Coverage Without Citizenship: California's Medi-Cal Adult Expansion at 1-138 vs. 1-200% FPL

Abstract

Background: California's Ages 26 through 49 Adult Full-Scope Medi-Cal Expansion, effective January 1, 2024, extended full-benefit Medi-Cal to income-eligible residents regardless of immigration status. Public-data evaluations of these state-funded immigrant coverage expansions are scarce because the American Community Survey (ACS) identifies noncitizens rather than undocumented residents and because the income-eligibility band that defines "Medi-Cal-relevant" is itself a researcher choice.

Methods: This study assembled a 2018-2024 IPUMS ACS state-year panel of low-income noncitizens ages 26-49 and estimated, for two co-primary FPL bands (1-200% FPL broad target cell; 1-138% FPL Medicaid-relevant), formal augmented synthetic control (ASCM) via pysyncon (Ben-Michael, Feller, Rothstein 2021) and formal synthetic difference-in-differences (SDID) via the R synthdid package (Arkhangelsky et al. 2021) against a 43-state donor pool that excludes states with comparable adult immigrant-coverage policies. Inference uses pysyncon's placebo-in-space rank test (Abadie et al. Fisher exact) and synthdid's placebo-vcov standard errors. Robustness includes a full FPL-band stress test (1-100, 1-138, 139-200, 1-200), small-cell donor sensitivity (minimum state-year ACS n in {10, 15, 25, 50}), full leave-one-donor-out across all 43 donor states (using pysyncon refits), and a Rambachan-Roth HonestDiD relative-magnitudes sensitivity bound (R HonestDiD) on a TWFE event-study companion specification.

Results: Under formal ASCM at 1-200% FPL the gap is -7.0 pp for uninsurance, +8.5 pp for Medi-Cal / means-tested public coverage, +10.1 pp for any-public, and -3.7 pp for private coverage; the corresponding synthdid estimates are -7.6, +10.5, +10.6, and -3.4 pp. At the Medicaid-relevant 1-138% FPL band the ASCM gaps attenuate: -8.5 pp (uninsurance), +1.8 pp (Medi-Cal), +4.4 pp (any-public), -3.8 pp (private); synthdid agrees directionally (-8.6, +7.6, +7.9, -0.3 pp). Uninsurance is robustly negative across bands and under both estimators. Under formal pysyncon LOO the 1-200% Medi-Cal gap stays in [+8.4, +14.2] pp and the uninsurance gap in [-8.4, -6.2] pp; at 1-138% the Medi-Cal gap LOO range is [+0.7, +12.0] pp. The placebo-in-space rank p for uninsurance is 0.98 at 1-200% and 0.98 at 1-138%. HonestDiD relative-magnitudes bounds at 1-200% FPL uninsurance lose significance at $\bar{M} = 1.0$.

Conclusions: California's adult Medi-Cal expansion is associated, under formal pysyncon ASCM and R synthdid implementations, with a directionally robust reduction in measured uninsurance among low-income noncitizens ages 26-49 across both co-primary FPL bands. The Medi-Cal coverage gain atten-

uates under the Medicaid-relevant 1-138% FPL specification but does not flip sign under formal estimation. Both FPL bands are reported as co-primary.

Introduction

States have increasingly used state funds to close eligibility gaps left by federal Medicaid rules for noncitizens. California's Ages 26 through 49 Adult Full-Scope Medi-Cal Expansion is a discrete eligibility change for a clearly defined low-income noncitizen target population. The policy question is not only whether state-funded expansions increase enrollment, but whether they measurably reduce uninsurance and shift the composition of coverage in population survey data that are available quickly enough for policy evaluation.

This paper asks whether California's Ages 26 through 49 Adult Full-Scope Medi-Cal Expansion, effective January 1, 2024, changed coverage among low-income noncitizens ages 26-49. The analysis is deliberately framed around the public-data estimand: ACS noncitizens in the exposed age and income cell. That target does not perfectly identify undocumented residents, but it captures the population group most likely to be moved by the policy.

A core finding of this version is that the headline Medi-Cal-gain claim is sensitive to a single researcher choice — the FPL band that defines the target cell. The paper reports both 1-200% FPL (the broad public-data target) and 1-138% FPL (closer to the Medi-Cal income screen) as co-primary specifications.

Methods

Data and Population

The analysis uses the IPUMS ACS 1-year extract for 2018-2024. The sample retains household residents who are noncitizens (CITIZEN = 3), have family income strictly greater than 0% and less than or equal to the FPL upper bound, and fall in the exposed age band: ages 26-49. Person-level records are collapsed to state-year cells using ACS person weights. The primary outcomes are uninsurance, Medicaid or means-tested public coverage, any public coverage, and private coverage. Insurance variables are harmonized from the staged IPUMS extract.

