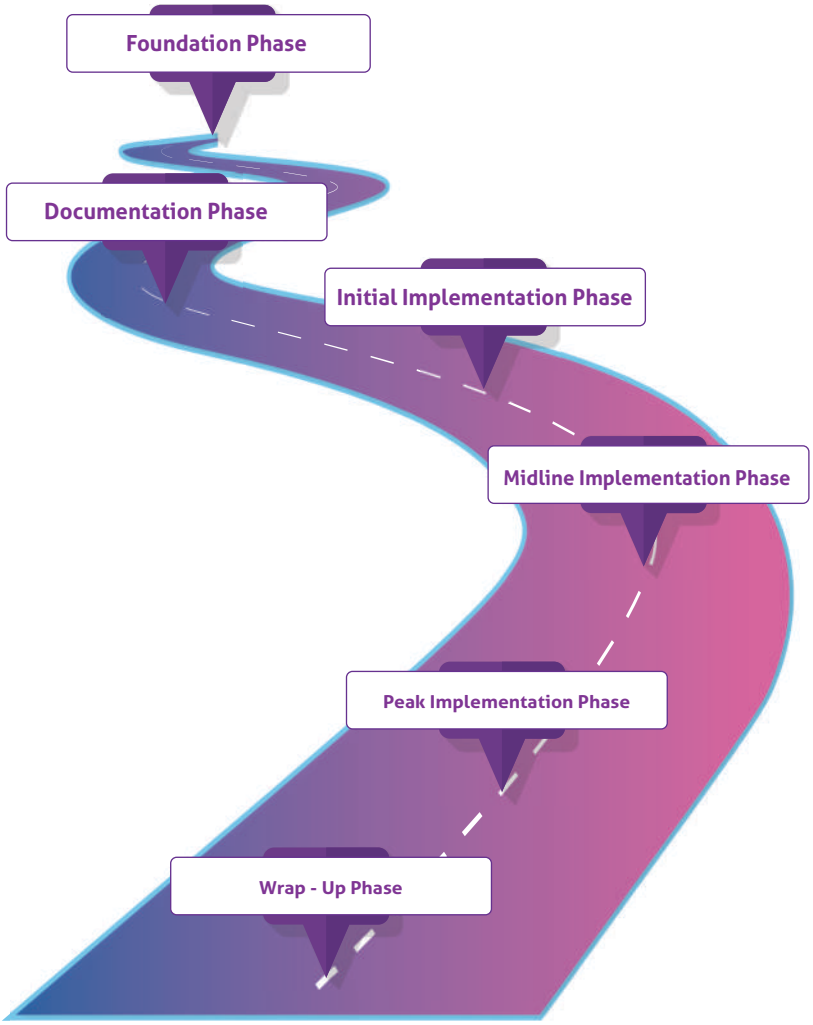
Through education, you will gain knowledge and insight into the latest techniques not only increasingly your confidence but also unlocking the full potential of your laboratory.

HuQAS offers the following training through a yearly calendar as well as on request (Onsite at the HuQAS training center or virtually)

- Advanced Root Cause Analysis & CAPA Training.
- Peripheral Blood Film Competency Training.
- Good Clinical Lab Practice Training.
- ISO 15189 Internal Auditor Training.
- ISO/IEC 17043 Profiviency Testing Provider (PTP) Course.
- Method Validation, Verification and Uncertainty of Measurements for Medical Laboratories.
- Internal Audit for Proficiency Testing Laboratories Based on ISO 17043:2010.
- Biosafety and Biosecurity Training.
- ISO 13528 Awareness and Advanced Training.
- Malaria Microscopy Refresher.
- Andrology Training.
- ISO 15189:2022 Transition and Implementation.
- Phlebotomy Refresher Training.
- TB Microscopy Refresher Training.

THE MENTORSHIP JOURNEY TO ACCREDITATION

Laboratory accreditation mentorship program, based on **ISO 15189** International Standard strengthening the quality and capacity of our medical laboratories. Achieve accreditation within **6 - 12 months**



WHY THE HuQAS MENTORSHIP PROGRAM

- Ample contact hours between our mentors and the mentees hence a shortened project duration.
- Access to a well-versed team of mentors dedicated to your laboratory.
- Active involvement of our renowned team of Advisory Board Members to the mentorship process.
- Opportunity for Exchange of best lab practices among pathology and laboratory medicine peers under the HuQAS EQA programs.
- Integration of other laboratory related guidelines e.g., CLIA, CLSI, CAP, OSHA, JCIA, SafeCare, etc bolstering patient care and safety.

ISO 15189:2012
Medical Laboratories

10
QMS Trainings

120
Contact Days

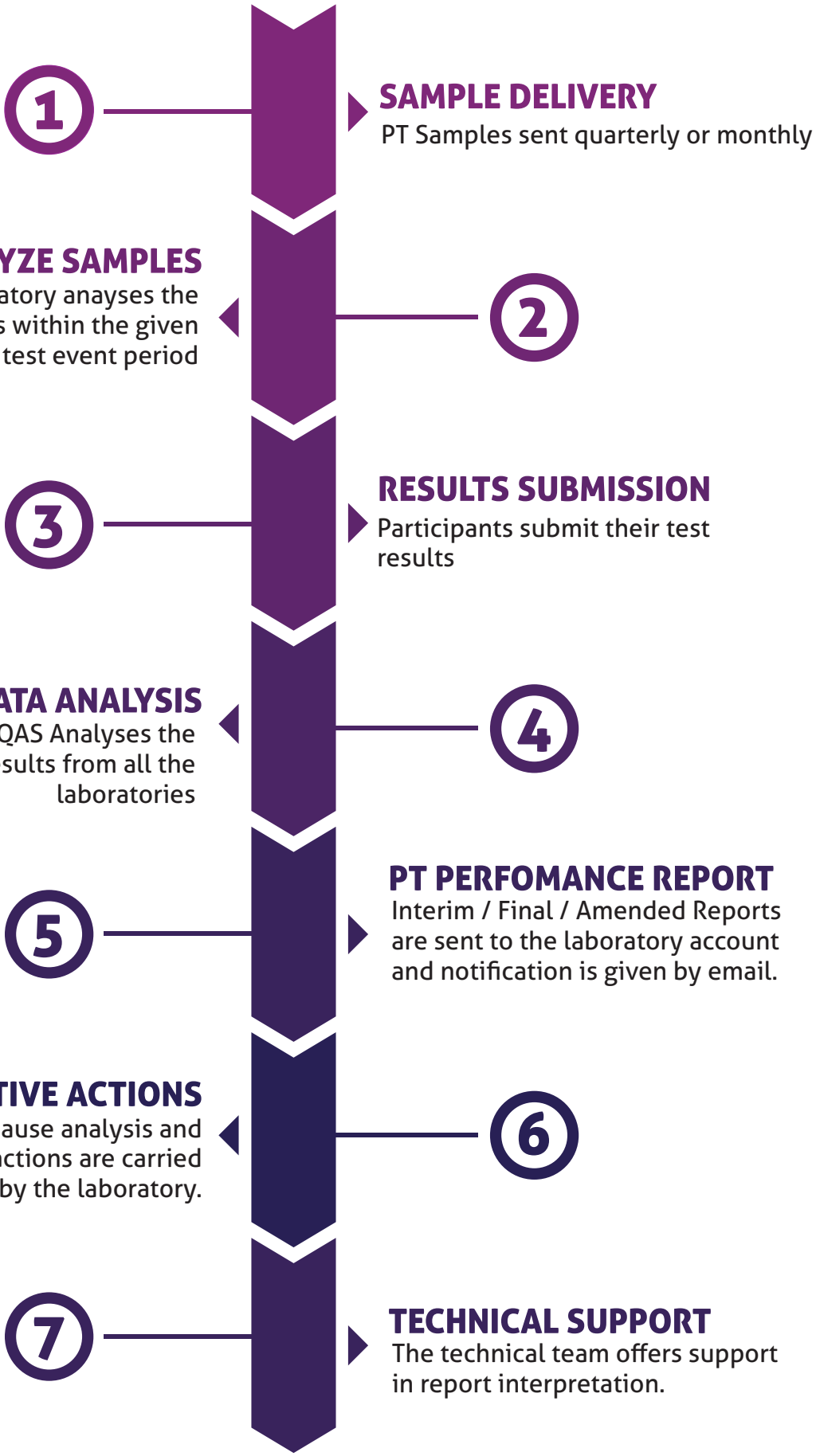
6
Months to Accreditation

HuQAS EQA PROGRAM INTRODUCTION

Accredited to ISO/ICE 17043:2023 since 2009, HuQAS offers cost-effective, high-quality EQA/PT panels across 40+ programs, supported by a robust quality management system, expert technical support and a strong culture of excellence focused on laboratory sciene and patient safety.

