

A Retrospective Bland-Altman Analysis of Glucose Measurement Accuracy and Precision

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Abstract

Introduction

Medical care professionals and hospitals have been searching, and continue to search for solutions to accurate, timely and cost effective blood glucose measurement data. This data is to support therapeutic decisions to more appropriately and effectively manage in-patient blood sugar. To demonstrate and differentiate the capability of our patented and patent pending automated Clinical Sentinel intellectual property ("Clinical Sentinel IP"), a meta-analysis was completed from published studies for a wide range of blood glucose measurement products and technologies.

Methods

Studies published in peer-reviewed journals were reviewed and analyzed across a range of targeted blood sugar (blood glucose) concentrations from approximately 80mg/dL to 180 mg/dL. Bland-Altman Plots were prepared from the data in the published studies and TecMed's human case studies to demonstrate the comparative accuracy of existing gold standard laboratory devices, current measurement devices/products, technologies under development, and our Clinical Sentinel IP.

Results

The series of Bland-Altman Plots from the meta-analysis provides a clear illustration of the differentiation between the products and technologies reviewed herein.

Conclusions

The Bland-Altman meta-analysis provides striking differentiation for the accuracy and precision demonstrated by the optically based Clinical Sentinel IP measurement system. The Clinical Sentinel IP is the only known accurate, automated, realtime and cost effective blood glucose measurement and monitoring technology that exceeds all existing and proposed standards for blood glucose measurement.