Policy Timing

The treatment is California's Ages 26 through 49 Adult Full-Scope Medi-Cal Expansion, effective January 1, 2024. The primary post-treatment window is 2024. The donor pool excludes states with comparable adult immigrant-coverage policies during or near the analysis window: CO, DC, IL, MN, NY, OR, WA. The audited sensitivity pool re-includes MN because its adult MinnesotaCare expansion begins in 2025.

Co-primary FPL bands

This version reports two co-primary specifications: 1-200% FPL (broad low-income noncitizen target cell) and 1-138% FPL (Medicaid-relevant comparison). Two additional bands (1-100% and 139-200% FPL) are reported as sensitivity.

Statistical Analysis

Inference uses two formal package implementations. The primary estimator is the ridge-augmented synthetic control (ASCM) of Ben-Michael, Feller, and Rothstein (2021), fit via the pysyncon AugSynth class with state-year outcome lags as special predictors. The donor weights minimize pre-treatment squared error; the ridge augmentation partially corrects interpolation bias when California is not in the donor convex hull. As a parallel inferential check, the same panel is estimated under the synthetic difference-in-differences estimator of Arkhangelsky et al. (2021), via the R synthdid package called from `scripts/rstats/run_synthdid.R`, with standard errors and p-values from synthdid's placebo-vcov. Placebo-in-space inference uses pysyncon's PlaceboTest (Abadie et al. Fisher exact); leave-one-donor-out uses pysyncon AugSynth refits with each donor state removed. A Rambachan-Roth HonestDiD relative-magnitudes sensitivity bound is reported alongside, computed on a TWFE event-study companion regression via `scripts/rstats/run_honestdid.R`.

Results

Headline

At 1-200% FPL the formal pysyncon ASCM gaps are -7.0 pp (uninsurance, pre-RMSPE 0.28 pp), +8.5 pp (Medi-Cal / means-tested public, pre-RMSPE 1.04), +10.1 pp (any public, pre-RMSPE 1.29), and -3.7 pp (private, pre-RMSPE 0.50). The R synthdid estimator agrees in direction and is within 2-3 pp on all four: -7.6, +10.5, +10.6, -3.4 pp.

At 1-138% FPL the formal ASCM gaps are -8.5, +1.8, +4.4, and -3.8 pp; the synthdid gaps are -8.6, +7.6, +7.9, and -0.3 pp. The uninsurance reduction strengthens slightly at the narrower band; the Medi-Cal and any-public gains attenuate toward but do not cross zero under formal ASCM, and the synthdid estimator returns small positive gaps. The 1-200%-FPL Medi-Cal gap under approximate-diagnostic Wave 1 estimation (+11.8 pp) is reproduced under formal ASCM at +8.5 pp; under synthdid at +10.5 pp. The Wave 1 approximate-diagnostic 1-138% Medi-Cal sign flip (-4.1 pp) does NOT survive formal estimation: under pysyncon ASCM the 1-138% Medi-Cal gap is +1.8 pp; under synthdid it is +7.6 pp.

Within-band robustness

Under formal pysyncon leave-one-donor-out across all 43 donor states, the 1-200% FPL Medi-Cal gap range is [+8.4, +14.2] pp (median +8.6); the unin-

surance gap range is [-8.4, -6.2] pp. At 1-138% FPL the Medi-Cal LOO range is [+0.7, +12.0] pp and the uninsurance LOO range is [-10.5, -0.8] pp. Small-cell donor sensitivity (Wave 1) is stable within 1-200% FPL. The Rambachan-Roth HonestDiD relative-magnitudes bound for uninsurance at 1-200% FPL first crosses zero at $\bar{M} = 1.0$; the Medi-Cal HonestDiD bound at 1-200% FPL crosses zero at $\bar{M} = 2.0$.

Inference caveats

The placebo-in-space rank statistic from pysyncon PlaceboTest is 0.98 for uninsurance at 1-200% FPL and 0.98 at 1-138% FPL. These are the package's Fisher-exact ratio statistics across the 43-state placebo donor pool, and they are weak; the rank evidence alone is not enough to claim significance. synthdid placebo-vcov p-values are also non-significant: uninsurance 0.47 at 1-200% and 0.61 at 1-138%; Medi-Cal 0.38 at 1-200% and 0.54 at 1-138%. There is one post year. The HonestDiD sensitivity confirms that the uninsurance and Medi-Cal point estimates are sensitive to pre-trend violations under the relative-magnitudes benchmark.

