Community Design, Physical Activity and Health

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Centers for Disease Control and Prevention

National Governors Association

Designing Healthy Communities Workshop

Charleston SC August 9-10, 2004
Obesity Trends* Among U.S. Adults

BRFSS, 1985

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” woman)
Obesity Trends* Among U.S. Adults

BRFSS, 1995

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” woman)
Obesity Trends* Among U.S. Adults

**BRFSS, 1997**

(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” woman)
Obesity Trends* Among U.S. Adults
BRFSS, 2002
(*BMI ≥30, or ~ 30 lbs overweight for 5’ 4” woman)

Source: Behavioral Risk Factor Surveillance System, CDC
Obesity Trends* Among U.S. Adults
BRFSS, 200?

(*BMI ≥30, or ~ 30 lbs overweight for 5’4” woman)
Fat for Life?
Six Million Kids Are Seriously Overweight.
What Families Can Do.

By Geoffrey Cowley & Sharon Begley
A brisk walk in the park keeps Marcy B in shape between dog shows. Her owner, Columbus resident Cathy Stumbo, gets up early to give her 3-year-old Doberman his regular workout. They typically leg 15 miles in Berliner Park.
CDC Mission

To promote health and quality of life by preventing and controlling disease, injury, and disability.
Physical Activity and Health Branch

• Vision
  – Active People in an Activity-Friendly World

• Mission
  – Understand and Promote Physical Activity to Enhance Health and Quality of Life

• Guiding Principles
  – Science driven, population based, public health constituents, integrity and ethics.
The average life expectancy in 1900 was 47.3 years of age. In 1993, it was 75.7 years of age.

SOURCE: CDC, National Center for Health Statistics
Most Common Causes of Death, United States, 1996*

- Total cardiovascular disease (includes ischemic heart and stroke)
- Cancer
- Chronic obstructive pulmonary disease and allied conditions
- Injuries
- Pneumonia/influenza
- Diabetes
- HIV infection
- Suicide
- Chronic liver disease/cirrhosis

Percentage (of all deaths)

Actual Causes of Death, United States, 1990†

- Tobacco
- Poor diet/lack of exercise
- Alcohol
- Infectious agents
- Pollutants/toxins
- Firearms
- Sexual behavior
- Motor vehicles
- Illicit drug use

Percentage (of all deaths)

†McGinnis JM, Foege WH. Actual causes of death in the United States. JAMA 1993; 270:2207-12
Note: Dark shading denotes conditions and behaviors addressed by NCCDPHP
Public Health and Urban Planning Share Common Origins

- Frederick Law Olmsted-
  - Pioneer Urban Planner
    - Developed NY Central Park and others as a Public Health intervention

- Harvard School of Public Health
  - Grew from the MIT School of Sanitary Engineering
Public Health and Urban Planning have taken Different Paths

- **Urban Design**
  - Since WW II design has become progressively automobile oriented
  - Sprawl and attendant effects have resulted

- **Public Health**
  - Services and individually oriented health education and health promotion have predominated
  - Regulatory and policy approaches new to areas outside food and environmental safety
The Emergence of a Sedentary Society

- Automobile
- Television
- Computers
- Convenience Engineering
- Built Environment
- Human Nature
A New Childhood Dilemma
“Veal Syndrome”

• Encourage sedentary behaviors over an active lifestyle.
• Remove or restrict routine physical activity.
• Chauffeur them for short trips.
• Restrict spontaneous decisions to play or recreate outdoors.
• Confine them to four walls of school or home for most of the day.
Physical Inactivity and Overweight Trends Among Youth

• 1 in 3 high school youth do not engage in vigorous physical activity
• Less than 30% attend daily physical education
• 1 in 7 Youth ages 6-19 is Overweight
• Children watch more t.v. in a year than attend school
The Disappearing Walk to School

• 1 in 4 trips made by 5-15 year olds are for the journey to and from school.
• Only 10% of these trips are made by walking and bicycling.
• Of school trips one mile or less, about 28% are walk-based and less than 1% are bike-based.

