Position statement of the Canadian Society of Clinical Chemists and Canadian Association of Medical Biochemists on hemoglobin A1c measurement and reporting

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1. Background

In an ongoing effort to globally standardize HbA1c assay results produced by different methodologies and manufacturers’ products, the IFCC developed a reference method for HbA1c which was published in 2001 [1]. Since that time a network of reference laboratories has been established to provide calibration traceability to the IFCC reference system. In addition, a method may be NGSP certified ensuring traceability to the DCCT reference method and the relationship between NGSP/DCCT values and IFCC values defined by an equation. The IFCC has recommended a master equation NGSP = 0.09148 × [IFCC] + 2.152 to define this relationship based on results from the network laboratories (http://www.ngsp.org/docs/IFCCstd.pdf). Alternatively, vendors may have their own variants of this equation to ensure alignment to both IFCC and DCCT/NGSP reference methods.

In addition, a Consensus Statement was developed and published by a joint working group of the IFCC/ADA/EASD/IDF with recommendations regarding the reporting of HbA1c results [2]. The Canadian Society of Clinical Chemists and the Canadian Association of Medical Biochemists see value in standardizing the Canadian response to these recommendations and coordinating the implementation of changes to avoid conflicting information being provided to physicians and patients from different resources.

2. Actions

All laboratories should calibrate their assays using IFCC traceable calibrators. IFCC traceable calibration is now available for all lab based products sold in Canada. Manufacturers continue to work toward having IFCC calibration for POCT devices.

Results obtained should be converted to NGSP values using the equation applicable to the method used. These equations can be obtained from the manufacturer.

1. Results should be reported as the fraction or % of total hemoglobin. Reporting in SI units is not recommended at this time. Dissemination of educational materials and more widespread familiarity with the SI values are desirable prior to making this change. Additionally, position statements of the Canadian Diabetes Association and Canadian Endocrine Society on recommended target values for treatment remain based on DCCT/NGSP values expressed as a percentage.

2. Results should be reported with a comment addressing the therapeutic target (adult or pediatric) based on current CDA Clinical Practice Guidelines.

3. Reporting of eAG (estimated average glucose) is not recommended.

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1 Working Group of the Canadian Society of Clinical Chemists on HbA1c Standardisation.
References
