

Implementation Determinants of a Virtual Telehealth Program for Patients with Persistently Poorly Controlled Diabetes

Connor Drake, PhD
CORE Cyberseminar Series
April 10, 2024

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Implementation Determinants of a Virtual Telehealth Program for Patients with Persistently Poorly Controlled Diabetes

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Agenda

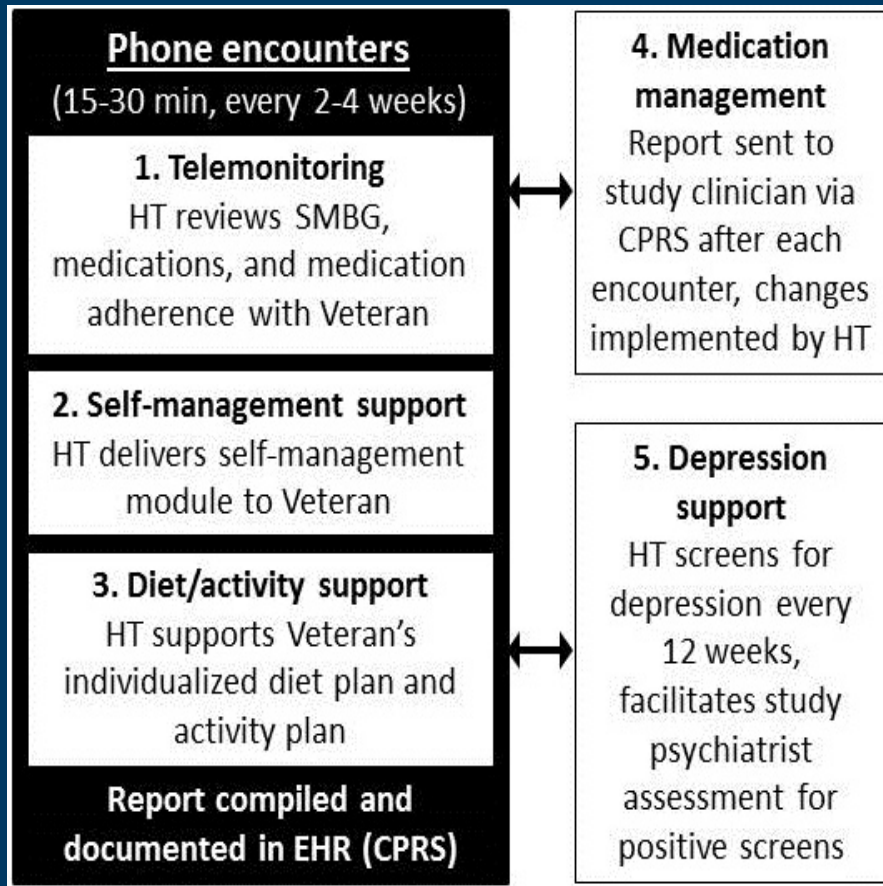
- Background
- Research Objectives
- Methods
- Results
- Discussion
- Key Take Aways
- Future Research Directions
- Acknowledgements and Q&A

Background: Persistently Poor Diabetes Mellitus (PPDM)

- Patients with consistently elevated HbA1c $\geq 8.5\%$ for at least one year despite clinic-based management
- **Around 10-15%** of the general diabetic population has PPDM, and **nearly 12% of diabetic Veterans have PPDM**
- PPDM is generally unresponsive to standard outpatient treatment

It is possible that current PPDM treatment is not addressing the underlying medical, social, and behavioral drivers of PPDM.

