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

Frank J. Chaloupka
Healthy Eating Research Annual Meeting
St. Paul, MN, October 17, 2008
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
University of Michigan
Lloyd Johnston, Project Director
Institute for Social Research

Monitoring the Future (MTF)

Youth, Education and Society (YES!)

University of Illinois at Chicago
Frank Chaloupka, Project Director
Health Policy Center

ImpacTeen

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……..
Co-Investigators and key staff include: Leah Rimkus, Lisa Powell, Sandy Slater, Jamie Chriqui, Lindsey Turner, Dianne Barker, Sherry Emery, Glen Szczypka, Euna Han, Peggy Loudermilk, and others…….
Bridging the Gap integrates across …

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

Annual collection of state policies and commercial data (UIC)

Local and Community

Planned annual community data collection and ongoing district wellness policy collection and coding (UIC)

School and Organizational

Annual YES (ISR-UM) and Food & Fitness surveys (UIC)

Individual and Household

Annual MTF surveys (ISR-UM) Commercial data (UIC)

State level policies and legislation around Safe Routes to School

State taxation of beverages, snack foods, and restaurant food

Availability and accessibility of healthy food and beverages in stores and restaurants

Frequency and length of physical education and recess

Implementation of school district wellness policies

Awareness and implementation of Alliance for a Healthier Generation Guidelines

Marketing of food/beverages at school

Availability of various foods/beverages in the school environment

Marketing of healthy/unhealthy foods and beverages in communities

Awareness and implementation of healthy eating, physical activity, and obesity

State policies related to school district wellness policies

Characteristics of the built environment that impact on physical activity

State policies related to healthy eating and physical activity

State and National food and beverage television advertising

Local zoning codes, regulations, and ordinances that can impact on healthy eating and physical activity

Market-level PSAs related to healthy eating, physical activity, and obesity

Bridging the Gap - Obesity

Information on healthy eating and physical activity opportunities from key informant interviews

Comprehensiveness of school district wellness policies

State level policies addressing the built environment

Availability and accessibility of physical activity opportunities

Presence and content of vending machines at school

Marketing of food/beverages at school

Local and Community

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

Guest Editors
Frank J. Chaloupka, Lloyd D. Johnston, Ross C. Brownson, and Antronette K. Yancey
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
- 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
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
At risk of overweight defined as BMI at or above the 85th percentile; overweight defined as BMI at or above the 95th percentile.
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
Beverages & Foods at School

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Core YES School Administrator Survey

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MTF Schools

The graph shows the trends in the percent of students in high school and middle school with soft drink bottler contracts from 2004 to 2007. The data indicates a decline in the percent of students in both high school and middle school with these contracts over the years.

“Less healthy” includes candy, salty snacks, cookies/crackers/ cakes/other baked goods, or ice creams/frozen yogurts that are high in fat sold in vending machines, school stores, snack bars/carts (not à la carte foods offered in cafeteria during lunch).
“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 1,050 primary schools and additional 500 secondary schools in 579 school districts

• Additional nationally representative sample of ~400 private primary schools

• Currently using a longitudinal design, mail survey

• Developing a web-based version of the survey for use in future waves
Food & Fitness School
Administrator Survey
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Public Primary Schools
2006/07 Academic Year
À la Carte Beverage Availability, Public Primary Schools, 2006/07

- **Water**: 30.0%
- **No/Low Calorie Beverages**: 5.0%
- **100% Fruit Juice**: 40.0%
- **Sports Drinks**: 10.0%
- **Light Juices**: 15.0%
- **Fruit Drinks**: 35.0%
- **Low-Fat Milk**: 25.0%

**75+% Free/Reduced Lunch**

- **Water**: 25.0%
- **No/Low Calorie Beverages**: 10.0%
- **100% Fruit Juice**: 30.0%
- **Sports Drinks**: 5.0%
- **Light Juices**: 15.0%
- **Fruit Drinks**: 10.0%
- **Low-Fat Milk**: 35.0%
Food and Beverage Availability as part of School Lunch, Public Primary Schools, 2006/07

Graph showing the availability of different food items in school lunches, comparing all students to those in 25% or more African American schools. The items include Fruit Drinks, Salty Snacks, Low-Fat Salty Snacks, Ice Cream, French Fries, and Salad Bar.

Student level, weighted estimates; at least some days.
Food & Fitness and YES School Administrator Surveys

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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 level, weighted estimates

- Policy Adopted
- Nutrition Education Goals
- Physical Activity Goals
- Competitive Food Guidelines

0% 20% 40% 60% 80% 100%

Primary Schools
Middle Schools
High Schools

80% 73% 80% 67% 69% 75% 73% 77% 74% 80% 81% 78%

Policy Adopted
Nutrition Education
Physical Activity Goals
Competitive Food Guidelines
School Administrator Reports of District Wellness Policy Adoption and Implementation, 2006/07

![Bar chart showing school level, weighted estimates for different aspects of wellness policy adoption and implementation.](chart.png)
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

- >93% 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 (e.g. NANA, CSPI, AFHK, others)

• Collection and coding of limited set of other district policies
Percentage of District Policies Containing Mandatory Wellness Policy Components, Public Primary Schools, 2006/07

*Preliminary data; partial sample - data for 408/579 districts included in 06-07 sample
District Wellness Policies: Selected School Meal-Related Provisions, Public Primary Schools, 2006/07

Adequate time to eat

- >=20 min. lunch and/or >= 10 min brfst.: 11%
- Vague/ suggested/ < time: 45%
- No provision/ wellness policy: 45%

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

- Specific & required: 4%
- Vague/ suggested: 6%
- No provision/ wellness policy: 83%

*Preliminary data; partial sample - data for 408/579 districts included in 06-07 sample*
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)
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 1/1/07
  – For restaurant and fast food/carryout foods
    • As of 1/1/07; historical data in development
States With Sales Taxes on Sodas and Snack Foods

Number of states with higher sales tax than food generally by product and sales location, 2007

State Sales Tax Rates for Sodas and Snack Foods

BTG State Obesity Policy Data

• Under development
  – State laws regarding Safe Routes to Schools
  – State policies concerning school district wellness policies

• 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
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
Analyses of Merged Data

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

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
Bridging the Gap

Community Data Collections
BTG – The Next Four Years

• Resume community data collection activities around 2nd year MTF schools; focus on:
  • community food environment
  • physical activity opportunities
  • local policies
  • other factors potentially relevant to youth healthy eating, physical activity, and obesity

• Builds on work supported by RWJF through ALR and other programs
Cigarette Advertising and Youth Smoking Uptake, 1999-2003

Source: Slater, et al., *Archives of Pediatric and Adolescent Medicine*, 2007
Cigarette Price-Promotions and and Youth Smoking Uptake, 1999-2003

Source: Slater, et al., *Archives of Pediatric and Adolescent Medicine*, 2007
BTG – Opportunities for Collaboration

• Variety of BTG data available on program websites

• Opportunities for analytic access or collaborations for analyses of confidential, non-public data

• Opportunities for visiting positions at UIC (sabbaticals, leaves)

• Multiple post-doctoral openings at both UIC and UM over next 4 years