- **Bacteriology**
- **Blood Screening**
- **Chemistry**
- **Clinical Microbiology**
- **Diagnostic Immunology**
- **Hematology**
- **Molecular**
- **Mycology**
- **Parasitology**
- **Serology**
- **Transfusion EQA**

PROFICIENCY TESTING DESIGN



EQA PROGRAMS

Basic Chemistry - H43BCHE

4 test events 3 samples 5ml with 4 shipments

Basic Chemistry - H121BCHE

12 test events 1 samples 5ml with 2 shipments

1. Acid Phosphatase, Prostatic
2. Acid Phosphatase, Total
3. Alanine Aminotransferase (ALT/SGPT)
4. Albumin
5. Alkaline Phosphatase(ALP)
6. Amylase, Total
7. Amylase , Pancraetic
8. Aspartate Aminotransferase(AST/GOT)
9. Bilirubin, Direct
10. Bilirubin, Total
11. Calcium
12. Chloride
13. Creatine Kinase
14. Creatinine
15. Gamma Glutamyltransferase(GGT)
16. Glucose
17. Iron
18. Lactate
19. Lactate Dehydrogenase(LDH)
20. Lipase
21. Lithium
22. Magnesium
23. Phosphorous
24. Potassium
25. Protein Total
26. Sodium
27. Urea/Urea Nitrogen
28. Uric Acid
29. Zinc

Lipids

1. Cholestrol, HDL
2. Cholestrol, LDL
3. Cholestrol Total
4. Triglycerides

Report Only Available | Sample Type: Lypholized.

Special Chemistry - H32SPCH

3 test events 2 samples 3ml with 3 shipments

1. Alpha Fetoprotein
2. Beta - hcg
3. Carcinoembronic Antigen
4. C-Peptide
5. DHEA - Sulphate
6. Digoxin
7. Estradiol
8. Estriol, Total
9. Estriol, Unconjugated
10. Ferritin
11. Folate
12. Follicle Stimulating Hormone(FSH)
13. Human Growth Hormone
14. Immunoglobulin
15. Insulin
16. Lutenizing Hormone (LH)
17. Progesterone
18. Prolactin
19. Prostate-specific Antigen (PSA), Total
20. Prostate-specific Antigen (PSA), Free
21. Testosterone
22. Thyroid Simulatinh Hormone(TSH)
23. Thyroxine, Free(FT4)
24. Thyroxine, Total(TT4)
24. Triiodothyronine Total(TT3)
25. Triiodothyronine Free(FT3)

Report Only Available | Sample Type: Lypholized Serum.

Urinalysis - H32URIN

3 test events 2 samples 5ml with 3 shipments

1. Bilirubin
2. Ketones
3. Protein
4. Leukocyte esterase
5. Reducing Subsatances
6. Glucose
7. Nitrite
8. Specific Gravity
9. Human Chrionic Gonadotropin(HCG)
10. Osmolality
11. Urobilinogen
12. Hemoglobin
13. pH

Report Only Available | Sample Type: Urine.

Tumor Markers - H32TUMK

3 test events 2 samples 2ml with 3 shipments

1. Cancer Antigen 72 - 4(CA 72 - 4)
2. Prostate-specific Antigen Free (PSA)
3. Alpha-fetoprotein
4. Carcinoembryonic Antigen (CEA)
5. Cancer Antigen 125 (CA 125)
6. Cancer Antigen 15 - 3 (CA 15 - 3)
7. Prostate-specific Antigen Total
8. Ferritin
9. Cancer Antigen 19 - 9 (CA 19 - 9)
10. B - hCG
11. Cancer Antigen 27.29 (CA 27.29)

Report Only Available | Sample Type: Lyophilized Serum.

All EQA Programs listed are operated in conformity with ISO/IEC 17043

EQA PROGRAMS

Coagulation - H33COAG

3 test events 3 samples 1ml with 3 shipments

1. Activated Partial Thromboplastin Time Floribinogen
2. Prothrombin Time (PT) (APTT)
3. International Normal Ratio (INR)
4. Thrombin
5. Anti - thrombin III

Report Only Available | Sample Type: Lypholised Plasma.

Basic Hematology H122HEMA

12 test events 2 samples 1ml with 2 shipments

1. Hematocrit
2. Mean Corpuscular Volume (MCV)
3. White Blood Cell Count (No Differentials)
4. Mean Corpuscular Hemoglobin (MCH)
5. Red Blood Cell Count
6. White Blood Cell Count
7. Mean Corpuscular Hemoglobin Concentration(MCHC)
8. Red Cell Distribution Width(RDW)
9. Hemoglobin
10. Platelets

Report Only Available | Sample Type: Whole Blood.

Hematology 5-part Differential - (H43HEFA, H43HEFB, H43HEFE, H43HEFG, H43HEFH)

4 test events 3 samples 1ml with 4 shipments

1. Hematocrit
2. Mean Corpuscular Volume (MCV)
3. WBC Differential (Lymphocytes, Monocytes, Basophils, Neutrophils, Eosinophils)
4. Mean Corpuscular Hemoglobin (MCH)
5. Red Blood Cell Count
6. White Blood Cell Count
7. Mean Corpuscular Hemoglobin Concentration(MCHC)
8. Red Cell Distribution Width
9. Hemoglobin
10. Platelets

Report Only Available | Sample Type: Whole Blood.

Hematology 3-part Differential - H43HETA

4 test events 3 samples 1ml with 4 shipments

1. Hematocrit
2. Mean Corpuscular Volume (MCV)
3. WBC Differential (Granulocytes, Lymphocytes, Monocytes)
4. Mean Corpuscular Hemoglobin (MCH)
5. Red Blood Cell Count
6. White Blood Cell Count
7. Mean Corpuscular Hemoglobin Concentration(MCHC)
8. Red Cell Distribution Width
9. Hemoglobin
10. Platelets

Report Only Available | Sample Type: Whole Blood.

Basic Glycated Hemoglobin - H32BGHG

3 test events 2 samples 1ml with 3 shipments

1. HBA1C
2. Hemoglobin

Report Only Available | Sample Type: Lyophilised.

Lymphocyte Immunophenotyping - H32LIPH

3 test events 2 samples 1ml with 3 shipments

1. Cd3 (T cells)
2. Cd4 (T Helper)
3. Cd4%
4. Cd3 (T Cytotoxic)
5. Cd8+
6. Cd8%

Report Only Available | Sample Type: Whole Blood.

All EQA Programs listed are operated in conformity with ISO/IEC 17043

EQA PROGRAMS

Sickle Cell Screening - H32SCSC	**3 test events 2 samples 2.5ml with 3 shipments**
1. Sickle Cell Screening	**Report Only Available | Sample Type: Whole Blood.**
Blood Gas - H43BGAS	**4 test events 3 samples 2.5ml with 4 shipments**
1. pH 2. pCO2 3. pO2 4. Na+ 5. k+	6. Ca++ 7. Mg++ 8. Cl- 9. Glucose 10. Lactate **Report Only Available | Sample Type: Ampoule .**
Peripheral Blood Film Slides - H32PBFS	**3 test events 2 slides with 3 shipments**
1. Red Cell Morphology 2. Differential Of Normal and Abnormal White Blood Cells 3. Platelet Count 4. Platelet Morphology	**Report Only Available | Sample Type: Fixed Blood Slides.**
Basic Transfusion Medicine - H43BTME	**4 test events 3 samples 1ml with 4 shipments**
1. Foward Blood Grouping 2. Reverse Blood Grouping 3. Cross Matching	**Report Only Available | Sample Type: Packed Cells | Plasma**
Syphilis Serology - H43TREP	**4 test events 3 samples 1ml with 4 shipments**
1. Anti-Treponema 2. None Treponemal Antibodies	**Report Only Available | Sample Type: Serum.**
Hepatitis Serology - H43HEPM	**4 test events 3 samples 1ml with 3 shipments**
1. Anti-HAV IgG 2. Anti-HAV IgM 3. Anti-HAV Total 4. Anti-HBc IgM 5. Anti-HBc Total 6. Anti-HBe	7. Anti-HBs 8. Anti-HCv 9. HBesAg 10. HBsAg 11. HCV Ag **Report Only Available | Sample Type: Serum.**
Occult Blood - H33OCCB	**3 test events 3 samples 1.5ml with 4 shipments**
1. Occult Blood Test	**Report Only Available | Sample Type: Stool Sample.**
SARS-CoV-2 Molecular - H32COVA	**3 test events 2 samples 0.75ml with 3 shipments**
1. SARS-CoV-2 Nucleocapsid Antigen 2. SARS-CoV-2 Detection	**Report Only Available | Sample Type: Liquid.**
SARS-CoV-2 Molecular - H33COVD	**3 test events 3 samples pellets with 3 shipments**
1. SARS-CoV-2 Detection 2. SARS-CoV-2 Molecular Gene Identification	**Report Only Available | Sample Type: Pellets.**

