

Quality specifications by Labquality for the most common clinical chemistry tests

Table 1. Goals for analytical variation
in clinical chemistry

Analyte	Goal (CV %)
Alanine aminotransferase	4.0
Albumin	1.8
Alkaline phosphatase	4.0
Amylase	4.0
Aspartate aminotransferase	4.0
Bilirubin	3.4
Calcium	1.3
Calcium Ionized	1.3
Chloride	0.7
Cholesterol	3.0
Cholesterol HDL	3.0
Cortisol	3.6
Creatine phosphokinase	4.0
Creatinine	2.8
Ferritin	5.4
Gamma glutamyltransferase	4.0
Glucose	2.1
Immunoglobulin A	3.2
Immunoglobulin G	2.6
Immunoglobulin M	3.6
Iron	2.4
Lactate dehydrogenase	4.0
Magnesium	2.6
Osmolality	0.7
Phosphorus	2.0
Potassium	1.1
Protein	1.6
Sodium	0.7
Thyrotropin	4.2
Thyroxin	3.0
Thyroxin free	4.8
Transferrin	3.3
Triglycerides	3.0
Triiodothyronin	4.1
Urea	3.0
Uric acid	2.0

Table 2. Goals for total analytical error
in clinical chemistry (*target limits*)

Analyte	Goal (%)
Alanine aminotransferase	± 12
Albumin	± 5
Alkaline phosphatase	± 12
Amylase	± 12
Aspartate aminotransferase	± 12
Bilirubin	± 12
Calcium	± 3
Calcium Ionized	± 3
Chloride	± 2
Cholesterol	± 5
Cholesterol HDL	± 10
Cortisol	± 15
Creatine phosphokinase	± 12
Creatinine	± 8
Ferritin	± 15
Gamma glutamyltransferase	± 12
Glucose	± 6
Immunoglobulin A	± 15
Immunoglobulin G	± 8
Immunoglobulin M	± 15
Iron	± 12
Lactate dehydrogenase	± 12
Magnesium	± 6
Osmolality	± 2
Phosphorus	± 6
Potassium	± 4
Protein	± 5
Sodium	± 2
Thyrotropin	± 12
Thyroxin	± 10
Thyroxin free	± 12
Transferrin	± 8
Triglycerides	± 15
Triiodothyronin	± 12
Urea	± 10
Uric acid	± 8

In Finland, the Quality Goal Expert Group of Labquality Ltd. has prepared a proposal for analytical quality goals for the most common clinical chemistry tests. In this proposal, quality goals are presented both for the analytical variation (precision) and for the total error which involves both the precision and the systematic error of the results (bias). These analytical quality goals have been set mainly for two purposes. First, the goals for total error are used in the assessment of individual results of external quality control surveys. Secondly, a laboratory can assess its own performance by comparing the variation of its results with these analytical quality goals when the own method is running normally [Sorto A, Kaihola HL, Törmä A. Quality Assurance in the Clinical Laboratory. Principles of Internal Quality Control. Labquality News 2: 38-56, 1998].