Rural Obesity Prevention Toolkit

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Table of Contents

Rural Health Obesity Prevention Toolkit

Welcome to the Rural Health Obesity Prevention Toolkit. This toolkit is designed to help your program to identify factors in your community that promote obesity, convene partners to help address those problems, and apply proven obesity prevention strategies.

This toolkit consists of seven modules. Each concentrates on different aspects of obesity prevention programs. Modules also include resources for you to use in developing a program for your area. There are more resources on general community health strategies available in the Rural Community Health Toolkit.

Module 1: Understanding Obesity
Learn about rural obesity in the United States, so you can develop practical solutions to address it.

Module 2: Creating an Obesity Prevention Program: Where to Begin
First steps in creating a rural obesity prevention program.

Module 3: Targeting Audiences
Choosing the audience for your rural obesity prevention program.

Module 4: Developing Interventions
Using appropriate evidence-based interventions to meet your community's rural obesity prevention needs.

Module 5: Addressing Obesity
Rural obesity prevention strategies for healthcare providers, schools and communities.

Module 6: Evaluation Efforts
Evaluating rural obesity programs to help communities assess program effectiveness and build the evidence base for what works in rural communities.

Module 7: Program Clearinghouse
Examples of rural obesity programs that have been implemented in clinical, school, and community settings.

Module 1: Understanding Obesity

Rural areas in the United States have higher rates of obesity than urban areas, with the rural south having the highest rates of overweight individuals. Rural communities have a unique set of factors that can contribute to higher rates of obesity. This module looks at factors contributing to obesity in rural areas, such as:

- Environmental characteristics
- Limited transportation options
- Limited availability of healthy foods
- Lack of public health funding and infrastructure
- Barriers to access
- Rural population characteristics

Since the makeup of rural areas is culturally, socially, economically and ethnically diverse, there is no one factor or set of factors responsible for rural obesity. For information on the factors that affect health in rural communities, see Overview of Specific Issues in a Rural Context in the Rural Community Health Toolkit.

In this module:

- What is obesity?
- Factors contributing to obesity
- At-risk populations
- Resources for understanding obesity

What is Obesity

The terms "obesity" and "overweight" describe weight ranges greater than what is generally considered to be healthy for a given height. By definition, an overweight person has extra body weight from muscle, bone, fat, and/or water. Someone who is obese has a high amount of extra body fat.

Body Mass Index (BMI) is the standard used to diagnose overweight and obesity in adults. BMI measures body fat based on height and weight. Adults with BMI greater than 30 are considered obese, while those with BMI measures greater than 25 are classified as overweight.

Why is obesity an important issue in rural communities?

Obesity causes more needless deaths in this country than any other risk factor. Obesity among adults and children in the United States has risen dramatically over the past 30 years. More than a third of U.S. adults and nearly one in five children and adolescents are obese. Rates of obesity are higher for certain racial and ethnic groups – approximately half of African American population and 40 percent of Hispanic population are obese.

In rural America, rates of obesity are even higher. The rural south has the highest rates of overweight in the U.S. One study using 2003 data showed that rural children and youth aged 10-17 years were more likely to be obese than their urban counterparts (14% urban, versus 17% rural).

Another study using 2005-2008 data from the National Health and Nutrition Examination Survey (NHANES) reported that 40% of rural adults were obese, compared to 33% of urban adults. In 2007, the National Survey of Children's Health found a similar result for children aged 10-17, with 35% of children in rural areas and only 30% of children in rural areas being considered overweight or obese.

Factors Contributing to Obesity

Certain features of rural communities make it more challenging for people to eat a healthy diet and to be physically active. These features differ between communities, but include environmental characteristics, access barriers, and population characteristics.

Environmental Characteristics

Environmental characteristics refer to the natural and physical (built) surroundings in which people live their lives. The design and condition of the environment can contribute to rural obesity – for example, by making it more difficult to obtain healthy foods or to be physically active.

Built Environment
The built environment includes homes, schools, workplaces, parks, farms, and roads. Barriers to healthy eating and physical activity in the built environment include:

- Limited access to public parks
- Few sidewalks
- Lack of public transportation
- Lack of street lighting

Natural Environment
The natural environment includes climate, resources, water, air, and geography. Barriers to physical activity and access to healthy foods in nature include:

- Harsh weather (e.g., snow, heat)
- Rough or hilly terrain
- Remote location, creating long traveling distances

Access Barriers

Access barriers refer to the availability of resources to support a healthy weight and lifestyle. For example, transportation is a key part of "access to opportunity," such as the chance to obtain healthy foods, physical activity, and health care, or to travel to jobs or educational institutions. Nearly 40 percent of rural counties have no form of public transportation. Common rural access issues include:

Healthy Foods

- Higher rates of food insecurity
- Limited access to grocery stores carrying fresh fruits and vegetables
- Higher cost of fresh fruits and vegetables

Physical Activity

- Limited areas and equipment for structured physical activity
- Lack of funding for public facilities and/or programs

Transportation Options

- Long travel distances
- Lack of transportation infrastructure
- Dependence on driving

Healthcare

- Fewer healthcare providers
- Higher rates of uninsured
- Fewer disease management programs
- Limited nutrition education

Public Health Resources

- Sparsely populated areas receive less public health funding
- Health programs may not be designed to address rural health issues

Population Characteristics

Population characteristics refer to the demographic and socioeconomic qualities of the community. Rural populations tend to be older, poorer, and at greater risk of becoming obese and overweight than their urban counterparts. To learn more, visit the At-Risk Populations section of this module.

At-Risk Populations

Certain populations tend to have higher rates of obesity. Overweight and obesity are often accompanied by other chronic health conditions such as diabetes, heart disease, hypertension, certain cancers, and arthritis.

Rural populations with a higher risk of obesity include those who are:

- Age 60 and above
- Low-income
- Caucasians living in Appalachia
- Latino migrant farm workers
- American Indians/Alaska Natives (AI/AN) living on reservations
- African-Americans living in the south

It is important to consider the needs of specific population groups when creating or tailoring your rural obesity prevention program. For additional information, see Considerations When Adapting a Program in the Rural Community Health Toolkit.

Resources for Understanding Obesity

Information in this module was developed in part using these resources:

2011 Report to the Secretary: Rural Health and Human Services Issues

Document

Examines key topics in health and human services and their effects on rural areas including research on rural childhood obesity. Presents recommendations for supporting efforts to reduce childhood obesity and prioritizing funding for rural communities.

Organization(s): National Advisory Committee on Rural Health and Human Services

Date: 3/2011

The Economic Impact of Obesity in the United States

Document

Reviews the economic impact associated with the obesity epidemic in four cost categories: direct medical, productivity, transportation, and human capital. Identifies important gaps in each set of costs and potential trends in economic impacts of obesity for future research.

Author(s): Hammond, R.A. & Levine, R.

Citation: Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy, 3, 285-295

Date: 8/2010

Is Rural Residency a Risk Factor for Overweight and Obesity for U.S. Children?

Document

Examines how residing in a rural community is a risk factor for overweight and obesity in children using data from the National Survey of Children's Health to compare childhood obesity in rural and metropolitan settings.

Author(s): Lutfiyya, M.N., Lipsky, M.S., Wisdom-Behounek, J., & Inpanbutr-Martinkus, M.

Citation: Obesity, 15(9)

Date: 9/2007

A Meta-Analytic Review of Obesity Prevention Programs for Children and Adolescents: The Skinny on Interventions that Work

Document

Summarizes obesity prevention programs and their effects with a focus on programs targeting children and adolescents and females. Investigates participant, intervention, delivery, and design features associated with larger intervention effects, and discusses promising directions for future research.

Author(s): Stice, E., Shaw, H., & Marti, C.N.

Citation: Psychological Bulletin, 132(5), 667–691

Date: 2006

[Obesity and Related Health Behaviors Among Urban and Rural Children in the United States:](#)
[Data from the National Health and Nutrition Examination Survey 2003–2004 and 2005–2006](#)
Document

Analyzes rates of overweight and obesity among rural and urban children using data from the National Health and Nutrition Examination Survey. Discusses the differences in modifiable health behaviors between rural and urban children.

Author(s): McGrath Davis, A., Bennett, K.J., Befort, C., & Nollen, N.

Citation: Journal of Pediatric Psychology, 36(6), 669-676

Date: 2011

[Overweight and Physical Inactivity Among Rural Children Aged 10-17: A National and State](#)
[Portrait](#)
Document

Examines the presence of overweight and obesity among children in rural and urban communities using 2000 CDC BMI charts as a reference.

Author(s): Liu J., Bennet, K.J., Harun, N., et al.

Organization(s): South Carolina Rural Health Research Center

Date: 10/2007

[Prevalence of Obesity Among Adults From Rural and Urban Areas of the United States: Findings](#)
[From NHANES (2005-2008)](#)
Document

Analyzes obesity prevalence in rural and urban adults using BMI classification. Examines the demographic, diet, and physical activity connection of obesity across rural and urban residence.

Author(s): Befort, C., Nazir, N., & Perri, M.

Citation: Journal of Rural Health, 28(4), 392-397

Date: 5/2012

[Prevalence of Obesity and Trends in the Distribution of Body Mass Index Among US Adults,](#)
[1999-2010](#)
Document

Estimates the prevalence of adult obesity from the 2009-2010 National Health and Nutrition Examination Survey (NHANES) and compares adult obesity and the distribution of BMI with data from 1999-2008.

Author(s): Flegal, K.M., Carroll, M.D., Kit, B.K., & Ogden, C.L.

Citation: Journal of the American Medical Association, 307(5), 491-497

Date: 2/2012

[Reports on Rural America: Demographic Trends in Rural and Small Town America](#)
Document
Summarizes population redistribution trends in rural and small town communities and describes the social, economic, and political importance of these trends.
Author: Johnson, K.
Organization(s): Carsey Institute, Annie E. Casey Foundation, W.K. Kellogg Foundation
Date: 2006

[Rural Healthy People 2010, Nutrition and Overweight Concerns in Rural Areas: A Literature Review](#)
Document
A brief review of the Healthy People 2010's goals and objectives to promote health and reduce chronic disease associated with diet and weight by focusing on nutrition and obesity and overweight particularly prevalent in rural areas. Summarizes interventions for the prevention and treatment of obesity feasible in rural areas.
Author(s): Tai-Seale, T. & Chandler, C.
Date: 2010

Module 2: Creating an Obesity Prevention Program: Where to Begin

Getting Started

Obesity has many causes and no single solution, but rural communities have many strengths and resources that can help to solve the problem. Communities can form networks to bring together stakeholders with different backgrounds, expertise, and existing resources to develop local solutions.

Developing Solutions Through Community Networks

A diverse group of community stakeholders, including community members and organizations, should be invited to participate in community networks. Networks are more likely to be effective when they can offer:

- Social value
- Common goals
- Rewards and incentives
- Comprehensive and coordinated approaches

Community networks can begin to develop solutions by conducting the following activities:

- Mapping community assets and needs
- Prioritizing needed changes
- Planning an approach

When identifying the targets for change, communities should prioritize those that can be accomplished using evidence-based interventions. For more information on how to achieve this, see Identifying Evidence-Based and Promising Program Models in the Rural Community Health Toolkit.

In this module:

- Functions of community networks
- Engaging stakeholders
- Identifying problems
- Setting priorities
- Planning approaches
- Ensuring effectiveness
- Resources for starting an obesity prevention program

Functions of Community Networks

Networks offer a means of making progress towards preventing and addressing obesity when no single organization has the expertise or resources to bring about change. Networks also ensure that obesity prevention programs take a broad perspective to address the individual and environmental factors that affect obesity.

- Recruiting program participants
- Identifying resources (e.g. meeting space for classes)
- Changing organization policies to support physical activity and healthy eating (such as opening school facilities to communities for physical activity or making healthy foods available at places of worship)
- Offering insight on informational needs and learning styles
- Helping identify and select evidence-based or promising intervention strategies
- Adapting or developing curricula and materials
- Ensuring cultural relevance
- Ensuring sustainability of the obesity prevention program

Networks come in a variety of forms and serve different purposes. Examples of community networks are presented in Table 2-1.

Table 2-1: Community Networks and their Typical Roles and Membership

Type of Network	Typical Role	Typical Membership
Multi-sector coalitions	Assemble partners for a specific purpose or to solve a particular problem. Members include all who are affected by the problem.	Representatives and resources from numerous issue areas (e.g., education, economic development, transportation, agriculture, health) and sectors (business, nonprofit, government)
Regional coalitions	Collaborate around a defined program of action to improve health in a specific geographic area (as large as one or more states, or as small as a metropolitan area)	Voluntary organizational members
Wellness councils	Act collectively to carry out efforts at specific sites (e.g., schools or worksites) to improve the health of people within that institution	Staff and employees (and in schools, the community members, family members, and students)
Community advisory boards	Formalize academic-community partnerships in community-based participatory research and represent community members in research activities	Representatives from regional organizations (for-profit, nonprofit, school, faith-based, government) as well as community members
Steering committees	Provide advice and guidance to those planning an intervention	Broad community representation

Engaging Stakeholders

There are many potential partners that can contribute to planning and implementing obesity prevention programs. Some suggested types of stakeholders that might be invited to take part in rural collaborations are provided in Table 2-2. For additional information on rural partners, see Identifying and Engaging Possible Partners in the Rural Community Health Toolkit.

Table 2-2: Examples of Potential Partners for Rural Obesity Prevention Programs

- Academic Institutions
- Area Health Education Centers
- Business Organizations
- Chamber of Commerce
- Charitable Groups
- Civic Events Groups
- Community Colleges
- Cultural Groups
- Disability/Special Needs Groups
- Education Groups
- Elderly Groups
- Elected Officials
- Environmental Groups
- Family Support Groups
- Fire Departments
- For-Profit Businesses
- Foundations
- Health Advocacy and Fitness Groups
- Heritage Groups
- Healthcare Providers
- Hospitals

- Libraries
- Media
- Men's Groups
- Mentoring Groups
- Neighborhood Block Clubs
- Neighborhood Groups
- Nonprofit Organizations
- Parks and Recreation Departments
- Police Departments
- Public Health Departments
- Recreation Groups
- Religious Groups
- Schools
- Service Clubs
- Social Groups
- Social Service Agencies
- Transit Authorities
- Universities
- USDA Cooperative Extension
- Women's Groups

Source: Discovering Community Power: A Guide to Mobilizing Local Assets and Your Organization's Capacity. Kretzmann, J. & McKnight, J.; Asset-Based Community Development Institute, School of Education and Social Policy; Northwestern University, 2005

Identifying Assets and Needs

The first step in planning a rural obesity prevention program is conducting a needs assessment. A needs assessment helps to identify available resources and appropriate plans for implementing them. For more information, see Conducting a Needs Assessment in the Rural Community Health Toolkit.

