The Chemistry Resource Committee recently reviewed the reporting of total CO_2 (tCO_2) on the AQ Survey to determine the need for reporting both as a calculated value and a measured value. Point-of-care instruments that determine blood gas concentrations measure the pH and the pCO_2 and usually calculate both the bicarbonate and tCO_2 using the Henderson-Hasselbalch equation. The tCO_2 and is the sum of the numerator and the denominator of the Henderson-Hasselbalch equation.

For the i-STAT system, Abbott has determined that the tCO_2 is a measured quantity for the CHEM8+ cartridge and states the following: "On the CHEM8+ cartridge, tCO_2 is metrologically traceable to the IFCC tCO_2 reference method. The implication of direct traceability to this tCO_2 reference method - and not to pH and pCO_2 standard reference materials - is subtle but significant: the CHEM8+ is independent of the pH and pCO_2 traceability. Given the metrological traceability of the CHEM8+ tCO_2 measurement, the traceable tCO_2 is considered to be a measured analyte." Thus, even though the tCO_2 is a calculated value on the i-STAT with the CHEM8+ cartridge, Abbott considers this a measurable result for the above reason. Further, bicarbonate is calculated from the Henderson-Hasselbalch equation and would vary by a fixed amount from the calculated tCO_2 for a given pH and pCO_2. Based on the above, the committee decided that beginning with the AQ-C Survey, all tCO_2 results would be considered calculated and the separation of measured and calculated would be terminated. Further, only tCO_2 would be reported by participants and not bicarbonate.

Ronald J. Elin, MD, PhD
Chemistry Resource Committee

In an effort to help in the standardization of creatinine measurements, the CAP will begin segregating creatinine results according to the type of calibration process, traditional calibration or IDMS-traceable calibration, used in your laboratory. The data shown in the current mailing shows a small, but statistically significant, difference in measured creatinine according to the type of calibration process that is used. Please help us in this effort by providing us with the type of calibration process used in your laboratory. Laboratories **not indicating** calibrator type were evaluated by All Instruments Comparative Method).