

# State and local policies are improving competitive food and beverage environments in U.S. public elementary schools

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Research Informing Policies & Practices  
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# Presenter Disclosures

Jamie Chriqui

**The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:**

*“No relationships to disclose”*

# Presentation Overview

- Background on competitive food and beverage (CF&B) consumption and prevalence
- Review of public policies governing CF&B
- Study overview and results
- Conclusions and policy opportunities

# Children's consumption of solid fats and added sugars (SOFAS)

- Between 2005-08, 16% of children's daily caloric intake from added sugars (CDC, 2012)
  - 59% from foods, 41% from beverages
- Regular sodas, fruit drinks, and whole milk are three of the top six products adding empty calories to children's diets (Reedy et al., 2010)
- Top food source for 2-18 year olds are grain-based deserts such as cookies, cakes, donuts (Reedy et al., 2010)

# CF&B availability in US public elementary schools (ES)

- ~1/2 ES students have access to competitive foods in schools (Turner et al., 2012)
- ~55% have access to competitive beverages (Turner et al., 2012)
- In school year 2009-10 (Turner et al., 2012),
  - >44% ES students had access to high-fat and/or sugary foods (e.g., cakes, cookies, ice cream)
  - 12% could purchase SSBs
  - 25% could purchase high-fat milks

# Laws and policies governing CF&B

- Federal: FMNV prohibition in places where meals are sold
  - Forthcoming, USDA regulations
- State laws
- District wellness policies
  - Child Nutrition and WIC Reauthorization Act of 2004
  - Healthy, Hunger-Free Kids Act of 2010

# Research to date and study purpose

- Primarily focused on secondary school level
  - Shows positive relationship between state laws and CF&B availability, consumption and student intake
- No study has looked at the combination of state laws, district policies, or both on ES CF&B availability nationwide
  - Purpose of this study

# STUDY OVERVIEW



# Methods

- Data sources
  - Bridging the Gap Research Program
    - State law data
    - District wellness policies
    - Food & Fitness ES survey
  - All data from SY 2008-09 through 2010-11

# Data sources: state laws

- Bridging the Gap codified state statutory (legislative) and regulatory laws
  - Includes all laws and policies embedded by reference
  - All 50 states and DC
  - Laws effective as of beginning of September of each year
  - Primary legal research with secondary source verification

# Data sources: district policies

- Congressionally-mandated district wellness policies
  - Annual nationally representative samples of public school districts (N=~600 districts/per year)
  - “Policy” includes school board-approved wellness policy, superintendent regulations, all policies and regulations embedded by reference
  - Primary collection of all policies via Internet and telephone/email verification
  - 96%-98% collection rate per year

# Data sources: ES CF&B practices

- Bridging the Gap Food & Fitness Survey
  - Annual mail-back survey of principals & FSDs conducted b/w Feb-June of each year
  - \$100 incentive for completion
  - 1,919 respondents in the 3-year pooled cross-section, including:
    - 1,582 unique schools located in 1,023 unique districts and 47 states

# State law and district policy coding

- Adaptation of Schwartz et al. (2009) coding scheme
  - Double-coding (88%-100% agreement) on each of 8 specific items used in this analysis:
    - SSB ban
    - Soda ban
    - High-fat (2%/whole) milk ban
    - Limits on sugars in foods
    - Limits on fats in foods
    - Limits on fats in a la carte lines
    - Limits on sodium in foods
    - Candy ban

# Policy predictors

- Four, mutually-exclusive categories within each restriction/ban:
  - No law/policy (referent)
  - District policy only
  - State law only
  - State law and district policy

# ES practices

## ■ Availability of:

- Regular soda
- Other SSBs
- High-fat milks
- Candy
- Sweets
- Salty snacks
- Cookies

- Regular-fat ice cream
- French fries in a la carte lines

# Control and contextual factors

- Census region (South=ref)
- Locale (NCES)
  - City (referent)
  - Suburb
  - Town
  - Rural
- School size (NCES)
  - Large (ref)
  - Medium
  - Small
- State-level obesity prevalence (NCHS, 2007)
- Race/ethnicity of students (NCES)
  - Majority ( $\geq 66\%$ ) White (ref)
  - Majority ( $\geq 50\%$ ) Black
  - Majority ( $\geq 50\%$ ) Hispanic
  - Diverse
- Free-/reduced price lunch eligibility (NCES)
  - Lowest ( $< 33\%$  elig)
  - Medium (33-66% elig)
  - High ( $> 66\%$  elig)

