

Implementing Digital Care Companions for Diabetes and Hypertension: An Interrelated System to Facilitate Self-management and Clinician Supervision

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Abstract

Introduction: Hypertension and type 2 diabetes require continuous monitoring and long-term management; however, most health systems lack integrated follow-up mechanisms, leading to suboptimal adherence and delayed detection of complications.

Digital Care Companions (DCCs) have the potential to integrate self-management with real-time clinician supervision through remote monitoring and support. This study assesses the **feasibility** and preliminary clinical signals of a digitally connected ecosystem incorporating DCCs for chronic disease management.

Methods

A 12-week prospective pilot study in two outpatient clinics with 45 adults (≥ 18 years) with hypertension or type 2 diabetes.

- DCC platform with Bluetooth BP monitors & glucometers.

- **Features:** Medication reminders, symptom logging, educational modules, two-way messaging.

- Clinician Dashboard for real-time monitoring.

Outcomes:

- **Feasibility:** Vital sign submissions, medication adherence.

- **Preliminary Signals:** Change in systolic BP & fasting glucose



Results



78%

Regular Vital Sign Submissions



64% Adherence to Medication Reminders



↓6.5 mmHg

Mean Systolic BP Reduction



↓10-12%

Reduction in Fasting Glucose Variability

Conclusions

The digitally connected DCC ecosystem demonstrated feasibility and supported anticipatory clinical decision-making, indicating strong potential for scalable chronic disease management in resource-constrained settings.