Enhancing Physical Activity within WorkHealthy America[SM] as part of a Culture of Wellness

By

Sadye Paez Errickson, PT, PhD, MS

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Abstract

Since 1988, the National Health and Nutrition Examination Survey (NHANES) indicates a statistical increase in obesity regardless of sex or age. A contributing factor of this obesogenic environment is characterized, in part, by increased food intake and physical inactivity. Targeting these behaviors through policy and environmental changes holds the potential to effectively address and reverse the obesity epidemic. In particular, American worksites have the potential for improving the health and productivity of workers through the promotion of physical activity within and around the worksite. However, the guiding principles and practices that employers are currently using are not fully understood. This report outlines the rationale and evidence for targeting overweight and obesity through a focus on physical activity, particularly the integration of physical activity into the workplace culture. This report presents a conceptual model for assimilating physical activity into the workplace environment. Third, an application of this conceptual model is applied using NC Prevention Partners' WorkHealthy America[SM] (WHA)[1] to comparatively assess the physical activity worksite guidelines and practices among a pilot sample of North Carolina organizations. Lastly, recommendations for the field of public health are

[1] WorkHealthy America[SM] is a propriotery worksite wellness product developed by NC Prevention Partners' to assess and provide tailored technical assistance to employers.

delineated in an effort to guide real and substantive change for the American public facing the obesity epidemic.

Introduction

Until recently, the last American century has largely focused on reducing infectious diseases and improving nutrition during early life; the later 1960s brought the first recognition of obesity as "a serious health problem" by the Department of Health (1). Today, obesity research continues to lag when compared to other chronic conditions. The causes and mechanisms of obesity, as well as the best methods to prevent and treat, are equivocal due to the complex set of factors – social, cultural, economic – that contribute to food intake and physical activity behaviors.

Overweight and obesity is not only a medical problem, but also a cultural one. The paradox is that while the availability and accessibility of high-fat fast food and sedentary activities is increasing, there is also a concurrent promulgation of popular media and marketing campaigns emphasizing thinness (2). The most straightforward answer to the etiology of overweight and obesity is medically based: overweight and obesity is caused by a chronic energy imbalance, where caloric intake is greater than caloric output (3). However, culturally, the etiology of overweight and obesity is more complex, with contributing genetic, metabolic, socioeconomic, behavioral, and environmental factors.

Physical activity has been forwarded as one viable solution for preventing new cases of overweight and obesity and for reducing associated medical and psychosocial conditions. In particular, targeting adults at the worksite may

present one underutilized environment to encourage positive physical activity behavior change because of the relationship between businesses and employees (4). A supportive worksite environment through visible and invisible elements of culture – policies, leveraged community resources, facilities and space, administrative engagement, technologies, education, communication, financial benefits and incentives, etc– holds potential to impact the employee, families, and the broader community.

Methods

This report aims to:

- Highlight the problem of overweight and obesity and the national and state-level plans targeting at reducing and preventing overweight and obesity;
- Describe the rationale and evidence supporting physical activity as a means to address overweight and obesity, specifically through a focus of increasing access to and participation in the workplace;
- Outline the best practices for initiating and sustaining wellness programs that support of physical activity;
- Present a workplace physical activity conceptual model which depicts the principles and essential components for operational and implementation outcomes;
- Describe the results of an application of this evidence using NC Prevention Partners' WHA in a comparative analysis among a pilot sample

of North Carolina organizations; and

- Put forth recommendations for the field of public health on the best practices for integrating physical activity into the workplace culture.

The Problem of Overweight and Obesity

Definition of Overweight and Obesity

The World Health Organization's most recent International Classification of Diseases (version 10) categorizes obesity as an " abnormal or excessive fat accumulation that may impair health" (5). Several codes are listed by etiology, including localized adiposity, drug-induced obesity, morbid obesity, obesity due to excess calories, and extreme obesity with alveolar hypoventilation. These codes serve as the standard diagnostic classification used for the purposes of classifying disease for health management and prevalence monitoring, as well as for the storage and retrieval of clinical data for epidemiological purposes, including national mortality and morbidity assessments.

Further, overweight and obesity are defined according to Federal Guidelines set forth by an NIH convened Expert Panel on Obesity, including the National Heart Lung and Blood Institute and the National Institute of Diabetes and Digestive and Kidney Diseases (3). These Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults defined body mass index (BMI), a measure of weight in kilograms divided by the square of the height in meters (kg/m^2), as the most appropriate method of identifying overweight or

obese. For adults, overweight is defined as a BMI equal to or greater than 25 and obesity is defined as a BMI equal to or greater than 30 (6). Clinically, obesity and overweight are associated with increased risk of morbidity from hypertension, dyslipidemia, Type 2 diabetes, coronary heart disease, stroke, osteoarthritis, gallbladder disease, sleep apnea, respiratory disorders, and several types of cancer, including endometrial, breast, colon, and prostrate (7).

Prevalence of Overweight and Obesity

Worldwide projections for 2005 from the World Health Organization indicated that approximately 1.6 billion adults over the age of 15 were overweight, and at least 400 million adults were obese (6, 8). In the United States, recent prevalence rates denoted that approximately 97 million adults are overweight or obese (7). In 2005, over 60% 0f North Carolinian adults were overweight or obese (9). Differentiating between these BMI demarcations, the CDC's Behavioral Risk Factor Surveillance System calculated that nationwide in 2009, 36.1% and 27.1% of Americans were overweight and obese, respectively. For North Carolina in 2009, 35.2% and 30.1% were overweight and obese, respectively.

Calls to Action

The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity asks for multi-faceted public health approaches to deliver long-term reductions in the prevalence of obesity, emphasizing a focus on health and not appearance, empowerment of individuals and communities to overcome barriers,

and a removal of stigmatization to allow the nation to move forward in a positive and proactive fashion (10). The World Health Assembly has made a similar call, establishing a Global Strategy on Diet, Physical Activity and Health for the adoption of healthy diets and regular physical activity through the support of stakeholders at global, regional, and local levels for a reduction in the prevalence of chronic diseases and their common risks, unhealthy diets and physical inactivity (8). These calls have led to specific objectives at both the federal and state levels.

Federal and State Objectives

At the federal level, Healthy People 2020 (HP 2020) is a national health promotion and disease prevention initiative designed to coordinate public health actions for the health and wellbeing of Americans (11). HP 2020 has two overarching goals: 1) to increase the years and quality of healthy life, and 2) to eliminate health disparities. Preventable threats to health are then identified as leading health indicators based on these goals. Each leading health indicators establishes objectives for the nation to strive towards accomplishing by 2020. HP2020 is currently developing the framework – including the vision, mission, goals, focus areas, and objectives – through a collaborative process of public input and stakeholder dialogue (Appendix C).

Objectives at the North Carolina state level began in 1999, when then Governor James B. Hunt chaired the Governor's Task Force on Healthy Carolinians 2010

(HC 2010) to develop measurable health objectives for the state to accomplish by the year 2010. The Healthy Carolinians State Action Project emerged as a statewide partnership focusing on health and safety issues at the community level (12, 13). Healthy Carolinians uses principle of collaboration, community mobilization and empowerment to identify priority health issues and intervention planning. Today, more than 80 counties are actively involved, striving towards meeting the health objectives set for the state of NC. Currently NC 2020 health objectives are being prepared for release in January 2011 (Appendix C).