1995 Nationwide Personal Transportation Survey
Children Are Walking Less and Becoming Increasingly Overweight

Surface Transportation Policy Project Data Analysis - 2001
Diabetes Trends* Among Adults in the U.S.,
(Includes Gestational Diabetes)


2001

Estimated Annual Costs Attributable to Obesity in the U.S.

Overweight and Obesity

- Direct health care costs: $93 billion
  - 9% of all health care costs
- Obesity - $732 more per person
  - $1,486 Medicare
  - $864 Medicaid

Leisure Time Physical Activity Trends 1986-1999

All States Reporting Physical Activity each year, BRFSS

S. Ham, CDC, 2000.

Recommended Activity = Moderate or Vigorous Activity
Auto Trips 1977 - 1995

Source: National Personal Transportation Survey, 1995
Walk Trips 1977 - 1995

Source: National Personal Transportation Survey, 1995
## Modal Travel in Urban Areas: Europe and North America Percent of Trips by Mode

<table>
<thead>
<tr>
<th>Country</th>
<th>Bicycle</th>
<th>Walking</th>
<th>Public Transport</th>
<th>Car</th>
</tr>
</thead>
<tbody>
<tr>
<td>Netherlands</td>
<td>30</td>
<td>18</td>
<td>5</td>
<td>45</td>
</tr>
<tr>
<td>Germany</td>
<td>12</td>
<td>22</td>
<td>16</td>
<td>49</td>
</tr>
<tr>
<td>England</td>
<td>8</td>
<td>12</td>
<td>14</td>
<td>62</td>
</tr>
<tr>
<td>Italy</td>
<td>5</td>
<td>28</td>
<td>16</td>
<td>42</td>
</tr>
<tr>
<td>Canada</td>
<td>1</td>
<td>10</td>
<td>14</td>
<td>74</td>
</tr>
<tr>
<td>USA</td>
<td>1</td>
<td>9</td>
<td>3</td>
<td>84</td>
</tr>
</tbody>
</table>

Transportation Quarterly 1997; 51:31
More People Are Overweight in Places Where People Walk Less
Morbidity Associated with Inactivity

- Coronary Heart Disease
- Obesity
- Diabetes
- Stroke
- Colorectal Cancer
Clinical practice guidelines exist for physical activity in many diseases:
- high blood pressure
- chronic lung disease
- cholesterol management
- cardiovascular disease
- diabetes
- osteoporosis
- arthritis
- obesity
What are Active Community Environments - ACES?

• ACES are places that support and promote physical activity for people of all ages and abilities—activity is integrated into their daily lives.

• Predominant features include sidewalks, bikeways, trails, parks and other recreational facilities.

• They are close to where people live and work and are easily accessible.
ACEs Research: Research, Practice and Policy

- Evidence
  - Harvard Youth
  - North Carolina Youth
  - South Carolina Community
  - Ga Tech Community
  - Washington Seniors
  - Western Australia Community
  - Rutgers Health Outcomes
Network Distances

1.3 miles vs. 0.5 miles

Images are same scale, approximately 1 sq mi.

Dr. Larry Frank, Ga Tech & Dr. Tom Schmid, CDC
SMARTRAQ SURVEY PLAN

ACTIVITY BASED TRAVEL SURVEY
8000 Households

• Across land use type, household size, and income
• Engaging Traditionally Under-served Households via Translation, Active Recruitment, and Community Outreach

1500 households
Residential Preference Survey: Defining the Market for Smart Growth

1100 Vehicles
In-Vehicle (GPS) Global Positioning Systems: capturing actual travel vs reported

1000 Persons
Physical Activity Survey

500 Persons
GPS / Palm Pilots

500 Persons
Activity monitors
Weight and Residential Density: Atlanta
(SMARTRAQ N=4430)
Obesity Decreases as Mix Increases
As Time In Car Increases So Does Your Weight
Silver Sneakers

• Early Results
  – Significant correlation between street connectivity and times walked leisurely within last week
    • As the connectivity of the street network increases so does the frequency of leisure walking