Another approach for identifying existing resources is asset mapping. Asset mapping is the process of cataloging resources such as individuals' skill sets, organizational resources, physical spaces, institutions, associations, and elements of the local economy. Asset mapping can help to:

- Identify community assets and strengths
- Ensure the intervention's relevance to community needs
- Obtain buy-in from the community
- Avoid duplication of existing efforts
- Identify creative opportunities to support healthy eating and physical activity

There is no single approach to preparing a community asset map. The convening organization may prepare and present a draft asset map to the members of the community network. Alternatively, all partner organizations may be involved in the process of asset mapping. Figure 2-1 provides a partial example of a map that can be used to link a planned program to community assets.

Figure 2-1: A Sample Community Asset Map

Examples of Community Assets that Might be Included in an Asset Map

Associations:
Animal care groups
Anti-crime groups
Block clubs
Business organizations
Charitable groups
Civic event groups
Special needs groups
Education groups
Elderly groups
Environmental groups

Physical Space:
Gardens
Parks
Playgrounds
Parking lots
Bike paths
Forest/forest preserves
Picnic areas
Campsites
Fishing spots
Duck ponds

Institutions:
Schools
Universities
Community colleges
Hospitals
Libraries
Social service agencies
Nonprofits
Museums
Fire departments
Media

Individuals:
Gifts, skills, capacities,
knowledge and traits of:
Youth
Older adults
Artists
TANF recipients
People with disabilities
Students
Parents
Entrepreneurs

Local Economy:
Business
Consumer expenditures
Merchants
Chamber of commerce
Business associations
Banks
Credit unions
Foundations
Institutional purchasing
power

Source: Discovering Community Power: A Guide to Mobilizing Local Assets and Your Organization's Capacity. Kretzmann, J. & McKnight, J.; Asset-Based Community Development Institute, School of Education and Social Policy; Northwestern University, 2005

A wide range of resources exist to help communities assess barriers to healthy eating and physical activity, as well assets to help overcome them. These resources are excellent guides for communities:

- **North Carolina's Eat Smart Move More Campaign**
  This campaign has compiled a collection of tools that can be used to inventory existing community resources and to promote physical activity and healthy eating. Resources are divided into programs and tools for the community, family, faith, preschool, school, after school, worksite, healthcare, and policy change.

- **The Community Toolbox: Chapter 3 – Developing a Plan for Assessing Community Needs and Resources**

Section of the University of Kansas Community Toolbox explaining why it is important to plan for and carry out an assessment of community needs and assets, and how to go about this task.

Setting Priorities

After conducting the needs assessment and asset mapping, implementers of rural obesity prevention programs should set priorities to take action on problems such as barriers to healthy eating and physical activity. For an overview of the methods that can be used, see Set Goals and Priorities in the Rural Community Health Toolkit.

Many formal approaches to priority setting include a role for an outside facilitator, such as a community healthcare provider, an individual from the public health department, or a researcher who partners with community members. One formal approach is Adapted Intervention Mapping (AIM).

Adapted Intervention Mapping (AIM)

AIM is a tool designed for use by partnerships between communities and universities. It provides a framework for planning and implementing programs to increase opportunities for physical activity and healthy eating. Critical elements of AIM include:

- Involvement of community members
- Emphasis on partnerships
- Identification of evidence-based practices
- Integration of theory and findings from literature

Using AIM, researchers identify evidence-based practices, which are then considered and ranked by community members.

A key step in the AIM process involves helping a community network decide which environment and policy changes to implement using available resources. This is done by ranking importance by changeability.

- **Importance**
  How important is an issue for affecting obesity in the community?
- **Changeability**
  How easy or difficult will it be to change the issue?

Table 2-3: Decision Matrix for Deciding which Environmental and Policy Changes are Desired

	More important	Less important
More changeable	High priority for intervention	Low priority except to motivate community organizing efforts ("Winnable battles")
Less changeable	Priority for innovative intervention; evaluation crucial	Not a priority

Source: Health Promotion Planning: An Educational and Ecological Approach, Third Edition
Green, L.W. & Kreuter, M.W.; Mayfield Publishing Company, Mountain View, CA. 1999

An example of how AIM has been applied in school settings is outlined in Figure 2-2, and can be adapted for other settings.

Figure 2-2: Using AIM to Choose Targets for Change (School Setting)

1. AIM facilitators share national dietary and physical activity guidelines and recommendations;
2. Network members brainstorms changes to help children achieve daily recommendations;
3. AIM facilitators share best practices information from the literature;
4. Network members individually rate each of the proposed changes based on importance (is this evidence-based strategy known to increase activity/healthy eating, will it affect the majority of students on the majority of school days) and changeability (do we have the resources, will, and capacity to do this?)
5. Brainstorm ideas and plot them on a whiteboard with four quadrants:
    a. High importance/low changeability
    b. High importance/high changeability
    c. Low importance/high changeability
    d. Low importance/low changeability
6. Discuss the results and have each network member vote on his or her top priorities (e.g., changes related to healthy eating, changes related to physical activity).
7. Network members select healthy eating and physical activity changes to implement, based on the environmental/policy changes receiving the most votes.

Source: Description of the Adapted Intervention Mapping (AIM) Process
Colorado School of Public Health; Rocky Mountain Prevention Research Center

Planning Approaches

Guidelines for using the Adapted Intervention Mapping (AIM) tool for planning an intervention are provided below. See Setting Priorities for a description of AIM.

Alternative planning approaches are available to help rural community networks identify evidence-based interventions. See the following modules for information on these approaches:

- Module 3: Targeting Audiences
- Module 5: Addressing Obesity
- Module 7: Prevention Clearinghouse

Role of the Community Task Force

The AIM process relies on regular meetings of a community task force. The task force is comprised of network members that are stakeholders in the target community. For example, members for a school-based obesity intervention may include representatives from the school administration, teachers, food-service staff, and parents. The responsibilities of the task force may include:

- Participating in the planning process
- Attending monthly planning meetings
- Completing project-related work outside of meetings
- Making decisions about desired interventions and implementation methods
- Participating in interviews and surveys
- Maintaining a program notebook to document the planning process
- Eventually continuing the intervention process without outside facilitation

Role of the Academic Researcher/Facilitator

AIM is facilitated by researchers who:

- Organize and lead the task force at each meeting
- Accomplish technical aspects of intervention
- Develop products for the task force members to review
- Present relevant research to the task force

Steps in Planning Interventions

During regular meetings, task force members contribute their skills and knowledge to plan the intervention. Figure 2-4 presents an overview of key planning steps to be accomplished through task force meetings.

Table 2-4: Roles of the Task Force and Academic Facilitator in the AIM process

Process	Task Force Member Roles	Facilitator Roles
Map assets and assess needs	Take photographs of surroundings Discuss behaviors and factors that may contribute to obesity in the community Discuss behaviors and factors that may contribute to healthy behaviors	
Decide which environmental and policy changes are desired	Use information generated to brainstorm potential interventions Complete a changeability worksheet (Table 2-1) to rank change targets Vote on which changes to implement	Share national guidelines, recommendations and best practices
Review logistics	Who can make this change happen? What are steps to enact the change? What barriers might be encountered? How can task members act and change environments to implement the change?	
Arrange subcommittees	Divide into subcommittees Set timelines. May conduct pilot tests of the intervention	
Discuss program evaluation		Identify process and outcome evaluation design and measures Anticipate the data desired by funders and stakeholders
Discuss program adoption	Discuss how to generate knowledge and enthusiasm for the intervention	

Ensuring Effectiveness

The factors that may increase the likelihood that community networks are effective in bringing about change include:

- Clear vision and mission
- Action planning targeting specific community changes
- Consistent, strong leadership
- Staff or others who can dedicate time and effort to following up on action plans
- Documentation of results and outcomes

Community networks are also more likely to be effective when they offer:

- **Social Value**
  Can be created by networks when they combine their resources and efforts to improve the lives of individuals or society as a whole.
- **Common goals**
  When network members share the same goals, they are more likely to experience a shared sense of mission that will help them work together to improve health.
- **Rewards and incentives**
  The convening organization must consider what will motivate different stakeholders to actively participate in the network. For example, businesses may be motivated to improve community health by cost savings due to a healthy workforce.
- **Comprehensive, coordinated approaches**
  Use frameworks to guide networks through a systematic process of planning to improve population health. Examples include Adapted Intervention Mapping (AIM) and others outlined in the 2002 report, The Future of the Public's Health in the 21st Century.

An in-depth discussion on building effective programs can be found in the November 2010 issue of Preventing Chronic Disease, from the Center for Disease Control and Prevention.

Resources for Starting an Obesity Prevention Program

Information in this module was developed, in part, using these resources:

Community Advisory Boards in Community-Based Participatory Research: A Synthesis of Best Processes
Document
Describes the best methods to form, operate, and maintain Community Advisory Boards (CABs) for community-based participatory research (CBPR).
Author(s): Newman, S., Andrews, J., Magwood, G., et al.
Citation: Preventing Chronic Disease, 8(3), A70
Organization(s): Centers for Disease Control and Prevention
Date: 5/2011

Developing a Parent-Centered Obesity Prevention Program for 4-H Families: Implications for Extension Family Programming
Document
Provides best practices for developing obesity prevention programs for parents of 4-H youth in rural states. Covers developing interdisciplinary teams, gathering data from focus groups, and using evaluations.
Author(s): Benke, C., Bailey, S., Eldridge, G., et al.
Citation: Journal of Extension, 51(3)
Date: 6/2013

Discovering Community Power: A Guide to Mobilizing Local Assets and Your Organization's Capacity
Document
Provides information to assist organizations in strengthening community based projects, activities, and proposals.
Author(s): Kretzmann, J., McKnight, J. Dobrowolski, S., & Puntenney, D.
Organization(s): Asset-Based Community Development Institute, School of Education and Social Policy, Northwestern University
Date: 2005

Focusing on Solid Partnerships Across Multiple Sectors for Population Health Improvement
Document
Offers guidance on forming cross-sector partnerships to leverage existing community expertise and resources.
Author(s): Bailey, S.
Citation: Preventing Chronic Disease, 7(6), A115
Organization(s): Centers for Disease Control and Prevention
Date: 11/2010

An Innovative Approach to Addressing Childhood Obesity: A Knowledge-Based Infrastructure for Supporting Multi-Stakeholder Partnership Decision-Making in Quebec, Canada

Document

Describes the development of tools to support decision-making within multi-stakeholder partnership (MSP).

Author(s): Addy, N., Shaban-Nejad, A., Buckeridge, D., & Dubé, L.

Citation: International Journal of Environmental Research and Public Health, 12(2), 1314-1333

Date: 2015

School Wellness Committee Toolkit

Document

Provides guidance to school wellness councils in planning and implementing action plans to improve health.

Organization(s): Alliance for a Healthier Generation

Date: 2013

Statement of Policy: Comprehensive Obesity Prevention

Document

Outlines recommendations for obesity prevention, articulates the role of state and local health departments, and offer specific obesity prevention strategies.

Organization(s): National Association of County and City Health Officials (NACCHO)

Date: 3/2010

Module 3: Targeting Audiences

It is important to think about the needs of the target population when developing your obesity prevention program because this affects the setting, strategies, and required resources for the intervention.

Identifying an appropriate intervention by target population instead of by setting is useful because similar intervention models can be used in different settings. In addition, individuals are influenced by their social and physical surroundings (the environment) which can affect whether or not they become overweight or obese. Therefore, obesity prevention programs should also address individual, environmental, systems, and policy levels.

Focusing on prevention approaches can decrease the number of new cases of obesity, lower the number of established cases in the population, and decrease disability among those who are already obese.

In this module:

- Defining audiences
- Choosing approaches
- Environmental factors
- Resources for targeting audiences

Defining Audiences

Developing an approach that is tailored to the target audience requires an understanding of the target population's characteristics. Target populations can be classified in a number of ways, such as:

- Race/ethnicity
- Literacy level
- Health status
- Level of risk for overweight or obesity

It may be helpful to classify interventions by target audience because similar intervention models can be implemented in different settings. For example, an intervention to provide behavioral and lifestyle coaching and counseling to overweight individuals could be carried out in a clinic, but could also take place in a setting such as a USDA Cooperative Extension Service office.

Table 3-1: Types of Obesity Prevention Interventions, Organized by Target Audience

Indicated	Selective	Universal
Prevention interventions targeted to **high-risk individuals** identified as having minimal but detectable amount of excess weight that foreshadows obesity.	Prevention interventions directed toward a **subgroup of the population** whose risk of developing obesity is above average or high.	Prevention interventions designed to reach **everyone in the eligible population**

Source: Weighing the Options: Criteria for Evaluating Weight-management Programs; Edited by P.R. Thomas, Washington, D.C., National Academy Press, 1995

Choosing Approaches

The following examples illustrate how interventions designed for a single setting, such as schools, can differ based on the targeted individuals and groups.

High-risk Individuals

Individuals at greater risk of becoming obese, such as those who are overweight.

- National Association of School Nurses, SCOPE program
  School nurses receive training in the most recent assessment techniques for high risk students.
  Examples of organizations that have succeeded in reaching high risk individuals include:
  - Community health clinics
  - Regional offices of the USDA Cooperative Extension Service
  - Area Health Education Centers (AHEC)
  - Tribal councils
  - School-based health centers

Sub-groups of the Population that are at High Risk

Certain groups at greater risk of obesity and associated conditions than the rest of the population.

- Cherokee Choices: A Diabetes Prevention Program for American Indians
  A Native American community with high rates of childhood obesity and Type-2 diabetes implemented a school-based program to improve well-being and reduce the risk of diabetes. Paid community mentors worked with students and school staff to: increase awareness, promote physical activity, enhance knowledge of nutrition, teach stress-management skills, and develop teachers as role models.

Entire Population

All individuals within a population.

- California Project LEAN: Leaders Encouraging Activity and Nutrition
  A school district and its board work to enact policies elevating the importance of physical activity and physical education before, during, and after school. Interventions targeting entire populations differ from those targeting high-risk individuals or sub-groups in that they are designed to change policies, systems, and environments (PSE) rather than behavior. A mix of strategies is needed. While many evidence-based models target individual-level change, they have a high cost for every person reached.

Environmental Factors

Social and physical environments shape actions and health-related choices of target audiences. Family relationships, neighborhood characteristics, community networks and institutions, regulations, and policies all play a role. An "ecological approach" to obesity examines how these contexts influence one another and helps map out strategies to address problems at each level.

To prevent obesity, barriers to healthy eating and physical activity must be addressed to make the healthy choice the easy choice. Complementary strategies can shift social norms to support healthy behaviors and help people make healthy choices. These strategies should:

- Increase individual knowledge and skills
- Change organizational practices
- Educate community and healthcare service providers
- Build coalitions and networks
- Foster policy and environmental change

Social-ecological Model

Many factors contribute to overweight and obesity. The social-ecological model describes factors on the individual, social, community, and societal levels that contribute to poor health outcomes. Figure 3-1 addresses specific assets and barriers to obesity prevention efforts in a rural context. It shows that rates of overweight and obesity in the population are shaped by individual and environmental factors as well as ecological contexts that unfold over the life course.

