Health in All Policies: Determining Relevancy, Content, and Impact

Drawing from Obesity Policy-related Examples at Federal, State, and Local Levels

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Presentation Overview

• Defining policy
• What are the “sources” of the policy data?
• Policy coding/analysis methods for use in policy-impact studies
• Examples of how a broad-spectrum of non-health-specific policies affect health
  • Focus specifically on obesity-related examples from our working on the Bridging the Gap Research project
    • Safe routes to school laws
    • Soda taxation
    • Zoning for healthy food access
Definitions 101
What do we mean by “policy”? 
• Depends on your study
• Are you interested in formal, “on the books” laws?
  • Big “P” policies → formal, codified, “on the books” laws and regulations
  • Includes: codified legislation (i.e., statutes), promulgated regulations (i.e., administrative laws), Executive Orders, and case law (judicial decisions)
• Are you interested in “policies in practice”?
  • Small “p” policies → informal, non-codified policy documents or guidance that do not carry the “force of law”
• Where are you getting your policy “data” from?


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“Policy” examples

• **Formal, “on the books” policies**
  - Federal and state codified laws (statutory-legislation and administrative-regulation)
  - Executive Orders
  - County/municipal ordinances and regulations
  - School district policies

• **“Policies in practice”**
  - Guidance document on a state agency website
  - Policy “handbook” describing a school district wellness policy and how it’s being implemented
  - Surveys of policy makers on “what their policy” is on x,y,z

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Difference in data sources “formal” vs. “policies in practice”

• Formal, “on the books” laws
  • State level: Typically compiled through primary legal research using subscription-based legal research services (e.g., Lexis and Westlaw)
    • Sometimes compiled by federal agencies, contractors, advocacy groups (will be discussed more later)
  • County/Municipal or School District level: combination of Internet research and formal “requests” for hard/electronic copies of policy(ies) from clerk/administrator

• “Policies in practice”
  • Typically compiled through self-reported surveys of policy makers/officials in the jurisdiction(s) of interest
    • Question may be “do you have a policy on x,y,z” but often the interpretation is what are you doing in your jurisdiction related to x,y,z
What do we mean by policy “data”? 

• **For quantitative studies of policy impact:**
  • Coded, policy variables:
    • Dichotomous indicators of whether a policy exists or not (1=yes, 0=no)
    • Ordinal measures of policy strength (0=no policy, 1=weak policy, 2=strong policy)
    • Policy indices or measures of strength (e.g., a measure of the strength of a policy across X individual coded policy items)

• **For qualitative studies of policy implementation:**
  • Systematic descriptions of policy content
    • Nodes/trees using qualitative software program such as Atlas
What difference does it make where I “get” my policy “data”?
...It makes a big difference!

• Caveat “utilitor” – *let the user beware*
  • Policy data sources developed by non-researchers:
    • Often are not in a format readily useable by researchers
    • May not be developed using a “rigorous” scientific methodology to ensure reliability and validity of the policy “data”
  • Be very careful to fully understand the methodology, definitions, coding scheme, effective dates, data sources, etc.


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Selected factors that differentiate policy tracking systems from longitudinal policy analysis systems

<table>
<thead>
<tr>
<th>Policy Tracking/Reporting System</th>
<th>Longitudinal Policy Analysis System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reports on individual policy measures without linking to prior policy action - e.g., Individual bill/legislation</td>
<td>Examines changes in policies over time - e.g., changes in codified statutory law over time</td>
</tr>
<tr>
<td>Often text-based reporting of policy actions or yes/no type reporting</td>
<td>Can be quantitative or qualitative - Policy impact studies often rely on quantitative measures - Indicator/benchmarks often require “coded data”</td>
</tr>
<tr>
<td>New measures reported with certain frequency - e.g., Newly introduced or enacted legislation occurring during Q1 of yr</td>
<td>Policy data tied to specific reference date - e.g., Policies in effect as of January 1 of each year</td>
</tr>
<tr>
<td>Difficult to measure details of policy change over time, particularly if includes introduced and enacted measures</td>
<td>Easily enables monitoring of changes in policy over time</td>
</tr>
<tr>
<td>More advocacy/reporting oriented</td>
<td>More evaluation oriented</td>
</tr>
</tbody>
</table>
Selected Examples of Public Policy Tracking Systems (i.e., individual bill-level summaries)