The Solution of Physical Activity

Prevention First for a Healthier North Carolina

The NC Prevention Partners 2009 North Carolina Prevention Report Card highlighted the urgent necessity to focus on prevention: 28% of preventable deaths in NC are due to poor diet and physical inactivity (14). Further, physical inactivity costs the state of NC $8.970 billion dollars a year to treat. The former calls to action for overweight and obesity have been further fragmented into specific empirical measurements for physical activity.

The US National Physical Activity Plan

The 2010 Dietary Guidelines Advisory Committee (DGAC) was established jointly by the Secretaries of US Department of Agriculture (USDA) and the US Department of Health and Human Services (HHS). The DGAC outlined a coordinated strategic plan which engages individuals, families, educators,

communities, physicians and allied health professionals, public health advocates, policy makers, scientists, and small and large businesses (e.g., farmers, agricultural producers, food scientists, food manufacturers, and food retailers) to recognize and overcome barriers to health-promoting behaviors. One part of this systematized effort included implementation of the US National Physical Activity Plan, a collaboration promoting local, state, and national programs and policies to increase physical activity and reduce sedentary activity (4).

The U.S. National Physical Activity Plan, a private-public sector collaborative, envisions a day when all Americans will be physical active in the environments they live, work, and play. This vision is backed by a comprehensive set of policies, programs, and initiatives that aims to increase physical activity by creating a national culture in eight societal sectors: business and industry; education; health care; mass media; parks, recreation, fitness and sports; public health; transportation, land use, and community design; and volunteer and non-profit.

Definition of Physical Activity

Physical activity is any bodily movement by skeletal muscles that results in energy expenditure in a variety of activities, such as household chores or leisure pursuits. Physical activity can further be defined by intensity level as moderate or vigorous with intensity being inferred through several measures such as the talk test, target heart rate, Borg's rating of perceived exertion, and metabolic

equivalent level (MET). Exercise is a component of physical activity. Exercise is planned, repetitive, and organized physical activity that is designed to improve one or more of the components of physical fitness (cardiovascular endurance, muscular strength, muscular endurance, flexibility, and body composition).

The US Surgeon General, the Centers for Disease Control and Prevention (CDC), the American College of Sports Medicine, and the American Heart Association recommend that healthy adults participate in at least 30 minutes per day of at least moderate-intensity aerobic physical activity, above usual activity, on most, if not all, days of the week (15-17).

The Surgeon General's 1996 Report on Physical Activity and Health concluded that regular sustained physical activity has positive effects on the musculoskeletal, cardiovascular, respiratory, and endocrine systems (16). Further, participation in physical activity reduces mortality and morbidity from coronary heart disease, hypertension, colon cancer and other types of cancer, and diabetes mellitus. Additionally, various psychosocial behaviors and risks are also affected by regular sustained physical activity, including reduced symptoms of depression and anxiety.

Prevalence of Physical Activity

Yet, Americans tend to be relatively inactive. In 2008, 50% of adult Americans did not participate in any physical activity (9). The CDC's Behavioral Risk Factor

Surveillance System (BRFSS) is an on-going telephone health survey that has been tracking health conditions and risk behaviors in the United States since 1984 (9). Specifically to physical activity, BRFSS measures "adults with 30+ minutes of moderate to vigorous physical activity (MVPA) five or more days per week or vigorous PA for 20+ min three or more days per week." In 2009, 50.6% and 46.4% of adults met these criteria, nationwide and unique to North Carolina, respectively. At the federal level, HP 2020 (11) has a leading health indicator for "Physical Activity", of which several objectives pertain to adults targeted towards improving the proportion of adults that meet current Federal physical activity guidelines (Appendix C).

The (Business) Culture of Wellness

The Business and Industry Sector

One contributing factor to adult inactivity stems from technological advancements on worksites where many job tasks have become increasingly sedentary, including extended hours seated at a desk, behind a wheel, or at a counter (18). These technological advancements are responsible for improving efficiency and maximizing output at the worksite; however, they are responsible for absenteeism, short-term disability, and work impairment due to this associated sedentary lifestyle (4). Employers spend an average of $18,000 per employee on health related costs, including medical care, other benefits and productivity costs (19). Moreover, employees who are severely overweight file twice as many workers' compensation claims, have nearly seven times the medical claims cost,

and miss thirteen times more work days per year than employees at their recommended weight (20). However, a meta-analysis review of 42 studies indicated that worksite health promotion programs reduce absenteeism, health care costs, and disabilitiy/workers' compensation costs by more than 25% (21).

Given that most employed adults spend 7.5 hours a day (22) every week at their worksites, worksites present an ideal opportunity to target physical activity habits. The HP 2020 developmental objective to "increase the proportion of employed adults who have access to and participate in employer-based exercise facilities and exercise programs" highlights the national recognition of this potential context and environment to change physical activity behaviors (23) (Appendix C). Additionally, the U.S. National Physical Activity Plan has recommended several strategies to promote participation in physical activity in the business and industry sector (4) (Appendix D). Several reviews also support that worksite health promotion may present an efficient strategy to increase participation in physical activity (24-26). Worksite health promotion programs demonstrate reductions in absenteeism and sick leave, the ability to generate positive financial return (18) and effectiveness for affecting employee overweight and obesity (27, 28).

Effective strategies to influence participation in physical activity have included a focus on behavioral strategies of education and counseling (27, 28), as well as environmental and policy interventions (29-32). However, while the Task Force of

Community Preventative Services has released a set of recommendations for worksite health promotion interventions, the focus remains on assessing employee health risks and decreasing employee tobacco use (33). The evidence to support the effectiveness of assessments in combination with health education programs remains insufficient. Although findings document that workplace physical activity interventions can improve both health and worksite outcomes (24, 34) gaps in research remain, particularly best strategies to increase participation levels above 50% (35).

While there are challenges and barriers for promoting physical activity in the worksite (36-40), the potential for improving health, productivity, and quality of life in this setting is feasible, particularly for promotion of incidental physical activity within and around the worksite (41). Understanding the current practices employed at worksites, as well as the link to theory and evidence-based recommendations, is critical to target and support those individuals who are among the high percentage that are not participating in sufficient amounts of daily physical activity.

Worksites have the potential for improving the health and productivity of Americans, and specifically, North Carolinian workers, through the promotion of physical activity. Yet, although national and state-level objectives, calls to action, recommendations and strategies have been proposed, the actual guiding principles and practices that employers and employees are using are not fully

delineated or understood.

NC Prevention Partners' WorkHealthy America[SM]

NC Prevention Partners, a statewide nonprofit and leader in reducing preventable illness and early death caused by tobacco use, poor nutrition and physical inactivity, aims to put "prevention first for a healthier North Carolina." NC Prevention Partner consequently focuses on unifying leaders from business, health insurers, schools, hospitals, foundations, researchers, consumers, public health and advocacy organizations to improve health and control costs (42).

