Bridging the Gap: Research Informing Practice and Policy for Healthy Youth Behavior

Frank J. Chaloupka Institute for Health Research and Policy University of Illinois at Chicago, February 11, 2009

Bridging the Gap is ...

- A collaborative effort to assess the impacts of *policies*, *programs & other environmental factors* on a variety of adolescent health-related behaviors
- An RWJF initiative begun in 1997 with focus on adolescent alcohol, tobacco, and other drug use and related outcomes
- More recently expanded to include youth eating practices, physical activity, and weight outcomes
- Linked to the ongoing, NIDA-funded, *Monitoring the Future* study



<u>University of Michigan</u> Lloyd Johnston, Project Director Institute for Social Research

> Monitoring the Future (MTF)

Youth, Education and Society (YES!)

<u>University of Illinois at Chicago</u> Frank Chaloupka, Project Director Health Policy Center

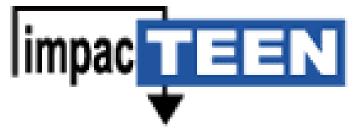
ImpacTeen



A Policy Research Partnership for Healthier Youth Behavior



Co-Investigators and key staff include: Patrick O'Malley, Jorge Delva Jerald Bachman, John Schulenberg Shelly Yee, Yvonne Terry-McElrath, Deborah Kloska, Jonathan Brenner and others.....



A Policy Research Partnership for Healthier Youth Behavior

Co-Investigators and key staff include: Lisa Powell, Sandy Slater, Jamie Chriqui, Lindsey Turner, Dianne Barker, Leah Rimkus, Sherry Emery, Glen Szczypka, Euna Han, Peggy Loudermilk, Kevin Gibbs, Chris Quinn, Elli Resnick, Linda Schneider, Oksana Pugach and many, many others.....

Bridging the Gap integrates across ...

Multiple behaviors Multiple disciplines Multiple levels of social organization Multiple centers and collaborators Multiple funders Multiple data sources

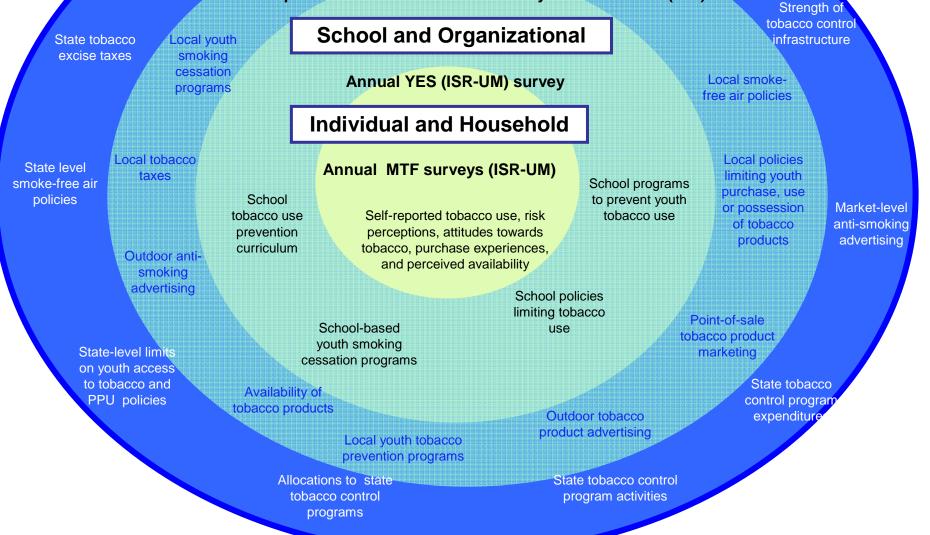
Bridging the Gap - Tobacco

State and National

Annual collection of state policies and commercial data (UIC)

Local and Community

Past and potential future annual community data collection (UIC)

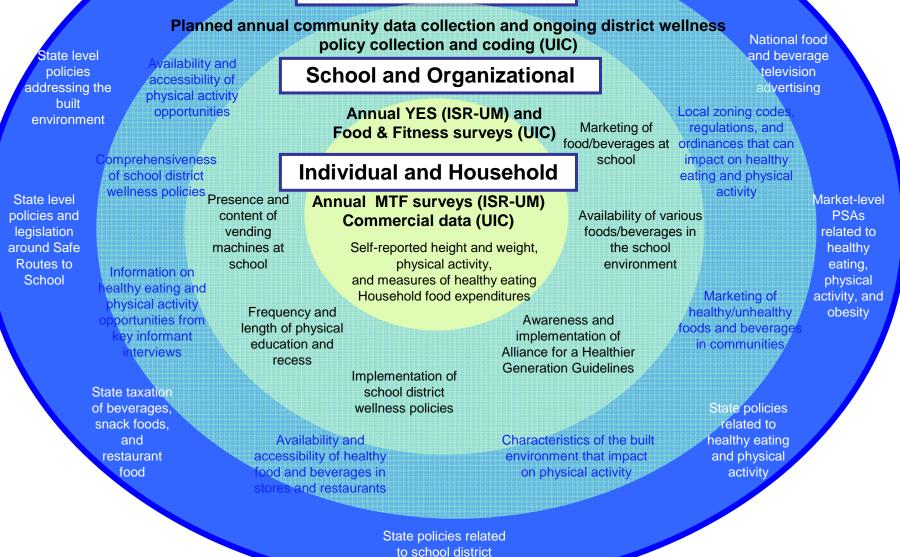


Bridging the Gap - Obesity

State and National

Annual collection of state policies and commercial data (UIC)

Local and Community



wellness policies

Bridging the Gap data include ...

- Monitoring the Future Surveys of adolescents
- Household food purchases
- Surveys of primary and secondary school administrators
- School district wellness policies
- Community-level observations
- Community key informant surveys
- Community-level ordinances and regulations
- Market and national level television advertising exposure
- State-level policies and regulations
- State-level "Strength of Tobacco Control" survey
- Variety of archival data



Monitoring the Future Student Surveys



Monitoring the Future Surveys

- Funded by NIDA (c. \$6.5 million/year)
- Annual, nationally representative, school based surveys of ~50,000 adolescents
- Students surveyed in ~420 secondary schools
- Focus on adolescent alcohol, tobacco, and illicit drug use
- Confidentiality protection limits analytic access (post-docs will help)

Monitoring the Future Surveys

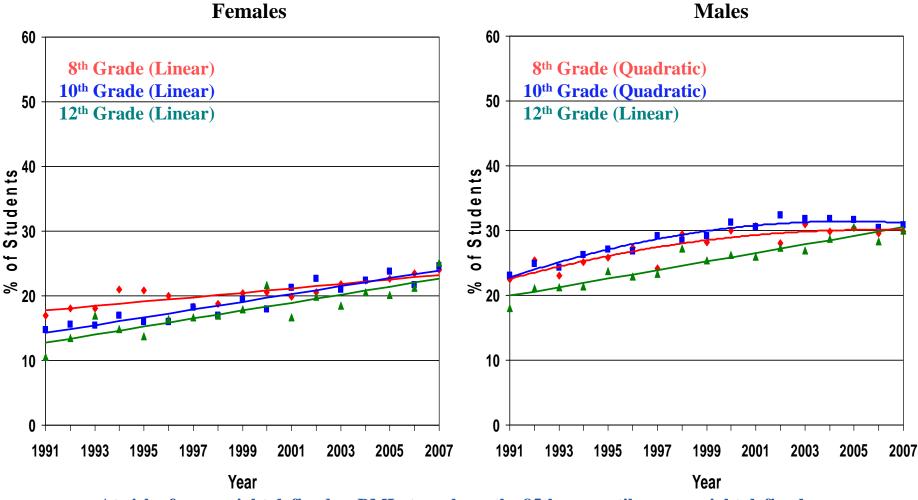
- Variety of questions relevant to adolescent healthy eating, physical activity, and weight outcomes added over time
- Information collected on height, weight, dietary practices, physical activity, sedentary behaviors, and other obesity-related issues
- Variety of information on youth and family characteristics



Trends in Overweight or At Risk of Overweight

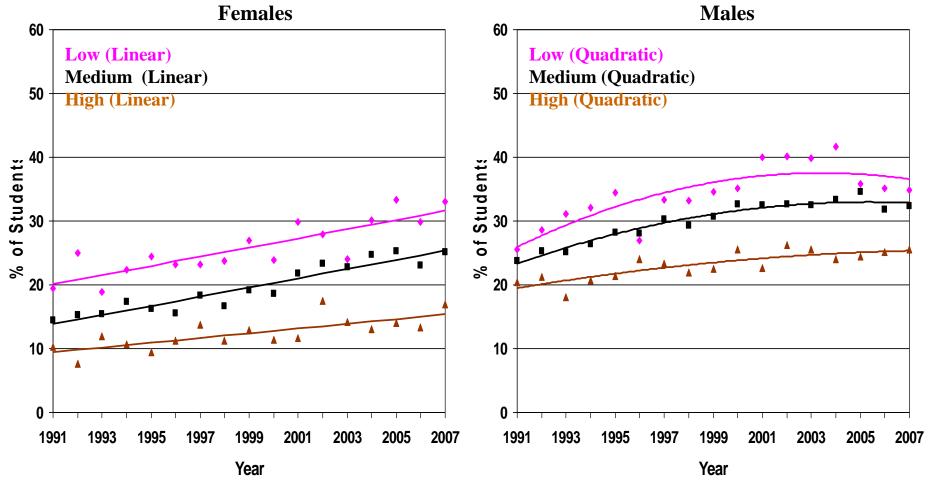
MTF Student Surveys

Trends in the Percent of Students Who are At Risk of Overweight or Overweight by Gender, 1991-2007



At risk of overweight defined as BMI at or above the 85th percentile; overweight defined as BMI at or above the 95th percentile.

