Conventional Units and SI Units in JAMA and the Archives Journals

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In the United States, most physicians and other health care professionals use conventional units for most commonly encountered clinical measurements (eg, blood pressure), and most clinical laboratories report many laboratory values by means of conventional units. To serve these readers, but also to serve the needs of readers in countries where SI units are used, JAMA and the Archives Journals have adopted an approach for reporting units of measure that includes a combination of SI units and conventional units. | Measurements of length, area, volume, and mass are reported by means of metric units rather than English units (Table).

Length, Area, Volume, Mass

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Measurements of length, area, volume, and mass are reported by means of metric units rather than English units (Table). In less formal, nonscientific texts such as essays, use of nonmetric units, such as miles or inches, and the use of idioms, such as “An ounce of prevention is worth a pound of cure,” are acceptable. In addition, if the nonmetric unit was used as part of a survey or questionnaire, the original measure should be retained.The patients were asked, “Do you have difficulty walking 15 feet?” |

pH

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Although SI nomenclature could be used to express values of hydrogen ion concentration (nmol/L), the pH scale (1 14) is used. |

Laboratory Values

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UPDATE: We will discontinue using quotation marks to identify parts of an article, but retain the capitalization; eg, This is discussed in the Methods section (not the “Methods” section). This change was made February 14, 2013. In JAMA and the Archives Journals, laboratory values for clinical chemistry analyses, hematologic tests, immunologic assays, metabolic and endocrine tests, therapeutic drug monitoring, toxicology determinations, and urinalysis are reported by means of conventional laboratory units. Table provides examples of conventional units and SI units for clinical laboratory measurement and is intended to facilitate conversion from conventional units to SI units (and vice versa). However,

Radiation

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UPDATE: We will discontinue using quotation marks to identify parts of an article, but retain the capitalization; eg, This is discussed in the Methods section (not the “Methods” section). This change was made February 14, 2013. Measurements of ionizing radiation and radioactivity should be reported by means of SI units. The SI units for radiation are established by international agreement. The unit for activity of a radionuclide is the becquerel; the absorbed dose of radiation (absorbed per unit weight of tissue) is the gray (Gy); and the dose equivalent used to indicate the detrimental effects of an absorbed radiation dose

Time

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The SI unit for time is the second, although minute, hour, and day also are used. Other units of time, such as week, month, and year, are not part of the SI but also are used. The abbreviations for minute, hour, and day are min, h, and d, respectively, and the abbreviations for week, month, and year are wk, mo, and y, respectively. These abbreviations are used in tables, figures and virgule constructions. (See , Abbreviations, Units of Measure.) |

Temperature

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The Celsius scale (°C) is used for temperature measurement rather than the base SI unit for temperature, the kelvin (K), which has little application in medicine. Although both kelvin and Celsius scales have the same interval value for temperature differences, they differ in their absolute values. For example, a temperature of 273.15 K is equal to 0°C. Temperature values generally are reported in degrees Celsius, and values given in degrees Fahrenheit (°F) are converted to degrees Celsius (°C).(°F - 32)(0.556) = °C |

Visual Acuity

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Visual acuity should be reported on the basis of how the measurement was determined. For example, using the Snellen fraction with English units, 20/20 or 20/100 indicates that the person being evaluated can see at 20 ft what a person with “normal visual acuity” can see at 20 ft or at 100 ft, respectively. The equivalent metric measurements for visual acuity are 6/6 and 6/30, respectively. (See , Nomenclature, Ophthalmology Terms.) |

Pressure

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Blood pressure and intraocular pressure are reported in millimeters of mercury (mm Hg); cerebrospinal fluid pressure is reported as centimeters of water (cm H2O). The pascal (newton per square meter [N/m2]) is the recommended SI unit for pressure but generally is not used for reporting these common physiologic pressure measurements. Partial pressure of gases (eg, of oxygen and carbon dioxide) may be reported as millimeters of mercury (mm Hg) or as kilopascals (kPa). (See also , Nomenclature, Pulmonary, Respiratory, and Blood Gas Terminology.) |

Solutions and Concentration

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A molar solution contains 1 mol (1 g molecular weight) of solute in 1 L of solution. The SI style for reporting molar solutions is mol/L; for solutions with millimolar concentrations, mmol/L is used; and for solutions with micromolar concentrations, µmol/L is used. The concentration is given as 4-mmol/L potassium chloride, not 4 mmol/L of potassium chloride.The gel was incubated at 40°C after applying 10 mL of a solution of 4-mmol/L potassium chloride and 5 mL of a solution of 1-mol/L sodium chloride. Molar concentrations of solutions and reagents also may be expressed by using M to designate molar and