NC Prevention Partners developed the WorkHealthy America[SM] (WHA) as a brief, online survey that measures how well an employer supports employees to be healthy at work, specifically, organizational-level indicators of worksite wellness related to nutrition, tobacco, and physical activity and automatically generates a report card, recommendation report, a tailored action plan, and toolboxes that features resources (43). Any size or type of employer can use the *Assessment* to evaluate their organization's current nutrition, physical activity, and tobacco use policies and environments to create a baseline to measure against future progress. Employers receive a grade based on their wellness policies, benefits, and environments for each topic area, as well as access to toolboxes, webinars and tailored action plans to help create and improve healthy workplace policies.

The Physical Activity Module

NC Prevention Partners' WHA's physical activity module was updated as a result of the literature review presented in this report. It was similarly structured to complement NC Prevention Partners heavily funded tobacco and nutrition modules and logic models. These findings also led to the development of a conceptual model highlighting the best principles and practices for integrating physical activity in the workplace culture. Additionally, this updated module was pilot tested among 20 organizations in North Carolina for clarity prior to being programmed into NC Prevention Partners automated to WHA's database.

All questions in the WHA were based on gold standards for what works in worksite wellness, including but not limited to the CDC's Guide to Community Preventive Services (33), the Healthy People 2020 targets (44), and the Guide to Clinical Preventive Services (45). The evidence supports four main principles for fostering a workplace environment to increase participation in physical activity among employees, both in and outside of the workplace (43):

1. **Policy**: establishing policies that safely promote physical activity;
2. **Environment**: creating an environment conducive to physical activity;
3. **Education**: educating employees about the benefits of physical activity and about physical activity opportunities your worksite offers; and
4. **Benefits and Incentives**: developing effective benefits and incentives that engage and reward physically active employees.

Each main principle has several required components that based on the gold standards, are necessary for creating a culture of wellness within worksites. Presence or absence of these required components will be instrumental in determining the success of the business and its employees to integrating physical activity in the worksite.

Principle 1: Adopt and Implement Leadership and Policy Infrastructure Supportive of Physical Activity

There are five required components for addressing Principle 1 (43):

1. Provide employees with paid time to exercise during each workday.
2. Offer employees flexible work hours to schedule physical activity according to their preferences.
3. Have employees sign waivers of liability/assumption of risk forms before participating in physical activity during work hours.
4. Regularly evaluate the effectiveness of your physical activity policies and programs.
5. Actively communicate information about physical activity policies and programs to employees.

The National Physical Activity Plan outlines a framework for action that calls for an interaction of stakeholders at various levels of influence, including employer and employee levels (18). Establishing policies that safely promote physical activity is important to creating a culture of wellness. Active endorsements of

such policies are also important to develop an infrastructure that is supportive of physical activity. The Guide to Community Preventive Services (hereinafter Community Guide) (33, 45) systematically reviews scientific interventions to issue evidence-based recommendations to promote public health. Specific to physical activity, the Community Guide endorses businesses and industries increasing opportunities for employees to participate in physical activity *at* the worksite, particularly to control overweight and obesity. Written flextime or periodic policies supporting physical activity during work time have been shown to increase levels of physical activity (40, 46, 47). These policies can support physical activity at the worksite in various ways, such as providing 10 minute breaks announced through broadcast or email (48) or active endorsement from senior management (49). Additionally, it is important that employees are aware of policies and program supporting physical activity at the worksite. Each employee should be notified of existing policies and programs for physical activity at new employee orientation and in the employee policy manual. These activities send a clear message from stakeholders at the leadership level to stakeholders at the employee level on the importance of physical activity.

Principle 2: Create an Environment Conducive to Physical Activity

There are also five required components to addressing Principle 2 (43):

1. Provide access to physical activity opportunities during work hours.
2. Provide access to physical activity facilities outside of work hours.

3. Carry out regular safety inspections of onsite exercise facilities and/or equipment.
4. Encourage alternative commuting to work.
5. Provide accommodations for employees with special needs.

Providing access to safe and clean facilities and space is as important as promoting physical activity at the worksite. Environments conducive to physical activity should include opportunities to be physically active during work hours, such as the provision of onsite facilities (20, 33, 50). Environments might also include recreational walking with marked walking paths inside and outside buildings (40, 47) and attractive stairwells accompanied by point-of-decision prompts (51). Alternative means of commuting to work are an additional means to support physical activity and should include bicycle racks (39), locker rooms and showers (51).

Principle 3: Educate Staff about Available Physical Activity Options

There are three required components for addressing Principle 3 (43):

1. Educate employees about the importance of physical activity.
2. Use motivational signs or point-of-decision prompts to encourage people to get more physical activity.
3. Actively communicate with employees about opportunities for physical activity, as well as your policies and benefits that support physical activity.

Businesses and industries should also continue to promote physical activity beyond new employee orientation through environmental prompts (e.g., signage) (49), posted newsletters, email (51), and written educational materials such as handouts and posters (48). The Community Guide additionally recommends a method of "saturating" the worksite with point-of-decision prompts using internet sites, bulletin boards, fliers, and posters (33). Point-of-decision prompts should be posted at various sites with high employee traffic, such as break rooms, bathrooms, and stairwells (49).

Principle 4: Use Benefit Design and Incentives to Encourage Behavior Change

Lastly, there are four required components for addressing Principle 4 (43):

1. Provide incentives and/or disincentives to employees for participating in physical activity
2. Offer a discount for employees to join a local or onsite exercise facility
3. Offer health insurance benefits or equivalent employee benefits that support physical activity
4. Communicate and promote benefits and incentives through your wellness program

Employees can be motivated to participate in physical activity at the worksite through benefit design and incentives. Discounted or subsidized memberships to local fitness facilities might serve as a motivator for behavior change, particularly

if this benefit is also extended to immediate family members (33, 47). Higher participation rates in physical activity have also been demonstrated when a program consists of multiple incentives, such as money or cash bonuses, lower health insurance premiums, gift cards, employee recognition, flex time, or small tokens and merchandise (35). Disincentives may include economic factors, such as gasoline tax or developmental impact fees, that may influence decisions individuals make pertaining to physical activity choices (52).

The Conceptual Model

The conceptual model for the physical activity module in the WHA is depicted in Appendix A. "Operation and implementation" delineates monitoring and evaluation objectives for each potential stage of initiating and sustaining a physical activity worksite program. Principles based on these operation and implementation objectives are outlined at two levels: required and optional components. Required components are the factors that are critical to physical activity worksite programs; these have been described above in detail. Optional components are important or promising practices that have circumstantial or emerging evidence but are not yet fully supported as fundamental.

A Comparative Analysis of the WHA's Physical Activity module

The data presented in this study were derived from a convenience sampling of North Carolina organizations (n=20) that have already completed the tobacco and nutrition modules of the WHA. Each organization had a higher-level

executive or wellness committee member complete the physical activity module of the WHA in February 2010, which consisted of questions for each required and optional component from each principle. Organizations were selected to represent diverse demographic factors, including size, type of industry, and geographical setting, as well as a willingness to complete the physical activity module. Data from the 20 organizations will be evaluated using Stata 11.0. The main outcome measures were aggregate physical activity grades for these NC organizations based on policy, environment, education, and incentive principles.

