

## Appendix

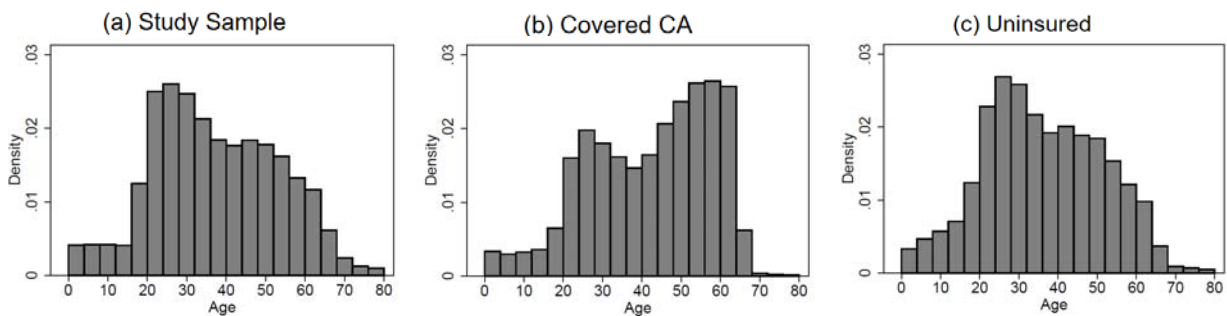
### A1. Comparison of Study Sample to Uninsured and Covered California Enrolled Populations

This section presents descriptive statistics on the final study sample, and as a comparison, the 2015 Covered California-enrolled and uninsured populations in California.<sup>1</sup> We find that the study sample is roughly a mix of these other two populations. This is unsurprising given that the Funnel is largely drawn from those that were uninsured in 2015 but were likely on the margin of enrolling.

Table 1 displays demographic summaries on each of the three populations. The average age in the study sample is 37 years old, younger than the Covered California population (42) but similar to the uninsured (36). Appendix Figure 1 displays the full age distributions, and suggests that the age profile of the study sample is more similar to the uninsured than to the Covered California population.

The average income in the study sample is 215 percent of FPL.<sup>2</sup> This is similar but slightly higher than both Covered California (210 percent) and the uninsured (212 percent). The study sample is also more similar to the Covered California population in terms of gender, but resembles more closely the race distribution of the uninsured population. Overall, these statistics suggest that the Funnel population resembles the uninsured, but given their expressed interest in the marketplace, may be slightly more likely to take up insurance than the overall uninsured population in subsequent years.

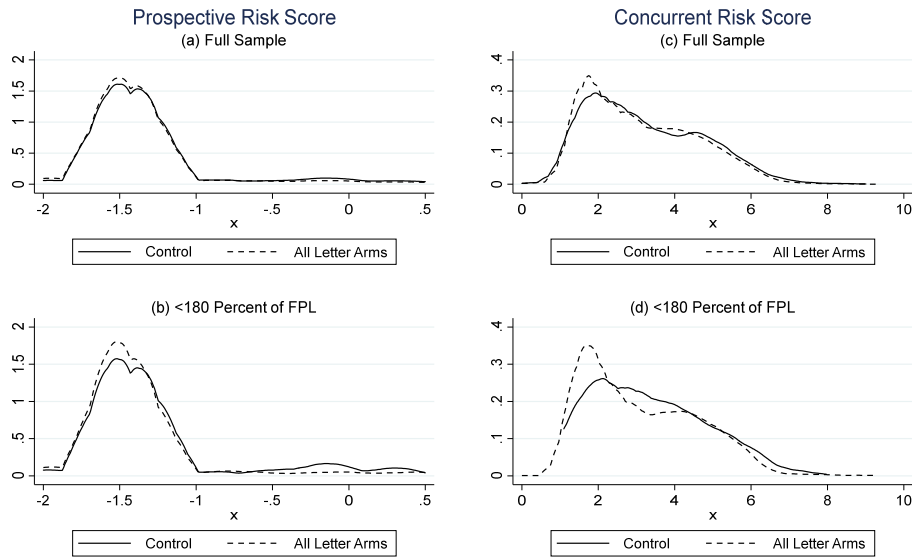
Appendix Figure 1. Age Distribution, By Populaton Segment



<sup>1</sup> Data on the uninsured come from the IPUMS (Ruggles, *et al*, 2017) version of the American Community Survey (ACS). We restrict the full ACS to those that are flagged uninsured at the time of interview, not institutionalized, and have incomes above 100 percent FPL.

