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Preface

This workbook is the product of nearly two years of diligent work provided by a dedicated group of individuals who believe that public parks and recreation can contribute mightily to reducing lifestyle related chronic illness through intentional design, persistent surveillance, fundamental change in the delivery system, and vigilant oversight of the effects on people and their community.

We offer hope that by repositioning public parks and recreation agencies they can bear the fruit of what we all believe to be true – there is a relationship between what you do in your discretionary or leisure time and your health!

Indiana University is committed to bringing its resources to urban and rural agencies who can make a difference in preventing lifestyle related chronic illness.

dmc/mpm

Special thanks for support

Since the inception of this project in February 2009, there have been numerous individuals and agencies who have contributed to its success. Above all, funding through the Faculty Research Support Program (FRSP) from the Indiana University School of Health, Physical Education and Recreation was instrumental in the initial year of operations. Special thanks are extended to former Dean Robert Goodman and Associate Dean for Research Dr. David Koceja. Their confidence in the project from its outset is deeply appreciated.

We are indebted to the Indiana Parks and Recreation Association (IPRA) for their partnership in this endeavor from its inception. The Memorandum of Understanding with the IPRA has served to anchor our work specifically on municipal parks and recreation agencies.

Many individuals have been key to the success of the Healthy Communities Surveillance and Management Project™. Special commendation is extended to faculty at Indiana University Bloomington including Drs. Michael Muehlenbein (Anthropology), Fernando Ona (Environmental Health), Kiboum Kim, Craig Ross, Rasul Mowatt, and Jennifer Piatt (Recreation, Park and Tourism Studies). A special thanks is extended to Mrs. Teresa Penbrooke, Founder and CEO of GreenPlay LLC, and faculty and Co-Founder of GP RED, who has been a kindred spirit of hope throughout the project. She has also been keen to anchor our design to insure its application in the practice of planning. Of particular merit were the contributions of Mrs. Paula McDevitt and Mr. Mick Renneisen of the Bloomington Parks and Recreation Department. They opened their agency and provided us unfettered access to data, sources and people. We are deeply indebted to this outstanding team of professionals. Of particular note is the work of Shanna Saubert, my Graduate Research Assistant. Throughout the process she has been steadfast in maintaining our website, minutes of meetings, and handling any and all duties thrown her way. We are all indebted to her important contributions to this project.

Others who have contributed to the development of this innovative project include: Dr. Michael McGinnis (Political Science), Dr. Lloyd Kolbe, Dr. Jim Klaunig (Environmental Health), Alexia Franzidis, Tyler Hack, John Drew, Tom Orr, Deanna Davis, Rob Layton, Rachel Brenna, Hidemi DeHays, Andrew Nejad, Katie Byrd, Tirajeh Saadatzadeh, Sean Prall, Adeel Chaudhry, Lisa Becker, Cari Lewis, Sierra Stringfield, Ruth Gleason, Leslie Brinson and the staff at the Rhino's Youth Center, Banneker Community Center, St. Charles Catholic School, Bryan Park Pool, Mills Pool, Indiana University Outdoor Pool, Cascades Golf Course, Suburban Lanes Bowling and Classic Lanes Bowling, Bloomington. The parents and their children who participated in our Active Youth Survey are gratefully acknowledged.

dmc

Welcome and project history

By David M. Compton (Indiana University), Teresa Penbrooke (GreenPlay LLC)

In January 2009, Dr. Compton arrived at Indiana University and set forth on a research agenda that would elevate the context of a “healthy community” in relation to public parks and recreation. While the healthy communities movement nationally has been underway, there is a paucity of empirical evidence that public parks and recreation is a causal agent of change in the health and well-being of its citizens. As well, there is no existing structural mechanism that can serve as a platform for designing interventions to affect behavioral change in these departments. Our Healthy Communities Surveillance and Management Project™ was designed to address this major gap in managing public parks and recreation, to reposition itself as a major player in positive community health.

This applied research project brings together two critically important parts to affect practice. First, it utilizes a systems analysis approach to inventorying and cataloging data, and relies on systems modeling by building community relevant models via Stella 9.1[®] software. This advanced software allows the project team to examine the influence of several variables on health outcomes. Of critical importance is the use of this software program as a tool to assisting managers in making informed decisions that affect desired behavioral, environmental, financial, or managerial outcomes. Managers who are making calculated and informed decisions are essential to increasing human capacities and improving health and well-being.

