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A Policy Research Partnership for Healthier Youth Behavior

Assessing Environmental Influences Associated with Diet, Physical Activity and Obesity: An Inventory of Existing Surveillance Systems

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1. INTRODUCTION

The U.S. has been experiencing a growing trend in overweight and obesity among both adults and youth over the past few decades. Recent statistics showed that the prevalence of obesity among children in the U.S. continued to rise at a rapid pace. Obesity (age- and gender-specific body mass index (BMI) $\geq$ 95th percentile) rates reached 13.9%, 18.8% and 17.4% among children aged 2-5, 6-11, and 12-19 years old, respectively, and 33.2% and 31.1% among adult females and males, respectively, in 2003-2004 (Ogden et al. 2006). Poor dietary behaviors along with physical inactivity underlie this growing obesity epidemic among the American population. The problem has grown to such proportions that obesity is second only to tobacco as the leading cause of preventable disease and death and obesity may soon overtake tobacco as the leading causes of death (Mokdad et al. 2004; USDHHS 2001). Although there has been some recent controversy on the magnitude of the health impact that obesity has on excess mortality, there is still strong evidence that obesity is associated with increased rates of mortality (Flegal et al. 2005). Furthermore, Thorpe et al. (2004) found that 27 percent of the growth in health care spending between 1987 and 2001, was attributable to the increase in obesity prevalence and increased spending on obese people. Coupled with this growing trend of overweight and obesity is a population that is becoming increasingly sedentary (Levin et al. 2003), with ever increasing poor dietary habits (USDA 1998; Lin et al. 2001; Gidding et al. 2006). The exercise and eating habits that youth adopt now will invariably follow them into adulthood. In fact, adolescent obesity increases the long-term risk of health conditions such as cardiovascular disease, certain cancers, hypertension, and type II diabetes (Must et al. 1992). Therefore, it is important to work on reversing this trend now, among all populations, but particularly among children and youth. Although recent evidence shows a strong genetic influence on BMI, modifications to the environment are still important for long-term population-based weight control (Wardle et al. 2008). Promoting regular physical activity, healthy eating, and creating environments that support these behaviors are essential to reducing the negative impact of this major public health issue (Egger and Swinburn 1997; Sallis et al. 1998; French et al. 2001).

There are many environmental, social and individual-level factors that affect healthy eating, physical activity, and obesity rates and there are a number of existing surveillance systems and databases containing information that not only track the current state of the problem, but that can also provide evidence to help address it. These existing data sources provide a wealth of information that can be used by researchers to help inform both current and future research. The purpose of this report is to identify existing national data sources. We did this by developing a checklist of potential domains/variables to help identify relevant data sources (see Appendix A). We then used Internet search engines, as well as transportation article databases and Medline to identify relevant data sources. The search terms used via the internet were transportation, environment, built environment, adult, young adult, adolescent, youth, child, obesity, overweight, BMI, physical activity, exercise, physical education, nutrition, and healthy

eating. Similar search terms were used to identify published articles that may have utilized relevant datasets. Search terms used for the transportation article databases included walking, active travel, physical activity, pedestrian, non-motorized transportation, urban design, urban planning, urban sprawl, and health. Web sites and articles resulting from these searches were then reviewed for relevance and possible inclusion in this report. In order to be considered for inclusion, the data source or surveillance system needed to meet the following criteria: 1) the survey was national; 2) the same population (age/grade-level) was assessed each time; 3) the survey instrument(s)/relevant questions remained primarily the same for each wave/year; and 4) the data are either publicly available or available for a fee (this is relevant for some key proprietary data sets). The search uncovered numerous studies, many of which focused on a small population or a single community and were therefore excluded from this report. Appendix B provides web links for each data source.

In this report, we grouped the inventory of data sources into three broad categories: 1) individual-level survey data; 2) contextual data; and, 3) food program resources. A brief summary of all data sources is presented and for individual-level survey data we included specific descriptions of measures related to Body Mass Index (BMI), nutrition, physical activity (PA), and available geocode information. The final section of this paper discusses the challenges researchers must consider when using these data, such as issues related to weaknesses in the measures, data linkage, data comparability, and missing information.

2. INDIVIDUAL-LEVEL DATABASES

Continuing Survey of Food Intakes by Individuals (CSFII) and Diet and Health Knowledge Survey (DHKS)

Sponsored by the US Department of Agriculture (USDA), the cross-sectional CSFII was developed to provide continuous nationally representative data on the dietary status of the general US and low-income population. The survey was conducted in: 1985-86, 1989-91, 1994-96, and 1998. Primary data collection methods include 2 nonconsecutive days in 1994-96 using 24-hour dietary recalls. CSFII covered a nationally representative multi-stage stratified sample of non-institutionalized persons aged 0 to 90 years who resided in the US. The 1994-96 surveys provide comprehensive detailed dietary data for approximately 5,500, individuals each year; in total 21,662 people had at least one 24-hour recall. For examining children, the CSFII 1998 added intake data from 5,559 children birth through 9 years of age to the intake data collected from 4,253 children of the same ages participating in the CSFII 1994-96. Estimates of food-based nutrients ingested by individuals are derived from data developed by the Nutrient Data Laboratory, Agricultural Research Service (ARS). In addition, the survey collects data on socio-demographic variables (such as household size, income, race, age, and sex), food shopping practices, sources of food, nutrition- and health-related questions, and food safety questions. The CSFII provides information for use in policy formation, regulation, program planning and evaluation, education, and research.

Parallel to the CSFII, the 1989-91 and 1994-96 Diet and Health Knowledge Survey (DHKS) was administered to participants over age 20 (n=5,765) to collect information on individual's perceived adequacy of own food and nutrient intakes, knowledge about USDA food recommendations, use of food labels, factors related to food choices and grocery shopping, and household expenditure on food. The DHKS was a telephone follow-up to the CSFII and was

designed in order to link individuals' diet and health knowledge and attitudes with their food choices and nutrient intakes. The questions included information on their knowledge of food labeling, how healthy their diet was, frequency of eating certain low-fat and high-fat foods, and issues about food safety related to preparing fresh fruits and vegetables for consumption.

BMI: Self-reported height and weight, weight history.
Nutrition: 24-hour recalls of dietary intake on 2 non-consecutive days (kinds and amounts), shopping practices, sources of foods, where foods are consumed, water intake, fast food consumption, food assistance program participation, food expenditures, pregnancy, lactation, nursing status, health and nutrition related knowledge and perceptions, dieting history.
PA: Light and vigorous physical activity, sedentary activities.
Geocode: Not available (n/a).

National Health and Nutrition Examination Survey (NHANES)

The National Center for Health Statistics (NCHS) at the Centers for Disease Control and Prevention conducts the NHANES surveys. NHANES I, II, and III were administered in 1971-1975, 1976-1980, and 1988-1994, respectively. Since 1999, NHANES became a continuous survey, and the data have recently become available for the first 6 years of 1999-2004. The 2005-2006 wave is expected to be released in the fall of 2008. The NHANES includes a series of cross-sectional surveys begun in the early 1960s that provided nationally representative information on the nutrition and health status of the U.S. civilian non-institutionalized population aged 2 months to 74 years old. The survey examines a nationally representative sample. The 03-04 NHANES covered a sample of 10,122 persons. All NHANES waves used a stratified, multistage probability cluster sampling design. The NHANES surveys oversample some minority, age, and low-SES population groups. A major objective of the survey's nutrition component is to provide data for nutrition monitoring purposes, including tracking nutrition, identifying risk factors related to food insecurity, and estimating the prevalence of compromised nutritional status. A second major objective is to provide information for studying the relationships among diet, nutritional status, and health. Physical examinations were conducted for each individual in full mobile examination centers (MECs) through direct examinations. The surveys consist of two parts: a home interview and a health examination. As part of the health examination nutrition status is ascertained through blood tests of participants one year of age and older. Primary nutritional survey content includes information on: food security; nutrition, such as breastfeeding, intake of milk, number of times a week food is purchased outside the home, etc. In addition to these in-person interviews, survey respondents who are asked about the foods they eat are contacted via phone 3 to 10 days after their examination and a food questionnaire is mailed to their home for completion. The NHANES detailed interview includes demographic, socioeconomic, dietary, and health-related questions. The examination component consists of medical and dental examinations, physiological measurements, and laboratory tests administered by highly trained medical personnel. The data can be used to provide national estimates of health and nutritional status and study their risk factors and association with health promotion and disease prevention. NHANES also provides information on individual demographic and socio-economic characteristics.

BMI: Measured height and weight, body measurements (i.e., skinfold thickness, waist circumference), self-reported height and weight, weight history (weight 10 years ago, weight at age 25).
Nutrition: Food security, diet behavior and nutrition, food and nutrient consumption, food program participation, dietary supplements, 24-hour recall of detailed dietary intake, food consumption frequency, measured fasting glucose, dieting history, welfare/food assistance program participation.
PA: Physical activities and fitness level (i.e., cardio-respiratory fitness, physical functioning), accelerometer measures and sedentary activities.
Geocode: Special agreement: county and state.

Medical Expenditure Panel Survey (MEPS)

The MEPS is a set of large-scale nationwide surveys of health care use and expenditures in the U.S. The survey began in 1996 and collects data on the specific health services that Americans use, frequency of utilization, cost of these services, sources of payment for health services, health insurance coverage, quality of health care, household income, and employment. The MEPS consists of two major components: the Household Component and the Insurance Component. The MEPS household component is a nationally representative survey of the U.S. civilian non-institutionalized population; it collects detailed data on demographic characteristics, health conditions, health status, use of medical care services, charges and payments, access to primary care (measures undergo changes during these years), satisfaction with care, health insurance coverage, income, and employment for individuals of all ages. The nationally representative sample of households was drawn from participants in the prior year's National Health Interview Survey. MEPS uses an overlapping panel design in which data are collected through a preliminary contact followed by a series of rounds of interviews over 2-3-year period. The sample size consists of about 32,000 records in 2001 and more than 37,000 records since 2002 from about 15,000 households. Medical conditions are collected for all medical events reported during the survey period. High prevalence conditions including high blood pressure and diabetes are also collected independent of medical events. The MEPS collects information on height and weight, which is reported by the parent for children ages 6-17, and self-reported for adults. Starting in 2001, for confidentiality purposes, height and weight are not publicly released, but instead are presented as BMI. The Insurance Component estimates come from a survey of employers conducted to collect information on health insurance plans.

BMI: Self-reported height and weight (1996-2000), BMI (based on self-reported height and weight, since 2001).
Nutrition: Diabetic patients asked whether they use diet to control diabetes.
PA: Activity and functional limitations (limited information), whether spend1/2 hour or more in moderate or vigorous physical activity at least three times a week.
Geocode: Special agreement: census tract and block group codes, zip code, county, and state.

