

UMMC Connected Care

Remote Patient Monitoring & Chronic Care Management

Chronic Disease Management



UMMC Center for Telehealth and Emerging Technologies
IMPACT Center for Pharmacy Transformation
University of Mississippi School of Pharmacy

Disclosures



This project was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under the National Telehealth Center of Excellence cooperative agreement U66RH31459, which has a total award amount of \$4,250,000 for the approved project period. The contents are those of the author(s) and do not necessarily represent the official views of, nor an endorsement by, HRSA, HHS, or the U.S. Government.

What is Connected Care?

Remote Patient Monitoring (RPM) and Chronic Care Management (CCM)



RPM Versus CCM



RPM

- Provides daily monitoring of physiologic data (blood pressure, blood glucose, weight) for clinical action
- Implementation of evidence-based medication management protocols with pharmacist and specialist physician oversight

CCM

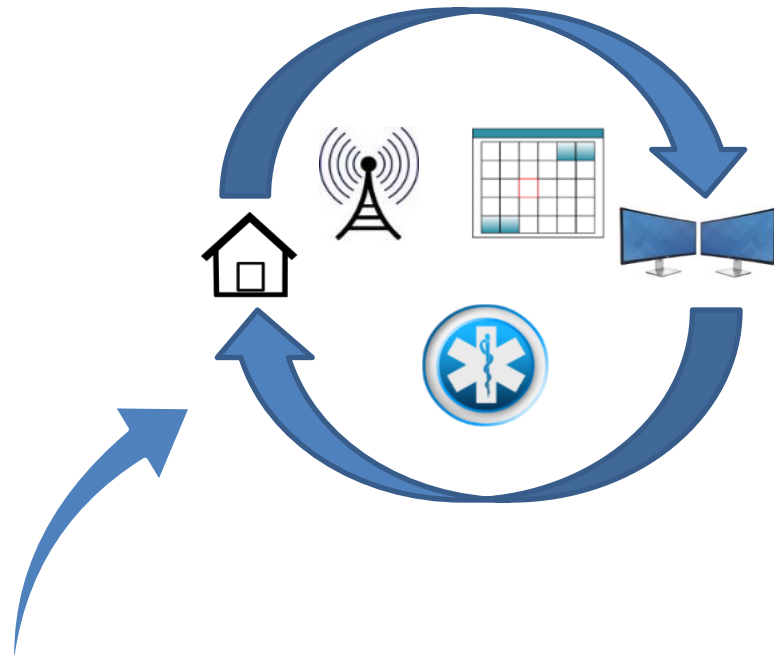
- Provides ongoing care coordination and patient engagement with education

Together, CCM and RPM provide a robust chronic disease management strategy with shared goals of reducing hospitalizations, improving adherence, and enhancing patient outcomes.

Connected Care Pathway



RPM: 6-12 months



Chronic Care Management



Primary Clinician – Patient Relationship

RPM Participation Requirements (UMMC)

- Primary provider visits at least every 6 months
 - Annual Wellness Visit

RPM: A Closer Look



How it Started



Original Research

Mississippi Diabetes Telehealth Network: A Collaborative Approach to Chronic Care Management

- UMMC and North Sunflower Medical Center
- 171 patients with diabetes, A1c >7%
- RPM with glucose monitoring and education
- A1c 9.5% to 7.9% over 12 months

UMMC RPM Programs



Current RPM Programs

- **Diabetes**
- **Hypertension**
- **Chronic Obstructive Pulmonary Disease**
- **Congestive Heart Failure**
- End Stage Renal Disease HTN
- Maternal Health

Key Partnerships

- Specialty clinics at UMMC
- Federally Qualified Health Centers (FQHCs)
- Insurance Companies
- Outside hospitals/health centers

RPM Program Overview



Chronic disease management in the patient's home including:



