Care of patients with type II diabetes requires balancing long-term benefits of glycemic control against short term risks for hypoglycemia. Hemoglobin A1c (A1c) test results are critical in establishing the risk for, diagnosis of, and management of diabetes. Integrated Systems Management dictates that Risk is the critical issue. In this case, Systematic Analytical Error [SAE] can introduce a significant shift of test results leading to Systematic Diagnostic Error [SDE] and inappropriate therapy without the clinician being aware they are incurring this Risk.

### Problem

How can we reduce the impact of Systematic Analytical Error on the balance between:

- **Short term Risk** of hypoglycemia against
- **Long term Risk** of persistent hyperglycemia

So as to lay the ground work for establishing: **Acceptable Risk**

### Solution

An efficient, cost effective means of helping clinicians to establish Acceptable Risk is to utilize readily available Quality Control Data (QCD) to estimate test reliability; then create a clear and concise report that effectively communicates the Risks incurred in utilizing only one or two A1c test results. In essence, Quality Control is really Risk Control.

The goal is to use the reporting of this information to lead the clinician to be more judicious in how a diagnosis is rendered and treatment considered to the benefit of the patient.

### Implementation

Implementation of reliability [also know as uncertainty] measurement can be achieved through a two stage approach:

- Methodology validation prior to implementation.
- Publication of collated Quality Control Data as:
  - Bias, Imprecision, Skewing, and Significance of Two Results

This provides an estimate of the probability a single test result is clinically significant and that two are significantly different.

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### References