Figure 3-1: Social-ecological model of obesity prevention in a rural context

Conceptual Model for Studying Development, Implementation and Sustainability of Obesity Prevention Programs in a Rural Context

Rural Environment

Rural Assets
- Community capacity and coherence
- Leadership
- Existing networks for collaboration

Rural Barriers
- Environmental
- Socioeconomic
- Access
  - Food
  - Physical activity
  - Health care
  - Transportation

Broad social, economic, cultural, health, and environmental conditions and policies at the global, national, state, and local levels

Living and working conditions

Social, family and community networks

Individual behavior

Innate individual traits: age, sex, race, and biological factors

Across life course

Interventions
- Policies
- Programs
- Information

Outcomes
- Behavioral outcomes
- Risk factors
- Associated diseases/conditions
- Policies, systems, and environmental outcomes
- Health-related quality of life
- Health equity

Assessment, Monitoring, Evaluation & Dissemination

Source: The Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020: Phase I Report: Recommendations for the Framework and Format of Healthy People 2020, U.S. Department of Health and Human Services, October 28, 2008

Resources for Targeting Audiences

Information in this module was developed, in part, using these resources:

Area Health Education Centers: A Role in Enhancing the Rural Practice Environment
Document
Assesses the role of Area Health Education Centers (AHECs) in supporting the practices of rural healthcare providers.
Author(s): Brown, J.G.
Organization(s): Office of the Inspector General
Date: 5/1995

Bridging the Evidence Gap in Obesity Prevention: A Framework to Inform Decision Making
Document
Describes how a systems approach can be used to understand and conduct research on obesity.
Author(s): Kumanyika, S., Parker, L., & Sim, L.
Organization(s): Institute of Medicine, National Academies Press
Date: 2010

The Future of the Public's Health in the 21st Century
Document
Reviews recent achievements, hidden vulnerabilities, and other complex issues that may affect the health of Americans in the future.
Organization(s): Institute of Medicine, National Academies Press
Date: 2003

Population-Based Prevention of Obesity: The Need for Comprehensive Promotion of Healthful Eating, Physical Activity, and Energy Balance
Document
Discusses population-based approaches, special considerations, and environmental and policy approaches, among other topics, on obesity prevention.
Author(s): Kumanyika, S., Obarzanek, E., Stettler, N., et al.
Citation: Circulation, 118(4), 428-464
Organization(s): American Heart Association
Date: 7/2008

The Spectrum of Prevention: Developing a Comprehensive Approach to Injury Prevention
Document
Describes the Spectrum of Prevention, a framework comprised of six action levels for preventing injury and promoting health.
Author(s): Cohen, L. & Swift, S.
Citation: Injury Prevention, 5, 203-207
Date: 1999

Module 4: Developing Interventions

Because evidence-based programs are rigorously studied and evaluated, communities implementing them can tell funders the program is likely to be effective if it is implemented correctly. This assumes the chosen program was developed under similar conditions with an appropriate audience and follows the same procedures.

Evidence-based programs can be adapted, but changes must be made carefully to avoid eliminating aspects of the program that are responsible for strong results. Once you identify an appropriate program for your community, it is important to consult existing resources to guide the implementation and adaptation of the intervention.

For a broad overview of rural program development, see Developing a Rural Community Health Program in the Rural Community Health Toolkit.

In this module:

- Choosing interventions
- Adapting interventions
- Meeting unique community needs
- Planning interventions
- Resources for developing interventions

Choosing Interventions

When selecting a program, it is important to involve a steering committee made up of representatives of the target audience. This committee can offer guidance on which issues have the highest priority. The chosen intervention should be aligned with these issues. The committee can also play a central role in selecting, adapting, and guiding implementation of the intervention approach.

Finding an appropriate intervention program can bring several challenges, due to both the nature of obesity, and the challenges of identifying evidence-based practices appropriate for rural settings.

- **Challenges related to the nature of obesity**
    - Cross-disciplinary literature base
    - Differing study designs that are hard to compare
    - A long timeline for measuring prevention
    - Difficulty of maintaining weight loss
- **Challenges related to practice in rural settings**
    - Published rural studies often focus on specific rural regions or subpopulations
    - Few interventions have been tested in rural settings
    - Evidence produced through systematic reviews is often presented in "generalizable" terms, and is not context-specific

Factors in Choosing Interventions

Rural communities need to invest time and effort in choosing an intervention strategy. Decisions about an intervention approach are often based on pragmatic factors such as the guidance of peers or resource availability. When making a decision, communities should consider several factors:

- **Resources**
  Communities need to have the right resources available to support the intervention. Organizations need to be able to cover costs such as annual licensing fees, training, program materials, and evaluation and tracking.

- **Existing community capital and networks**
  Many rural communities already have networks that can be used to plan a comprehensive approach to preventing and addressing obesity. Groups that have been working together for years may be best prepared to implement evidence-based interventions, as they already understand community assets and needs, and can quickly mobilize resources.

- **Ecological level targeted**
  Approaches vary based on what is being targeted, whether it is individual, community, or organizational behaviors, or systems and policy. Individual behavior happens within the social and physical context in which people live their lives. Comprehensive approaches that address multiple "levels" of these contexts at once are more likely to be effective. It should be noted that there is more evidence for approaches addressing individual behavior than policy, systems, or environmental change.

- **Population needs**
  Rather than simply relying on findings from other projects, rural organizations may consult other organizations serving similar populations. These organizations can offer guidance and insight on the best way to engage residents of the community, or for model curricula and materials. Issues related to population needs can include availability of reliable information, access to healthy foods and physical activity.

Finding Programs that Fit

Rural communities can take specific steps to identify evidence-based, effective, or promising practices to help accomplish their goals. Process steps include:

- Define goals and objectives for the planned intervention
- Match goals and objectives of the evidence-based or promising practice model when possible
- Analyze the extent to which the context (e.g., community structure and values, resources) and target audience characteristics (e.g., language, socioeconomic status, culture) are similar to those of the model
- Review program materials and implementation protocols for the model interventions
- Speak with the project team to gain insight into whether a model intervention can be successfully replicated in a new community

According to the University of Wisconsin-Madison and the University of Wisconsin Extension Service, questions to ask when choosing an appropriate program can be categorized under program match, program quality, and organizational resources.

- **Program match**
  - How well do program goals and objectives match those that the community hopes to achieve?
  - Is the program "strong enough" (e.g., of sufficient length and intensity) to be effective with this group of participants?
  - Are potential participants willing and able to make the time commitment necessary to take part in the program?

- Has the program been shown to be effective in a target population similar to yours?
- To what extent might you need to adapt this program to make it appropriate for your community?
- Does the program allow for adaptation?

- **Program quality**
  - Has the intervention itself been shown to be effective?
  - Is the program listed on a respected registry of evidence-based programs? If so, what rating has it received?
  - For what audiences has the program been found to work?
  - Is there information available about what program adaptations are acceptable if it is not implemented exactly as designed?
  - Is adaptation assistance available from the developer?
  - What is the extent and quality of training offered by the developers?
  - Do the program's designers offer technical assistance? Is there a charge for this assistance?

- **Organizational resources**
  - What are the training, curriculum, and implementation costs of the program?
  - Can your community afford to implement this program, both now and in the future?
  - Does your staff have the capacity and training to implement this program? Do they have the recommended or required qualifications to implement it?
  - Is your staff willing to make the needed time commitment to implement this program?
  - What is the likelihood that this program will be sustained?
  - Are your community partners supportive of your implementation of this program?

More guidelines on these factors can be found in this article from the University of Wisconsin Extension Service.

Adapting Interventions

Even if an intervention is evidence-based, it may not meet a rural community's particular needs. When looking for the right obesity intervention, it's important to consider audience factors such as:

- Culture
- Literacy
- Learning style
- Setting of the intervention

It is not always possible to find the right match for all these components. Some model programs may include activities that don't match the culture of the participants. In these cases, it may be necessary to evaluate the source of the mismatch and what the effect may be. Following that evaluation, an existing model might be adapted to fit the target population.

For a detailed overview of changes and adaptations for rural programs, see Considerations When Adapting a Program in the Rural Community Health Toolkit.

Table 5-1: Sources and Effects of Program Mismatches

Source of Mismatch	Actual or Potential Mismatch Effect
Group Characteristics	
• Language	Participants do not understand program content
• Ethnicity	Conflicts in belief, values, and/or norms
• Socioeconomic status	Insufficient social resources and culturally different life experiences
• Differences between urban and rural communities	Logistical and environmental barriers affecting participation in program activities
Risk Factors	
• Number and severity	Insufficient effect on multiple or most severe risk factors
Program Delivery Staff	
• Type of staff	Staff may not have the skills and knowledge to successfully implement the program
• Staff cultural competence	Limited awareness of, or insensitivity to, cultural issues
Administrative/Community Factors	
• Community consultation	Absence of community buy-in, community resistance or disinterest, low participation
• Community readiness	Absence of infrastructure and organization to address problems and implement the program

Source: The Cultural Adaptation of Prevention Interventions: Resolving Tensions between Fidelity and Fit. Castro, F.G., Barrera, M., & Martinez, C.R.; Prevention Science, 5(1), March 2004

Meeting Unique Community Needs

Evidence-based interventions offer communities some assurance their investment of resources will produce results if the program is implemented under the right conditions, with an appropriate audience, and following the right procedures. To get those results, the intervention must be implemented with fidelity.

Fidelity is how closely a program or curriculum mirrors the original design that provided evidence of its effectiveness. Program fidelity can be measured by:

- **Delivery method:** Is the program implemented as it was designed?
- **Dosage:** How many sessions are held, how long do they last, how often are they held?
- **Setting:** Clinic? School? Community?
- **Materials used:** Handouts, training materials, videos
- **Target population:** Who participated in the program when it was tested?
- **Provider qualifications:** What were the qualifications of the providers?
- **Provider training:** What kind of training did the people implementing the program receive?

Maintaining Program Effectiveness

Staying true to key elements of a program model is essential to replicate results, with all protocols and guidelines implemented as intended. Program fidelity can be monitored by tracking progress on process objectives, reviewing costs, and monitoring time staff spends on implementation. When adapting a program, these strategies should be used to maintain program effectiveness:

- Select a program that meets your needs
- Ensure that staff is committed to program fidelity
- Contact the program developer
- Determine key elements that make the program effective
- Assess the need for cultural adaptation
- Stay true to the duration and intensity of the original program
- Avoid program drift
- Stay up-to-date with program revisions and new materials

You can learn more about each of these steps on the University of Wisconsin Extension Service website.

Adapting Models to be Culturally Appropriate

A common reason for adapting a model is to fit the cultural needs of the target population. Current research suggests that effective programming for participants from multiple cultural backgrounds can be done with proven, culture-generic programs.

It is important to find balance between implementing a program as it was designed and ensuring it is relevant to the target population. Adapting models must be done carefully to avoid removing elements responsible for positive results. Adaptations have been researched to see what changes are and are not acceptable to ensure programs remain effective. These changes can be made on a surface level or deep level.

- **Surface level adaptations**

  Tailoring of language, visuals, examples, scenarios, and activities used during the intervention. These adaptations generally will not reduce program effectiveness.

- **Deep level adaptations**

  Altering program structure and goals, which have a potential to reduce program effectiveness. The need for deep level adaptations may also mean the program does not match the intended audience and other programs may be a better fit.

- **Acceptable changes**

  Making these changes will not alter the theory and internal logic of the intervention and ensure critical steps contributing to the intervention effectiveness are maintained. They include:
    o Translating language or modifying vocabulary
    o Replacing cultural references
    o Modifying some aspects of activities
    o Adding relevant evidence-based content to make the program more appealing

- **Unacceptable changes**

  These changes make a substantial change to a program's potential effectiveness:
    o Reducing number or length of program sessions
    o Lowering participant engagement
    o Eliminating key messages or skills learned
    o Removing topics
    o Using inadequately trained staff
    o Using fewer staff members than recommended.

The Society for Public Health Education (SOPHE) has also highlighted elements of interventions that can and cannot be modified when dealing with program fidelity:

- **Aspects that can be modified**
  - Names
  - Pictures/testimonials
  - Wording
  - Location
  - Incentives
  - Timeline

- **Aspects that cannot be modified**
  - Health topic
  - Deletion of key components
  - Insertion of key components
  - Theoretical foundation (e.g. behavior change theory)

For more information on modifications to interventions, please see The Cultural Adaptation of Prevention Interventions: Resolving Tensions between Fidelity and Fit, Castro, F.G., Barrera, M., & Martinez, C.; Prevention Science, 5(1), 41-45, March 2004.

Planning Interventions

A wide range of tools and resources have been created to guide communities through the process of implementing evidence-based interventions. Some of these specifically address the issue of planning to prevent and address obesity. A collection of high-quality resources is provided in the table below.

Table 5-2: Resources to Guide Planning for Interventions Addressing Obesity and Its Risk Factors

Source/What it Is	Strengths and Limitations
Cancer Control P.L.A.N.E.T Provides easy access to resources that can facilitate the transfer of evidence-based research findings into practice. Provides access to data and resources that can help planners, program staff, and researchers to design, implement, and evaluate evidence-based cancer control programs, including those addressing population-based approaches.	**Strengths** • Includes detailed information for planning interventions to address diet/nutrition and physical activity • Assists in identifying regional partners • Provides direct linkages to research-tested programs **Limitations** • Not necessarily tailored to needs of rural areas
Let's Move! Toolkit for Faith-Based and Community Organizations Designed to help faith-based and neighborhood organizations transform neighborhoods, engage communities, and promote healthy choices.	**Strengths** • Offers specific strategies and resources that faith-based institutions can use to prevent and address obesity in their communities • Faith-based institutions play a vital role in meeting the needs of rural communities **Limitations** • This toolkit is not specifically tailored to the needs of rural areas
Integrating Primary Care Practices and Community-based Resources to Manage Obesity: A Bridge-Building Toolkit for Rural Primary Care Practices Designed to help rural primary care practices create linkages that connect patients to community-based resources that can help them maintain or achieve a healthy weight.	**Strengths** • Toolkit is designed for rural settings • Establishes five task-oriented steps to guide you through the development of your own program, and includes templates for all materials **Limitations** • Toolkit method stresses that healthcare clinic must have strong, preexisting connections with and investment in the community

Resources for Developing Interventions

Information in this module was developed, in part, using these resources:

[Accelerating Evidence Reviews and Broadening Evidence Standards to Identify Effective, Promising, and Emerging Policy and Environmental Strategies for Prevention of Childhood Obesity](#)
Document
Offers a framework, criteria, and process developed from existing expert classification systems to assess the evidence of strategies to increase health eating and active living and prevent childhood obesity. Identifies evidence gaps and methods to increase evidence making it available to inform policy and support effective obesity prevention.
Author(s): Brennan, L., Castro, S., Brownson, D., et al.
Citation: Annual Review of Public Health; 32, 199-223
Date: 1/2011

[Adapting Evidence-Based Programs to New Contexts: What Needs to be Changed?](#)
Document
Identifies six key areas for consideration when adapting school-based programs in rural areas.
Author(s): Smith, E. & Caldwell, L.
Citation: Journal of Rural Health, 23, Supplement, 37-41
Date: 1/2008