Behavioral Risk Factor Surveillance Survey (BRFSS)

The BRFSS, administered and supported by the Division of Adult and Community Health, National Center for Chronic Disease Prevention and Health Promotion at the CDC is an ongoing data collection program. It was initiated in 1984, and is a state-based system of health surveys conducted via telephone interview. The objective of the BRFSS is to collect uniform,

state-specific data on preventive health practices and risk behaviors that are linked to chronic diseases, injuries, and preventable infectious diseases in the adult population (18 years of age and older). Data are collected from a random sample of adults (one per household). At its establishment in 1984, 15 states participated in monthly data collection. By 1994, all states, the District of Columbia, and three territories were participating in the BRFSS. Currently, data are collected monthly in all 50 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and Guam. More than 350,000 adults are interviewed each year, making the BRFSS the largest telephone health survey in the world. This survey collects information on the consumption of fruits and vegetables, as well as measures on food security status. The data are not available for all years, with certain questions being added at different points in time. However, one key difference is that the BRFSS is conducted individually by state health departments or their contractors, therefore, data collection methods can vary from state to state.

BMI: Self-reported height and weight.
Nutrition: Consumption of fruits and vegetables.
PA: Exercise and physical activity, limitation of activity.
Geocode: Public use: county and state.

Youth Risk Behavior Surveillance System (YRBSS)

The CDC developed the cross-sectional school-based YRBSS in 1990 in order to monitor priority health risk behaviors that contribute markedly to the leading causes of death, disability, and social problems among youth in the United States as well as monitor the progress toward achieving the Healthy People 2010 objectives and other program indicators. These behaviors include dietary behaviors; physical activity; tobacco, alcohol, and drug use; sexual behaviors; and violence. The YRBSS includes national, state, and local school-based surveys of representative samples of 9th through 12th grade students. These surveys are conducted every two years (starting in 1991), usually during the spring semester. The state and local surveys, conducted by departments of health and education, provide data representative of public and private high school students in each state or local school district. The YRBSS also includes additional national surveys conducted by CDC: (1) The Youth Risk Behavior Survey, conducted in 1992 as a follow up to the National Health Interview Survey among nearly 11,000 persons aged 12–21 years old; (2) The National College Health Risk Behavior Survey, conducted in 1995 among a representative sample of about 5,000 undergraduate students; (3) The National Alternative High School Youth Risk Behavior Survey, conducted in 1998 among a representative sample of almost 9,000 students in alternative high schools; and, (4) A series of methodological studies conducted in 1992, 2000, 2002, and 2004 to improve the quality and interpretation of the YRBSS data. Not all states participate. For example, in 2005, California, Louisiana, Minnesota, Pennsylvania, Virginia, and Washington did not participate. The YRBSS contains basic questions regarding the frequency of consumption of fruit, vegetables, and milk. However, these questions were added in varying years and, therefore, do not allow for the examination of consistent trends over time.

BMI: Self-reported height and weight.
Nutrition: Frequency of consumption of fruit, vegetables, and milk, dietary behaviors.

PA: Physical activity (level and amount spent on vigorous/moderate PA), participation in physical education classes and sports teams, strength exercises, exercises to lose/maintain weight.
Geocode: Public use: state for schools.

National Longitudinal Survey of Youth 1979 (NLSY79)

The Bureau of Labor Statistics began the NLSY79 in 1979 with a cohort of 12,686 individuals aged 14 to 22, who were interviewed annually through 1994 and biennially since. Following their first interview, many of the respondents have made transitions from school to work, and from their parents' homes to being parents themselves and homeowners. A key feature of this survey is that it gathers information in an event history format (i.e., labor force activity, marital status, fertility, government assistance), in which dates are collected for the beginning and ending of important life events. The survey includes detailed questions on educational attainment, training investments, income and assets, health conditions, workplace injuries, insurance coverage, alcohol and substance abuse, sexual activity, and marital and fertility histories. Moreover, the NLSY79 includes an aptitude measure, a school survey, and high school transcript information. An aptitude indicator, the full Armed Services Vocational Aptitude Battery (ASVAB) was administered to 94% of the sample respondents in 1980. In 1980, a survey was conducted of the secondary schools attended by NLSY79 respondents. Information gathered in the survey included school-level characteristics as well as respondent-specific information such as achievement test scores. In 1980-1983, the NLSY79 collected detailed transcript information for potential high school graduates that included coursework, grades, and attendance records.

BMI: Self-reported height and weight.
Nutrition: Food stamps and food insecurity.
PA: Frequency and intensity of physical activity.
Geocode: Special agreement: county and state.

NLSY79 Children and Young Adults (NLSY79 Child)

NLSY79 Children and Young Adults contains data on the children of NLSY79 mothers (starting in detail in 1986 for NLSY mothers with children aged 0-15 accounting for 5,255 children in 1986 and increasing to 8,323 children in 2000) with supplemental child surveys included for children 10 and over starting in 1988 and the NLSY79 young adult surveys (started in 1994 for the children age 15 and over) permit the study of child and adolescent populations. The survey contains basic information about respondents' light and vigorous physical activity, physical activity at work, and sedentary activities.

BMI: Self-reported height and weight.
Nutrition: Free/reduced-price school breakfast/lunch, breakfast choices available at household, parental rule setting on eating choices, food stamps, and food insecurity.
PA: Light and vigorous physical activity, participation in after-school sports lessons, playing sports and general physical activity, physical activity at work, sedentary activities (TV watching, computer use), and parental rule setting on limits on TV.
Geocode: Special agreement: county and state.

National Longitudinal Survey of Youth 1997 (NLSY97)

The NLSY97 is administered by the Bureau of Labor Statistics. The survey consists of a nationally representative sample of 8,984 youths aged 12-16 as of December 31, 1996. One unique aspect of the NLSY97 is that Round 1 contains a parent questionnaire that generates information about the youths' family background and history. Information in the parent questionnaire includes: parents' marital and employment histories, relationship with spouse or partner, ethnic and religious background, health (parents and child), household income and assets, participation in government assistance programs, youths' early child-care arrangements, custody arrangement for youth, and parent expectations about the youth. Youths are interviewed on an annual basis and followed up every year to their adult years. The purpose of the NLSY97 is to document the transition from school to work and into adulthood. Surveys include a detailed account on labor market and educational experiences, relationships with parents, contact with absent parents, marital and fertility histories, dating, sexual activity, onset of puberty, participation in government assistance programs, expectations, time use, criminal behavior, rules in the family, religion, health, nutrition (1997 and 2003), physical activity, and alcohol and drug use. Areas of the survey that are potentially sensitive, such as sexual activity and criminal behavior, comprise the self-administered portion of the interview. In 1997 and early 1998, the NLSY97 respondents were given the computer-adaptive version of the Armed Services Vocational Aptitude Battery (CAT-ASVAB). In 1996 and again in 2000, surveys were conducted of all schools with a 12^{th} grade in the statistical sampling areas in which NLSY97 respondents resided. The surveys gathered information about the characteristics of each school, the staff, and the student body. In spring of 2000, high school transcripts were collected for NLSY97 participants born in 1980 and 1981 who provided written permission to contact their schools. A second phase of collecting the remaining high school transcripts began in 2004.

BMI: Self-reported height and weight, perceptions of weight.
Nutrition: Consumption of fruits and vegetables per week, frequency of eating breakfast, family meal practices, efforts to lose/gain weight, food program participation.
PA: Vigorous physical activity (i.e., days per week of least 30 minutes exercise), sedentary activities (i.e., hours per week of computer use and TV watching).
Geocode: Special agreement: county and state.

Panel Study of Income Dynamics (PSID)

The PSID is conducted by the Survey Research Center in the Institute for Social Research at the University of Michigan. It is a longitudinal study of a representative sample of U.S. individuals and the family units in which they reside, including an oversampling of the low-income population. Since its inception in 1968, the survey was conducted annually, and then every two years since 1997. The PSID started with a sample of 4,800 families in 1968. A sample of 441 immigrant families was added in 1997. The number of families and individuals included in the survey has grown over time, as individuals from families in the core sample have been followed over time, and children of PSID parents included into the sample as they form a family unit of their own. By 2001, the sample size reached more than 7,000 families. The primary focus of the survey is economic and demographic, including measures of income, wealth, welfare support, food stamps, food expenditures, pensions and savings, philanthropic giving, participation in government assistance programs, employment history, family composition changes, marriage and fertility histories, religious background, residential location, housing and

food expenditures, time spent in housework, health and health insurance. Some waves of the study also include variables geared toward sociological or psychological research. Between 1968 and 1972, the PSID was collected through face-to-face interviews using paper and pencil questionnaires. Beginning in 1973, the majority of the interviews were conducted over the phone. In 1993, the PSID introduced the use of computer-assisted telephone interviewing. In the 1999 wave, 97.5% of the interviews were conducted over the phone, and all interviews were conducted using computer-based instruments.

BMI: Self-reported height and weight for head of household and wife available since 1999.
Nutrition: Importance of fruit and vegetable consumption, nutrition education, whether family eats together, whether on a diet, frequency of eating out, food expenditures, food security, food stamps.
PA: Frequency of light and vigorous physical activity of head of household and wife, whether have a vehicle.
Geocode: Special agreement: zip code, county, and state.

PSID Child Development Supplement (CDS)

The CDS is also conducted by the Survey Research Center in the Institute for Social Research at the University of Michigan. It was added to the PSID core data in order to collect additional information on PSID parents and their children. CDS-I collected data in 1997-1998 on 3,563 children aged 0-12 from 2,394 families. In 2002-2003, CDS-II followed up 2,908 of those children now aged 5-18 years old from 2,017 families. Information was collected on: physical health; anthropometric measures of height and weight; health and dental insurance information; emotional well-being; intellectual achievement; welfare support; social relationships with family and peers; a comprehensive accounting of parental (or caregiver) time inputs to children as well as other aspects of the way the children spent their time; existence of household rules and the degree of enforcement of those rules; the learning environment in the home (using the HOME Scale measures); Woodcock-Johnson assessment tools; school resources, as reported through the National Center for Education Statistics Common Core of Data; and decennial-census-based measurement of neighborhood resources. CDS obtained information from various parties involved in the child's growth and development: the primary caregiver, secondary caregiver, absent parent, teacher, school administrator, and children/youth themselves. The CDS survey design is complex, relying on time diary methodology, computer-assisted personal interviews (CAPI), and audio computer-assisted self-interviews (ACASI) with adolescents.

