

Self-Management Interventions Using Mobile Health for the Multimorbid



Myra Schmaderer, PhD, RN,¹ Rachel Thompson, MD,² Christopher Wichman, PhD,³ Bunny Pozehl, PhD, APRN-NP, FHSFA, FAHA, FAAN,¹ Colleen Bartholomew, BSN, RN¹ Zachary Fowler, MS⁴

¹University of Nebraska Medical Center College of Nursing, ²Nebraska Medicine, ³University of Nebraska Medical Center College of Public Health, ⁴University of Nebraska at Omaha (UNO) College of Information Science and Technology

PURPOSE

- To evaluate the feasibility of delivering mobile health (mHealth) self-management (SM) interventions to improve adherence to the prescribed treatment
- To evaluate the impact of delivering mHealth SM interventions to improve adherence to the prescribed treatment in the multimorbid population returning home after hospital discharge.

BACKGROUND

- Over 1/4 of adults have been diagnosed with multimorbidity.
- Multimorbidity is a public health issue due to its prevalence and poor outcomes.
- Numerous studies suggest that lack of adherence to recommended treatment results in poor patient outcomes.
- A gap remains in understanding what strategies promote patient success in adhering to treatments when patients have multimorbidity.
- mHealth has been successful in delivering SM promotion strategies to individuals with single disease.

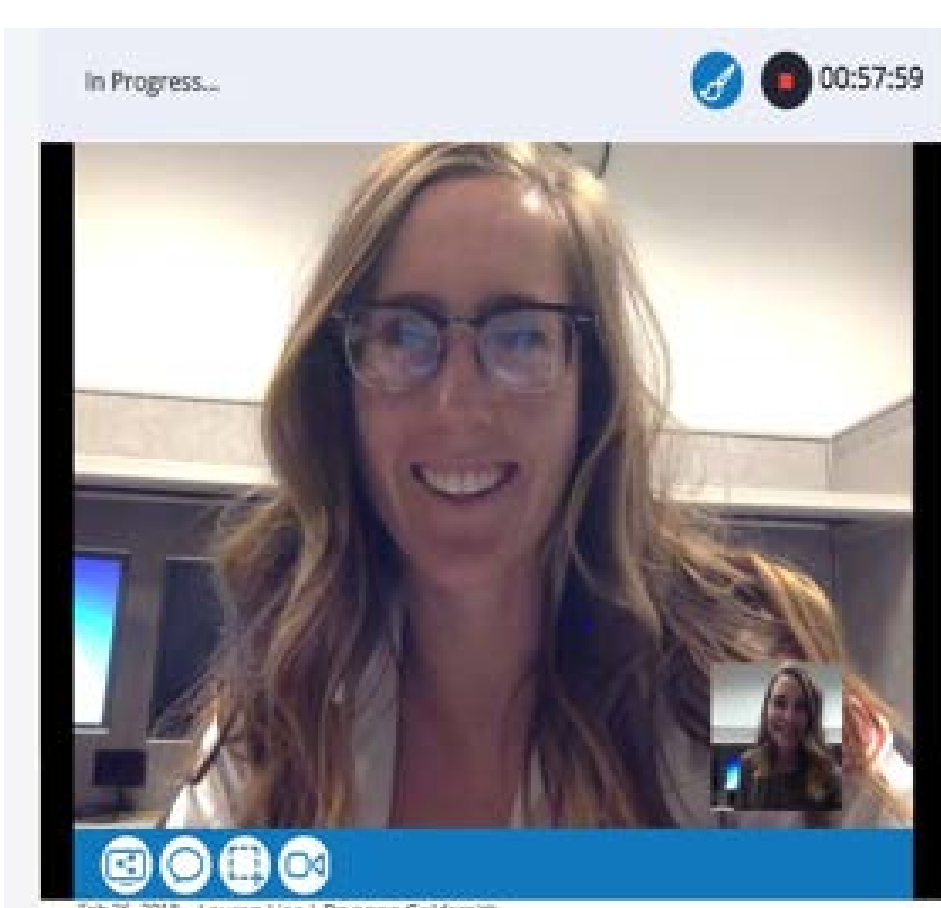
IDEA CTR PRIORITIES

This study addresses:

- New technologies and models to improve health care access
- Connecting clinical care and community services

VIRTUAL VISITS

The **nurse practitioner (NP)** guides the intervention and provides problem solving and decision making. Medications, symptoms, activity, sleep, fatigue, pain and emotional status are addressed. The NP has virtual visits with the patient at Week 2, 5 & 8. The **Community Health Worker (CHW)** identifies barriers to adherence and assesses social determinants of health (e.g., food insecurity, housing instability, stress) and mobilizes appropriate resources. The CHW has a home Week 1 and has virtual visits with the patient at Weeks 3, 4 & 6.



AIMS

Aim 1. To evaluate the feasibility of implementing comparative SM interventions (mHealth and mHealth plus virtual visits with a nurse practitioner and community health worker team) in multimorbid individuals by assessing:

- Acceptability of each intervention
- Enrollment (recruitment efficiency, attrition, problems and solutions);
- Intervention fidelity (delivery, receipt, enactment of the intervention [benefits and barriers]);
- Data collection (technological transfer of data, instrument reliability, time required, missing data).

Aim 2. To examine the impact of delivering the mHealth and mHealth plus interventions compared to standard care in multimorbid individuals on:

Primary outcome: adherence to disease specific lifestyle behaviors (e.g. diet and medication, and self-monitoring of physiological measures as needed [weight blood pressure, blood glucose, oxygen saturation])

Secondary outcomes:

- Health related quality of life;
- Patient reported health status;
- Symptom status;
- Healthcare utilization.

APPROACH

Study Design: Three-group (standard care, mHealth, mHealth Plus) repeated measure randomized controlled trial using a smart technology platform.

Sample: 75 patients being discharged from Nebraska Medicine

Inclusion criteria:

- Multimorbid patients with one of 4 chronic conditions (HF, COPD, diabetes or hypertension) and at least one other chronic disease (i.e., hypertension, cancer, stroke, heart disease, diabetes, arthritis, hepatitis, current asthma, kidney failure, or COPD)
- Adult patients (age 19 and older)
- Access to smart technology and internet access or a phone plan large enough for daily interactions
- Able to hear, speak and read English.

Exclusion criteria:

- Major surgery while hospitalized during the current admission
- Discharged to somewhere other than home (e.g., long term care facility)
- Receiving home health services; documented dementia; or life expectancy <6 months.