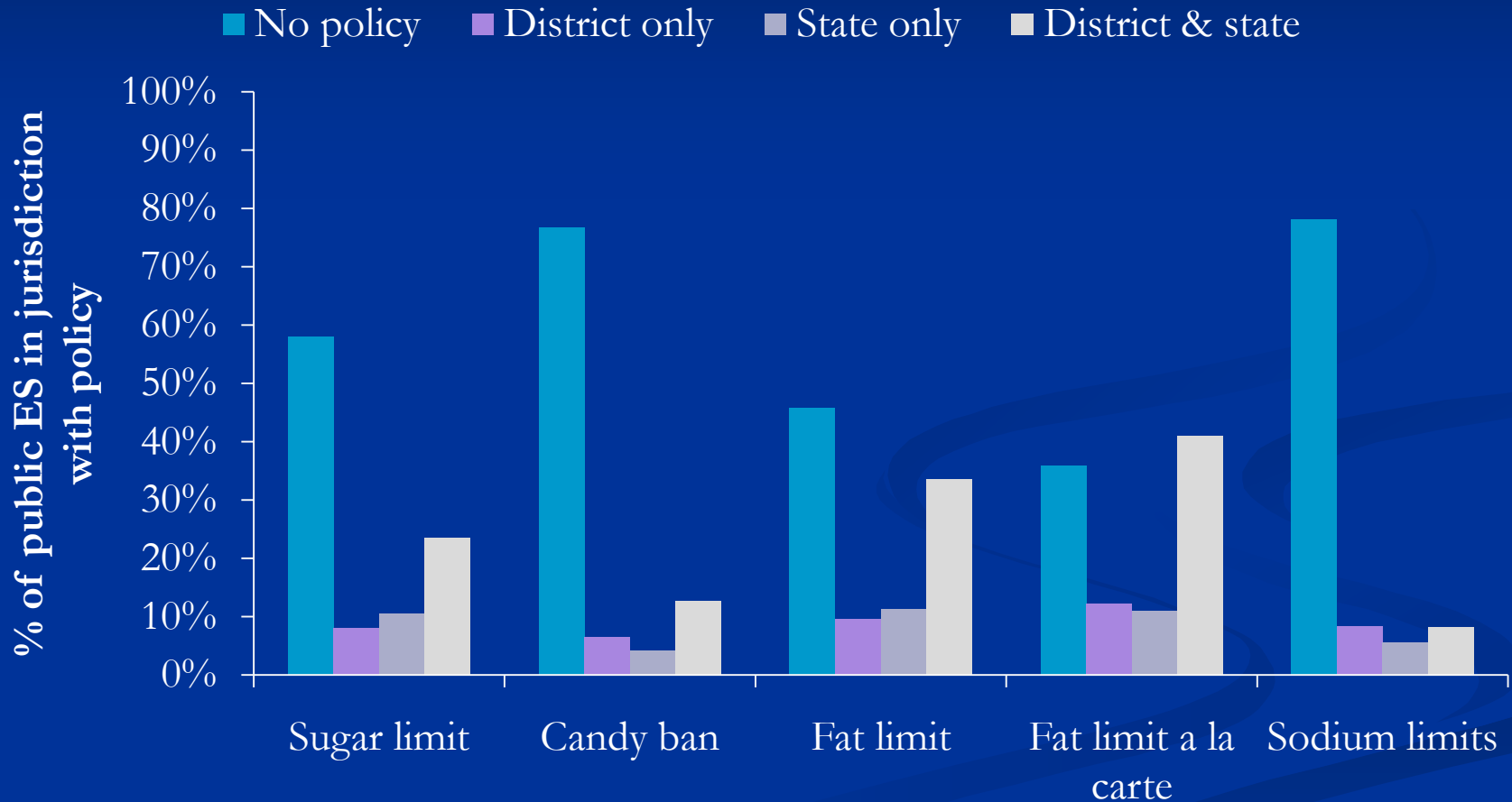


# Analytic methods

- Multivariate logistic regression
  - Clustered on state and district
  - Weighted to % public ES nationwide
  - Control for contextual factors
  - Margins command to compute adjusted prevalence of CF&B item within each policy category
- STATA/SE v. 12.0.1

