Examining State and Local Obesity-Related Policies as Part of the BTG Initiative

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Overview

• Contextual examples from tobacco control leading to BTG work in the obesity research area
• Overview of BTG state obesity-related policy research and evaluation efforts
  – Examples of the utility of the data for policy analyses
• Overview of BTG local/school district-level policy identification and analysis efforts
• Planned analyses/future measurement efforts
Contextual examples from tobacco control policy measurement and impact studies
The diagram illustrates the relationship between cigarette prices and sales in the United States from 1970 to 2007. It shows that as cigarette prices have generally increased over time, there has been a corresponding decrease in sales. The source of this information is the report "Tax Burden on Tobacco, 2007," and F. Chaloupka calculations.
Cigarette Prices and Adult (26+) Smoking Prevalence
US State-Level Data, 2004-05

Source: NSDUH, *Tax Burden on Tobacco*, 2007, and author’s calculations
Cigarette Prices and Adult Smoking Prevalence, United States, 1970-2007

Source: NHIS, Tax Burden on Tobacco, 2007, and author’s calculations
Note: green data points for prevalence are interpolated assuming linear trend
Cigarette Prices and Smoking Prevalence
Ages 12-17, State-Level Data, 2004-05

Source: NSDUH, Tax Burden on Tobacco, 2007, and author’s calculations
Cigarette Price and Youth Smoking Prevalence, United States, 1991-2007

Source: MTF, Tax Burden on Tobacco, 2007, and author's calculations
Major Smoke-Free Air Legislation in the 50 States and the District of Columbia - 1991-2006

Source: The MayaTech Corporation and the Roswell Park Cancer Institute; includes laws effective July 1, 2006.
Smoke Free Air Policies and Adult Smoking Prevalence, 2003-04

Source: NSDUH, Mayatech & RPCI, and author’s calculations

\[ y = -0.0791x + 26.516 \]

\[ R^2 = 0.1169 \]
Smoke Free Air Policies and Youth Smoking Prevalence, 2003-04

Source: NSDUH, Mayatech & RPCI, and author’s calculations

\[ y = -0.052x + 13.851 \]

\[ R^2 = 0.0885 \]
Mean Number of Possession, Use, and Purchase Laws per State* -- United States, 1988-2003**

*Includes the District of Columbia; Theoretical Range = 0-3; Includes 1st quarter of 2003 only.
**Sources: ALA’s SLATI, CDC’s STATE system, and Roswell Park Cancer Institute
Youth Access Policies and Youth Smoking Prevalence

2003-04

\[ y = 0.0067x + 12.777 \]

\[ R^2 = 0.0002 \]

Source: NSDUH, Mayatech & RPCI, and author’s calculations
Purchase, Possession and Use Policies and Youth Smoking Prevalence, 2003-04

\[ y = 1.0263x + 10.916 \]

\[ R^2 = 0.1896 \]

Source: NSDUH, Mayatech & RPCI, and author’s calculations
BTG State Obesity Policy Measurement Efforts
Context for BTG State Policy Efforts

• Build on existing work primarily conducted by the National Cancer Institute
  
  
  – Focus on state-level policies affecting the school environment
    • Physical education policies
    • School-based nutrition policies
  
  – Developed by NCI and The MayaTech Corporation based on input from expert advisors and consultants
  
  – “Policies” defined to include state statutory and administrative laws
    • public policies that have the full force of law;
    • laws developed by state legislatures and regulations developed by executive agencies
BTG State Policy Methods

• Identifying topics to complement existing efforts of NCI and others
  – Topics where policies already exist and potential for analyses linked with outcome data are readily possible or anticipated
  – Topics where there is some scientific basis or precedent from other public health areas (e.g., taxation and smoking consumption)

• Focus on developing policy data sets for use in policy impact studies
  – Different than simple policy tracking efforts
  – Emphasize variation in policy provisions
  – Focus on surveillance of policy changes over time

• Currently emphasizing enacted/adopted codified law
  – Not examining “guidelines”, pending laws, model laws, etc. as they are not requirements
Rely on secondary sources for verification of complete policy capture

- National Association for Sport and Physical Education
- Action for Healthy Kids
- Center for Science in the Public Interest
- Trust for America’s Health
- School Nutrition Association
BTG State Policy Topics

- New state-level policy data being compiled by UIC and MayaTech to complement NCI state PE and school-based nutrition policy data
  - State sales tax rates for snacks and sodas sold through grocery stores and vending machines
    - Annual data compiled for 1/1/97 through 1/1/07
    - Descriptive manuscript regarding the 2007 data in press at *Journal of Public Health Policy*

- Work in progress (1/1/07 initial reference date)
  - State sales tax rates for restaurants, fast food/carryout
  - State level laws regarding safe routes to school
  - Statutory/administrative law mandates/frameworks for local wellness policies (different from model policies/guidelines)
    - Baselines likely to vary depending on policy domain
Number of states with higher sales tax than food generally by product and sales location, 2007

- Chips/Pretzels: 20
- Milkshakes/Baked Goods: 21
- Ice Cream: 23
- Gum: 26
- Candy: 16
- Sodas: 20
State sales tax rates for selected snacks and sodas by sales location, 2007
The following states do not impose a sales tax on candy for vending/grocery sales:
AK, AZ, CO, DE, LA, MA, MI, MT, NH, NV, OH, OR, and PA.
The following states do not impose a sales tax on sodas for vending/grocery sales:
AK, AZ, CO, DE, LA, MA, MI, MT, NH, NV, OR, and VT.
Restaurant Tax Data (as of 1/1/07)

