

Online Appendix

Price Sensitivity and Information Barriers to the Take-up of Naloxone

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Figures

Figure A1: Script Health Homepage

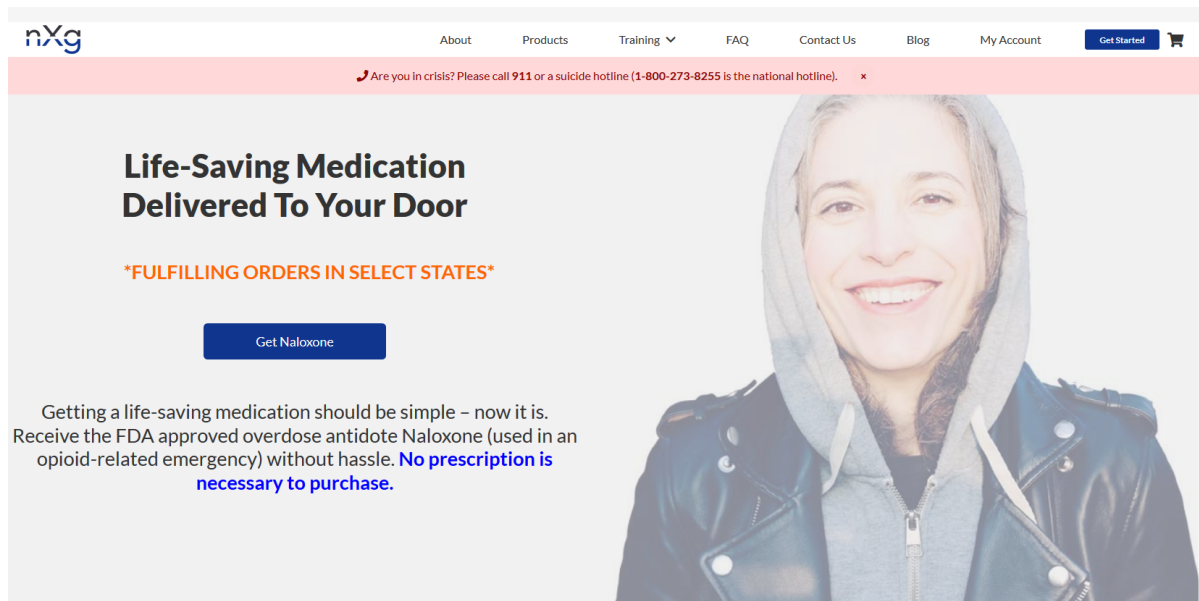


Figure A2: Sample Google Advertisement

Ad · www.naloxoneexchange.com



Concerned about a friend? | Buy Naloxone online | No Prescription

\$110 for Naloxone kit. Shipped discreetly to your door.
Naloxone is an opioid antidote that quickly reverses an
overdose.

Notes: This ad was part of the “information/stigma, \$110” treatment arm.

Tables

Table A1: Variation in Wording for Baseline Advertisement

<u>Version 1</u>		<u>Version 2</u>	
Headline 1	Buy Naloxone online	Headline 1	Buy Naloxone online
Headline 2	No Prescription	Headline 2	No Prescription
Headline 3	Fast. \$X for Naloxone Kit.	Headline 3	Shipped to your door.
Description 1	Naloxone is an opioid antidote that quickly reverses an overdose.	Description 1	\$X for Naloxone kit.
Description 2	Naloxone is an opioid antidote that quickly reverses an overdose.	Description 2	Naloxone is an opioid antidote that quickly reverses an overdose.
Path (optional)		Path (optional)	
Display URL	https://www.naloxoneexchange.com	Display URL	https://www.naloxoneexchange.com
Final URL	https://www.naloxoneexchange.com/buy/	Final URL	https://www.naloxoneexchange.com/buy/
<u>Version 3</u>		<u>Version 4</u>	
Headline 1	Naloxone Shipped to Your Door	Headline 1	Naloxone Shipped to Your Door
Headline 2	Buy Naloxone online	Headline 2	Buy Naloxone online
Headline 3	No Prescription	Headline 3	No Prescription
Description 1	Fast. \$X for Naloxone Kit.	Description 1	\$X for Naloxone kit.
Description 2	Naloxone is an opioid antidote that quickly reverses an overdose.	Description 2	Naloxone is an opioid antidote that quickly reverses an overdose.
Path (optional)		Path (optional)	
Display URL	https://www.naloxoneexchange.com	Display URL	https://www.naloxoneexchange.com
Final URL	https://www.naloxoneexchange.com/buy/	Final URL	https://www.naloxoneexchange.com/buy/