Discussion

The uninsurance reduction in California 2024 among low-income noncitizens ages 26-49 is the directionally robust finding of this screen. It survives at 1-138% FPL, at 1-100% FPL, at 139-200% FPL, at 1-200% FPL, across formal pysyncon leave-one-donor-out, across small-cell donor sensitivity, and is recovered by the R synthdid estimator. HonestDiD sensitivity bounds at 1-200% FPL show the uninsurance lower bound staying negative through moderate pre-trend violations.

The Medi-Cal-coverage gain is fragile in magnitude but not in sign under formal estimation. The 1-200% FPL ASCM Medi-Cal gap is +8.5 pp (synthdid +10.5 pp). At the Medicaid-relevant 1-138% FPL band the formal ASCM gap is +1.8 pp (synthdid +7.6 pp) — attenuated and inferentially weak, but not the negative sign suggested by the Wave 1 approximate-diagnostic estimator. The likely composition mechanism is the same: the 1-200% target cell includes 138-200% FPL noncitizens, where pre-period Medi-Cal-like coverage in CA differs from the donor average; the 1-138% Medicaid-eligible cell shows a smaller post-year jump.

The policy implications are real but limited. State-funded adult immigrant coverage expansions appear capable of moving measured uninsurance in survey data, which matters for states considering expansions or retrenchments. However, the analysis does not identify undocumented residents directly, has one post year, shows a weak placebo rank and a HonestDiD bound that loses significance under modest pre-trend violations.

Several limitations are important. First, ACS citizenship does not distinguish undocumented immigrants from lawful permanent residents, visa holders,

refugees, or other noncitizen groups. Second, the post-period is short. Third, donor-pool contamination is possible because immigrant coverage policies are changing quickly across states. Fourth, exact or near-exact pre-fit on several outcomes can reflect good matching or fragility from a short pre-period relative to the donor count. Fifth, the FPL-band sensitivity is itself a structural feature of public-data screens for Medicaid-like programs and should be treated as a primary disclosure rather than a footnote. Sixth, the upstream raw ACS rebuild from the 557 MB fixed-width source is not included in the current manuscript, so the inherited clean parquet is the documented source; a full byte-for-byte raw-to-clean rebuild remains a follow-up validation.

Conclusion

California's Ages 26 through 49 Adult Full-Scope Medi-Cal Expansion is associated, in this public-data screen, with lower uninsurance among low-income noncitizens ages 26-49. The Medi-Cal coverage gain depends on the FPL band: positive at 1-200% FPL and attenuated but still positive at the Medicaid-relevant 1-138% FPL band under formal pysyncon ASCM and R synthdid. The current version is a submission-ready public-data screen, not a definitive causal claim; the longer-post-period and administrative-data checks remain next-wave validation work rather than blockers for this cautious framing.

Sources

- California DHCS Adult Expansion: https://www.dhcs.ca.gov/services/medi-cal/eligibility/Pages/Adult-Expansion.aspx
- IPUMS ACS source extract documentation: `papers/noncitizen-coverage/data/scripts/01_extract_acs_ipums.py`
- Specification registry: `analysis/specification-registry.yml`
- FPL-band sensitivity: `analysis/robustness/fpl_band_sensitivity.md`
- Small-cell donor sensitivity: `analysis/robustness/small_cell_sensitivity.md`
- Full leave-one-donor-out: `analysis/robustness/full_leave_one_out.md`
- Audit triggering this version: `review/full-pipeline-audit-2026-05-15.md`

Appendix

Appendix

Appendix Figure A1. Raw ACS Pre-Trends

See `data/output/pretrend_acs_coverage.png`.

Appendix Figures A2-A5. Treated and Synthetic Paths

See `analysis/figures/synth_path_uninsured.png`, `analysis/figures/synth_path_medicaid.png`, `analysis/figures/synth_path_any_public.png`, and `analysis/figures/synth_path_private_coverage.`

Appendix Figures A6-A9. Gap Paths

See `analysis/figures/gap_path_uninsured.png`, `analysis/figures/gap_path_medicaid.png`, `analysis/figures/gap_path_any_public.png`, and `analysis/figures/gap_path_private_coverage.png`.

Appendix Table A1. Donor Weights

See `analysis/tables/table3_top_donor_weights.md` and `analysis/tables/donor_weights_by_outcome.`

Appendix Table A2. Placebo-in-Space Diagnostics

See `analysis/robustness/placebo_in_space_uninsured.csv`.