Daily Health Sessions

Personalized Interventions

Targeted Education

Health Coach

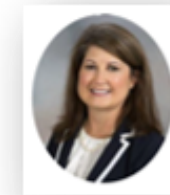
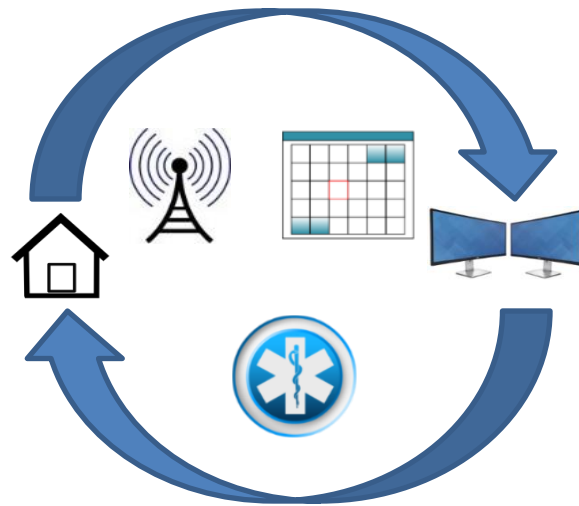
Behavior Modification

Patient Empowerment

RPM Workflow



- Telemonitoring kit
- Linked with Epic EHR
- Full technical support (device setup and as needed troubleshooting)



- Health education
- RN daily monitoring
- Safety alerts & protocols
- Patient engagement

- Routine team meetings
- Monthly/biweekly data reviews
- PharmD med titration and med reconciliation
- Algorithms developed by physicians

Initial Intake Process



RPM Medication Review

RPM Enrollment Date: 6/15/2022
Enrolled for: Hypertension

ALLERGIES:

No known medication allergies

MEDICATIONS:

Encounter Medications

HYPERTENSION MEDICATIONS:

Medication	Dosage	Directions	Last Fill Date	Quantity
Losartan	100 mg	Once daily	5/20/2022	90
Amlodipine	10 mg	Once daily	6/15/2022	30



Identify barriers to adherence

- **Transportation**
- **Side effects**
- **Forgetfulness**
- **Cost**

MEDICATION ADHERENCE:

What problems does the patient have with their medication? None reported
How many missed doses? 0
Appropriate refill history at the pharmacy? Yes
Adherence tools that patient uses? Pill box
Statin: Yes – Atorvastatin 40 mg daily

PREFERRED PHARMACY

KROGER DELTA 474 - CLINTON, MS - 107 HWY 80 EAST
107 HWY 80 EAST
CLINTON MS 39056
Phone: 601-925-6343 Fax: 601-925-6344

PHARMACY INSURANCE

Name: Medicare/Medicaid/Private

Initial Intake Process



LIFESTYLE FACTORS:

Meals/snacks: Patient reports that her diet includes fruits, vegetables, and nuts. She typically eats chicken, fish, and shrimp, but she does occasionally eat pork chops and bacon. She denies eating canned or processed meats. She uses Mrs. Dash seasoning when cooking and denies adding extra salt to her foods.

Physical Activity: Active (3-4 exercise activities per week). Patient reports walking for 30 minutes 3 to 4 times a week with her neighbor.

LABS:

Lab Results

Component	Value
NA	140
K	4.0
BUN	16.0
CREATININE	0.86
CHOL	208
TRIG	299
HDL	50
LDLCALC	98

Estimated GFR: >60 ml/min/1.73m²

ASCVD Risk: Estimated 10-year risk of ASCVD is 41.8% based on gender, race, most recent cholesterol, HDL, systolic blood pressure, and smoking status

PLAN:

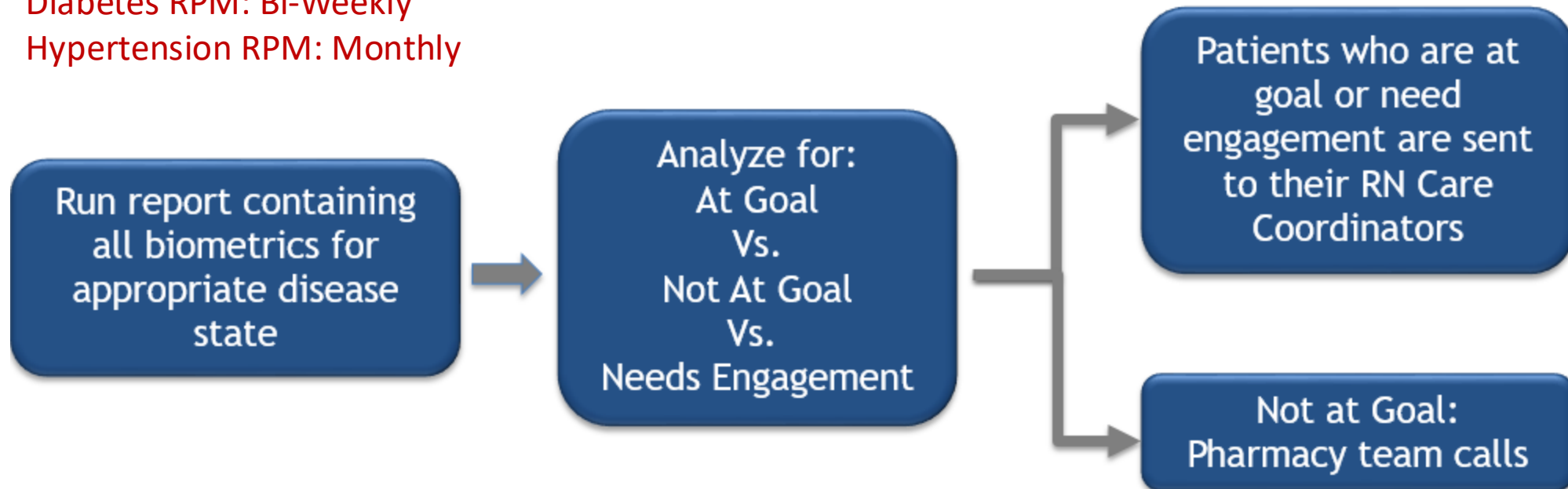
Patient will participate in the remote patient monitoring medication management program for hypertension and has been informed of pharmacist collaborative agreement with Dr. Clark.

1. The patient will obtain daily blood pressure measurements. RPM Team will review measurements monthly and adjust medications per protocol, aiming to **achieve average BP <130/80** based on provider recommendation.
2. The medication record in Mr. Patient's profile has been updated and adjusted to reflect which medications the patient reports he is taking and how he is taking his medications as of today.
3. Education provided including the importance of a heart healthy diet, regular exercise, program participation and medication adherence to prevent complications of hypertension.

Review Week Workflow



Diabetes RPM: Bi-Weekly
Hypertension RPM: Monthly



RPM Reviews

Goals:

Hypertension

Average BP <130/80 mmHg or <140/90 mmHg

Type 2 Diabetes Mellitus

Average pre-prandial blood glucose of <140 mg/dL

Monthly Review: RPM Hypertension

Telephone Visit #: 1
Dates reviewed: 09/01/20 to 09/28/20
Critical BP (>180/120 mmHg or <80/50 mmHg): yes - 188/77 9/6/20 (may have been an error, taken one minute after 116/79 reading?)
Abnormal lab values: no
Hospitalizations, ER visits, or urgent clinic visits: no
Self-Reported Adherence to medications: Reports no Missed Doses

BP Meds: take Carvedilol 12.5 mg twice daily
Has allergies to losartan (angioedema) and HCTZ (swelling)

Encounter Medications

Lab Results

Component	Value	Date
NA	142	01/30/2020
K	4.5	01/30/2020
BUN	13.0	01/30/2020
CREATININE	1.08 (H)	01/30/2020

BLOOD PRESSURE SUMMARY:

BP measurements, total: 30
Average Blood Pressure, mmHg: 145/78 (goal <130/80)
Average Heart Rate: 67

PLAN PER PROTOCOL:

1. Initiate amlodipine 5 mg daily *Newly prescribed medications and potential adverse effects were discussed in detail and all questions answered. Will follow up in one month.
2. No lab work indicated
3. Continue RPM



Goals of Therapy



- Hypertension
 - Average BP <130/80 mmHg or <140/90 mmHg
- Type 2 Diabetes Mellitus
 - Average pre-prandial blood glucose of <140 mg/dL

*Participants should have 16 or more active days per rolling 30-day period for billing and medication titration purposes