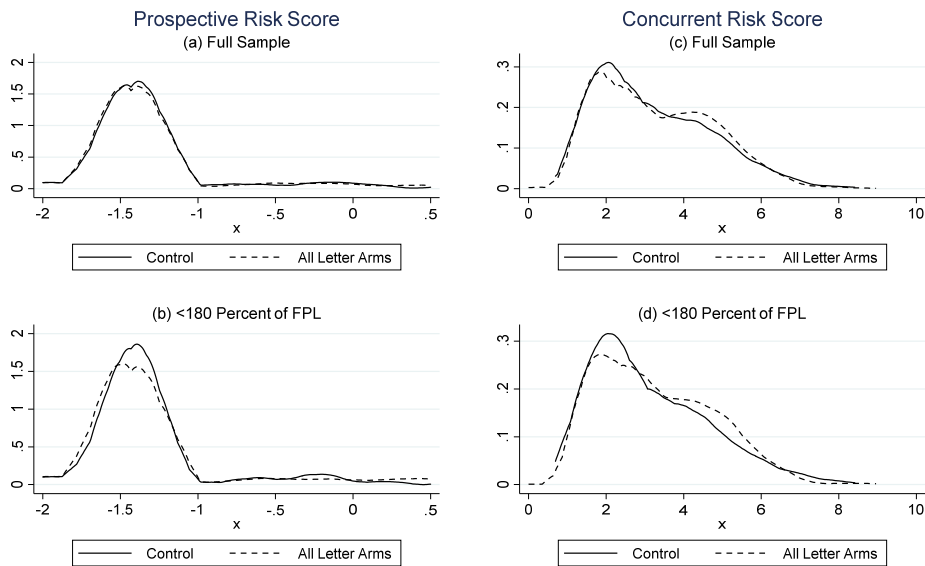
<sup>2</sup> FPL information is missing for some households with incomes above 400 percent of FPL, so we restrict estimates of average incomes, here, to households with reported income less than 400 percent of FPL. Households with incomes above 400 percent of FPL are ineligible for subsidies, and did not need to provide their income on the application, resulting in missing incomes for some of these households.

Appendix Figure 2. Average Risk by Treatment, Among Enrolled Open Enrollment Sample



Notes: The figure plots the kernel densities of the  $\ln(\text{risk score})$ , separately for the control group and the combined intervention arms, for the open enrollment sample, only. Figures (a) and (b) use the CDPS prospective risk scores based on diagnoses from 2015 hospital and emergency department encounters. (c) and (d) use concurrent risk scores based on full claims realized during the 2016 plan year.

Appendix Figure 3. Average Risk by Treatment, Among Enrolled County Referral Sample



Notes: The figure plots the kernel densities of the  $\ln(\text{risk score})$ , separately for the control group and the combined intervention arms, for the county referral sample, only. Figures (a) and (b) use the CDPS



**(e) Price/Qual Compare (Arm5)**

AN IMPORTANT MESSAGE FROM COVERED CALIFORNIA

CoveredCA.com  
(800) 787-9159 or  
TTY: (800) 889-4500

**Dear <First name last name>.**  
You have **<three weeks left>** to enroll in health coverage for 2016 through Covered California. **The deadline to enroll is January 31, 2016.**  
Every health insurance plan offered through Covered California offers free preventive care, helps pay for doctor visits, and protects you from high, unexpected medical costs. For example, without insurance:  
• A typical emergency room visit costs over \$1,200.  
• A typical 3-day hospital stay costs over \$20,000.

Based on your information, we estimate that:

**WITH HEALTH COVERAGE:**  
• You will likely receive **<\$1250>** in tax credits in 2016. This reduces the cost of a Silver plan by about <3> per month, or about <40%>.

**WITHOUT HEALTH COVERAGE:**  
• You may pay an IRS Tax Penalty of **<\$600>**.

**SHOP & COMPARE:**  
To make enrolling easier, we compared 2016 Bronze and Silver plans available to you in your area. Based on your information, we estimated how much <your family> monthly premiums would be (after any tax credits). We also show plan quality ratings to help you compare plans.

