



Proficiency Testing & Interlaboratory Comparisons

Key Objectives

The key objective of the project is to expand the use of Proficiency Testing (PT) in Turkey and in particular provide more sectors with nationally produced schemes, reducing the dependence upon international providers which can be costly. There will remain a place for international PT schemes, as this allows laboratories to compare their performance on a world-wide scale, which remains important in the competitive markets we operate in and in key areas such as healthcare.

The importance of PT and Interlaboratory Comparisons (ILC) in terms of laboratory quality,



cannot be underestimated. They are the only means by which a testing laboratory can prove its competence to carry out the analysis they perform daily. A well organised proficiency testing scheme which is carried out appropriately by the participating laboratories is a powerful tool that the laboratory manager can use to actively improve the quality of the testing performed. When used with laboratory accreditation to ISO17025, internal quality standards certified

reference materials etc., properly implemented PT schemes can provide the validation of the whole quality assurance process.

PT is to the laboratory what a stop-watch is to a sprinter in training for the Olympics. Without a means of measuring their performance, the sprinter has no idea if the times for 100m are as good as his fellow competitors and therefore if they have a chance of winning. Without PT, a laboratory cannot compare results with their peer laboratories and know if the quality of the work is up to the standards of the industry as a whole. PT is a tool to improve performance and must be treated as such - providers should be viewed as educators and consultants, not judge and jury.

Current PT Providers in Turkey

The project does not aim to tell laboratories what to do and the instigation of the project does not mean there is any problem with PT in Turkey. The aim is to accelerate the development of PT schemes into other sectors by spreading the expertise already



available in the country and open up the availability of proficiency testing to those sectors where appropriate and cost-effective proficiency testing is not currently available. It is very evident from the work conducted under the programme so far that there are some excellent schemes in Turkey which are run and administered to a level which matches and indeed exceeds, in some cases, that of internationally available schemes. Just

some of the schemes are listed below, and if you are running a scheme and are not part of the project, please contact us as soon as possible!

- TÜBİTAK UME – Ulusal Metroloji Enstitüsü, *fchemistry*;
- TÇMB – Türk Çimento Müstahsilleri Birliği, *cement tests*;
- Düzen Laboratuvarlar Grubu, *clinical testing*;
- KBUDEK – Klinik Biyokimyacı Uzmanları Derneği, *clinical testing*

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Sector Working Groups

Very important to the success of the project are the sector working groups, the aim of which is to identify areas where PT is required and set up pilot programmes which will develop into National schemes for Turkish laboratories. The groups and coordinators are listed below:

- Food - Zeliha Yildirim
- Calibration - Sekip Turhan
- Cement - Bahadır Erdogan
- Fuel - Ender Okandan
- Medical - Diler Aslan
- Environment - Eyup Yahsi
- Veterinary -Nahit Yazicioglu
- Textiles - H. Ozlem Cavumirza

The History of PT

The first collaborative studies between laboratories were undertaken by the AOAC in America more than 120 years ago and the first certified reference materials were produced in the early 1900's. PT as we are



familiar with it started in the field of clinical chemistry in the late 1940's in the USA and in the early 1950's in the UK, but these were isolated studies. Regularly distributed PT schemes developed in the late 1960's and 1970's, mainly in the area of clinical testing. PT then moved into other areas of analysis such as asbestos fibre analysis (1980's) water (1985), and food (1990) and continues to expand today. There are now literally thousands of PT schemes available and the EPTIS website is a good place to search for international PT schemes. www.eptis.bam.de

Collaboration with UME

Following a successful meeting between the PT and ILC Project and the management board of the National Metrology Institute; Director Sermet Suer, Assistant Director S. Temel Yalcin, Assistant Director, Technical, Sakir Baytaroglu, we are pleased to announce that UME has agreed to collaborate with the project. Also present was PT expert Fatma Akcadag. UME run proficiency tests in chemistry and since 2005 has organised interlaboratory comparisons in the area of calibration. Representing Turkey to the rest of the world in matters of high-level measurement, UME is important to the project and instrumental in leading the way in improving the standards of laboratory measurement in Turkey. However, like many of their international counterparts, it is not realistic to expect UME to provide PT and ILC services to every area, and therefore collaboration is a good way to accelerate provision of proficiency tests and interlaboratory comparisons to cover the needs of the different laboratories in Turkey. UME's collaboration will, clearly help to reach this goal and we are pleased to welcome their input to the Calibration sector Working Group and training activities of this project. They will also be an important member of the Proficiency Test Steering Board, represented by Enver Sadikoglu, which will be established in September 2006.

The first training sessions were held from 12th - 15th June 2006 at TUSSIDE in Gebze, combining formal lectures and practical exercises aimed at providing a broad background in proficiency testing. Scientists from four of the key sectors took part in the training Food, Fuel, Healthcare, and Environment. The experience of the participants with regard to PT ranged from those currently running established, well respected PT schemes to those who have participated in International PT schemes and are looking to set up pilot National schemes where none are currently available.

The first half of the training, carried out by International Experts Brian Brookman (LGC Ltd. United Kingdom) and Tracey Noblett (Quality Management Ltd. United Kingdom) concentrated on the key areas for consideration when setting up any PT scheme and the relevant international documents that schemes need to follow in order to provide a good service to the participants of the scheme. There are very many types of scheme that can be provided, and often it is the nature of the target sector for the scheme which dictates the kind of scheme and the basic set up which is



Brian Brookman presenting his opening lecture 'What is PT?'

required to make the scheme successful. For example the type of statistical analysis and data reporting which are ideally suited to a clinical chemistry PT scheme are unlikely to be appropriate for a food microbiology scheme and vice-versa. Practical exercises and team projects were enthusiastically tackled by the groups and there was also the opportunity to visit the excellent facilities at TÜBİTAK UME and TÜBİTAK MAM. The delegates also took part in an exercise to present the training themselves, lead by Project Coordinator Jill Merry (Euro Health Group, Denmark) in order to prepare them for giving this training to other scientists in Turkey, broadening the PT, the benefits it can bring, and more importantly, helping other sectors to set up Proficiency Testing schemes suited to their own needs. The second part of the training will concentrate on the processing of data and producing reports once the pilot schemes that are proposed in new sectors are completed. This will take place in the Autumn of 2006. Further training events are planned, please see our website: www.quality-turkey.org/exc/proficiency-testing.htm

International Aspects of Proficiency Testing

The link between proficiency testing and trade is well established, as are the high risks associated with relying on laboratory results from facilities that are not accredited and do not monitor their performance. World-wide manufacturers of products who are reliant on consistent quality around the world, understand the benefits of PT as a tool to help achieve this. In many sectors, such as food for example, the major



manufacturers run their own schemes (usually in partnership with an international provider) in order to monitor performance between their own laboratory networks and also that of third party analytical laboratories performing testing on their behalf. This gives them confidence in the analytical capability of the laboratories which relates directly to the quality of the end product. Failure to use proper monitoring of goods can cause significant economic problems and health risks, as demonstrated by the massive recall of food products containing the banned colour Sudan I after a batch of chilli was imported into the UK and used as an ingredient in over 400 manufactured foods. In order to export product it is necessary to demonstrate that the product meets the specification of the importer and that the analytical results which show compliance with the specification have been performed in a competent laboratory - which in turn can be demonstrated by good performance in an appropriate PT scheme. Many retailers in Europe and around the world will insist on seeing a laboratory's PT results before using them as an independent testing facility or accepting product that has been tested by the laboratory.