Trends in the Percent of Students Who are At Risk of Overweight or Overweight by SES and Gender - 10th Grade, 1991-2007



At risk of overweight defined as BMI at or above the 85th percentile; overweight defined as BMI at or above the 95th percentile.



Core YES School Administrator Survey

MTF Schools

YES – Core Administrator Survey

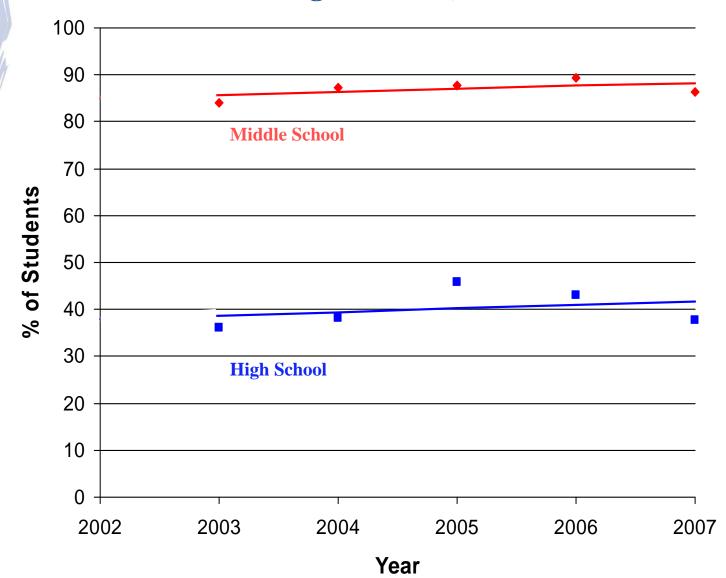
- First implemented in 1998
- Initial focus on school-based substance use prevention and treatment activities
- Administered in nationally representative, second-year MTF half sample
- Response rates consistently well above 80 percent

YES – Core Administrator Survey

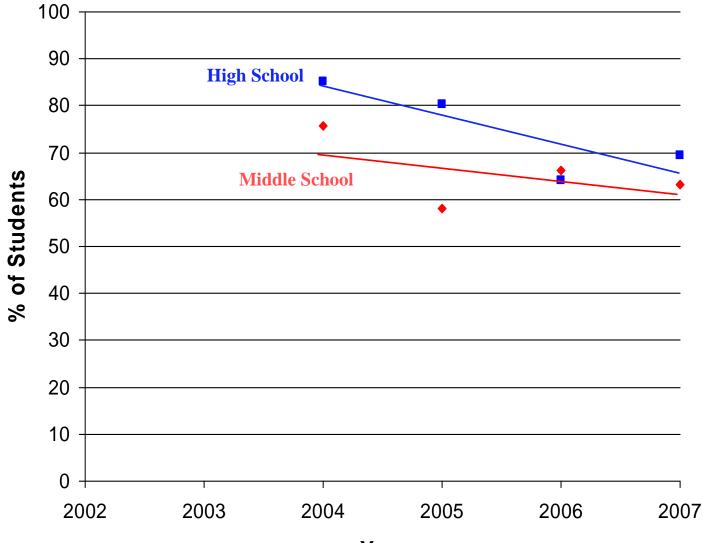
Obesity-related content added in 2003, expanded over time, and includes questions on:

- Soft drink contracts
- Soft drink availability
- Physical Education
- Sports participation
- Physical fitness testing
- Measuring BMI

PE Requirement: Trends in the Percent of Students in Schools that Require PE be Taken Sometime During the Year, 2003-2007

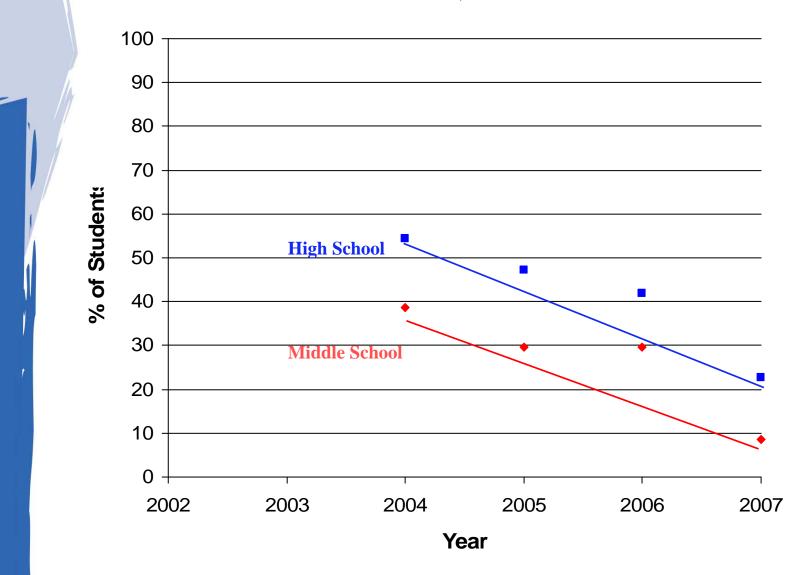


Trends in the Percent of Students in Schools/School Districts with Soft Drink Bottler Contracts, 2004-2007



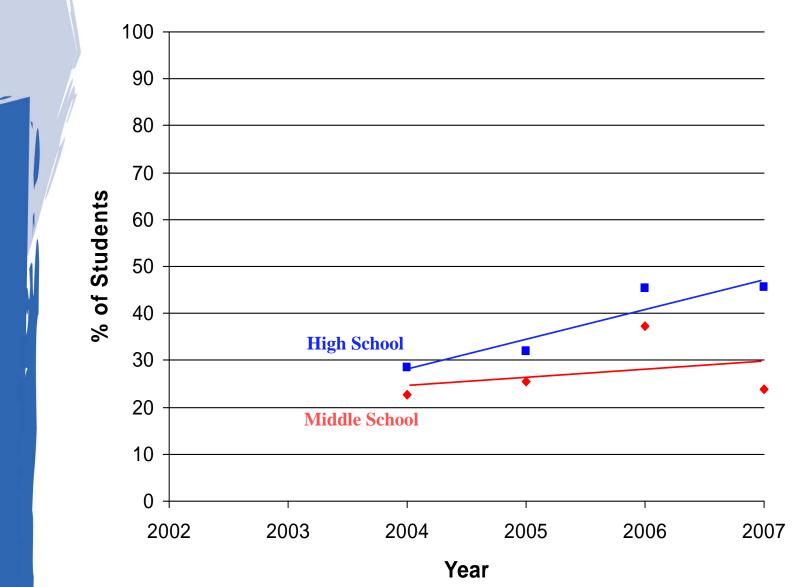
Year

Five or More 'Less Healthy' Foods: Available at Lunch, 2004-2007



"Less healthy" includes five or more of the following items: pizza, deep-fried potatoes, candy, salty snacks, cookies/crackers/cakes/other baked goods, or ice creams/frozen yogurts that are high in fat.

Three 'More Healthy' Foods: Available at Lunch, 2004-2007



"More healthy" includes all of the following 3 items: low-fat salty snacks, low-fat cookies/crackers/pastries/other baked goods, or low- or non-fat ice cream/frozen yogurt/sherbet/yogurt.