Second, our project advances the use of technology in planning for public parks and recreation agencies. Of particular importance are the geographic information systems, Composite Values Methodology, and the GRASP[®] system of community analysis used by GreenPlay LLC and Design Concepts.

The Healthy Communities Surveillance and Management Project™ timeline is as follows:

January, 2009	Inception of planning team
March, 2009	Presentation by Dr. Compton to Utah Recreation and Park Association, St. George, Utah
May, 2009	Alpha model developed for review using five tiers approach
May-July, 2010	Inventory and analyses if assets and affordances for Bloomington Parks and Recreation Department
June-July, 2010	Bloomington Active Youth Survey by Dr. Muehlenbein and team of Researchers
August, 2010	Presentation by Drs. Compton, Kim, Muehlenbein, Ross, & Robertson to the World Leisure Congress in ChunCheon, South Korea
October, 2010	Presentation by Dr. Compton & Mrs. Penbrooke to National Recreation and Park Association Congress in Minneapolis, Minnesota
January, 2011	Presentation by Drs. Kim, Muehlenbein, Ross, Miss Saubert, & Mrs. Penbrooke to Indiana Parks and Recreation Association in Indianapolis, Indiana

Introduction to the Healthy Communities workshop

By David M. Compton (Indiana University)

Welcome to this workshop to explore the “Healthy Community” concept. This session aims to provide you with basic information that can serve as a starting point for repositioning your agency.

Three levels of workshops. Our approach is to offer three levels of workshops. This first level informational workshop is aimed at providing you with the basic rationale for repositioning your agency. A second level workshop would involve your agency becoming a *Beta* test site. Such a workshop is more intensive and includes training of select personnel to create a strategic focus, collect necessary data, and design your interventions for a period of 3-5 years. The third level workshop is focused on assisting your Healthy Communities Team in methods of surveillance, data management and analysis, and decision making strategies that will affect the desired behavioral outcomes of individuals and your community.

Workshop format for today. We will use several methods to convey information today. These include: lectures, check points (to insure you are getting what is being offered), case studies, audience dialog, and short exercises to anchor your learning.

There are three (3) distinct parts to this workshop. Each is labeled as Part A, B, or C.

Part A: The foundations for a healthy community. In this section you will focus on comprehending the role that parks and recreation can, and must play in your community as a “positive public health agency” to increase childhood physical activity and decrease obesity. You will see why this role is an imperative, you will learn how to create a warrant for your agency to act, and you will understand why behavior change is not immediate, but requires surveillance over time.

Part B: What your agency needs to know, collect, and manage. In this section you will focus on identifying information required for you to create a database from which to develop strategies, assemble and digest information. These are the essential five tiers of information all agencies should have in place so as effectively design strategies aimed at increasing the citizens’ capacities to live healthier lives. Furthermore, this information will provide you with public health targets (i.e., groups and lifestyle related illnesses) that you can choose to address in your community, such as obesity.

Part C: Planning and managing the Healthy Community. In this last section you will be introduced to a system of analysis to document the effects of your managerial decisions as they relate to particular chronic illnesses, lifestyle behaviors, or levels of active engagement (physical, social, cognitive, or spiritual). You will begin to understand the complex (but simplified) relationships between variables, like the flow of funding, adding amenities or programs, and active youth engagement. You will be able to better simulate how managerial decisions can affect individual behaviors and community outcomes.

Contact information

To contact us regarding The Healthy Communities Surveillance and Management Project™, to arrange other training workshops, professional presentation, joint preparation of grants for research, training or community development, or just to obtain more information, please direct your correspondence to one the following individuals:

Dr. David M. Compton: (812) 856-6055, compton@indiana.edu

Mrs. Teresa Penbrooke: (303) 870-3884, tpenbroo@indiana.edu

Dr. Michael Muehlenbein: (812) 855-2040, mpm1@indiana.edu

Ewing, R., Schmid, T., Killingsworth, R., Zlot, A., & Raudenbush, S. (2003). Relationship between urban sprawl and physical activity, obesity, and morbidity. *American Journal of Health Promotion*, (18), 47–57.

Hedley, A., Ogden, C., Johnson, C., Carroll, M., Curtin, L., & Flegal, K. (2004). Prevalence of overweight and obesity among US children, adolescents, and adults, 1999–2002. *The Journal of American Medical Association*, (291), 2847-2850.

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Sturm, R. (2005). Economics and physical activity: A research agenda. *American Journal of Preventative Medicine*, 28(2S2), 141–149.