[The Cultural Adaptation of Prevention Interventions: Resolving Tensions Between Fidelity and Fit](#)
Document
Examines key issues, concepts, and strategies related to program fidelity when using a community-based participatory research approach for adapting a community intervention.
Author(s): Castro, G., Barrera, M., & Martinez, R.
Citation: Prevention Science, 5(1), 41-45
Date: 3/2004

[Effectiveness and Implementation of An Obesity Prevention Intervention: the HeLP-her Rural Cluster Randomised Controlled Trial](#)
Document
Describes an evaluation plan for assessing efficacy and implementation of the cluster randomized trial known as the Healthy Lifestyle Program for women living in small rural communities, or HeLP-her Rural trial, which adapted an evidence-based intervention for use in rural communities.
Author(s): Lombard, C., Harrison, C., Kozica, S., et al.
Citation: BMC Public Health, 14, 608
Date: 2014

[Evaluating the Impact of Health Promotion Programs: Using the RE-AIM Framework to Form Summary Measures for Decision Making Involving Complex Issues](#)
Document
Discusses metrics of Reach, Effectiveness, Adoption, Implementation and Maintenance (RE-AIM) that uses multiple indicators of internal and external dimensions to estimate overall intervention impact.
Author(s): Glasgow, E., Klesges, M., Dzewaltowski, A., et al.
Citation: Health Education Research; 21(5), 688-694
Date: 10/2006

[Evidence-based Public Health: A Fundamental Concept for Public Health Practice](#)
Document
Reviews the key components of evidence-based public health (EBPH), addressing the use of scientific evidence, data and information systems, frameworks, the community, evaluation, and dissemination.
Author(s): Brownson, C., Fielding, F., & Maylahn, M.
Citation: Annual Review of Public Health, 30, 175-201
Date: 1/2009

[Guidelines for Selecting an Evidence-Based Program: Balancing Community Needs, Program Quality, and Organizational Resources](#)
Document
Provides tools for assessing the appropriateness of an evidence-based program for implementation in a community. Discusses how selection requires balancing priorities based on program match, program quality and organizational resources.
Author(s): Small, A., Cooney, M., Eastman, G., & O'Connor, C.
Organization(s): University of Wisconsin-Madison, University of Wisconsin-Extension
Date: 3/2007

[Obesity Treatment through Behavioral Coaching](#)
Website
Lists obesity treatment interventions that produce sizable, sustained effects on important life outcomes.
Organization(s): Social Programs That Work

[The Community Guide: Obesity](#)
Website
Summarizes and reviews interventions in the Community Guide and Community Preventive Services Task Force findings.
Organization(s): Community Preventive Services Task Force

[Program Fidelity and Adaptation: Meeting Local Needs Without Compromising Program Effectiveness](#)

Document

An overview of the types and effects of implementation changes that are frequently made to programs, and suggests strategies for ensuring effectiveness and appeal of the program for local participants.

Author(s): O'Connor, C., Small, S., & Cooney, S.

Organization(s): University of Wisconsin-Madison, University of Wisconsin-Extension

Date: 4/2007

[Recommended Community Strategies and Measurements to Prevent Obesity in the United States: Implementation and Measurement Guide](#)
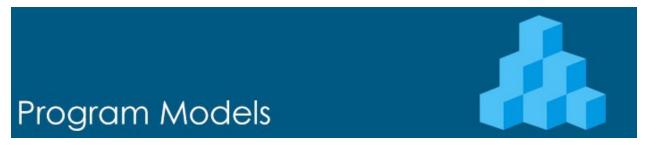
Manual

Lists strategies for improving nutrition and active living to reverse the obesity epidemic in the U.S. Author(s): Keener, D., Goodman, K., & Lowry, A.

Organization(s): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention

Date: 7/2009

Module 5: Addressing Obesity in Different Settings

Program Models

There is no one-size-fits-all approach for implementing programs to prevent and address overweight and obesity. Choosing a program requires communities to assess their needs and resources, find an appropriate model program, and then adjust that model to fit the community. (See Module 4: Developing Interventions)

This module presents interventions that rural communities can explore, select, adapt, and/or modify as needed. The interventions are organized by three settings: clinics, schools, and communities. However, many of these models can be implemented or adapted for use in a variety of settings. Model summaries include information about:

To learn how to identify and adapt interventions, see Developing a Rural Community Health Program in the Rural Community Health Toolkit.

- Strength of existing evidence of effectiveness
- Whether programs target individual-level behavior change, or policy, systems, and environment (PSE) changes
- Whether they have been tested in a rural setting
- Links to additional information

In this module:

- Evidence of effectiveness
- Models for healthcare providers
- Models for schools
- Models for communities

Evidence of Effectiveness

Intervention strategy examples are sorted based on the strength of evidence for their effectiveness. For the strongest level of evidence ("evidence-based" interventions), examples of commonly used strategies that are rated as having "insufficient evidence" are included in some cases to show the stringency of the evidence-based standard.

The lists are not comprehensive, and the strength of the evidence varies. For interventions that lack evidence, it does not mean they do not work, but that additional research is needed to determine whether or not they are effective.

Communities that are considering carrying out a program to prevent or address obesity need to be aware of tradeoffs associated with the strategies from each level of evidence:

- **Evidence-based strategies; strongest evidence**
  These intervention approaches have met the most rigorous standards of evidence. Due to the stringency of these standards, many approaches that may have merit do not meet them. The number and range of evidence-based interventions for addressing obesity is extremely small.

- **Effective strategies; strong evidence**
  These approaches have also been tested in high quality studies. However, it is not always possible to locate effective strategies that have been tested in rural settings, or with special populations such as specific racial and ethnic minority groups that may be concentrated in rural areas.

- **Promising and emerging strategies**
  These interventions may employ innovative strategies or target populations that have not yet been reached. However, evidence of the effectiveness of the strategy is likely to be limited.

Individual and Policy, Systems, and Environmental (PSE) Interventions
Interventions in this module represent two approaches to addressing obesity. The first type seeks to change the behavior of individuals. The second type addresses social and physical environments (policy, systems, and environmental—or PSE-level change). To clarify the overall approach of the interventions, each one is labeled as targeting either individual-level and/or PSE-level changes:

- **Individual change**
  Seeks to help individuals reach or maintain a healthy weight by balancing calories taken in through food and calories expended by physical activity. Interventions assist individuals in adopting healthy behaviors like healthy eating and physical activity. While important, such programs have a high per-person cost.

- **Policy, Systems, and Environmental (PSE)**
  Seeks to help populations maintain healthy weights by making the healthy choice the easy choice. Helps entire populations adopt a healthier lifestyle target PSE-level change. PSE-approaches may use resources more efficiently, but there is less evidence available for their effectiveness.

Testing of Interventions in a Rural Context

Most interventions tested in rural communities target individual change. Few programs targeting PSE changes have been tested in rural communities. Rural practitioners who wish to address environmental barriers to healthy eating and physical activity may need to look at promising or emerging strategies for guidance. More PSE approach models have been tested in school and community settings than in clinics.

How Can Rural Healthcare Providers Address Obesity?

Provider-oriented interventions use methods or techniques that directly engage a healthcare professional or a team of professionals to address overweight and obesity. In rural communities, these interventions can provide an ongoing source of support, guidance, and accountability for behavior change for those who are overweight or obese. The reach of interventions can be increased by targeting patient populations at increased risk of overweight and obesity, or who are experiencing associated health problems such as diabetes, metabolic syndrome, or cardiovascular disease. Additionally, pediatricians can play an important role in the primary prevention of childhood obesity.

Healthcare providers can help patients receive ongoing support for behavior change by linking with community-based organizations. Broad types of interventions that can take place in clinical settings include those oriented toward providers, and those oriented towards patients.

Patient-oriented interventions use techniques such as psychological, lifestyle, or behavioral counseling. Such interventions can be adapted to either a clinical or a community-based setting. In clinical settings, they are generally designed to address one person at a time to achieve individual-level changes.

Many rural counties are designated as Health Professional Shortage Areas, where there is a shortage of primary medical care. Rural clinics are an important setting for early detection and treatment of obesity. Because many have extremely limited resources, it is important for them to choose tested and effective strategies to deliver positive results.

Models for Health Providers

- Evidence-based interventions
- Effective interventions
- Promising interventions
- Emerging interventions

Evidence-Based Interventions for Healthcare Providers

Interventions identified in published systematic reviews, syntheses, or meta-analyses as producing significant, positive health or behavioral outcomes and/or intermediate policy, environmental, or economic impacts based on a structured review of published high-quality, peer-reviewed studies and evaluation reports.

Provider-Oriented Interventions

- **Intervention Type:** Obesity: Multicomponent Provider Interventions
  Source: U.S. Community Preventive Services Task Force
  Change type: Individual level
  Synopsis: According to the Task Force, there is insufficient evidence to determine the effectiveness of a range of provider-oriented interventions to prevent and/or reduce overweight and obesity. Specific strategies cited as having insufficient evidence include: provider education; provider feedback; provider reminders; provider education with a client intervention; multi-component provider interventions; and multicomponent provider interventions with a client intervention. Until better evidence exists for provider-oriented obesity interventions, none of these approaches can be defined as evidence-based.

Patient-Oriented Interventions

- **Intervention type:** Physical Activity: Individually Adapted Health Behavior Change Programs
  Source: U.S. Community Preventive Services Task Force
  Change type: Individual level
  Description: The programs are tailored to each individual's interests, preferences, and readiness for change. Skills taught include: goal-setting and self-monitoring; building social support for new behaviors; behavioral reinforcement through self-reward and positive self-talk; structured problem solving to maintain behavior change; and prevention of relapse into sedentary behavior.

- **Intervention type:** Interventions for Treating Obesity in Children
  Source: The Cochrane Collaboration
  Change type: Individual level
  Description: Quality data is limited to recommend one obesity treatment program for children and adolescents over another. However, evidence shows that, compared to standard care or self-help, combined behavioral lifestyle interventions can more effectively reduce overweight in children and adolescents.

Effective Interventions for Healthcare Providers

Interventions demonstrated in published high-quality, peer-reviewed studies and evaluation reports to produce significant positive health or behavioral outcomes, and policy, environment, or economic impacts.

- **Program name:** Weight-Wise
  Change type: Individual
  Description: Behavioral weight management program to help women lose weight safely by moderately restricting calories, improving healthy eating behaviors, increasing physical activity, and self-monitoring behaviors. An adaptation of the Diabetes Prevention Program, which has strong evidence of effectiveness.
  Demonstrated Success
    - Audience tested: Low-income, midlife women who are overweight
    - Compared to controls, participants in intervention group lost an additional 9.5 pounds; over half lost 8 or more pounds
    - Lower cost per participant than Diabetes Prevention Program

- **Program name:** A New Leaf… Choices for Healthy Living
  Change type: Individual
  Description: Structured assessment and counseling tool emphasizing practical strategies for making changes in dietary and physical activity behaviors. Can be used to prevent and treat cardiovascular disease, diabetes, obesity, and other chronic diseases.
  Demonstrated Success
    - Audiences tested: Low income, women, men, low literacy, Spanish speaking
    - In the literature since 1999, and precursor, Food for Heart, since 1992; Both tested in numerous randomized control trials
    - Increased fruit and vegetable intake and physical activity measured by self-report and accelerometer

- **Program name:** Baby-Friendly Hospital Initiative (BFHI)
  Change type: Individual; Policy, Systems, and Environmental (PSE)
  Description: Hospital policies and procedures to support optimal breastfeeding practices. Provides education materials, lactation support; breastfeeding support groups, peer counselor relationships, telephone support, written policies, and hospital staff trainings.
  Demonstrated Success
    - Audiences tested: Patients at Boston Medical Center (program implementation site). Predominantly low income, Black
    - Peer-reviewed articles examined effect on breastfeeding initiation and exclusivity, sustained breastfeeding initiation, and breastfeeding duration rates at six months of age
    - Positive outcomes found for all listed variables

Promising Interventions for Healthcare Providers

Interventions showing meaningful, plausible positive health or behavioral outcomes, and policy, environment, or economic impacts based on evidence from published or unpublished evaluation studies or exploratory evaluations.

- **Program name:** Pounds Off with Empowerment (POWER)
  Change type: Individual
  Description: Participants were assigned to one of three study interventions:
    - Intensive-lifestyle program – based on Diabetes Prevention Program. Participants met regularly with a nutritionist for sessions on nutrition, physical activity
    - Reimbursable-lifestyle program – condensed version of the intensive-lifestyle program. Time determined by number of hours reimbursed annually by Medicare for diabetes education in South Carolina for individuals recently diagnosed with diabetes
    - Usual-care – a study in which a nutritionist conducted one session at the beginning of the twelve-month period

  Demonstrated Success
    - Tested in rural setting
    - Audience tested: 152 individuals living in medically underserved rural communities
    - At least 45 years old, diagnosed with diabetes, high BMI
    - 12-month randomized clinical trial compared two intervention cohorts to usual care cohort
    - Intensive lifestyle participants had:
        - Greater weight loss at 6 months
        - Greater proportion had lost about 4.5 pounds at 12 months
    - Reimbursable lifestyle had no differences in weight change found between intervention and control

- **Program name:** SHAPEDOWN
  Change type: Individual
  Description: An obesity intervention for adolescents. Participants meet weekly for ten, 2.5 hour, weekly group meetings that include: voluntary weigh-in, leader-facilitated interaction, and an exercise period. Sessions can be delivered individually. Two sessions provide parents with strategies to support adolescents' weight loss efforts. (Assessment at baseline, 3-, 6-, and 15 months post-intervention).

Demonstrated Success
- o Tested in rural setting
- o Audience tested: 66 adolescents from four sites (rural health department, rural nutrition practice, suburban medical clinic, urban medical center)
- o At three and 15 months, intervention group improved in weight, weight-related behavior, self-esteem, knowledge, depression
- o Control group improved in self-esteem only

- **Program name:** Little by Little
  Change type: Individual
  Description: A single-use intervention guided by CD-ROM that can be used alone or with reminders. Includes two questionnaires – one on fruit and vegetable intake (10-item questionnaire) and one on fat and snack intake (15-item questionnaire). Provides information on need for change, strategies for improving diet, and suggestions for goals.
  Demonstrated Success
    - o Audience tested: 481 low-income African-American and non-Hispanic White women from 40-65 years old
    - o Randomized controlled trial; 24-hour recall on dietary intake, baseline and two months after CD-ROM
    - o Intervention with and without reminder calls increased fruit and vegetable consumption more than control group

- **Program Name:** StrongWomen-Healthy Hearts
  Change Type: Individual
  Description: The program targets overweight and obese middle-aged women at risk for cardiovascular disease. Participants engage in a one-hour class, 2 days per week, over 12 weeks. Participants engage in physical activity over the 12 weeks, gradually increasing to 30 minutes of aerobic activity. There is a dietary training component to help participants modify their diet and improve weight control.
  Demonstrated Success
    - o Compared with the control group, participants in the intervention group had a significant decrease in body weight (a mean loss of 2.1 kg), waist circumference (-2.3 in), and energy intake (-390 kcal/day)
    - o Participants showed an increase in activity (+1637 steps/day, and an increase in self-efficacy for dietary and physical activity behaviors.