Management Between Reviews



- Medication titration due to critical values
- Remind patients to have labs drawn and follow-up with patients on lab results
- Contact referring provider if determined that in clinic visit or other referral is needed
- Routine meetings with RPM care team

RPM Outcomes



Hypertension and Diabetes Outcomes

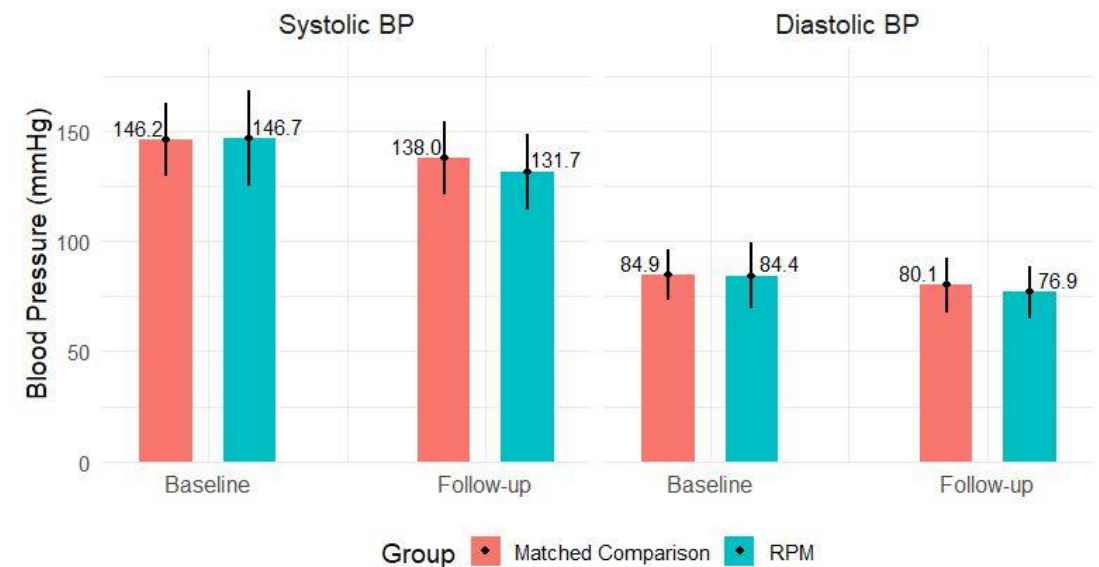


Hypertension Remote Patient Monitoring (RPM) Program

- Evaluated the long-term implementation of a pharmacist-led RPM program in routine clinical practice for patients with uncontrolled hypertension (HTN)
- Uncontrolled HTN was defined at a BP >130/80 mmHg at last clinic visit prior to RPM enrollment
- Patient reach:
 - 210 patients completed the program between 2018 and 2022
- Outcome:
 - RPM group achieved significantly greater reductions in systolic blood pressure (SBP) ($p < .001$) compared to controls

Diabetes RPM Program

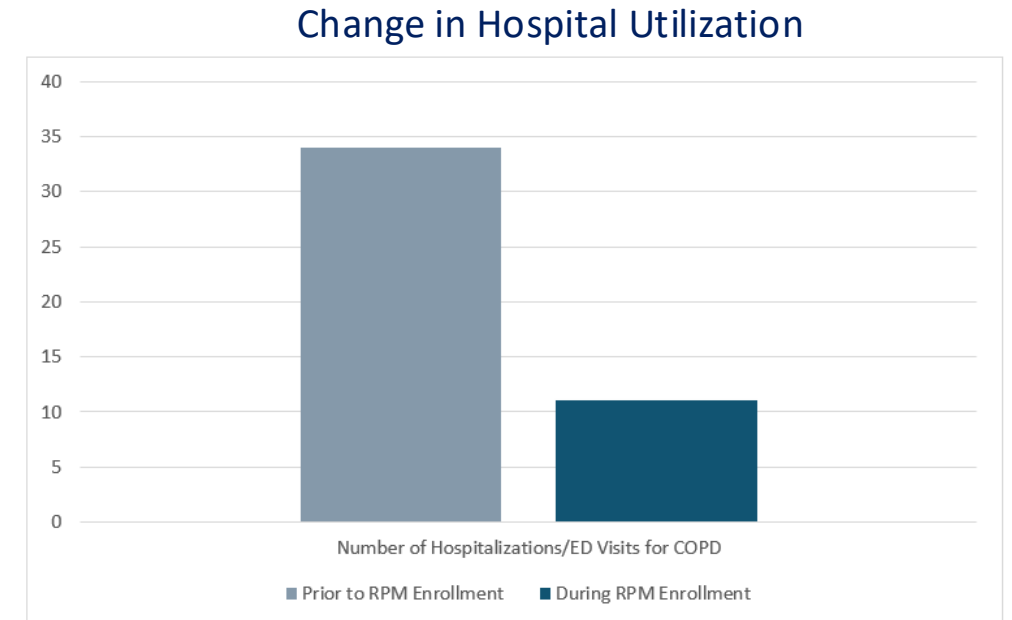
- Preliminary data suggests an HbA1c reduction of nearly 2% for patients enrolled



