

April 12, 2014

Communication Partnerships that Work: Translating Evidence-based Health Research into Practice

Angela Carman, *University of Kentucky*

Gretchen Holmes, *University of Kentucky*

Anna G. Hoover, *University of Kentucky*

Margaret McGladrey, *University of Kentucky*

Ernie Scott, et al.

Communication Partnerships that Work: Translating Evidence-based Health Research into Practice

Angela Carman, DrPH

National Coordinating Center Faculty and Kentucky Public Health Research Network

Gretchen Holmes, PhD

Rural Health Director, Center for Excellence in Rural Health

Anna Hoover, PhD

National Coordinating Center Deputy Director

Margaret McGladrey, MA

Assistant Dean for Research, UK College of Public Health;
Program Manager, Rural Cancer Prevention Center

Ernie Scott, BA

Director of the Kentucky Office of Rural Health

Mary Tucker-McLaughlin, PhD

Assistant Professor, East Carolina University School of Communication

Nancy Winterbauer, PhD

Academic Co-chair, North Carolina Public Health Practice-based Research Network



**PUBLIC
HEALTH**

**SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS**

Roadmap

- Introduction to Research Translation (Anna Hoover)
 - Clinical and Public Health
- Center of Excellence in Rural Health
 - Overview and Kentucky Homeplace (Gretchen Holmes)
 - Kentucky Office of Rural Health (Ernie Scott)
- Public Health PBRN/PRC Dissemination & Implementation Project
 - Public Health PBRNs (Anna Hoover)
 - CDC Prevention Research Centers (Margaret McGladrey)
 - Kentucky LHD Adoption (Angie Carman)
 - North Carolina Adaptation (Nancy Winterbauer and Mary Tucker-McLaughlin)
- Closing Comments and Questions



Dissemination and Implementation Research Terminology*

Dissemination:

An active approach of spreading evidence-based interventions to the target audience via determined channels using planned strategies

Implementation:

The process of putting to use or integrating evidence-based interventions within a setting.

**Rabin, Brownson, Haire-Joshu, Kreuter, & Weaver (2008)*



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Dissemination and Implementation Research Terminology*

Adoption: The decision of an organization or community to commit to and initiate an evidence-based intervention (EBI)

Adaptation: The degree to which a which an EBI is changed or modified by a user during adoption and implementation

Fit: The level of match between an EBI and the real or perceived needs, objectives, and structure of an adopting organization.

**Rabin, Brownson, Haire-Joshu, Kreuter, & Weaver (2008)*



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

University of Kentucky Center of Excellence in Rural Health



**PUBLIC
HEALTH**

**SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS**

UK Center of Excellence in Rural Health

- Established in 1990 by the Kentucky General Assembly to address health disparities in rural Kentucky, including a chronic shortage of health professionals
- Key functions:
 - Education
 - Research
 - Service
 - Community engagement



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

About the Center

Our Mission:

Improve the health of rural Kentuckians through education, research, service, and community engagement

Our Employees:

Over 150 dedicated individuals living and working in rural areas of Kentucky



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

- 

PUBLIC
HEALTH

SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

[illegible]

- 

Kentucky Health Disparities

| Health Outcome | National Ranking | Kentucky | Kentucky Homeplace | Kentucky Homeplace Medicaid Eligible* |
|---------------------------|------------------|----------|--------------------|---------------------------------------|
| Obesity | 40 th | 30.4% | 47.6% | 48.4% |
| Diabetes | 41 st | 10.8% | 31.7% | 29.7% |
| High cholesterol | 43 rd | 41.3% | 50.2% | 46.2% |
| Sedentary Lifestyle | 43 rd | 29.3% | 67.6% | 67.6% |
| Annual dental visits | 44 th | ----- | ----- | ----- |
| Heart attacks | 48 th | 6.1% | 15.2% | 12.4% |
| Poor mental health days | 48 th | 4.8 | 17.2 | 17.3 |
| Poor physical health days | 49 th | 5.0 | 18.4 | 18.1 |
| Cardiac heart disease | 49 th | 5.9% | 17.3% | 13.7% |
| Cancer deaths | 50 th | ----- | ----- | ----- |
| Smoking | 50 th | 29.0% | 35.1% | 40.5% |

Kentucky ranks at the bottom in national health outcomes

*A total of 5,689 clients in the Kentucky Homeplace coverage area are Medicaid eligible



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS



**PUBLIC
HEALTH**

SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

State Office of Rural Health

- The SORH Program was established in 1991
- Federal-State partnership
- Administered by Health Resources and Services Administration (HRSA)
- Establishes a focal point within each state for rural health issues
- Provides an institutional framework that links communities with State and Federal resources to help develop long-term solutions to rural health problems



