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Abstract:

INTRODUCTION: Mobile technology may be useful in addressing several issues in adolescent diabetes management.

PURPOSE: To assess the feasibility and acceptability of a cell phone glucose monitoring system for adolescents with type 1 diabetes and their parents. **METHODS:** The authors recruited patients with type 1 diabetes who had been diagnosed for at least 1 year. Each adolescent used the system for 6 months, filling out surveys every 3 months to measure their usability and satisfaction with the cell phone glucose monitoring system, as well as how use of the system might affect quality of family functioning and diabetes management. **RESULTS:** Adolescents reported positive feelings about the technology and the service, even though a concerning number of them had significant technical issues that affected continued use of the device. Nearly all thought that the clinic involvement in monitoring testing behavior was quite acceptable. The use of the Glucophone™ did not, however, significantly change the quality of life of the adolescents, their level of conflict with their parents, their reported self-management of diabetes, or their average glycemic control within the short time frame of the study. **CONCLUSIONS:** As a feasibility study of the technology, this work was successful in demonstrating that cell phone

glucose monitoring technology can be used in an adolescent population to track and assist in self-monitoring behavior. The authors speculate that explicitly attempting to change behavior, perhaps with the use of behavioral contracts, would enhance the technology's ability to improve outcomes.

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