Chronic Obstructive Pulmonary Disease (COPD) Outcomes



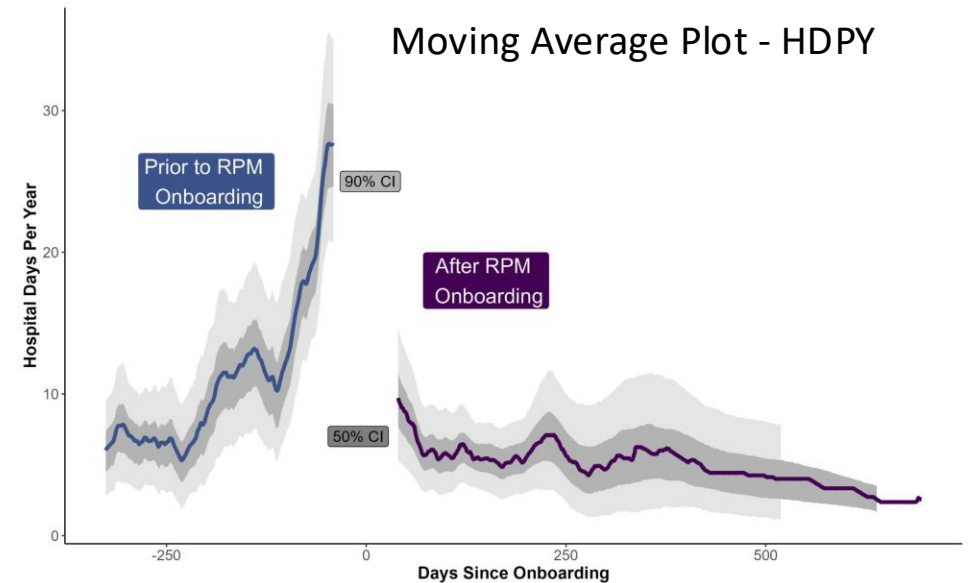
- Evaluated the effect of an RPM program using daily biometric and symptom tracking with protocol-driven escalation on hospital utilization
- Patient reach:
 - 30 patients enrolled between January 2023 and August 2025
- Outcome:
 - 68% reduction in acute care utilization ($p < 0.001$) for patients while enrolled in the RPM program when compared to 1 year prior to enrollment



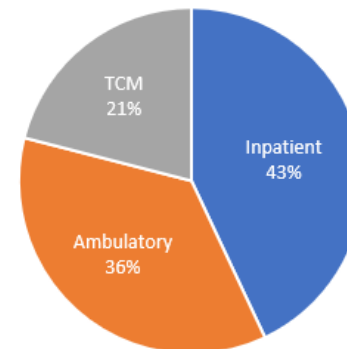
Congestive Heart Failure (CHF) Outcomes



- Nurse-led remote patient monitoring with real-time biometric review, structured onboarding, and monthly outreach
- Patient reach:
 - 103 patients enrolled between January 2023 and July 2025 following an inpatient stay, ambulatory visit, or transitional care management (TCM) phone call
 - 83 completed onboarding and were included in the analysis
- Outcome:
 - Nearly 50% fewer hospital days per year (HDPY) during RPM participation



Referral Sources



Questions?