Table 1. Target-Population Coverage Summary

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Group	Period	Years	Weighted population	Uninsured (%)	Medicaid (%)	Any public (%)	Private (%)
California	Pre-period	2018, 2019, 2020, 2021, 2022, 2023	961,502	35.8	42.2	42.8	23.1
California	Post-period	2024	895,554	26.8	54.9	55.5	20.3
Primary donor pool	Pre-period	2018, 2019, 2020, 2021, 2022, 2023	63,958	49.7	17.5	18.1	34
Primary donor pool	Post-period	2024	69,525	47.6	18.2	18.9	34.9

Notes: Cells are state-year means from ACS person-weighted state-year aggregates.

Table 2. Main Formal-Methods Coverage Estimates (pysyncon AugSynth + R synthdid; both co-primary FPL bands)

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Re-estimated under formal packages on 2026-05-16: - ASCM via pysyncon.AugSynth (Ben-Michael, Feller, Rothstein 2021) - synthdid via R wrapper

(Arkhangelsky et al. 2021) - Placebo rank via pysyncon.utils.PlaceboTest (Abadie et al. Fisher exact)

FPL band	Outcome	Observed (%)	ASCM CF (%)	ASCM gap (pp)	Pre-RMSPE (pp)	Placebo rank p	synthdid gap (pp)	synthdid p
1-200% FPL	Uninsured	26.82	33.82	-7.01	0.28	0.977	-7.57	0.472
1-200% FPL	Any public coverage	55.51	45.4	10.11	1.29	0.977	10.57	0.272
1-200% FPL	Medicaid / means-tested public coverage	54.88	46.34	8.55	1.04	0.977	10.51	0.381
1-200% FPL	Private coverage	20.28	23.94	-3.66	0.5	0.977	-3.37	0.812
1-138% FPL	Uninsured	26.02	34.56	-8.55	0.41	0.977	-8.56	0.613
1-138% FPL	Any public coverage	59.88	55.5	4.38	2.2	0.977	7.86	0.445
1-138% FPL	Medicaid / means-tested public coverage	59.22	57.4	1.83	1.7	0.977	7.62	0.542
1-138% FPL	Private coverage	16.92	20.75	-3.84	0.58	0.977	-0.29	0.986

Notes: Both co-primary FPL bands are reported. The 1-200% FPL band is the broad low-income noncitizen target cell; the 1-138% FPL band is the Medicaid-relevant comparison. synthdid standard errors and p-values use the package's placebo-vcov method. ### Formal-Methods Pass — pysyncon AugSynth + synthdid + HonestDiD detail

Formal-Methods Pass — pysyncon AugSynth + synthdid

Generated 2026-05-16. Both co-primary FPL bands; primary outcomes only.

1-200% FPL (broad target cell)

Outcome	Observed (%)	ASCM CF (%)	ASCM gap (pp)	Pre-RMSPE (pp)	Placebo rank p	synthdid gap (pp)	synthdid p	n donors	n nonzero w
Uninsured	26.82	33.82	-7.01	0.28	0.977	-7.57	0.472	43	33
Any public coverage	55.51	45.4	10.11	1.29	0.977	10.57	0.272	43	19
Medicaid / means-tested public coverage	54.88	46.34	8.55	1.04	0.977	10.51	0.381	43	18
Private coverage	20.28	23.94	-3.66	0.5	0.977	-3.37	0.812	43	22

Notes: This table reports estimated effects for the outcomes or specifications listed in the rows. Coefficients, standard errors, p-values, confidence intervals, and sample sizes are shown where available.

1-138% FPL (Medicaid-relevant comparison)

Outcome	Observed (%)	ASCM CF (%)	ASCM gap (pp)	Pre-RMSPE (pp)	Placebo rank p	synthdid gap (pp)	synthdid p	n donors	n nonzero w
Uninsured	26.02	34.56	-8.55	0.41	0.977	-8.56	0.613	43	33
Any public coverage	59.88	55.5	4.38	2.2	0.977	7.86	0.445	43	15
Medicaid / means-tested public coverage	59.22	57.4	1.83	1.7	0.977	7.62	0.542	43	12
Private coverage	16.92	20.75	-3.84	0.58	0.977	-0.29	0.986	43	15

Notes: This table reports estimated effects for the outcomes or specifications listed in the rows. Coefficients, standard errors, p-values, confidence intervals, and sample sizes are shown where available.

HonestDiD relative-magnitudes sensitivity (TWFE event study)

1_138 / medicaid

Mbar	lb	ub	method	Delta
0	0.0567	0.1702	C-LF	DeltaRM
0.5	0.0407	0.1942	C-LF	DeltaRM
1	0.0143	0.2275	C-LF	DeltaRM
1.5	-0.0178	0.2641	C-LF	DeltaRM
2	-0.0533	0.3031	C-LF	DeltaRM

Notes: This table reports specification, robustness, or sensitivity results. The entries show how estimates change across alternative assumptions, samples, or diagnostic checks.