All EQA Programs listed are operated in conformity with ISO/IEC 17043

EQA PROGRAMS

HIV Screening - H43HIVA	**4 test events 3 samples 1ml with 4 shipments**
1. Anti-HIV-1 2. Anti-HIV-1/2 3. Anti-HIV-2	**Report Only Available | Sample Type: Plasma.**
HBV DNA Viral Load - H43HBVL	**4 test events 3 samples 1.5ml with 4 shipments**
1. HBV DNA	**Report Only Available | Sample Type: Frozen Human Plasma**
HCV RNA Viral Load - H43HCVL	**4 test events 3 samples 1.5ml with 4 shipments**
1. HCV RNA	**Report Only Available | Sample Type: Frozen Human Plasma.**
HIV Viral Load - H43HIVL	**4 test events 3 samples 1.5ml with 4 shipments**
1. HIV -1 RNA Viral Load	**Report Only Available | Sample Type: Frozen Human Plasma**
Early Infant Diagnosis - H42HEID	**4 test events 3 samples with 4 shipments**
1. Early Infant Diagnosis Test	**Sample Type: DBS (Dry Blood Spot)**
Rifampicin - Resistant Mycrobacterium Tuberculosis- H33RRTB	**3 test events 3 samples with 3 shipments**
1. Mycrobacterium Tuberculosis Detection 2. Mycrobacterium Tuberculosis Rifampicin Resistance	**Sample Type: Pellets.**
Mycobacterium Acid Fast Stain - H43MAFS	**4 test events 3 slides with 4 shipments**
1. AAFB Detection 2. AAFB Quantification	**Report Only Available | Sample Type: Fixed Glass Slides**
TB Lipoarabinomannan (LAM) Test - H33TBLM	**3 test events 3 slides with 3 shipments**
1. TB LAM	**Sample Type: Urine**
Gram Stain - H43GRAM	**4 test events 3 slides 4 shipments**
1. Gram Stain Reaction 2. Gram Stian Morphology	**Report Only Available | Sample Type: Fixed Glass Slides.**
Bacterial Identification - H43BACT	**4 test events 3 swabs with 4 shipments**
1. Bacterial Identification 2. Gram Stain 3. Antimicrobial Susceptibility Testing (AST)	**Sample Type: Swabs.**

All EQA Programs listed are operated in conformity with ISO/IEC 17043

EQA PROGRAMS

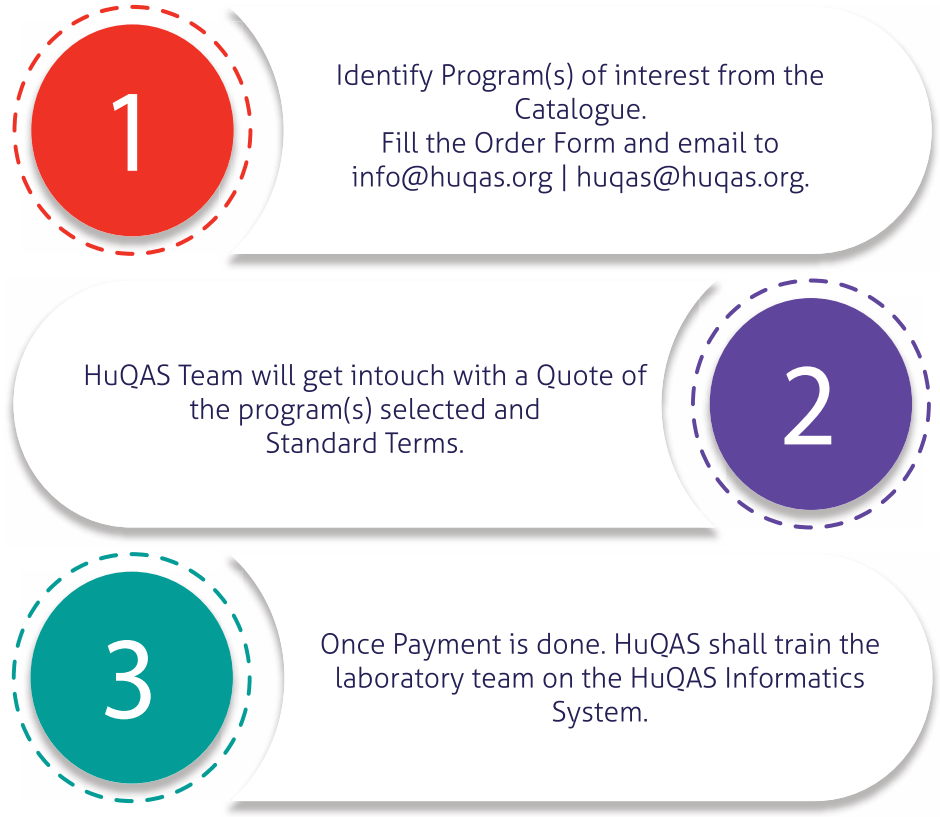
Urine Culture - H43URIC	**4 test events 3 samples with 4 shipments**
1. Bacterial Identification 2. Gram Stain 3. Antimicrobial Susceptibility Testing (AST)	**Sample Type: Swabs.**
Cryptococcus Antigen - H32CRYA	**3 test events 2 samples 1ml with 3 shipments**
1. Cryptococcus Neoformans	**Sample Type:Serum**
KOH Slides - H32KOHS	**3 test events 2 slides 3 shipments**
1. Fungal Identification	**Sample Type: Fixed Glass Slides.**
Helicobacter Pylori Antigen - H33HPAG	**3 test events 3 samples with 3 shipments**
1. H. Pylori Antigen	**Sample Type: Stool.**
Malaria - H43MALA	**4 test events 3 slides with 4 shipments**
1. Malaria Parasites Detection 2. Malaria Species Identification and Quantification 3. Malaria Species Stage Identification	**Report Only Available | Sample Type: Fixed Blood Slides.**
Malaria Rapid Diagnostic Test - H43MRDT	**4 test events 3 samples 1ml with 4 shipments**
1. Malaria Parasites Detection 2. Malaria Antigen	**Sample Type: Whole Blood Samples.**
Blood Glucose - H33BLGL	**3 test events 3 samples 1ml with 3 shipments**
1. Glucose Point of Care Test (POCT) 2. Ketone Point Of Care Test (POCT)	**Sample Type: Whole Blood Samples.**
Hemoglobin Levels - H33HGBN	**3 test events 3 samples 1ml with 3 shipments**
1. POCT Hemoglobin Levels	**Sample Type: Whole Blood Samples.**
Blood Parasites - H32BLPA	**3 test events 2 samples 1ml with 2 shipments**
1. Blood Parasite Detection and Identification	**Sample Type: Fixed Glass Slides.**
General Parasitology - H32GEPA	**3 test events 2 samples 1ml with 3 shipments**
1. Parasite Identification	**Sample Type: Liquified Stool Sample**

All EQA Programs listed are operated in conformity with ISO/IEC 17043

EQA PROGRAMS

Human Papillomavirus Testing - H32HHPV	**3 test events 2 samples with 3 shipments**
1. HPV	**Sample Type: Liquid, Human based matrix.**
Stool Antigen - H43STAG	**4 test events 3 samples with 4 shipments**
1. Helicobacter pylori Antigen 2. Salmonella Antigen	**Sample Type: Liquified Stool Sample**
Cardiac Markers - H42CAMA	**4 test events 2 samples 1.5 ml with 4 shipments**
1. CK - MB 2. hsCRP 3. Myoglobin 4. Troponin I & T 5. BNP 6. D - Dimer 7. NT - proBNP 8. CK Total	**Sample Type: Liquid, Human based matrix.**
Sperm Analysis - H45ADRO	**4 test events 5 slides 4 shipments**
1. Sperm Vitality 2. Sperm Morphology 3. Sperm Motility and Concentration	**Sample Type: Microscopy Slides and Video**

REGISTRATION PROCESS



REPORT ONLY | SAMPLE ONLY SUBSCRIPTIONS | OFF – CYCLE | VALIDATION SUBSCRIPTION

1. Report Only - Report 2nd Set of results using the same samples at no extra cost.
2. Sample Only - Receive a 2nd sample set (without evaluation/reports) for 70% of program price. Available for all programs.
3. Off-Cycle Subscription - This is a standalone subscription for EQA program price. You will receive one set os samples for a just concluded Test Event and Assigned for the price of normal EQA program
4. Validation Subscription - Validated Samples with an associated report of survey values, but do not submit results for evaluation. You receive one set of survey validated samples with an associated report of survey values, but do not submit results for evaluation.

To order these types of subscriptions, please write the subscription type on the Order Form and send it to mail: huqas@huqas.org

By placing your order, you agree to these terms.

