

# Remote Monitoring and Chronic Care Management: A Community Health Center Model of Care

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# Area Demographics

The service area for RCCHC and RCH encompasses 1,930 square miles in northeastern North Carolina including Bertie, Gates, Hertford, and Northampton counties. All four counties are rural counties with a population density ranging from 28 to 64 residents per square mile.



## Area Ethnicity

60% African American

38% Caucasian

1.6% Hispanic

.4% Other

# Eastern North Carolina

The per capita income for Hertford County is \$15,641, compared to \$20,307 for the state, and \$21,587 for the country.

US Congressional District 1 – ranked 4<sup>th</sup> poorest in the nation.

18% of county residents have incomes below 100% of the Federal Poverty Level (FPL), compared to the national rate of 12.3%.

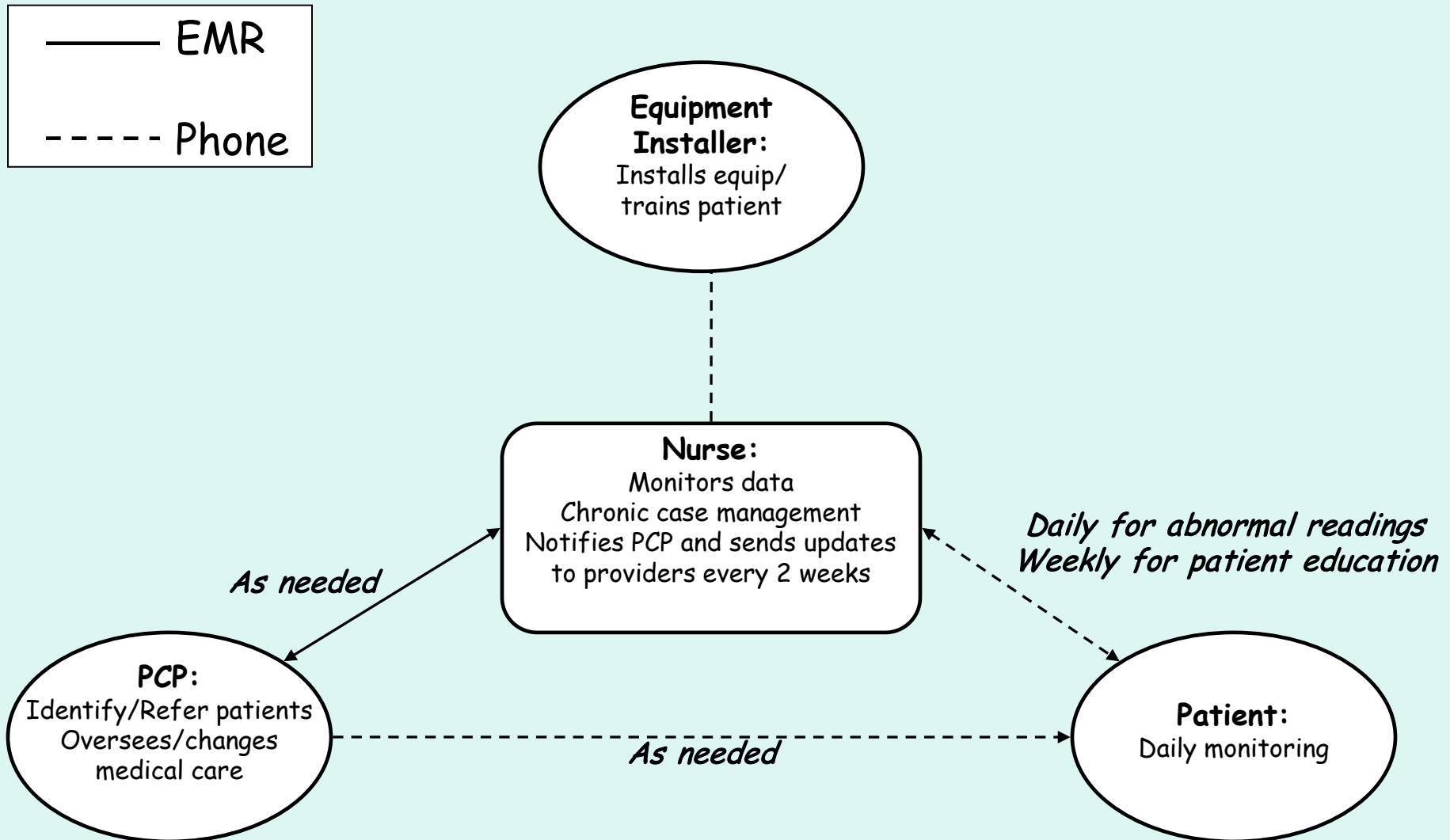
North Carolina ranks 12th nationally in terms of the numbers of health care uninsured individuals. Hertford County uninsured is at **25.6%**