Each question was graded based on the following scale: 3 points for strongly recommended, 2 points for a key process measure, and 1 point for a good process measure. Organizations received an overall grade based on the total number of points received for all questions with a range from "A" to "F". A grade of an "A" represented an organization that at a minimum had policies and procedures in place for all required components for each principle; a grade of an "F" represented an organization that failed to address each required component for each principle.

Tailored feedback was given to each organization upon completing the physical activity module of the WHA. For each question, organizations received information about their current status, short- and long-term action steps (within 6 weeks and 6 months, respectively), and related resources. These recommendations are research-based, garnered from scholarly publications,

peer-reviewed journals, and clinical research. For example, the first question of the module asks: "Does your worksite have a policy that provides employees with paid time to exercise during each workday?" The response field can be answered as either a "yes" or "no."

If the response is "yes" then the following feedback would be provided:

- **Current Status**: Your worksite has achieved this critical practice. There is strong evidence that a policy to provide employees with paid time to exercise during the day will encourage increased physical activity.
- **Short-Term Action Steps** (within 6 weeks): Recognize policy through employee communication channels, such as newsletters, paycheck stuffers, e-mails, etc. Provide opportunities that make it very easy to use this benefit, such as scheduled activity breaks, planned exercise classes, etc.
- **Long-Term Action Steps** (within 6 months): Continue to monitor, enforce and evaluate. Make changes as necessary, and communicate changes to employees.

If the response is "no" then the following feedback would be provided:

- **Current Status**: Your worksite has **not** achieved this critical practice. There is strong evidence that a policy to provide employees with paid time to exercise during the day will encourage increased physical activity.
- **Short-Term Action Steps** (within 6 weeks): Work with executives,

wellness committee, or other appropriate personnel to establish a policy to provide employees with paid time to exercise during the workday. Work with executive level leadership to incorporate the initiative in the worksite's vision, goals, and identity.

- **Long-Term Action Steps** (within 6 months): Recognize policy through employee communication channels, such as newsletters, paycheck stuffers, e-mails, etc. Provide opportunities that make it easy to take advantage of the policy, such as scheduled activity breaks, planned exercise classes, etc.
- **Direct them to these NC Prevention Partners' Resources**:
    - Sample Policy 1 http://www.ncpreventionpartners.org/dnn/portals/0/pdf/physicalactivitytoolbox/sample.policy1.pdf
    - Sample Policy 2 http://www.ncpreventionpartners.org/dnn/portals/0/pdf/physicalactivitytoolbox/sample.policy2.pdf

Results

In this pilot study, employee size ranged from organizations with less than 49 employees (23%) to organizations with more than 750 employees (15%). The majority of organizations had between 100 to 249 organizations (39%). Industry sectors included: computer/IT services (8%), construction (8%), education (8%), health departments (15%), healthcare provider offices (8%), insurance/broker

(8%), manufacturing (8%), restaurant/food service (8%), transportation and storage (8%), and other sectors (23%).

Aggregate physical activity grades ranged from B to F, with the greatest percentage receiving a D grade (46.2%) or C grade (38%). No organization received an A grade on physical activity. The majority of organizations had easy access to exercise facilities and/or equipment (61.5%) and bike racks, showers, changing facilities, and lockers (84.6%). However, only approximately half had accommodations for employees with special needs. Less than half used benefits to encourage participation in physical activity, such as incentives (46.2%) or discounts (38.5%). Approximately half of the organizations used education to communicate the importance of physical activity (53.8%), however, most did not actively endorse participation in physical activity as evident by the lack of physical activity break policies (69.2%) or communication of existing physical activity policies (84.6%) at the worksite. Further, very few organizations gave employees paid time off to exercise during the workday (92.3%) and none of the organizations had a policy supporting flexible work hours to schedule physical activity.

Discussion

This report aimed to highlight the problem of overweight and obesity and the potential solution of physical activity within a larger context of a culture of wellness by emphasizing the evidence in literature and national and state-level

plans. A conceptual model depicting best practices for wellness programs in support of physical activity and the results of a pilot study using NC Prevention Partners' WHA Physical Activity Module additionally stressed the best practices for the field of public health for the integration of physical activity into the workplace culture as a viable panacea for adult overweight and obesity.

Best practices outline components of policy, environment, education, and incentives to create a worksite culture promoting physical activity as part of overall wellness programs. This pilot study among 20 North Carolinian organizations aimed to test an enhanced physical activity module in NC Prevention Partners' WHA. The majority of organizations received grades of C and D on the physical activity module, reflecting deficiencies in all principles. Specifically, top management support and supportive environmental policies for physical activity at the worksite were absent among these organizations.

Limitations

The limitations of this pilot study primarily include the sample size and consequent limited generalizability. Additionally, the organizations were selected from a pool of organizations that had already completed the nutrition and tobacco modules of the WHA indicating some level of commitment to employee wellness. Therefore the sample may have a higher set of grades or more evidenced-based physical activity practices in place.

Recommendations

Creating worksite environments that makes it easy for Americans to be healthy is critical towards addressing the numerous medical, emotional, and economic factors related to physical inactivity. First, understanding the actual practices in support of physical activity at worksites is important to be able to address the gaps in research and translational application. A next step of this research would include expanding the sample size to obtain more generalizable results. NC Prevention Partners is continuously extending its workplace reach by gathering baseline and ongoing improvements data, tracking changes, and engaging organizations and leaders towards incorporating best practices and strategies within their worksites.

Numerous guidelines exist as previously discussed, however, there are no datasets on actual worksite practices available. NC Prevention Partners' WHA is the first dataset that captures baseline and ongoing outcomes and process data over time, thus, filling a critical gap in the evidence. The Board of NC Prevention Partners envisions expanding the WHA to the national level as both an intervention and a monitoring and evaluation tool to capture actual workplace practices and transitions to best practices.

Second, comprehensive worksite health promotion programs should aim to pursue environmental factors, particularly for physical activity, "to alter the worksite 'culture' to become more health conscious" (26). Best practices for

"altering" physical activity practices in business at the leadership and organizational levels include garnering top management support and developing supportive environments (18). The Public Health Leadership Competency Framework outlines the core competencies required of public health leaders (53), including the capacity to articulate a vision and act as an effective change agent by modeling behavior and facilitating empowerment of others to take action. Obtaining this leadership support is critical towards successfully initiating and sustaining changes in worksite culture.

Third, garnering support from other stakeholders, such as government and nongovernmental organizations, will additionally help to advance cultures of wellness at worksites. These partnerships are instrumental towards establishing a greater context in which to pursue policy and environmental changes that complement leadership efforts at worksites. North Carolina must continue to support existing policies in support of physical activity and obesity related issues and to develop actions to fill the existing gaps to reduce the prevalence of overweight and obesity among North Carolinians.