# RESULTS

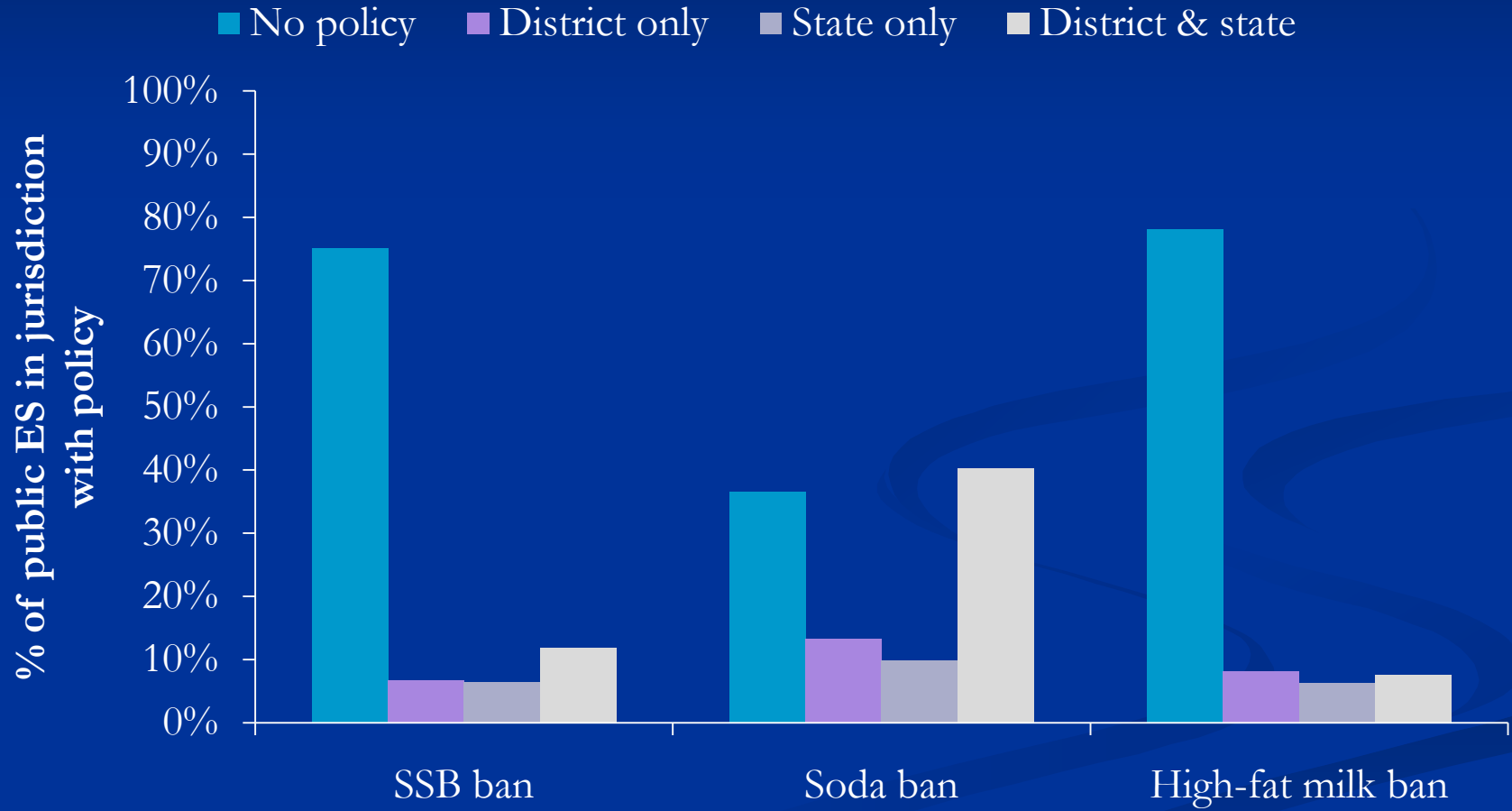
# Food policy limits by jurisdiction



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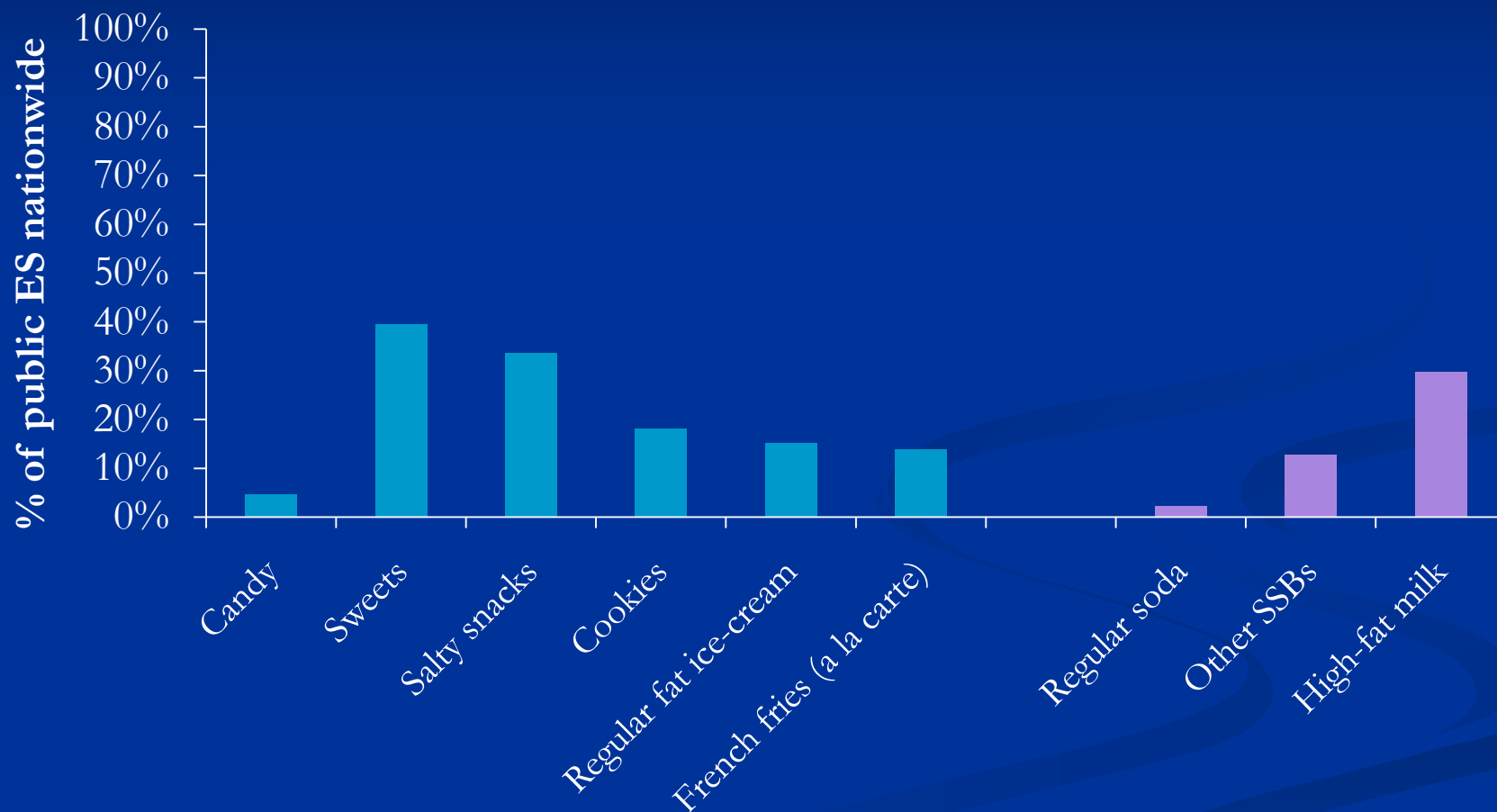
# Beverage policy limits by jurisdiction



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# ES CF&B availability (SY 2008-09 through 2010-11)