YES Supplemental Secondary School Administrator Survey

&

Food & Fitness Primary School Administrator Survey

YES & F&F Administrator Surveys

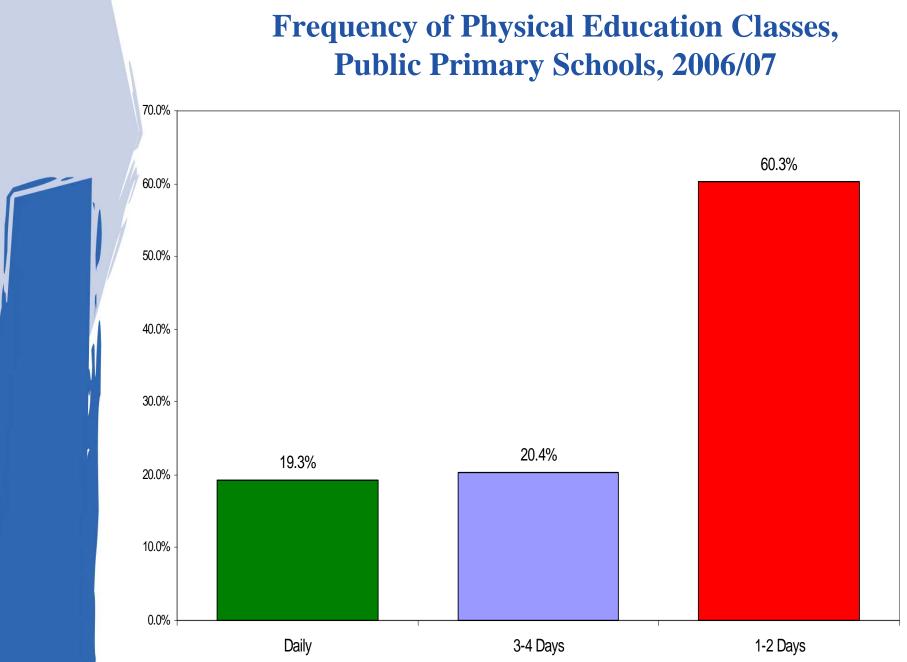
- Obesity-focused adaptations of Core YES survey, first implemented in 2006/07 academic year
- Expanded sets of questions on:
 - Student physical education and other physical activity
 - Foods and beverages available at schools
 - School policies and programs relevant to obesity
- New questions on the Alliance for a Healthier Generation's guidelines for beverages and competitive foods
- F&F survey includes questions on issues more relevant to primary school students (e.g., recess time, classroom snack policies)

YES & F&F Administrator Surveys

- Integrated, nationally representative samples of public elementary (F&F), and secondary schools (YES)
 - Approximately 1,070 primary schools and additional 500 secondary schools in about 600 school districts
- Additional nationally representative sample of ~400 private primary schools
- Uses a rolling longitudinal design, mail survey
- Developing a web-based version of the survey for use in future waves

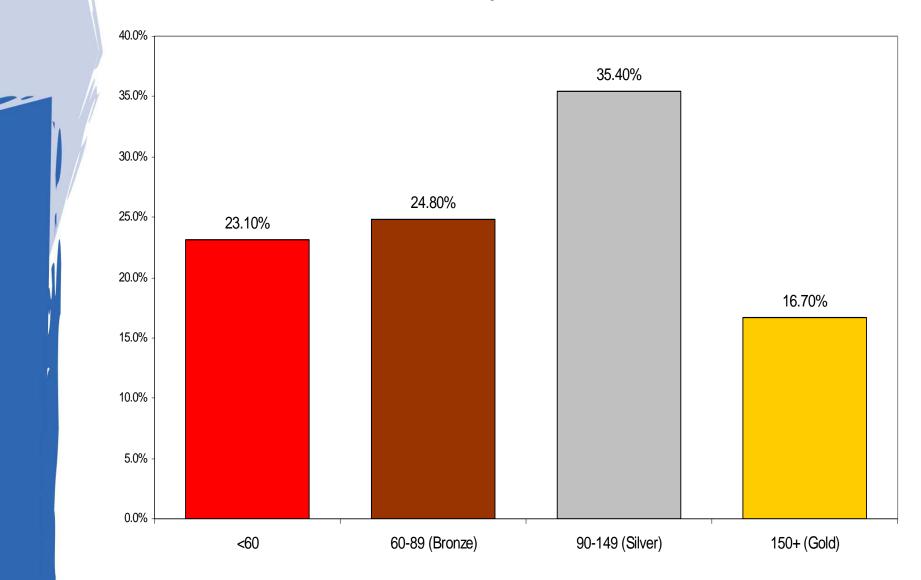
Food & Fitness School Administrator Survey

Public Primary Schools 2006/07 Academic Year



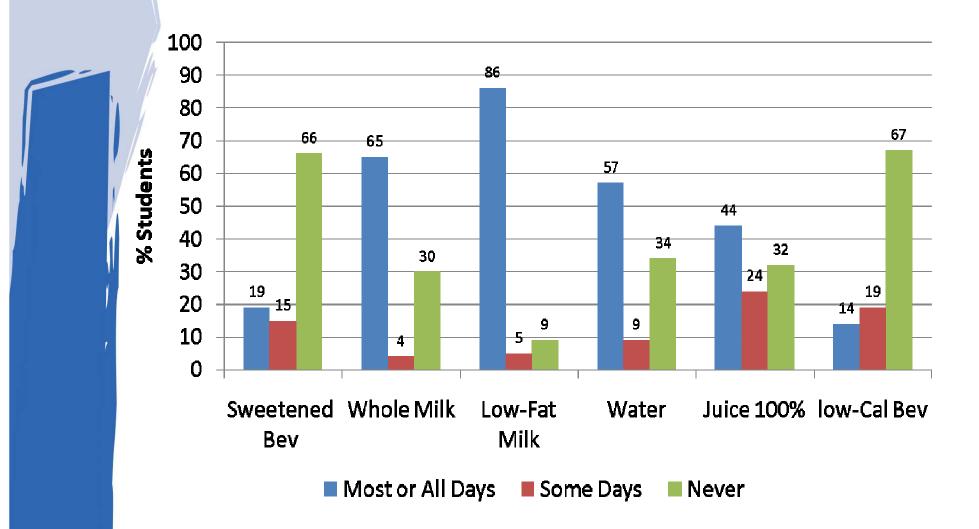
School level, weighted estimates

Minutes of Physical Education per Week, Public Primary Schools, 2006/07



School level, weighted estimates

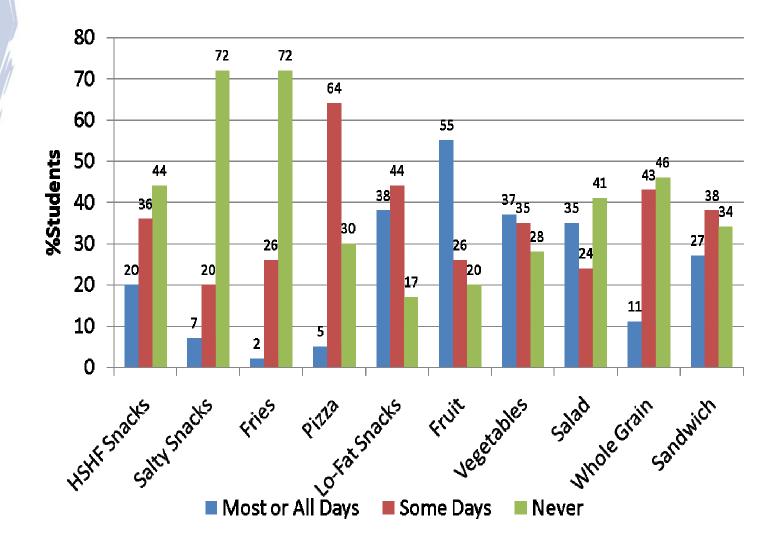
À la Carte Beverage Availability, Public Primary Schools, 2006/07



Student level, weighted estimates

À la Carte Food Availability,

Public Primary Schools, 2006/07



"Cupcake" Policies,

Public Primary Schools, 2006/07

4		Yes, school-wide policy	Yes, in some classes	No
	Policies limiting sugar- sweetened items (e.g., candy, cupcakes, cookies) from being brought in during snack-time	46.3%	22.6%	31.1%
	Any policies limiting sugar- sweetened items (e.g., candy, cupcakes, cookies) at school parties	33.0%	17.2%	49.9%

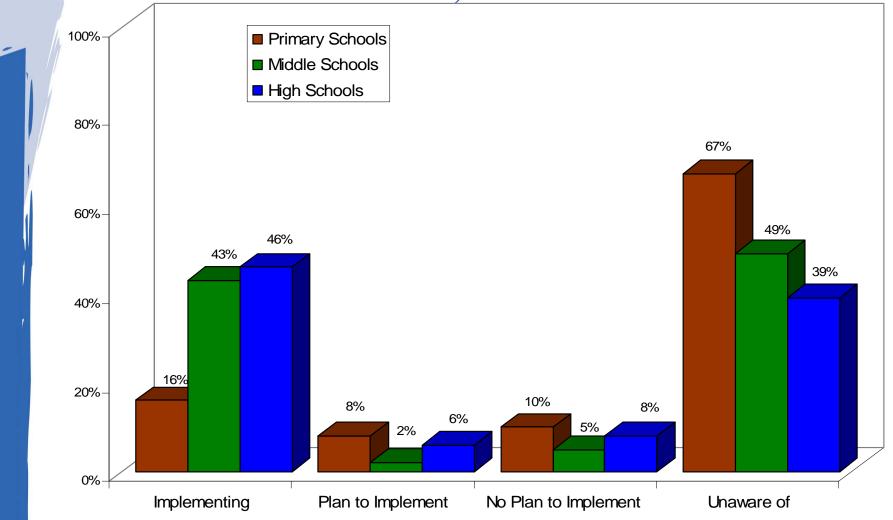
Other Classroom Candy and Food Related Practices, Public Primary Schools, 2006/07