CDC Division of Nutrition and Physical Activity Legislative Database
http://apps.nccd.cdc.gov/DNPALeg/index.asp

NASBE School Healthy Policies Database
http://nasbe.org/healthy_schoo ls/hs/index.php

National Conference of State Legislatures Bill Summaries Database*
http://www.ncsl.org

Yale Rudd Center for Food Policy & Obesity Legislative Updates
http://www.yaleruddcenter.org/legislation/

*NCSL has some characteristics of a coded policy analysis system and some of a tracking system

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Selected Examples of Longitudinal Policy Analysis Systems

CDC State Tobacco Activities Tracking and Evaluation System

Bridging the Gap/ImpacTeen State Obesity Policy Data (currently only tax data posted)
http://www.bridgingthegapresearch.org/research/sodasnack_taxes

Bridging the Gap Wellness Policy Coding System
http://www.bridgingthegapresearch.org/research/district_wellness_policies

NCI State Physical Education and Recess and School Nutrition Environment Policy Classification Systems
http://cancercontrol.cancer.gov/hprb/data_systems.html

NIAAA Alcohol Policy Information System (APIS)
http://alcoholpolicy.niaaa.nih.gov/
What sources does Bridging the Gap use for compiling policy information?

• Primary legal research and analysis
  • For state data: Usually use primary legal research sources to identify relevant laws/laws “on the books:
    • Westlaw and Lexis-Nexis
    • Often based on statutory and administrative law, sometimes includes case law
  • For county/municipal data:
    • On-line code publishers
    • County/municipal websites
    • Direct from community

• For school districts
  • District websites
  • Direct from district

• Secondary data sources
  • Occasionally use
  • Particularly those proven to be reliable and valid
  • Useful for validation of primary research

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Policy Coding and Analysis Methods
### Examples of “data” available from different policy analysis and evaluation approaches

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Is there a state law governing availability of sugar-sweetened beverages in schools?</td>
<td>Only 100% juice, water, and skim/nonfat milk may be sold during the day EXCEPT at the HS level where….</td>
<td>1=Yes, law exists 0=No law</td>
<td>3-SSBs are banned in schools 2-SSBs are prohibited at certain times/locations 1-SSB restrictions are encouraged 0-No law</td>
<td>Approach 1 provides the language of the law but requires the researcher to recode the information.</td>
</tr>
<tr>
<td>Is there a state law requiring time spent in physical education (PE) in schools?</td>
<td>PE is required daily for all students for a minimum of 30 minutes/day except for districts that apply for a waiver….</td>
<td>1=Yes, law exists 0=No law</td>
<td>3=Law requires minimum of 150 mins/week (ES) and 225 mins/week (MS/HS) 2=Law requires &lt; 150/225 mins/week 1=Law encourages time spent in PE or requires PE but allows waivers to the requirement 0=No law</td>
<td>Approach 2 simply tells whether a law exists or not but does not provide the nuances.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Approach 3 tells both whether a law exists and how detailed the law is without recoding.</td>
</tr>
</tbody>
</table>
“Coded” Policy Systems Characteristics

• “Codes” usually based on scientific evidence, evidence-based practice and/or theory
• Often ordinal coding schemes but can be dichotomous
• Continuous measures are used as appropriate
  • Time, frequency, credits, quantity
Primary reasons why different systems report different information

- Underlying system purpose
- Policy analysis and reporting methodology(ies)
- “Sources” of policy information
- Level of experience/expertise with legal/policy research and analysis and subject matter
- Primary intended “aim”/use of the system
- Resources
Examples of “health in all policies”

Obesity policy-related examples from Bridging the Gap
Example 1:
Laws affecting walking/biking to school
What types of laws/policies would affect walking/biking to school?