Background: PRACTICE-DM



- Practical Telemedicine to Improve Control and Engagement for Veterans with Clinic-Refractory Diabetes Mellitus (**PRACTICE-DM**) combines support systems for telemonitoring, self-management, diet/activity, medications, and depression
- Leverages established VHA Home Telehealth (HT) workforce, infrastructure, and technical resources

Background: Parent Study

Active-comparator, parallel-arm RCT

- Group 1 (n=101): Comprehensive telehealth (PRACTICE-DM)
- Group 2 (n=99): Telemonitoring and care coordination

Study Setting: VAMCs in Durham, NC and Richmond, VA

Outcomes

- Primary: HbA_{1c}
- Secondary: Diabetes distress, diabetes self-care, self-efficacy, BMI, and depression symptoms

Compared with telemonitoring/care coordination, patients in the PRACTICE-DM arm experienced greater HbA_{1c} reduction and had greater improvement at 12 months for diabetes distress, diabetes self-care, and self-efficacy. No differences in BMI or depression.

Original Investigation

FREE

July 25, 2022

Effect of a Comprehensive Telehealth Intervention vs Telemonitoring and Care Coordination in Patients With Persistently Poor Type 2 Diabetes Control A Randomized Clinical Trial

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JAMA Intern Med. 2022;182(9):943-952. doi:10.1001/jamainternmed.2022.2947

Research Objectives

Challenge

Implementation factors have hindered comprehensive telehealth programs for PPDM being offered in routine practice.

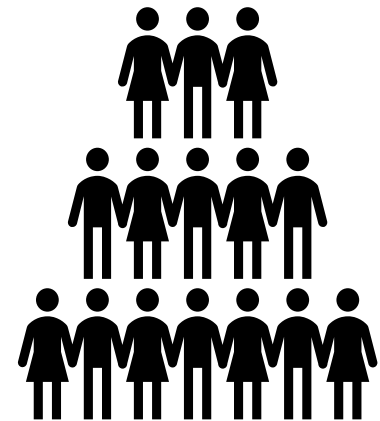


Primary Objective

- Qualitatively assess **implementation determinants** associated with PRACTICE-DM

Larger Goal

- Understand how to optimally implement, scale, and disseminate more effective **diabetes care delivery** and thereby improve diabetes outcomes among Veterans who are refractory to clinic-based management



Methods

Data Collection

10 Veterans from each study site who received the PRACTICE-DM intervention were interviewed

- Data was collected through phone-based, semi-structured interviews
 - o Interview guide was designed to extract information regarding barriers and facilitators of the PRACTICE-SM intervention
- Interviews were also conducted with 2 HT nurses that participated in delivering PRACTICE-DM at each site, as well as with 2 administrators/medication managers at each site