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Section 2: The public health imperative: Promoting health and preventing lifestyle-related illness and disease

By Terrance Robertson (Northwest Missouri State University), Matthew Symonds (Northwest Missouri State University), Michael P. Muehlenbein (Indiana University)

Learning Objectives

1. To identify three key facts on the indices of obesity and cardiovascular disease, nationally and in Indiana.
2. To conduct a self-check inventory on your own risk factors to disease.
3. To conceptualize three aspects of a supportive built environment that could contribute to changing life-styles and healthy living.
4. To comprehend the Communication Intervention Program and Evaluation (C.I.P.E.) model.
5. To utilize the Communication Intervention Program and Evaluation (C.I.P.E.) model to determine the health issue or problem in one's locale and to design an effective program to address that issue or problem.

Learning Outcomes

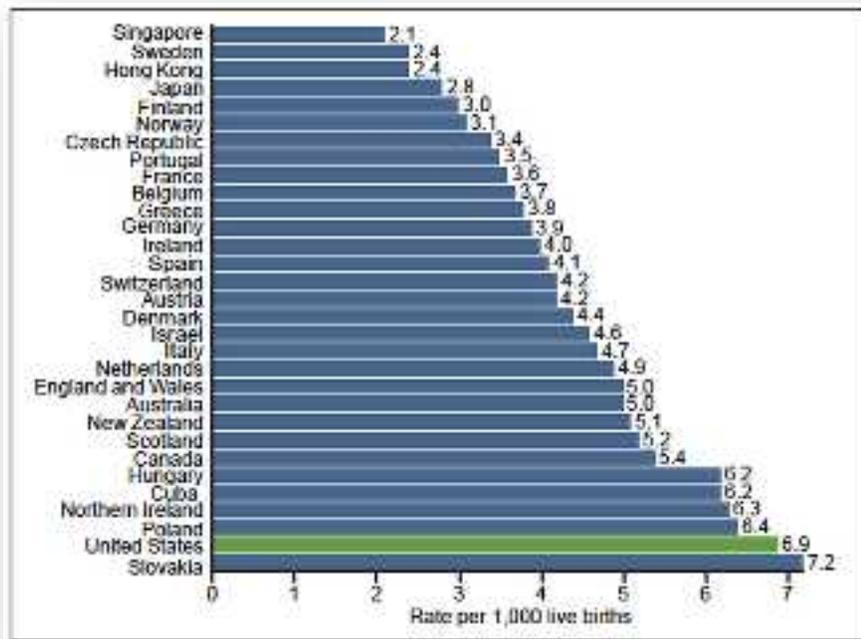
At the end of this section, participants will be able to:

1. Describe why park and recreation professionals should be concerned with public health.
2. Know where to access sources of current and accurate public health information.
3. Describe health-related concerns that public health officials, educators, and others are working on to help prevent lifestyle related illnesses and diseases.
4. Describe some of the health problems of Indiana's adults.
5. Describe a conceptual model to help explain the relationship between individuals, their environment, and resources which are relative to their behavioral choices.
6. Describe personal health risk factors that the readers' possess or that members of their families' possess.
7. Summarize potential outcomes for the citizens of Indiana if no successful health interventions are implemented.

State of the problem

To put in clear terms, the majority of the United States population is now overweight or obese (Flegal et al., 1998; Flegal et al., 2002). Poor nutrition and lack of physical activity account for at least 14% of all deaths in the United States (Variyam et al., 1996). Despite the fact that we know how to prevent obesity and cardiovascular disease, these rates have increased significantly over the past few decades. According to 2009 data from the Behavioral Risk Factor Surveillance System (Centers for Disease Control and Prevention, 2009), 36.2% of adults nationwide are overweight, 27.2% are obese, 49.4% do not practice the recommended amount of weekly physical activity, 24.2% do not participate in any physical activities, and 76.5% do not consume the recommended five servings of fruits and vegetables daily. Similarly, according to 2009 data from the Youth Risk Behavior Surveillance system (Centers for Disease Control and Prevention, 2010), 15.8% of high school students nationwide are overweight, 12% are obese,

only 18.4% participate in the recommended amount of weekly physical activity, 24.9% spend three or more hours per day on the computer (that is not school work), and 32.8% watch television for three or more hours per day. In 2005, the United States ranked 30th in infant mortality (MacDorman and Mathews, 2009).