• Funding for a formal “safe routes to school” (SRTS) program
  • Initially result of 2005 SAFETEA-LU (Transportation Reauthorization)

• Requirements for crosswalks, crossing guards, sidewalks, traffic calming, hazardous routes exemptions, etc.
  • These laws historically predate federal SRTS program funding (2005) and were originally created for safety reasons and not specifically for encouraging walking/biking to school
Study Purpose

- To examine the relationship between existing state laws related to bussing distance, hazardous routes, traffic calming, crossing guards, speed zones, and sidewalks (i.e., safety-related laws) on walking and biking policies and practices at elementary schools nationwide.

Data Sources

- State laws
  - Primary legal research by staff at The MayaTech Corporation and UIC using Westlaw and Lexis-Nexis state statutory and administrative law (regulatory) databases
  - Laws effective as of January 1 of each year, 2007-2009
  - Included all 50 states and DC

- Elementary school survey (from Bridging the Gap Food & Fitness Survey)
  - Annual, mail-back surveys of school administrators at nationally representative samples of elementary schools in the spring of 2007, 2008, and 2009
    - Surveys conducted in 47 states (excludes AK, HI, WY and DC)
    - Response rates: 2007-54.6% (578 schools); 2008-70.6% (748 schools); 2009-61.8% (641 schools)

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## Barriers to walking/biking to school

<table>
<thead>
<tr>
<th>State law</th>
<th>Barrier</th>
<th>% walk/bike</th>
<th>Adjusted</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>With Law</td>
<td>W/O Law</td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Minimum bussing dist.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤1 mile</td>
<td>Distance</td>
<td>47.1</td>
<td>44.2</td>
<td>1.31</td>
<td>0.74, 2.31</td>
</tr>
<tr>
<td>&gt;1-2 miles</td>
<td></td>
<td>50.5</td>
<td>44.2</td>
<td>1.21</td>
<td>0.88, 1.66</td>
</tr>
<tr>
<td>&gt;2 miles</td>
<td></td>
<td>43.2</td>
<td>44.2</td>
<td>0.65</td>
<td>0.38, 1.13</td>
</tr>
<tr>
<td>Hazardous route exemption</td>
<td>Traffic</td>
<td>49.2</td>
<td>55.0</td>
<td>0.88</td>
<td>0.63, 1.25</td>
</tr>
<tr>
<td>Sidewalk construction</td>
<td>Sidewalks</td>
<td>22.0</td>
<td>33.9</td>
<td>0.76</td>
<td>0.52, 1.11</td>
</tr>
<tr>
<td>Employ crossing guards</td>
<td>Crossing guards</td>
<td>12.3</td>
<td>23.0</td>
<td>0.36</td>
<td>0.22, 0.58</td>
</tr>
<tr>
<td>Traffic control measures</td>
<td>Traffic</td>
<td>50.2</td>
<td>58.3</td>
<td>0.71</td>
<td>0.53, 0.95</td>
</tr>
<tr>
<td>Speed zones</td>
<td>Traffic</td>
<td>53.0</td>
<td>58.2</td>
<td>0.75</td>
<td>0.53, 1.08</td>
</tr>
</tbody>
</table>

Unweighted N=1967 public elementary schools in 3 years combined (2007-2009) unless otherwise noted

*p-val at least <.05*

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## Allowing all students to walk/bike to school