# RCCHC Remote Monitoring and Chronic Care Management

- Patient-centered care
- PCP to patient in their home/residence
- Long term daily monitoring, health assessment, nursing assessment, health education and intervention as needed
- Medical Home Model
- Chronic Care Model

# RCCHC Conceptual Model



# RCCHC

## Remote Patient Monitoring NC Network

NC ORH

HRSA OAT

Piedmont Health  
Services

Gateway  
Community  
Health Center

Solid Foundations

Ocracoke  
Medical Center

Wake Health  
Services

Roanoke Chowan  
Community  
Health Center

Kinston  
Community  
Health Center

Robeson Health  
Care Corporation

Greene County  
Health Services

Chowan Hospital

East Carolina  
Heart Institute

Rural Health Group

# **HWTF Phase I Study Protocol**

**2006-2009**

**IRB Approved**

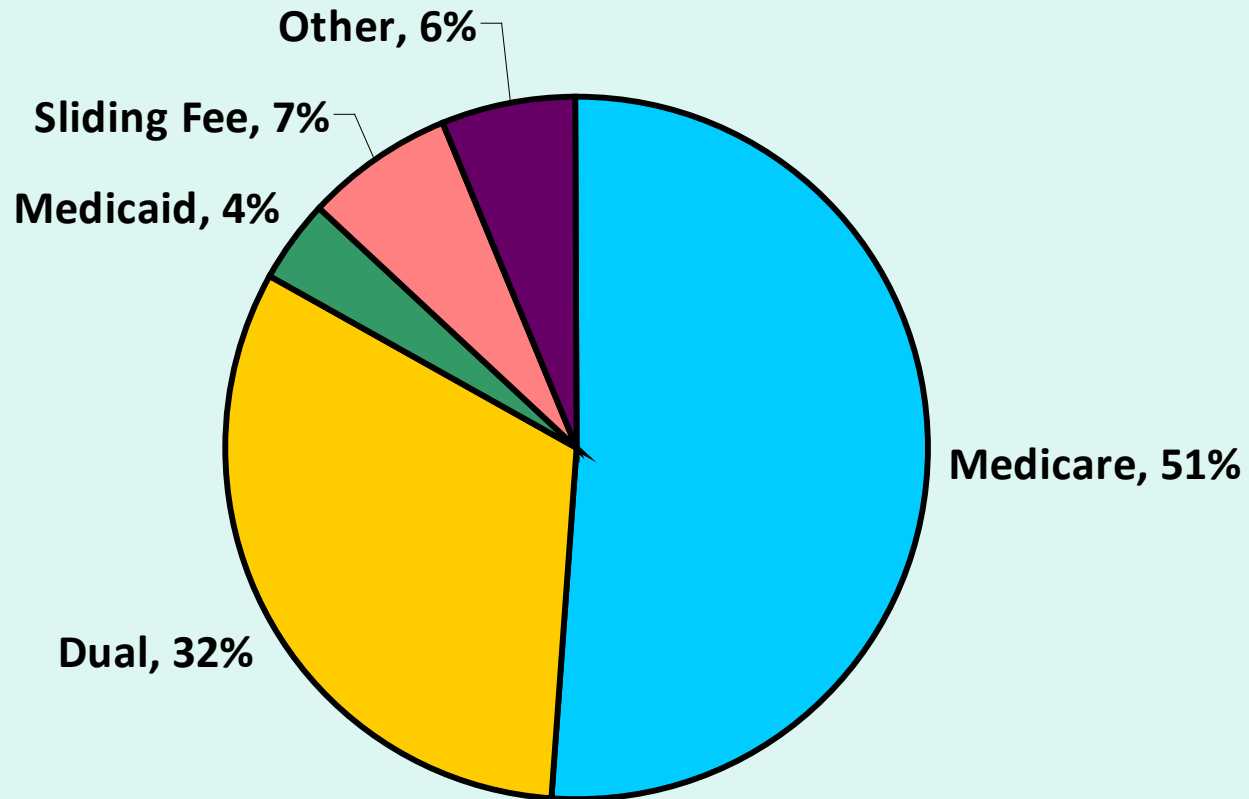
**External evaluation – ECU/WFU**

**Hypothesis:**

**CVD, DM, HTN patients who participate in daily in-home remote monitoring and chronic care management will experience:**

- **Enhanced compliance**
- **Increased self care**
- **Reduced hospitalizations and bed days**
- **Reduced ER visits**
- **Reduced health care expenditures**

# HWTF Phase I Payor Source





# Hospital Bed Days and ER Visits

n=64

**Statistically Significant Reductions**

## Hospital Bed Days

6 mos. prior to Telehealth = **199**

During 6 mos. Telehealth = **99**

## ER Visits

6 mos. prior to Telehealth = **27**

During 6 mos. Telehealth = **5**

*Analyzed Charges are related to diseases being monitored*

*RCCHC/PPTN Patient Charge Data Ending June 2009*

# Hospital Bed Days and ER Visits

n=64

