External Quality Assessment Services and Quality Controls

International external quality assessment schemes for all clinical laboratories

Wide selection of quality controls and reference materials for internal quality assurance for clinical laboratories

Seminars, conferences and virtual training events for healthcare professionals
Labquality offers high-quality controls, calibrators and reference materials for internal quality assurance. Third party controls provide an independent, unbiased assessment of test systems and play an essential role in ensuring day-to-day consistency.

Labquality offers EQA schemes for all areas of laboratory medicine. With EQA, laboratories can monitor and improve the quality of their analytics while getting an independent assessment of their performance.

Labquality Education provides training for healthcare professionals with the objective of continuously improving patient safety. Labquality Days congress on laboratory medicine, as well as other training events on quality, form the core of today’s offering.
LABQUALITY is an international service organization dedicated to improving patient safety. Labquality provides clinical laboratories and units performing point-of-care testing with comprehensive solutions for external and internal quality assurance as well as training programs. Its main products include external quality assessment (EQA) services and quality controls for internal quality assurance (IQA).

Labquality is an independent and impartial organization founded in 1971 by the Finnish Society of Clinical Chemistry, Finnish Red Cross, major Finnish hospitals and other professional associations. Currently over 4500 laboratories in 47 countries participate in Labquality’s EQA schemes. Laboratories outside Finland are served by over 20 distributors in different countries, the focus being on Europe.

Knowledgeable and skilled personnel is one of Labquality’s most important assets. There is a staff of about 40 professionals working in the company’s premises in Helsinki, Finland. During its 40-year history Labquality has evolved into an important center of expertise in external quality assessment. Labquality works in close collaboration with Finland’s leading laboratory professionals, who thus share their expertise with the company.

More than 200 Finnish and foreign experts in clinical laboratory medicine and quality certification activities are involved in developing and executing Labquality’s services.

Towards improved patient safety

New services and updates

FOR LABORATORIES
■ New schemes in virtual microscopy for parasitology and pathology
■ New schemes for nucleic acid testing in virology: Hepatitis B, Hepatitis C and HIV
■ Unique pre-analytical schemes
■ High-quality controls and calibrators for internal quality assurance

FOR POINT-OF-CARE TESTING (POCT) UNITS
■ 25 external quality assessment schemes
■ A broad selection of controls for internal quality assurance
■ New online courses

Most important customer segments
■ Clinical laboratories
■ Units performing POCT
■ Healthcare organizations
■ Diagnostics industry
■ Universities and research institutes
■ Food and environmental laboratories
■ Healthcare training institutes
■ Pharmacies
■ Veterinary clinics
Labquality's history in brief

Nearly 70 percent of diagnoses made by doctors are based on the results of laboratory tests. Correct and reliable test results are one of the central factors in patient safety. Labquality, which offers external quality assessment services, has been improving the quality of laboratory results in Finland since 1971.

Quality assessment work was started in Finland more than 40 years ago after laboratory professionals realised its importance. Even in the 1960s the situation was a bit suspect, as a patient’s anaemia might suddenly be cured on the way to another hospital. Chemists Sakari Närvänen and Matti Nuutinen found the joke to be true when analysing the same batch of serum for iron and iron binding capacity at laboratories at Helsinki hospital district clinics (HYKS) and at the city hospital. The lowest and highest iron values differed by a factor of 2.5. The differing results inspired Närvänen and Nuutinen to use comparative measurements methods first with iron and then with creatine. In 1966 a common control programme was started at nine HYKS laboratories, which was known as Operation Mansikki after the cow from which the first serum control sample was taken.

A meeting establishing Kliinisten Laboratoriotutkimusten Laaduntarkkailu Oy, Labquality’s predecessor, was held in 1971. It was decided that the company’s core operation would be distribution of quality-monitoring samples to laboratories and examination of the laboratories’ performance levels by gathering and processing analysis results.

In the 1980s laboratories in neighbouring countries became interested in the operation, and by the year 2000 the company had grown to become a significant international service exporter. In 1996, the company’s 25th anniversary, its name was changed to Labquality to reflect its expanding area of operations.