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Core SORH Functions

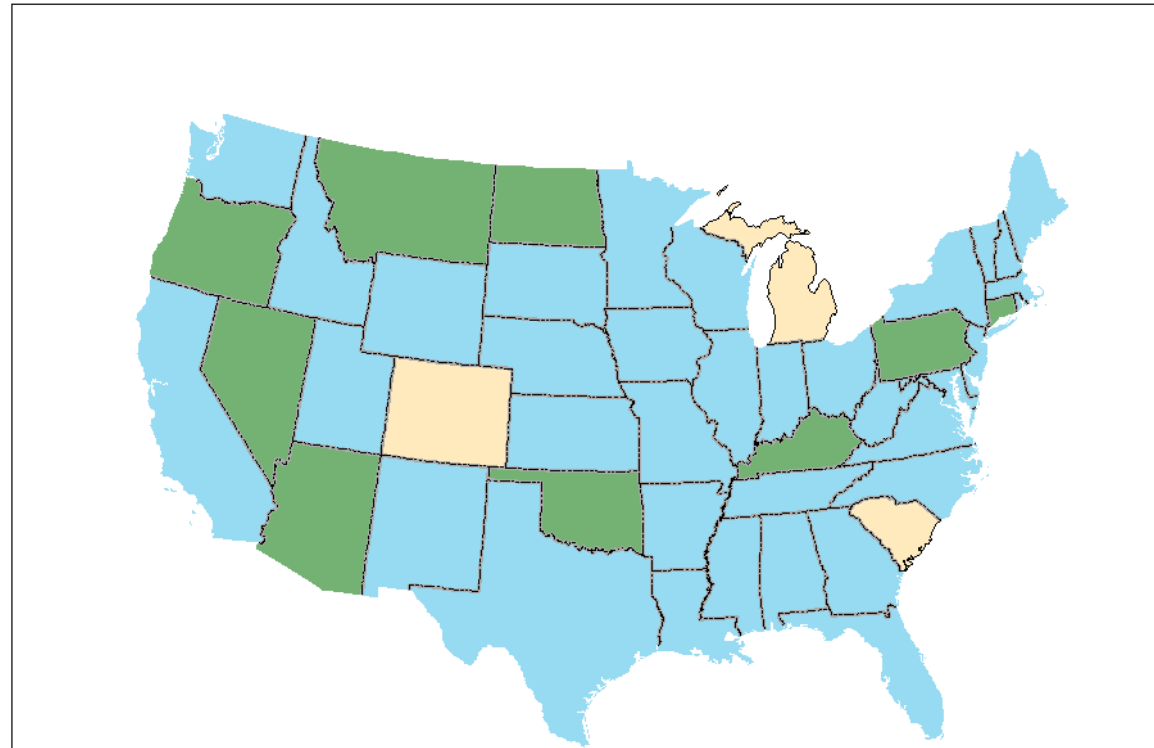
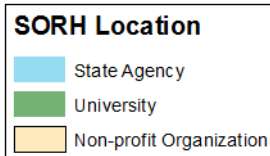
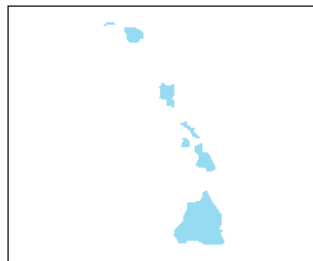
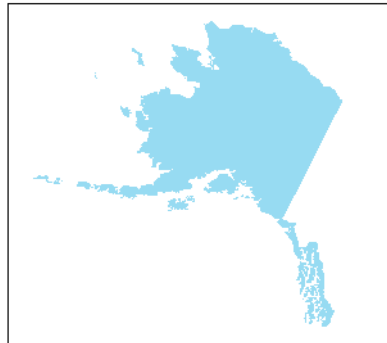
- Collection and dissemination of information
- Coordination of rural health activities
- Provision of technical assistance
- *States have substantial flexibility in using grant funding to address their unique needs.*



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

SORHs by Type

State Office of Rural Health Location by Type



Kentucky Office of Rural Health (KORH)

- Direct the coordination of efforts across the state to improve rural health.
- Monitor and evaluate changing federal and state policies that impact state and local rural health programs.
- Act as a liaison between Federal/State agencies on local, state and national rural health issues.



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Kentucky Office of Rural Health (KORH)

- Direct the maintenance and dissemination of rural health information to increase awareness and understanding of issues.
- Tasked with forming rural health networks across the State
- Recommend actions to facilitate rural health program development and implementation.
- Assist with grant application development and review.



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Potential Research Partnering

- Direct the maintenance and dissemination of rural health information to increase awareness and understanding of issues
 - HRSA ORHP policy
 - ACA
 - KYNECT
 - » Public forums to answer questions and sign up Kentuckians
 - » Kentucky Health Benefit Exchange Information Session Road Show
 - Health care providers, administrators, boards of directors, community agencies, coalitions, navigators, mid-level managers, front-line staff, etc.
- Research opportunity
 - Identify best dissemination method for ACA and KYNECT information



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS



**PUBLIC
HEALTH**

**SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS**

Potential Research Partnering

- Tasked with forming rural health networks across the state
 - Hospitals, health departments, clinic, community groups
 - Tasked with creating projects to improve health care delivery systems, quality of care, community health programs, etc. (individual networks decide)
 - KORH facilitates network development, strategic planning, best practices, funding sources, etc.
 - Research opportunities are limitless



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS



Homeplace *Kentucky*



**PUBLIC
HEALTH**

**SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS**



Mission: Provide access to medical, social, and environmental services for the citizens of the Commonwealth

Vision: Educate Kentuckians to identify risk factors and use preventative measures to become a healthier people with knowledge and skills to access the healthcare and social systems

<http://ruralhealth.med.uky.edu/cerh-homeplace>



**PUBLIC
HEALTH**

SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Kentucky Homeplace

- **Who We Serve:**

- The program's beneficiaries are the medically underserved or "the neediest of the needy."
- Most clients are at 100% - 133% of the federal poverty level.

- **What We Do:**

- Homeplace's services are offered at no charge to the clients.
- Community Health Workers (CHWs)
 - Employed from the communities they serve
 - Trained as advocates to provide access to medical, social, and environmental services
 - Deliver education on prevention and disease self-management
 - Collect research data to help identify health trends, socio-cultural and economic barriers in order to find solutions to bridge the gap between uninsured/underinsured individuals and the health care delivery system



Research Approach List

1. Get to know the population
 1. In-person visits
 2. Get someone from the community to introduce you
2. Don't come to see what you can get from the community..... come to see what you can do for the community
3. If you identify a problem..... don't leave without helping them solve it
4. Be prepared to share your results
5. Don't come rushing in to save us from ourselves
6. Partnership is working together as equals and sharing resources and success



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

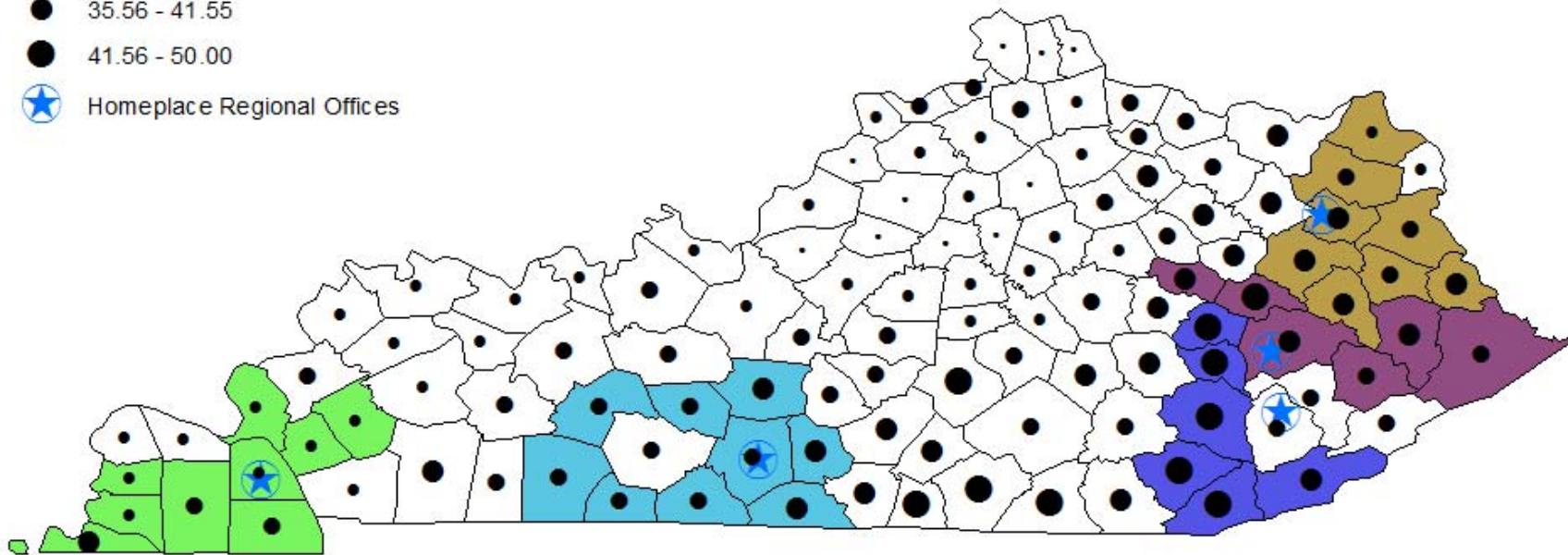
Kentucky Medicaid Eligible with Homeplace Regions

