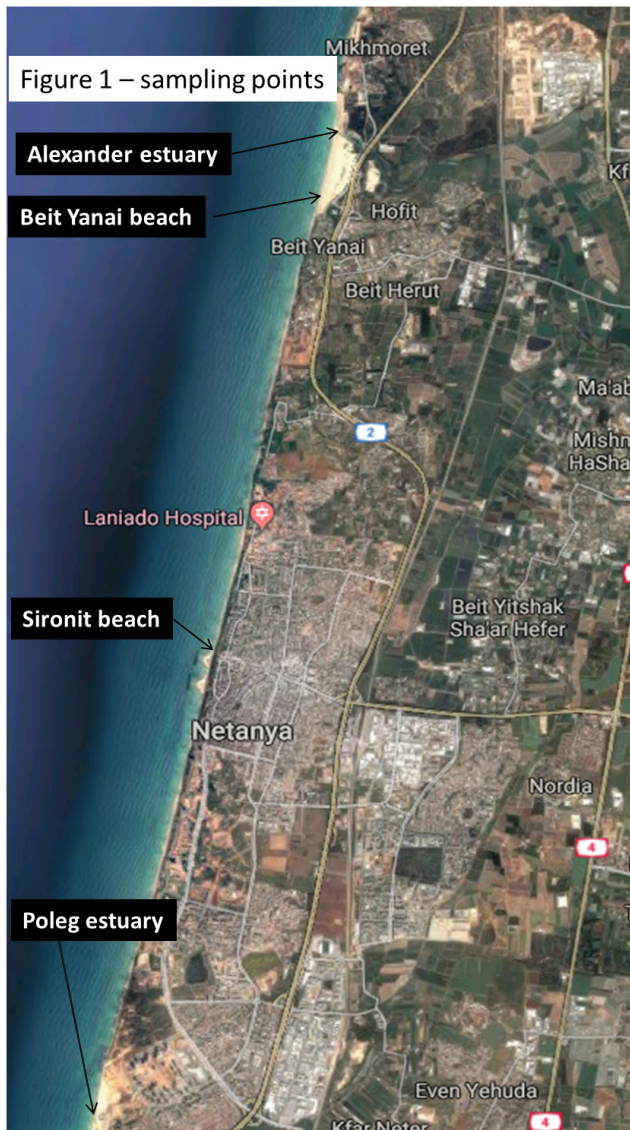


investigate sources and persistence of rivers and coastal water pollution and to define the role “environmental” strains have in human epidemiology and disease.

Table 1- Cultivated bacteria from 4 sites during June and July 2018

Sites	Date	Water volume filtered	Bacteria cultivated			
			Carbapenem resistance	ESBL positive	Gram positive Cocci	Other bacteria
Alexander River estuary	June 2018	Stream water:750ml	<i>Enterobacter cloacae bla_{SHV}</i>	NG	NG	<i>E.coli</i> <i>Serratia marcescens</i> <i>Citrobacter sedlakii</i> <i>Pseudomonas putida</i>
	July 2018	Stream water:700ml	<i>Enterobacter cloacae non-CP CRE</i>	NG	NG	NG
Poleg River estuary	June 2018	Stream water:200ml	<i>E. coli bla_{SHV}</i>	<i> klebsiella pneumoniae</i>	NG	<i>Enterobacter cloacae</i> <i>Acinetobacter baumannii</i>
	July 2018	Stream water:200ml	NG	<i>E.coli</i>	NG	NG
Beit Yanai beach	June 2018	Seawater:1300ml	<i>Enterobacter cloacae bla_{SHV}</i>	NG	<i>S. aureus</i> <i>E. casseliflavus gallinarum</i>	<i>Pseudomonas putida</i> <i>Pseudomonas luteola</i>
	July 2018	Seawater:1000	NG	NG	NG	NG
Sironit Beach	June 2018	Seawater:950ml	NG	NG	<i>S. aureus</i>	<i>E. coli</i> <i>Enterobacter aerogenes</i>
	July 2018	Seawater:1000	NG	NG	NG	NG
Negative control	June 2018	Room air	NG	NG	NG	NG
	July 2018	Medium:80ml	NG	NG	NG	NG

NG = no growth



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1620. Effectiveness of the 2016 California Policy Eliminating Non-Medical Exemptions on Vaccine Coverage: A Synthetic Control Analysis

Sindiso Nyathi, BA¹; Hannah Karpel, MS²; Kristin L. Sainani, PhD¹; Yvonne Maldonado, MD¹; Peter J. Hotez, MD, PhD³; Eran Bendavid, MD⁴; Nathan C. Lo, MD PhD⁵; ¹Stanford University, Stanford, California; ²NYU School of Medicine, New York City, New York; ³Baylor College of Medicine, Houston, Texas; ⁴Stanford University School of Medicine, Stanford, California; ⁵University of California, San Francisco, San Francisco, California