- **Program Name:** TeleFIT
  Change Type: Individual, adolescents
  Description: A telemedicine approach for providing obesity treatment services to children and their families. The program placed telemonitors within four existing clinics (Brenner Families in Training or Brenner FIT) to increase access to clinic services.

Demonstrated Success

- This outreach program increased access to obesity treatment services. The number of families from rural counties that participated in TeleFIT increased from 5 to 14 in the first year of the program. In the second year, an additional 16 families participated. Over the course of the study, the number of rural families participating among the Brenner FIT patient population increased from 7% to 14%.

- **Program Name:** Vtrim - Your Online Partner for Healthy Weight
  Change Type: Individual
  Description: The Vtrim is a 12-week, online weight loss program. Courses are led by a therapist within a private online chat room and include about 15 to 20 individuals. Each week features topics related to food attitudes and behaviors and behavior modification lessons, such as "Eating in Social Situations."
  Demonstrated Success
  - Vtrim group lost significantly more weight than the control group at 6 months and maintained a greater loss at 12 months.
  - More participants in the Vtrim group maintained a 5% weight loss goal (65% vs. 37.5%; p = 0.01) at 12 months.

- **Program name:** New Moves
  Change type: Individual
  Description: This school-based intervention is intended for adolescent girls enrolled in a girls-only physical education class. In addition to the physical education component of the class, this intervention includes education about healthy foods, addresses how to avoid unhealthy weight-related activities, and provides motivational individual coaching.
  Demonstrated Success
  - Compared to the control group, the intervention group showed a significant decrease in sedentary activity
  - Intervention group showed a significant decrease in unhealthy eating behaviors
  - Intervention group showed a significant increase in body satisfaction

Emerging Interventions for Healthcare Providers

Includes newly-implemented, untested innovations with some apparent effectiveness in achieving stated aims (i.e., face validity). Strategies may be strong candidates for exploratory evaluation.

- **Program name:** Pasos (Steps to Wellness)
  Change type: Individual
  Description: Culturally-relevant curriculum, tailored to a low-literacy Hispanic population. Emphasizes action planning, activities such as games and skits, and personal accountability. 15-week program delivered by promotoras providing instruction about mental health issues and coping strategies to help patients manage their weight and diabetes.
  Plans to evaluate
  - Tested in rural setting
  - Staff report the program has been in high demand
  - Staff have used an Access database to track biomarker data over the course of the program (e.g., A1C levels, blood glucose, weight), and report that these indicators generally show some benefit

How Can Rural Schools Address Obesity?

Schools are an ideal setting for promoting healthy behaviors such as healthy eating, physical activity, and decreased screen time. Overweight or obese children are more likely to be obese as adults, and also more likely to have health problems like diabetes during childhood.

While it is important for children to learn healthy behaviors early in life, they also need access to healthy foods and opportunities to be active. This can be done by creating environments that provide nutritious meals and snacks, active recess, physical education, and health education. Examples of school-based interventions that help prevent and address obesity include:

- Health and nutrition education
- Increased recess time
- Eliminating unhealthy food options from the cafeteria
- Offering nutritious items in vending machines
- Banning sales of sweetened beverages
- Planting class gardens
- Promoting biking or walking to school
- School-based screening for obesity to aid in early detection and treatment

School-based interventions can also affect families and the greater community, both indirectly and directly. For example, children who learn about healthy foods at school may influence their families' cooking practices. In rural areas, schools also serve as a focal point for community social activity and gatherings. Communities may be able to pursue joint-use agreements with school districts to use school buildings and playgrounds for recreational purposes when schools are not in session.

Healthy, Hunger-free Kids Act

In 2010, Congress passed the Healthy, Hunger-free Kids Act, requiring all local school agencies participating in the National School Lunch Program or other child nutrition programs to establish a wellness policy for schools under their jurisdiction. No financial assistance was provided for implementation of these policies. As a result, rural and other communities often lack resources to implement meaningful wellness policies. In response, field experts created tools to assist school agencies in assessing wellness approaches, the quality of the approaches, and providing resources for improving policies. Links to these tools are available in the Additional Resources section.

Models for schools

- Evidence-based interventions
- Effective interventions
- Promising interventions
- Emerging interventions
- Additional resources for schools

Evidence-Based Interventions for Schools

Interventions identified in published systematic reviews, syntheses, or meta-analyses as producing significant, positive health or behavioral outcomes and/or intermediate policy, environmental, or economic impacts based on a structured review of published high-quality, peer-reviewed studies and evaluation reports.

- **Intervention type:** Strategies to Change the Environment
  Source: The Cochrane Collaboration
  Change type: Individual; Policy, Systems, and Environmental (PSE)
  Description: Targeting youth aged 6-12 years of age with school-based programs to encourage healthy eating, physical activity, and body image can help reduce the levels of obesity. Findings show obesity prevention is worth the investment. Researchers recommend strategies focusing on environmental approaches to improving physical activity levels and dietary habits, as opposed to strategies solely aimed at individual behavior change. Examples include:
  - Increase opportunities for physical activity and development of fundamental movement skills during the school week
  - Improve nutritional quality of food supplied in schools
  - Give more attention to parent support and home activities that encourage children to be more active, eat more nutritious foods, and spend less time in screen-based activities

- **Intervention type:** School-based Programs to Prevent and Control Obesity
  Source: U.S. Community Preventive Services Task Force
  Change type: Individual
  Description: There is insufficient evidence to determine the effectiveness of school-based programs to prevent and/or reduce overweight and obesity among children and adolescents because interventions vary widely and the reported outcomes are not comparable. Additional research is needed to determine whether these interventions are effective. Until better evidence exists for school-based obesity intervention programs, none of these programs can be defined as evidence-based.

- **Intervention type:** School-Based Programs Promoting Good Nutrition
  Source: U.S. Community Preventive Services Task Force
  Change type: Individual
  Description: Finds insufficient evidence to determine the effectiveness of multicomponent school-based nutrition interventions in increasing fruit and vegetable intake and decreasing fat and saturated fat intake among school-age children.

Effective Interventions for Schools

Includes programs demonstrated in published high-quality, peer-reviewed studies and evaluation reports to produce significant, positive health or behavioral outcomes, and policy, environment, or economic impacts.

- **Program name:** Coordinated Approach to Child Health (CATCH.org)
  Change type: Individual; Policy, Systems, and Environmental (PSE)
  Description: Program covers children from preschool through 8th grade and has been implemented in thousands of schools and after-school organizations. It uses multiple approaches, including school, after-school, early childhood, and training. Employing a holistic approach that includes classroom, physical education, and food service components, the program promotes physical activity, healthy food choices, and tobacco prevention in children. The original clinical trial took place in four regions, with 25+ years of research and field testing following.
  Demonstrated Success
    o Tested in rural setting
    o Audiences tested: Multiple across age and SES groups
    o Improved diet
    o Improved physical activity
    o Significant positive academic improvements
    o Cost-effectiveness
    o Prevention of childhood obesity among disadvantaged youth
    o Sustainability/Lasting effects

- **Program name:** Pathways
  Change type: Individual; PSE
  Description: Program was created by a partnership between five universities and seven American Indian communities with a focus on primary prevention of obesity in American Indian children (3rd, 4th, and 5th graders). Components include culturally appropriate curriculum promoting healthy eating and physical activity, family involvement, food service, and physical activity.
  Demonstrated Success
    o Tested in rural setting
    o Audience tested: Conducted with 1,704 3rd-5th graders from 41 schools in seven American Indian nations
    o Increases in knowledge and cultural identity in intervention when compared to control schools
    o Retention of knowledge over three years
    o Lowered the percent of energy from fat in school lunches

- **Program name:** Project LEAN (Leaders Encouraging Activity and Nutrition)
  Change type: Individual; PSE
  Description: Focuses on youth empowerment, policy and environmental change strategies, and community-based solutions. Multiple components with tools such as school wellness, parent engagement, youth engagement, and lesson plans aimed at increasing healthy eating and physical activity to reduce the prevalence of obesity and chronic diseases (e.g., heart disease, cancer, diabetes).
  Demonstrated Success
    - Tested in rural setting
    - Audiences tested: School board members and high school students in California
    - Increase in nutrition-related issues on school board agendas
    - More favorable nutrition-related policies
    - Increased knowledge and awareness of nutrition programs

- **Program name:** Planet Health
  Change type: Individual
  Description: Provides an interdisciplinary curriculum to improve activity and dietary behaviors in middle school students with intervention materials integrated into language, arts, math, science, social studies, and physical education classes. Uses grade-level and subject-appropriate skills and competencies to improve nutrition, reduce television time, and increase physical activity.
  Demonstrated Success
    - Two-year randomized controlled trial
    - Audience tested: 1,295 ethnically diverse 6th and 7th graders from public schools in four Massachusetts communities
    - Obesity decreased among girls
    - Television viewing decreased for boys and girls
    - Girls ate less overall, consumed more fruits and vegetables

- **Program name:** Winning with Wellness
  Change type: Individual
  Description: A school-based obesity prevention project promoting healthy eating and physical activity at a rural Appalachian elementary school in Northeast Tennessee. The initiative included eight program areas: nutrition services, health education, physical education, school health services, counseling and psychological services, healthy school environment, school site health promotion for staff, and family and community involvement. Based on the CDC's Coordinated School Health (CSH) model and a community-based participatory research (CBPR) approach.

Demonstrated Success

- o Tested in rural setting
- o Audiences tested: 114 third and fourth grade students participated in the study along with 98% of the school's teachers
- o Findings from this preliminary project revealed improvements in nutrition offerings and increased physical activity during the school day.
- o Pedometer data confirmed that students were more active at school after program implementation than before the program, with an increase of approximately 886 steps per day.
- o Because of preliminary success with elementary students, the program was adapted for use with middle school students.

Promising Interventions for Schools

Interventions showing meaningful, plausible positive health or behavioral outcomes, and policy, environment, or economic impacts based on evidence from published or unpublished evaluation studies or exploratory evaluations.

- **Program name:** Just for Kids! Teen Mentoring Curriculum
  Change type: Individual
  Description: An eight-week intervention conducted by Ohio State University researchers in Appalachian elementary schools addressed the roles of exercise and food in promoting health, moderation in sedentary activities, and encouraged children to set reasonable behavioral goals. The program compared the effects of two curriculum delivery methods: adult teacher in a classroom and individual teen mentoring. All instructors taught lessons from a program called "Just for Kids!" that was developed by the University of California, San Francisco.
  Demonstrated Success
    - Tested in rural setting
    - Audiences tested: 160 schoolchildren in the third and fourth grades
    - Teen-mentored group showed a greater increase in physical activity behavior and a marginal decrease in BMI and diastolic blood pressure post-intervention
    - The adult teacher group did not demonstrate any improved health outcomes at post intervention

- **Program name:** KIDPOWER
  Change type: Individual
  Description: A standardized medical nutrition therapy, known as KIDPOWER, was delivered by registered dietitians to overweight children in 9 primary care practices in a rural community in North Carolina.
  Demonstrated Success
    - Tested in rural setting
    - Audiences tested: Children and adolescents aged 2-20 years
    - Increased vegetable and fruit servings per day
    - Decreased number of times eating out per week
    - Decreased TV time both on weekdays and weekends
    - Significantly decreased intake of soda and sugar sweetened beverages

- **Program name:** Physical Activity and Nutrition for Health
  Change type: Individual
  Description: This 20-week nutrition and exercise program is a school-based program for elementary school children. The program's curriculum includes a family support component and guided activities to be completed in the home that enable children to

practice behavior modification skills. Specifically, the curriculum addresses risk factors for cardiovascular disease.

Demonstrated Success

- o Tested in rural setting
- o Audiences tested: Teachers, parents, and 3rd-grade students from six elementary schools
- o Baseline and post-test measures: height, weight, BMI, body fat, blood cholesterol, time to run 1 mile, exercise/ nutrition knowledge, 24-hour dietary recall
- o At post-test (8 months), intervention schools had lower fat intake, higher exercise levels, and increased nutrition knowledge

- **Program name:** School-based Healthy Lifestyle Intervention - based on Coordinated School Health Program
  Change type: Individual
  Description: A comprehensive school-based healthy lifestyle intervention was implemented in 4 rural elementary schools in Kentucky. The intervention included 4 goals: improving physical education, health education, family/community involvement, and school wellness policies. Children's physical activity was assessed by pedometer, and nutrition was assessed by a previous day recall survey.
  Demonstrated Success
  - o Tested in rural setting
  - o Audiences tested: Elementary school students
  - o Significant effects on increasing the percentages of children meeting physical activity and nutrition recommendations
  - o Showed increasing physical activity and nutrition levels over time

- **Program name:** Sodabriety
  Change type: Individual
  Description: The purpose of this intervention was to decrease soda consumption among students. The program used a Teen Advisory Council (TAC) to design and implement the program within 2 high schools. Each TAC consisted of 2 teachers and 2 students from each grades 9-12 in school. Each TAC implemented a student-design and student-led intervention, which included: a tailored promotional campaign including a "commercial," flyers, T-shirts, and posters to promote the 30-Day Challenge. Vending machine surveys were completed.

Demonstrated Success
- Tested in rural setting
- Audiences tested: High school students
- Immediately post intervention, majority of students (65%) consumed sugar-sweetened beverages fewer than three days per week
- One month after the intervention, nearly 60% of the students still consumed sugar-sweetened beverages fewer than three days per week

- **Program name:** TEAM Mississippi Project
  Change type: Individual
  Description: A healthy lifestyle school-based obesity intervention in a rural southern community that incorporated elements from established school-based programs including Pathways and CATCH. Intervention included family and school-based nutritional and physical activity events. The children's nutritional knowledge, number of different physical activities, fitness level, dietary habits, waist circumference, BMI percentile, and percentage body fat were measured pre- and post-intervention.
  Demonstrated Success
  - Tested in rural setting
  - Audiences tested: 450 schoolchildren from 6 to 10 years of age
  - Statistically significant decline in percentage of body fat
  - Reported engaging in significantly more physical activities
  - Showed improvement in their dietary fat intake

- **Program name:** West Virginia School Nutrition Standards
  Change type: Policy, Systems, and Environmental (PSE)
  Description: West Virginia Board of Education Policy 4321.1, a practice-tested policy, with a primary focuses on using changes in school district policies and practices to improving school food environments through changes in school district policies and practices. The policy is meant to improve the nutritional quality of foods in schools and reduce marketing of unhealthy foods and beverages to students. It went into effect in July 2008 and affects all schools in the state (pre-K through 12th grade).
  Demonstrated Success
  - Tested in rural setting
  - Audiences tested: 1,500 parents, 420 students, 53 food service directors, 53 county school superintendents, 601 principals, and 231 school nurses surveyed
  - Evaluation conducted by West Virginia University Health Sciences Center for the state Office of Child Nutrition
  - Year One findings: positive changes in student food/ beverage consumption

- **Program name:** Youth Fit For Life

  Change type: Individual

  Description: A 12-week after-school physical activity program for children aged 5-12 years old, taught by trained counselors (participants met three times per week). Includes physical activity, nutrition education, and behavioral life skills components. This program is an example of enhanced school-based physical education programs, which are recommended by the Community Guide.