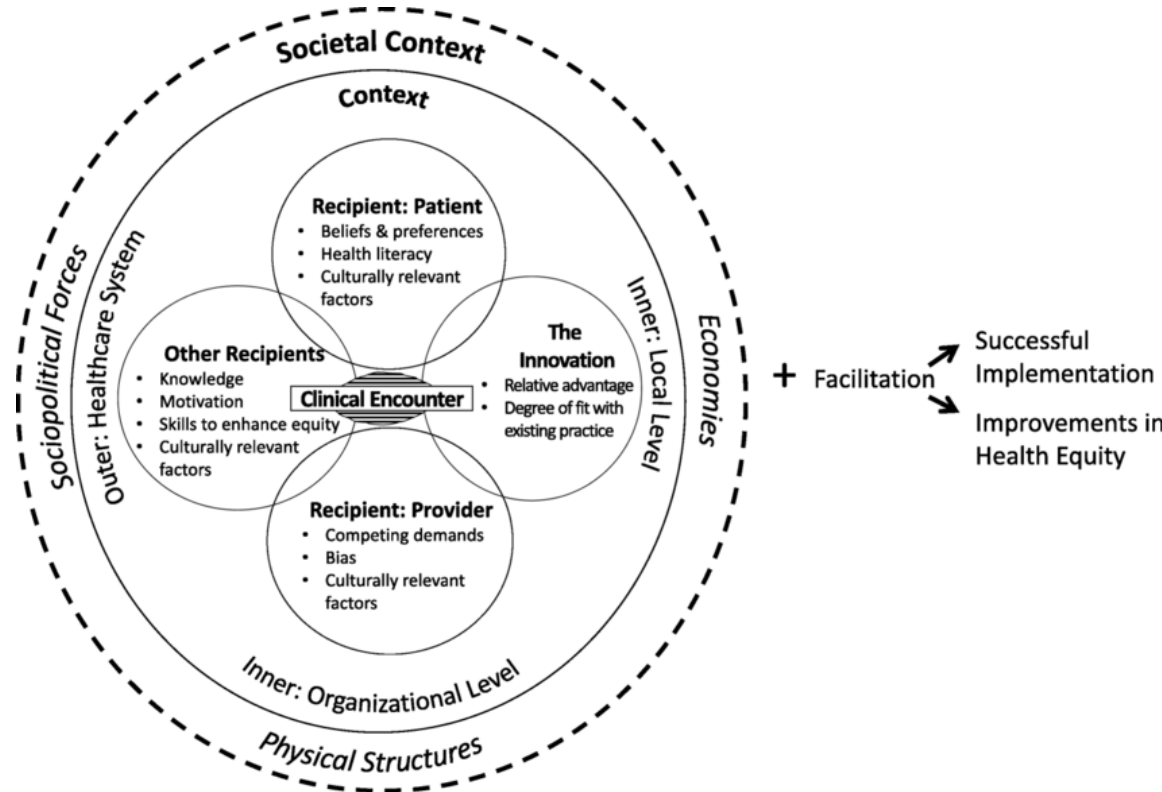
Methods

Health Equity Implementation Framework (HEIF)

- Works to explain how implementation factors and healthcare disparities factors impact the uptake of the intervention

Qualitative Data Analysis

- Secondary qualitative analysis
- Qualitative codebook developed using a priori domains of HEIF
- Standards for Reporting Qualitative Research (SRQR) checklist
- Hamilton's Rapid Qualitative Analysis methodology
- Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM) framework



Results

HEIF Domain: Clinical Encounter

The clinical encounter, or patient-provider interaction between recipients... This category includes aspects of PRACTICE-DM that are specific to the clinical encounter such as communication with staff/clinicians.

Barriers

- Unpredictable call durations requiring flexible call schedules.
- Time-consuming documentation.
- Lack of standardization in approach and infrastructure.

Facilitators

- Amplifies and complements existing diabetes care
- Responded favorably to nurse encounters
- Designed to promote patient accountability

“A lot of days I would work later so I could catch them after work. I was, you know, or trying to catch them on their lunch break which, you know, my lunch break.” (HT Nurse)

Results

HEIF Domain: Patient Factors

These are factors that are specific to the patient and can include beliefs about PRACTICE-DM, an individual's situation, preferences for communication/engagement, and attitudes towards specific stakeholders or institutions. What about the patients' situation is going to impact their willingness or ability to engage with PRACTICE-DM.

Barriers

- Patient availability.
- Emotional distress of diabetes was a common barrier.
- Engagement with the program were influenced by the holistic situation of the patient.
- Diet change was difficult.
- Patient-specific stressors that diverted attention from diabetes self-management.

Facilitators

- Perception that telehealth improved patient access and engagement with the program.
- Perception of spillover benefits from participation.
- Patient perceived program as effective.
- Patients reported being able to more effectively engage with health care team.
- Complementary to role of care partners and family.

Results

HEIF Domain: Provider Factors

These are factors specific to the provider or clinician (e.g., HT nurse, Medication Managers). This can include method of communication, time constraints, or techniques/skills used to engage with patients.

Barriers

- 'Higher touch' motivational interviewing and coaching may be necessary for Veterans with low engagement.
- Medication managers were concerned about medication adjustments, relying on nurses for communication.
- Scheduling/timing issues with existing patient panel.

Facilitators

- 'Collaborative harmony' in team-based approach.
- Nurses offered emotional support, encouragement, and accountability and were professional in approach.
- Establishing rapport.
- Tailored educational content.
- Medication adjustment and other care team processes perceived as seamless.

