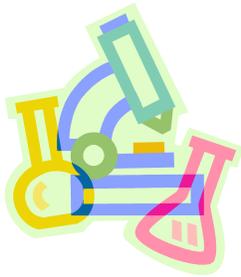


The Need for Standardized Units of Measurement

Medical Terminology The Unified Code for Units of Measure (UCUM) is a system that includes all units of measure. The purpose of this new standard is to facilitate unambiguous electronic data exchange of quantities with their units. The real value of restricting the default notations for units of measure is not to handle legacy systems but primarily for transmitting Electronic Health Records (EHR) containing laboratory results.

Terminology: Laboratory UCUM Standard for Units of Measurement for Interoperability



The Unified Code for Units of Measure (UCUM) is a system that includes all units of measures used in international science, engineering, and business. The purpose of this new standard is to facilitate unambiguous electronic data exchange of quantities with their units. Similar to LOINC (Logical Observation Identifier Names and Codes), the standard is meant to be used in the background during computer to computer data exchanges.

The Unified Code for Units of Measure is based on ISO 2955-1983, ANSI X3.50-1986, and HL7's ISO+ extensions. UCUM places restrictions on the character set and typographical details, not only to deal with legacy systems, but also to facilitate clear communication of the meaning of units computer to computer. The Unified Code for Units of Measure is "inspired by and heavily based on ISO 2955-1983, ANSI X3.50-1986, and HL7's extensions called ISO+". (from <http://unitsofmeasure.org>).

Units of Measure in Lab Systems

Reporting quantitative measurement is not meaningful without units. Medical patient chart notes about laboratory tests fail to do this routinely however. We also fail to standardize lab reporting in computer systems. A review of in a system may reveal "G", "GM", "GS" representing grams. For liters you may see "LITERS", "L", and for milliliter you may see "ML", or "CC". Within one institution most measurements are typically reported consistently but could lead to wrong inferences when patients move between institutions.¹ Unlike LOINC, UCUM could also be used for communication between humans. UCUM units are human friendly codes with precise semantics. For example: "ug/dl", not "mcg/deciliters" or "g" and not "gm". For more information regarding UCUM, see <http://unitsofmeasure.org> and also <http://aurora.regenstrief.org/~ucum/ucum.html>.

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¹ Schadow G, McDonald C, Suico, J, Fohring U, Tolxdorff T. Units of Measure in Clinical Information Systems. Journal of the American Medical Informatics Association, Vol 6, Mar/Apr 1999.