	Yes, up to teachers	Yes, but discouraged	No
Candy as reward for good academic performance	31.9%	31.9%	36.7%
Candy as reward for good behavior	33.4%	31.2%	35.4%
Candy in classroom lessons	50.9%	13.0%	36.1%
Food coupons (e.g., Book-It)	64.9%	4.8%	30.3%

Food & Fitness and YES School Administrator Surveys

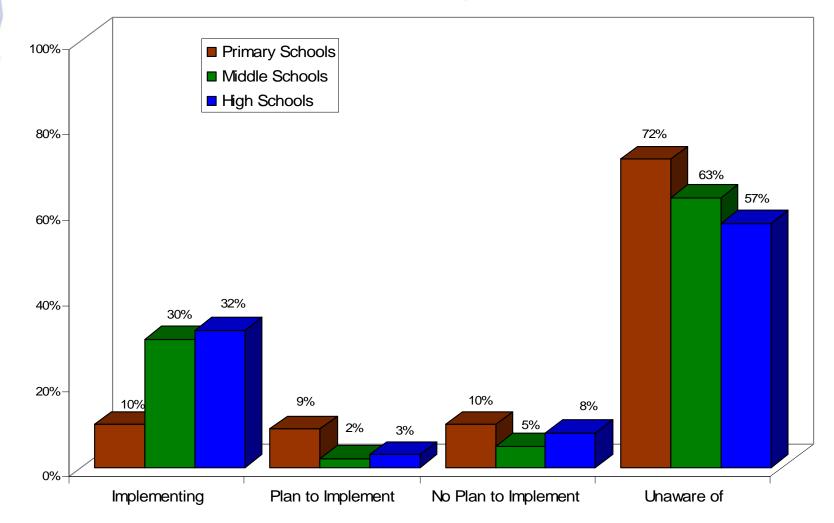
Public Primary and Secondary Schools, 2006/07 Academic Year

Awareness and Implementation of the Alliance for a Healthier Generation's Beverage Guidelines, Public Schools, 2006/07



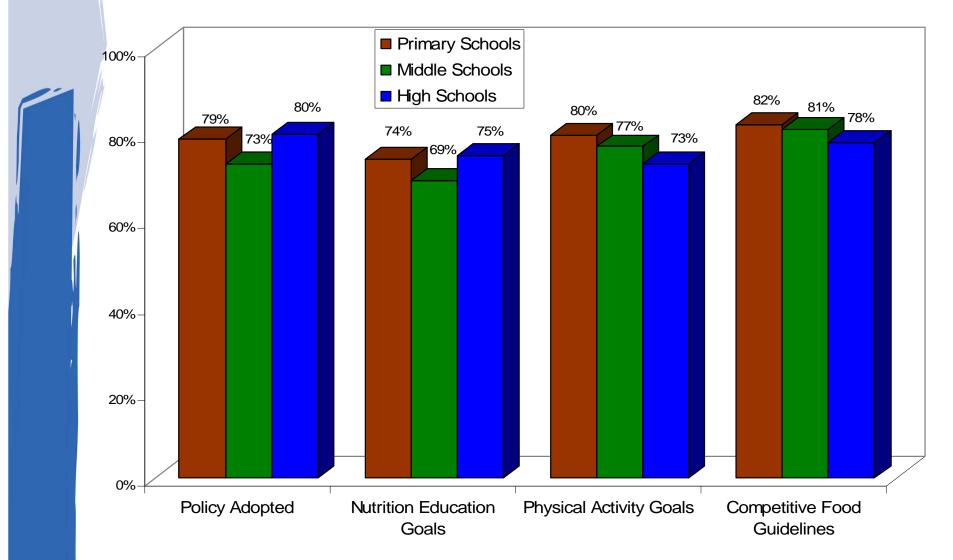
School level, weighted estimates

Awareness and Implementation of the Alliance for a Healthier Generation's Competitive Food Guidelines, Public Schools, 2006/07

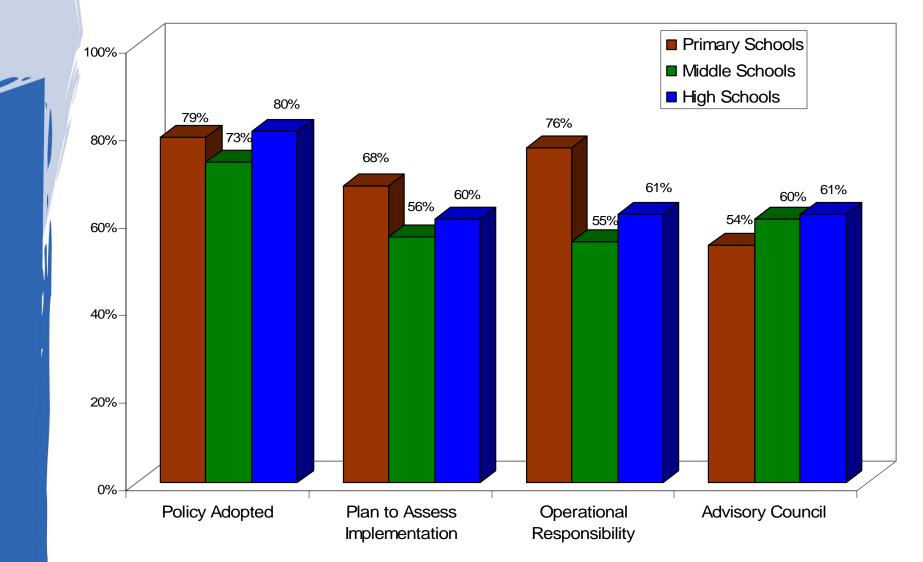


School level, weighted estimates

School Administrator Reports of District Wellness Policy Adoption and Implementation, 2006/07



School Administrator Reports of District Wellness Policy Adoption and Implementation, 2006/07





School District Wellness Policy Collection & Coding



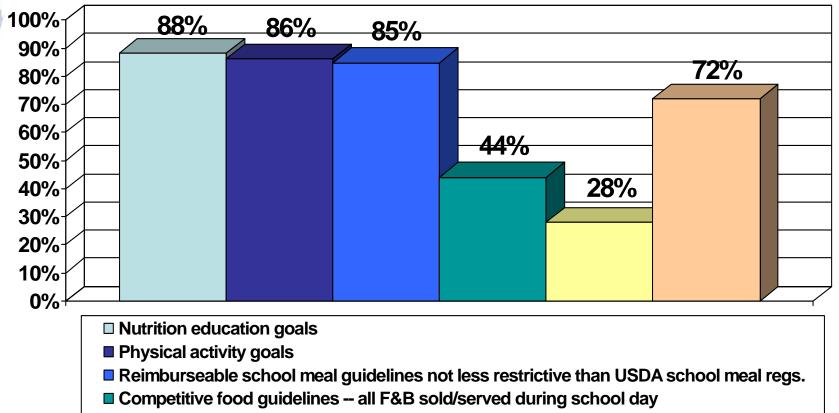
School District Wellness Policy Collection

- Mandated by PL 108-265; required by 1st day of school year following June 30, 2006
- Sample of school districts integrated with primary and secondary school administrator survey samples
- Mixed methods for collecting district policies
- 94.0% response rate for 2006/07 sample
- 5% of districts confirmed to have no policy

School District Wellness Policy Coding

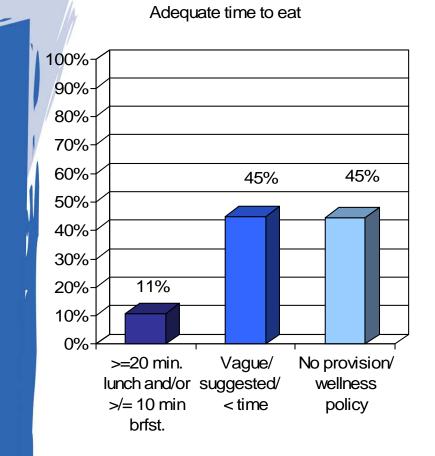
- Coding tool adapted from 96-item tool developed by Healthy Eating Research Grantees
- Includes a few additional items and grade specific coding
- Collection and coding of relevant district and state policies, regulations, and guidelines
- Collection and coding of other national guidelines
- Collection and coding of limited set of other district policies