STUDY GROUPS/ mHealth INTERVENTION

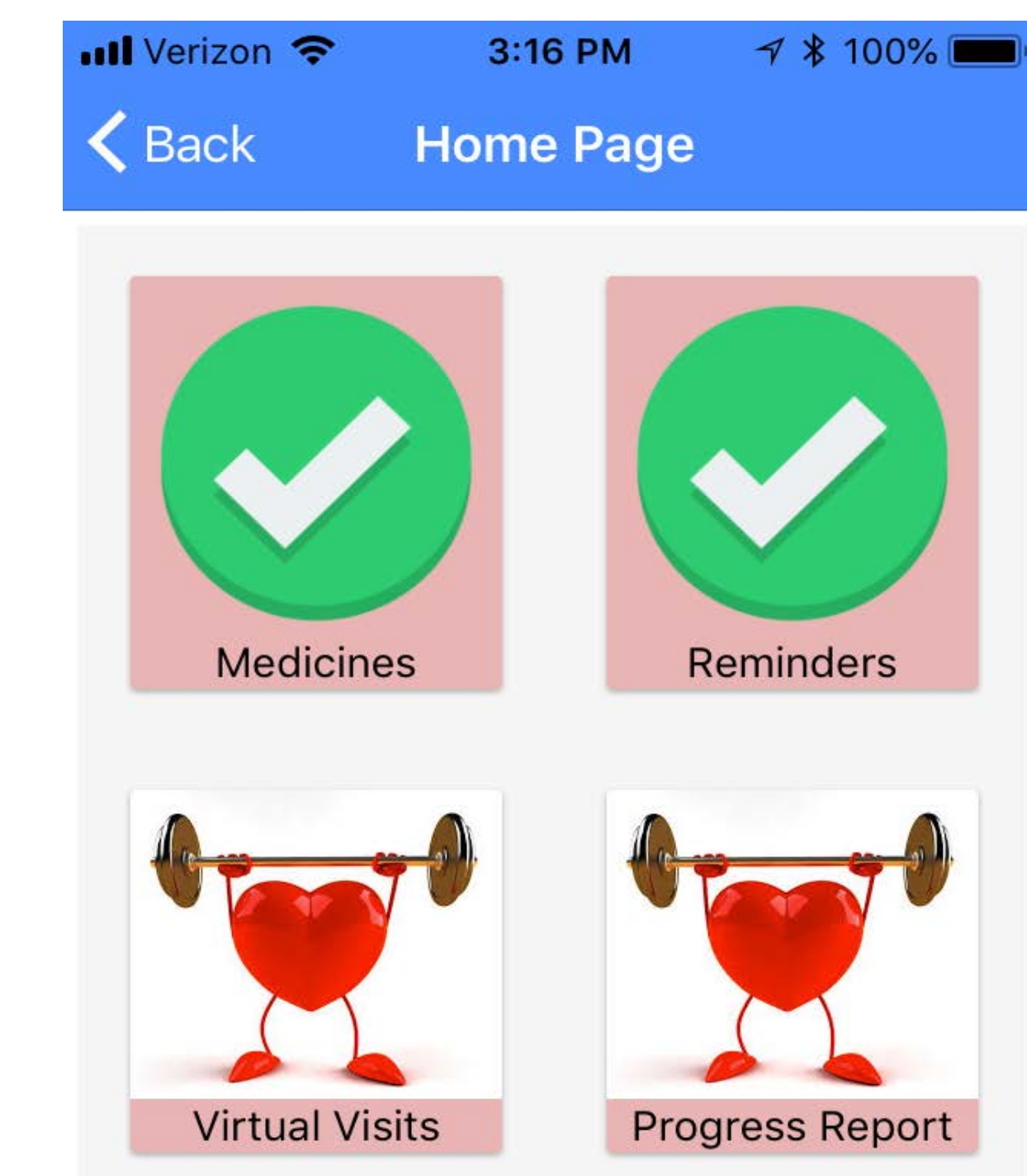
8-week intervention provides a mHealth platform to promote knowledge, skill and confidence to self-manage behaviors to promote adherence to treatment guidelines.

Standard care (SC)- evidence-based standardized disease specific education by Nebraska Medicine discharge protocols. To ensure **consistent outcome data collection** for the adherence variables (recording diet, medications, weight, BP, BG or O² sat), all patients receive access to the mHealth platform and will be given Bluetooth device(s) to record physiologic measurements.

mHealth- SC and the mHealth technology platform that provides *educational content (HINTS), reminders, medication documentation, weekly report cards, motivational strategies* tailored to each patient depending on their multimorbidity and needs.

mHealth plus- SC, mHealth technology platform that provides *educational content (HINTS), reminders, medication documentation, weekly report cards, motivational strategies* tailored to each patient depending on their multimorbidity and needs **plus virtual visits** with a NP/CHW team.

THE mHEALTH APP DEVELOPED BY UNO TECHNOLOGY TEAM



Compatible with phone or tablet (IOS or android)

EXAMPLE of BLUETOOTH PHYSIOLOGIC MEASURES



BP cuff and machine

Pulse Oximeter

NEXT STEPS

- Phase 1: 10 patients will be enrolled in mHealth Plus to test the platform to ensure functionality. Anticipated start date: November 1, 2018.
- Awaiting funding

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CONTACT INFORMATION

Myra Schmaderer PhD, RN

mschmade@unmc.edu 402-472-7335