

## Statistics used in Global Proficiency's PT Schemes

The statistical methods used in each of our PT schemes are tailored to match the design of each scheme, and various techniques are used to present the collated data to participating laboratories.

### Statistical Methods

- The statistical methods used by Global Proficiency take into account:
- Whether consensus or reference values are used
- The extent to which measurement uncertainty is method-dependent or influenced by matrix effects
- Methods used, and the compatibility of test data from different methods
- Any regulatory or customer requirements relating to measurement uncertainty or limits of detection
- The number of participating laboratories
- Ability to merge data between rounds (according to sample stability) or between blind duplicates

### Techniques used to Present Data to Participating Laboratories

Various techniques are used to present the collated data to participating laboratories:

- Graphical displays of the data in which graphs summarise the data or facilitate comparisons
- Tabular description in which tables of numbers summarise the data
- Summary statistics which present descriptive parameters such as mean, median, standard deviation, median absolute difference etc.

With all statistical applications there are limitations that need to be understood when interpreting summarised data. Scheme protocols are available to ensure laboratory staff understand the statistics applied in each PT scheme, and Global Proficiency's technical support staff are available to assist.