  Demonstrated Success
  - Audience tested: 165 African American and Caucasian children aged 9-12 years old
  - Pre-/post-study compared the effects of intervention group to unstructured activity group
  - Increased voluntary physical activity
  - Increased physical self-concept

Emerging Interventions for Schools

Includes newly implemented, untested innovations with some apparent effectiveness in achieving stated aims (i.e., face validity). Strategies may be strong candidates for exploratory evaluation.

- **Program Name:** Body Quest: Food of the Warrior
  Change Type: Individual
  Description: Third graders are engaged in the 17-weekly *Body Quest* classes with Alabama Cooperative Extension System educators using a variety of interactive, colorful and anime-style material, primarily in an Apple iPod medium. The warriors challenge elementary youth to develop healthy behaviors (eating, physical activity, sleep hygiene, and family involvement) through this novel technology.
  Plans to evaluate
    - Treatment groups showed a higher consumption of both fruits and vegetables at the end of the intervention compared to control groups.
    - Has tested in rural communities and schools with high percentage of students with a high percentage of free and reduced lunches
    - Partnering with SNAP-Ed and Alabama A&M and Auburn Universities

- **Program name:** Creating Healthy, Active, and Nurturing Growing-Up Environments (CHANGE)
  Change type: Individual; Policy, Systems, and Environmental (PSE)
  Description: Children learn healthy living skills and become positive change agents for their parents, peers, and community with an increase of rural children's access to regular physical activity and healthy snacks in afterschool environments. Targets school-aged children (6-12 years old) in low socioeconomic status (SES), rural regions, including Appalachia, Mississippi Delta, and California's Central Valley.
  Plans to evaluate
    - Tested in rural setting
    - Save the Children is partnering with Tufts University to design, implement, and evaluate
    - Three-year, $1 million evidence-building initiative underway at 30 schools in eight rural communities
    - Examining how supportive environments can help low-income rural children increase physical activity and healthy eating

- **Program name:** Safe Routes to School (SRTS)
  Change type: PSE
  Description: Examines conditions around schools and conducts projects and activities to improve safety and accessibility, and reduce traffic and air pollution. Helps make

bicycling and walking to school safer and more appealing transportation choices. Provides some guidance for schools located in rural areas.

Plans to evaluate

- o Tested in rural setting
- o National Review Group comprised of transportation, education, health and advocacy leaders provides advice and feedback
- o Success stories from many states available on website
- o A comprehensive plan to evaluate program outcomes is in progress

- **Program name:** School Environment Project; University of Colorado Denver School of Public Health

  Change type: PSE

  Description: An adapted version of Intervention Mapping (AIM) that applies community-based participatory research methods to improve healthy eating and physical activity environments in schools. The tools is intended for university and elementary school partners to facilitate the implementation of environmental and policy changes.

  Plans to evaluate

  - o Tested in rural setting
  - o Has been applied in multiple schools in rural communities in Colorado
  - o A CDC-funded project applying the AIM process to create healthier environments for middle school students is underway and will be completed in 2014

- **Program name:** Team Up for Health Living

  Change type: Individual

  Description: A cross-peer intervention developed by researchers at East Tennessee State University (ETSU) and led by ETSU undergraduate students for obesity prevention among adolescents through the high school setting. The two major components were: 1) An eight-week intervention targeting students in Lifetime Wellness classes; and 2) Student assessments of body mass status, dietary behaviors, physical activity, and sedentary behaviors at baseline, three-months, and one year following the baseline assessment.

  Plans to evaluate

  - o Tested in rural setting
  - o Major descriptive analyses will be conducted on all demographic and baseline data: BMI Z score, dietary intake and physical activity and sedentary behaviors

Additional Resources for Schools

The following tools were produced by field experts to help school agencies assess wellness approaches and improve wellness policy:

- Wellness School Assessment Tool (WellSAT)
    - Developed by researchers at the Rudd Center for Food Policy & Obesity at Yale
    - Standard method for quantitative assessment of school wellness policy
- Health Education Curriculum Analysis Tool (HECAT)
    - Developed by the Centers for Disease Control and Prevention
    - Helps school districts analyze health education curricula based on the national standards
- Physical Education Curriculum Analysis Tool (PECAT)
    - Developed by the Centers for Disease Control and Prevention
    - Assists school districts and individual schools to conduct a clear, complete, and consistent analysis of physical education curricula

How Can Rural Communities Address Obesity?

There are many community-based efforts to prevent and address obesity across the country. Some use traditional behavior modification and counseling/educational approaches to encourage individuals to make positive changes to their lifestyles. Others use social support and companionship to help people lose weight and maintain a healthy weight.

A third category of community-based interventions targets changes in the places where people live, learn, work, and play. These are referred to as policy, systems, and environmental (PSE) changes. PSE changes increase opportunities for making healthy choices, targeting multiple levels of influence, including individual behaviors, family settings, and community institutions.

It is easier to find programs targeting individual-level changes than those addressing PSE changes. Yet, there are efforts to examine multi-level approaches in rural settings. For example, the U.S. Department of Health and Human Services (HHS) previously distributed funding to communities nationwide to aid in implementing environmental changes using the Communities Putting Prevention to Work (CPPW) program. In 2014, the Robert Wood Johnson Foundation and Leadership for Healthy Communities released a rural childhood obesity prevention toolkit that includes policy options for community health engagement to encourage active living and healthy eating.

Community Strategies
The Centers for Disease Control and Prevention (CDC) has developed a guide with community strategies for healthy eating and active living. The guide also provides a single measure for each strategy to assess progress. These strategies can be used to conduct baseline assessment, identify priorities for action, and measure change over time. There are 24 strategies divided into six categories:

- Promote the availability of affordable healthy food and beverages
- Support healthy food and beverage choices
- Encourage breastfeeding
- Encourage physical activity or limit sedentary activity among children and youth
- Create safe communities that support physical activity
- Encourage communities to organize for change

Some strategies listed in the guide include:

- Increasing availability to healthier food and beverage choices in public service venues
- Improving access to supermarkets
- Increasing the amount of physical activity through physical education and extracurricular activities
- Improving access to outdoor recreational activities

- Enhancing infrastructure for bicycling/walking

- Improving zoning for mixed-used development

For further information, see Recommended Community Strategies and Measurements to Prevent Obesity in the United States: Implementation and Measurement Guide, July 2009.

Models for Communities

- Evidence-based interventions
- Effective interventions
- Promising interventions
- Emerging interventions
- Additional resources for communities

Evidence-Based Interventions for Communities

Interventions identified in published systematic reviews, syntheses, or meta-analyses as producing significant, positive health or behavioral outcomes and/or intermediate policy, environmental, or economic impacts based on a structured review of published high-quality, peer-reviewed studies and evaluation reports.

- **Intervention type:** Behavioral Interventions to Reduce Screen Time
  Source: U.S. Community Preventive Services Task Force
  Change type: Individual
  Description: Behavioral interventions to reduce screen time (time spent watching television and videos; playing video or computer games; surfing the Internet). These can be single-component or multicomponent and often focus on changing screen time through classes aimed at improving children's or parents' knowledge, attitudes, or skills.

- **Intervention type:** Technology-Supported Coaching or Counseling Interventions to Reduce Weight and Maintain Weight Loss
  Source: U.S. Community Preventive Services Task Force
  Change type: Individual
  Description: Technology-supported multicomponent coaching or counseling interventions that use technology to facilitate or mediate interactions between a coach or counselor and an individual or group. Goal is to influence weight-related behaviors or weight-related outcomes. These interventions often also include other technological or non-technological components. They may focus on reducing weight or maintaining weight loss.

- **Intervention type:** Social Support Interventions in Community Settings
  Source: U.S. Community Preventive Services Task Force
  Change type: Individual
  Description: These interventions focus on changing physical activity behavior through building, strengthening, and maintaining social networks that provide supportive relationships for behavior change (e.g., setting up a buddy system, making contracts with others to complete specified levels of physical activity, or setting up walking groups or other groups to provide friendship and support).

Effective Interventions for Communities

Includes programs demonstrated in published high-quality, peer-reviewed studies and evaluation reports to produce significant positive health or behavioral outcomes, and policy, environment, or economic impacts.

- **Program name:** Tomando Control de su Salud
  Change type: Individual
  Description: Workshops, conducted in Spanish, held once a week for six weeks in community settings such as senior centers, churches, libraries, and hospitals. Facilitators are non-health professionals with chronic diseases. Workshops cover:
  - Techniques to deal with frustration, fatigue, pain, and isolation
  - Exercises for maintaining and improving strength, flexibility, and endurance
  - Appropriate use of medications
  - Communicating effectively with family, friends, and health professionals
  - Healthy eating
  - Appropriate use of healthcare system
  - How to evaluate new treatments

  Demonstrated Success
  - Tested in rural setting
  - Audience tested: 5,000 Spanish-speaking people with heart disease, lung disease, or diabetes; followed for one year
  - Compared to controls, participants in the intervention group showed improved outcomes in terms of:
    - Health status
    - Health behavior
    - Self-efficacy
    - Emergency room visits (fewer)
  - At one year post-intervention, improvements were maintained

- **Program name:** The Stanford Nutrition Action Program (SNAP)
  Change type: Individual
  Description: Nutrition education program for English-speaking adults with low literacy skills teaching methods of choosing and preparing low-fat foods in ways that help women and their families reduce heart attack risk by lowering fat intake. Six-week classroom-based intervention followed by a 12-week maintenance intervention.

Demonstrated Success
- o Audiences tested: Primarily young Hispanic women (58%) as well as White (20%), Asian (10%), and women of other races (12%)
- o Significant reductions in the percentages of calories from fat and in calories from saturated fat
- o Increased nutrition knowledge
- o Increased self-efficacy for achieving a low-fat diet

Promising Interventions for Communities

Interventions showing meaningful, plausible positive health or behavioral outcomes, and policy, environment, or economic impacts based on evidence from published or unpublished evaluation studies or exploratory evaluations.

- **Program name:** Complete Health Improvement Program (CHIP)
  Change type: Individual
  Description: CHIP is an intensive community-based lifestyle intervention that has been shown to offer significant benefits for the prevention, control, and even reversal of cardiovascular disease, type 2 diabetes, and depression. The program was implemented in the underserved, rural, Appalachian county of Athens County, Ohio. Participants attended one of six CHIP classes, and each class was conducted over a 4- to 8-week period and involved 16 two-hour group sessions.
  Demonstrated Success
    - Tested in rural setting
    - Audiences tested: 214 individuals aged 24-81 years
    - Collectively demonstrated significant reductions in body mass index, systolic and diastolic blood pressure, and fasting blood levels of total cholesterol, low-density lipoprotein, and glucose

- **Program name:** Treatment of Obesity in Underserved Rural Settings (TOURS)
  Change type: Individual
  Description: Randomized trial to compare effectiveness of three types of extended care programs to promote successful long-term weight management in rural populations. Carried out through the Cooperative Extension Service (CES). Participants took part in a six-month lifestyle modification program modeled after Diabetes Prevention Program (low-calorie eating plan, increased physical activity, and training in behavior modification strategies). Extended care cohorts received one of the following:
    - 26, 60-minute in-person group counseling sessions (83 women)
    - 26, 15-minute telephone-based counseling sessions (72 women)
    - Education via 26 bi-weekly newsletters with tips for maintaining weight loss (control group-79 women)
  Demonstrated Success
    - Tested in rural setting
    - Audience tested: Completers of initial lifestyle intervention – 234 overweight rural women ages 50-75
    - Primary outcomes in 6-month lifestyle intervention completers included average weight loss of 10 kg (22 lb) and improvements in blood pressure, blood lipid, glycemic control

- o At 12 months, participants who received either telephone or face-to-face counseling regained less weight than control group and had smaller increases in BMI

- **Program name:** Cherokee Choices: A Diabetes Prevention Program for American Indians
  Change type: Individual; Policy, Systems, and Environmental (PSE)
  Description: A targeted program consisting of a culturally appropriate community action plan for the prevention of Type 2 diabetes, especially among children. The program includes three components: elementary school mentoring, worksite wellness for adults, and church-based health promotion. A social marketing strategy supports these components. Church wellness included activities to improve diet and physical activity. Pastors developed sermons on importance of taking care of the physical as well as spiritual self.
  Demonstrated Success
  - o Tested in rural setting
  - o Audience tested: Eastern Band of Cherokee Indians in North Carolina. Church wellness component included members of 5 churches (n = 150)
  - o Participants in the church program walked an average of 211 miles in six months

- **Program name:** Community Healthy Activities Model Program for Seniors (CHAMPS)
  Change type: Individual
  Description: Individually tailored, choice-based physical activity program promoting increased long-term physical activity in older adults. Includes principles of self-efficacy enhancement, readiness to change, and motivational techniques. An example of individually-adapted health behavior change interventions, recommended by Community Guide.
  Demonstrated Success
  - o Audience tested: 173 sedentary adults, average age 74, in 2 Medicare HMOs
  - o Original one-year randomized controlled trial found:
  - o Increased caloric spending in physical activity
  - o Average of three pounds lost
  - o Reduced BMI
  - o Currently being tested in three diverse community settings in San Francisco, CA
  - o More information available at the National Cancer Institute's website

- **Program name:** Utilizing the Church and Church Members for Conducting Weight Loss Programs
  Change type: Individual
  Description: Designed to promote dietary change and physical activity in a church-based setting with individual and group formats. Group format includes one meeting per month for six months. Lessons and group discussions with health educators. Lesson

plans include topics such as ideal body weight and maintaining healthy weight, diet and exercise, food groups, and record-keeping. Program takes six months to complete. Lay health educators are recruited from the same church where program is being implemented and are intensively trained for two days.

Demonstrated Success

- o Audience tested: 40 African American church members (37 women, 3 men) in Baton Rouge, LA
- o Pilot tested, convenience sample, no control group
- o Six months after enrollment, participants lost an average of 3.3 kilograms and 0.5 percent of body fat
- o Participants increased physical activity

- **Program name:** Eating for a Healthy Life (EHL)
  Change type: Individual
  Description: Dietary change intervention to help members of religious organizations make healthier decisions. Goals include lowering fat intake and increasing fruit, vegetable, and whole grain consumption. A self-determined advisory committee plans social activities after religious services.
  Demonstrated Success
  - o Audience tested: Adults ages 18-100 from 40 religious organizations in the Seattle, WA area
  - o At 12 months, randomized clinical study found through telephone survey:
  - o Reported decrease in consumed fat
  - o Reported increase in consumed fiber

Emerging Interventions for Communities

Includes newly implemented, untested innovations with some apparent effectiveness in achieving stated aims (i.e., face validity). Strategies may be strong candidates for exploratory evaluation.