Pct Medicaid Eligible

- 8.90 - 20.95
- 20.96 - 28.65
- 28.66 - 35.55
- 35.56 - 41.55
- 41.56 - 50.00



Homeplace Regional Offices



Source: Kentucky Cabinet for Health and Family Services
Created by: University of Kentucky Center of Excellence in Rural Health

Kentucky Homeplace Colon Cancer Project Featured on Healthy People 2020 Website

Kentucky Homeplace has been recognized by DHHS' Healthy People 2020 initiative for their work to improve colorectal cancer screening rates.

- Results showed 24% increase in patients asking providers about screening ($p=.013$)

<http://healthypeople.gov/2020/implement/sharinglibrary.aspx?StoryID=62&source=map>



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Improving Diabetic Outcomes (I DO 2 Study)

Goal:

*Increase diabetes self-management knowledge
and improve diabetic outcomes that lead to a
reduction in complications resulting in a better
quality of life, both for clients and their families*



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Why Focus on Diabetes in Kentucky?

- 54 of 120 (45%) KY counties are Appalachian
- 11.7 % average diabetes rate in these counties
- 10.6% average rate in non-Appalachian KY counties
- 68 KY counties fall within the “diabetes belt”
- 32.7% of Homeplace clients statewide are diabetic
- Mal-distribution of Certified Diabetes Educators (CDEs)

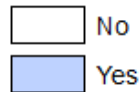


SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

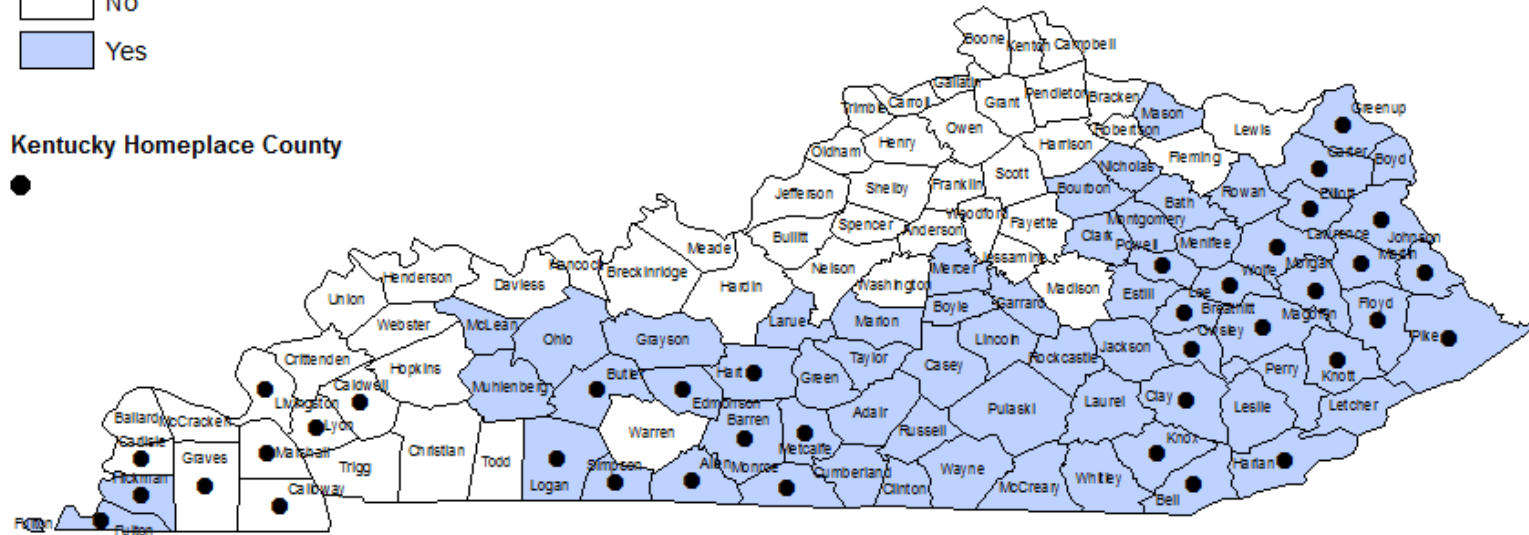
Kentucky Counties in Diabetes Belt

Diabetes belt has 48 CDEs per 1,000 diabetics,
non-diabetes belt has 209 per 1,000.