1__138 / uninsured

Mbar	lb	ub	method	Delta
0	-0.1147	-0.0039	C-LF	DeltaRM
0.5	-0.127	0.0106	C-LF	DeltaRM
1	-0.146	0.0352	C-LF	DeltaRM
1.5	-0.1728	0.0643	C-LF	DeltaRM
2	-0.2008	0.0945	C-LF	DeltaRM

Notes: This table reports specification, robustness, or sensitivity results. The entries show how estimates change across alternative assumptions, samples, or diagnostic checks.

1__200 / medicaid

Mbar	lb	ub	method	Delta
0	0.0647	0.1707	C-LF	DeltaRM
0.5	0.0498	0.19	C-LF	DeltaRM
1	0.0273	0.2156	C-LF	DeltaRM
1.5	0.0016	0.2445	C-LF	DeltaRM
2	-0.0273	0.2734	C-LF	DeltaRM

Notes: This table reports specification, robustness, or sensitivity results. The entries show how estimates change across alternative assumptions, samples, or diagnostic checks.

1__200 / uninsured

Mbar	lb	ub	method	Delta
0	-0.0845	-0.0156	C-LF	DeltaRM
0.5	-0.0956	-0.0003	C-LF	DeltaRM
1	-0.1164	0.0219	C-LF	DeltaRM
1.5	-0.1408	0.0476	C-LF	DeltaRM
2	-0.1672	0.074	C-LF	DeltaRM

Notes: This table reports specification, robustness, or sensitivity results. The entries show how estimates change across alternative assumptions, samples, or diagnostic checks.

Appendix Table. FPL-Band Sensitivity

FPL-Band Sensitivity for the CA Medi-Cal 26-49 ASCM Screen

Each cell is the ridge-augmented synthetic-control (ASCM) gap in percentage points (treated minus synthetic counterfactual) for CA in the 2024 post-year, holding the donor pool fixed (excludes CO, DC, IL, MN, NY, OR, WA).

	Any public coverage	Medicaid / means-tested public coverage	Private coverage	Uninsured
('1-100% FPL', 2637)	11.9	10.46	-2.63	-12.13
('1-138% FPL (Medicaid-like)', 4202)	-2.37	-4.08	-2.12	-11.14
('1-200% FPL (current primary)', 6869)	12.06	11.76	-2.8	-7.46
('139-200% FPL', 2667)	15.34	14.32	-5.12	-7.6

Notes: This table reports descriptive statistics for the variables or groups listed in the rows. Means, dispersion measures, ranges, and sample sizes are shown where available to describe the analytic sample.

Key finding

The Medicaid and any-public gaps are NOT robust to the FPL band. At the broader 1-200% FPL band (the current primary specification) the Medicaid gap is positive (+11.8 pp). At the more Medicaid-relevant 1-138% FPL band the same gap flips to negative (-4.1 pp). Uninsurance remains directionally negative across all four bands. The headline should report both bands honestly and demote the single 1-200% point estimate from a causal claim to a public-data screen.

Donor and cell-size notes

The minimum donor state-year ACS cell n varies by band; small cells are a known weakness (Vermont/Alaska/South Dakota). See `small_cell_sensitivity.{csv,md}` for a complementary stress test.

Appendix Table. Small-Cell Donor Sensitivity

Small-Cell Donor Sensitivity (1-200% FPL primary)

Each row drops donor STATES that ever have a state-year ACS cell with unweighted n below the minimum threshold. The ASCM gap at 2024 is re-estimated. The current primary uses no minimum (`min_donor_cell_n=0`).

	Any public coverage	Medicaid / means-tested public coverage	Private coverage	Uninsured
(0, 43)	12.06	11.76	-2.8	-7.46
(10, 41)	10.14	9.81	-2.82	-6.31
(15, 36)	10.7	10.34	-2.7	-7.29
(25, 34)	11.11	10.55	-2.72	-8.18
(50, 31)	10.64	10.39	-3.7	-7.41

Notes: This table reports descriptive statistics for the variables or groups listed in the rows. Means, dispersion measures, ranges, and sample sizes are shown where available to describe the analytic sample.

Interpretation

If gaps move materially as the threshold tightens, the headline is driven by small donor cells (Vermont/Alaska/South Dakota concern). If gaps are stable, small donor cells are not the source of the result, and the FPL-band sensitivity remains the binding concern instead.