Carrier	Overall Quality	Bronze Plan (Lowest Price)	Silver Plan (Lowest Price)
Carrier A HMO	★★★★	\$135	\$175
Carrier B HMO	★★★★	\$150	\$188
Carrier C HMO	★★★	\$164	\$204
Carrier D HMO	★★	\$175	\$215
Carrier E HMO	★★★	\$187	\$227
Carrier F HMO	★★★★	\$205	\$245

**Silver plans offer better coverage.** If you get sick or injured, you may save more than <\$3,000> year in medical costs with a Silver plan over a Bronze plan.

**(d) Price Compare (Arm 4)**

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Based on your information, we estimate that:

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• You will likely receive **<\$1250>** in tax credits in 2016. This reduces the cost of a Silver plan by about <3> per month, or about <40%>.

**WITHOUT HEALTH COVERAGE:**  
• You may pay an IRS Tax Penalty of **<\$600>**.

**SHOP & COMPARE:**  
To make enrolling easier, we compared 2016 Bronze and Silver plans available to you in your area. Based on your information, we estimated how much <your family> monthly premiums would be (after any tax credits).

Carrier	Bronze Plan (Lowest Price)	Silver Plan (Lowest Price)
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**(c) Subsidy-Penalty Letter (Arm 3)**

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• A typical 3-day hospital stay costs over \$20,000.

When you enroll through Covered California, your family can have the peace of mind knowing you will have your health care covered when you need it.

Based on your information, we estimate that:

**WITH HEALTH COVERAGE:**  
• You will likely receive **<\$1250>** in tax credits in 2016. This reduces the cost of a Silver plan by about <3> per month, or about <40%>.

**WITHOUT HEALTH COVERAGE:**  
• You may pay an IRS Tax Penalty of **<\$600\*>**.

**3 SIMPLE STEPS TO OBTAIN COVERAGE**

- 1. REMEMBER:** The deadline to enroll in a health plan is January 31, 2016.
- 2. SHOP & COMPARE:** Use the Shop & Compare Tool at CoveredCA.com to review your health plan options.
- 3. ENROLL:** Sign in at CoveredCA.com to enroll in the plan that best fits your needs, or find free confidential, in-person help near you.

**(b) Basic Reminder Letter (arm 2)**

AN IMPORTANT MESSAGE FROM COVERED CALIFORNIA

CoveredCA.com  
(800) 787-9159 or  
TTY: (800) 889-4500

**Dear <First name last name>.**  
You have **<three weeks left>** to enroll in health coverage for 2016 through Covered California. **The deadline to enroll is January 31, 2016.**  
Every health insurance plan offered through Covered California offers free preventive care, helps pay for doctor visits, and protects you from high, unexpected medical costs. For example, without insurance:  
• A typical emergency room visit costs over \$1,200.  
• A typical 3-day hospital stay costs over \$20,000.

When you enroll through Covered California, your family can have the peace of mind knowing you will have your health care covered when you need it. **Sign in at CoveredCA.com to enroll in the plan that best fits your needs, or find free confidential, in-person help near you.**

**3 SIMPLE STEPS TO OBTAIN COVERAGE**

- 1. REMEMBER:** The deadline to enroll in a health plan is January 31, 2016.
- 2. SHOP & COMPARE:** Use the Shop & Compare Tool at CoveredCA.com to review your health plan options.
- 3. ENROLL:** Sign in at CoveredCA.com to enroll in the plan that best fits your needs, or find free confidential, in-person help near you.

Appendix Table 1. Sample Exclusions

	Number of Households	Take-up
Funnel Sample Size	153,146	7%
Reason for Sample Exclusion		
Initial Budgetary Exclusion	26,964	9%
Any member with invalid age	660	0%
FPL<100	4,097	1%
Invalid Mailing Address	5,017	3%
SAWS and Deemed Subsidy Ineligible	42,471	1%
Final Study Sample Size	87,394	10%

Appendix Table 1 reports the number of households associated with sample exclusions imposed on the Funnel population, and the take-up rate for that exclusion. The December 2015 Funnel included 153,146 households who were initially considered eligible for the study. The initial exclusion dropped a randomly selected 26,964 households, due to study budget constraints. The resulting 126,182 households were then randomized into five study arms, according to the stratified methodology described in Section 3.4. As described in Section 3.2, after randomization, additional exclusions were imposed based on information about household program eligibility and address availability. Exclusion counts in the table are unconditional on the other exclusions, so households may appear in more than one row. The final study sample size was 87,394.

