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Title

From Referral to Control: Timeliness and Durability of Blood Pressure Control in a Digital Disease Management Program for Hypertension

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Background

Remote patient monitoring (RPM) can enhance hypertension (HTN) management through home-based measurement and real-time intervention.

Objectives

Evaluate UC San Diego Health (UCSDH) RPM program on timeliness and durability of systolic BP (SBP) control.

Data and Methods

Analyzed EHR data from 1,325 patients enrolled in the UCSDH Digital Health Program for HTN from 10/2020-7/2022. SBP control (monthly avg. <130 mmHg) and BP monitoring intensity were assessed before referral and after enrollment. Time to first SBP control (two consecutive readings <130 mmHg) estimated using Kaplan-Meier methods, with restricted mean survival time (RMST) calculated over 12-months. Mean SBP and time in target range (TTR) calculated from first SBP control event to last available BP reading.

Results

Pre-referral: avg. 33.7% at SBP goal (1.9 clinic readings/month). Post-enrollment: avg. 55.9% at goal (12.1 home readings/month); in clinic, avg. 47.6% at goal (1.9 readings/month). 1,036 (78.2%) achieved SBP control with RMST of 1.6 months, with mean SBP of 125.0 mmHg over median 3.7 month follow-up; mean TTR of 59.1% for SBP range 100-130 mmHg. Outcomes were consistent across socio-demographics, though severe baseline HTN had less sustained control (mean SBP 131.7 mmHg).

Conclusions

An RPM program at UCSDH increased monitoring intensity and promoted timely, durable SBP control across socio-demographics. Patients with severe baseline HTN may need tailored strategies for long-term control.