BMI: Measured height, self-reported weight in CDS-I, measured weight in CDS-II
Nutrition: Frequency of consumption of fruits, vegetables, grains, sweets, meat, protein, whether eat breakfast, whether in free/reduced/full price school breakfast/lunch program, limits on candy, sweets and snacks, limits on choices in deciding what to eat for breakfast/lunch, whether the household has family meals together, time spent on meals at home, WIC participation.
PA: Light and vigorous physical activity, athletic sports/teams, school PA education, peer- and family-level PA, sedentary activities, such as watching TV, playing video games, sitting in front of the computer, rules on TV watching, degree and enforcement of rules.
Geocode: Special agreement: zip code, county and state; National Center for Education Statistics school identifier and school district identifier.

National Health Interview Survey (NHIS)

The National Health Interview Survey (NHIS) is a multi-purpose cross-sectional health survey conducted on an annual basis since 1957 by the National Center for Health Statistics (NCHS) at the Centers for Disease Control and Prevention (CDC). Data are collected through personal household interviews for a nationally representative sample of non-institutionalized, civilian adults from approximately 35,000 households or about 87,500 persons residing in the US at the time of the interview. The interviewers are employed and trained by the U.S. Census Bureau according to procedures specified by NCHS. In 1997, the NHIS questionnaire was revised to include core questions and supplements. The core questions remain largely unchanged from year to year and allow for trend analysis and for data from more than one year to be pooled to increase sample size for analytic purposes. The core contains four major components: Household, Family, Sample Adult, and Sample Child. Availability of nutrition-related questions vary by year, but the surveys contain numerous measures on nutrition including eating habits, such as the frequency of eating fruit, vegetables, meats and grains; and, use of dietary supplements and vitamins. The leisure-time physical activity questions include: frequency and duration of vigorous activities, frequency and duration of light or moderate activities, and frequency of strengthening activities. The designs of two major Department of Health and Human Services (DHHS) national household surveys have been or are linked to the NHIS. The National Survey of Family Growth used the NHIS sampling frame in its first five cycles and the Medical Expenditure Panel Survey currently uses half of the NHIS sampling frame. Other linkage includes linking NHIS data to death certificates in the National Death Index (NDI).

BMI: Self-reported height and weight.
Nutrition: Frequency of eating fruits, vegetables, meats and grains; use of dietary supplements and vitamins, Food Stamp Program, TANF, WIC.
PA: Frequency and duration of vigorous physical activities, frequency and duration of light or moderate activities, and frequency of strengthening activities.
Geocode: Special agreement: Census tract, zip code, county, and state (up to 2004); county and state (2005 onwards).

Monitoring the Future (MTF)

The MTF conducted at the Survey Research Center in the Institute for Social Research (ISR) at the University of Michigan and is funded by the National Institute on Drug Abuse (NIDA). Since 1975, the MTF has gathered data annually from nationally representative samples of 12^{th} graders or about 16,000 students in approximately 133 public and private high schools on their behaviors, attitudes, and values. Since 1991, similar information was collected from nationally representative samples of 8^{th} graders or about 18,000 students in approximately 150 schools, and 10^{th} graders or about 17,000 students in approximately 140 schools. Overall, about 50,000 students in approximately 420 public and private secondary schools are surveyed annually. Within each school, up to 350 students may be included. In schools with fewer students, the usual procedure is to include all of them in the data collection. The sample of students, drawn separately for each grade, is selected from all public or private schools located in the 48 coterminous states and D.C. The MTF contains basic nutrition measures on eating habits including frequency of eating breakfast, vegetables, and fruit. MTF respondents participate by completing self-administered, machine-readable questionnaires in their normal classrooms, as administered by University of Michigan personnel.

In addition to the cross-sectional surveys MTF also has a longitudinal component. Starting in 1976, a randomly selected sample of approximately 2,400 individuals from each senior class has been followed up biannually after high school on a continual basis to an approximate age of 32. These respondents receive a mail questionnaire at their home, which they complete and return to MTF. These longitudinal files also include information on consumption of vegetables and fruit, and frequency of eating breakfast.

BMI: Self-reported height and weight.
Nutrition: Eating habits including frequency of eating breakfast, vegetables and fruit.
PA: Time spent in physical activities (i.e., participation in vigorous exercises for at least 20-30 minutes), sedentary behavior (i.e., computer usage and television watching).
Geocode: Special agreement: school zip code, city, county and state.

National Longitudinal Study of Adolescent Health (Add Health)

Add Health is conducted at the Carolina Population Center at the University of North Carolina in collaboration with six universities and several other institutions across the US under a grant from the National Institute of Child Health and Human Development (NICHD) with co-funding from 17 other federal agencies. Add Health is a school-based, nationally representative longitudinal study of the health-related behaviors of adolescents and their transitioning into young adulthood. Add Health seeks to examine how social contexts (families, friends, peers, schools, neighborhoods, and communities) influence the health and risk behaviors of adolescents. Data were collected in two waves between 1994 and 1996, beginning with an in-school questionnaire. In 2001 and 2002, Add Health respondents, then aged 18 to 26, were re-interviewed in a third wave to investigate the influence that adolescence has on young adulthood and followed up with a series of in-home interviews of students between 1994 and 1996, and later in 2001 and 2002. Other sources of data include questionnaires for parents, siblings, fellow students, school administrators and interviews with partners. Preexisting databases provide information about neighborhoods and communities. Waves I and II examine the forces that may influence adolescent behavior, in particular: personal traits, families, friendships, romantic relationships, peer groups, schools, neighborhoods, and communities. Wave III explores the transition between adolescence and young adulthood. Add Health is the largest, most comprehensive survey of adolescents ever undertaken: in wave I, 90,118 adolescent were interviewed through in-school questionnaires (September 1994-April 1995) and 20,745 adolescent in-home interviews (April 1995–December 1995); in wave II, 14,738 adolescents were interviewed through in-home interviews (April 1996–August 1996); and in wave III, 15,197 young adults were interviewed through in-home interviews and biomarkers (July 2001–April 2002). The surveys contain extensive questions on eating behaviors ranging from what youth eat for a typical breakfast to recording everything the survey respondent ate on the day prior to being interviewed and how it was prepared. In addition, the survey contains questions on the number of days in the past week the respondent ate fast food and for what meals, as well as whether the respondent took vitamins/minerals.

BMI: Self- reported height and weight.
Nutrition: Detailed diet the previous day, days eaten fast food in the previous week, days taken vitamins in the previous week.

PA: During the previous week frequency of light physical activity, heavy physical activity, participation in organized sports, frequency of physical education classes in school, minutes exercise/play sports during a physical education class, play sports with mother and/or father, hours a week watch TV, play video/computer games.
Geocode: Special agreement: census tract and block group, zip code, county and state.

Early Childhood Longitudinal Study (ECLS)

The ECLS is conducted by the National Center for Education Statistics (NCES) with the involvement of several other federal agencies including the USDA. Begun in 1998 the ECLS is a multi-purpose national longitudinal survey that provides data on a wide range of family, school, community, and individual variables on children's development, early learning, and performance in school. The ECLS comprises two overlapping cohorts: the Birth cohort following children from birth through kindergarten entry and the Kindergarten cohort following children from kindergarten to 8th grade. Both ECLS surveys also contain a teacher component. Within this questionnaire, respondents are asked the number of times a week students participate in physical education, as well as the amount of time per day. The surveys also ask how many days a week and amount of time per day students have recess.

Early Childhood Longitudinal Study-Birth Cohort (ECLS-B)

The ECLS-B is a nationally representative longitudinal data set of 14,000 children born in 2001 with oversamples of Asian and Pacific Islander, American Indian and Alaska Native, and Chinese children , as well as twins, and low and very low birth weight children. Information about these children was collected when the children were approximately 9-months, 2-years (2003), and preschool age or one year away from kindergarten (Fall 2005), eligible for kindergarten (75% in Fall 2006, and 25% in Fall 2007). Data are collected on the on children's cognitive, social, emotional and physical development, and the learning environment across multiple settings (home, child care, school) through observation and assessment of the children, interviews with the parents, early care and education providers, and kindergarten teachers. Information is obtained during the years from birth through kindergarten on child's health conditions, health insurance, dental care, spanking, discipline, rule enforcement, mental, physical, and emotional development, and education. The ECLS-B offers the opportunity to examine the relationship between children's participation in WIC and their cognitive performance and school progress and many other issues.

BMI: Measured height and weight.
Nutrition: Breastfed, early feeding (i.e., formula, cow's milk), nutrition and diet (food and beverages), feeding practices (i.e., sleep with bottle), whether child able to feed self, family eating routines, household food sufficiency/shortages/availability, Food Stamps, WIC, TANF, Medicaid, free/reduced price school lunch, school breakfast.
PA: Child's extracurricular activities (i.e., organized sports), television and video viewing, child's computer use at home.
Geocode: Special agreement: zip code of child's household and child care center/provider, county, and state.

Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K)

The ECLS-K is a nationally representative longitudinal sample of approximately 22,000 children enrolled in about 1,000 kindergarten programs during the 1998-99 school year. Information is collected in the fall and the spring of kindergarten (1998-99), the fall and spring of 1st grade (1999-2000), the spring of 3rd grade (2002), 5th grade (2004), and 8th grade (2007). The sample consists of children from different racial-ethnic and socio-economic backgrounds and includes an oversample of Asian children, private kindergartens, and private school kindergartners. The sample is designed to support separate estimates of kindergartners in public and private schools; Black, Hispanic, White, and Asian children; and children by socio-economic status. The ECLS-K collects information from children, their families, teachers, and schools on the children's health, cognitive, social, emotional, and physical development; home environment and home educational practices; school and classroom environment, classroom curriculum, and teacher qualifications. The data are conducive to studying how individual, family, school, and community factors are associated with cognitive and social development.

BMI: Measured height and weight.
Nutrition: WIC, TANF/ADC/AFDC, food stamps, food security, free/reduced price lunch and breakfast at school, whether school offers breakfast/lunch, food environment at school (i.e., types of food children can buy in the school cafeteria, vending machines, etc.), student purchasing patterns for food and drinks at school, consumption of fruits, vegetables, soda, milk, juices, junk food for all meals consumed during the past 7 days, family meal patterns, feeding practice.
PA: Frequency of heavy physical activity, participation in sports at school/home, sedentary activities, sleep time, rules on TV watching.
Geocode: Special agreement: zip code, county and state of child's household, NCES school identifier, school's county, and state.

National Survey of Children's Health (NSCH)

The NSCH was sponsored by the Maternal and Child Health Bureau of the Health Resources and Services Administration and administered by the National Center for Health Statistics at the CDC. The NSCH is a national survey conducted, which collected information on 102,353 children between January 2003 and July 2004. The survey examined the physical and emotional health of children ages 0-17. Although information is available through other surveys on the physical and emotional health, the purpose of this survey was to collect data on the target population, as well as obtain both sufficient national and state-level sample sizes so that data could be meaningfully compared nationally and across states. Special emphasis was placed on factors that may relate to children's well-being, including family interactions, parental health, school and after-school experiences, and safe neighborhoods. Where possible, questions from existing surveys were used to allow for comparisons across databases. Data were collected through telephone interviews with a parent of a child selected from the household between the ages of 0-17.