*"I might want to interact with that nurse or directly on a scheduled basis in the beginning just to get to know each other's practice style"
(Medication Manager)*

Results

HEIF Domain: Characteristics of the Innovation

This is typically defined as characteristics related to the intervention itself, consisting of care coordination and the five core intervention components: telemonitoring, self-management support, diet/activity support, medication management, and depression support

Barriers

- Time intensive and difficult to fit within existing panels.
- Staffing levels and skillset requirements.
- Medication managers lack direct interaction with patient.
- Skipping blood sugar readings could introduce 'shaming' of patients.
- Frustration with frequency or unexpected nature of medication changes.
- Diet and nutrition education seemed unrealistic and inconsistent.

- Not enough exercise or physical activity opportunities.
- Lack of engagement with spouse or caregiver.
- Technical difficulties.

Facilitators

- Multi-disciplinary team based approach.
- Better use of existing patient data.
- Motivational because Veteran participation/collaboration was invited.
- Program offered social support through frequent contact.

Results

HEIF Domain: Context

Inner context factors at the local or organizational level can include leadership support for an innovation, feedback processes, the structure of a system, or any formal policies to embed change within a practice. Outer context factors might include incentives or mandates of the larger health care delivery system that patients work within. This includes environmental (in)stability of a political, economic, or cultural nature within the healthcare system and may relate to engaging with PRACTICE-DM or offering it as a program routinely.

Barriers

- Lack of fit and integration with PACT workflows
- Lack of standardization of workflows and training.
- COVID disruptions to diabetes management support programs.
- Lack of ways to interact with other Veterans with diabetes.

Facilitators

- Connects to existing VHA and community services and programs.
- PCP communication was productive.
- Complementary form of intensified support, not substitute for primary care.
- Veterans felt better equipped to navigate health system.

Results

HEIF Domain: Societal Influence

Larger, structural factors that include stigma, societal expectations, or political climate. This could include any description of events or experiences, implicit or explicit, wherein patients are subjected to racism or discrimination based on their identity. This also includes other economic factors that manifest for an individual, like unemployment, social isolation, food insecurity, or other social drivers that shape diabetes self-management during the PRACTICE-DM program. This could be a facilitator (gaining employment) or a barrier (social isolation).

Barriers

- No mechanism to address food insecurity and other social needs that influence diabetes management.
- COVID-19-related disruptions.
- Stigma and insulin use.

Facilitators

- Incentives support uptake and engagement.
- Virtual delivery can mitigate transportation barriers.
- Veterans felt better equipped to navigate health system.

Discussion

Key Takeaways

- Implementation barriers for diabetes telehealth interventions have include over-reliance on research-funded staff and resources, insufficient electronic health record (EHR) integration of patient data, and uncertain reimbursement*. Our study expands upon this literature.
- Comprehensive telehealth cost an additional \$1519 per patient per year to deliver. Further cost-effectiveness research is warranted.
- The role of nurse as an advocate and coach for patient was a facilitator and may require additional training and be difficult to protocolize.
- The comprehensive telehealth intervention does not account for all contributors to PPDM, including social determinants of health.
 - Incentives for participation may enhance equity

*Adler-Milstein J, Kvedar J, Bates DW. Telehealth among US hospitals: several factors, including state reimbursement and licensure policies, influence adoption. Health Affairs. 2014 Feb 1;33(2):207-15.

Limitations & Future Directions

Limitations

- Results may not generalize to other PPDM patient populations or non-VHA clinical settings.
- COVID-19 caused unique challenges that influence care and health.

Future Directions

- Implementation strategies should be developed with attention to cost.
- Opportunities exist for integrating other, complementary social care interventions (e.g., produce prescription or peer support)

Funding:

VC-Core Associate Investigator Award

Acknowledgements:

Tiera Lanford
Maddi Eldridge
Zoe Waddell
David Edelman
Leah Zullig
Matt Crowley

Questions or comments?

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