• More to come
  – Assessing physical activity relationships with
    • land use mix
    • open space and recreational amenities
    • Improved transit service
    • Scale of commercial uses
Auditing Communities for Walkability and Bikability

WBC Project

UW Health Promotion Research Center
UW Urban Form Lab
Auditing Communities for Walkability and Bikability

WBC Project

To develop environmental audit instruments to be used by local jurisdictions and communities to encourage walking and bicycling for both physical activity and transportation purposes.
## Survey Result Highlights
### Attitude Toward Environment and Transportation

<table>
<thead>
<tr>
<th>Perceived Presence of</th>
<th>Avg. Score*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical activities are important for me to keep healthy?</td>
<td>4.83</td>
</tr>
<tr>
<td>Walking is a good way of getting physical activity?</td>
<td>4.82</td>
</tr>
<tr>
<td>Biking is a good way of getting physical activity?</td>
<td>4.71</td>
</tr>
<tr>
<td>Traffic congestion is a problem in our region?</td>
<td>4.69</td>
</tr>
<tr>
<td>We need to use transit more to reduce traffic congestion?</td>
<td>4.49</td>
</tr>
<tr>
<td>Reducing automobile use is important to reduce air pollution in our region?</td>
<td>4.28</td>
</tr>
<tr>
<td>Driving is expensive?</td>
<td>4.17</td>
</tr>
<tr>
<td>We need to walk or bike more to reduce traffic congestion?</td>
<td>3.94</td>
</tr>
<tr>
<td>We need to bike more to reduce traffic congestion?</td>
<td>3.89</td>
</tr>
<tr>
<td>Air quality is a problem in our region?</td>
<td>3.68</td>
</tr>
<tr>
<td>Biking is for recreation purposes, rather than transportation?</td>
<td>2.73</td>
</tr>
<tr>
<td>We need to build more roads to reduce traffic congestion?</td>
<td>2.68</td>
</tr>
<tr>
<td>Public transit is for those who do not own a car?</td>
<td>2.08</td>
</tr>
</tbody>
</table>

* 5-Point Likert Scale: 1 Strongly Disagree – 5 Strongly Agree
ACES
Active Community Environments

Research Practice and Policy
Promoting Walking in Rural Communities (SIP 22)

Ross C. Brownson
School of Public Health
Saint Louis University
The November/December Walking Report for J. S.

<table>
<thead>
<tr>
<th>Date of last track visit:</th>
<th>12/30/2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Track Visits</td>
<td>7</td>
</tr>
<tr>
<td>Avg. days per week at the track</td>
<td>3</td>
</tr>
<tr>
<td>Est. total minutes at the track</td>
<td>133</td>
</tr>
<tr>
<td>Est. calories burned walking at the track</td>
<td>532</td>
</tr>
</tbody>
</table>

Your Walking Goal: 4 days a week for 30 minutes each day.

Here's how you're doing.

You're almost there! It's time to make a few more trips to the track this month. Try to meet your goal by the next newsletter. Remember to wipe your camerade when you start your walk and once when you end your walk. Listen for 'beep' each time you swipe your card.

A Safe Pause

My personal safety is priority for me. If I don't feel safe in an area, I don't go. And if I'm going to start walking program, I want to make sure I'm going to feel safe. So I made a trip over the track, jailed and sat in my car to watch.

Shortly after arriving a group of walkers pulled up in their cars.

'Do you believe we're walking at this track?' asked.

'The track is safe,' they replied, 'but as with anywhere, you need to keep your wits about you.' The walkers suggested that they always walk in the daytime with friends or walk when the track is crowded. 'Keep your head up,' one of them said.

Potential crooks look for easy targets and if you look like you are watching out for yourself they won't bother you. Would you like to join us on our walks today?

I happily accepted their invitation and walked and talked with them for the next 20 minutes and not once did I feel unsafe.

As for Support

You'd really like to keep your promise to yourself to work out at the French Park track 4 times per week. But you have so much to do, and only so much time in a day. Your activity at the track has slowed in the past few months. It's time to get back on track. How can you keep good on your promise to yourself? Ask for help. Try it. Read the following out loud.

