

**“Study Designs and Analytic Strategies for Environmental and Policy Research on Obesity, Physical Activity, and Diet”**

April 8, 2008, Washington, DC

**Developing policy measures for obesity, diet, and physical activity**

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**Presentation Overview**

Over the past several decades, public health research has documented the important role that policy changes (both public and private) can play on community and individual level behavior changes.

Examples of successful public health policy initiatives include:

1. increases in state excise taxes for cigarette products that result in a marked decline in cigarette consumption following state tax increases;
2. expansion of state and local smoke-free air policies (both public policies and private policies in workplace and home environments) that lead to reduced exposure to environmental tobacco smoke;
3. mandatory seat belt laws or motorcycle helmet laws that are associated with reductions in driving/motorcycle accident-related traumatic brain injury; and
4. increases in the mandatory minimum drinking age and reductions in alcohol consumption by youth.

Building on the evidence-base that has developed from other public health areas and the fact that many obesity-related risk factors and behaviors can be altered by environmental and policy interventions, the obesity-related research field is in need of consistent and reliable measures to facilitate evaluations and policy analyses that will assess the impact that state and local-level policy changes may have on community- and individual-level behaviors. In recent years, several efforts have emerged to develop systems for classifying and measuring the nature and extent of the myriad of state and local policies that have been or are under development related to physical activity, school-based nutrition, and wellness-related issues.

This presentation begins by reviewing successful policy interventions from the tobacco control field to illustrate successes that have been garnered elsewhere. From there, a review of several efforts to classify/measure state and local public policies related to physical activity, school-based nutrition, and wellness-related issues will be presented. This will be followed by other obesity-related state-level policy development efforts currently underway. The presentation will conclude with a summary of recommendations for the field. The following discussion: (1) summarizes the existing state- and local-level policy classification/measurement systems, (2) discusses other related activities underway, and (3) identifies recommendations for continued growth and expansion of the field.

**State-level physical activity and school-based nutrition-related policy classification/measurement systems.**

The National Cancer Institute (NCI) has led the development of two systems for classifying state statutory and administrative (regulatory) laws related to physical education and school-based nutrition issues. Information on both systems is available at: [http://dccps.nci.nih.gov/hprb/data\\_systems.html](http://dccps.nci.nih.gov/hprb/data_systems.html). The Web site includes the coding tools and baseline data and a codebook for laws in effect as of 12/31/03. Efforts are currently under way to include annual data points for the years 2004 through 2007; 2008 data will be available in 2009. Both systems were developed based on reviews of the scientific literature, with input from expert consultants, and reviews of the best available data. Detailed information on both policy classification systems, their development, and initial baseline data were presented in two papers contained in a special supplement to the *American Journal of Preventive Medicine* available at: [http://www.impactteen.org/publications\\_AJPMsupplement.htm](http://www.impactteen.org/publications_AJPMsupplement.htm). Citations for each manuscript are included at the end of the following summaries.

*Physical Education and Recess State Policy Classification System (PERSPCS)*

The 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

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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.

For additional information, see;

Mâsse, L.C., Chriqui, J.F., Igoe, J.F., Atienza, A.A., Kruger, J., Kohl, H.W., Frosh, M.M., & Yaroch, A.L. (2007). Development of a physical education-related state policy classification system. *Am J Prev Med*, 33(4S):S264–S276.

*School Nutrition Environment State Policy Classification System (SNESPCS)*

The 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.

For additional information, see;

Mâsse, L.C., Frosh, M.M., Chriqui, J.F., Yaroch, A.L., Agurs-Collins, T., Blanck, H., et al. (2007). Development of a school-nutrition environment state policy classification system (SNESPCS). *Am J Prev Med*, 33(4S):S277–S291.

**Other State Policy Data Set Development Efforts**

*State Snack and Soda Sales Tax Data:* This data set 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 a January 1 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 ImpactTeen project at the University of Illinois at Chicago. The data will be posted on the ImpactTeen Web site ([www.impactteen.org](http://www.impactteen.org)) in the near future. The 2007 data also are included in a forthcoming manuscript by Chriqui et al. to be published by the *Journal of Public Health Policy*.

*State Restaurant Sales Tax Data:* This 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 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 ImpactTeen project at the University of Illinois at Chicago. The data will be posted on the ImpactTeen Web site ([www.impactteen.org](http://www.impactteen.org)) in the near future.