1. This Standard Terms forms the foundaton of a legally enforceable agreement between HuQAS and a PT participa t or its appointed representaatie.
   Contact HuQAS for current program prices at huqas@huqas.org. Payment can be made in US Dollars or equivalent Kenya Shillings at the tim of payment.
2. For participa ts outside Kenya, prices exclude any applicable taxes charged by individual Government.
3. Prices include shipping and handling for orders within Kenya. All other orders are subject to additiona shipping charges from Nairobi.
4. We will replace at our cost any test samples broken or compromised during shipping.
5. Test samples broken or compromised afer your receipt will be replaced at your cost (current program price pro-rated by event cycles).
6. The payment is due on the order confirmaaon. Shipments will be made only upon receipt of payment. Overdue accounts bear interest at 1.5% per month, compounded on a monthly basis.
7. Shipments and/or performance informaton ma y be withheld for overdue accounts.
8. We reserve the right to or not offer programs with less than ten (10) parrtipa ts by providing note and a full refund.
9. HuQAS reserves the right to cancel or postpone EQA surveys. This informati n will be provided to parrtipa ts before the original sample shipping date and HuQAS will endeavor to offer an alternaate date in a a t ly manner.
10. Collusion with other parti ipants is strictly prohibited and we reserve the right to withdraw your participaon on the evidence of this malpracti e.
11. Test Samples may contain pathogenic materials; you assume all risks and responsibiliti s for the receipt, handling, storage, use, and disposal of EQA material.
12. HuQAS may from time-to-time subcontract sourcing, producton of some PT items, and shipping services. When subcontracting occurs, it is placed with a competent subcontractor and the PT provider is responsible for this.
13. All Particip a t informatio will only be disclosed to regulatory bodies upon your wrritt permission or by law or authorized by contractual arrangements to release confidenntl informamon.
14. Any informaton about the paartipa t from a source other than the papartpant shall be kept confidenntl by the PT provider.
15. The Identty of parrtip ts in the HuQAS PT Scheme shall remain confidendel and known only to persons involved in the operatio s of the PT Scheme, unless the parrtipa t waives confidendenity.
16. By signing the st andard terms, you give HuQAS (Human Quality Assessment Services) permission to collect, process, and store your organizati nal and personnel data for PT activit s, Know Your Customer (KYC) verificaation, sci enti research, and to ensure compliance with applicable laws and regulati ns.

CLIENT AUTHORIZATION

Name:	**Company / Insttuon Stamp**
Positon/Title	
Signature:	
Date:	
Payment amount from preceding page(s):	
Local Purchase Order Number:	

HUMAN QUALITY ASSESSMENT SERVICES

Name	**Stamp**
Positon/Title	
Signature	
Date	

HuQAS ORDER FORM

Organization Name: _____ Date: _____

LABORATORY INCHARGE / MANAGER

Name: _____

Mobile Number: _____

Email: _____

LABORATORY Q/A OFFICER

Name: _____

Mobile Number: _____

Email: _____

BILLING CONTACT

Name: _____

Mobile Number: _____

Email: _____

Alternative Email: _____

Alternative Mobile: _____

LABORATORY AUTHORISING SIGNATURE.

NAME: _____

SIGNATURE: _____

BILLING AUTHORISING SIGNATURE.

NAME: _____

SIGNATURE: _____

No.	PROGRAM(S) *(as indicated on the catalog)*	Analyzer / Instrument *(manufacturer, model and series.)*	Back-up Analyzer / Instrument *(Optional)*

Identify Program(s) of interest from the Request For Quote Form.
Fill the Order Form and email to info@huqas.org | huqas@huqas.org

For further asssitance call us : +254 20 354 2483

EQA POLICIES

1. SHIPMENTS

Two weeks prior to a PT shipment, the person designated as shipping contact will receive an <**Advance Shipment Notice**> through their registered email address.
Any changes to shipment dates shall be communicated in advance to all affected participating laboratories
Extensions or excused status will not be granted due to routing/receiving problems within an institution causing non- delivery of samples to the laboratory.
PT sample shipments shall be dispatched in accordance with the HuQAS EQA calendar to facilitate delivery before the scheduled opening date of each test event. As delivery timelines may vary depending on the destination country and courier processes, participants who have not received their shipment at 24 hours before the scheduled opening date are advised to contact HuQAS support immediately for assistance and shipment tracking.

2. ORDERS

Programs may be ordered at any time. Orders received after EQA sample ordering deadline will be assessed for inclusion in the current test event (HuQAS/AD/0002/R01).
Where inclusion is not feasible , enrollment will commence in the next test event an the participant will be nortified accordingly.
Changes to purchased programs should be directed to HuQAS via email. Changes to programs are dependent on availability of the product.

All communication should include:

- Your PT ID..
- Laboratory name, address, email and telephone number.
- Contact name.
- Information on programs added or cancelled.
- Billing information.

All prices will be prorated by the number of test events/year.
To ensure timely preparation and distribution of PT samples, participants should complete their renewal or new enrollment by the order deadline indicated on the HuQAS EQA Calendar or renewal form.

3. SAMPLES

All shipments should be immediately be opened upon receipt and contents checked for the following:

- Damaged samples
- Missing samples
- Incorrect samples

For replacements, contact HuQAS support. Store samples at the appropriate temperature and follow all sample handling protocols indicated in the "Handling & Reporting Instructions". All samples should be considered as potentially hazardous and laboratories should follow their protocols for handling biohazard materials when processing or discarding samples. PT samples should be analyzed as soon as possible and results submitted to HuQAS.

4. RESULT SUBMISSION.

DO NOT MAIL RESULTS TO HuQAS

Participants will receive a reminder 2 day prior to the Results Deadline that their results are due. Late results will not be evaluated.

5. PT PERFORMANCE

All results are accessible in the HuQAS Informatics approximately 10 working days of the results Deadline. Reports consist of:

- Program performance report - all analyte results performance in a given test event.
- Alert report (if applicable) - highlights analytes/vials that did not meet "acceptable criteria".

6. CORRECTIONS

PT Performance reports may also be sent to accrediting | regulatory agencies upon a laboratory's written request. Therefore it is critical that you review your reports immediately and report any errors on our part to HuQAS support.

A corrected report will be sent to you as soon as possible. Appeals for reports can only be done within 7days after release of the report. Any appeals that are made shall be reviewed and responded on email.

Error on the part of the lab, e.g. results entered form incorrect instruments, wrong units or incorrect order will not be corrected.

7. PT FAILURES

Before contacting HuQAS SUPPORT, participants should follow their protocols for troubleshooting samples, instrument or reagent problems. HuQAS support can provide suggestions and other resources to assist participants. Samples for remedial PT are available on a limited basis but there is a cost associated with the samples.

8. REPORTS

It is the responsibility of the participant to keep all records of the participation in proficiency testing. Participants can access all reports and graphs including archived reports for the past two years from "REPORTS" section online at **www.eqa.huqas.org.** or for monthly EQA on **www.monthly-eqa.huqas.org**

All HuQAS reports issued to participants are authorized for release by the Chief Executive Officer or his/her designee.

All HuQAS reports either Interim or Final or Amended Reports accompany every shipment and can also be downloaded on every laboratory dashboard count. Participants data evaluation is based on consensus mean which is determined by participants in a specific peer group. For details on evaluation please refer to the evaluation criteria. Participants reports are confidential unless a lab waives confidentiality in writing. The content of PT samples are clearly indicated in the handling and storage instructions which accompany every shipment and can also be downloaded on every laboratory dashboard account.

Participants data evaluation is based on consensus mean which is determined by participants in specific peer group.

For details on evaluation please refer to the evaluation criteria

9. ACCREDITATION AGENCIES AND REPORTS

Participation in an approved PT program is part of your laboratory's Quality Assurance requirements.

Reports may be sent to laboratory oversight bodies | regulatory agencies upon written permission .As an approved PT provider we will report PT results in a manner that meets the laboratory oversight bodies | regulatory agencies requirements. It is the responsibility of the participating laboratory to notify HuQAS support which agencies should receive PT performance reports.

HuQAS EVALUATION CRITERIA

".....advancing healthcare through improved laboratory testing"

This report interpretation guide aims to explain the laboratory reports and statistical evaluations to participants providing detailed yet easy-to-read information on laboratory performance to access the level of quality and identify areas for improvement.

HuQAS reports are designed with a user-friendly, easy to interpret per analyte format, that includes a summary performance report that includes your laboratories overall score per program allowing for effortless interpretation of analytical performance.

The HuQAS report not only offer a comparison of laboratory results with other laboratories using the same analytical instrument, method or all method but also provide detailed information for comparison to other analytical instruments and methods.