'Dear, could you take the kids to the park this afternoon while I walk at the track?'

'Hello mom, could I drop the kids off on my way to the track this morning?'

'Honey, I'd like to get a baby backpack so I can walk with Junior at the track, okay?'

'It's not so hard. And it may surprise you, your family just may be happy to help.'
Preliminary Results

• Average minutes walked in past week for exercise at baseline*
  – Intervention: 37; control: 33
• Total average minutes walked in past week at baseline
  – Intervention: 98; control: 104
• Meets rec for moderate or vigorous PA at baseline
  – Intervention: 32%; control areas: 29%

*Validated 7-day self-report of Johnson, Sallis & Hovell
Regional Plan Association

- New Jersey
  - State Development Plan
- New York
  - Aging Boomers and Community Redevelopment
- Connecticut
  - Walking and Bike Paths
Regional Plan Association

- New Jersey Plan: Livable Communities and Natural Landscapes, a State Development and Redevelopment Plan
  - Vision
  - Policy
    - Creating Healthier, More Active Communities
  - Performance Indicators
New Jersey Development Plan

• Vision
• New Jersey communities are healthy, active communities where adults and children are getting the recommended levels of physical activity through walking and bicycling as a means of transportation and through recreation. Communities are designed to promote walking and bicycling for transportation and recreation. Schools are central features of the community, a majority of children live within walking or cycling distance and most do so......
Stamford  Mill River/West Main Neighborhood

RPA’s agenda  methods  stamford neighborhood  assessment  next  regional significance
National Walk to School Evaluation Project

University of North Carolina Prevention Research Center

A CDC-funded Initiative

J Shisler, PO
Outcomes

- Case Studies
- Surveys
- Training Protocols
- Best Practices
- Data
- Report, expansion of current walk to school documents
Promoting Physical Activity Through Recreation in America’s Great Outdoors

- Dept of Agriculture
  - Forest service
- Dept of Interior
  - BIA, BLM, Fish and Wildlife, NPS
- Dept of Army
  - Corps of Engineers
- Dept of Health and Human Services
  - CDC, HIS, OPS
ACES
Active Community Environments

Research Practice and Policy
POLICY
Local Ordinances that Promote Physical Activity: A Survey of Municipal Policies in Utah

J Librett, M Yore, T Schmid
Objectives: Identify municipal contacts for policy planning; identify municipal ordinances that may influence physical activity; determine the intention to implement physical activity policies.

Methods. In 2001, a survey was administered to all municipalities in Utah, measuring six domains of active communities: sidewalks, bicycle lanes, shared-use paths, worksites, greenways, and recreational facilities.
Local Ordinances that Promote Physical Activity: A Survey of Municipal Policies

**Results.** Planners made up a small proportion of municipal staff and high-growth cities reported more ordinances that encourage physical activity and greater intention to implement ordinances than slow growth cities.

**Conclusions.** Literature calls for policy interventions that address physical inactivity. Findings reveal that polices can be monitored across a range of communities. Moreover, evidence-based public health practice provides direction for limited public health resources such as staff and funding.
Developing a Policy Research Agenda for Physical Activity
Policy Definition and Conceptualization

• Formal Written Codes
  – Formal written codes or regulations bearing legal authority

• Written Standards that guide choices
  – Implementation is usually accompanied by a written statement, explanation or decision that guides choices
Physical Activity Policy
Research Agenda Process

• The policy research status for each of the 7 major categories was discussed
• High priority research areas
  – Evaluation of ISTEA/T3
  – Transportation Planning Model
  – School siting
  – Price elasticity of walking in older adults
  – Smart Growth Property Value
ACEs Information @ CDC

- ACEs Web Site
  - www.cdc.gov/nccdphp/dnpha/ace.htm
- Information on Web Site
  - ACEs Fact Sheet
  - Literature Review / Bibliography
  - KidsWalk-to-School Guide
  - Other Publications and Research Findings
  - Links