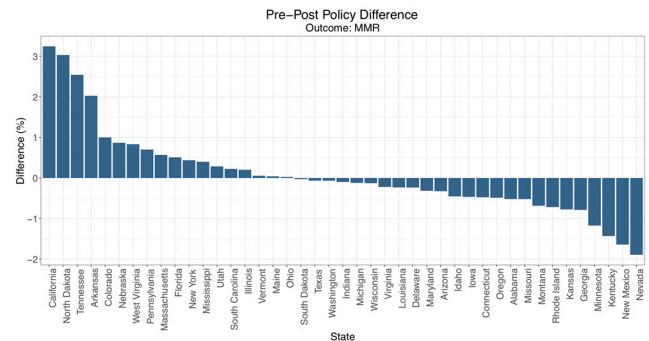
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Background. Vaccine hesitancy in low vaccine coverage “hot spots” has led to recent outbreaks of vaccine-preventable diseases across the United States. State policies to improve vaccine coverage by restricting non-medical (personal belief) exemptions are heavily debated and their effectiveness is unclear due to limited rigorous policy analysis. In 2016, a California policy (SB 277) eliminated non-medical exemptions from kindergarten requirements. To address the ongoing debate on such policies, we performed a quasi-experimental, controlled analysis of the policy’s impact on vaccine and exemption outcomes.

Methods. We used state vaccine coverage and exemption data (2011–2017) from the CDC and health data from public sources. We prespecified a primary outcome of MMR coverage (%) and secondary outcomes of medical and non-medical exemptions (%). We included covariates related to socioeconomic and health measures (e.g., insurance, well child visits) and pre-2016 mean coverage. Using the synthetic control method, with 2016 as the treatment year and a 2-year post-policy period, we constructed a “control” California, from a weighted sum of states. We used permutation testing to repeat the process for each of the other states and their unique synthetic control, to determine whether there was a meaningful difference in California (i.e., a change in California’s coverage relative to its control in the top 5th percentile of states). We tested the model’s sensitivity to various analytical assumptions.

Results. Of 43 control states, synthetic California was predominantly comprised of Idaho, Mississippi, and Arkansas, and had a good pre-policy match on outcomes. MMR coverage in California increased by 3.2% relative to synthetic California in the post period (Top 1 of 44 states, Figure 1). Medical exemptions increased by 0.4%, while non-medical exemptions decreased by 2.2% in the post-period (Top 1 of 43 states). The model was robust to changes in covariates and control states.

Conclusion. The policy resulted in a meaningful increase in MMR coverage and reduction in non-medical exemptions. We measured a modest increase in medical exemptions, but this was offset by the larger reduction in non-medical exemptions. State policies removing non-medical exemptions can be effective in increasing vaccination coverage.



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1621. Acute Cardiovascular Events Among Adults Hospitalized with Influenza, FluSurv-NET, 2010–2018

Eric J. Chow, MD, MS, MPH¹; Melissa A. Rolfes, PhD, MPH¹; Alissa O’Halloran, MSPH¹; Evan J. Anderson, MD²; Nancy M. Bennett, MD, MS³; Laurie M. Billing, MPH⁴; Shua Chai, MD, MPH⁵; Elizabeth Dufort, MD⁶; Sue Kim, BS, MPH⁷; Lourdes Irizarry, MD⁸; Ruth Lynfield, MD⁹; Maya Monroe, MPH, BS¹⁰; Ilene Risk, MPA¹¹; Samantha Stephens, MPH¹²; Keipp Talbot, MD MPH¹³; Ann Thomas, MD¹⁴; Kim Yousey-Hindes, MPH, CPH¹⁵; Carrie Reed, DSc, MPH¹; Shikha Garg, MD, MPH¹; ¹Centers for Disease Control and Prevention, Atlanta, Georgia; ²Emory University School of Medicine, Atlanta, Georgia; ³University of Rochester, Rochester, New York; ⁴Ohio Department of Health, Columbus, Ohio; ⁵California Department of Public Health, Oakland, California; ⁶NYSDOH, Albany, New York; ⁷Michigan Department of Health and Human Services, Lansing, Michigan; ⁸New Mexico Department of Health, Santa Fe, New Mexico; ⁹Minnesota Department of Health, Saint Paul, Minnesota; ¹⁰Maryland Department of Health, Baltimore, Maryland; ¹¹Salt Lake County Health Department, Salt Lake, Utah; ¹²Colorado Department of Public Health and Environment, Denver, Colorado; ¹³Vanderbilt University Medical Center, Nashville, Tennessee; ¹⁴Oregon Health Authority, Portland, Oregon; ¹⁵Connecticut Emerging Infections Program, New Haven, Connecticut

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