In Diabetes Belt



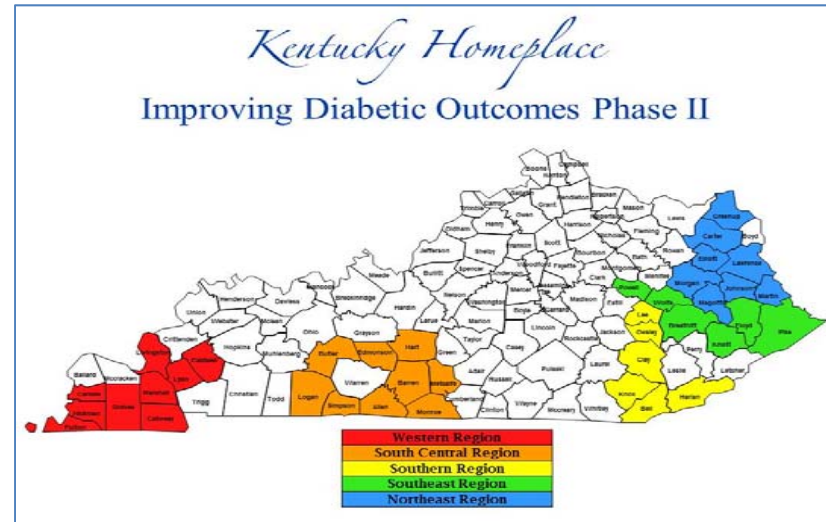
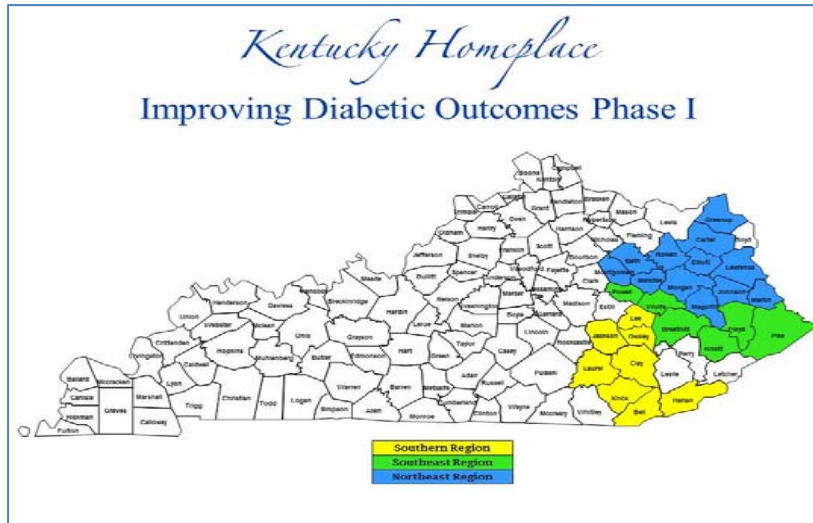
Kentucky Homeplace County



Data Source: Centers for Disease Control and Prevention

Created by: University of Kentucky Center of Excellence in Rural Health

Improving Diabetic Outcomes



Anthem Foundation



**PUBLIC
HEALTH**

**SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS**

Recruitment and Enrollment

- Trained 25 CHWs and 5 Regional Coordinators
- Identified 2812 eligible clients in all Homeplace counties
- 1198 (42.6%) were told by a provider they have diabetes
- 1614 were at risk of developing diabetes based on the ADA Diabetes Risk Test
- 586 (20.8%) signed IRB consent for I DO II study
- 231 (39.4%) participated in nurse-led DSME



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

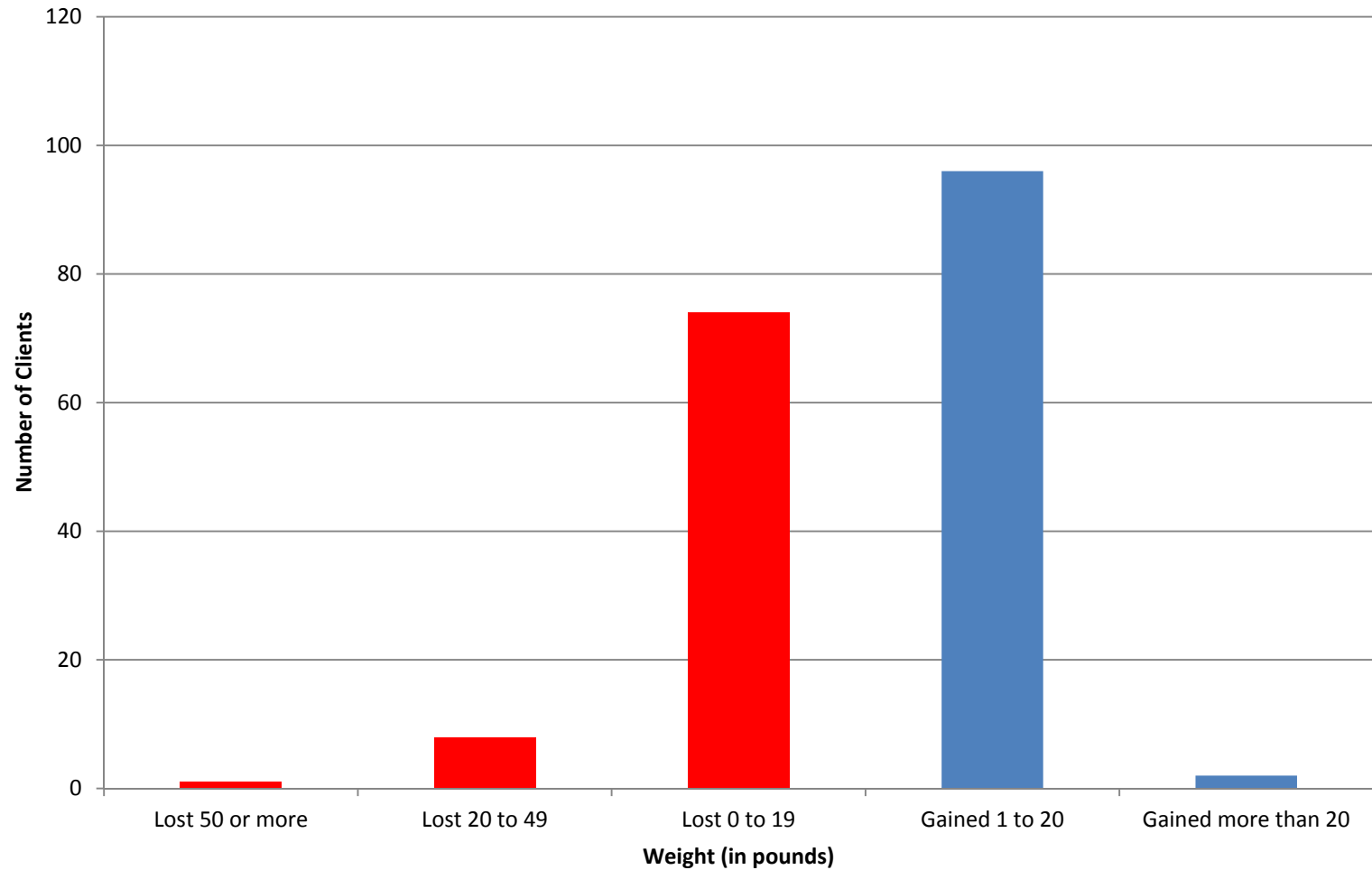
Preliminary Results – Study Sample

- 54.5% were at or below 100% FPL
- 37.2% from 101-175% FPL
- 37.2% had “serious” to “some limitations” with health literacy
- 36.4% had less than high school education
- 27.3% overweight, 59.7% obese (87% combined)
- 48.5% were told they have diabetes
- 51.5% were at risk based on ADA risk test