In addition to laboratories, Labquality’s external quality assessment services are now used by units that provide point-of-care testing as well as various social welfare and healthcare organisations. The company has over 4,500 customers in Finland and Europe. Labquality’s turnover in 2012 was 6 million Euros. At the end of 2012 Labquality absorbed its two subsidiaries, Bioclin and Qualitor.
EQA programs for laboratory medicine enable evaluation of the entire laboratory process. Labquality offers high quality, educational EQAs with over 40 years of know-how and expertise."
What is EQA?
External quality assessment provides a means of assessing analytical performance in comparison to other laboratories using the same method and instrument.

It is important that the service includes provision of identical specimens or other material to several clients simultaneously, statistical comparison and analysis of the results and feedback to the participants about their performance.

EQA programs enable evaluation of the entire laboratory process, not only the measurement/testing event. The main objectives of EQA reference measurements are:

1. Evaluation and monitoring of the performance of one’s own examinations.
2. Identification of possible problems or shortcomings, training needs and impact of corrective measures.
3. Comparison of the analytical performance between the participants.
4. Demonstration of the reliability of the methods used.
5. Evaluation of measurement uncertainty.

Labquality has over 40 years of knowhow and expertise, and its service is a part of the well-known Scandinavian healthcare system. Labquality offers high-quality, educational EQA with the following attributes:

**Schemes to all fields of laboratory medicine**
Labquality has over 150 EQA schemes covering all medical laboratory expertises. Labquality provides a full service for all kinds of laboratories.

**World’s largest network of experts**
Over one hundred experts are involved in executing the external quality assessment programmes.

**Independency**
Labquality is completely independent from any control material, instrument, reagent or test manufacturer. Labquality cooperates with many players in the healthcare field throughout Europe but operates independently in sample sourcing and result processing.

**High quality specimens**
Labquality provides real patient specimens, when possible. Labquality provides specimens from different manufacturers to show possible matrix effects between the methods. Authentic one-donor specimens also enable post-analytical evaluation in many tests.

**Flexibility in participation**
Labquality allows laboratories to choose the most appropriate number of rounds in a year according to specific needs. Laboratories can also control their quality costs by using Labquality’s adjustable programmes. Labquality collects annual subscriptions, but laboratories can start or stop at any point of the year. Service is professional and friendly.

**Educational EQAs with expert reports**
In addition to statistics and graphs, an integral part of Labquality’s service is an expert evaluation report. The expert assesses specimen materials, methods and results, and presents his observations to the participants.

**Global view with local touch**
Labquality serves customers globally. We select our distributors carefully to provide professional service in Your country and Your language, whenever feasible.

Why Labquality EQAs?

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LABQUALITY has a wide range of EQA schemes designed for clinical laboratories and POCT units. The schemes have been grouped by medical laboratory specialization, and schemes suitable for POCT form a group of their own.

All important schemes are accredited according to the ISO 17043 standard. The accredited schemes are listed and described at www.labquality.fi.

**Schemes for laboratories**

**Clinical andrology**

**Clinical physiology**

**Clinical genetics**

**Clinical haematology**
- Coagulation tests
- Cell counts and morphology
- Determination of blood group

**Clinical immunology**

**Clinical chemistry**
- General chemistry, long-term chemistry
- General chemistry, short-term chemistry
- Allergy tests
- Diabetes tests
- Endocrinology
- Specific proteins
- Cardiac markers
- Cancer markers
- Urine tests
- Basic chemistry
- Specialized chemistry

**Clinical microbiology**
- Bacterial serology
- Bacteriology
- Mycology
- Parasitology
- Virology

**Clinical pathology**
- Diagnostics
- Technology

**Laboratory instruments**

**Pre- and post-analytics**

**Schemes suitable for POCT**

**Clinical physiology**
- **interpretation of ECG**

**Clinical haematology**
- Thromboplastin time (INR)
- White blood cell count
- White blood cell differential count

**Clinical chemistry**
- CRP
- Glucose meters
- Haemoglobin meters
- Haemoglobin A1c
- Drug abuse screening
- Basic chemistry meters
- Pregnancy tests from urine
- Cardiac markers: BNP and proBNP
- Cardiac markers: Troponins
- Faecal blood
- Blood gas analyzers
- Urine strip tests