BMI: Self-reported height and weight.
Nutrition: Breastfeeding, family eating habits, receive free or reduced-price school breakfast or lunch, concerns about eating disorders, food stamps, WIC, TANF/ADC/AFDC.

PA: Participation in heavy and light physical activities (i.e., bike, scooter, skateboard, roller skates, roller blades), participation in physical activities for at least 20 minutes, computer/video game usage and television watching habits, family rules about TV watching.
Geocode: Public use: state; Special agreement: zip code, county, and rural-urban commuting codes (RUCAs).

Pediatric Nutrition Surveillance System (PedNSS)

The majority of PedNSS records (83.5%) are from the WIC Program, while other programs include Early Periodic Screening, Diagnosis, and Treatment Program (EPSDT), Title V Maternal and Child Health Program (MCH), and other programs (including Head Start). It uses already available data collected on infants and children who visit public health clinics for routine care, nutrition education, and supplemental foods. These primarily include health, nutrition, and food assistance programs for infants and children, such as the Women, Infants, and Children Supplemental Food Program (WIC); Early Periodic Screening, Diagnosis and Treatment (EPSDT); and clinics funded by Maternal and Child Health Program (MCH) Block Grants. The PedNSS is designed as a child-based public health surveillance system to monitor the nutritional status of low-income infants, children, and women in federally funded maternal and child health and nutrition programs. The surveillance system was initiated in 1973 in five states and by 2006 has expanded to include 40 states, 1 territory, 5 Indian Tribal Organizations, and the District of Columbia collecting information on 7,600,000 children below the age of 5 years old. State health departments that choose to participate in the PedNSS submit data to CDC on a monthly basis. Data are sent to CDC on computer tapes or disks. Monthly reports listing children at high nutritional risk and reported errors are sent back to surveillance participants. Data are collected on socio-demographic variables (ethnicity/race, age, geographic location), birth weight, anthropometric indices (height/length, weight), iron status (hemoglobin and/or hematocrit), breastfeeding, and health risk behaviors (TV/Video viewing, smoking in the household). PedNSS also provides a framework for tabulating and interpreting state-specific information on the nutritional characteristics of low-income children. These data can be used to identify prevalent nutrition-related problems; identify high risk groups; monitor trends; target resources for program planning; and evaluate the effectiveness of interventions. These surveillance data also can be used for program planning, management, and evaluation; for the development of health and nutrition interventions; and to monitor progress toward the *Healthy People 2010* objectives for the United States.

BMI: Measured height and weight.
Nutrition: Initiation and duration of breastfeeding.
PA: TV/Video viewing.
Geocode: Public use: state; Special agreement: clinic's zip code and county.

Pregnancy Nutrition Surveillance System (PNSS)

The PNSS is directed by the CDC. It is a program-based public health surveillance system which is collected annually and is designed to monitor risk factors associated with infant mortality and poor birth outcomes among low-income pregnant women who participate in two federally funded public health programs for nutrition surveillance, the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) and Title V Maternal and Child Health Program (MCH). The PNSS started in 1979 with 5 participating states and 10,000

surveillance records, and has been growing ever since. In 2006, 26 states, 1 U.S. territory, and 5 Indian Tribal Organizations contributed data, representing approximately 1,100,000 women. The data include information on maternal health indicators (pre-pregnancy weight status, maternal weight gain, parity, interpregnancy intervals, anemia, diabetes, and hypertension during pregnancy), maternal behavioral indicators (medical care, WIC enrollment, multivitamin consumption, smoking, and drinking), and infant health indicators (birth weight, preterm births, full term low-birth weight, and breastfeeding initiation). One of the limitations of the data is that they are not nationally representative, as contributing states, U.S. territories, and tribal governments participate voluntarily in the PNSS. Similarly, PNSS is not representative of all low-income pregnant women or pregnant women in the general population.

BMI: pre-pregnancy BMI, gestational (i.e. maternal) weight gain, baby's birth weight.
Nutrition: infant feeding, WIC enrollment, multivitamin consumption, smoking and drinking.
PA: n/a.
Geocode: Public use: state; Special agreement: clinic's zip code and county.

National Food Stamp Program Survey (NFSPS)

The National Food Stamp Program Survey (NFSPS) was conducted between June 1996 and January 1997 by Mathematica Policy Research, Inc. (MPR) for the Food and Nutrition Service at the U.S. Department of Agriculture. Telephone interviews were conducted with a nationally representative sample of food stamp program (FSP) participants. Information was obtained on client satisfaction with services provided by FSP offices and agencies, the monetary and non-monetary costs of participating in the FSP, food shopping behaviors, items related to food security, and nutrient availability. In addition, information on dietary knowledge and attitudes and a 7-day household food use record was collected from a subsample of 1,000 of these households. Approximately 1,000 income-eligible non-participants were contacted through random digit dial sampling to gather information on their experiences with the FSP and their reasons for nonparticipation.

BMI: n/a.
Nutrition: Food stamp program participation, monetary and non-monetary costs of FSP participation, food shopping behaviors, food security (18 items), nutrient availability, dietary knowledge and attitudes, (for a subsample) 7-day household food use.
PA: n/a.
Geocode: n/a.

National Survey of America's Families (NSAF)

Conducted by The Urban Institute, the NSAF provides a comprehensive look at the well-being of children and non-elderly adults. The survey was conducted in three rounds, 1997, 1999, and 2002, and gathered information on more than 100,000 people from over 40,000 families across the country. The NSAF provides quantitative quality-of-life measures and pays particular attention to low-income families. It is representative of the non-institutionalized, civilian population under age 65 in the nation as a whole and in 13 states studied in depth: Alabama, California, Colorado, Florida, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, New York, Texas, Washington, and Wisconsin. Together, these 13 States are home to more than

half the nation's population and represent a broad range of fiscal capacities, child well-being, and approaches to government programs.

BMI: n/a.
Nutrition: Food assistance program participation (includes food stamps, WIC, school lunch, school breakfast), and food security.
PA: Child participates in sports team at school.
Geocode: Public use: state, county only for participants from counties with >250,000 people.

Survey of Income and Program Participation (SIPP)

The SIPP is sponsored and conducted by the U.S. Census Bureau. The survey collects information on income by source, employment, program participation and eligibility, and general demographic characteristics. It has three main objectives: to measure the effectiveness of existing Federal and State programs; to estimate future costs and coverage for government programs, such as Food Stamp Program (FSP); and to improve statistics on the U.S. distribution of income and economic well-being in the country. The SIPP comprises a continuous series of national panels of the civilian non-institutionalized population since 1984, with sample size ranging from approximately 14,000 to 36,700 interviewed households and duration of each panel ranging from 2½ to 4 years. Data files are available for all waves of the 1984 through 1993 panels, all waves of the 1996 and 2001 panels, and a preliminary wave 1 for the 2004 panel. The survey uses a 4-month recall period, with approximately the same number of interviews being conducted in each month of the 4-month period for each wave. Interviews are conducted by personal visit and by decentralized telephone. Currently, the SIPP interviews are conducted using a computer-assisted interview on a laptop computer. All household members 15 years old and older are interviewed by self-response, if possible. Proxy response is permitted when household members are not available for interviewing. Variables include labor force behavior; income; participation in public programs; basic demographic characteristics; living arrangements; food adequacy or abbreviated food security module; participation at the individual level in the FSP and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); and participation at the household level in the free, reduced-price, and full-price categories of the National School Lunch Program and School Breakfast Program.

BMI: n/a.
Nutrition: Free/reduced school lunch and school breakfast, food stamps, and WIC.
PA: n/a.
Geocode: Public use: state; Special agreement: census tract, city, and county.

Survey of Program Dynamics (SPD)

The SPD is conducted by the U.S. Census Bureau and is a longitudinal, demographic survey designed to collect data on the economic, household, and social characteristics of a nationally representative sample of the U.S. population over time. The SPD is a special extension of the Survey of Income and Program Participation (SIPP) designed to look specifically at the effects of welfare reform. Congress mandated that the U.S. Census Bureau continue to collect data on the 1992 and 1993 panels of SIPP, as necessary, to obtain information on changes in participation in public assistance programs, employment, earnings, and measures of adult and child well-being. The SPD was designed to create a longitudinal database spanning a ten-year

period and consisting of three components: information collected in the 1992 and 1993 panels of the SIPP; information collected in 1997 using a modified version of the March Current Population Survey; and information collected from 1998 to 2002 using the SPD instrument. All SIPP people interviewed in the first wave of the 1992 and 1993 panels, and still being interviewed at the end of their panel, were eligible for the SPD sample. The 1997 SPD was a "bridge" between the earlier SIPP interviews and the new SPD survey, and used a modified version of the March CPS questionnaire (which includes the annual income supplement). The CPS annual income supplement obtains data for the previous calendar year on topics such as work experience, earnings, program participation, income, and health insurance. The SPD's data include information on: program eligibility, access, and participation; transfer income and in-kind benefits; food security; and, detailed economic and demographic data on employment and job transitions, income, and family composition.

BMI: n/a.
Nutrition: Food insecurity, incidence of reduced food intake for children and adults.
PA: Difficulty to walk short distances, sports participation, TV.
Geocode: Public use: state.

Consumer Expenditure Survey (CE)

The Consumer Expenditure Survey (CE) is an annual survey of household expenditures conducted by the U.S. Bureau of Labor Statistics at the U.S. Department of Labor. The survey has three major objectives: to provide information on consumer expenditures to support revisions to the Consumer Price Index market basket; to provide a flexible set of data serving a wide variety of social and economic analyses; and to provide a continuous body of detailed expenditure and income data for research purposes. The survey comprises two independent household components: a quarterly interview survey for broad expenditure categories and a weekly diary survey for small number of frequently purchased items, such as individual food items, gasoline, stamps, and other miscellaneous items. The data set includes information on age, race, sex, household size, income, geographic region, and Food Stamp Program participation. Data is also collected on the amount of money spent on food consumed at home and away from home.

BMI: n/a.
Nutrition: Individual food items purchased, food expenditures (food consumed at home and away from home) from diaries and consumer surveys.
PA: n/a.
Geocode: Public use: MSA and state; Special agreement: census tract.