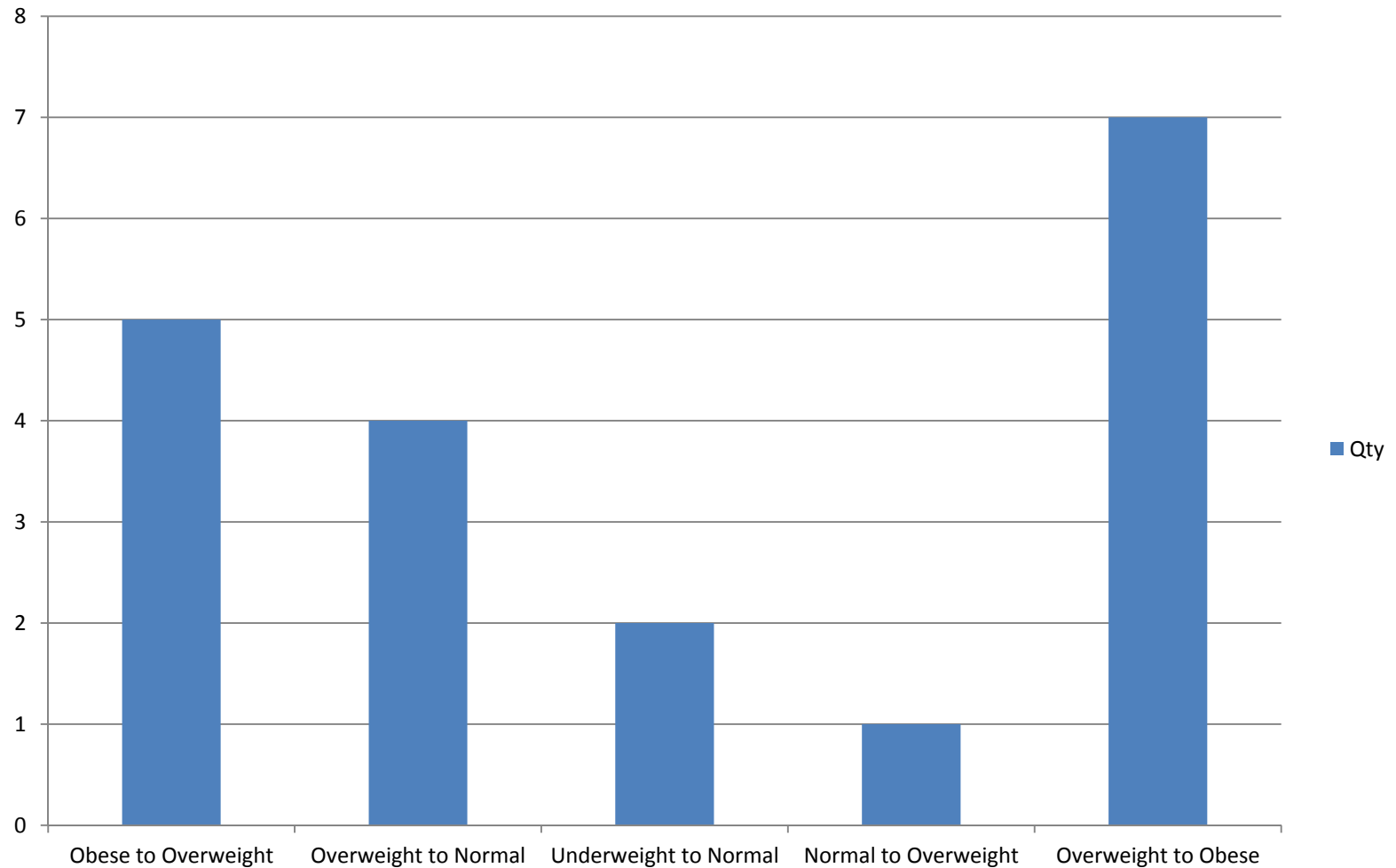
SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Weight Change