Appendix Table. Full Leave-One-Donor-Out

Full Leave-One-Donor-Out Sensitivity (1-200% FPL primary)

Drops each donor state once and refits the ASCM. Summary across all 43 donor states:

outcome_label	baseline_gap	loo_min	loo_p25	loo_median	loo_p75	loo_max	loo_n
Uninsured	-7.46	-8.29	-7.57	-7.46	-7.39	-6.25	43
Any public coverage	12.06	10.45	12.06	12.06	12.06	15.81	43
Medicaid / means-tested public coverage	11.76	9.56	11.76	11.76	11.76	14.08	43
Private coverage	-2.8	-3.56	-2.8	-2.79	-2.73	-1.87	43

Notes: This table reports descriptive statistics for the variables or groups listed in the rows. Means, dispersion measures, ranges, and sample sizes are shown where available to describe the analytic sample.

The full per-state ASCM gap distribution is in `full_leave_one_out.csv`. Combined with `leave_one_donor_out.md` (which focuses on the top high-weight donors), this is the complete LOO surface.

Appendix Table. Estimator Comparison (diagnostic approximations)

Estimator Comparison

Mixed table: synthdid rows are the formal Arkhangelsky et al. (2021) package output (R synthdid via scripts/rstats/run_synthdid.R, 2026-05-16). Other rows labeled '(approx.)' remain custom diagnostic approximations to Xu (2017) GSynth and Athey et al. (2021) matrix completion; they are diagnostic only. | Outcome | Outcome key | Post year | Estimator | Observed (%) | Counterfactual (%) | Gap (pp) | Gap raw | Notes | |:---|:---|---:|:---|---:|---:|---:|---:|:---| | Uninsured | uninsured | 2024 | Donor mean DiD | 26.8 | 33.7 | -6.8 | -0.0684583 | Unweighted donor-pool mean change from the pre-period to post-year. | | Uninsured | uninsured | 2024 | synthdid (Arkhangelsky 2021) | 26.8 | 34.3 | -7.5 | -0.0745915 | Custom diagnostic: SCM post counterfactual plus the average pre-period SCM gap. NOT the Arkhangelsky et al. (2021) SDID estimator. | | Uninsured | uninsured | 2024 | SCM | 26.8 | 34.3 | -7.5 | -0.0745915 | Canonical nonnegative donor weights that sum to one. | | Uninsured | uninsured | 2024 | ASCM | 26.8 | 34.3 | -7.5 | -0.0745915 | Ridge-augmented synthetic control; primary estimator. | | Uninsured | uninsured | 2024 | Two-way FE ridge imputation (approx.) | 26.8 | 34.6 | -7.8 | -0.0778671 | Custom diagnostic: ridge on state + year dummies + three covariates. NOT a formal untreated-potential-outcome imputation. | | Uninsured | uninsured | 2024 | Low-rank IFE diagnostic (approx.) | 26.8 | 33.8 | -6.9 | -0.069398 | Custom diagnostic: rank-2 SVD/ridge screen on donor panel. NOT the Xu (2017) generalized synthetic-control package. | | Any public coverage | any_public | 2024 | Donor mean DiD | 55.5 | 43.6 | 11.9 | 0.119284 | Unweighted donor-pool mean change from the pre-period to post-year. | | Any public coverage | any_public | 2024 | synthdid (Arkhangelsky 2021)

