



## The Diabetes Integration Project

The Manitoba Diabetes Integration Project (DIP) operates under the auspices of the Four Arrows Regional Health Authority. It is a mobile diabetes screening program that uses specially trained nurses for the “finger stick” blood testing of patients for hemoglobin A<sub>1c</sub>, lipids (total cholesterol, HDL cholesterol, triglycerides and calculated LDL cholesterol), glucose and the testing of urine for the determination of the microalbumin:creatinine ratio.

The following information relates to the mobile testing of blood and urine for this project. The Canadian External Quality Assessment Laboratory (CEQAL) has assessed the analytical performances of the analyzers that are being used in the program. This performance assessment utilized sample sets of human serum covering the clinical range of interest with accuracy target values assigned by credentialed reference methods. For HbA<sub>1c</sub>, the base of accuracy was the DCCT reference laboratory at the University of Missouri. This laboratory operates the glycosylated hemoglobin A<sub>1c</sub> standardization program in the United States and served as the core laboratory for the Diabetes Control and Complications Trial (DCCT). The base of accuracy for the lipid measurements was CEQAL's Reference Method Laboratory, which is a member of the Cholesterol Reference Method Laboratory Network (CRMLN). CRMLN operates under the aegis of the CDC/NHLBI in the United States and serves as the accuracy base for the lipid standardization program in North America and Internationally.

([www.cdc.gov/nceh/dls/crmln/memberlabs.htm](http://www.cdc.gov/nceh/dls/crmln/memberlabs.htm))

The day-to-day analytical performance of the analyzers is monitored in the field through the use of an internal quality control (IQC) program with pre-defined performance limits and accuracy targets assigned by these credentialed reference methods. Total cholesterol, HDL cholesterol, triglycerides, calculated LDL and glucose are all measured using a single testing cassette on the Cholestech LDX™ analyzer. The IQC performance limits for lipids have been set to comply with the total error performance goals as recommended by the NCEP (National Cholesterol Education Program). The IQC total error performance limit for glucose has been set at +/- 8%.

Hemoglobin A<sub>1c</sub> is measured in whole blood using the Siemens DCA analyzers. The IQC total error performance limit for this analyte has been set at 9%. The urinary microalbumin / creatinine ratio is also being determined using the Siemens DCA analyzers. The IQC total error performance limit for this analyte has been set at 15%. A similar quality control program is being used in support of mobile diabetes screening programs that are operating in Northern Alberta and British Columbia.

The quality of testing that is being provided in these programs meets the performance goals as defined for purposes of licensing and accreditation of clinical laboratories in North America.

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