Percentage of District Policies Containing Mandatory Wellness Policy Components, Public Primary Schools, 2006/07

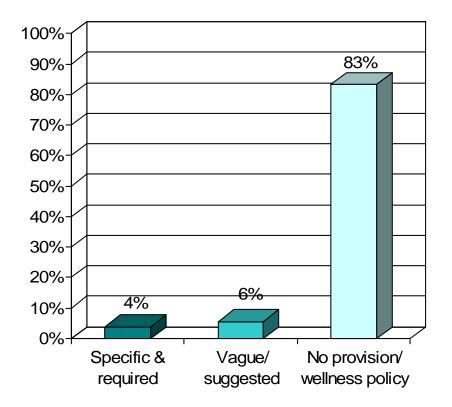


- Required stakeholders (all)
- Implementation plan

District Wellness Policies: Selected School Meal-Related Provisions, Public Primary Schools, 2006/07



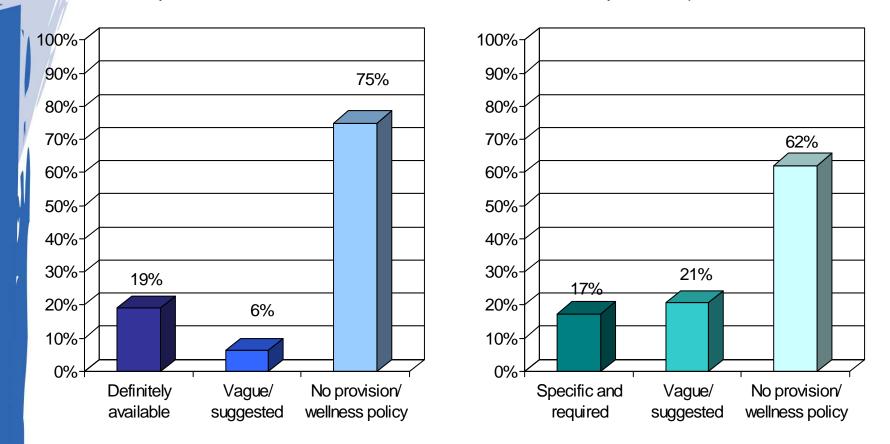
Specifies use of low-fat cooking methods/items for school meals (beyond USDA reqs.)



District Wellness Policies: Selected Physical Activity-Related Provisions, Public Primary Schools, 2006/07

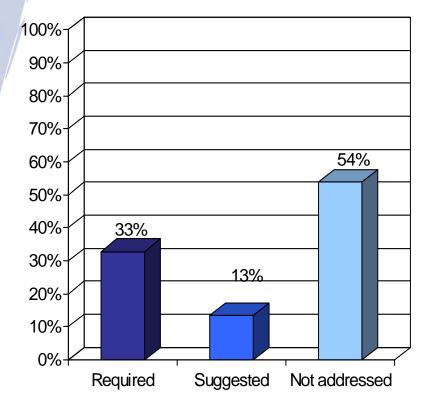
Daily recess requirements

Community use of school facilities for PA

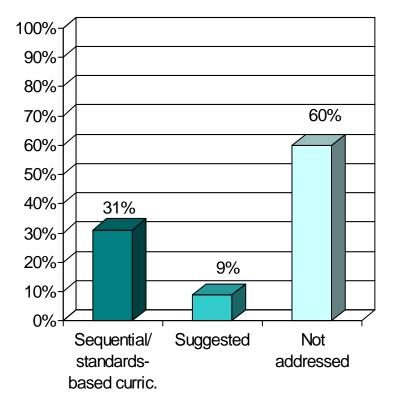


District Wellness Policies: Selected Physical Education-Related Provisions, Public Primary Schools, 2006/07

PE must teach/address physically-active lifestyle



PE curriculum is sequential or aligned with academic standards





State Obesity-Related Policy Collection & Coding

State Policy Measurement

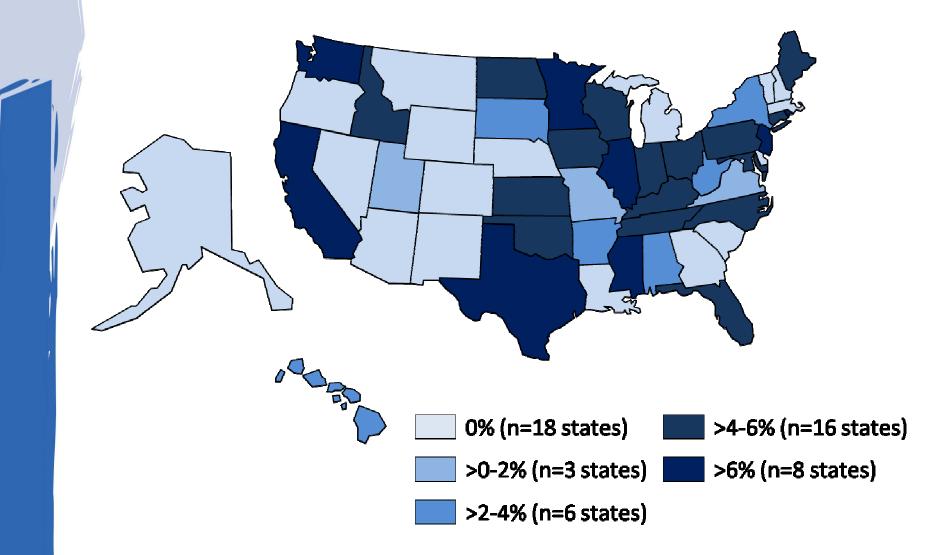
- Follows BTG's successful efforts to measure and monitor state policies on alcohol, tobacco, and illicit drugs
- Complement to NCI's State Policy Classification Systems for Physical Education and Nutrition
- Informed by and a complement to other efforts to monitor state obesity-related policies (e.g., RWJF's *BALANCE Report*, CSPI Competitive Foods Report, Trust for America's Health *F as in FAT*, NASBE Health Policies database)

BTG State Obesity Policy Data

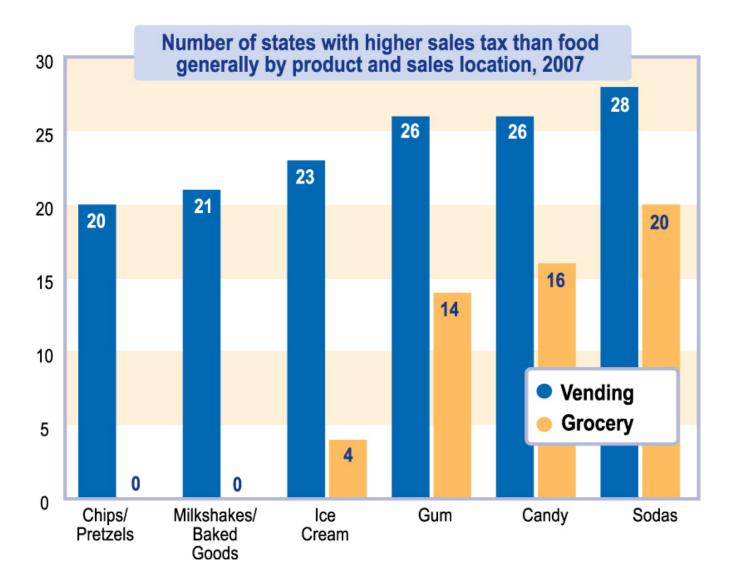
- State sales tax rates:
 - For a variety of snack foods and sodas
 - Separately for sales in grocery stores and through vending machines
 - Annual data from 1/1/97 through 1/1/08
 - For restaurant and fast food/carryout foods
 - As of 1/1/08; historical data in development

State Sales Tax Rates on Soda

(as of January 1, 2008)

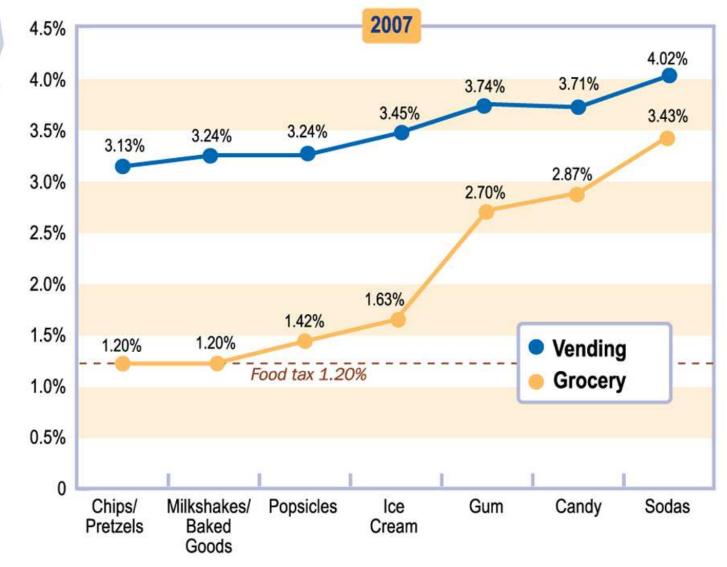


States With Sales Taxes on Sodas and Snack Foods



Source: Chriqui, et al., Journal of Public Health Policy, 2008

State Sales Tax Rates for Sodas and Snack Foods



Source: Chriqui, et al., Journal of Public Health Policy, 2008

BTG State Obesity Policy Data

- Under development
 - State laws regarding Safe Routes to Schools
 - State policies concerning school district wellness policies
 - State restaurant taxes
- Planned/possible topics
 - Farm to school program requirements
 - Restrictions on competitive food contracts/vending
 - Dedicated funding for school-based nutrition, PE and/or other obesity prevention programs
 - Menu labeling requirements
 - Zoning/land use policies
 - Policies addressing the built environment
 - New taxes (if enacted, e.g., "junk food taxes")