Statistically Significant Reductions

## Hospital Bed Days

24 mos. post Telehealth = **70**

## ER Visits

24 mos. post Telehealth = **23**

*Analyzed Charges are related to diseases being monitored*

*RCCHC/PPTN Patient Charge Data Ending June 2009*

# Hospital and ER Charges

n=64

**Statistically Significant Reductions**

## Hospital Charges

6 mos. prior to Telehealth = **\$1.2 million**

During 6 mos. Telehealth = **\$365 k**

## ER Charges

6 mos. prior to Telehealth = **\$64 k**

During 6 mos. Telehealth = **\$16 k**

*Analyzed Charges are related to diseases being monitored*

*RCCHC/PPTN Patient Charge Data Ending June 2009*

# Hospital and ER Charges

n=64

Statistically Significant Reductions

## Hospital Charges

24 mos. post Telehealth = **\$438 k**

## ER Charges

24 mos. post Telehealth = **\$44 k**

*Analyzed Charges are related to diseases being monitored*

*RCCHC/PPTN Patient Charge Data Ending June 2009*

# **Estimated Savings**

Hospitalization Charges

**\$4,362,000**

Emergency Room Charges

**\$212,000**

**Total Savings**

**\$4.5 Million**

# What We Measure

## **Patient**

- Satisfaction
- PAM

## **Clinical Indicators**

- HgA1c
- LDL
- BP, Pulse
- Weight
- Blood glucose
- Oxygen saturation

## **Health Services Use:**

- # PCP visits
- Hospital Bed Days
- Emergency Room visits
- 

## **Medical Costs**

- PCP visits costs
- Hospitalization costs
- ER visit costs

# Kiosk Monitoring

- Care Coordination
- Self Management



# Challenges and Opportunities

- Vulnerable populations – rural & urban
- Equipment/Vendor issues
- Connectivity
- Provider adoption
- Staffing