Conclusions

The cultural aspects of the problem of overweight and obesity necessitate a corresponding solution that integrates culture as part of a larger wellness plan. A 2009 CDC study reported that total direct and indirect costs attributable to obesity amounts to as high as $147 billion dollars annually (54). Additionally, this

same study found that obese patients have a 42% higher medical cost than people within a normal weight range. From monies allocated to health care, the majority is spent on direct care while only 3% is spent on prevention (42). These health care and employment costs do not consider additional broader social costs. Moreover, although overweight and obesity is observe in all population groups, certain groups have higher prevalence rates, including Hispanics/Latinos, African Americans/Blacks and American Indians (12). These same groups also tend to be the least physically active.

The cost, low yield, and difficulty of therapeutic treatments, complicated with the difficulty of treating established obesity warrant a focus on prevention of overweight and obesity by establishing healthy behaviors as the norm. The potential benefits of preventing and treating overweight and obesity through the integration of physical activity into a culture of wellness is of considerable public health importance. There are many determinants contributing to physical inactivity, and thus, many areas in which to focus prevention efforts. Yet, it is clear that establishing and sustaining a culture of wellness at worksites is an important sector in which to institute these efforts.

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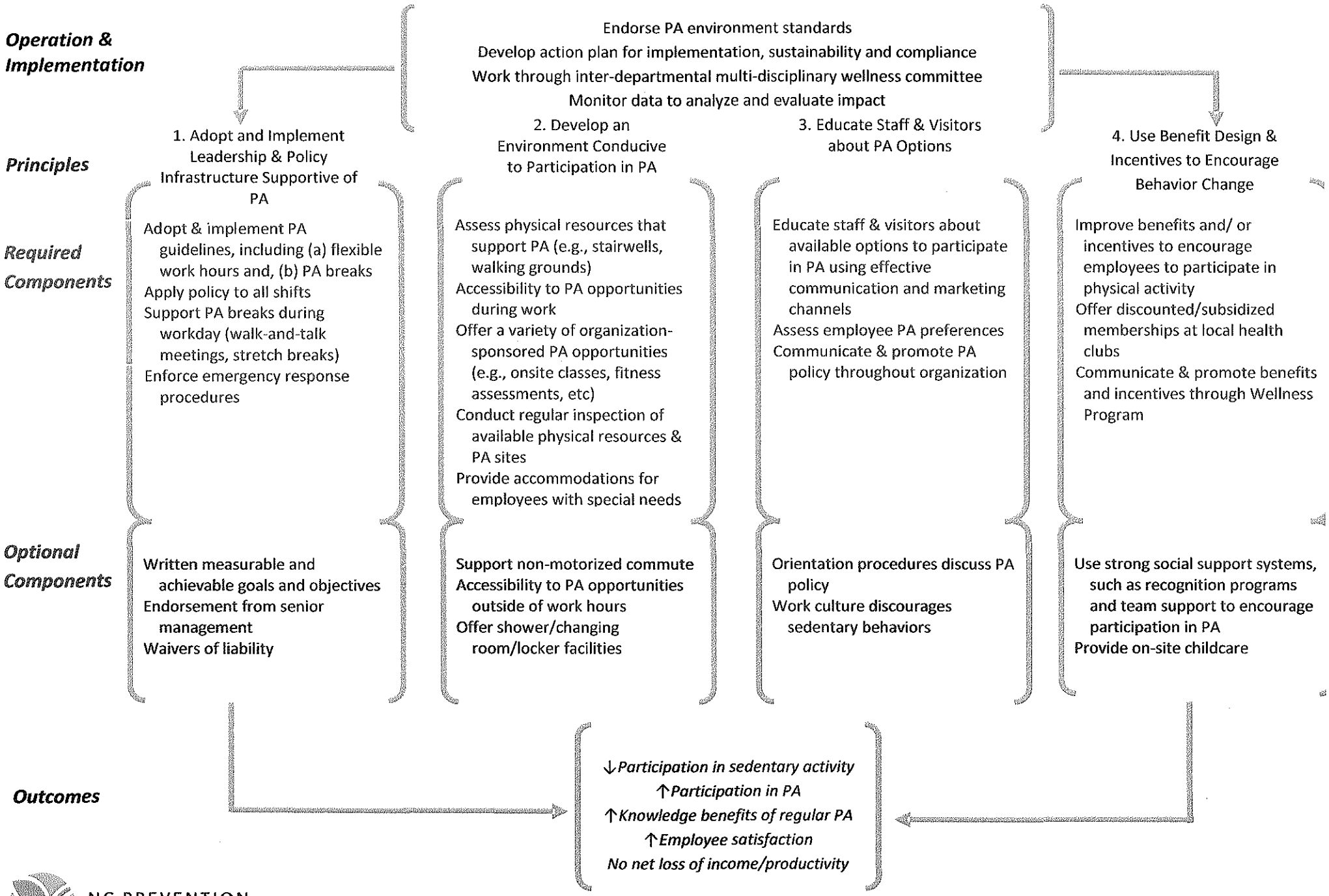
Appendix A
Physical Activity (I , Conceptual Model



NC PREVENTION PARTNERS

Revised July 17, 2009

Appendix B: Physical Activity Toolbox

Physical Activity (PA) Programs

PA Education and Awareness Programs: Promotional Campaigns and/or Bulletin Board Materials

1. **Eat Smart, Move More...NC: Handouts and Posters**

   http://www.eatsmartmovemorenc.com/ESMMHandouts/ESMMHandouts.html and

   http://www.eatsmartmovemorenc.com/MotivationalPosters/MotivationalPosters.html

2. **CDC: Physical Activity Guidelines for Americans Toolkit Posters and Event Flyers**

   http://www.health.gov/paguidelines/posters.aspx and

   http://www.health.gov/paguidelines/flyers.aspx

3. **Big Five Prescription Pad**

   (http://www.eatsmartmovemorenc.com/PrescriptionPads/Texts/big5_prescript_pad.pdf) This Adobe document allows medical professionals and/or organizations to "prescribe" healthy behaviors, such as "Right-size your portions" and "choose to Move More everyday".

4. **Patient Education Packets**

   (http://www.eatsmartmovemorenc.com/PatientEducationPackets/PatientEducationPackets.html) Includes downloadable evidence-based education materials on 1) Prepare more meals at home, 2) Tame the Tube, 3) Choose to Move More Everyday, 4) Right-size your portions, 5) Re-think your drink, and 6) Enjoy More Fruits and Vegetables

5. **CDC: Physical Activity Guidelines for Americans Toolkit**

   http://www.health.gov/paguidelines/toolkit.aspx This resource includes Fact Sheets for PA Guidelines for Americans and "A Guide for Adults: Be Active Your Way" presentation (also available as a powerpoint on cd-rom by request). A good resource to educate employees on PA guidelines.

6. **The President's Challenge Adult Fitness Test** http://www.adultfitnesstest.org/ This link provides details (including an instructional booklet and data collection form) to conduct an adult fitness test (aerobic fitness, muscular strength and endurance, flexiblity, and body composition) based on the FITT (frequency, intensity, time, type) principle for self and others.