Nielsen Homescan Data

Nielsen Homescan is a consumer-based survey of food purchases collected from a large, national panel of households. Beginning with 15,000 households in 1989 as part of their Homescan data, today AC Nielsen Homescan includes 61,000 households across the nation in 23 local markets and tracks dollar expenditures on consumer product goods. Panel members report the details of each food shopping occasion at a wide variety of store types, including traditional food stores, nontraditional food retailers (such as supercenters, warehouse clubs, and dollar stores), and online merchants. Panelists use a customized electronic device in their homes to scan

the barcodes of the products they purchase and to record the quantity, date, store, and if the item was purchased on promotion or sale. The amount paid for each item is either entered by the household or obtained by Nielsen directly from the store. A unique feature of Homescan is that it captures all consumer package goods purchase information, including both UPC, as well as non-UPC coded random weight perishable products. The data provide information on buying behavior across every type of retail outlet including warehouse clubs, convenience stores, supermarkets, drug stores, mass merchandisers to mail order and the Internet. In addition to the household purchasing behavior data, AC Nielsen also collects information on general eating and activity attitudinal statements, as well as conducting a childhood obesity survey. Furthermore, for a sub-sample of 15,000 households, data is collected on all household members' chronic medical conditions are collected, such as weight control, high cholesterol, diabetes, and high blood pressure.

BMI: n/a.
Nutrition: Household food items purchased and food expenditures.
PA: n/a.
Geocode: Public use: county and state.

National Household Travel Survey (NHTS)

The NHTS is conducted by the Federal Highway Administration (FHWA) and is the only authoritative inventory of daily and long-distance personal travel. The survey was conducted in 1969, 1977, 1983, 1990, 1995, 2001, and 2008. Prior to 2001, the survey was known as the National Personal Travel Survey (NPTS). The survey includes information on demographic characteristics of households, people, vehicles, and detailed information on daily and longer-distance travel for all purposes by all modes, including purpose of the trip, means of transportation (including walking and biking), trip length, day of week and month of the year, number of people on trip, and a host of other trip-making characteristics, including availability of public transportation. The survey is an appropriate source of data to explore a host of research questions pertaining to the relationship among social and demographic change, land development patterns, and transportation. The NHTS survey data were collected from a sample of U.S. households and expanded to provide national estimates of trips and miles by travel mode, trip purpose, and a host of household attributes. The NHTS data were collected through telephone interviews with each household in the sample being assigned a specific 24-hour "Travel Day." Survey participants kept diaries to record all travel by all household members for the assigned day. A 28-day "Travel Period" was assigned to collect longer-distance travel (over 50 miles from home) for each household member, and includes information on long commutes, airport access, and overnight stays. A key weakness of these data is different survey research firms were hired to collect the information for different years, resulting in data collection methods that vary by year.

BMI: n/a.
Nutrition: n/a.
PA: Walking, biking, transit, and driving.
Geocode: Public-use: county, MSA, and state; Special agreement: zip code.

3. CONTEXTUAL DATABASES

Outlet Densities

Economic Census

The Economic Census is the major source of facts about the structure and functioning of the US economy. The economic census takes place every five years in years ending in 2 and 7, and traces its roots back to the first census of manufactures in 1810. It measures economic activity, providing data for the gross domestic product (GDP) and other indicators of economic performance. For example, the 2007 Economic Census forms were sent to over 4 million businesses in December 2007, asking for information about business activity during the 2007 calendar year. The Standard Industrial Classification (SIC) system was previously used to classify businesses, but since 1997 the Economic Census has been using primarily the North American Industry Classification System (NAICS). Relevant data is available on retail trade, arts, entertainment, and recreation; accommodation and food services (includes eating and drinking places and mobile foodservices); manufacturing (includes bakeries); other available data (includes datasets containing multiple sectors: mining; utilities; construction; wholesale trade; transportation and warehousing; information; finance and insurance; real estate and rental and leasing; professional, scientific, and technical services, management of companies and enterprises; administrative, support, waste management, and remediation services; educational services; health care and social assistance; and, other services except public administration). The Economic Census publishes data for the retail trade sector for U.S. states, counties, places, metropolitan areas, and zip codes.

Dun and Bradstreet Business Lists (D&B)

D&B provides a proprietary list of businesses by Standard Industry Classification (SIC) codes. Data can be obtained through use of D&B MarketPlace software. MarketPlace contains information on more than 14 million businesses in the U.S. and is compiled and updated quarterly through directories, government registries, websites, and interviews in order to optimize the accuracy and completeness of the data. MarketPlace allows sorting by multiple criteria such as zip code, company, size, location, metropolitan area, county, state, physical addresses, subsidiaries, and (SIC) codes of business types. SIC codes allow for searching for, and selection of specific types of businesses, such as restaurants, supermarkets, grocery/convenience stores, physical activity-related outlets, and other businesses. These data can be used to develop outlet density measures for analyses. Similarly, the D&B Zapdata is another source providing the same information, and also includes latitude and longitude data of the business location.

InfoUSA

Founded in 1972, InfoUSA is the leading provider of business and consumer information products, database marketing services, data processing services, and sales and marketing solutions. The company owns a proprietary database of 210 million US consumers and 14 million US businesses under one roof. For the business database, infoUSA makes over 20 million phone calls a year to verify the name of the owner or key executive, their address, number of employees, number of PC's, fax numbers, e-mail addresses and other information. The databases change by roughly 65% per year. Elements available from the consumer database include: Location (zip code, city, metro area, county, and state), type of business (yellow page

heading, major industry group, SIC code or profession), business size in revenue and number of employees, and executive contact information.

Price Data

American Chamber of Commerce Researchers Association (ACCRA)

Since 1968, the average nominal price of food, including fresh fruits and vegetables, and other household items, excluding all taxes, has been collected as part of ACCRA's Cost of Living Index series. In particular, these reports contain quarterly information on prices from more than 300 U.S. cities. ACCRA collects 62 different prices for a range of products. Data for the index is collected by chambers of commerce or similar organizations located in designated metropolitan statistical areas (MSAs) that have volunteered to participate. Price data collection is based on establishment samples that reflect a mid-management standard of living. For consistency, national brands are stipulated where possible. Otherwise, "lowest price" is specified calculated as the average of the lowest prices found in all stores surveyed. All items are priced in each place at a specified time and according to standardized specifications. Because the organizations collect the data on a voluntary basis, the participating MSAs may vary from quarter to quarter so there is no consistent way to compare prices over time. The data undergo validation and quality assurances and allow for the construction of local-level measures of price. However, the ACCRA data also has a number of limitations. For example, as noted above the number and mix of respondents varies from quarter to quarter, as well as the MSAs and locations within MSAs; the sample is not representative of the U.S. as a whole; and the sample cannot be tracked over time.

Nielsen Scantrack Data

Since 1995, AC Nielsen has collected supermarket (primarily food and drug stores) scanner data weekly in 50 designated market areas (DMA), from a sample of approximately 4,800 stores, throughout the US. Areas with no designated market fall into one large DMA that represents the remaining US. The markets are collections of counties centered on one or two metropolitan areas. As a result, there are a number of drawbacks to using this data. For instance, all but 17 of the scanner markets cross state boundaries. Additionally, the markets do not correspond to census bureau MSAs or regions. Data are available on all products that are scanned in the sample stores by price, dollar sales, unit sales, sales share and the percentage of stores selling each product. The data are available in quarterly aggregations, by brand, which allows for analyses of brand-specific prices, local-level prices, and the information reflects the actual price paid, accounting for any promotions and coupons. The disadvantages of the scanner data include: it is available only from stores with scanner technology, the data is expensive, and the DMAs do not perfectly match MSAs, nor do they always fall within state boundaries complicating policy analyses and comparisons.

Advertising Data

Nielsen Media Research (NMR)

NMR measures ratings of television programming and advertising in over 9,000 households or 18,000 individuals across the US. Data is collected electronically every night through the Nielsen People Meter, which is installed in a sample of homes on TV sets, VCRs,

cable boxes, and satellite dishes. People Meters provide reliable measurement 24 hours a day, seven days a week. The television and advertising industry uses ratings to project the price of commercials for the next television season and to gauge the range of exposure to product advertising. Ratings can be allocated by brand within each television program. Nielsen includes ratings data for all programs and media markets (i.e., Network TV, National Cable, Syndication, Hispanic Network TV). Ratings are available by age groups and by race. The Nielsen ratings data allow researchers to document the overall composition (by food type) of advertising during children, teen and adult programming. In addition, the data can track the amount of exposure to food advertising over a given period of time. Additional issues such as comparisons of food type advertising across child and youth programming versus adult shows can also be examined to determine food advertisement targeting practices.

Competitive Media Reporting (CMR)

Competitive Media Reporting (CMR), a unit of Taylor Nelson Sofres (TNS) Media Intelligence since 2000, is an experienced provider of advertising occurrence and expenditure data to advertising agencies, advertisers, broadcasters and publishers across 20 media in the U.S. TNS Media Intelligence also provides multinational advertising information, as it monitors 3 million brands worldwide across a multitude of media, such as TV, radio, print, the Internet, movie theaters, and outdoors. CMR provides ad occurrences but not ratings data.

Crime and Safety Data

Perceived Safety

A number of individual-level survey data sets such as Add Health, NSCH, children of the NLSY79, NLSY97, and the PSID-CDS include questions on perceptions of neighborhood safety. The ImpacTeen survey (discussed later in the report) also collected environmental measures that might influence the perception inhabitants have of the safety of their neighborhood, such as the presence of vacant/boarded up houses, graffiti, bars on windows, etc. There are also a number of other sources of environmental data that could be used to construct varying types of safety measures. These are listed below.

Uniform Crime Reports (UCR)

The Uniform Crime Reports (UCR) is a national database of crime statistics that provides annual crime information reported from local and state law enforcement agencies. UCR city-level crime measures include violent crime, property crime, murder and non-negligent manslaughter, forcible rape, robbery, aggravated assault, burglary, larceny-theft, motor vehicle theft, and arson.

Fatality Analysis Reporting System (FARS)

The Fatality Analysis Reporting System (FARS) database contains a census of fatal crashes within the 50 states, the District of Columbia, and Puerto Rico. FARS data have been collected since 1975 and contain over 100 different data elements that characterize the crash, vehicle and people involved. The data are currently publicly available through 2003. Included in the data is information on accidents involving pedestrians and bicyclists, as well as information on the time and location of the crash. It is administered by the National Highway Traffic Safety Administration (NHSTA) at the US Department of Transportation.

School-level Data

Common Core of Data (CCD)

The National Center for Education Statistics (NCES) CCD is the Department of Education's primary database on public elementary and secondary education, providing annual, comprehensive information on all public elementary and secondary schools as well as school districts across all states. The school universe data are school-level and include questions on the count of students in the school, racial/ethnic distribution of students, student body composition by race, gender, grade, race/ethnicity, number of students eligible to participate in the free and reduced-price National School Lunch Program. The school district data provide information on the student demographics at the district level, and the school district finance data (F-33) include information on local, state, and federal finances (revenues and expenditures) at the school district level.