<table>
<thead>
<tr>
<th>State Law</th>
<th>Walking*</th>
<th>Biking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Minimum bussing distance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 1 mile</td>
<td>0.87</td>
<td>0.36-2.10</td>
</tr>
<tr>
<td>&gt;1-2 miles</td>
<td>1.91</td>
<td>1.17-3.13</td>
</tr>
<tr>
<td>&gt; 2 miles</td>
<td>3.75</td>
<td>0.81-17.34</td>
</tr>
<tr>
<td>Hazardous route exemption</td>
<td>1.40</td>
<td>0.82-2.39</td>
</tr>
<tr>
<td>Sidewalk construction</td>
<td>1.28</td>
<td>0.74-2.28</td>
</tr>
<tr>
<td>Employ crossing guards</td>
<td>1.30</td>
<td>0.58-2.87</td>
</tr>
<tr>
<td>Traffic control measures</td>
<td>1.26</td>
<td>0.78-2.04</td>
</tr>
<tr>
<td>Speed zones</td>
<td>1.18</td>
<td>0.68-2.06</td>
</tr>
</tbody>
</table>

*\( p\)-val at least < .05

*2009 only

[bridgingthegap](http://www.bridgingthegapresearch.org)
State laws are more likely to affect whether zero students walk/bike to school than to affect the proportion who do so.

<table>
<thead>
<tr>
<th>State Law</th>
<th>Logistic (Odds Zero Walk/Bike)</th>
<th>Poisson (Proportion Walk/Bike)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>95% CI</td>
</tr>
<tr>
<td>Minimum bussing distance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 1 mile</td>
<td>2.54</td>
<td>0.93, 6.95</td>
</tr>
<tr>
<td>&gt;1-2 miles</td>
<td>0.71</td>
<td>0.27, 1.86</td>
</tr>
<tr>
<td>&gt; 2 miles</td>
<td>1.06</td>
<td>0.25, 4.48</td>
</tr>
<tr>
<td>Hazardous route exemption</td>
<td>0.66</td>
<td>0.26, 1.69</td>
</tr>
<tr>
<td>Sidewalk construction</td>
<td>0.66</td>
<td>0.40, 1.08</td>
</tr>
<tr>
<td>Employ crossing guards</td>
<td>0.32</td>
<td>0.17, 0.61</td>
</tr>
<tr>
<td>Traffic control measures</td>
<td>0.58</td>
<td>0.33, 1.00</td>
</tr>
<tr>
<td>Speed zones</td>
<td>0.45</td>
<td>0.23, 0.85</td>
</tr>
</tbody>
</table>

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Example 2: State Sales Taxes and Soda Consumption
Understanding Food/Beverage Tax Definitions-1

• Depending on the state definitions, taxes on sodas and other beverages are based on either the general sales tax or the food sales tax.

• General sales tax applies when “food” is defined to explicitly exclude items of interest.
  
  • E.g., KY Rev Stat Ann 139.485: “Food and food ingredients” are not taxable items; however, “food and food ingredients” shall not include…soft drinks.
    
    • In this example, food generally is not taxed but soft drinks are taxed at a rate of 6% (same as state sales tax).
Understanding Food/Beverage Tax Definitions-2

• Food sales tax applies when “food” is defined to explicitly include items of interest
  • E.g., AZ Admin Code R15-5-1860: “The following are examples of items which the Department consider as tax exempt food…soft drinks and soda”
    • In this example, food generally is not taxed so soft drinks and soda also are not taxed

• States that tax items higher than the state food tax rate are considered to have disfavored the item relative to food products generally – disfavored tax
  • E.g. State tax on sodas is 6% while food tax is 1% → Disfavored amount is 5%
Soda Taxes, Children’s Consumption, and Weight
Early Childhood Longitudinal Study-Kindergarten Cohort
Objective