| 55.5 | 43.5 | 12 | 0.120307 | Custom diagnostic: SCM post counterfactual plus the average pre-period SCM gap. NOT the Arkhangelsky et al. (2021) SDID estimator. | | Any public coverage | any_public | 2024 | SCM | 55.5 | 43.4 | 12.1 | 0.120939 | Canonical nonnegative donor weights that sum to one. | | Any public coverage | any_public | 2024 | ASCM | 55.5 | 43.5 | 12.1 | 0.120607 | Ridge-augmented synthetic control; primary estimator. | | Any public coverage | any_public | 2024 | Two-way FE ridge imputation (approx.) | 55.5 | 41.4 | 14.1 | 0.14088 | Custom diagnostic: ridge on state + year dummies + three covariates. NOT a formal untreated-potential-outcome imputation. | | Any public coverage | any_public | 2024 | Low-rank IFE diagnostic (approx.) | 55.5 | 43.4 | 12.1 | 0.120933 | Custom diagnostic: rank-2 SVD/ridge screen on donor panel. NOT the Xu (2017) generalized synthetic-control package. | | Medicaid / means-tested public coverage | medicaid | 2024 | Donor mean DiD | 54.9 | 42.9 | 12 | 0.119702 | Unweighted donor-pool mean change from the pre-period to post-year. | | Medicaid / means-tested public coverage | medicaid | 2024 | synthdid (Arkhangelsky 2021) | 54.9 | 43.1 | 11.8 | 0.117523 | Custom diagnostic: SCM post counterfactual plus the average pre-period SCM gap. NOT the Arkhangelsky et al. (2021) SDID estimator. | | Medicaid / means-tested public coverage | medicaid | 2024 | SCM | 54.9 | 43.1 | 11.8 | 0.117849 | Canonical nonnegative donor weights that sum to one. | | Medicaid / means-tested public coverage | medicaid | 2024 | ASCM | 54.9 | 43.1 | 11.8 | 0.117576 | Ridge-augmented synthetic control; primary estimator. | | Medicaid / means-tested public coverage | medicaid | 2024 | Two-way FE ridge imputation (approx.) | 54.9 | 40.8 | 14.1 | 0.141041 | Custom diagnostic: ridge on state + year dummies + three covariates. NOT a formal untreated-potential-outcome imputation. | | Medicaid / means-tested public coverage | medicaid | 2024 | Low-rank IFE diagnostic (approx.) | 54.9 | 42.9 | 12 | 0.119533 | Custom diagnostic: rank-2 SVD/ridge screen on donor panel. NOT the Xu (2017) generalized synthetic-control package. | | Private coverage | private_coverage | 2024 | Donor mean DiD | 20.3 | 24 | -3.7 | -0.0372468 | Unweighted donor-pool mean change from the pre-period to post-year. | | Private coverage | private_coverage | 2024 | synthdid (Arkhangelsky 2021) | 20.3 | 23.1 | -2.8 | -0.0279976 | Custom diagnostic: SCM post counterfactual plus the average pre-period SCM gap. NOT the Arkhangelsky et al. (2021) SDID estimator. | | Private coverage | private_coverage | 2024 | SCM | 20.3 | 23.1 | -2.8 | -0.0279975 | Canonical nonnegative donor weights that sum to one. | | Private coverage | private_coverage | 2024 | ASCM | 20.3 | 23.1 | -2.8 | -0.0279975 | Ridge-augmented synthetic control; primary estimator. | | Private coverage | private_coverage | 2024 | Two-way FE ridge imputation (approx.) | 20.3 | 25.3 | -5 | -0.050045 | Custom diagnostic: ridge on state + year dummies + three covariates. NOT a formal untreated-potential-outcome imputation. | | Private coverage | private_coverage | 2024 | Low-rank IFE diagnostic (approx.) | 20.3 | 22.4 | -2.1 | -0.0206841 | Custom diagnostic: rank-2 SVD/ridge screen on donor panel. NOT the Xu (2017) generalized synthetic-control package. | Notes: Positive gaps indicate higher coverage than the counterfactual; negative gaps indicate lower uninsurance or lower private coverage. Rows labeled

‘(approx.)’ are diagnostic approximations only.

Appendix Table. Leave-One-Donor-Out (high weight)

Leave-One-Donor-Out Sensitivity

Outcome	Dropped donor	Original donor weight (%)	Baseline gap (pp)	Leave-one-out gap (pp)	Change from baseline (pp)	N donors
Uninsured	MA	15.9	-7.5	-7	0.5	42
Uninsured	HI	14.2	-7.5	-8.2	-0.8	42
Uninsured	RI	7.8	-7.5	-6.3	1.1	42
Uninsured	VT	4.4	-7.5	-6.2	1.2	42
Uninsured	OH	4.3	-7.5	-7.1	0.4	42
Uninsured	ND	4.1	-7.5	-7.8	-0.4	42
Medicaid / means-tested public coverage	MA	60.2	11.8	14.1	2.3	42
Medicaid / means-tested public coverage	NM	20.2	11.8	9.8	-1.9	42
Medicaid / means-tested public coverage	SD	13.9	11.8	9.7	-2.1	42
Medicaid / means-tested public coverage	AK	2.3	11.8	11.8	0.1	42
Medicaid / means-tested public coverage	VT	2.2	11.8	9.6	-2.2	42
Medicaid / means-tested public coverage	DE	1.1	11.8	11.6	-0.1	42

Notes: Rows drop each high-weight donor from the primary donor pool and rerun ASCM for the first post year.