Rates of obesity, Type 2 diabetes, and heart disease, all associated with poor eating habits and lack of physical activity, are increasing in children and young adults in the United States (U.S. Department of Health and Human Services, 2001), and obesity is associated with four of the top ten leading causes of death (National Institutes of Health, 1998). Data from NHANES surveys (1976-1980 and 2003-2006) show that the prevalence of obesity for children and youth has increased: for those aged 2–5 years, prevalence increased from 5% to 12.4%; for those aged 6-11 years, prevalence increased from 6.5% to 17%; and for those aged 12–19 years, prevalence increased from 5% to 17.6% (Hedley et al., 2004; Ogden et al., 2002; Ogden et al., 2008). Overweight children tend to remain overweight in adulthood (Whitaker et al., 1997), and children of overweight parents tend to have low physical activity levels (Sallis et al., 2000), producing an intergenerational effect.

All of this can have enormous economic costs (Colditz, 1999). Approximately 75% of the nation's total health care costs are incurred by treating lifestyle-related chronic diseases (Centers for Disease Control and Prevention, 2004). Obesity costs may have reached as high as over \$90 billion in 2002 dollars (Finkelstein et al., 2003). Coupled with other factors, like a rapidly aging population (Kinsella and Velkoff, 2001), the trend towards more managed care-like structures for Medicaid programs (Galewitz, 2010) and (unless things change) an ever-

increasing number of uninsured or underinsured individuals/families, the argument that personal, community, and population health will be a leading issue of our time has merit.

“The first wealth is health.”

Ralph Waldo Emerson
Poet, lecturer and essayist
1803-1882

Activity 2.1: Be honest about your own risk factors!

Age:

Gender/sex:

Race/ethnicity:

Height:

Weight:

Body mass index:

Body build type (slight, medium, large):

Number of days per week of moderate/vigorous activity:

Total cholesterol:

High-density lipoproteins:

Low-density lipoproteins:

Triglycerides:

Blood pressure:

Fasting glucose:

Hours of sleep per night:

Waist circumference:

Number of alcoholic beverages consumed per day:

Tobacco use:

Number of servings of fruits and vegetables consumed per day:

Annual physical examinations:

Seatbelt usage:

Indiana's health

Indiana-specific data are interesting to consider in this context, not least of all because our primary Healthy Communities model has been developed using Indiana data. Over 20% of Indiana adults are current smokers, over 75% consume less than five fruits or vegetables per day, and over 50% have less than 30 or more minutes of moderate physical activity on five or more days per week, or have less than 20 or more minutes of vigorous physical activity on three or more days per week (Centers for Disease Control and Prevention, 2009). Moreover, in 2008 nearly one in five Hoosiers did not have health care and report a lack of access to environmental factors that could positively affect their health.

Number of deaths per leading cause in Indiana, 2007:

Heart disease:	616,067
Cancer:	562,875
Stroke (cerebrovascular diseases):	135,952
Chronic lower respiratory diseases:	127,924
Accidents (unintentional injuries):	123,706
Alzheimer's disease:	74,632
Diabetes:	71,382
Influenza and Pneumonia:	52,717
Nephritis, nephrotic syndrome and nephrosis:	46,448
Septicemia:	34,828

(Xu et al., 2010)

Factors influencing healthy behaviors

Changing health behaviors of youth is a necessary prerequisite for a future healthy state and national population and economy (U.S. Department of Health and Human Services, 1996). Even moderate changes in major health behaviors such as smoking, fruit and vegetable consumption, physical activity, and alcohol consumption have been shown to have significant benefits for improved health and reduced mortality (Kvaavik et al., 2010). Of the behaviors that are a matter of lifestyle choices, nutrition and activity level are two key elements of maintaining a positive health status. There are clear public health benefits of physical activity in children and adults (Haapanen et al., 1997). It improves muscle strength and bone health (Malina et al., 2004), improves mood (Strong et al., 2005) decreases risk of cardiovascular disease in adulthood (ibid) and improves blood lipids and pressure and glucose metabolism (Riddoch, 1998). The developmental benefits of these activities are clear and should be prioritized (Pellegrini and Bohn, 2005; Sallis and MacKenzie, 1991).

Because activity during adolescence predicts activity as adults (Tammelin et al., 2003), we must find better ways to promote a 'broad leisure repertoire' so that children may continue to participate as they age (Bocarro et al., 2008). Organized sport provides a valuable opportunity for intensive exercise (Katzmarzyk and Malina, 1998). However, participation in organized sports for non-advanced athletes decreases dramatically throughout adolescence due to a number of reasons, including the development of new social relationships, changes in body image, and even general changes in attitude towards physical education and activity (i.e., changes in leisure identity) (Allison et al., 1999; Koplan et al., 2005; Trudeau and Shephard, 2005).