• To examine association between soda taxes, consumption and weight of children

Data Description

• Nationally representative panel of elementary school students from the Early Childhood Longitudinal Survey-Kindergarten Cohort.
• Food consumption 5th grade; measured height and weight
• Final sample: 7,414 children who reported their food consumption and 7,300 children for which height and weight information exists
• **Outcome variables**: soda consumption in last week (m=6), soda purchases at school (m=0.4), and weight change 3rd to 5th grade (m=1.9)
• **Control variables**: age in months, race/ethnicity, family income, mother’s education level, physical activity, TV watching, parent-child interactions.
## Associations by Sub-populations

<table>
<thead>
<tr>
<th>Outcome Variable</th>
<th>Total Consumption</th>
<th>School Consumption</th>
<th>BMI Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Higher Soda Tax Amount</td>
<td>Higher Soda Tax Indicator</td>
<td>Higher Soda Tax Amount</td>
</tr>
<tr>
<td>Full Sample</td>
<td>-0.004</td>
<td>-0.006</td>
<td>-0.010</td>
</tr>
<tr>
<td>At Risk of Overweight</td>
<td>-0.026</td>
<td>-0.078</td>
<td>-0.011</td>
</tr>
<tr>
<td>Low-Income</td>
<td>-0.142*</td>
<td>-0.811</td>
<td>-0.039**</td>
</tr>
<tr>
<td>African American</td>
<td>-0.125</td>
<td>-0.767</td>
<td>-0.103**</td>
</tr>
<tr>
<td>9+ Hrs TV</td>
<td>-0.073</td>
<td>-0.376</td>
<td>-0.029**</td>
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Source: Sturm, Powell, Chriqui, and Chaloupka, *Health Affairs*, 2010
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Source: Sturm, Powell, Chriqui, and Chaloupka, *Health Affairs*, 2010

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Example 3: Example of how local zoning policies address healthy food access
Local Zoning Authority

• Among the powers granted from state to local governments is the authority to regulate the use of land through zoning.

• Zoning ordinances:
  • establish specific districts and uses
  • prescribe density or intensity of the use of individual lots within districts
Types of Uses in Local Zoning Codes

• Permitted
• Accessory (e.g., allowing urban farming on land primarily used for residential purposes)
• Conditional (e.g., requiring a permit or special approval for farmers’ markets to locate to certain areas)
• Temporary uses (e.g., allowing farmers’ markets on a temporary basis)
• Restricted (e.g., limiting fast food outlets to a certain maximum density per district)
• Prohibited
Bridging the Gap Study of Local Zoning for Healthy Food Access

• Part of the Bridging the Gap Community Observation Measures Project (BTG-COMP)

• Nationwide evaluation of the impact of state and local policies on the built and food environments and adolescent behaviors and obesity

• First year, 2010

• Policy study involved collection of “policies” from 361 counties and places (municipalities, towns, townships) nationwide that surround 154 secondary schools
BTG COMP Zoning Study

- Analyzed zoning codes for all policy communities using a food policy audit tool developed by BTG staff (Chriqui et al., in preparation)
- Examined types of uses addressed in zoning codes for food stores, non-store food vendors, and restaurants (including fast food) by type of zone/district and type of use
- Planned analyses will examine the relationship between food outlet zoning, healthy food access/consumption, and adolescent weight-related outcomes
Preliminary Data on Food Outlet Permitted Use by Type of Zone/District

Type of Outlet
- F&V Stands
- Mobile Vendor
- Farmers' Market
- Fast Food
- Convenience Store
- Grocery

% of Policy Communities that Permit Type of Outlet

N=361 policy communities
Preliminary data-do not cite/circulate
Preliminary Data on Food Outlet Prohibitions by Type of Zone/District

N=361 policy communities
Preliminary data-do not cite/circulate

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Summary
Summary

- Policy research is complicated
  - Simple measures of policy presence often fail to account for nuances that differentiate policy A from policy B
  - Definition of policy varies
  - Implications of primary vs. secondary data
- Policies can be “quantified” for use in policy impact studies
- Most policies have some implication for “health”
  - Useful to think “outside of the box” at the range of policies that may impact the health of society and individuals