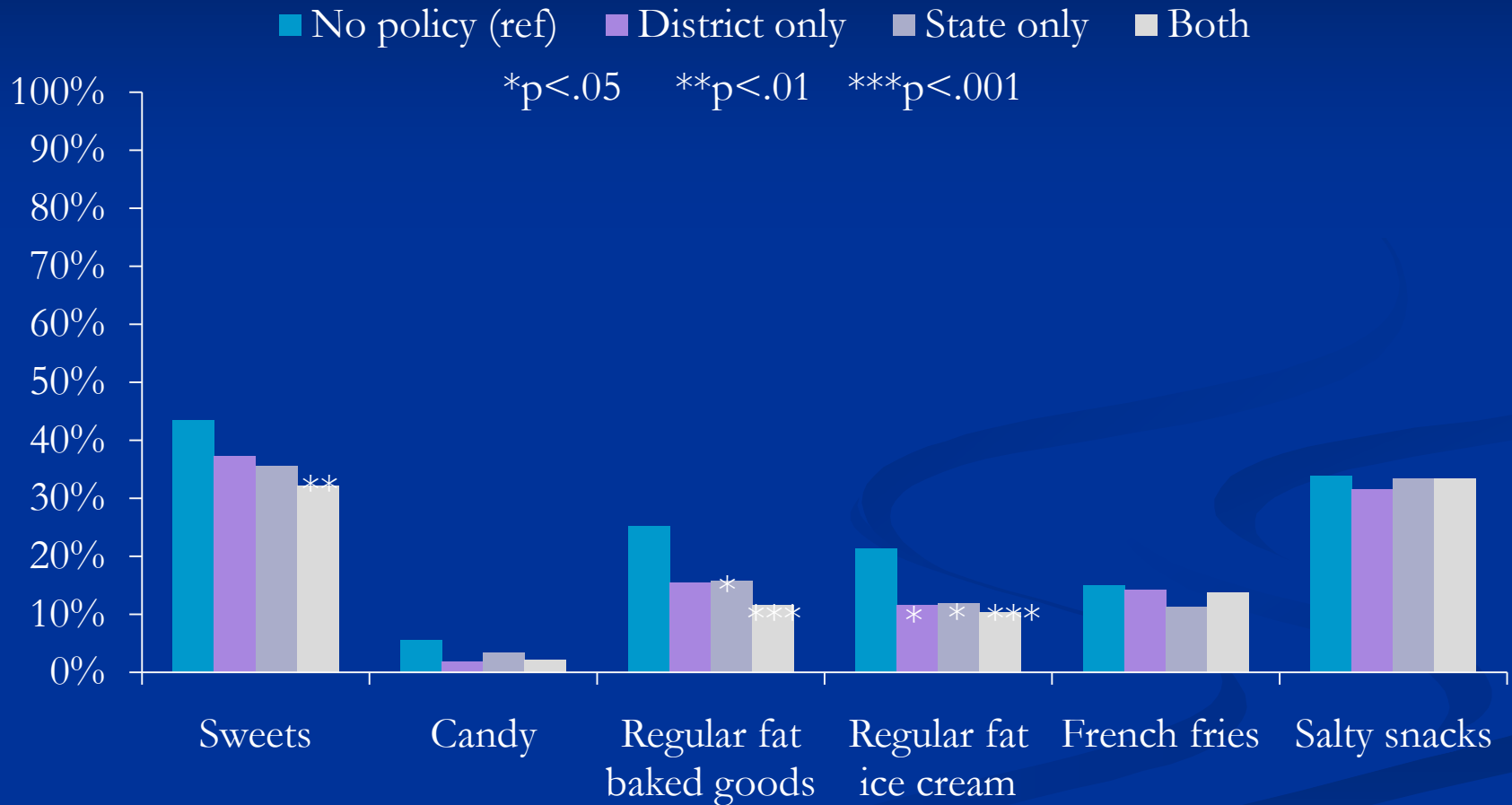


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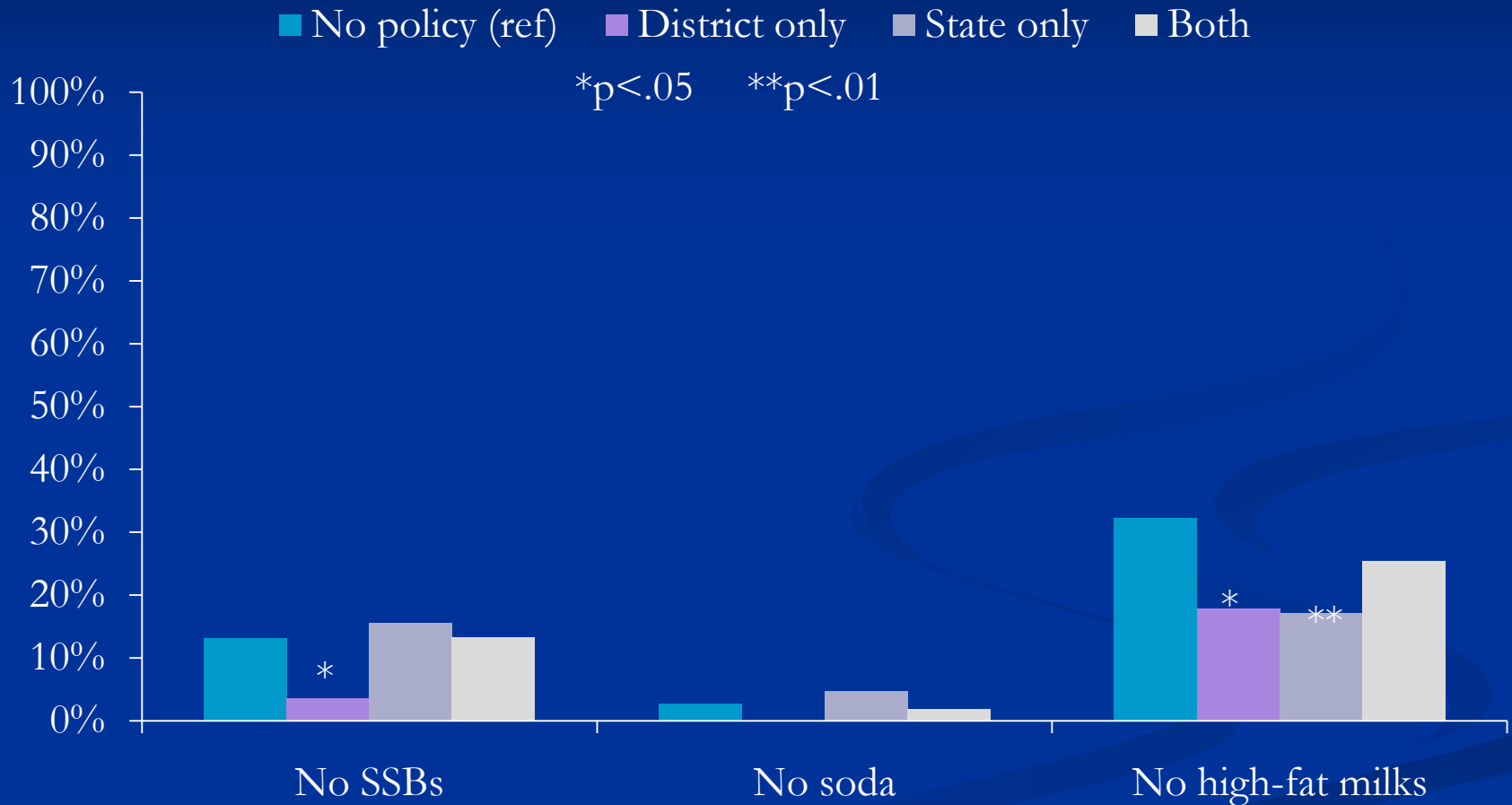
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N=1814 schools food analysis  
N=1830 schools beverage analysis)

# Adjusted association between ES competitive food availability and state/district policies



# Adjusted association between ES competitive beverage availability and state/district policies



# CONCLUSIONS AND OPPORTUNITIES



# Conclusions

- First study to examine relationship between district policies and/or state laws and ES competitive food and beverage availability
  - CF&B still available in ES nationwide
  - State laws and/or district policies are associated with reduced availability of CF&B

# Opportunities still exist

- Beverage bans and sodium limits are lacking in policies
- High-fat milks still available in nearly 1 in 3 public ES
- Patchwork approach to policy making
  - State laws and district policies
- Forthcoming federal nationwide competitive food standards to set a “floor”

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