Appendix Table 2. Heterogeneous Treatment Effects, by Baseline Risk (No controls)												
Entry Sample	All		Open Enrollment					County Referral				
Income Sample	All	All	All	≤180 FPL	180-250	>250 FPL	All	All	≤180 FPL	180-250	>250 FPL	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Arm2345: All Letters	0.000 (0.005)		-0.012 (0.010)					0.007 (0.004)				
Arm2: Reminder		0.001 (0.006)		-0.007 (0.013)	-0.016 (0.027)	-0.007 (0.024)	0.001 (0.018)		0.005 (0.005)	0.005 (0.008)	0.009 (0.010)	-0.003 (0.009)
Arm345: Subsidy Arms		-0.000 (0.005)		-0.013 (0.010)	-0.013 (0.022)	-0.014 (0.020)	-0.009 (0.014)		0.007* (0.004)	0.006 (0.006)	0.008 (0.008)	0.008 (0.009)
ln(CDPS Score)	-0.001 (0.003)	-0.001 (0.003)	0.005 (0.006)	0.005 (0.006)	0.005 (0.013)	0.002 (0.012)	0.007 (0.009)	-0.001 (0.002)	-0.001 (0.002)	-0.003 (0.003)	0.001 (0.004)	-0.000 (0.006)
Arm2345 x ln(CDPS Score)	-0.010*** (0.003)		-0.022*** (0.007)					0.001 (0.003)				
Arm2 x ln(CDPS Score)		-0.009** (0.004)		-0.020** (0.009)	-0.032* (0.019)	-0.020 (0.017)	-0.011 (0.013)		0.001 (0.004)	0.006 (0.005)	-0.002 (0.006)	-0.006 (0.007)
Arm345 x ln(CDPS Score)		-0.010*** (0.004)		-0.023*** (0.007)	-0.035** (0.015)	-0.021 (0.014)	-0.014 (0.010)		0.000 (0.003)	0.002 (0.004)	-0.001 (0.005)	-0.001 (0.006)
Constant	0.080*** (0.004)	0.080*** (0.004)	0.133*** (0.009)	0.133*** (0.009)	0.166*** (0.019)	0.148*** (0.017)	0.111*** (0.012)	0.034*** (0.004)	0.034*** (0.004)	0.040*** (0.005)	0.036*** (0.007)	0.022*** (0.008)
Region FE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Observations	86,876	86,876	44,029	44,029	9,783	12,169	22,077	42,847	42,847	18,977	15,756	8,114
R-squared	0.001	0.001	0.001	0.001	0.003	0.001	0.000	0.000	0.000	0.000	0.000	0.001

Appendix Table 2 reports heterogeneous treatment effects on take-up, by baseline health spending risk. Health spending risk is measured using the CDPS prospective risk score, based on diagnoses from 2015 hospital and emergency room encounters. Column headers note sample specifications. Specifications reported here are analogous to Table 5, except that regressions do not control for ACA age-based community-rating premium ratio, as is included in Table 5. Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Appendix Table 3. Treatment Effects on Coverage Duration, Among Enrolled Consumers

Dependent Variable: Enrollment Length (months)												
Entry Sample	All			Open Enrollment				County Referral				
Income Sample	All	All	All	≤180 FPL	180-250	>250 FPL	All	All	≤180 FPL	180-250	>250 FPL	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Arm2345: All Letters	-0.131 (0.095)		-0.053 (0.109)					-0.343* (0.190)				
Arm2: Reminder		-0.122 (0.118)		0.017 (0.134)	0.042 (0.248)	-0.068 (0.246)	0.101 (0.209)		-0.558** (0.250)	-0.177 (0.354)	-0.923** (0.404)	-1.594** (0.731)
Arm345: Subsidy Arms		-0.134 (0.098)		-0.077 (0.112)	0.085 (0.206)	-0.160 (0.206)	-0.119 (0.178)		-0.276 (0.196)	-0.002 (0.279)	-0.633** (0.318)	-1.275** (0.633)
Control Group Mean (month)	8.44	8.44	8.43	8.43	8.64	8.26	8.42	8.47	8.47	8.66	8.40	8.00
Observations	7,962	7,962	6,214	6,214	1,817	1,934	2,463	1,748	1,748	852	657	239
R-squared	0.031	0.031	0.030	0.030	0.035	0.050	0.034	0.048	0.049	0.073	0.062	0.182

Appendix Table 3 reports treatment effects of letter interventions on duration of coverage, conditional on take-up. Enrollment duration is measured as the average number of months of paid coverage among household policy holders on policies opened during open enrollment. Column headers note sample specifications. Robust standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1