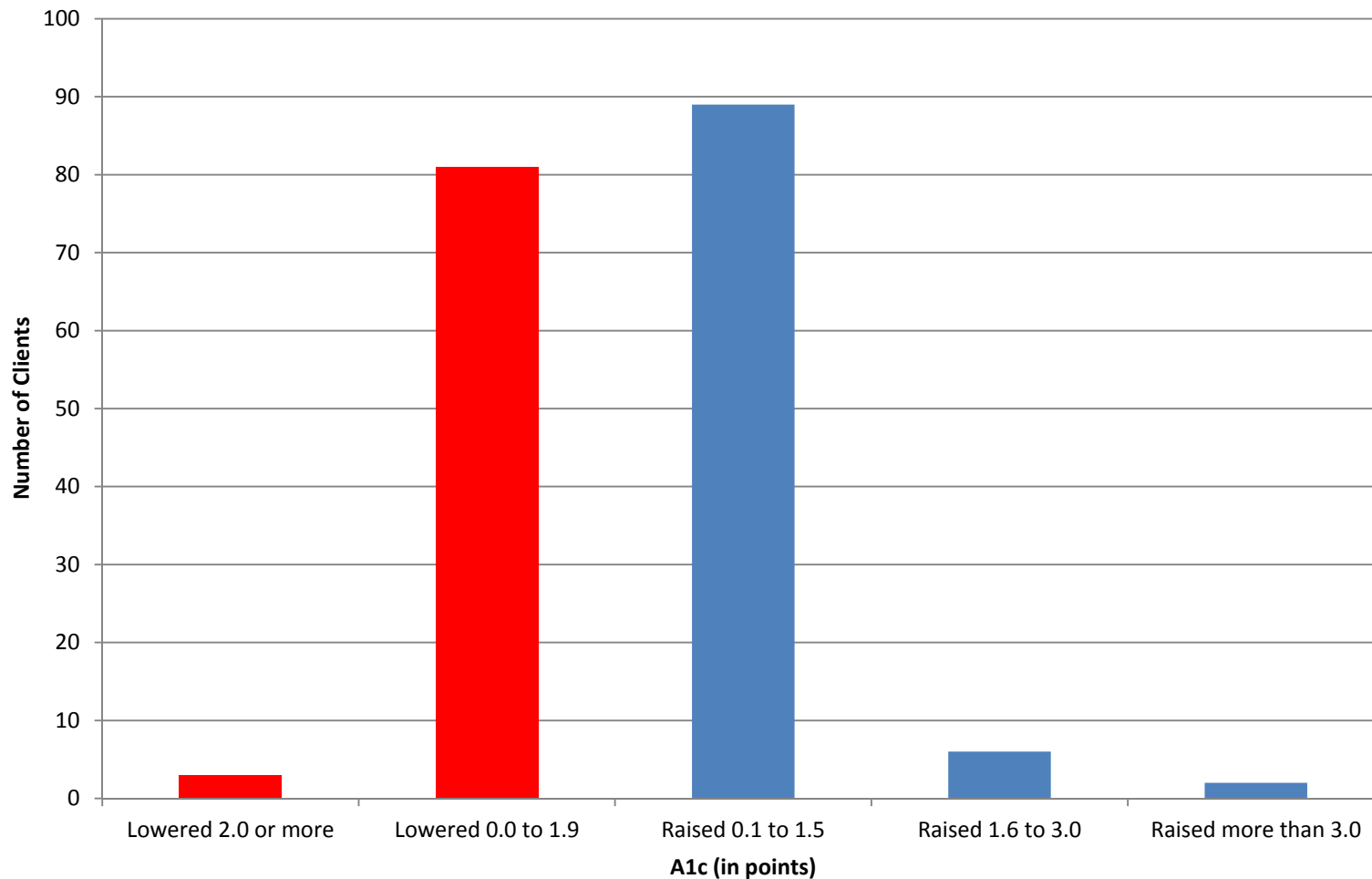
SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

BMI Change



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

A1c Change



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Improved DKT Scores of Insulin Users

| Question | Pre | Post | Change |
|---|------|------|--------|
| If you are sick with the flu, which of the following changes should you make? | 3.8 | 45.0 | 41.2 |
| The Diabetic Diet is: | 63.4 | 95.5 | 32.1 |
| Which should <u>not</u> be used to treat low blood glucose? | 35.7 | 66.7 | 31.0 |
| The best way to take care of your feet is to: | 68.3 | 95.7 | 27.4 |
| If you have taken intermediate-acting insulin (NPH or Lente), you are most likely to have an insulin reaction in: | 11.6 | 23.8 | 12.2 |
| What effect does unsweetened fruit juice have on blood glucose | 50.0 | 55.0 | 5.0 |
| If you are beginning to have an insulin reaction, you should: | 59.0 | 63.6 | 4.6 |
| Which of the following is highest in carbohydrates | 68.2 | 72.7 | 4.5 |
| Numbness and tingling might be symptoms of: | 0.0 | 4.5 | 4.5 |
| Signs of ketoacidosis include: | 22.2 | 25.0 | 2.8 |
| If you take your morning insulin but skip breakfast your glucose level will usually: | 69.8 | 71.4 | 1.6 |



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Non-Insulin Users Improved DKT Scores

| Question | Pre | Post | Change |
|--|------|------|--------|
| The best way to take care of your feet is to: | 71.6 | 92.3 | 20.7 |
| Which of the following is a "free food"? | 33.3 | 45.8 | 12.5 |
| Infection is likely to cause: | 77.3 | 87.6 | 10.3 |
| Which of the following is highest in fat? | 18.4 | 25.5 | 7.1 |
| The Diabetic Diet is: | 61.4 | 68.3 | 6.9 |
| Which of the following is usually not associated with diabetes: | 82.5 | 88.5 | 6 |
| Numbness and tingling might be symptoms of: | 4.3 | 5.9 | 1.6 |
| Which should <u>not</u> be used to treat low blood glucose? | 35.8 | 37.3 | 1.5 |
| Which is the best method for testing blood glucose? | 70.2 | 70.9 | 0.7 |
| For a person in good control, what effect does exercise have on blood glucose? | 86.2 | 86.3 | 0.1 |



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

More preliminary results

Comparative Emergency Department utilization rates for US vs Homeplace clients

| | |
|--|------|
| – Kentucky Homeplace | 10.1 |
| – US Population Living in Private Residences | 39.2 |