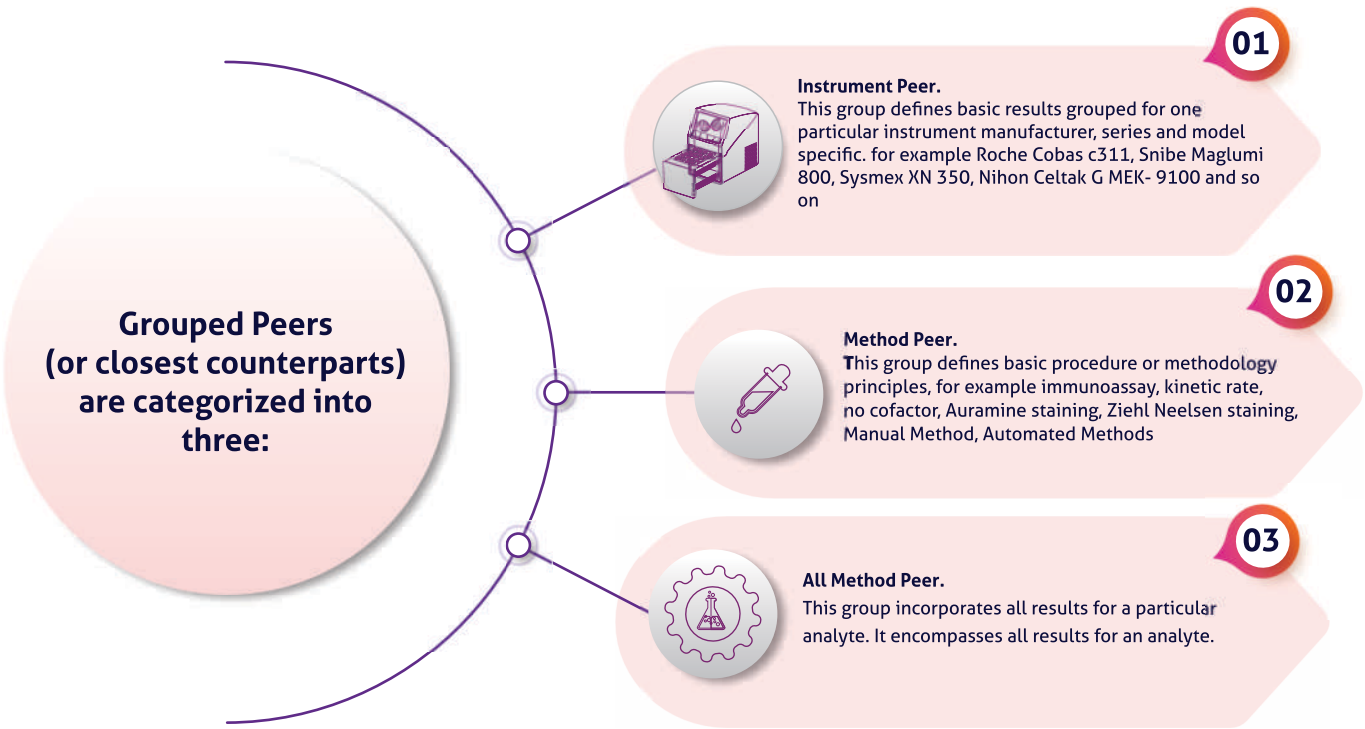
The inclusion of statistical breakdowns by all methods, your methods and where applicable, your instrument with Robust Mean, CV and SD to further enhance the value of your reports.

Quantitative Analytes

In accordance with ISO 13528:2015, participating laboratories are evaluated based on their deviation from a consensus performance of clustered peers (or closet counterparts). A numerical criterion is utilized to determine if the deviation constitutes a matter of concern.

Participants with a significant deviation (large z-score with positive or negative deviation) from the mean are considered outliers and receive a "NOT ACCEPTABLE" grade. An outlier refers to a value within a dataset that is inconsistent with other values in the same set.

PEER GROUPING CATEGORISATION



QUANTITATIVE LABORATORY REPORT

HUQ0001 | Basic Chemistry | Report No: 509-2-120913 (A)

C — Albumin [g/L]

Score: 100% (B)

D

Instrument Model:	Method:	Peering by:
Roche Integra 400/Plus	Bromocresol Green	Bromocresol Green (METHOD)

Albumin - Sample A

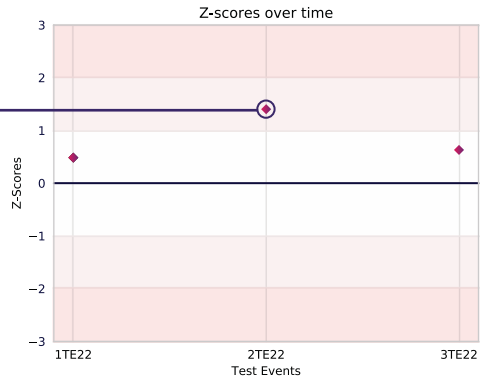
E

Result	N	Mean	SD	SE	CV(%)	Z-Score	Grade
32.94	228	31.49	2.31	0.31	7.34	0.63	ACCEPTABLE

F

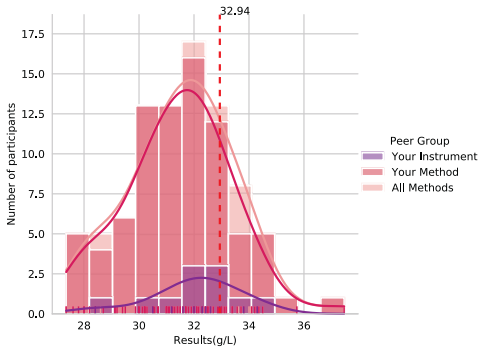
Peer Group Name	N	Mean	SD	SE	CV%
ALL	507	31.57	2.34	0.30	7.40
Human HumaStar 100 (I)	187	30.71	2.02	0.59	6.57
Roche Cobas c111 (I)	75	33.13	2.7	0.94	8.16
Roche Integra 400/Plus (I)	52	32.13	1.6	0.60	4.97
Human HumaStar 200 (I)	8	31.64	2.2	0.97	6.96

G



H

Results Histogram(Albumin)



(A) Your Lab Code (*HUQ001*), the Program Name (*Basic Chemistry*), a unique report number that bears the test event number (*509*), the program ID (*2*) and a unique analysis report number (*120913*)

(B) An average percentage score based on the number of samples.

(C) Your Analyte report in your labs units of entry

(D) Your analyte and Your method used in results entry, and the peer group your results are represented by on section E.

(E)

Results: Your Result (X_i) in your units of entry,

N: Number of Participants for the analyte,

Mean: Robust Average (X_{pt}) of all participant results.

SD / σ_{pt}: Standard deviation for proficiency assessment ($_{pt}$) calculated from participants results.

S.E or U_m: Uncertainty associated with Standard Deviation of the results.

$$\text{S.E or } U_m = \frac{1.25 \times \ _{pt}}{\sqrt{p}}$$

C.V: Coefficient of Variation calculated as:
CV = $_{pt}/X_i$ - 100

Z Score: measure of how many standard deviations below or above the mean a data point is.

$$\text{Z Score} = \frac{X_{pt} - X_i}{\sigma_{pt}}$$

(F)

Grade For a:
z - score between $|z| \leq \pm 2.0$ is **ACCEPTABLE**
z - score between $\pm 2.0 < |z| < \pm 3.0$ is a **WARNING**
z - score between $|z| \geq \pm 3.0$ is **NOT ACCEPTABLE**

A performance comparison of other methods used to analyse the analyte. You can compare the Robust mean (X_{pt}), the SD ($_{pt}$), the uncertainty (of the calculated robust mean, the CV and the number of participanting laboratories and results for each peer group.

(G) Z - Score plot over time for lab test quality control can help laboratories detect issues early, monitor their performance, and ensure consistent, accurate results.

(H) Overlapping histograms provides a clear visual representation of data distribution and facilitates identification of trends, outliers, and potential issues.

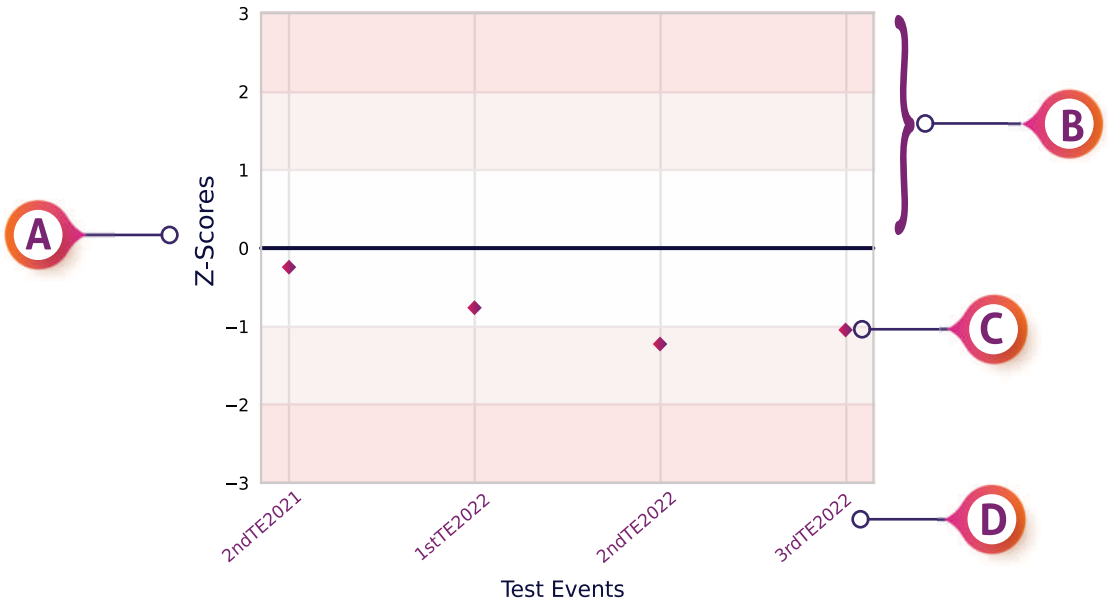
Its useful for comparison of performance among different laboratories, methods, or instruments facilitating benchmarking and identification of best practices.

