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Research Informing Policies & Practices  
for Healthy Youth

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

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

October 26, 2011

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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

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# 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?

See: Brownson, R.C., Chiqui, J.F., Stamatakis, K.A. (2009). What is evidence-based public health policy? *American Journal of Public Health*, 99:1576–1583.

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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

# 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”?

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## ...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.

For more information, see: Chriqui, J.F., O’Connor, J.C., Chaloupka, F.J. (2011). What gets measured, gets changed: Evaluating law and policy for maximum impact. *Journal of Law, Medicine, and Ethics*,39:21-26.

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

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

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## **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\\_schools/hs/index.php](http://nasbe.org/healthy_schools/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

<http://apps.nccd.cdc.gov/statesystem/Default/Default.aspx>

Bridging the Gap/ImpacTeen State Obesity Policy Data (currently only tax data posted)

[http://www.bridgingthegapresearch.org/research/sodas\\_nack\\_taxes](http://www.bridgingthegapresearch.org/research/sodas_nack_taxes)

Bridging the Gap Wellness Policy Coding System

[http://www.bridgingthegapresearch.org/research/district\\_wellness\\_policies](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](http://cancercontrol.cancer.gov/hprb/data_systems.html)

NIAAA Alcohol Policy Information System (APIS)

<http://alcoholpolicy.niaaa.nih.gov/>

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# 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

# Policy Coding and Analysis Methods

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# Examples of “data” available from different policy analysis and evaluation approaches

Question	Approach 1: Text-based System	Approach 2: Does Law Exist ? (Yes/No)	Approach 3: Does Law Exist? (Detailed Coding Distinctions)	Difference in Understanding of Policy Status
Is there a state law governing availability of sugar-sweetened beverages in schools?	Only 100% juice, water, and skim/nonfat milk may be sold during the day EXCEPT at the HS level where....	1=Yes, law exists 0=No law	3-SSBs are banned in schools 2-SSBs are prohibited at certain times/ locations 1-SSB restrictions are encouraged 0-No law	Approach 1 provides the language of the law but requires the researcher to recode the information.
Is there a state law requiring time spent in physical education (PE) in schools?	PE is required daily for all students for a minimum of 30 minutes/day except for districts that apply for a waiver....	1=Yes, law exists 0=No law	3=Law requires minimum of 150 mins/week (ES) and 225 mins/week (MS/HS) 2=Law requires < 150/225 mins/week 1=Law encourages time spent in PE or requires PE but allows waivers to the requirement 0=No law	Approach 2 simply tells whether a law exists or not but does not provide the nuances.  Approach 3 tells both whether a law exists and how detailed the law is without recoding.

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# “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

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**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

Source: Chriqui, J.F., Taber, D., Slater, S., et al., in press, *Health & Place*.

# 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)

# Barriers to walking/biking to school

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

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

State Law	Walking*		Biking	
	OR	95% CI	OR	95% CI
Minimum bussing distance				
$\leq 1$ mile	0.87	0.36-2.10	1.12	0.61- 2.06
$>1-2$ miles	<b>1.91</b>	<b>1.17-3.13</b>	1.27	0.91-1.78
$> 2$ miles	3.75	0.81-17.34	1.85	0.89-3.87
Hazardous route exemption	1.40	0.82-2.39	<b>1.79</b>	<b>1.24-2.57</b>
Sidewalk construction	1.28	0.74-2.28	0.69	0.46-1.03
Employ crossing guards	1.30	0.58-2.87	<b>2.70</b>	<b>1.71-4.27</b>
Traffic control measures	1.26	0.78-2.04	1.26	0.94-1.68
Speed zones	1.18	0.68-2.06	1.27	0.82-1.96

 *p-val* at least  $<.05$

\*2009 only

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# State laws are more likely to affect whether zero students walk/bike to school than to affect the proportion who do so

State Law	Logistic (Odds Zero Walk/Bike)		Poisson (Proportion Walk/Bike)	
	OR	95% CI	RR	95% CI
Minimum bussing distance				
≤ 1 mile	2.54	0.93, 6.95	<b>0.57</b>	<b>0.39, 0.84</b>
>1-2 miles	0.71	0.27, 1.86	0.94	0.74, 1.19
> 2 miles	1.06	0.25, 4.48	1.14	0.88, 1.46
Hazardous route exemption	0.66	0.26, 1.69	1.11	0.79, 1.38
Sidewalk construction	0.66	0.40, 1.08	1.08	0.89, 1.31
Employ crossing guards	<b>0.32</b>	<b>0.17, 0.61</b>	1.08	0.88, 1.32
Traffic control measures	0.58	0.33, 1.00	1.06	0.88, 1.27
Speed zones	<b>0.45</b>	<b>0.23, 0.85</b>	1.07	0.88, 1.30