Commercial & Other Archival Data



Commercial and Archival Data

- Key databases used in BTG research include:
 - Dun & Bradstreet's MarketPlace database
 - Nielsen Media Research data on exposure to TV advertising
 - Nielsen Media Research data on exposure to obesity-related public service advertising
 - A.C. Nielsen's HomeScan database
 - ACCRA community-level price data
 - U.S. Census data
 - ArcGIS data
 - Aerial photographs
 - and more.....

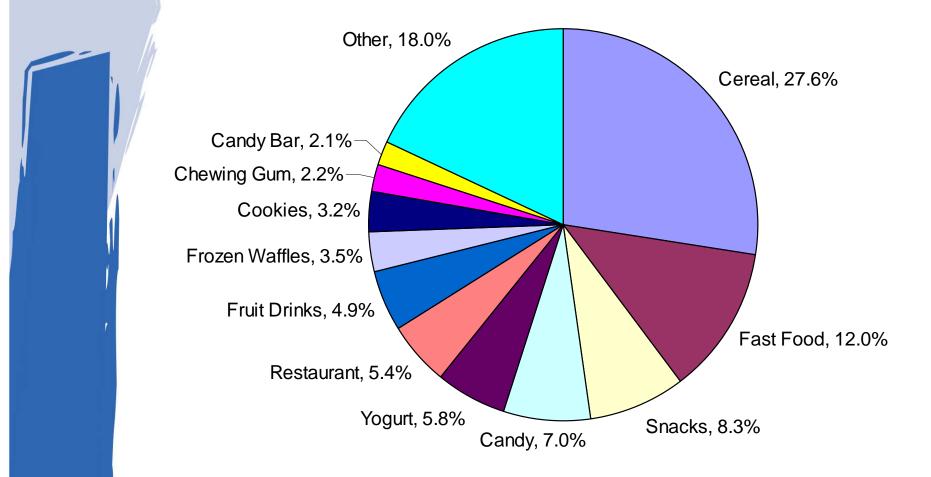
Dun & Bradstreet's MarketPlace Data

- More than 14 million US Businesses, updated quarterly
- Selection based on primary and secondary Standard Industry Classification code
- Supermarkets, convenience stores, and other food outlets
- Fast food and full service restaurants
- Physical activity-related outlets
- Have used these data to:
 - Document disparities in access to healthier food options and opportunities for physical activity for 28,050 zip codes nationally
 - Describe food environment around census of public secondary schools

NMR TV Advertising Data

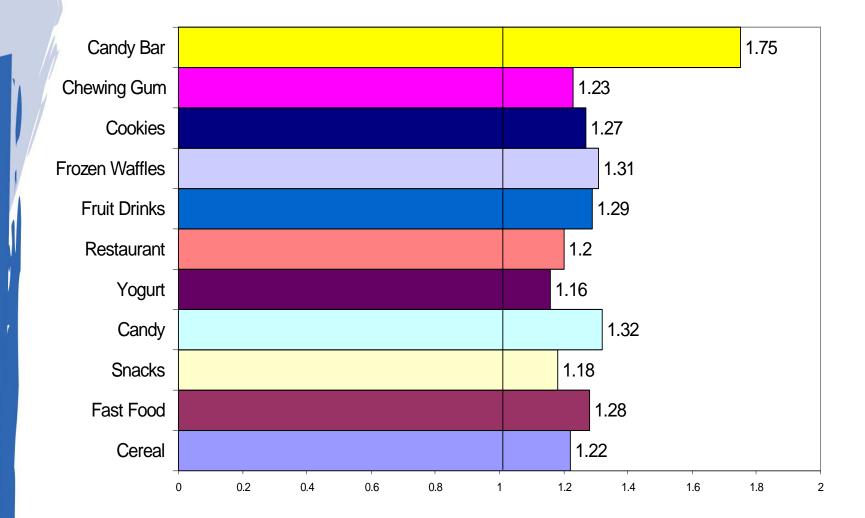
- 2003/04, 2005/06, and 2007/08 TV seasons (nine months)
- Data for 600 most watched network, cable, regular programming, and syndicated shows by age and race
- Exposure measures reflect weighted averages for all ads based on targeted ratings points
- All ads coded for nutritional content, including calories per serving and fat, sugar, and sodium content

Exposure to Food and Beverage Advertising, 2-11 year olds, 2003/04 TV season



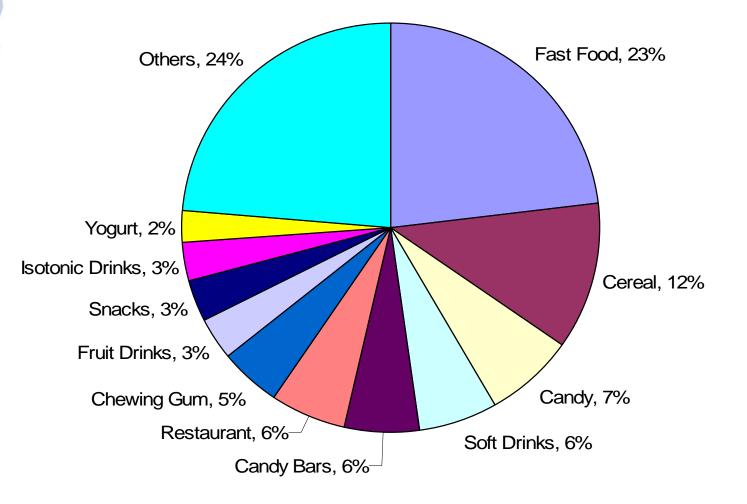
Source: Powell et al., Archives of Pediatrics and Adolescent Medicine, 2007

Relative Exposure of Black and White Children (2-11) to Food and Beverage Advertising, 2003/04 TV season



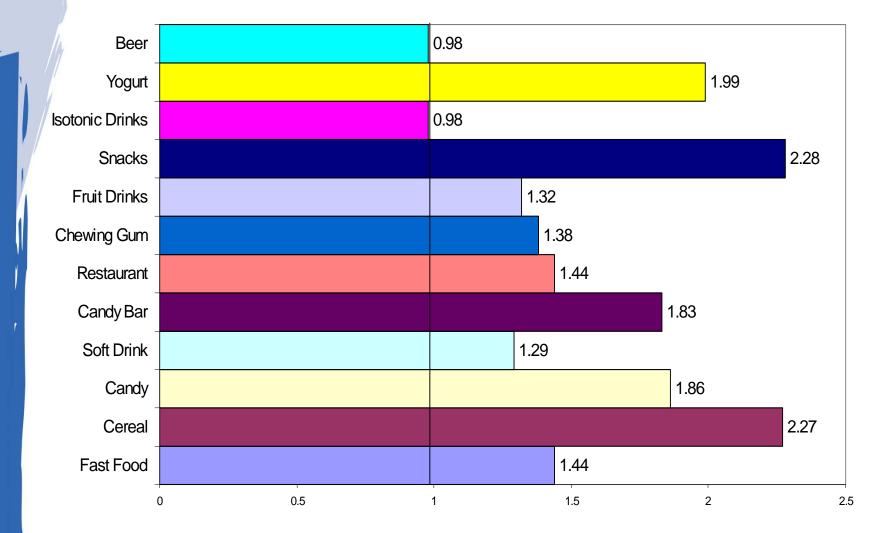
Source: Powell et al., Archives of Pediatrics and Adolescent Medicine, 2007

Exposure to Food and Beverage Advertising, 12-17 year olds, 2003/04 TV season



Source: Powell et al., American Journal of Preventive Medicine, 2007

Relative Exposure of Black and White Youth (12-17) to Food and Beverage Advertising, 2003/04 TV season



Source: Powell et al., American Journal of Preventive Medicine, 2007

Nutritional Content of Food and Beverage Advertising Seen by Youth – Percentage High in Sugar, Fat, or Sodium, 2003/04 TV season