Private School Universe Survey (PSS)

The Private School Universe Survey (PSS) provides data on the universe of private elementary and secondary schools, teachers, and students. The Private School Survey produces data similar to that of the NCES Common Core of Data for the public schools. The PSS is conducted every 2 years with the first collection during the 1989-90 school year and with the most recent being available for the 2005-2006 school year. The target population for the survey consists of all private schools in the U.S. that meet the National Center for Education Statistics (NCES) definition: a private school is not supported primarily by public funds, provides instruction for one or more of grades K-12 or comparable ungraded levels, and has one or more teachers (organizations or institutions that provide support for home schooling without offering classroom instruction for students are not included). The PSS surveys administrative personnel in private schools. Information collected includes: religious orientation; level of school; size of school; length of school year, length of school day; total enrollment (K-12); number of high school graduates, whether the school is single-sexed or coeducational and enrollment by sex; number of teachers employed; program emphasis; existence and type of kindergarten program.

School Health Policies and Programs Survey (SHPPS)

The School Health Policies and Programs Study (SHPPS) is a national survey conducted in 1994, 2000, and 2006 (next wave planned for 2012) to assess school health policies and programs at the state, district, school, and classroom levels in elementary, middle/junior, and senior high schools. In 1996, 502 districts and 766 schools were surveyed; in 2000, 745 districts and 1,331 schools were surveyed; and, in 2006, 538 districts and 1,103 schools were surveyed. SHPPS provides information on the characteristics of eight school health program components (health education, physical education and activity, health services, mental health and social services, food service, school policy and environment, faculty and staff health promotion, and family and community involvement) at the State, district, school, and classroom levels nationwide. It also includes data on the parties responsible for coordinating and delivering each of the components of the school health program, as well as their education and training background. Information is also provided on the collaboration among staff from each school health program component and with staff from state and local agencies and organizations. State agencies and district personnel were interviewed through computer-assisted telephone interviews or self-administered mail questionnaires, while school faculty/staff and classroom teachers were

interviewed through computer-assisted personal interviews to collect information on State, district, and school policies and programs specific to each school health program component, with an emphasis on policy. Classroom-level questionnaires were designed to describe required instruction and techniques used in teaching health topics and physical education. The public-use data set for SHPPS 2006 is available from the CDC.

Specific to nutrition, SHPPS assesses food service coordination, menu planning, food ordering, food preparation, student participation in school meals, food variety and availability, nutrient analysis, cafeterias, credentials of food service staff, and promotion of the food service program to students' families and the larger community. The questionnaire also assessed foods and beverages sold within the school, but outside of the food service program, as well as school practices and policies regarding using food as a reward. The SHPPS survey also collected data on school physical education policies, practices, standards, guidelines, objectives, and course characteristics at the state, district, school, and classroom levels. The survey also collects information on requirements for recess in elementary schools, as well as the promotion of the physical education program among students' families and the community at large.

More specifically, state-level questions include: health education courses taught, hours spent on various topic (i.e., nutrition, HIV), number of students in class, student participation in courses and community related activities, collaboration between agencies; availability of breakfast and lunch, variety of lunch entrees, side dishes, milk choices, ala carte, state policies on junk food, state assistance given to school districts to teach students about healthy eating/nutrition. District-level questions included: district PE goals, objectives, activities for elementary, middle, and high schools, hours of instruction, district required tests, credentials, collaboration; techniques used to plan menus, nutrition information when ordering foods, practices when preparing foods, availability of school breakfast/lunch, ala carte, availability of brand name fast foods in school. School-level questions included: curriculum, hours required for students, standards and guidelines, length of each PE class, activities taught, collaboration between teachers, intramural spots, interscholastic sports; techniques used to plan menus, nutrition information when ordering foods, practices when preparing foods, availability of school breakfast/lunch, à la carte, availability of brand name fast foods in school, visits to cafeteria for educational activities, nutrient analyses, promotion of school meals, service or nutrition projects, promotion of community awareness of the school food service program by school food service staff, role of the family in planning the school food service program.

School Nutrition Dietary Assessment Study (SNDA)

The SNDA is conducted by the Food and Nutrition Service, U.S. Department of Agriculture and is a nationally-representative survey and provides information on the nutritional quality of meals served in public schools that participate in the National School Lunch Program and the School Breakfast Program. There are three waves of the SNDA: SNDA-I in 1991-1992, SNDA-II in 1998-1999, and SNDA-III in 2004-2005 school years. Results of the first wave of the study led to the development and implementation of the School Meals Initiative for Healthy Children (SMI). The primary purpose of the SMI is to improve the nutritional quality of school meals through education and technical resources provided to school food service employees. Subsequent waves of this study track how schools are progressing toward meeting the SMI standards, as well as collecting information about menu planning practices and related school food service program operation issues. Information on nutrition includes: prices charged for reduced/full priced school meals, types of meals offered (hot meal, salad bars), availability of

vending machines, à la carte foods, use of food from commercial vendors (such as McDonald's and Taco Bell).

Fast Response Survey System (FRSS)

The Fast Response Survey System (FRSS) questionnaire, Food and Physical Activity in Public Elementary Schools (FPAPES), was designed to obtain current information on the availability of foods and opportunities for physical activity. The FRSS data consists of a nationally representative sample of 1,198 public elementary schools from the 50 states and the District of Columbia surveyed in 2005. More specifically, questions were asked about the physical education classes, recess, physical assessment of students, such as number of days per week, times per day, and minutes per day each elementary grade had recess, as well as the number of days per week and class length each elementary grade had physical education. The survey included also questions about food services, such as hot lunches, a la carte items, vending machines, school stores and snack bars. Survey items also asked about the types of food sold and when these services were available to the students, as well as whether the schools had contracts with companies to sell foods within the schools.

Bridging the Gap

The "Bridging the Gap: Research Informing Practice and Policy for Healthy Youth Behavior" (BTG) was initiated in 1997, with funding from The Robert Wood Johnson Foundation. BTG is a multi-disciplinary, multi-site collaborative endeavor developed to substantially expand existing knowledge on the conditions in the larger social environment that can influence the use of licit and illicit drugs by American young people, as well as adolescent obesity. In BTG, a particular emphasis is placed on assessing the impact of laws, policies, practices, and programs, since these are among the factors most amenable to change. These factors are being examined at three levels of social organization: the state, community, and school levels. The BTG initiative comprises several studies described below: Youth, Education, & and Society (YES); ImpacTeen; and, Food & Fitness.

Youth, Education, & Society (YES)

The Youth, Education, & Society is proprietary data which collects information annually since 1997-98 from the administrators of approximately 210 schools each year focusing on school-level activities and policies related to substance use and abuse. YES schools were selected from half-sample of Monitoring the Future (MTF) schools and represent separate national samples of 8^{th}, 10^{th}, and 12^{th} graders. Beginning in 2003, the survey focused on dietary and exercise issues as well. Some of the physical activity questions include: physical education activities, percent of students who participate in interscholastic or varsity sports, and percent of students who participate in intramural or physical activity clubs (not P.E. classes), percent of students who walk or bike to school. Some of the nutrition questions include: the percent of students that have meals at school, off campus or bring their own lunch, the types of foods available in vending machines and a la carte items, availability of national fast food chains at the school, and information on the nutrition content of foods offered. YES is administered by the Survey Research Center (SRC), part of the Institute for Social Research (ISR) at the University of Michigan.

ImpacTeen

ImpacTeen is also proprietary data and is another component of BTG with the primary purpose of examining the effects of policies and other environmental factors on youth substance use, obesity, and related outcomes. ImpacTeen collects this information from the surrounding communities of the MTF schools. For each school in the final sample, a catchment area, or community, is defined, reflecting the area from which the school draws the majority of its students. ImpacTeen contains a number of physical activity-related measures that have been collected annually, since the project's initiation in 1999. These measures include information on the availability of after-school activities including sports, as well as outdoor observational data on community-level physical activity-related settings. Specifically, these measures include the availability of 1) sports areas, 2) parks and green spaces, 3) public pools and beaches, and 4) bike paths/lanes. In 2003, measures on the presence of street lighting and level of street traffic were added to the outdoor observation component in an effort to gather information on walking-friendly neighborhoods.

ImpacTeen Health Department Data

In 2003, ImpacTeen fielded a telephone survey for the Health Departments with jurisdiction over its sample of communities. The purpose of this survey was to identify what types of programs health departments offer to both the community at large and to local schools that target health eating, physical activity, and obesity. Information collected included: provision of nutrition counseling and weight loss programs; parental education programs; whether the health department advocates for specific programs or policies, such as healthy school meals; and whether there are other agencies in the community that offer similar programs/support.

Food & Fitness Survey

Begun in 2007, the Food & Fitness survey is longitudinal proprietary data that annually collects information from a nationally representative sample of elementary school (grades K-5) administrators in approximately 1,070 public and 400 private schools. Detailed information is collected on physical education and other physical activity-related activities, the school food environment, and school policies, programs and practices that potentially impact on children's likelihood of being overweight. School district-level wellness policies are also being collected from the districts in which the schools are located. The physical activity information includes: physical education activities; prevalence of recess and recess activities; percent of students who walk or bike to school; barriers to walking and biking to school; percent of students participating in school and community sponsored after-school physical activities; and, physical activity-related classroom practices and policies. The nutrition questions include: the percent of students participating in the USDA reimbursable national school breakfast and lunch programs; the types of foods available in vending machines and a la carte items; availability of national fast food chains at the school; classroom nutrition practices and policies; and the percent of schools with food-related advertising in their cafeteria.

Socio-economic and Demographic Data

There are a number of federal agencies that collect various types of information that are useful for analyses. These range from demographic and socioeconomic information to information that can be used to create measures for urban planning/design-related analyses.

CENSUS

The US Census Bureau administers the Census, which consists of two surveys—the quarterly Interview survey and the Diary survey—that provide information on the buying habits of American consumers, including data on their expenditures, income, and consumer unit (families and single consumers) characteristics. Annual income and expenditures are integrated from the Interview and Diary surveys in varying detail and classified by income, age, consumer unit size, and other demographic characteristics of consumer units. The surveys target the total non-institutionalized population (urban and rural) of the United States in 1980, 1984 and thereafter. The surveys targeted the urban non-institutionalized population in 1981 through 1983. The data are collected in independent quarterly Interview and weekly Diary surveys of approximately 7,000 sample households (5,000 prior to 1999 and 7,500 since 1999). Each survey has its own independent sample, and each collects data on household income and socioeconomic characteristics. The Interview survey includes monthly out-of-pocket expenditures such as housing, apparel, transportation, health care, insurance, and entertainment. The Diary survey includes weekly expenditures of frequently purchased items such as food and beverages, tobacco, personal care products, and nonprescription drugs and supplies.