PA Education and Awareness Programs: Stairwell/Walkability

1. **Eat Smart, Move More...NC: Stairwell Guide**: http://www.eatsmartmovemorenc.com/StairwellGuide/StairwellGuide.html A useful planning tool for anyone that is interested in creating a stairwell initiative in their workplace environment. This tool provides step-by-step guidelines, including downloadable promotional signs and examples of existing stairwell initiative programs in NC.
2. **CDC StairWELL to Better Health**: http://www.cdc.gov/nccdphp/dnpa/hwi/toolkits/stairwell/index.htm This link includes information on stairwell appearance, motivational signs, installing music, tracking stair usage, project checklist, and other related resources.
3. **CDC Worksite Walkability**: http://www.cdc.gov/nccdphp/dnpa/hwi/toolkits/walkability/index.htm includes an audit tool for your worksite (http://www.cdc.gov/nccdphp/dnpa/hwi/toolkits/walkability/Walkability_Audit_Tool.pdf)
4. **California Be Active! Worksite Program: A Guide to Improving Worksite Stairwells** http://www.cdph.ca.gov/programs/cpns/Documents/CPNS-StairwellsTool.pdf and stairwell competition form: http://www.cdph.ca.gov/programs/cpns/Documents/CPNS-StairwellCompetitionForm.pdf

5. **California Be Active! Worksite Program: A Guide to Establishing Worksite Walking Clubs** http://www.cdph.ca.gov/programs/cpns/Documents/CPNS-WalkingClubTool.pdf
6. **Skyscraper Climb**: http://www.dshs.state.tx.us/wellness/resource/SKYSCRAPERCLIMBcontents.pdf This resource includes incentive ideas to implement this program at your worksite.

PA Education and Awareness Programs: Activity Tracker

1. **Small Step** http://www.smallstep.gov/login/login.cfm This link provides a free activity tracker.
2. **Eat Smart, Move More...NC: Activity Log:** Use this excel document to log your activity and tabulate physical activity in terms of mileage, steps, and/or time http://www.eatsmartmovemorenc.com/MealPlannerAndActivityLogs/MealPlannerAndActivityLogs.html
3. **Eat Smart, Move More...NC: Pedometer tracker** (word document): http://www.eatsmartmovemorenc.com/PatientEducationPackets/Texts/SWYH%20and%20ESMM%20Walking%20Log.pdf

PA Education and Awareness Programs: Linking to Community

1. **Discount Fitness Club Network**: http://www.cdc.gov/nccdphp/dnpa/hwi/toolkits/fitnessclub/index.htm This toolkit provides guidance on identifying and establishing relationships with a nationwide discount fitness club network for employees of multi-site organizations. Also includes CDC as a case study for using this program.

Physical Activity for Individuals with Disabilities

Books

1. "Conditioning with Physical Disabilities, Kevin F. Lockette and Ann M. Keyes, editors, in cooperation with The Rehabilitation Institute of Chicago. Available by contacting:

   Human Kinetics

   P.O. Box 507

   Champaign, IL 61825-5076

   1-(800)-747-4457
2. ACSMs "Exercise Management for Persons with Chronic Diseases and Disabilities," Scott Wikgren, acquisitions editor. Available by contacting:

   Human Kinetics

   P. O. Box 507

   Champaign, IL 61825-5076

   1-(800)-747-4457
3. "Fitness Programming and Physical Disability," Patricia D. Miller, editor. Available by contacting:

   Human Kinetics

   P.O. Box 507

   Champaign, IL 61825-50765

   1-(800)-747-4457

Resources on Physical Activity and People with Disabilities

1. The National Center on Physical Activity and Disability

   Department of Disability and Human Development

University of Illinois at Chicago

1640 West Roosevelt Road

Chicago, IL 60608-6904

1-(800)-900-8086

http://www.uic.edu/orgs/ncpad

2. Disabled Sports USA

   451 Hungerford Drive

   Suite 100

   Rocksville, MD 20850

   (301) 217-0960

   TDD: (301) 217-0963

   http://www.dsusa.org

3. National Center on Accessibility

   5020 State Road 67 North

   Martinsville, IN 46151

   (765) 349-9240

   http://www.indiana.edu/~nca

4. New York State Department of Health

   Disability and Health Program

   Empire State Plaza

   Corning Tower

   Albany, New York 12237

   (518) 474-2018

   http://www.health.state.ny.us

(Click on "consumers" to access the Disability and Health Page. DOH publishes a brochure for people with disabilities called, "Fit for Life," featuring testimonials from physically fit, people with disabilities.)

5. Access to Recreation, Inc.

   Adaptive Recreation Equipment for the Physically Challenged

   P.O. Box 5072-430

   Thousand Oaks, CA 91359-5072

   1-(800)-634-4351

   Free catalog

6. American Association for

   Active Lifestyles and Fitness

   1900 Association Drive

   Reston, VA 20191

   1-(800)-213-7193

   http://www.aahperd.org/aaalf/aaalf-main.html

7. American Council on Exercise (IDEA)

   5820 Oberlin Drive, #102

   San Diego, CA 92121

   (619) 535-8979

   http://www.acefitness.org/fitfacts

8. American Occupational Therapy Association

   4720 Montgomery Lane

   P.O. Box 31220

   Bethesda, MD 31220

(301) 652-6611

http://www.aota.org

9. American Physical Therapy Association

   1111 North Fairfax Street

   Alexandria, VA 22314

   (703) 706-3201

   http://www.apta.org/pt_journal/May99/May99_abs/v79n5p495.html

Resources on Access and the Americans with Disabilities Act

1. Council for Better Business Bureaus Foundation

   4200 Wilson Boulevard

   Arlington, VA 22203

   (703) 247-3656

   http://www.bbb.org/library/ada-fit.html

2. U.S. Department of Justice Office of the ADA

   P.O. Box 66738

   Washington, DC 20035-9998

   (202) 514-0301 (Voice)

   (202) 514-0383 (TDD)

   http://www.usdoj.gov/crt/ada/adahom1.htm

3. Architectural and Transportation Barriers Compliance Board

   1331 F Street, NW, Suite 1000

   Washington, DC

   20004-1111

1-(800)-872-2253 Voice/TDD

http://www.access-board.gov

4. Equal Opportunity Commission

   Office of Legal Counsel

   ADA Services

   1801 L Street NW

   Washington, DC 20507

   1-(800)-699-3362 Voice

   (202) 663-7026 (TDD)

   http://www.hreoc.gov.au/disability_rights/index.html

5. Disability and Business Technical Assistance Centers

   1-(800)-949-4ADA

   http://www.adata.org/dbtac.htm

Policies and/or Environments

PA Guidelines

1. **Eat Smart, Move More...NC: NC HealthSmart Worksite Wellness Toolkit: Move More**

   http://www.eatsmartmovemorenc.com/NCHealthSmartTlkt/movemore.html This toolkit outlines how to set up activities and provides guidelines for creating supportive policies and environments around physical activity.

Physical Activity Policy Examples

1. **Eat Smart, Move More...NC**:

   http://www.eatsmartmovemorenc.com/PhysicalActivityAndHealthyEatingPolicy/Texts/sample_pa.pdf

2. Think Fit PA Policy Example.doc

Community Physical Activity Toolbox

General PA Awareness

1. **Small Step** http://www.smallstep.gov/ This link provides numerous tips to improve nutrition and physical activity habits ("small steps") and a free activity tracker.