QUANTITATIVE LABORATORY REPORT

The Z - Score Plot combines performance scores over several rounds of a proficiency testing scheme.

It allows trends analysis, and other features of the results, to be identified that are not apparent when performance scores for each round are examined separately.

Anatomy of Z - Score Over - time Plot



A Z - Score is plotted for each sample, for monthly you will receive a plot for every month of result entry. For Quarterly your will receive a plot for every analyte overtime.

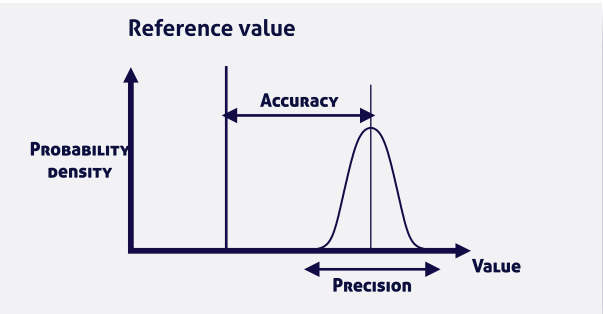
B Accepable scores (0 - 1) having no shading, Warning scores (1 - 2) having light red shading, Not Acceptable (2 - 3) have dark red shading.

C Z - Score for each event sample, current and previous events upto 12 events for monthly and 5 events for quarterly.

D Test Events participated only, If your lab result was not entered there will be no entry for that test event.

The Overlapping histogram shows where your result is in comparison with others in the three peers groupings of All Method, Method and Instrument Peer. (*ISO 13528:2015 Clause 10.2*)

A The histogram is created using actual participant results, as indicated at the X - Axis represented by singular points on the X - Axis.
A kernel density estimate (KDE) is plotted to provide a smooth curve describing the general shape of all lab results for the analyte distribution. (*ISO 13528:2015 Clause 10.3*)



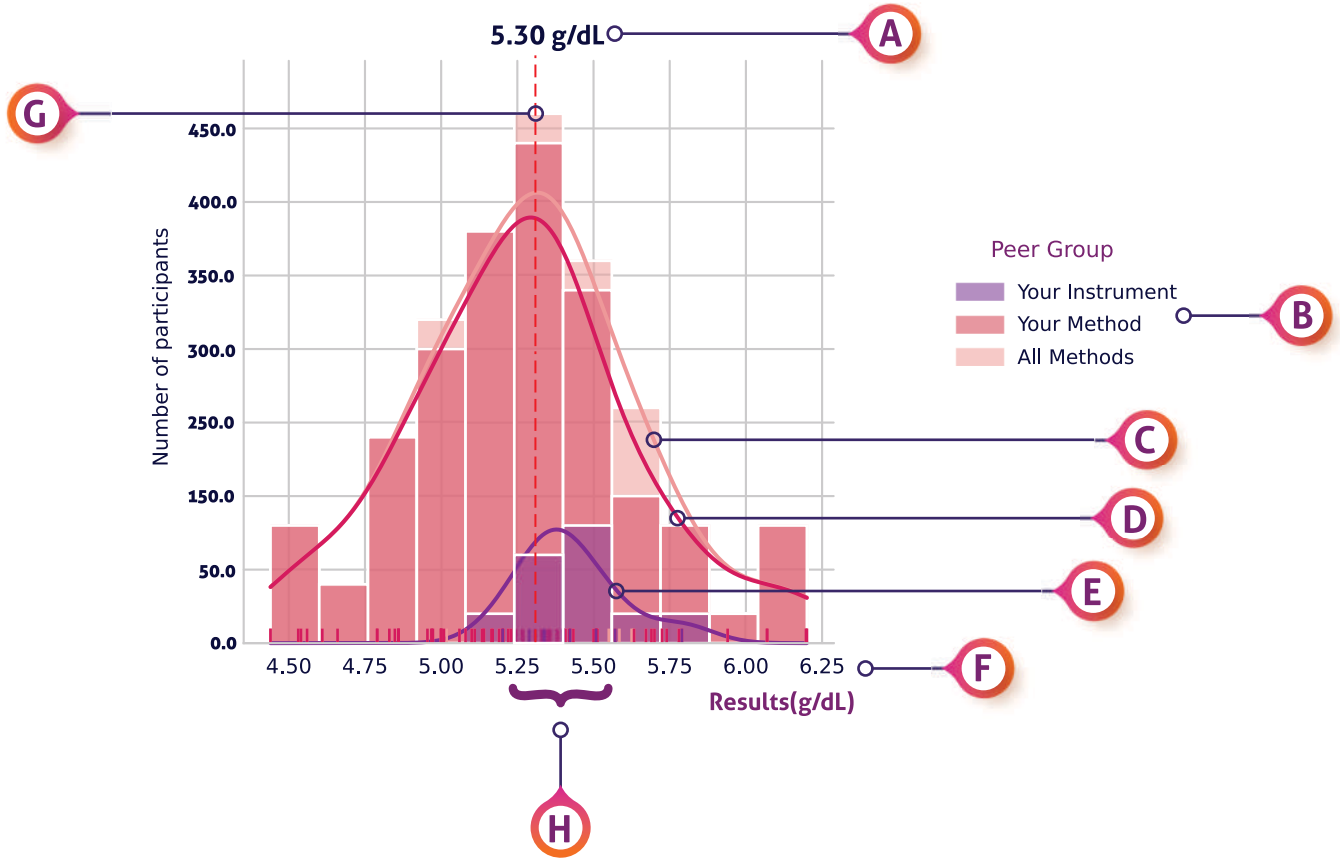
Accuracy is how close a your result is to the robust mean,

while

Precision is how close your result is to your peers.

QUANTITATIVE LABORATORY REPORT

The Anatomy of a Results Histogram



A Your result represented in your units. Your result is indicated by Red Broken Line.

B Your Instrument peer will be colored in a Light Purple, Your Method Peer will be in Red and the All Method Peer will be in light red.

C Kernel Density Curve for All Method Peer

D Kernel Density Curve for Your Method Specific Peer

E Kernel Density Curve for Your Instrument Peer

F Spread of results entered for the particular analyte.

G 450 laboratories reported values between 5.25 and 5.50 in your method peer.

H 55 laboratories reported values between 5.25 and 5.50 in your instrument peer.

QUALITATIVE LABORATORY REPORT

QUALITATIVE ANAYLTES

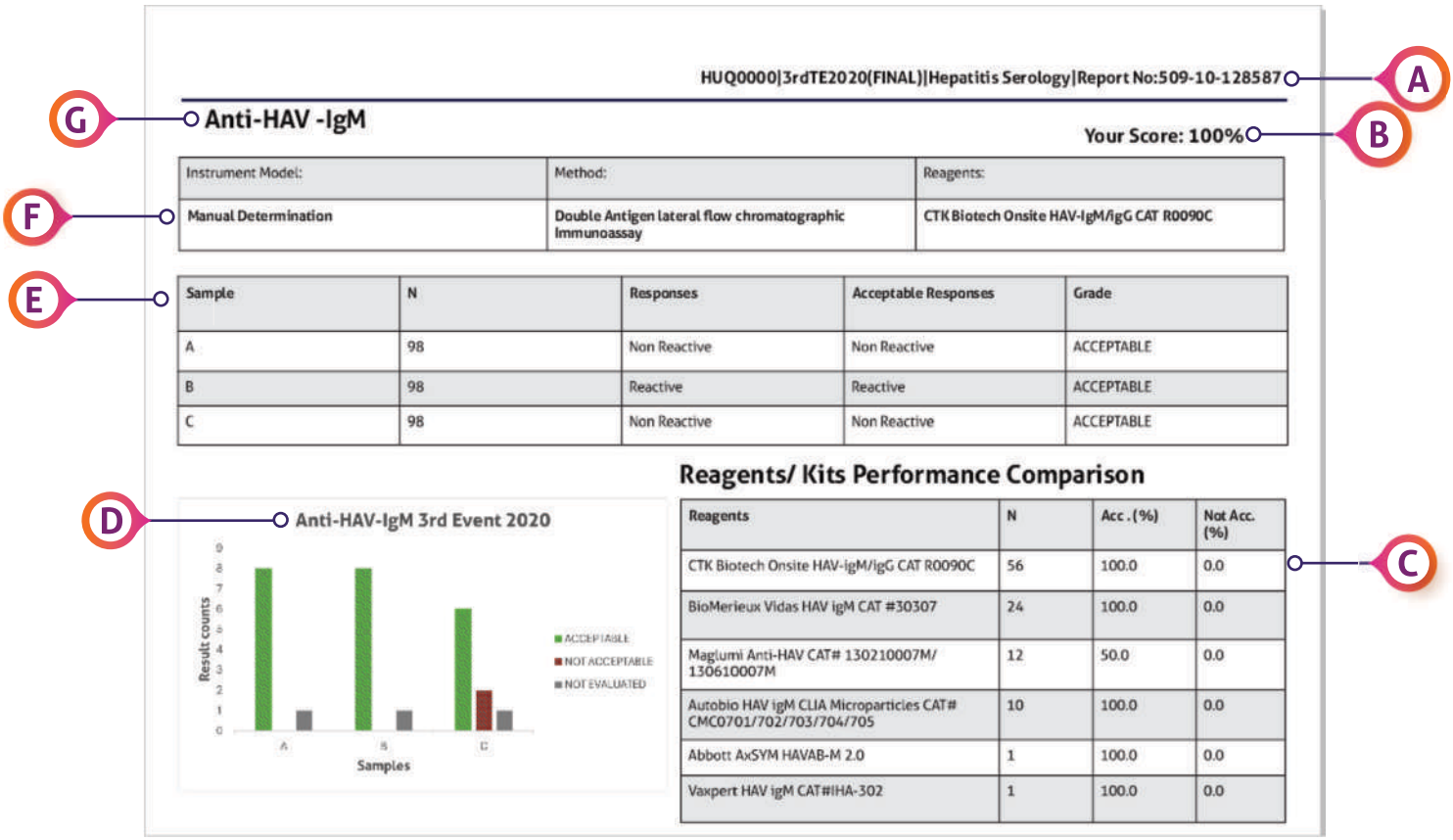
Qualitative analytes are thoose whose results are expressed as categorical outcome, rather than numerical values. These may incluse responses such as:

- Positive / Negative.
- + / ++ / +++.
- MPS seen / No MPS seen.
- Stage / Not Applicable and other similar qualitative indicators.

Assigned values for these analytes are typically determined through consensus results from expert or reference laboratories or from validated reference materials.

Participants results are evaluated based on their agreement with the assigned value:

- **AGREEMENT** with the assigned value is graded as **ACCEPTABLE**
- **DISAGREEMENT** with the assigned value is graded as **NOT ACCEPTABLE**



QUALITATIVE LABORATORY REPORT

A Indicates a unique laboratory code (*HUQ000*), Test Event Name (*3rdTE2020*), Program Name (*Hepatitis Serology*), Unique per analysis Report Number (*509-10-128587*) and Report Status (*Interim, Final or Amended*).

B An Average percentage score based on ACCEPTABLE, *or* NOT ACCEPTABLE.

C Simple way to evaluate the performance of other kits, instrument, methods used to analyze the parameter.

D Bar graph indicating a quick visualization of how the lab result compared performance to other laboratories per analyte.

E Description of analyte performance against assigned grade (Acceptable, Not Acceptable). Indicating expected responses along with your lab responses and the overall "N" number of participants.

F Outlines your laboratory's Instrument models, Methods and Kits/Reagents, used in the results entry.

G An indication of the test or analyte analysed by the lab.

SEMI- QUALITATIVE LABORATORY REPORT

HUQ0000| 3rdTE2024 (FINAL) | Malaria | Report No: 636-12-1589712 (A)

Malaria Species Identification and Quantification (F)

Your Score: 50% (B)

Instrument Model:	Method:	Reagent:
Manual Determination	Manual	Not Applicable

(C)

Sample	N	Responses	Acceptable Responses	Grade
A	38	Plasmodium falciparum,	Plasmodium falciparum,	ACCEPTABLE
Quantification		223	lower.l. 270.00 / target 360.00 / upper.l. 450.00	NOT ACCEPTABLE
B	38	Plasmodium malariae,	Plasmodium vivax,	NOT ACCEPTABLE
C	38	Plasmodium malariae, Plasmodium falciparum,	**Plasmodium malariae, Plasmodium falciparum,**	ACCEPTABLE

(D) (E)

A Indicates a unique laboratory code (*HUQ000*), Test Event Name (*3rdTE2024*), Program Name (*Malaria*), Unique per analysis Report Number (*636-12-1589712*) and Report Status (*Interim, Final or Amended*).

B An Average percentage score based on ACCEPTABLE, WARNING and NOT ACCEPTABLE.

C Outlines your laboratory's Instrument models, Methods and Kits/Reagents, used in the results entry.

D Description of analyte performance against assigned grade (Acceptable, Not Acceptable). Indicating expected responses along with your lab responses and the overall "N" number of participants.

E Quantification summary performance on your laboratories that is scored against expected ranges in accordance to WHO guidelines.

F An indication of the test or analyte analysed by the lab.

REPORT INTERPRETATION AND PROTOCOL STATEMENTS

1) Sample Preparation

Proficiency testing (PT) panels' raw material were sourced, transported and handled in accordance with international and national regulatory and ethical requirements as outlined in the PT operational procedure (HuQAS/QP/0008) and the WHO Guidelines for Safe Transport of Infectious Substances and Diagnostic Specimens(WHO/EMC/97.3).

Sample preparation and characterization are conducted at HuQAS PT Laboratory in accordance with the PT operational procedure(HuQAS/QP/0008) and WHO Manual for the Organization of external Quality Assessment in Health Laboratories(WHO-DIL-LAB-99).

2) Homogeneity and Stability Testing

The PT panels provieded have well-defined homogeneity and stability reports. Homogeneity and stability testing are performed in accordance with ISO 13528:2022 and the procedure for homogeneity and stability testing (HuQAS/QP/0014)

3) Assigned Values, Metrological Traceability and Measurement Uncertainity

Assigned values, their associated metrological traceability and measurement uncertainity for each program are established per the procedure for assigning values(HuQAS/QP/0015) and based on ISO 13528:2022.

- PT materials and their assigned values are metrologically traceable to measurement reference methods. This traceability is documented in the raw materials assay sheets and supported by robust statistical methods detailed in ISO 13528:2022
- Measurement uncertainity for quantitative programs is estimated using robust statistical methods as outlined in the procedure for data management (HuQAS/QP/0013), in line with ISO 13528:2022

4) PT Design and Implementation

The PT scheme is conducted using the HuQAS Visible Quality Cycle Matrix(VQC), each laboratory can choose running the EQA program using the following combinations:

- H45-4×5 "Apex" (H45), four events per year.
- H43-4×3 "Core and Default" (H43), four events, three samples.
- H42-4×2 "Lean" (H42/H33), four events, two samples OR three events, three samples.
- H32-3×2 "Basic" (H32): three events, two samples.

5) Statistics

In accordance with ISO 13528:2022, HuQAS reports provide the following parameters for interpreting results:

1. Z-Score(|Z|)

- |Z| ≤ 2.0: Acceptable.
- 2.0 < |Z| < 3.0: Warning signal.
- |Z| ≥ 3.0: Not acceptable.
- An asterisk (*) next to the Z-Score indicates evaluations were calculated using Z-prime(Z'), as detailed in ISO 13528:2015 Clause 9.5.

2. Standard Error (SE):

- An estimate of the measurement uncertainty for the assigned value.
- Acceptability criteria are outlined in the catalogue.

3. Coefficient of Variation (CV):

- An estimate of the overall variability of participants' results, expressed as the ratio of
- the standard deviation to the mean.
- Acceptability criteria are outlined in the catalogue.

6) Method of Assigning Values

In accordance with **ISO13528:2022**, HuQAS assigns values for PT materials using one or more of the following ISO-recognized approaches:

1. **Consensus Values from Participants**
   This is the primary and most commonly used method for assigning target values. Participants are grouped into **peer groups** based on similar technology, method or instrument platform. When a peer group has **five (5)** or more participants, the assigned value is calculated using robust statistical methods applied to the results of that group. The resulting robust mean becomes the assigned (target) value.

2. **Certified Reference Materials**
   Where CRM have been used, values provided by the manufacturer will be adopted directly to assign target to respective programs.

3. **Use of reference measurement procedure**
   EQA samples that are not CRM will be evaluated in the HuQAS laboratory using reference methods. The results will be compared with the compared with the certificate of analysis provided by the manufacturer to assign target values.

4. **Consensus Values from Expert Laboratories and Experts**
   EQA materials that are not CRM will be referred to selected laboratories or expert consultants for evaluations. A consensus of the results will be used to assign target values using robust statistics. This will be done for analytes that cannot be evaluated interneally in the HuQAS laboratory.

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PERFORMING ROOT CAUSE ANALYSIS

Continuous Testing, Continuous Improvement

The term external quality assessment (EQA) is used to describe a method that allows for comparison of a laboratory's testing to a source outside the laboratory. This comparison can be made to the performance of a peer group of laboratories or to a the performance os a reference laboratory.

Your External Quality Assurance (EQA) performance report will help you understand the quality of your lab's test results. EQA should be done in addition to internal quality controls (QC).