Restaurant tax vs. general sales/food tax

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<th>General Sales Tax</th>
<th>Food Tax</th>
</tr>
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<td>Rest tax &gt;</td>
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</tr>
</tbody>
</table>
State tax rates as of 1/1/07:
Restaurant, etc. tax vs. general food tax & general sales tax

Mean = 5.16%
Mean = 1.20%
Mean = 4.83%

Source: Unpublished data compiled by UIC and MayaTech; Federation of Tax Administrators
Safe Routes to School Policy

Measurement

• Initial topics
  – SRTS Program Formality
  – SRTS Laws’ Purpose, Administration, and Approval Process
  – Characteristics of Eligible Projects
  – Selection of Projects/Vetting Criteria
  – Other Relevant Laws Affecting Students’ Ability to Walk or Bicycle to School
  – Federal funding for SRTS projects

• Development status
  – Engaging officials from National Center for Safe Routes to School to review coding scheme
  – Baseline measurement of 1/1/07
  – Plan to compile annual data for 2005-2006 and prospectively starting with 2008
A Few Examples of Utility of Data for Policy Analyses:

Associations between Prices and Youth Behavior and Weight Outcomes
Community Food Environment and Youth Behavior

• Find that:

  • youth in communities with lower fruit and vegetable prices have more frequent fruit & vegetable consumption and lower BMI

  • youth in communities with lower fast food prices have less frequent fruit & vegetable consumption, higher BMI, and are more likely to be overweight

  • 10 percent rise in fast food prices would increase probability of frequent F&V consumption by 3%, reduce BMI by 0.4% and lower probability of being overweight by 5.9%

Source: Powell, et al., Advances in Health Economics and Health Services Research, 2007
Community Food Environment and Youth Behavior

• Find that:
  • *Impact of fast food and F&V prices greatest among most at risk youth (higher BMI)*
    • Above 90\textsuperscript{th} percentile, fast food price impact 4 times larger than average effect for full sample
    • Above 95\textsuperscript{th} percentile, fruit & vegetable price impact 5 times larger than average effect
    • Little impact of prices at low/mid-ranges of BMI
    • Supermarket availability inversely associated with BMI at all levels, with greater impact on upper end
    • No associations between fast food and full service restaurant availability

Source: Auld and Powell, *Economica*, in press
BTG Local Wellness
Policy Identification and Measurement Efforts
Local Wellness Policies

- Wellness policies mandated by Congress (P.L. 108-265) for all school districts participating in the National School Lunch Program
  - Policies needed to be in place by the 1st day of the school year following June 30, 2006
Local Wellness Policy
Identification—Food & Fitness Study

• Phase I: nationally representative sample of 580 school districts in the U.S.
• Dual-collection methods: Internet research with telephone follow-up
  – Policies obtained from 504 districts (87%)
  – Verified to not exist in 28 districts (5%)
• Wellness policies collected include both the mandatory Federal policy components as well as administrative regulations/procedures
HER-developed Local Wellness Policy Coding Tool

• Parallels federally-mandated topics:
  – Nutrition education, reimbursable school meals, competitive food sales, physical activity/physical education, communications and marketing, and implementation and evaluation

• Incorporates many of the components of the NCI systems and systems developed by AFHK, NANA, and the Alliance for a Healthier Generation/Clinton Foundation, NASPE and others

• 96-item coding tool (0/1/2 ordinal variables)
  – Initially tested by HER grantees on policies from school districts in CT, PA, MN, WA
  – Further refined by BTG researchers for use with a nationally-representative sample of school districts throughout the U.S. (N=580 districts)
HER-developed Local Wellness Policy Coding Tool—UIC/BTG Adaptations to Facilitate Policy Evaluation Studies

- Adapt coding tool for measuring policy variance by grade-level (ES/MS/HS)

- Further refinement of competitive food variables to allow for policy nuances based on sale/serve “location” (i.e., a la carte, vending, school stores, fund raisers, parties, etc.)
BTG plans for analysis and policy measurement
Planned analyses... a few examples

• Relationships between:
  – state sales taxes for soft drinks and snacks and consumption patterns, weight outcomes
  – state sales taxes for restaurants and consumption patterns, weight outcomes
  – state/local policy requirements governing nutrition and physical activity and reported school practices, student behavior, weight outcomes
  – state safe routes policies and biking/walking to school among students
State policy measurement: Planned/possible future topics

- **Planned topics**
  - Farm to school program requirements
  - Restrictions on competitive food contracts/vending

- **Possible future topics**
  - Dedicated funding for school-based nutrition, PE and/or other obesity prevention programs
  - Menu labeling requirements
  - Zoning/land use policies, policies related to the built environment
  - New taxes (if enacted, e.g., “junk food taxes”)
Local policy measurement: Planned/possible future topics

• Planned refinement of HER coding tool; addition of new sub-topics by BTG researchers
  – Farm-to-school, BMI measurement/reporting, contract requirements, vending machine bans, closed campus provisions, etc.

• County/municipal policy collection and measurement
  – Zoning/school siting policies
A Policy Research Partnership for Healthier Youth Behavior

www.impacteen.org

www.yesresearch.org

www.monitoringthefuture.org