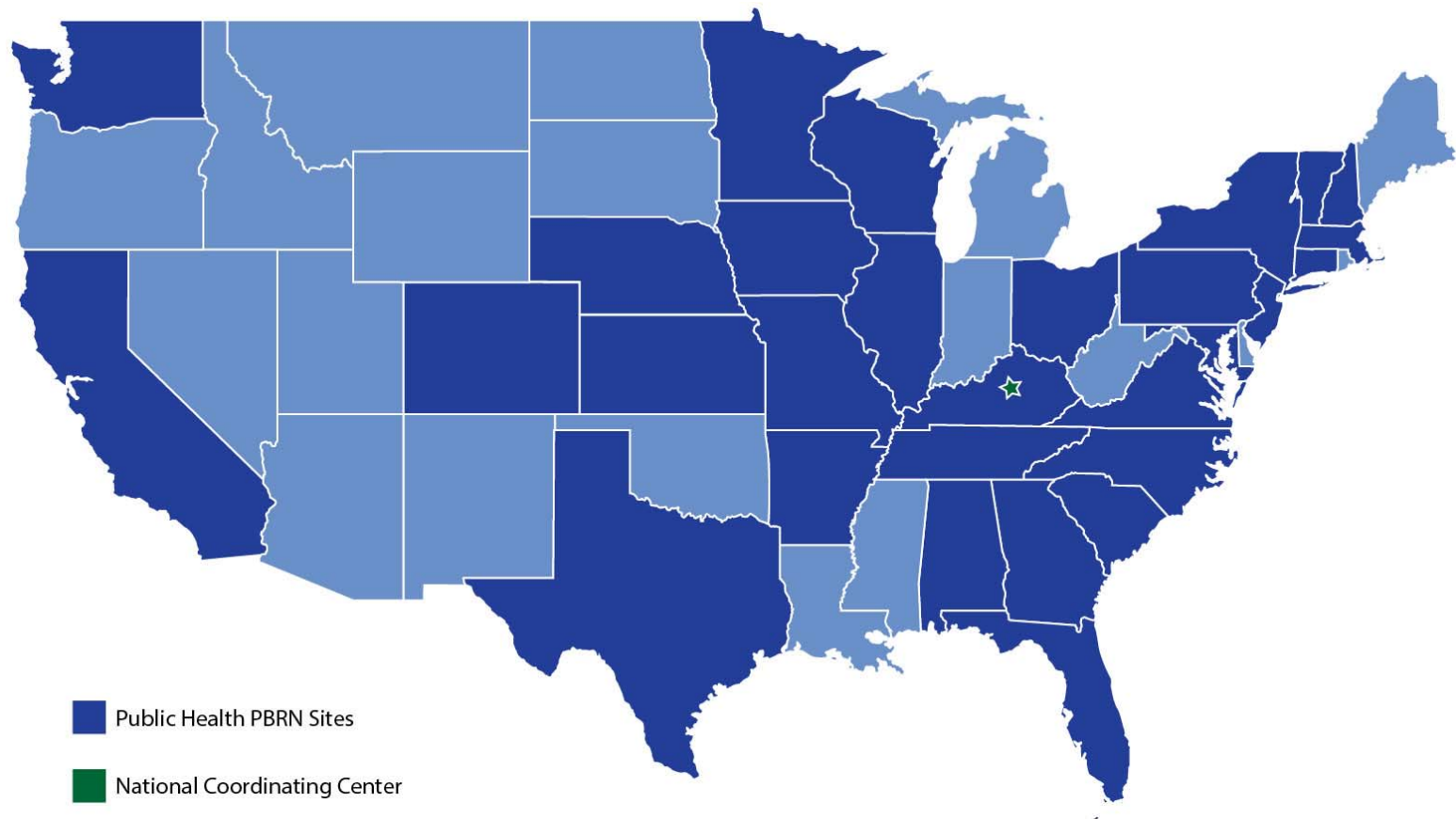
*per 100 persons per year

**National Hospital Ambulatory Medical Care Survey: 2010



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

What Are Public Health PBRNs?



**PUBLIC
HEALTH**

**SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS**

University of Kentucky PRC: Rural Cancer Prevention Center

The Rural Cancer Prevention Center (RCPC) is a **planned collaboration** of community members, public health professionals, and researchers designed to reduce health disparities associated with **cervical, breast, and colorectal** cancer among residents of the Kentucky River Health District in Appalachian Kentucky.

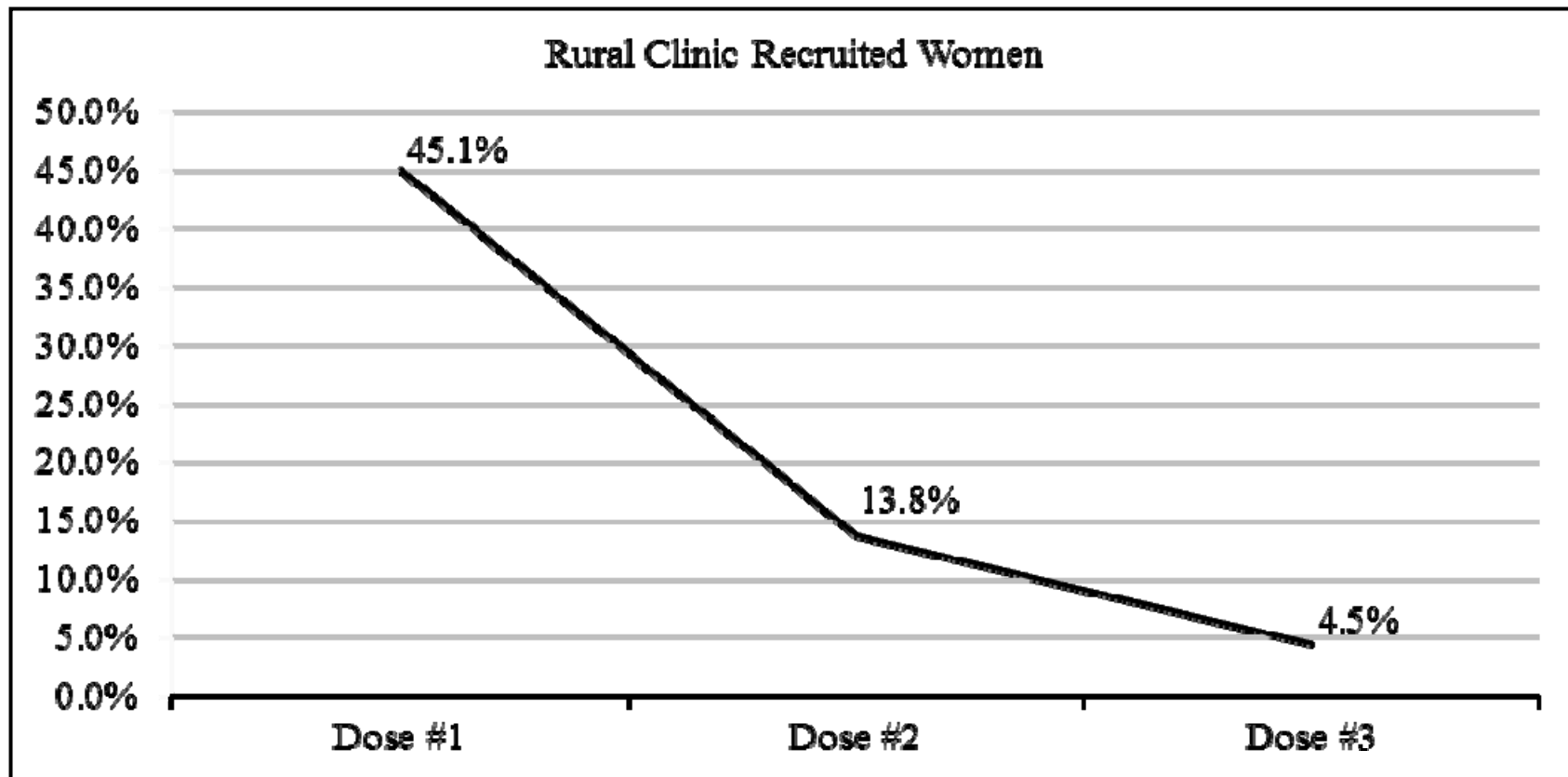


Slide courtesy of RCPC



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Formative Research: Uptake and Adherence for Adult Women, Ages 18-26, Appalachian Kentucky



Slide courtesy of RCPC

Crosby, et al., *Journal of Rural Health*, 2011



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

RCPC's 1-2-3 Pap Initiative

- Social Marketing Campaign
- Stage 2: 12-minute DVD Intervention
 - Credible Testimonials
- Original Delivery: Nurse to Patient Following First Dose
- Results: increase in uptake of 35.7% ($p=.03$).*

*(Vanderpool et al, *JoC*, 2013)



D & I Research in LHDs: Research Questions

- 1) Do specific implementation planning activities, such as the allocation of personnel and other planning resources, identification of project champions, and intra-organizational communication processes, affect the selection of specific channels to disseminate evidence-based public health interventions?