The interaction of several factors contributes to one's participation in health behaviors, including age, socio-economic status, ethnicity, gender, environment, and parental engagement. For example, children are more likely to participate in athletic activities if their parents do (Kremarik, 2000). Schools can also provide an excellent environment for students to develop important health literacy. Schools play a key role in the development of healthy communities, not only by educating students about health and physical activity but also through developing partnerships in the community. For example, a revised health and physical education curriculum in Ontario, Canada is focused on helping students learn to make healthy choices and is centered on five fundamental principles: (1) schools, families, and communities should support student learning; (2) physical activity is a key component of student learning; (3) physical and emotional safety is a prerequisite for learning; (4) learning is student-centered and skill-based; and (5) learning is balanced, integrated, and connected to real life (OHPEA, 2010).

Health literacy

Health literacy is defined in Healthy People 2010 as: "The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions." Traditionally underserved populations – the elderly, minority, and immigrant populations, low-income individuals, and those with chronic mental or physical health conditions – are those most likely in need of health literacy support.

Healthy behaviors lead to improved quality of life, decreased risk for morbidity and mortality, and lower cost of health insurance.

(U.S. Department of Health and Human Services, 2000)

Roles of parks and recreation

Despite the clear benefits of physical activity in youth (Bassuk and Manson, 2005), less than 10% of elementary schools provide daily physical education classes (Burgeson et al., 2001). In 2009, only 56.4% of high school students went to physical education classes on one or more days in an average week when they were in school (Centers for Disease Control and Prevention, 2010). Getting youth involved in physical activities, and subsequently changing other health-related behaviors, requires a better assessment of both access to and utilization of public parks and recreation assets and affordances. As of 2008, there were 14,347 public parks and recreation agencies which provided services to more than 75 million youth in the United States (U.S. Census Bureau, 2008). However, the relationship between utilization of public parks and recreation assets and affordances by youth and health improvement (prevention of obesity, diabetes, cardiovascular disease, etc.) is surprisingly equivocal. There exists a paucity of empirical evidence to support claims of the impact of public parks and recreation programs have on youth health outcomes. Although the results of a plethora of studies are still mixed, it appears that children without access to parks or playgrounds are at higher risk of being overweight (Singh et al., 2010).

Park usage depends upon several factors, including quality and availability (Ries et al., 2009) and safety concerns, particularly in urban populations (Babey et al., 2008). The number of parks within a 0.75 mile radius of a home is directly associated with increased metabolic equivalent values in high school students (Pate et al., 2008). Availability of commercial physical activity-related facilities is related to frequency of vigorous exercise among adolescents (Powel et al., 2007). Children and adolescents with access to recreational facilities and programs near their homes are more active than those without such access (Sallis et al., 2000), and walkability of a neighborhood and access to local markets with fresh food predicts increased activity and decreased obesity in children (Sallis and Glanz, 2006). In contrast, privatization of youth sport programs contributes to social inequalities in participation and thus risk of obesity (Delva et al., 2007).

For children and adults alike, the likelihood of participating in physical activities is largely determined by the surrounding built environment (Brownson et al., 2006; Heath et al., 2006). A general socioecological model suggests that social and ecological (i.e., built environment) factors shape personal choices for participation in physical activity and other healthy behaviors. The built environment can encourage or discourage physical activity (Sallis and Owen, 1996). Future work requires a broader focus on the socioecological determinants of health behaviors (Stokols, 1996). It is critically important to measure the health of individuals and communities holistically and ecologically by considering physical, mental, social, political, and environmental measures of physical activity, well-being, and improving quality of life (Peter, 2005). Collaborative relationships must be sought between public health professionals, leisure scientists and government officials (Henderson and Bialeschki, 2005). Of paramount importance is the need to examine and measure the dynamic influence of governmental policies, fiscal resources and allocations, assets/affordances, as well as demographic, geographic, and epidemiologic variables unique to the community. It is likely that through careful system analysis and the utilization of management models that the nation's public park and recreation agencies may serve as a catalyst in creating, managing, and sustaining healthy communities (Godbey et al., 2005).

"Leave all the afternoon for exercise and recreation, which are as necessary as reading. I will rather say more necessary because health is worth more than learning."