- **Program name:** [Cultiva La Salud, formerly known as Central California Regional Obesity Prevention Program](#)
  Change type: Individual; Policy, Systems, and Environmental (PSE)
  Description: Targeted an agricultural region in central California with few dense urban neighborhoods and many small, isolated rural towns. In this community, overweight and obesity occur alongside hunger and there are multiple food deserts. Goals include promoting safe places for physical activity, increasing access to fresh fruits and vegetables, and supporting community and youth engagement in local and regional efforts to change nutrition and physical activity environments. Implemented at each of eight sites in a partnership between the local health department, a community-based organization, and an obesity council.
  Plans to evaluate
  - Tested in rural setting
  - Audience tested: Eight counties in California with similar geographic, social, and political characteristics
  - Grantees have made progress in implementing their interventions and changing physical activity and healthy eating environments
  - More time is needed to achieve measurable outcomes

- **Program name:** [Developing and Maintaining Trails](#)
  Change type: PSE
  Description: Trails can be paved or unpaved and within parks, commercial or school settings. They can be used for recreational physical activity such as biking and walking and for active transportation by connecting residential, school, and commercial areas within communities.
  Plans to evaluate
  - Tested in rural setting
  - Two related studies of adults in rural Missouri found 32 - 55 % of trail users reported increased physical activity after they started using trails
  - [Additional information is available in the American Journal of Preventive Medicine](#)

- **Program name:** [Creating Walkable and Bikeable Communities](#)
  Change type: PSE
  Description: Rural communities can invest in biking and walking facilities to create opportunities for physical activity, reduce congestion, and draw residents and tourists to

commercial areas. Strategies include developing walkways and bike paths connecting key community locations, maintaining trails, hosting events, and supporting safe cycling campaigns.

Plans to evaluate

- o Tested in rural setting
- o A study found six out of seven rural communities with bicycle routes found they improved accessibility, efficiency of transportation system
- o Additional information is available from the Transportation Research Board website

- **Program name:** Utilizing Innovative Grocery Store Ownership Models
  Change type: PSE
  Description: Although grocery stores are an important institution in rural communities, recent trends are causing them to close. Lack of access to grocery stores can reduce rural residents' access to fresh, healthy, and nutritious food. Rural communities can use innovative models of grocery store ownership such as cooperatives, community-owned, or school-based. Community demographics and characteristics dictate which ownership models may be most effective.
  Plans to evaluate
  - o Tested in rural setting
  - o A recent study found greater supermarket availability was generally unrelated to diet quality and food and vegetable intake
  - o Researchers concluded that increased access to food stores may require complementary or alternative strategies to promote dietary behavior change
  - o Additional research is available through PubMed

Additional Resources for Communities

Information for community models was developed, in part, using these resources:

The Future of the Public's Health in the 21st Century
Document
Provides recommendations for the governmental public health system and entities in other sectors strengthening the public health infrastructure and to protect and promote health and well-being.
Author(s): Committee on Assuring the Health of the Public in the 21st Century
Organization(s): Health and Medicine Division (HMD), National Academies of Sciences, Engineering, and Medicine
Date: 11/2002

What Shapes Health-Related Behaviors?
Document
Discusses the links between health-related behaviors and social factors including income, education and neighborhood conditions that begin in childhood and provides suggestions for helping individuals choose health-promoting behaviors in communities.
Author(s): Barclay, C., Braveman, P., & Egerter, S.
Organization(s): Robert Wood Johnson Foundation
Date: 3/2011

Module 6: Evaluation Program Efforts

Evaluating rural obesity programs is critical to the development of an evidence base for what works in rural communities. Evaluation can help communities to assess the quality, cost, effectiveness, and effect of a policy, program, intervention, initiative, or action to prevent or treat obesity (see CDC's Framework for Program Evaluation).

Evaluations may assess individual behavioral changes or policy, system, and environmental changes. For example:

- Individual behavioral interventions may provide training, education, or other opportunities to individuals
- Policy interventions may focus on changing a law or organizational rule
- Systems interventions may affect an organization or system
- Environmental interventions may focus on changing a community's economic, social, and physical environment

Given the nature of obesity treatment and prevention programs, and the diversity of sectors and stakeholders involved, evaluations often measure progress across multiple aspects of the intervention simultaneously. Similarly, obesity programs often implement a combination of policy, systems, and environmental changes. These factors make it difficult to identify the effectiveness of individual intervention strategies.

As a result of these challenges and others, few rigorous evaluations have been conducted on rural obesity interventions to date.

For a detailed overview of program evaluation, see Evaluating Rural Programs in the Rural Community Health Toolkit.

In this module:

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Evaluation Designs

When designing your obesity program evaluation, it is important to consider the intervention goals, evaluation purpose, and available resources for evaluation.

Evaluations of rural obesity programs have used experimental, quasi-experimental, and non-experimental designs. Experimental designs are the "gold standard" for assessing cause and effect, but require a high level of time and resources. Quasi-experimental designs are more commonly used for evaluating obesity programs.

Process and Outcome Evaluation

The most common frameworks for evaluating rural obesity programs are process evaluations and outcome evaluations.

- **Process evaluation**
  Assesses how the program was implemented and whether it was implemented as intended. Key focus areas may include the quality and effectiveness of the rural obesity program.

- **Outcome evaluation**
  Assesses program effects and is used to make recommendations for future program improvements. Key focus areas may include expected and unexpected outcomes and program reach.

For detailed information about the evaluation designs and frameworks that can be used for rural obesity programs, see Evaluation Design in the Rural Community Health Toolkit.

Resources to Learn More

Quasi-Experimental Evaluations: Part 6 in a Series on Practical Evaluation Methods
Document
An overview of quasi-experimental evaluations with an explanation of the various types and descriptions of the circumstances under which type of study is appropriate.
Author(s): Moore, K.
Organization(s): Child Trends
Date: 1/2008

Quantitative and Qualitative Data

To implement obesity program evaluations, communities often use a combination of qualitative and quantitative data sources and/or data collection methods.

- **Qualitative methods**
  Refers to the collection and/or analysis of descriptive data from sources such as interviews, focus groups, and site visits.

- **Quantitative methods**
  Refers to the collection and/or analysis of numerical information from sources such as surveys or reports.

Often, evaluators of rural obesity programs use a mixed methods approach, combining qualitative and quantitative methods within one evaluation (e.g., content analysis of focus group data and a statistical analysis of survey data). A mixed methods evaluation approach may result in a better understanding of the program and increased credibility of the evaluation results.

For more information on data collection methods, see Collect and Analyze Quantitative and Qualitative Data in the Rural Community Health Toolkit.

Evaluation Challenges for Rural Obesity Programs

When planning your rural obesity program evaluation, it is essential to acknowledge and consider the potential constraints and challenges.

One key evaluation challenge is the multifactorial nature of obesity. A number of factors may contribute to obesity. These include: genetics, environmental determinants (e.g., the presence of food stores and walking paths), social and economic drivers (e.g., educational and employment opportunities), the strength of families and social networks, and community safety, among others. Each of the factors contributing to obesity, and their relationship with one another, must be considered in evaluations.

Another key consideration is the cyclical nature of long-term behavior change. Behavior change is a process that occurs in stages, and individuals may experience set-backs before experiencing long-term, lasting changes. Given that evaluations typically occur at a specific point in time, long-term outcomes may not be recorded. Some evaluations of policy, system, and environmental changes focus on tracking short-term or intermediate outcomes (e.g., changes in diet or exercise) given the time needed to achieve and measure long-term outcomes.

For an overview of the key challenges related to program evaluation, see Evaluation Challenges in the Rural Community Health Toolkit.

Evaluating Individual-Level Programs

Interventions focused on individual behavioral change may provide education, training, and services to individuals. Examples of rural obesity interventions that have been evaluated to assess individual behavioral change are provided.

Program: Martinsville-Henry County Coalition for Health and Wellness
Summary: Eight Coalition and Activate programs used community coalitions to create healthier environments, disseminate health promotion programs, and improve access to healthcare. The evaluation assessed program reach and effectiveness in achieving knowledge and behavior change among participants in the initiative.

- **Evaluation goal:** Assess program reach and effectiveness in achieving knowledge and behavior change among program participants

- **Target population:** Participants are primarily underserved and uninsured Martinsville-Henry County residents

- **Design:** Non-experimental

- Evaluation methods: Key informant interviews and pre- and post-test surveys to measure knowledge and behavior change among participants; analysis of changes in access to healthcare services by examining enrollment and referral trends over time

- **Evaluation findings:** The evaluation identified individual-level health benefits

- **Source:** Transformation of a Rural Community for Active Living
  Smith, M.L., Bazzarre, T.L., Frisco, J., et al.
  Family & Community Health, 34(2), 163-72

Program: The Treatment of Obesity in Underserved Rural Settings, Randomized trial, north-central Florida
Summary: Between 2003 and 2007, a trial was conducted to demonstrate the effectiveness of extended care programs that include face-to-face or telephone follow-up sessions to help participants maintain weight loss in rural communities. Participants completed an initial lifestyle program focused on weight-loss, and then were randomized to participate in an extended care component (telephone or face-to-face counseling) or an education control group. Participants completed a six-month and 18-month assessment.

- **Evaluation goal:** Assess effectiveness of extended-care programs designed to improve maintenance of lost weight

- **Target population:** 234 obese women, ages 50-75 years, from medically underserved rural areas in north-central Florida

- **Design:** Experimental

- **Evaluation methods:** Participants were stratified by county and Body Mass Index (BMI) and randomly assigned to participate in telephone or face-to-face counseling or an education control group; weight loss was measured at the initial phase (0 to 6 months) and the extended care phase (6 to 18 months)

- **Evaluation findings:** Extended care delivered either by telephone or in face-to-face sessions improved maintenance of lost weight one year after randomization compared with education alone

- **Source:** Extended-Care Programs for Weight Management in Rural Communities: The Treatment of Obesity in Underserved Rural Settings (TOURS) Randomized Trial
  Perri, M.G., Limacher, M.C., Durning, P.E., et al.
  Archives of Internal Medicine, 168(21), 2347-54

Evaluating Community-Level Interventions

Many community, foundation, and government initiatives are being implemented to target policy, system, and environmental changes to reduce morbidity and mortality associated with obesity. Case studies and examples of these interventions are provided below.

- Department of Health and Human Services
  - State Physical Activity and Nutrition Program (SPAN)
  - Racial and Ethnic Approaches to Community Health (REACH)
  - Good Health and Wellness in Indian Country

Evaluation examples

The following programs offer examples of evaluation strategies for measuring policy, system, and environmental change in community-level obesity prevention initiatives.

Program: Kaiser Permanente Community Health Initiative
Summary: Implemented between 2005 and 2010. An organization-wide effort designed to produce a significant and measurable impact on the health of select communities.

- **Goal of evaluation:** To promote program improvement, assess impact, and share lessons learned

- **Target population:** Nine communities in five regions (three in Northern California and Colorado, one in Georgia, Ohio, and the Mid-Atlantic States)

- **Design:** Non-experimental, cross-site evaluation

- **Evaluation methods:** Analysis of progress report data; key informant interviews; observation of environmental changes; calculating affected reach; analysis of clinical data; baseline and follow-up population-level surveys of youth and adults

- **Evaluation findings:** 2008 interim findings: Communities built capacity and implemented creative strategies. Potential impact of their interventions was high

- **Sources:** Approaches to Measuring the Extent and Impact of Environmental Change in Three California Community-Level Obesity Prevention Initiatives
  Cheadle, A., Samuels, S., Rauzon, S., et al.
  American Journal of Public Health, 2010, 100(11)

What to Measure to Show Impact

Evaluation designs should define and measure the reach, strength, and dose of obesity prevention and treatment interventions. Including these components will help contribute to the evidence base for policy, system, and environmental change strategies that work in rural communities.

- **Reach**

  Measured by how many people in a community are exposed to a particular strategy; For example, if 1,000 people begin using new bike lanes on a highway in a city of 10,000 people, the calculated reach is 10%.

- **Strength**

  Measured by the percentage improvement, from baseline, in day-to-day lifestyle changes that increase activity or improve diet.

- **Population dose**

  Degree of change taking place in the population, measured by the reach plus the strength of the intervention.

Resources to Learn More

The Kaiser Permanente Community Health Initiative: Overview and Evaluation Design
Author(s): Cheadle, A., Schwartz, P., Rauzon, S., et al.
Citation: American Journal of Public Health, 100(11), 2111-2113
Date: 11/2010

Approaches to Measuring the Extent and Impact of Environmental Change in Three California Community-Level Obesity Prevention Initiatives
Author(s): Cheadle, A., Samuels, S., Rauzon, S., et al.
Citation: American Journal of Public Health, 100(11)
Date: 11/2010

Measurement Types

The Center for Disease Control and Prevention (CDC) defines a measure as,

> "a single data element that can be collected through an objective assessment of the physical or policy environment and used to quantify without bias an obesity prevention strategy."

Evaluation measures should be appropriate for the obesity program's intervention setting, target population, and goals. The table below provides examples of three types of measures that could be used to measure individual behavioral change or policy, system, and environmental changes. These evaluation measures are provided for illustrative purposes only. It is not intended as an exhaustive or prescriptive list of measurement types for rural obesity prevention programs.

Table 7.1: Measuring Change in Rural Obesity Programs

Description	Examples for Measuring Individual Behavioral Change	Examples for Measuring Policy, System, Environmental Change
Health/nutrition knowledge	- Number of people participating in chronic disease self-management workshops - Number of students reporting changes in knowledge, attitudes, and beliefs regarding physical education in school	Number of schools participating in a program to deliver a nutrition curriculum through after-school programs
Physical activity	- Number of seconds for a person to complete a shuttle run - Number of curl-ups or partial curl-ups a person can do in 60 seconds - Distance in centimeters stretched for the V-sit - Number of different types of age-appropriate physical activities a student completes each day - Change in a person's body mass index	- Annual number of farmers' markets or farmers' days per 10,000 residents in a local jurisdiction - Total number of miles of shared-use paths and bike lanes relative to total street miles maintained by the local jurisdiction - Number of school wellness policies passed to encourage physical activity during the school day - Number of new pedestrian crossings and bike lanes to improve community "walkability" and "bikeability" in a town
Healthy behaviors	- Number of people who completed an annual health risk assessment - Number of days a person completes a food diary - Number of people experiencing a change in their hemoglobin A1C level	- Change in percentages of healthy food and beverages sold in health departments - Number of children who walk or bike to school in a township - Number of policies passed at state or local levels prohibiting sales of less healthy food and beverages in schools

Resources to Learn More

The Kaiser Permanente Community Health Initiative: Overview and Evaluation Design

Author(s): Cheadle, A., Schwartz, P., Rauzon, S., et al.

Citation: American Journal of Public Health, 100(11), 2111-2113

Date: 11/2010

[Recommended Community Strategies and Measurements to Prevent Obesity in the United States](#)

Author(s): Keener, D., Goodman, K., Lowry, A.,

Organization(s): Centers for Disease Control and Prevention

Date: 7/2009

Evaluation Tools for Rural Obesity Programs

The following data collection tools, standards, guides, and registries may provide additional guidance your rural obesity program evaluation.

- **Behavioral Risk Factor Surveillance System (BRFSS) Questionnaires**
  This survey instrument is comprised of a standard set of questions asked by all states that includes questions demographic characteristics and current health behaviors, such as tobacco use and seatbelt use. While it does not specifically target obesity, some of the questions do relate to obesity and the survey could be adapted to best fit communities' needs. Surveys are also available in Spanish.