# Emerging Trends

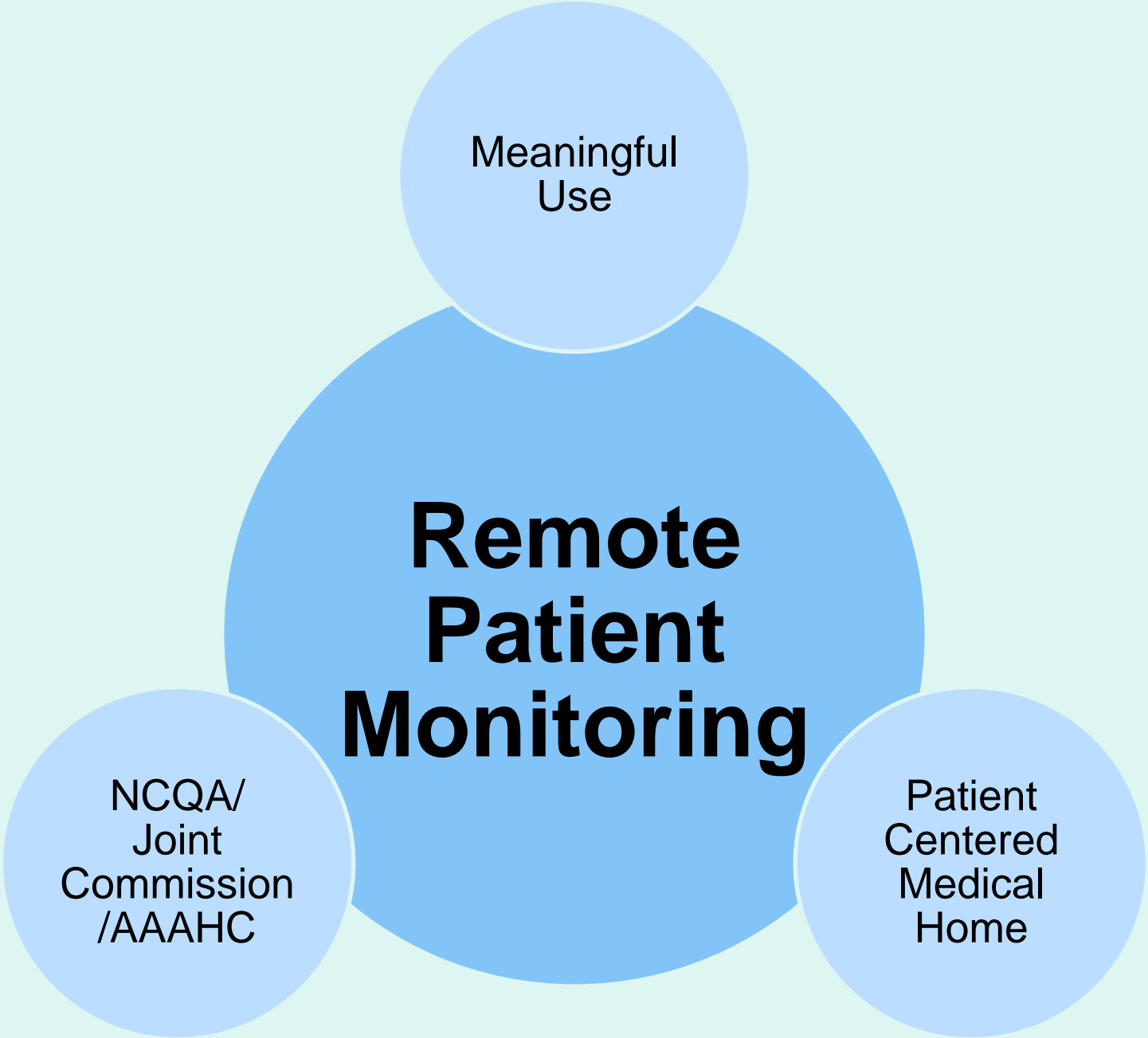
- Aging of Population
- Wireless
- Efficiencies
- Industry Alliances
- Cost-effectiveness
- Healthcare market emphasis on patient experience
- Increased costs
- Government pressure
- Dwindling economic resources
- Decreased healthcare staffing
- Emphasis on error reduction

# Remote Patient Monitoring

- How do we pay for it?

Annual savings from remote monitoring could amount to as much as \$10.1 Billion for U.S. Residents with congestive heart failure; \$6.1 billion for patients with diabetes; and \$4.9 billion for patients with COPD.

-Wall Street Journal Report



# Establishing Innovative Partnerships



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