**Clinical microbiology**
- EBV mononucleosis
- Helicobacter pylori in faecis
- Influenza virus A and B
- Puumala virus antibodies
- Plasmodium falciparum (malaria)
- RS virus
- Streptococcus group A

**Pre- and post-analytics**
- Pre-analytics, sample taking and POCT

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POINT-OF-CARE testing (POCT) is referred to as analytical testing performed near the patient, outside the laboratory setting. POCT is intended to reduce time to test results and shorten the time to therapeutic intervention. During past years, the growth of POCT has been substantial. The treatment of increasing amount of patients is thus begun on the basis of point-of-care tests. To ensure POCT devices generate results that are comparable to those of the laboratories, also these tests should be subjected to the same quality requirements as conventional laboratory analyses. In POCT, several factors need to be taken into account, such as sample taking and handling, maintenance and calibration of the instrument as well as internal and external quality assessment and post-analytical factors.

POCT users:
- Medical centers
- Hospital wards
- Pediatric clinics
- Surgical units
- Outpatient clinics
- Occupational healthcare
- Home/community nursing

Responsibility issues
If POC testing is being conducted in your unit, and there is as of yet no external quality assessment, please contact your supporting laboratory, the person in charge of quality in your organization (e.g. quality manager), or Labquality customer service.

EXTERNAL QUALITY ASSESSMENT OF POCT
Pre-analytical EQA schemes
New pre-analytical EQA schemes will be available for clinical chemistry laboratories, microbiology, blood gas units, phlebotomy and POCT units. The scheme consist of case studies from real life requiring a participant to select an appropriate answer related to the pre-analytical phase. Reports of the scheme contain participant-specific results and scores, including expert comments and feedback.

Virtual microscopy – Parasites in faeces, parasites in blood
Virtual microscopy is a method where samples are imaged and digitized so that several fields of vision and levels of focus can be viewed on a computer screen. Among the first schemes utilizing virtual microscopy technology are the blood and faecal parasite schemes. This new technology will guarantee identical and homogeneous samples for participants. It also enables to diversify range of findings. Virtual schemes are a powerful tool for external quality assessment and education.

EQA schemes for molecular diagnostics
Labquality is introducing new molecular EQA schemes to complement its extensive serology and antigen detection offering. The expansion of schemes available for molecular diagnostics of infectious diseases in particular is one of Labquality’s key priorities, reflecting the increasingly important role of molecular testing in overall diagnosis of diseases. With the exploitation of extensive user input on the scheme design, the new molecular EQA schemes have been made easy to incorporate into the laboratory routines.

Labquality is supplementing its range of EQA products. Novelties for 2014 include the schemes for pre-analytics and the virtual microscopy schemes introduced in 2013 are becoming more and more popular.
EQA Round

The full scheme of participation starts from planning and ends with the end-of-year certificate of participation. Planning and customizing the programs according to laboratory’s local and quality system needs is the key point of Labquality’s EQA service. Free selection of rounds also makes the system cost effective.

**Order**
Order directly or via country distributor (see list of distributors on www.labquality.fi).

**Delivery**
Every round includes delivery of specimens or other scheme specific materials. All EQA specimens are carefully selected to be most suitable for the analytes or test in use.

**Analysis**
Participants analyse the specimens according to the instructions.

**Result reporting**
Results have to be reported on time through LabScala or by paper forms. Late results are not accepted.

**Statistical analysis and expert evaluation**
Labquality analyses the results within 2-3 weeks. Every report includes statistics and expert comments.

**Report and certificate**
The report is released in Labquality’s LabScala system. Printed reports are also available. A certificate of participation is available at the end of the year.
LabScala Online services

LabScala online service covers the whole EQA process. Through this EQA portal, laboratories can place orders, fill in results, view reports and communicate with Labquality. The intelligent new software guides the user through the EQA process and reminds the users of upcoming deadlines and necessary actions. LabScala is being developed further and new features are continuously added.