PA Education and Awareness Programs: Walking and Bicycling

1. **Pedestrian and Bicycle Information Center** http://www.pedbikeinfo.org/ This link offers extensive information about health and safety, engineering, advocacy, education, enforcement, access, and mobility as it relates to pedestrians and bicyclists.
2. **Walking Info** http://www.walkinginfo.org/ This site includes a walkability checklist (http://drusilla.hsrc.unc.edu/cms/downloads/walkabilitychecklist.pdf) and the How to Develop a Pedestrian Safety Action Plan workbook (http://drusilla.hsrc.unc.edu/cms/downloads/howtoguide2006.pdf) to help you develop a pedestrian safety action plan. In addition, this link includes sample pedestrian plans, policy and planning strategies to support walking, and numerous case studies.
3. **Bicycling Info** http://www.bicyclinginfo.org/ This site includes the Bicycle Countermeasure Selection System (BIKESAFE; http://www.bicyclinginfo.org/bikesafe/) and a Bikeability Checklist (http://www.bicyclinginfo.org/pdf/bikabilitychecklist.pdf) , as well as numerous sample bicycle plans, planning and policy examples, and cases studies.
4. **Walking & Bicycling Suitability Assessment (WABSA)** Walk (http://www.eatsmartmovemorenc.com/ACEs/Texts/070317_aces_walkingmethod.pdf) and

Bike (http://www.eatsmartmovemorenc.com/ACEs/Texts/070317_aces_bikemethod.pdf) suitability assessment tools

5. **Move More North Carolina: A Guide to Creating Walking Maps** (http://www.eatsmartmovemorenc.com/WalkingMapGuide/Texts/WalkingMapGuide_lowrez.pdf) This document provides step-by-step guidelines to promote safe walking routes in and around communities to encourage people to move more. Also includes examples of walking maps: http://www.eatsmartmovemorenc.com/WalkingMapGuide/WalkingMapGuide.html

Technology

1. **Image Library Pedestrian and Bicycle Information Center** http://www.pedbikeimages.org/ This link provides a searchable collection of free, high quality images relating to walking and bicycling.
2. **Pedestrian and Bicycle Crash Analysis Tool** http://www.walkinginfo.org/facts/pbcat/index.cfm (PBCAT) This is a crash typing software product intended to assist state and local pedestrian/bicycle coordinators, planners and engineers with improving safety for walkers and bicyclists. Version 2.1.1. is available for download.

PA Guidelines – Community Resources

1. **CDC ACES – Active Community Environments** http://www.cdc.gov/nccdphp/dnpa/physical/health_professionals/active_environments/aces.htm This initiative encourages environmental and policy interventions that will affect increased levels of physical activity and improved public health. The goals are to
    - encourage the development of pedestrian and bicycle friendly environments.

- promote active forms of transportation like walking and bicycling.
- disseminate information related to Active Community Environments.

Also see ACEs **Community Assessment**

http://www.eatsmartmovemorenc.com/ACEs/Texts/070317_aces_commassess.pdf

2. **Start With Your Heart/NC Cardiovascular Health Program and Eat Smart, Move More...NC: Winning with Aces, How you can work toward Active Community Environments**

   http://www.eatsmartmovemorenc.com/ACEs/Texts/070317_aces_policyguide.pdf This document includes worksheets to hel p you identify your own resources, including land use planning and policy statements for land use planning and multimodal transportation plans, models for successful community participation, guidelines for working with the media, and tools for community assessment, and walking and bicycling suitability assessment.

3. **National Center for Bicycling & Walking (May 2002): Increasing Physical Activity Through Community Design, A Guide for Public Health Practitioners**

   http://www.eatsmartmovemorenc.com/ACEs/Texts/070317_aces_increasepa.pdf

4. **Walking & Bicycling Suitability Assessment (WABSA)** Guidebook (http://www.eatsmartmovemorenc.com/ACEs/Texts/070317_wabsa_guidebook.pdf). WABSA also includes materials for scoring, walking and bike methods, funding sources for walk bike, sample workshop evaluation, liability release, and slideshow presentation (http://www.eatsmartmovemorenc.com/ACEs/ACEs.html)

   WABSA Assessment tools: Walk (http://www.eatsmartmovemorenc.com/ACEs/Texts/070317_aces_walkingmethod.pdf) and Bike (http://www.eatsmartmovemorenc.com/ACEs/Texts/070317_aces_bikemethod.pdf) suitability assessment tools

5. **Local Physical Activity & Nutrition Coalition Manual: Guide for Community Action** (http://www.eatsmartmovemorenc.com/ESMMCoalitions/Texts/070317_lpan_manual.pdf) ESMM Coalitions promote physical activity and healthy eating opportunities at the community level. These coalitions initiate and/or coordinate local programs and interventions to increase opportunities for community members to increase physical activity and promote healthy eating.
6. **ASCM's Charting and Changing the Policy Landscape: Promoting Physical Activity & Reversing Physical Inactivity through Policy Solutions, Executive Summary** http://www.acsm.org/AM/Template.cfm?Section=Home_Page&Template=/CM/ContentDisplay.cfm&ContentID=6473 Led to development of the National Physical Activity Plan, a comprehensive plan for promoting physical activity
7. **National Physical Activity Plan** http://www.physicalactivityplan.org/ The Plan and its implementation will be the focus of a conference July 2009
8. **Eat Smart, Move More...NC: North Carolina Blueprint for Changing Policies and Environments in Support of Increased Physical Activity** http://www.eatsmartmovemorenc.com/ESMMPlan/Texts/mm_blueprint.pdf
9. **Active Living by Design:** http://www.activelivingbydesign.org/category/resource-type/toolkit

Case Studies

1. **Active Living Network Storybank** – Although ALN is no longer operational (as of January 2008), this link has a Storybank, a searchable database of projects, programs and initiatives around the country promoting health through changes in the built environment. http://www.activeliving.org/storybank
2. **Walking Info** http://www.walkinginfo.org/ This link includes numerous case studies for walking programs.

3. **Bicycling Info** http://www.bicyclinginfo.org/ This site includes numerous cases studies for bicycling programs.
4. **Eat Smart Move More...NC: County Profiles** (http://www.eatsmartmovemorenc.com/CountyProfiles/CountyProfiles.html) These can be used as talking points regarding the burden of obesity on North Carolinians. ***MAYBE ALSO LINK TO NCPP REPORT CARD***
5. **Active Living by Design**: http://www.activelivingbydesign.org/communities

Gold Standards

1. **CDC: *The Guide to Community Preventive Services*:** The *Community Guide* provides evidence-based recommendations on population-based interventions appropriate for use by communities and health care systems to promote health and prevent disease, injury, disability, and premature death through physical activity. http://www.cdc.gov/nccdphp/dnpa/physical/health_professionals/recommendations/community_guide.htm#guide The 15-member independent Task Force on Community Preventive Services makes its recommendations based on systematic reviews of topics in three general areas:
    - Changing risk behaviors,
    - Reducing diseases, injuries, and impairments, and
    - Addressing environmental and ecosystem challenges.

