Conclusion   Consistent and accurate metadata to support access to quality indicators is crucial to establishing indicator interoperability. The recommendations in this paper pertain to metadata for identifying healthcare quality indicator source and formula. Further exploratory work to analyse descriptive information about other indicator sets could inform the development of international guidance for quality indicator metadata.

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Abstract no. 370   Quanti-Kin Web: a web tool for ELISA assay processing

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Diagnosis and treatment monitoring can be greatly improved if numerical values of laboratory markers are available. In several laboratories various tests, such as the enzyme-linked immunosorbent assay (ELISA), are based on colorimetric methods, where enzyme activity is used as a quantitative label. The ELISA is an easily standardized and readily automated, relatively inexpensive, highly sensitive and specific procedure, which requires small sample and reagent volumes. The accuracy and wide range of quantification with the ELISA method is still an open problem. This paper presents the improved and web based version of a software for analyte quantification that bases its quantification capability on optical density readings collected both during the colour formation phase and after the dispensation of the stop solution.

The Quanti-Kin Web has been developed within Microsoft Visual Studio 2015 using Microsoft SQL Server 2016 to record data and is now available at the address http://www.quantikin.com. The complete process of test management can be divided into five sections.

1. Creation of a new assay.
2. Optical density values acquisition.
3. Web based data transfer.
4. Quality control of the experiment.
5. Quantification of analyte and results reporting.

A large quantity of old data related to the calibration curves of two important experimental centres and data produced in the same centres, but by training personnel visiting these centres, was collected. Therefore, with these types of data it was possible to evaluate the efficiency of the calculation engine. The previous program QKDS achieved good precision regarding the quantification of known amounts of p24, but the data presented were only produced in an extremely well controlled environment. The statistical analysis performed with the data collected by highly trained users shows that Quanti-Kin Web produced results similar to those presented in. On the contrary, during widespread worldwide routine use the performances in quantification were significantly lower than those obtained by well trained personnel and reported in. This aspect can greatly influence quantification results and the curves. Thanks to Quanti-Kin Web improved quantification algorithm, this problem can be overcome without affecting the quality of the experiment. In fact a strong check on the wells has been developed. By this way, the maximum error has been significantly reduced from 960.49 in the old version to 55.63 in the new one. The standard deviation was also reduced from 86.53% to 6.7%, the variance was reduced from 74.87 to 44.87 and lastly the mean error was reduced from 15.19 to 0.24. The data are calculated over experiment performed in many laboratories all over the word during the last three years.

The web deployment of the present tool makes its use very simple, as it does not require any installation and it assures a very fast execution. The data that are exchanged on the web are uniquely related to the amount of analyte present in the wells and not to the identity of the patient, so any restrictions due to the privacy laws of many countries are not affected.