Census TIGER files

The term TIGER® comes from the acronym Topologically Integrated Geographic Encoding and Referencing which is the name for the system and digital database developed at the U.S. Census Bureau to support its mapping needs for the Decennial Census and other Bureau programs. The topological structure of the TIGER® data base defines the location and relationship of streets, rivers, railroads, and other features to each other and to the numerous geographic entities for which the Census Bureau tabulates data from its censuses and sample surveys. The Census Bureau's TIGER® System automates the mapping and related geographic activities required to support the decennial census and sample survey programs of the Census Bureau starting with the 1990 decennial census, and provides support for complete coverage of the United States, Puerto Rico, the U.S. Virgin Islands, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and the Midway Islands. The TIGER/Line files are a digital database of geographic features, such as roads, railroads, rivers, lakes, legal boundaries, census statistical boundaries, etc. covering the entire United States. The data base contains information about these features such as their location in latitude and longitude, the name, the type of feature, address ranges for most streets, the geographic relationship to other features, and other related information. To make use of these data, a user must have mapping or Geographic Information System (GIS) software that can import TIGER/Line data. Measures that can be constructed using the Census TIGER files include: average block size in square miles; percentage of small blocks (<0.01 square mile); intersection density in square miles; and, ratio of 3-way and/or 4-way intersections to all intersections for target area.

Census of Population and Housing, Demographic Profile

Started in 1790, the Census is taken every ten years and electronic data are available since 1980. The Census of Population and Housing, Demographic Profile includes information on various demographic, social, economic, and housing characteristics for the United States, states, counties, minor civil divisions in selected states, places, metropolitan areas, American Indian and Alaska Native areas, Hawaiian home lands and congressional districts. The Demographic Profile contains the 100-percent and sample data. The 100-percent data were asked of all people and about every housing unit. The sample data were asked of a sample of housing units and persons in group quarters (e.g., college dormitories). The Demographic Profile contains topics, such as sex, age, race, Hispanic or Latino, household relationship, household type, group quarters population, housing occupancy, and housing tenure. The sample items include sample population topics, such as school enrollment, educational attainment, marital status, grandparents as caregivers, veteran status, disability status of the civilian non-institutionalized population, residence, nativity and place of birth, region of birth of the foreign born, language spoken at home, ancestry, employment status, commuting to work, occupation, industry, class of worker, income, and poverty status. The sample items also include sample housing topics, such as units in structure, year structure built, rooms, year householder moved into unit, vehicles available, house heating fuel, occupants per room, value, mortgage status and selected monthly owner costs, selected monthly owner costs as a percentage of household income, gross rent, and gross rent as a percentage of household income. The Demographic Profile is released as individual files for each of the 50 states, the District of Columbia, and Puerto Rico; and for the United States as a whole.

Current Population Survey (CPS)

The U.S. Census Bureau conducts the CPS on behalf of the U.S. Bureau of Labor Statistics and other Federal agencies which support the survey. The CPS is a large, nationally and state representative monthly survey that obtains information from approximately 50,000 households. The main purpose of the CPS is to provide estimates of employment, unemployment, and other characteristics of the general labor force, while the survey also includes demographic data such as gender, age/grade, race/ethnicity, and family income. The March CPS Supplement provides detailed data on income, poverty, and health insurance coverage. The CPS Food Security Supplement was introduced in April 1995 and has been conducted annually since and asks a series of questions about household food expenditures, use of public and private food assistance programs, and experiences and behaviors related to food security, food insecurity, and hunger. These data are the source of national and state-level statistics on national poverty and food security at the household level. In addition to using these data to create contextual socioeconomic measures, they can also be used for household-level analyses to address food program participation and food security nutrition related research questions.

Local Area Unemployment Statistics

The Local Area Unemployment Statistics (LAUS) program provides monthly estimates of total employment and unemployment for approximately 7,200 areas by place of residence. More specifically, it includes data on employment, unemployment, and labor force for Census regions and divisions, States, counties, metropolitan areas, and many cities. The concepts and definitions underlying LAUS data come from the Current Population Survey (CPS), the

household survey that is the official measure of the labor force for the nation. State monthly model estimates are controlled in "real time" to sum to national monthly labor force estimates from the CPS.

State-level Policy Data

Policy Data

The CDC provides a searchable policy database that contains summaries of state legislative bills related to nutrition and physical activity. The database contains information dating from 2001 through the present. The disadvantage of this resource is that it does not provide a copy of the full proposed/enacted piece of legislation. There are also a number of other legislative services available, such as State Net and NetScan's Health Policy Tracking Service. For a fee, these organizations will provide nutrition, physical activity, and obesity-related legislative and regulatory information either in the form of a report, or the actual text of the bills.

Physical Education and Recess State Policy Classification System (PERSPCS)

The Physical Education and Recess State Policy Classification System (PERSPCS) contains quantitative data on statutory and administrative (regulatory) laws in effect as of December 31, 2003, for each of the 50 states and the District of Columbia. The PERSPCS includes a series of ordinal variables that measure state policy variance on the following topics: physical education time requirements, staffing requirements for physical education, curriculum standards for physical education, assessment of health-related fitness, and recess time. Policies are coded for each of three grade levels-elementary, middle, and high schools, except for the recess policies, which are coded for the elementary grade level. A series of additional dichotomous indicators measure potential facilitating/inhibiting policy provisions.

School Nutrition Environment State Policy Classification System (SNESPCS)

The School Nutrition Environment State Policy Classification System (SNESPCS) contains quantitative data on statutory and administrative (regulatory) laws in effect as of December 31, 2003, for each of the 50 states and the District of Columbia. The SNESPCS includes a series of ordinal variables that measure state policy variance on the following topics: the availability of competitive foods in the schools (a la carte foods in school cafeterias, vending machines, school stores/canteens); reimbursable school meals; school meal scheduling time and length requirements; food service director qualifications; coordinating or advisory council requirements; nutrition education; marketing (advertising and promotion restrictions, preferential pricing); and body mass index (BMI) screening. Some of these areas are classified according to grade level requirements for elementary, middle, and high schools. A series of dichotomous tracking variables that might potentially enhance or inhibit implementation or impact of the individual policy provisions are also coded for most of the areas above.

State Snack and Soda Sales Tax Data

The State Snack and Soda Sales Tax dataset contains annual data on sales tax rates for each of the 50 states and the District of Columbia for sodas and selected snack products sold through grocery stores and vending machines for the years 1997 through 2007, using January 1 as the annual reference date. 2008 data are currently being compiled. Sales tax rates are captured

for the following snack products: candy, chips/pretzels, ice cream, popsicles, milkshakes, and baked goods. In addition to variables for each item and sales location (grocery stores and vending machines), dichotomous variables indicate the extent to which each product is taxed at a higher rate than food, generally (known as a disfavored tax). Additional variables include state, state FIPS code, year, and statutory citation information. The data were compiled by The MayaTech Corporation for the ImpacTeen project at the University of Illinois at Chicago.

State Restaurant Sales Tax Data

The State Restaurant Sales Tax data set contains baseline data on sales tax rates for each of the 50 states and the District of Columbia for restaurants, fast food, and carryout foods as of January 1, 2007. Historical and 2008 data are currently being compiled. In addition to sales tax rates for each sales location and state, dichotomous variables indicate if the tax rates are higher than the general state sales tax and the state sales tax applied to food products, generally. Additional variables include state, state FIPS code, year, and statutory citation information. The data were compiled by The MayaTech Corporation for the ImpacTeen project at the University of Illinois at Chicago.

Data on State Safe Routes to School Laws

Data on state statutory laws addressing safe routes to school are currently being compiled using January 1, 2007 as the reference date. Baseline data dating back to January 1, 2005 and then annual updates for the years 2008 and beyond will be developed upon completion of the 2007 data set. Variables will include a combination of ordinal and dichotomous variables that assess state law variance on the following topics: state safe routes to school law adherence to federal law (SAFETEA-LU) language, degree of safe routes to school program formality, state safe routes program administration, eligible and ineligible safe routes projects (both infrastructure and non-infrastructure projects), project comprehensiveness, eligibility criteria for projects, project vetting criteria, and program evaluation components, as well as other state laws relevant to safe routes to school (such as pedestrian safety education programs and traffic control measures in proximity to schools). Additional variables will include state, state FIPS code, year, and statutory citation information. The data are being compiled by The MayaTech Corporation for the ImpacTeen project at the University of Illinois at Chicago.

4. FOOD PROGRAM RESOURCES

Food Stamp Program State Rules Database

The Food Stamp Program State Rules Database and associated documentation were prepared by the Urban Institute with funding from the Food Assistance and Nutrition Research Program (FANRP) to provide a central data source for State policy options in the Food Stamp Program. The database includes 59 program rules and/or policies that fall into 10 categories: Asset Limits; Immigrant Eligibility; Standard Utility Allowance; Recertification Periods; Reporting Requirements; Able-bodied Adults Without Dependents Eigibility; Cash Assistance; Issuance Method; Outreach; and Biometric Technology. Data are provided for all 50 States and the District of Columbia, and, where possible, for each month from January 1996 through December 2004.

Food Stamp Program Quality Control Data File (FSPQC)

The FSPQC contains detailed demographic, economic, and Food Stamp Program (FSP) eligibility information for a nationally representative sample of approximately 50,000 FSP units (i.e., an FSP "household" is known technically as a food stamp "unit"). The FSPQC data are generated from monthly quality control (QC) reviews of FSP cases that are conducted by State FSP agencies to assess the accuracy of eligibility determinations and benefit calculations for the State's FSP caseload. These data, which are produced annually, are ideal for tabulations of certain characteristics of FSP units and for simulating the impact of various FSP policy changes on current FSP units.

Food Stamp Program Access Study Surveys (FSPAS)

The FSPAS were conducted in 2000 to provide a systematic and comprehensive look at how local program policies and procedures influenced potentially eligible households' participation in the Food Stamp Program. FSPAS is centered around a nationally representative sample of local food stamp offices. Samples of food stamp caseworkers and their supervisors were selected within the sampled offices and interviewed concerning local office policies and practices that might affect access to the FSP. For the geographic area served by each office, samples were drawn of food stamp eligible nonparticipants, food stamp applicants, households recertifying for food stamp benefits, and households leaving the FSP. Information was obtained about their socioeconomic characteristics, relationship to the FSP, and participation decisions.

Food and Nutrition Service Program Operations Data

The Food and Nutrition Service Program Operations Data provide statistical information on aspects of all major Food and Nutrition Service (FNS) food and nutrition assistance programs. These programs include the Food Stamp Program; the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC); Child Nutrition Programs (National School Lunch, School Breakfast, Child and Adult Care, Summer Food Service, and Special Milk); and Food Distribution Programs (Schools, Emergency Food Assistance, Indian Reservations, Commodity Supplemental, Nutrition for the Elderly, and Charitable Institutions). Four types of tables are provided: historical summaries, annual state-level data for selected elements, monthly national-level data for major programs, and state-level participation in major programs for the latest available month. The summaries began in 1969, the year that FNS was established to administer USDA's food and nutrition assistance programs.