EQA allows you to see how your lab is performing compared to a group of your peers. All results on your EQA performance report should be examined for not acceptable results and warning signals, unusual trends like positive or negative bias, sudden shifts or other problems. Nor acceptable EQA results can arise from both systematic and random sources of error.

Systematic errors refers to errors which are present for every measurement of a given sample. Narrow down on results on one side of the target value and where a bias is seen using the z-Score values.

For example all of your EQA results are above or below the peer group mean.



Systematic Errors affect the accuracy of your results.

Random errors refers to the spread in the values of EQA results from one measurement of the quantity to the next as is shown by results that are on average close to the target value but there are a few exceptions that show large deviations from the target value.



Random Errors affect the precision of your results.

How to Investigate Not Acceptable Result(s).

Depending on the test program, a result could be evaluated against the peer group mean or a pre-determined reference value.

Possible Causes of Errors to cause Not Accepatable Grade(s).

Random Errors

- Insufficient mixing of sample, especially following freezing and for samples requiring good homogeneity (for example, hematology samples).
- Poor pipetting
- Transcription errors
- Sample mix-up
- Incorrect result unit submitted
- Testing not performed immediately after sample vials are opened (for example, blood gases vials)
- Incorrect sub method selected
- Dilution-related problem (wrong dilution factor used, result not corrected for dilution factor, incorrect calculation)
- Online result entry errors ('typo')
- Suspected/known imprecision problem with test
- Calculation (manual and automatic) errors
- Result unit conversion not done or done incorrectly
- Cross-contamination or carryover
- Mis-graded/Mis-interpreted result
- Mis-labelled sample in sampling rack

Systematic Errors

- Inaccurate reconstitution (wrong diluent, inaccurate diluent amount, inadequate equilibration of reconstituted material)
- Reagents contaminated, expired
- Incorrect sequence of results entered during online result entry
- Insufficient mixing/centrifuging before testing
- Instrument error or malfunction
- Incorrect storage of test kits and/or reagents and/or EQA samples
- Instrument parameters changed
- Compromised samples during shipping
- Ineffective or inconsistent washing
- Temperature of samples not proper for testing (room temperature is required for some samples)
- Calibration-related issues with instrument (not calibrated, expired calibration, sub-optimal calibration results, calibration drift)
- Wrong assay used for testing sample
- Contamination of equipment

HuQAS
Human Quality Assessment Services

EQA CALENDAR
ISO 17043:2023 ACCREDITED EQA PROGRAMS
2026

QUARTERLY

4 Events Programs (H43, H42)

Test Event	Ordering Deadline	Sample Dispatch	Start Date	End Date	Interim Report Release	Final Report Release
1st Event 2026	15/12/2025	09/02/2026	23/02/2026	08/03/2026	16/03/2026	23/03/2026
2nd Event 2026	16/02/2026	20/04/2026	11/05/2026	31/05/2026	10/06/2026	19/06/2026
3rd Event 2026	18/05/2026	27/07/2026	03/08/2026	16/08/2026	24/08/2026	04/09/2026
4th Event 2026	17/08/2026	05/10/2026	12/10/2026	25/10/2026	02/11/2026	09/11/2026

3 Events Programs (H33, H32) * misses 2nd Event 2026

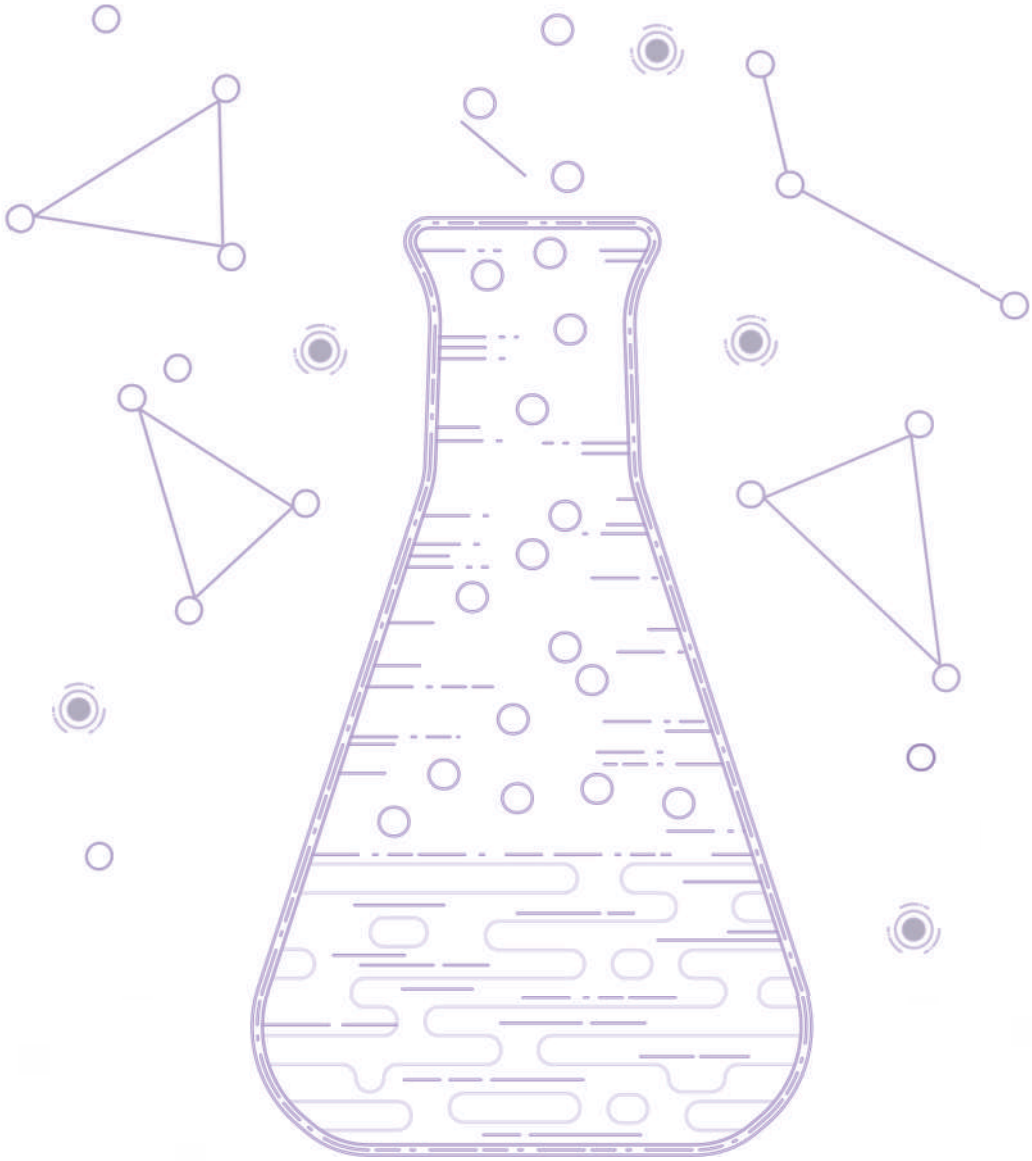
Test Event	Ordering Deadline	Sample Dispatch	Start Date	End Date	Interim Report Release	Final Report Release
1st Event 2026	15/12/2025	09/02/2026	23/02/2026	08/03/2026	16/03/2026	23/03/2026
3rd Event 2026	18/05/2026	27/07/2026	03/08/2026	16/08/2026	24/08/2026	04/09/2026
4th Event 2026	17/08/2026	05/10/2026	12/10/2026	25/10/2026	02/11/2026	09/11/2026

MONTHLY

Monthly Test Event	Sample Dispatch Date	Event Start Date	Event Deadline Date	Interim Release Date	Final Report Release Date
19Jan2026		19/01/2026	25/01/2026	27/01/2026	29/01/2026
16Feb2026	12 Jan 2026	16/02/2026	22/02/2026	24/02/2026	26/02/2026
16Mar2026		16/03/2026	22/03/2026	24/03/2026	26/03/2026
13Apr2026		13/04/2026	19/04/2026	21/04/2026	23/04/2026
04May2026		04/05/2026	17/05/2026	19/05/2026	21/05/2026
15Jun2026	20 Apr 2026	15/06/2026	21/06/2026	23/06/2026	25/06/2026
20Jul2026		20/07/2026	26/07/2026	28/07/2026	30/07/2026
10Aug2026		10/08/2026	16/08/2026	18/08/2026	20/08/2026
21Sep2026		21/09/2026	27/09/2026	29/09/2026	01/10/2026
12Oct2026	06 July 2026	12/10/2026	18/10/2026	21/10/2026	23/10/2026
09Nov2026		09/11/2026	15/11/2026	17/11/2026	19/11/2026
07Dec2026		07/12/2026	13/12/2026	15/12/2026	17/12/2026

*** The calendar above is tentative and may change due to production, shipping and particip t issues. All Changes will be communicated.*

"..... advancing healthcare through improved laboratory testing."



HuQAS
Human Quality Assessment Services

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