The user-specific dashboard keeps clients up to date:

Process-wise forms are easy to use:
Reports with expert comments - value-added benefit of Labquality EQAs

Different tests need different kinds of reports. For clinical chemistry, haematology and quantitative immunology, Labquality provides histogram reports summarized by instrument. Quantitative analytes are compared with target values created by Labquality’s expert group. The Z score (SDI) is also included. In the field of microbiology, scoring reports are most appropriate, and for qualitative analytes, a table by findings is suitable. Labquality does not only report the statistics. There is always an evaluation report with expert comments and feedback included. Labquality does not rank laboratories according to their performance. Examples of reports:
Participation in EQA rounds

New clients
In case you are not yet a Labquality client, please contact Labquality customer service at info@labquality.fi.

Orders, changes and cancellations
In order to ensure your participation in Labquality’s schemes, we highly recommend orders to be placed for one calendar year at the time. Please place your annual order by the end of November, and complete it later, if necessary. Cancellations must be made at least one month before the delivery month of the round.

Delivery
The delivery month of each round is shown in a separate product catalogue. Delivery dates are confirmed on average three weeks before on the Labquality website or LabScala. The specimens are to be analyzed and the results sent according to the instructions enclosed in the delivery.

Certificate of participation
Certificates of participation are delivered in December. Each participant can print a general certificate of participation from LabScala free of charge. Participants can also order a round-specific certificate, in Finnish or in English. In addition, there is a specific certificate of participation for microbiological examinations.

LabScala customer channel
A new client receives a login code and password for Labquality’s customer channel LabScala. After registration, the client has access to Labquality’s services.
»Third party controls provide a truly independent, unbiased assessment of the test system. Labquality offers quality controls, calibrators and reference materials for internal quality assurance of clinical laboratories and point-of-care testing units.«
LABQUALITY offers quality controls, calibrators and reference materials for internal quality assurance of clinical laboratories and point-of-care testing units. The portfolio includes Bioclin branded calibrators and controls as well as a range of products from the world’s leading quality control suppliers. These IQA products provide a truly independent, unbiased assessment of the test system and thus play an essential role in ensuring day-to-day consistency of the results.

Why to use IQA?
Third party controls are IQA products designed to provide an independent assessment of a diagnostic device or method. Contrary to instrument manufacturers’ controls, these products have not been designed or optimized for use with any given reagent system. Thus, third party controls enable unbiased evaluation of the analytical performance and detection of shifts that may occur when the reagent lot is changed. The extended shelf life of even up to several years makes these controls optimal for long-term monitoring.

Independent Quality Controls For
- All routine and specialized laboratory needs
- Ensuring day-to-day consistency of results
- Detection of reagent lot change linked shifts

Product Range
Labquality has a comprehensive offering of IQA products suitable for hematological, immunological, clinical chemistry and microbiological diagnostics. Portfolio includes products such as the B-Trol® for basic blood counting as well as a range of special products including reference panels, tumor markers, cardiac markers and multi controls containing dozens of components analyzable by a single system. The portfolio is constantly updated to ensure that also the future needs of clinical laboratories and point-of-care testing units are met. The complete list of our products is available on our website.

Labquality serves as a distributor for the following companies.
Contact Labquality to find out about distribution opportunities to your country.
Labquality's IQA products are intended for laboratories performing diagnostic testing in bacteriology, clinical chemistry, coagulation haematology, immunology and virology.
>Labquality Education offers training for healthcare professionals, the goal being continuous improvement of patient safety."
Labquality Days in February

The annually organized Labquality Days is aimed at the entire personnel of clinical laboratories and POCT units. The lectures explore problems and solutions in analytics, the medical background of examinations, new technologies, external quality assessment and overall quality management. Labquality Days also offers an opportunity to develop practical skills in different examination seminars. In general, popular and current topics are addressed, among these for example changes in the operating environment of laboratories.

Online training

Training programs offered via the Internet support Labquality’s mission, improvement of patient safety. In addition to external quality assessment schemes, online courses are a great way to enhance the knowhow of laboratory personnel. Labquality produces online courses also for units within the healthcare sector doing POCT.

Labquality also offers courses and seminars on quality certification and other quality assurance topics.

Labquality Education offers training for healthcare professionals, the goal being continuous improvement of patient safety. The main forum is the annual Labquality Days congress.

Make sure you keep up with our latest online course offerings at www.labquality.fi

»The annually organized Labquality Days is aimed at the entire personnel of clinical laboratories and POCT units.«
Ensuring excellent laboratory testing