Source: Powell et al., Pediatrics, 2007

AC Nielsen HomeScan Data

- Representative sample of over 125,000 US households
- Longitudinal sample of ~15,000 households
- Contains detailed information on all food purchases from all outlets, including prices and promotions
- Complementary data available:
 - Surveys of HomeScan households
 - Store-level information on product placement, in-store advertising and promotion, other marketing efforts

Analyses of Merged Data

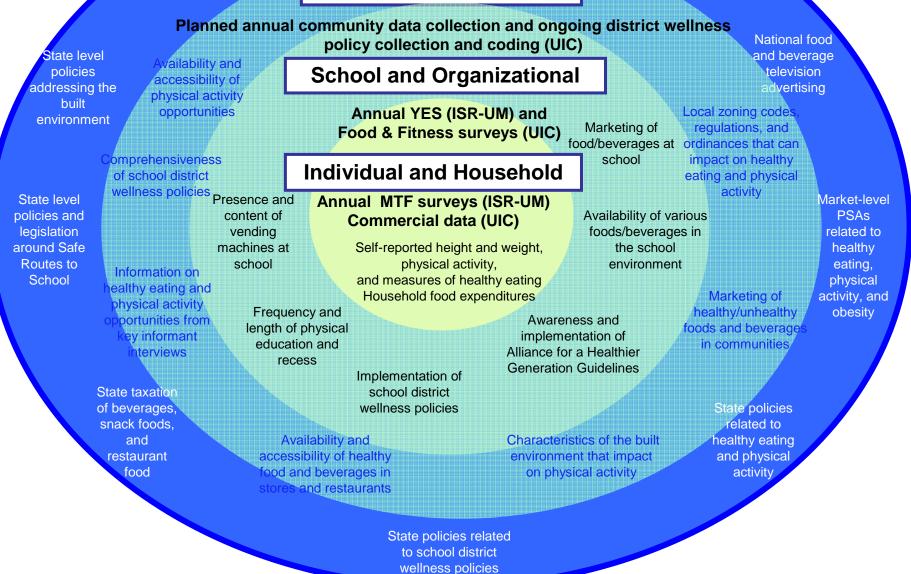
A Few Highlights from Recent, Ongoing and Planned BTG Obesity Analyses

Bridging the Gap - Obesity

State and National

Annual collection of state policies and commercial data (UIC)

Local and Community



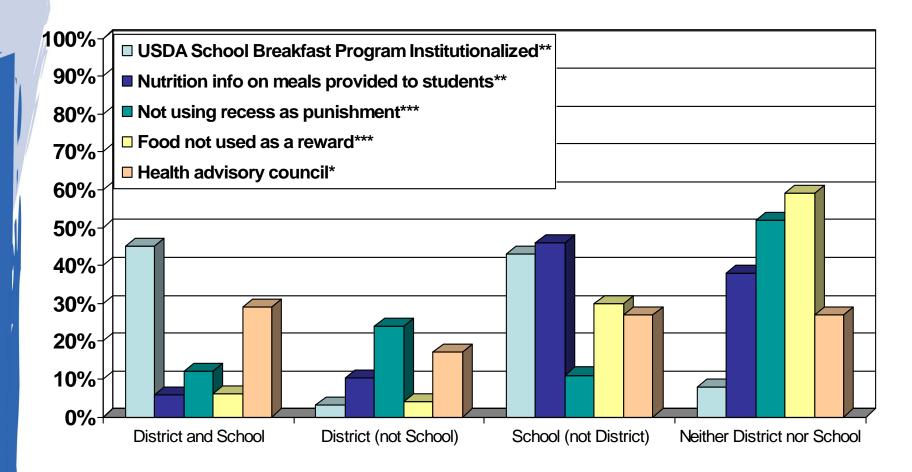
School Food & Beverage Offerings

- Data:
 - BTG Secondary School data on beverage and food offerings,
 - MTF Data on BMI among students in each grade
- Research Question:
 - Is the availability of soft drinks and unhealthy snacks predictive of proportion of students who are overweight? Is the removal of these products from the schools associated with a change in student overweight?
- Preliminary analyses are underway

School District Policies and School Practices

- Data:
 - BTG School district policies, 2006/07 school year
 - BTG Food & Fitness primary school survey data, 2006/07 school year
- Research Questions:
 - Are primary schools implementing the wellness policy components mandated by PL 108-265?
 - Have recommended policies/practices been adopted in district wellness policies and implemented in schools?
- Very preliminary analyses ongoing

Selected District Policy Components and School Policies and Practices, 2006/07 School Year



*p<.05 **p<.01 ***p<.001

*Very preliminary data; partial sample - data for 390 schools in 269 districts included in 06-07 sample;

State Policies and School District Wellness Policies

- Data:
 - BTG school district policies, 2006/07 and 2007/08 school years
 - BTG state-level policies addressing district wellness policies
- Research Question:
 - Do state policies setting minimum standards for district wellness policies and/or requiring district reporting or state review of local wellness policies result in more or less comprehensive district policies?
- Analyses to begin soon
 - Collaborators include Marlene Schwartz and colleagues (RUDD Center), and Terry O'Toole (CDC)

State Policies and School Practices

- Data:
 - NCI state-level nutrition and physical education policy systems, 2003-2006
 - YES-MTF administrator survey, 2004-2007
- Research Question:
 - Do state policies targeting the school food environment and student physical activity influence school practices?
- Analyses in planning stage
 - Collaborators include Tanya Agurs-Collins (NCI), Amy Yaroch (NCI), Louise Mâsse (University of British Columbia), and others

Community Factors and Adolescent Eating Practices and Weight Outcomes

- Data:
 - Price indices for fast foods and fruits and vegetables
 - Food-related outlet density measures
 - MTF data on frequency of fruit & vegetable consumption
 - BMI and indicator for overweight derived from MTF student reports
 - 1997 through 2003
- Research Question:

- Are there associations between availability of different types of food outlets and prices for fruits/vegetables and fast foods and youth eating practices and weight outcomes?

Community Factors and Adolescent Eating Practices and Weight Outcomes

- Findings:
 - Greater availability of chain supermarkets associated with more frequent fruit and vegetable consumption lower BMI and are reduced likelihood of overweight
 - Youth in communities with greater availability of convenience stores have higher BMI and are more likely to be overweight
 - Little evidence of any associations between fast food and other restaurant availability and adolescent eating practices and weight outcomes

Sources: Powell, et al., American Journal of Preventive Medicine supplement, 2007; Powell, et al. Advances in Health Economics and Health Services Research, 2007

Community Factors and Adolescent Eating Practices and Weight Outcomes

- Findings:
 - Lower fruit & vegetable prices associated with more frequent fruit & vegetable consumption and lower BMI
 - Lower fast food prices associated with less frequent fruit & vegetable consumption, higher BMI and greater likelihood of overweight
 - Estimate that a 10% rise in fast food prices would reduce probability of overweight by 5.9%
 - Greater impact of prices on youth at higher BMI
 - Above 90th percentile, fast food price impact 4 times larger
 - Above 95th percentile, fruit & vegetable price impact 5 times larger

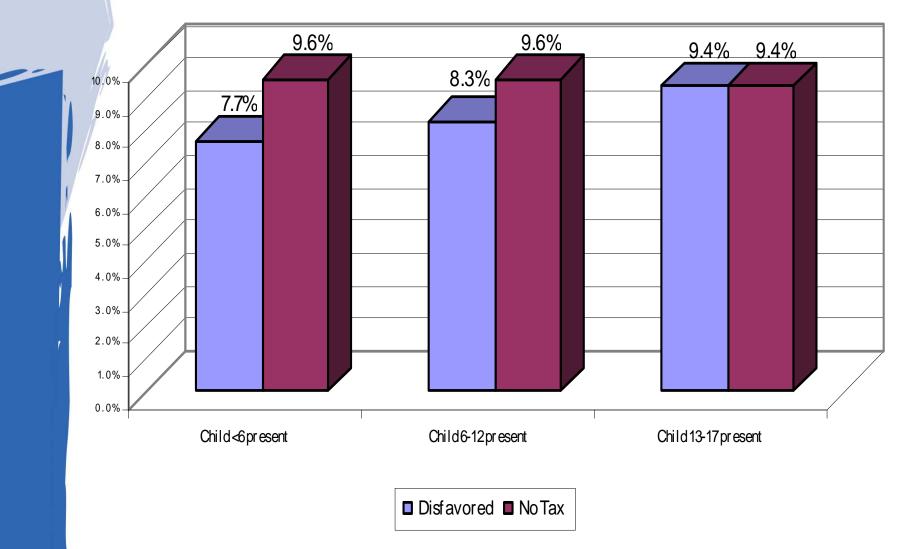
Sources: Powell, et al., 2007; Auld and Powell, Economica, in press

State Policy and Household Food Consumption

• Data:

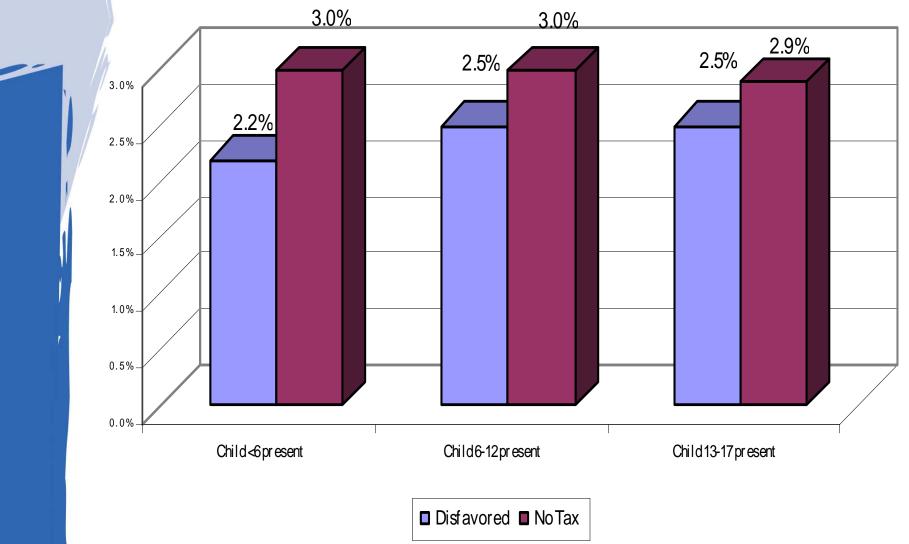
- -State sales taxes on snack food and sodas (disfavored status)
- HomeScan data on household food expenditures by product category (as a share of overall food expenditures)
- Second quarter 2007
- Research Question:
 - Do household expenditures on snack food and sodas differ in states whose sales taxes disfavor these products?

Soda Expenditures as Share of Household Food Expenditures, by State Disfavored Tax Status



Note: Very preliminary estimates

Candy Expenditures as Share of Household Food Expenditures, by State Disfavored Tax Status



Note: Very preliminary estimates



- Data Collection Planned for Spring 2010-2012 in 2nd year half-sample MTF communities
- Will assess: community food environment, physical activity opportunities, local policies, and other community factors potentially relevant to youth healthy eating, physical activity, and obesity
 - also tobacco placement, pricing, and marketing
- 2009: Methodological studies and pilots

BTG-COMP 2008 Youth Focus Groups

- Teleconferenced focus groups with teens in targeted grades
 mix of youth based on region, urbanicity, gender, and family SES
- Most kids don't regularly travel far to purchase food or to exercise or engage in other physical activity.
- Relatively low cost of fast food encourages teen consumption.
- Perceived expense of organized sports, travel teams, clubs, and various sports lessons contributes to teens avoiding or reducing participation in organized sports.

- •Community Definition: School Catchment Area +
 - •Availability of specific food (e.g. supermarkets) and physical activity outlets may extend beyond school catchment area
 - •2008 Focus Groups suggest teens travel within 10-15 minute walk or drive of their route to/from school to exercise or eat out.

•For policies: counties and municipalities where most students reside

- •Community Key Informant Surveys
 - •Annual telephone surveys
 - •Respondents with jurisdictional oversight in our communities:

Local Parks and Recreation Departments
City/County Health Departments
City/County Planning Departments

•Observational data collection

•Food stores (supermarkets, grocery stores, convenience stores, gas stations, drug stores, wholesale club, Target/Wal-Mart/Kmart)

- •Fast food restaurants and coffee shops
- •Focus on:
 - Availability, placement, pricing and quality of healthy and unhealthy foods/beverages and tobacco products
 - Food/beverage and tobacco product marketing
 - Nutrition information



- •Observational data collection
 - •Fitness centers (YMCA, B&G Clubs, JCCs, Commercial)
 - •Community recreation centers and parks
 - •PA Instructional schools (e.g., karate, dance)
 - •Street segments
 - •Focus on:
 - Availability and quality of facilities; pricing
 - Safety, amenities, aesthetics
 - Walkability, bikability,

- •Local policy collection and coding:
 - •Local ordinances and codes
 - •Local zoning policies
 - •Community master plans
 - •Local taxes on soda and candy
 - •School district wellness policies and joint use

agreements

- •Menu labeling requirements
- •Trans fat bans
- •Restrictions on fast food and/or formula restaurants

BTG-COMP

2009 Methodological Studies and Pilots

- •Instrument Refinement
 - •Fast Food Nutritional Information pilot (posted nutritional info)
 - •Community Recreation Center pilots (joint agreements & fees)
 - •Fitness Center and Instructional School pilot (fees)
 - •Advertising and Marketing pilots (type, content, placement)
 - •Community Key Informant Survey pilot
 - •Expert consultant feedback: all instruments
 - •Inter-rater reliability tests: all instruments

BTG-COMP

2009 Methodological Studies and Pilots

•Sampling Refinement

- •Business List Validation Study
 - comparing accuracy of D&B and InfoUSA lists; assessing systematic biases in lists
- •Street Segment Study
 - To determine minimum samples needed to accurately characterize neighborhoods
- •Local Policy Coding Pilots
 - •Food and built environment/physical activity items
 - •Expert consultant input/feedback: all topics and coding schemes
- •Full Fieldwork Pilot, planned for October, 2009



Bridging the Gap

Tobacco Data

Bridging the Gap - Tobacco

State and National

Annual collection of state policies and commercial data (UIC)

Local and Community

Past and potential future annual community data collection (UIC)

School and Organizational State tobacco Local youth smoking excise taxes cessation Annual YES (ISR-UM) survey programs Individual and Household Local tobacco State level Annual MTF surveys (ISR-UM) taxes School programs smoke-free air School to prevent youth policies tobacco use Self-reported tobacco use, risk tobacco use perceptions, attitudes towards prevention tobacco, purchase experiences, curriculum Outdoor antiand perceived availability smoking advertising School policies limiting tobacco School-based use youth smoking State-level limits cessation programs on youth access to tobacco and Availability of PPU policies tobacco products Outdoor tobacco product advertising Local youth tobacco prevention programs Allocations to state State tobacco control program activities tobacco control

programs

Strength of tobacco control infrastructure

Local smokefree air policies

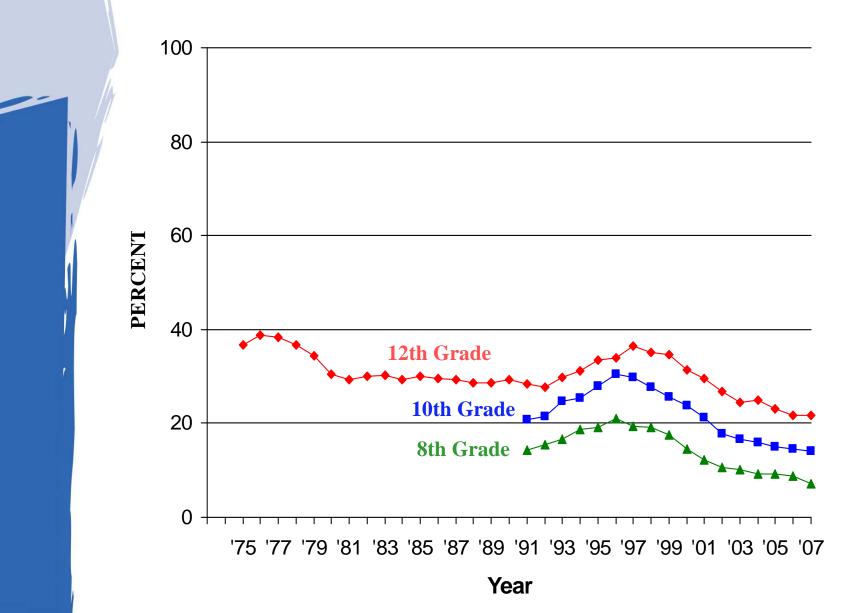
> Local policies limiting youth purchase, use or possession of tobacco products

Market-level anti-smoking advertising

Point-of-sale tobacco product marketing

> State tobacco control program expenditure

Cigarettes: Trends in 30-Day Use for Grades 8, 10, and 12



BTG Tobacco

- Monitoring of school-based prevention programs, cessation services, and other tobacco-related measures
- Measuring and monitoring major state tobacco control policies and funding for tobacco control programs
- BTG-COMP data on availability/access, pricing, and marketing of tobacco products
- Biennial "Strength of Tobacco Control" survey of state tobacco control program leads, voluntaries, and others
- Accumulation of archival data from many sources



A Policy Research Partnership for Healthier Youth Behavior



www.impacteen.org

www.yesresearch.org

www.monitoringthefuture.org

And soon a BTG web site!