Thomas Jefferson
3rd U.S. President, author of the Declaration of Independence
1762-1826

Paradoxes to consider

1. At a time when being “green” (environmental health, reducing waste and dependence on depleting resources) has become popular, why have regulatory taxes gone up? (<http://www.heritage.org/research/reports/2010/03/red-tape-rising-regulation-in-the-obama-era>)
2. At a time when we are concerned publicly with the increase in violence and violent crimes, why are mixed martial arts becoming so popular? (http://washingtonexaminer.com/search/apachesolr_search/increasing%20mma%20following)
3. At a time when obesity is commonly recognized as an epidemic, why are profits for fast food restaurants still stable and or increasing? (<http://www.biz2success.com/2010/10/qa-what-types-of-legal-business-operations-yield-the-highest-profit-margins/>)

Activity 2.2: Apply the following Communication Intervention Program and Evaluation (C.I.P.E.) model (adapted from Bensley and Brookings-Fisher 2003) for program development and evaluation based on levels of intervention.

- A. Identify and research a health-related issue or problem in your community or region.
- B. Utilizing your issue or problem, complete a program development matrix based on the following workflow.

Step #1 Context	Defining the problem In some instances, these data already exist. However, each community has varied needs, challenges, and opportunities. We need to collect, analyze, and evaluate data from our particular situations.						
Step #2 Establish Outcomes	What is our message? Based on our data, how can we address the problem(s). What do we want individuals in our communities to know or be able to do? Are we looking for increased health literacy or are we focused on changing behaviors?						
Step #3 Identify Strategies And Resources	Disseminating Information for greater health literacy and informed decisions	Informing Policy that may affect the built environment or health-related policy in our community	Mobilizing Community Effort to make the issue a focus for our community	Developing and Delivering Programs to address specific, identified needs	Working with Health Services to address issues	What Resources are Available? Financial, Human, Facilities	
Step #4 Choose the Appropriate Setting	Schools	Workplaces	Parks and Recreation Departments	Health Care Providers	Neighborhoods	Home Delivery	Community Organizations
Step #5 Identify the Delivery Type	Person to Person	Small Group	Large Group or Organization-Wide	Media	Technology		
Step #6 Choose the Method of Delivery and Data Collection Plan	Press conference, news release, advertising, billboards	Small or Large Group Presentations or Interventions	One on one counseling, intervention, training, exercise prescription	Web pages, Social media (i.e. Facebook and Twitter)	Utilize Best Practices for Program Delivery!		
Step #7 Data Collection and Evaluation	Evaluate program effectiveness and plan for future programs, services, and interventions. Return to Step 1.						

Web resources

American College Health Organization: http://www.acha.org/info_resources/hc2010.cfm
Association for Community Health: <http://www.communityhlth.org/>
Centers for Disease Control: <http://www.cdc.gov/healthycommunitiesprogram/>
Costs of obesity: <http://www.cdc.gov/obesity/causes/economics.html>
General health facts: <http://www.cdc.gov/nchs/fastats/lcod.htm>
Department of Health and Human Services: <http://www.hhs.gov/>
Healthy Campus: http://www.acha.org/info_resources/hc2010.cfm
Healthy People: <http://www.healthypeople.gov/2010/default.htm>
Healthy People 2020 draft proposed objectives:
<http://www.healthypeople.gov/2010/hp2020/Comments/default.asp>
Interagency Governmental Health site: <http://www.health.gov/>
Kaiser Family Foundation: <http://www.kff.org/>
Municipal Research and Service Center:
<http://www.mrsc.org/Subjects/HumanServices/healthyWhat.aspx>
Obesity rates: <http://www.cdc.gov/obesity/data/trends.html#State>
Office of Disease Prevention and Health Promotion: <http://odphp.osophs.dhhs.gov/>
Robert Wood Johnson Foundation: <http://www.healthykidshealthycommunities.org/>
State health facts: <http://www.statehealthfacts.org/profileglance.jsp?rgn=16>
State efforts:
California: <http://www.calendow.org/CHC/>; <http://www.healthycity.org/> ;
<http://www.healthycommunitiesinstitute.com/>
Colorado: <http://www.hmcnews.org/coloradocenter.html>
Massachusetts: <http://www.preventionworks.org/index.php>
Uninsured: <http://www.kff.org/uninsured/upload/7806-03.pdf>
Well: http://www.well.com/~bbear/hc_articles.html
World Health Organization: <http://www.euro.who.int/en/what-we-do/health-topics/environmental-health/urban-health/activities/healthy-cities>

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