Food Stamp EBT Redemption Patterns National Database

USDA's Food and Nutrition Service (FNS) contracted with Abt Associates to assemble a national sample of approximately 10,000 food stamp households per state. The sample was drawn from FNS's nationwide Electronic Benefit Transfer (EBT) database, providing a record of the time, place, and amount of every purchase. Subsets of the data were linked with the Food Stamp Program's authorized retailer database to identify store characteristics and with the program's quality control database to identify household characteristics.

5. CHALLENGES FOR DATA USERS

Although the above list of data sources and surveillance systems is extensive and focuses on the key systems that are available to the public, this list is by no means exhaustive. Obesity is a very complex issue and developing reliable and accurate measures to track the many factors that may affect it is quite complicated. Through our review of these data sources, we identified a number of issues researchers should consider when using these data:

1. Data sets have varying levels of available information and few have a comprehensive set of BMI, nutrition, and PA measures.
2. Many of the individual-level databases are cross-sectional which limits researchers' ability to make direct causal inferences about their results.
3. There is mixed opinion regarding the utility of using self-reported rather than objective measures of height and weight taken by trained data collectors, or an accelerometer for physical activity. An advantage of using self-reported information is that is it easier and cheaper to obtain, particularly from large samples of people. However, there is a trade-off between the ease of obtaining the data versus its level of accuracy.
4. Geocode information varies from data source to data source, which makes it challenging, if not impossible in some instances, to match/merge individual and contextual data sources. Geocode information may also not be available at the necessary geographic level to answer specific research questions. For example, in some instances geocode information is available at the county or state level. However, researchers are often interested in examining more proximate neighborhood effects.
5. Contextual data sets also may be limited by their available geographic measures.
6. There is considerable variation across data sets in terms of how variables were measured or collected. The data sources do not have consistent BMI, nutrition, PA or environmental measures making it difficult to compare across data sets.

Much work is still needed in this area, but the data sources compiled in this document can serve as a starting point for researchers to be able to provide evidence-based recommendations to help address the growing problem of obesity.

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APPENDIX A: Data Resource Search Criteria

Behavioral Outcomes:
Self-reported height and weight (BMI)
Measured height and weight (BMI)
Participation in sports
Prevalence of obesity, walking/biking to school
Prevalence of chronic diseases/health conditions specific to youth

Physical Activity Behaviors:
Television watching
Time on the computer
Playing video games
Participation in vigorous exercise in school
Participation in vigorous exercise outside of school
Athletic/sports team participation in school
Athletic/sports team participation outside of school

Food Consumption Behaviors:
Consumption of fruit
Consumption of vegetables
Consumption of grain
Consumption of low-nutrient-density foods (i.e., sweets, chips, soda, etc.)
Consumption of meat and protein
Eat breakfast
School reduced/free and full price breakfast/lunch

Social Environment:
Parent rule setting (i.e., limits on TV watching, food-related choices)
Parent work schedules
Parental role modeling through eating and physical activity habits
Household eating practices (i.e., family meals)
Peer influence on physical activity behavior
Newspaper/television news stories on obesity-related issues

Physical Environment:
Neighborhood density of food-related outlets (i.e., grocery stores, restaurants, fast food)
Neighborhood density of physical activity related outlets
Prices of food
Prevalence of bike/walking paths public green spaces (i.e. parks)
Urban density
Compact development
Mixed land use
Access to public transportation
Walking access to amenities

Industry Environment:
Television commercials
Sponsorship
Marketing (packaging, placement, promotion, price)
Product design and ingredients (low-fat, portion size, nutritional value)

Policy:
Federal law
State law
Local law
State-, Local-, and School-Level Nutrition and Physical Education Requirement and Taxes (i.e., Soda, Snack taxes)
Local Environmental Design Policies (Smart-Growth Land Use; Parks, Sidewalks, Bike Paths, etc.)
School Lunch/Breakfast Programs

Appendix B: Web Links to Data Sources

Dataset	Website
Individual-level Databases	
Continuing Survey of Food Intakes by Individuals (CSFII)	http://www.ars.usda.gov/Services/docs.htm?docid=14392
Diet and Health Knowledge Survey (DHKS)	http://www.ars.usda.gov/Services/docs.htm?docid=14392
National Health and Nutrition Examination Survey (NHANES)	http://www.cdc.gov/nchs/nhanes.htm
Medical Expenditure Panel Survey (MEPS)	http://www.meps.ahrq.gov/mepsweb/index.jsp
Behavioral Risk Factor Surveillance Survey (BRFSS)	http://www.cdc.gov/brfss/
Youth Risk Behavior Surveillance System (YRBSS)	http://www.cdc.gov/HealthyYouth/yrbs/index.htm
National Longitudinal Survey of Youth 1979 (NLSY79)	http://www.bls.gov/nls/nlsy79.htm
NLSY79 Children and Young Adults (NLSY79 Child)	http://www.bls.gov/nls/nlsy79ch.htm
National Longitudinal Survey of Youth 1997 (NLSY97)	http://www.bls.gov/nls/nlsy97.htm
Panel Study of Income Dynamics (PSID)	http://psidonline.isr.umich.edu/Guide/
Child Development Supplement (CDS)	http://psidonline.isr.umich.edu/CDS/
The National Health Interview Survey (NHIS)	http://www.cdc.gov/nchs/nhis.htm
Monitoring the Future (MTF)	http://www.monitoringthefuture.org/
National Longitudinal Study of Adolescent Health (Add Health)	http://www.cpc.unc.edu/addhealth
Early Childhood Longitudinal Study-Birth Cohort (ECLS-B)	http://nces.ed.gov/ecls/birth.asp
Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K)	http://nces.ed.gov/ecls/kindergarten.asp
National Survey of Children's Health (NSCH)	http://www.cdc.gov/nchs/about/major/slaits/nsch.htm
Pediatric Nutrition Surveillance System (PedNSS)	http://www.cdc.gov/pednss/
Pregnancy Nutrition Surveillance System (PNSS)	http://www.cdc.gov/pednss/what_is/pnss/index.htm
National Food Stamp Program Survey (NFSPS)	http://www.fns.usda.gov/oane/MENU/Published/FSP/FILES/ProgramOperations/retailer.pdf
National Survey of America's Families (NSAF)	http://www.urban.org/center/anf/nsaf.cfm
Survey of Income and Program Participation (SIPP)	http://www.sipp.census.gov/sipp/index.html
Survey of Program Dynamics (SPD)	http://www.sipp.census.gov/spd/
Consumer Expenditure Survey (CE)	http://www.bls.gov/cex/
Nielsen Homescan Data	http://www2.acnielsen.com/products/cps_homescan.shtml
National Household Travel Survey (NHTS)	http://nhts.ornl.gov/
Contextual Databases	
Outlet densities	
Economic Census	http://www.census.gov/econ/census02/
(Economic Census data)	http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=ECN&_submenuId=datasets_1&_lang=en&_ts=
Dun and Bradstreet Business Lists (D&B)	http://www.dnb.com/us/, http://www.zapdata.com
InfoUSA	http://www.infousa.com/
Price data	
American Chamber of Commerce Researchers Association (ACCRA)	http://www.coli.org/
Nielsen Scantrack Data	http://us.nielsen.com/products/rms_scantrack.shtml

Advertising data	
Nielsen Media Research (NMR)	http://www.nielsenmedia.com/
Competitive Media Reporting (CMR)	http://www.tns-mi.com/index.htm
Crime and Safety data	
Uniform Crime Reports (UCR)	http://www.fbi.gov/ucr/ucr.htm
Fatality Analysis Reporting System (FARS)	http://www-fars.nhtsa.dot.gov/Main/index.aspx
School-level data	
Common Core of Data (CCD)	http://nces.ed.gov/ccd/index.asp
Private School Universe Survey (PSS)	http://nces.ed.gov/surveys/pss/
School Health Policies and Programs Survey (SHPPS)	http://www.cdc.gov/HealthyYouth/shpps/index.htm
School Nutrition Dietary Assessment Study (SNDA)	http://www.fns.usda.gov/OANE/menu/Published/CNP/FILES/SNDA-Sum.pdf http://www.fns.usda.gov/OANE/menu/Published/CNP/FILES/SNDAIIfind.pdf http://www.fns.usda.gov/OANE/menu/SNDAIII/SNDAIII.htm
Fast Response Survey System (FRSS)	http://nces.ed.gov/pubs2006/nutrition/
Youth, Education, & Society (YES)	http://www.yesresearch.org/
ImpacTeen	http://www.impacteen.org/
ImpacTeen Health Department Data	http://www.impacteen.org/
Food & Fitness Survey	http://www.impacteen.org/
Socio-economic and demographic data	
CENSUS	http://www.census.gov/main/www/cen2000.html
Census TIGER files	http://www.census.gov/geo/www/tiger/
Census of Population and Housing, Demographic Profile	http://www.census.gov/population/www/censusdata/hiscendata.html
Current Population Survey (CPS)	http://www.census.gov/cps/
Local Area Unemployment Statistics	http://www.bls.gov/lau/
State-level policy data	
Physical Education and Recess State Policy Classification System (PERSPCS)	http://dccps.nci.nih.gov/hprb/physed_sd.html
School Nutrition Environment State Policy Classification System (SNESPCS)	http://dccps.nci.nih.gov/hprb/school-nutrition_sd.html
State Snack and Soda Sales Tax Data	http://www.impacteen.org/
State Restaurant Sales Tax Data	http://www.impacteen.org/
Data on State Safe Routes to School Laws	http://www.impacteen.org/
Food program resources	
Food Stamp Program State Rules Database	http://www.ers.usda.gov/Briefing/FoodNutritionAssistance/data/#fsdatabase
Food Stamp Program Quality Control Data File (FSPQC)	http://www.fns.usda.gov/oane/MENU/otherresources.htm
Food Stamp Program Access Study Surveys (FSPAS)	http://www.ers.usda.gov/Briefing/FoodNutritionAssistance/data/#fspas
Food and Nutrition Service Program Operations Data	http://www.ers.usda.gov/Briefing/FoodNutritionAssistance/data/#program
Food Stamp EBT Redemption Patterns National Database	http://www.ers.usda.gov/Briefing/FoodNutritionAssistance/data/#ebt

Recent ImpacTeen and YES! Research Papers

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What Matters: Reality or Perception? The Impact of Peer Binging on College Students Drinking Behaviors, Wolaver A, Ciecierski C, Powell L, August 2007.

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