*Data on State Safe Routes to School Laws:* Data on state statutory laws addressing safe routes to school are currently being compiled using a January 1, 2007 reference date. Baseline data dating back to

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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. When completed, the data set will be posted on the ImpacTeen Web site ([www.impacteen.org](http://www.impacteen.org)) for public use.

**Local Policy Measurement System: Coding Tool for Abstracting School Wellness Policies**

In 2004, Congress mandated that all public school districts participating in the National School Lunch Program develop and implement a local wellness policy by no later than the first day of the school year following June 30, 2006 (P.L. 108-265). In response to this mandate, a team of researchers funded by the RWJF-supported Healthy Eating Research Program developed a tool for quantitatively assessing the variance in these local wellness policies across school districts. The coding scheme addresses the mandatory wellness policy topics related to: (1) nutrition education, (2) reimbursable school meals, (3) nutrition guidelines for all foods sold/served on school campus (i.e., competitive foods), (4) physical activity, and (5) implementation and evaluation. The coding scheme includes additional variables to assess physical education-related provisions and communications and marketing-related issues. The HER wellness policy coding tool was derived, in part, from the NCI policy classification system tools as well as other state measures created by the Action for Healthy Kids, National Alliance for Nutrition and Activity (NANA), and the Clinton Foundation. Copies of the HER coding scheme may be obtained from Dr. Marlene Schwartz at [marlene.schwartz@yale.edu](mailto:marlene.schwartz@yale.edu).

The HER wellness policy coding tool has been adapted by University of Illinois at Chicago researchers as part of the RWJF-supported Food & Fitness project to measure policy variance by grade-level. Additional topics and sub-topics as well as coding system refinements (e.g., coding competitive food restrictions based on sales location) are planned.

**Recommendations for Continued Growth and Expansion**

- 1. More comprehensive efforts to systematically, track, measure, and analyze policies at all levels that build on work that's ongoing at NCI, in BTG and elsewhere**
  - **Rationale:** Efforts are just beginning. There are a host of existing and anticipated forthcoming topics that will be worthwhile to systematically and reliably measure and classify at the state/local levels in coming years.
- 2. Better coordination of ongoing and future policy classification/measurement efforts that maximize consistency across efforts, sharing of data for use in evaluation, etc.**
  - **Rationale:** Experience from the tobacco control field has led to many disjointed but overlapping efforts to collect, code and evaluate the same policies by multiple agencies. We want to avoid the same mistakes and to maximize resources.
- 3. Work to refine existing measures and to develop indices that assess policy comprehensiveness/strength**
  - **Rationale:** As more policies are coded over time, it will be possible to refine the existing measures to make them more reliable and valid as policy measurement tools. Additionally, sub-scales/indices will be able to be developed to facilitate policy impact studies.
- 4. Efforts to assess the implementation and enforcement of policy**
  - **Rationale:** This is an area that is virtually silent at the moment. The existing state policy classification systems do not capture implementation/enforcement provisions. The local wellness scheme includes variables on implementation and enforcement which preliminarily suggest that, in many cases, districts will be enforcing/implementing fairly weak policy provisions. Systematic efforts to capture actual policy implementation/enforcement are needed.

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5. **Research on the impact of policies and their implementation/enforcement on key outcomes (diet, physical activity, weight outcomes)**
  - **Rationale:** Both cross-sectional and time series analyses of the impact of state/local policies and their implementation/enforcement on key outcomes are needed to begin to document for the field the extent to which policy measures are successful interventions for changing individual diet, physical activity, and related behaviors. Data will be needed that will facilitate linking the outcome-level data with policy data at the local and state levels. Both small-scale and large-scale (nationally representative) studies are needed.
6. **Better communication of policy research findings to policy makers and other relevant audiences**
  - **Rationale:** The only way to effectuate continued policy change will be to let policy makers and other relevant audiences know what works/does not work based on the science. Such findings need to be packaged and communicated in a way that will be easily digestible and transferred into policy action. Policy makers do not have time to read pages of a peer-reviewed article.
7. **Development of mechanisms for feedback from policy makers and others to the researchers to inform the policy tracking/evaluation efforts and define priorities**
  - **Rationale:** Policy making is a recursive process. As such, mechanisms need to be developed that allows for two-way communication so that the research community can both feed into the policy making process as well as respond to the needs of policy makers.