- **National Collaborative on Childhood Obesity Research (NCCOR) Measures Registry**
  Searchable database of diet and physical activity measures relevant to childhood obesity research. Measures are searchable by environment or behavior, measurement instrument, age, and community type/location. NCCOR also provides a listing of new or adapted measures that have not yet been published.

- **The Rapid Assessment of Physical Activity** (RAPA)
  Questionnaire designed to help clinicians assess older adults' levels of physical activity. Available in English, Spanish and Vietnamese.

- **The Rapid Eating Assessment for Participants** (REAP-S)
  Assesses a patient's diet and physical activity, and facilitates counseling by a primary care provider. Developed by Brown University.

- **Rural Active Living Assessment Tools** (RALA)
  Rural-specific assessment tools to aid researchers and practitioners in evaluating the activity-friendliness of rural communities. The three RALA tools include:
  - Town-wide Assessment (TWA), focusing on a town's characteristics (e.g. school locations, geography, and other physical activity features and amenities
  - Program and Policy Assessment (PPA), focusing on community and school programs and policies
  - Street Segment Assessment (SSA), focusing on the walkability of rural areas

- **System for Observing Fitness Instruction Time** (SOFIT)
  Assesses quality of physical education instruction. Comprehensive system provides a measure of student activity levels, lesson context and teacher behavior during class time.

- **System for Observing Play and Leisure Activity in Youth** (SOPLAY)
  Used for direct observation of physical activity and environmental characteristics in free play settings such as school recess.

- **Weight, Activity, Variety, Excess** (WAVE)
  Assesses a patient's current diet and physical activity status related to weight, activity, variety, and excess and encourages dialogue with providers.

Module 7: Clearinghouse of Rural Programs to Prevent and Address Obesity

Program Clearinghouse

The HRSA Federal Office of Rural Health Policy has funded several programs in rural areas with the goal of improving obesity rates as part of the 330A Outreach Authority program. This program focuses on expanding access to healthcare services in rural areas.

This module contains examples of 330A Outreach Authority grantees and other organizations that have developed promising rural obesity programs. Information on implementing programs in clinical, school, and community settings can be found in Module 5: Addressing Obesity in Different Settings.

- Southern Vermont Area Health Education Center, 30+5: Physical Activity and Nutrition at School
  Purpose: Improves nutrition and physical activity in three schools across multiple communities
  Location: Vermont

- Idaho Partnership for Hispanic Health, Companeros en Salud (Partners in Health)
  Purpose: Reduces risks for metabolic syndrome by improving nutrition and physical activity
  Location: Idaho

- Tuscola County Health Department, Thumb Area Nutrition and Physical Activity Campaign
  Purpose: Collaboration across a three-county region to implement a four-pronged program addressing obesity
  Location: Michigan

- Twin City Hospital Corporation, Trinity Hospital Twin City Fit for Life Program
  Purpose: Provides an overview of the obesity crisis, and presents information on nutrition, fitness, and chronic disease prevention
  Location: Ohio

- Yakima Valley Farmworkers Clinic, Tomando Control de Su Salud
  Purpose: Trains lay leaders and master lay leaders to build capacity for chronic disease management within the community
  Location: Washington

- University of Colorado Denver School of Public Health, School Environment Project
  Purpose: Adapts the Intervention Mapping process to be more community-friendly
  Location: Colorado

- La Clinica Del Carino
  Purpose: Identifies an appropriate intervention for low-literacy and Hispanic populations in the community
  Location: Oregon/Washington

- Southern Illinois University, CATCH Onto Health!: Coordinated Approach to Child Health
  Purpose: Helps implement a Coordinated Approach To Child Health (CATCH) program in a multi-county region
  Location: Illinois

Southern Vermont Area Health Education Center

- **Project Title:** 30+5: Physical Activity and Nutrition at School

- **Grant Period:** 2006-2009 FORHP Outreach Grantee

- **Program Representative Interviewed:** Nancy Schaefer, 30+5 Coordinator/Health Educator

- **Intervention Setting:** School

- **Program Overview:** The Southern Vermont Area Health Education Center (AHEC) has been working to improve nutrition and physical activity within three schools across multiple communities. The AHEC began by targeting youth in the 6th-8th grade, but soon identified the need to work with children younger than middle school.

  The AHEC's initial work with the schools focused on building relationships, buy-in, and trust from community and school system members. It formed a planning committee consisting of school nurses, community members, public health, and hospital representatives. With the committee's guidance, the Southern Vermont AHEC implemented a program to improve nutrition and increase opportunities for physical activity in schools. The program worked with school cafeteria staff to set up a salad bar and water cooler and to increase the vegetable content of meals (including popular items such as pizza).

  To implement these initiatives, the AHEC staff focused on cost and identifying strategies the schools and teachers would be willing to implement, rather than on searching for evidence-based approaches. Ultimately, teachers said they needed exercise equipment children would use. After an initial equipment purchase, the program ensured equipment was being used before more was purchased.

Resources required for implementing program

- Buy-in from school administrators and teachers
- Exercise equipment for students

Idaho Partnership for Hispanic Health

- **Project Title:** Companeros en Salud (Partners in Health)
- **Grant Period:** National Center on Minority Health and Health Disparities Grantee
- **Program Representative Interviewed:** Linda Powell, Program Director
- **Intervention Setting:** Community
- **Program Overview:** Partners in Health is a promotora, or community health worker, educational wellness program, targeting Hispanic populations in Weiser, Idaho. The program is family-centered and designed to reduce risks for metabolic syndrome by improving nutrition and physical activity. The primary objectives of the program are to:
  - Provide family members with basic information about health risks, including obesity, high blood glucose, high blood pressure, and high cholesterol
  - Teach healthy behaviors that might reduce all family members' health risks
  - Suggest strategies for families to support healthy behaviors and special needs of family members with diabetes, hypertension, or heart disease
  - Have fun learning and experiencing healthy activities

Partners include several community-based organizations, a hospital, and a medical center. A community advisory board consisting of community members and community organizations representatives was also instrumental in implementing the Companeros en Salud intervention.

The program curriculum was informed by an existing diabetes intervention which shared its curriculum and granted permission to use the content. Program staff adapted the curriculum to address the broader issue of metabolic syndrome which is related to obesity in terms of waist circumference, triglyceride levels, and other common risk factors and indicators.

Implementation of the curriculum does not require extensive resources, other than paying for staff time. However, conducting the research is expensive. The collaborative is working to identify strategies for scaling down the effort so that it can be more easily replicated in other communities. The collaborative used the Rapid Assessment of Physical Activity (RAPA) and the Rapid Eating Assessment for Patients (REAP) to collect participant-level data about physical activity and healthy eating.

Resources required for implementing program

- Implementation staff
- Space to implement program
- For evaluation, clinical tools to collect and analyze biomarkers
- Rapid Assessment of Physical Activity (RAPA)
- Rapid Eating Assessment for Patients (REAP)

Tuscola County Health Department

- **Project Title:** Thumb Area Nutrition and Physical Activity Campaign

- **Grant Period:** 2006-2009 FORHP Outreach grantee

- **Program Representative Interviewed:** Ann Hepfer

- **Intervention Setting:** Community/school

- **Program Overview:** The Tuscola County Health Department, in collaboration with partners, worked across a three-county region to implement a four-pronged program to address obesity. The intervention included community presentations, an adult walking program, a youth walking program, and a community outreach/social marketing campaign. It was carried out in response to data from a local implementation of the Behavioral Risk Factor Survey, which identified a need for obesity information and programming.

  In developing their approach, the health department and its partners examined the health programs already offered in the community. They targeted school-aged youth and parents of those youth for walking programs. For the marketing component, they targeted the entire community.

  Evaluation methods included a survey of nutrition and physical activity practices implemented prior to the start of the program, at four and 12 months. The results showed minimal program effects on dietary and physical activity practices during the implementation phase. When the HRSA grant ended, the adult walking program was picked up by another organization that implemented a similar program. The other program components were not sustained due to funding challenges.

Resources required for implementing program

- Implementation staff
- Space to hold presentations and implement programs
- For evaluation, tools to administer and analyze surveys
- Pedometers for walking program

Twin City Hospital Corporation

- **Project Title:** Trinity Hospital Twin City Fit for Life Program

- **Grant Period:** 2012-2015

- **Program Representative Interviewed:** Jennifer Demuth, Marketing Coordinator

- **Intervention Setting:** Clinical

- **Program Overview:** The goal of the Fit for Life health education curriculum is to decrease the number of overweight or obese men and women in Tuscarawas County and surrounding areas. In addition to promoting weight loss, the program is also designed to support disease control. The 12-week curriculum, implemented through weekly 90-minute sessions, provides participants with an overview of the obesity crisis, presenting information on nutrition, fitness, and chronic disease prevention. Participants develop customized fitness and diet plans with Fit for Life staff and discuss topics like cardiovascular fitness, strength conditioning, food labels, and nutrition. In addition to the core Fit for Life classes, the program conducts health risk assessments and other wellness presentations. On average, participants lose approximately seven pounds and see a nine-point decrease in total cholesterol over the course of the program.

Resources required for implementing program

- Implementation staff
- Space to implement program
- For evaluation, clinical tools to collect and analyze biomarkers

Read about the Trinity Hospital Twin City's Fit for Life in RHIhub's Rural Health Models and Innovations.

Yakima Valley Farmworkers Clinic

- **Project Title:** Tomando Control de Su Salud

- **Grant Period:** 2006-2009 FORHP Outreach grantee

- **Program Representative Interviewed:** Stella Vazquez, Director of Program Operations

- **Intervention Setting:** Clinical/community

- **Program Overview:** The Yakima Valley Farmworkers Clinic, a migrant health center in the Pacific Northwest implemented "Tomando Control de Su Salud," an evidence-based model for chronic disease self-management that had been developed by Stanford University.

  The curriculum was implemented as a six-series class that took place at the health center over six weeks. Health center staff trained lay leaders and master lay leaders to build capacity within the community. The health center found participants experience some challenges in completing all six weeks of the program.

  Tracking of biomarkers has shown benefits for those completing the program, but staff members have not been able to identify a minimum number of classes someone can take to be successful in making changes.

Evidence-based models highlighted

- Stanford Chronic Disease Self-Management Program

Resources required for implementing program

- Space to implement program
- Implementation staff
- For evaluation, tools to collect and analyze biomarkers
- Self-Management Resource Center Programs Licensing Fee
- Self-Management Resource Center Self-Management Programs: Fidelity Manual

University of Colorado Denver School of Public Health

- **Project Title:** School Environment Project
- **Grant Period:** June 2007-June 2009 (funded by Robert Wood Johnson Foundation)
- **Intervention Setting:** School
- **Program Overview:** Intervention Mapping is a six-step process to create robust interventions. Designed by the University of Texas, the strategic planning process draws from literature reviews, behavior change theories, and the ecological model, and is an intellectual process requiring a high level of knowledge and skills to complete.

  Researchers at the Prevention Research Center sought to adapt the Intervention Mapping process to be more community-friendly. They developed an approach called Applied Intervention Mapping (AIM) and used this approach in a number of school settings to address policy and environmental factors.

  The Prevention Research Center partnered with schools and guided them through the AIM process. It found that groups undertaking the AIM process succeeded in making changes, even a year after implementation ended. The Prevention Research Center recently received a grant from the Colorado Foundation to take the AIM process to other rural Colorado communities.

Resources required for implementing program

- Implementation staff
- Buy-in from school administrators, teachers and community members

La Clinica Del Carino dba. One Community Health

- **Grant Period:** 2006-2009 FORHP Outreach grantee

- **Program Representative Interviewed:** Margery Dogotch, Principal Investigator

- **Intervention Setting:** Clinical/community

- **Program Overview:** La Clínica del Cariño dba. One Community Health is a nonprofit community and migrant health center, serving the Columbia River Gorge area, including residents of Hood River and Wasco Counties in Oregon, and Klickitat and Skamania Counties in Washington.

  La Clinica del Carino set out to identify an intervention appropriate for low-literacy and Hispanic populations in the community. Health center staff had difficulty locating a curriculum to meet the needs of an often poorly educated population. Previous experiences with formal, classroom-based health literacy education had not been positive, and they had begun piloting programs grounded in popular education methodology. They found the participatory aspect of these programs appealed to their target population, so they decided to develop their own curriculum based on this approach.

  Content for the curriculum was borrowed from various sources. A physician on the health center staff had developed materials for low literacy audiences, which they used. They also used a program implemented by a local Area Agency on Aging as a model, adopting many participatory features.

  The curriculum made minimal use of lectures, emphasizing action planning, activities such as games and skits, and personal accountability. Staff sought to ensure the accuracy and currency of information in the curriculum while also making cultural relevance a key focus.

  Promotoras have led the sessions for program participants. Staff report the program has been in high demand. In addition, many participants bring a family member for support. As a result, they reached multiple generations of some families. Clinic staff have used an database to track biomarker data for participants over the course of the program (e.g., A1C levels, blood glucose, weight) and have found these indicators generally showed some benefit.

Resources required for implementing program

- Implementation staff (Promotoras)
- Space to implement program
- For evaluation, tools to collect and analyze biomarkers

Southern Illinois University

- **Project Title:** CATCH Onto Health!: Coordinated Approach to Child Health

- **Grant Period:** 2010-2013 FORHP Delta grantee

- **Program Representative Interviewed:** Jeff Franklin, Project Coordinator and Kim Sanders, Director Center for Rural Health and Social Service Development, Southern Illinois University, Carbondale

- **Intervention Setting:** School

- **Program Overview:** Southern Illinois University helped implement a Coordinated Approach To Child Health (CATCH) program throughout a multi-county region in the Midwest.

  CATCH is backed by extensive research that demonstrates its success. It affects four of the eight components of the Coordinated School Health model (i.e. health education, physical education, health services, mental health and social services, nutrition services, healthy and safe environment, family and community involvement, and staff wellness).

  The health department began offering grants to schools to become CATCH schools. Schools received training and $5,000-$10,000 to purchase equipment. When the state began to shift its focus from preventing cardiovascular disease to preventing obesity, the CATCH model was used. Program staff use the System for Observing Fitness Instruction Time (SOFIT) to evaluate the extent to which students are moving during Physical Education classes.

Evidence-based models highlighted

- [CATCH]

Resources required for implementing program

- SOFIT: [System for Observing Fitness Instruction Time]
- Buy-in from school administrators and teachers
- Equipment

About this Toolkit

Toolkit Development

The *Rural Obesity Prevention Toolkit* was first published on 12/20/2012 and last reviewed on 7/24/2017.

Toolkits are developed based on a review of FORHP grantees' applications, foundation-funded projects, and an extensive literature review, to identify evidence-based and promising models. Programs featured in the toolkit are interviewed to provide insights about their work and guidance for other rural communities interested in undertaking a similar project.

Credits

This toolkit was produced by the NORC Walsh Center for Rural Health Analysis, in partnership with the University of Minnesota's Rural Health Research Center, and in collaboration with and the Rural Health Information Hub (RHIhub).

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- RHIhub at 1-800-230-1898 or email info@ruralhealthinfo.org

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