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 *p-val* at least <.05

# 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

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## 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 5<sup>th</sup> 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 3<sup>rd</sup> to 5<sup>th</sup> 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

Outcome Variable	Total Consumption		School Consumption		BMI Change	
	Higher Soda Tax Amount	Higher Soda Tax Indicator	Higher Soda Tax Amount	Higher Soda Tax Indicator	Higher Soda Tax Amount	Higher Soda Tax Indicator
Full Sample	-0.004	-0.006	-0.010	-0.064*	-0.013*	-0.085**
At Risk of Overweight	-0.026	-0.078	-0.011	-0.067	-0.033**	-0.222**
Low-Income	-0.142*	-0.811	-0.039**	-0.239**	-0.000	-0.005
African American	-0.125	-0.767	-0.103**	-0.585**	0.029	0.086
9+ Hrs TV	-0.073	-0.376	-0.029**	-0.178**	-0.014	-0.091

Source: Sturm, Powell, Chriqui, and Chaloupka, *Health Affairs*, 2010

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Source: Sturm, Powell, Chriqui, and Chaloupka, *Health Affairs*, 2010

# 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

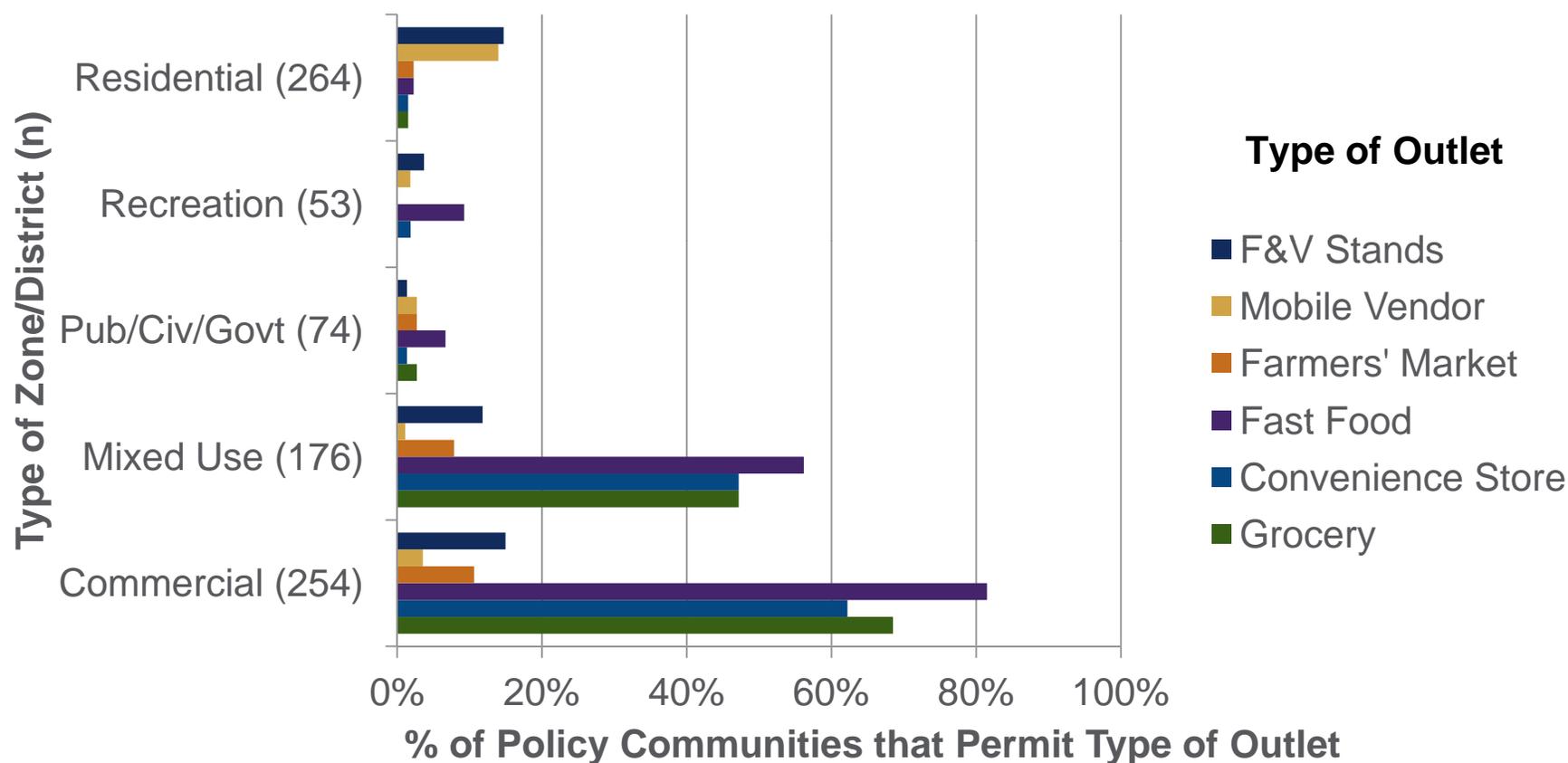
## Bridging the Gap Study of Local Zoning for Healthy Food Access