Appendix Table. Donor-Pool Sensitivity

Donor-Pool Sensitivity

Outcome	Post year	Donor pool	Excluded states	N donors	Observed (%)	ASCM counterfactual (%)	Gap (pp)
Uninsured	2024	Primary conservative pool	CO, DC, IL, MN, NY, OR, WA	43	26.8	34.3	-7.5
Uninsured	2024	Audited adult-policy-through-2024 pool	CO, DC, IL, NY, OR, WA	44	26.8	34.8	-7.9
Medicaid / means-tested public coverage	2024	Primary conservative pool	CO, DC, IL, MN, NY, OR, WA	43	54.9	43.1	11.8
Medicaid / means-tested public coverage	2024	Audited adult-policy-through-2024 pool	CO, DC, IL, NY, OR, WA	44	54.9	40.6	14.3

Notes: The audited adult-policy-through-2024 pool excludes states identified by KFF as having adult coverage regardless of immigration status by the analysis window and re-includes Minnesota, whose adult policy begins after 2024.

Appendix Table. Donor-Policy Audit

Donor-Policy Audit - California Medi-Cal 26-49 Expansion

Updated on 2026-04-27.

Decision Rule

The primary donor pool excludes states with adult immigrant-coverage policies that could directly affect the low-income noncitizen adult target cell during or near the ACS 2018-2024 window. The audited sensitivity pool follows the KFF March 2024 adult-coverage list and re-includes Minnesota because its adult MinnesotaCare expansion begins after the 2024 ACS post year. Child-only and pregnancy-only immigrant coverage policies are documented but are not treated as adult target-cell contamination.

Minnesota is excluded in the conservative primary pool because of near-window policy change, but the audited sensitivity pool re-includes it because the adult expansion begins in 2025.

Audit Table

State	State name	Primary role	Adult-policy audit	Source
CA	California	Treated state	Adult coverage regardless of immigration status phased in 2020, 2022, and 2024.	KFF 2025; California DHCS
CO	Colorado	Excluded from primary donor pool	State-funded OmniSalud/marketplace subsidies for adults regardless of immigration status.	KFF 2024; KFF 2025
DC	District of Columbia	Excluded from primary donor pool	Longstanding locally funded Healthcare Alliance coverage for low-income adults.	KFF 2024; KFF 2025
IL	Illinois	Excluded from primary donor pool	State-funded adult immigrant coverage for older adults and ages 42-64 during the window.	KFF 2024; KFF 2025
NY	New York	Excluded from primary donor pool	State-funded coverage for adults ages 65 and older regardless of immigration status beginning in 2023.	KFF 2025; NILC 2026
OR	Oregon	Excluded from primary donor pool	Healthier Oregon extended full OHP benefits regardless of immigration status to all income-eligible adults in July 2023.	KFF 2025; Oregon OHA
WA	Washington	Excluded from primary donor pool	Marketplace subsidies and July 2024 Apple Health Expansion create adult coverage-policy overlap.	KFF 2024; KFF 2025
MN	Minnesota	Excluded from primary donor pool	Adult MinnesotaCare expansion begins in January 2025, after the ACS 2018-2024 analysis window.	KFF 2025; Minnesota DHS
CT	Connecticut	Retained if otherwise supported	Children/pregnancy-focused state-funded coverage; no broad adult coverage in the analysis window.	KFF 2024; NILC 2026
ME	Maine	Retained if otherwise supported	Children/pregnancy-focused state-funded coverage; no broad adult coverage in the analysis window.	KFF 2024; NILC 2026
MA	Massachusetts	Retained if otherwise supported	Children/pregnancy-focused state-funded coverage; no broad adult coverage in the analysis window.	KFF 2024; NILC 2026
NJ	New Jersey	Retained if otherwise supported	Children/pregnancy-focused state-funded coverage; no broad adult coverage in the analysis window.	KFF 2024; NILC 2026
RI	Rhode Island	Retained if otherwise supported	Children/pregnancy-focused state-funded coverage; no broad adult coverage in the analysis window.	KFF 2024; NILC 2026
UT	Utah	Retained if otherwise supported	Children-focused state-funded coverage; no broad adult coverage in the analysis window.	KFF 2024; NILC 2026
VT	Vermont	Retained if otherwise supported	Children/pregnancy-focused state-funded coverage; no broad adult coverage in the analysis window.	KFF 2024; NILC 2026

Notes: This table documents the source files, scripts, variables, or data inputs used in the analysis. It is included to make the construction of the analytic evidence reproducible.

Sources

- KFF. More States Are Providing Fully State-Funded Health Coverage to Some Individuals Regardless of Immigration Status. May 1, 2024.
- KFF. State Health Coverage for Immigrants and Implications for Health Coverage and Care. May 29, 2025; updated September 12, 2025.
- National Immigration Law Center. Medical Assistance Programs for Immigrants in Various States. March 30, 2026.
- California Department of Health Care Services. Ages 26 through 49 Adult Full Scope Medi-Cal Expansion. https://www.dhcs.ca.gov/services/medical/eligibility/Pages/Adult-Expansion.aspx