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

D & I Research in LHDs: Research Questions

- 2) Does the use of specific dissemination channels correspond to intervention outcomes as assessed through secondary data analyses of changes in HPV vaccination series completion rates?



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

D & I Research in LHDs: Research Questions

- 3) What organizational attributes facilitate or impede adoption of evidence-based public health interventions?



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Recruitment:

Public Health Practice-Based Research Networks

- RCPC engaged Public Health PBRNs (PH PBRNs) through the Coordinating Center's 2013 Annual Grantee Meeting and follow-up telephone calls
- Kentucky and North Carolina PH PBRNs ultimately elected to participate
- 18 Kentucky LHDs were recruited through the Kentucky Health Department Association Meeting



**PUBLIC
HEALTH**

**SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS**

Mixed Methods: Quasi-Experimental Design

(*n*=18)

- Dependent Variable: Δ Uptake for HPV Vaccinations
- Quasi-Independent Variable: Delivery Channel



Channel 1
(*n*=2)

Original clinical setting
(after Dose 1)



Channel 2
(*n*=13)

Posted to LHD website and/or social
media



Channel 3
(*n*=3)

Screened on a loop in
waiting room

Methods: Qualitative Process Analysis

- Post-project key informant interviews
 - Project-specific benefits and barriers
 - Unplanned adaptations (and drivers of adaptations)
 - Perspectives regarding potential LHD roles in intervention implementations/adaptations



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

One.. Two.. Three.. Pap & the North Carolina Public Health Practice-Based Research Network



**PUBLIC
HEALTH**

**SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS**

One.. Two.. Three.. Pap NC: Adapting a video-based HPV intervention for local use

To start the process:

Review of Kentucky HPV Intervention video by PH practitioners and public health faculty with the intention of making the video North Carolina-specific



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Suggestions:

- Add b-roll from regions state wide identifying NC
- Select talent based on NC demographics and appropriate expertise. (African American main host, Hispanic co-host)
- Allow talent to speak conversationally based on an outline versus memorization of a script (news interview format)
- Shorten overall



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Why we chose the talent that we did...

Data:

- 22% of North Carolinians are African American, the 8th highest African American population in the US (US Census, 2013)
- Over 8% of North Carolinians are culturally Hispanic representing an increase in population of over 900% in the past 20 years (US Census, 2013; North Carolina Dept. of Cultural Resources 2013)!



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

One.. Two.. Three.. Pap NC: Adapting a video-based HPV intervention for local use

Step by step

- Selection of talent and experts
- Scheduling of b-roll, expert and studio shoots within allotted 3 months
- Identification of graphic artist



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

One.. Two.. Three.. Pap NC: Adapting a video-based HPV intervention for local use

Step by step

- Video shot on tapeless Panasonic video camera and in ECU studio
- Edited with non linear Edius video editing software
- Revised based on Kentucky partner feedback
- Distribution by Youtube link and hard copy DVDs to 26 participating North Carolina Health Departments



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

One.. Two.. Three.. Pap NC: Adapting a video-based HPV intervention for local use

Theoretical Framework

We developed the story board based on the Elaboration Likelihood model using both the central and peripheral routes of persuasion with an emphasis on clarity and brevity.

[123 Pap NC](#)



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Dissemination and Implementation Research

- Ethical
 - Maximizing positive health/population health impacts of research findings
- Pragmatic
 - Evaluation: effectiveness, efficiency
 - Funding Opportunities
 - NIH – D&I portfolio, research translation and engagement cores among P30 and P42 centers, TIDIRH program
 - CDC – PRC interest in 2014-2019 cycle
 - NSF – decision science portfolio
 - RWJF – new interest in systematic study of adaptations
 - VA – Quality Enhancement Research Initiative



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

Funding Opportunities

- NIH: Dissemination and Implementation Research in Health
 - R01: <http://grants.nih.gov/grants/guide/PA-files/PA-13-055.html>
 - R03: <http://grants.nih.gov/grants/guide/pa-files/PA-13-056.html>
 - R21: <http://grants.nih.gov/grants/guide/pa-files/PA-13-054.html>
 - TIDIRH:
http://obssr.od.nih.gov/scientific_areas/translation/dissemination_and_implementation/index.aspx
- CDC: Prevention Research Centers
 - <http://www.cdc.gov/prc/center-descriptions/index.htm>
 - 2014-2019 funded centers not yet listed
- NSF: Decision, Risk, and Management Sciences
 - http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5423
- U.S. Department of Veterans Affairs
 - Quality Enhancement Research Initiative:
http://www.queri.research.va.gov/partnered_research.cfm
 - Implementation studies in VA clinical practice settings
- Robert Wood Johnson Foundation
 - Funding alert sign-up here: <http://www.rwjf.org/en/grants/calls-for-proposals.html>



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS

For more information contact:

Angela Carman, DrPH: angela.carman@uky.edu

National Coordinating Center Faculty and Kentucky Public Health Research Network

Gretchen Holmes, PhD: gretchen.holmes@uky.edu

Rural Health Director, Center for Excellence in Rural Health

Anna Hoover, PhD: aghoov2@uky.edu

National Coordinating Center Deputy Director

Margaret McGladrey, MA: margaret.mcgladrey@uky.edu

Assistant Dean for Research, UK College of Public Health;

Program Manager, Rural Cancer Prevention Center

Ernie Scott, BA: ernie.scott@uky.edu

Director of the Kentucky Office of Rural Health

Mary Tucker-McLaughlin, PhD: TUCKERMCLAUGHLINM@ECU.EDU

Assistant Professor, East Carolina University School of Communication

Nancy Winterbauer, PhD: WINTERBAUERN@ECU.EDU

Academic Co-chair, North Carolina Public Health Practice-based Research Network



SERVICES & SYSTEMS RESEARCH
PRACTICE-BASED RESEARCH NETWORKS