

WellDoc™ Mobile Diabetes Management Randomized Controlled Trial: Change in Clinical and Behavioral Outcomes and Patient and Physician Satisfaction

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ABSTRACT

Background: Less than 63% of individuals with diabetes meet professional guidelines target of hemoglobin A1c <7.0%, and only 7% meet combined glycemic, lipid, and blood pressure goals. The primary study aim was to assess the impact on A1c of a cell phone-based diabetes management software system used with web-based data analytics and therapy optimization tools. Secondary aims examined health care provider (HCP) adherence to prescribing guidelines and assessed HCPs' adoption of the technology.

Methods: Thirty patients with type 2 diabetes were recruited from three community physician practices for a 3-month study and evenly randomized. The intervention group received cell phone-based software designed by endocrinologists and CDEs (WellDoc™ Communications, Inc., Baltimore, MD). The software provided real-time feedback on patients' blood glucose levels, displayed patients' medication regimens, incorporated hypo- and hyperglycemia treatment algorithms, and requested additional data needed to evaluate diabetes management. Patient data captured and transferred to secure servers were analyzed by proprietary statistical algorithms. The system sent computer-generated logbooks (with suggested treatment plans) to intervention patients' HCPs.

Results: The average decrease in A1c for intervention patients was 2.03%, compared to 0.68% ($P < 0.02$, one-tailed) for control patients. Of the intervention patients, 84% had medications titrated or changed by their HCP compared to controls (23%, $P = 0.002$). Intervention patients' HCPs reported the system facilitated treatment decisions, provided organized data, and reduced logbook review time.

Conclusions: Adults with type 2 diabetes using WellDoc's software achieved statistically significant improvements in A1c. HCP and patient satisfaction with the system was clinically and statistically significant.

INTRODUCTION

IT IS ESTIMATED that there are 21 million people affected with diabetes in the United States and 171 million people worldwide.^{1,2}

The velocity with which this epidemic is growing is unrelenting. It is estimated that by 2030, 366 million people worldwide will have diabetes.¹ Americans born in 2000 have a predicted lifetime risk for developing diabetes of

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