    The *Community Guide* is a federally-sponsored initiative and is part of a family of federal initiatives which include *Healthy People 2010* and the *Guide to Clinical Preventive Services.* The *Guide to Community Preventive Services* (*Community Guide*) is a federally-sponsored initiative documenting the effectiveness of various population-based interventions. For each

health topic selected, an independent Task Force on Community Preventive Services systematically reviews published scientific studies, weighs the evidence, and determines the effectiveness of each intervention strategy by assigning it to one of three categories:

- "Strongly Recommended"
- "Recommended," or
- "Insufficient Evidence." Note, however, that insufficient evidence should *not* be interpreted as ineffective, but rather as requiring additional research in order to strengthen the evidence.

In regard to physical activity promotion, the Task Force **strongly recommended** the following:

- **Communitywide campaigns*** (PDF-153K)

  These large-scale, highly visible, multicomponent campaigns direct their messages to large audiences using a variety of approaches, including television, radio, newspapers, movie theaters, billboards, and mailings.

- **Individually-adapted health behavior change programs***(PDF- 159K)

  These programs are tailored to a person's specific interests or readiness to make a change in physical activity habits. Teaching behavioral skills such as goal setting, building social support, self-rewards, problem solving, and relapse prevention all assist individuals in learning to incorporate physical activity into their daily routines.

- **School-based physical education (PE)***(PDF-152K)

  This approach seeks to modify school curricula and policies, and to increase the amount of time students spend in moderate to vigorous activity while in physical education class. Schools can accomplish this either by increasing the amount of time spent in PE class, or by increasing students' activity levels during PE classes.

- **Social support interventions in community contexts***(PDF - 152K)

  The goal of this approach is to increase physical activity by creating or strengthening social networks. Examples include exercise buddies, exercise contracts, and walking groups.

- **Creating or improving access to places for physical activity combined with informational outreach***(PDF-158K)

  This approach ensures that the physical environment is conducive to physical activity, such that places where people can be physically active are readily available, accessible, and acceptable. Examples would include attractive sidewalks, stairwells, walking or biking trails, and exercise facilities in communities or in the workplace. Informational outreach strives to make people aware of available resources, encourages them to take local action, or provides training, seminars, counseling, or risk screening so that resources are well used. The goal is to improve quality of life and achieve livable communities.

The Task Force on Community Preventive Services **recommended** the following:

- **Point-of-decision prompts***(PDF-158K)

  Motivational information is provided at the place where an individual is likely to be making a choice of action. For example, by locating signs close to elevators and escalators, people are encouraged to use safe and accessible stairs as a physically active alternative to passive transport.

The Task Force categorized the following as having **insufficient evidence** available in the scientific literature to determine effectiveness. More research is needed before a clear determination can be made.

- Classroom-based health education that focuses on information sharing and behavioral change,
- Mass media campaigns,
- Classroom-based health education that encourages young people to reduce television viewing and video game playing time,
- College-level physical education and health education,
- Family-based social support.

Intervention reviews are still **in progress** for the following:

- Transportation policy and infrastructure changes to promote nonmotorized transit, and
- Urban planning approaches, such as zoning and land use.

Appendix C. Federal and State* Objectives Towards a Healthier America

HP2020 {{101 Office of Disease Prevention & Health Promotion November 3, 2009; }} Overweight and Obesity Objectives	HP2020 {{101 Office of Disease Prevention & Health Promotion November 3, 2009; }} Physical Activity Objectives
Nutrition and Weight Status (NWS) HP2020-1: Increase the proportion of adults who are at a healthy weight.	Physical Activity and Fitness (PAF) HP2020-1: Reduce the proportion of adults who engage in no leisure-time physical activity.
NWS HP2020-2: Reduce the proportion of adults who are obese.	PAF HP2020-6: Increase the proportion of adults that meet current Federal physical activity guidelines for aerobic physical activity and for muscle strength training **
NWS HP2020-15 (Developmental): Prevent inappropriate weight gain in youth and adults.	PAF HP2020-10 (Developmental): Increase the proportion of trips made by walking **
	PAF HP2020-11 (Developmental): Increase the proportion of trips made by bicycling. ***
	PAF HP2020-9 (Developmental): Increase the proportion of employed adults who have access to and participate in employer-based exercise facilities and exercise programs

* HP2020 objectives have been proposed but have yet to be officially released; NC2020 objectives are being prepared for release in January 2011

** a. Increase the proportion of adults who engage in aerobic physical activity of at least moderate intensity for at least 150 minutes/week or 75 minutes/week of vigorous intensity or an equivalent combination.
b. Increase the proportion of adults who engage in aerobic physical activity of at least moderate intensity for more than 300 minutes/week or more than 150 minutes/week of vigorous intensity or an equivalent combination.
c. Increase the proportion of adults who perform muscle-strengthening activities on 2 or more days of the week.
d. Increase the proportion of adults who meet the objectives for aerobic physical activity and for muscle strengthening.

*** Adults aged 18 years and older, trips of 1 mile or less

Appendix D. Physical Activity Strategies

US National Physical Activity Plan {{104 Health and Human Services Secretary 2010; }}: Strategies for the Business and Industry Sector	US National Plan {{104 Health and Human Services Secretary 2010; }}: Specific Workplace Recommendations	NC Prevention Partners WorkHealthy America[SM] {{11 NC Prevention Partners 2010; }} Physical Activity Module
Strategy 1: Identify, summarize, and disseminate best practices, models, and evidence-based physical activity interventions in the workplace. **Strategy 4:** Develop legislation and policy agendas that promote employer-sponsored physical activity programs while protecting individual employees' and dependents' rights. **Strategy 5:** Develop a plan for monitoring and evaluating worksite health promotion programs.	Develop guidelines for what constitute "best practices" for workplaces and create a model of universal best practices that business and industry can adopt. Develop and maintain a clearinghouse of examples of best practices and resources that can be accessed by business and industry. Recruit key business and industry leaders to play central roles in influencing their peers.	**Policy**: establishing policies that safely promote physical activity
Strategy 2: Encourage business and industry to interact with all other sectors to identify opportunities to promote physical activity within the workplace and throughout society.	Recognize organizations that are examples of best practices. Best practices can include offering cognitive and behavioral interventions, environmental changes that support and encourage physical activity (e.g., shower facilities), and policies that encourage workers to be physically active (e.g., flex time, lunch time	**Environment**: creating an environment conducive to physical activity

	walking groups). Advance physical activity environmental assessment and improvement planning tools for worksites to help them build environments that support active, healthy living.	
Strategy 3: Educate business and industry leaders regarding their role as positive agents of change to promote physical activity and healthy lifestyles within the workplace and throughout society, giving particular consideration to efforts targeting low-resource populations.		**Education**: educating employees about the benefits of physical activity and about physical activity opportunities your worksite offers
	Develop specific approaches that are appealing to worksites with large numbers of lower income and ethnic minority workers.	**Benefits and Incentives**: developing effective incentives and benefit programs that engage and reward physically active employees.