- 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

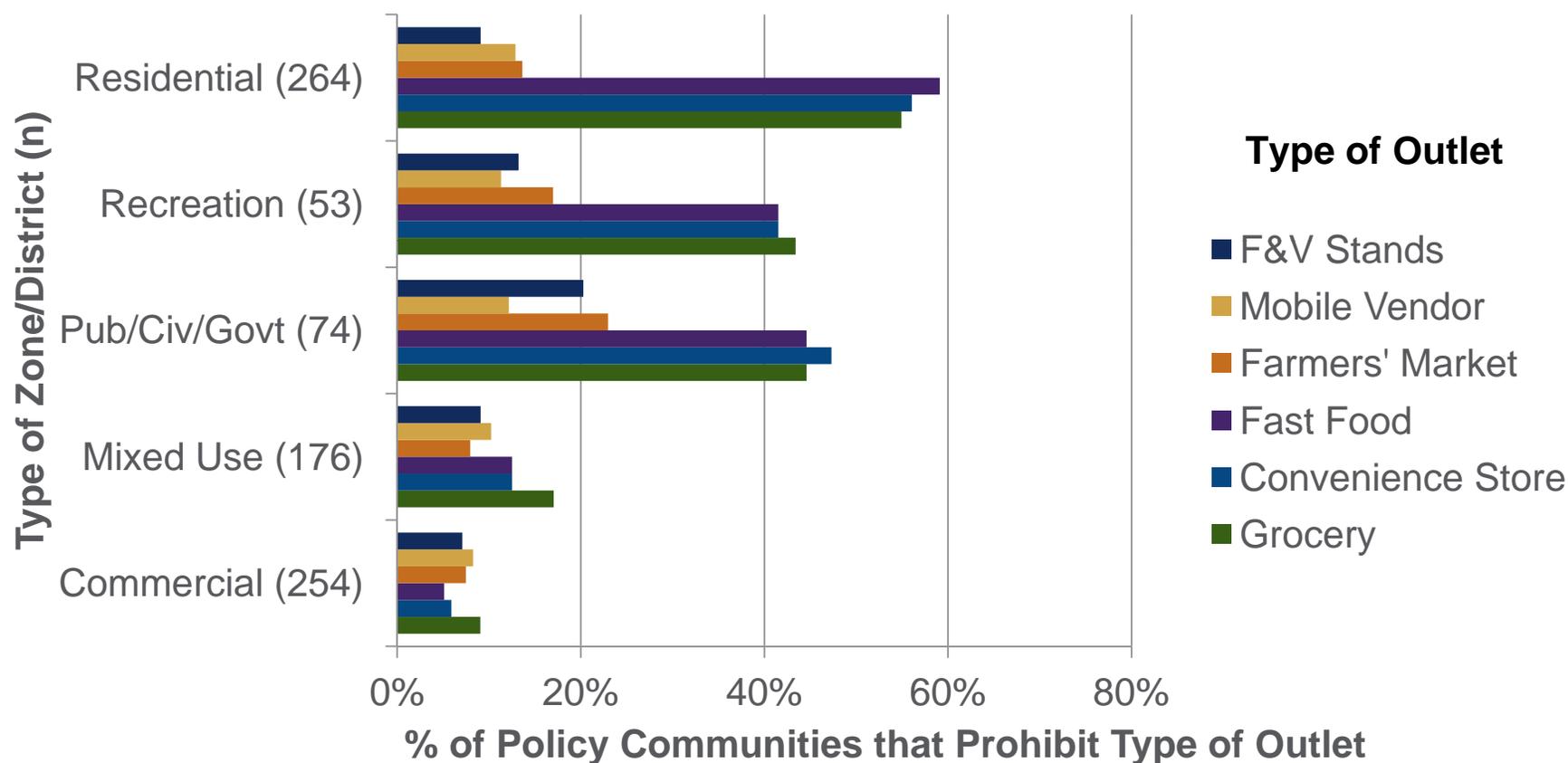
# Preliminary Data on Food Outlet Permitted Use by Type of Zone/District



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

# Summary

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# 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