Notes: Our “baseline” advertisement used one of the four versions above. Instead of the price amount, we include \$X above, where X was either 20 or 110 (and randomized across arms). Google Ads optimizes the use of the four versions by favoring the versions generating more clicks. We permitted this within-arm optimization given the similarity of the messaging among the four versions.

Table A2: Variation in Wording for Information/Stigma Advertisement

		<u>Version 1</u>	<u>Version 2</u>
Headline 1	Worried about a Loved One?	Worried about a Loved One?	
Headline 2	Buy Naloxone online	Buy Naloxone online	
Headline 3	No Prescription	No Prescription	
Description 1	Fast & Discreet. \$X for Naloxone Kit.	\$X for Naloxone kit. Shipped discreetly to your door.	
Description 2	Naloxone is an opioid antidote that quickly reverses an overdose.	Naloxone is an opioid antidote that quickly reverses an overdose.	
Path (optional)			
Display URL	https://www.naloxoneexchange.com	https://www.naloxoneexchange.com	
Final URL	https://www.naloxoneexchange.com/buy/	https://www.naloxoneexchange.com/buy/	
		<u>Version 3</u>	<u>Version 4</u>
Headline 1	Concerned about a friend?	Concerned about a friend?	
Headline 2	Buy Naloxone online	Buy Naloxone online	
Headline 3	No Prescription	No Prescription	
Description 1	Fast & Discreet. \$X for Naloxone Kit.	\$X for Naloxone kit. Shipped discreetly to your door.	
Description 2	Naloxone is an opioid antidote that quickly reverses an overdose.	Naloxone is an opioid antidote that quickly reverses an overdose.	
Path (optional)			
Display URL	https://www.naloxoneexchange.com	https://www.naloxoneexchange.com	
Final URL	https://www.naloxoneexchange.com/buy/	https://www.naloxoneexchange.com/buy/	

Notes: Our “information/stigma” advertisement used one of the four versions above. Instead of the price amount, we include \$X above, where X was either 20 or 110 (and randomized across arms). Google Ads optimizes the use of the four versions by favoring the versions generating more clicks. We permitted this within-arm optimization given the similarity of the messaging among the four versions.

Table A3: Raw Data by Treatment Arm

Campaign / Campaign ID	Users	Buyers	Units Sold	Coupons Used	Coupons Per User	Coupons Per Buyer
Baseline, \$20 / 9772477619	5464	139	148	100	0.018	0.719
Information, \$20 / 9778104942	3147	94	108	62	0.020	0.660
Baseline, \$110 / 9772546310	3482	62	77	22	0.006	0.355
Information, \$110 / 9778256808	3756	67	80	22	0.006	0.328
Control	1869	50	56	22	0.012	0.440

Notes: This table lists totals across all countries in each arm.

Table A4: Number of Coupons

	(1)	(2)	(3)	(4)
Panel A: Main Estimates				
		Number of Coupons		
Any Ad			-0.195	-0.324
			(0.318)	(0.322)
\$20 Price			1.307***	1.337***
			(0.270)	(0.262)
Baseline, \$20	1.321***	1.185***		
	(0.370)	(0.355)		
Baseline, \$110	-0.189	-0.31		
	(0.404)	(0.405)		
Information, \$20	0.847***	0.778**		
	(0.315)	(0.306)		
Information, \$110	-0.200	-0.341		
	(0.343)	(0.348)		
Panel B: P-Values				
Base ad, \$20=Base ad, \$110	0.000	0.000		
Base ad, \$20 = Info \$20	0.156	0.150		
Base ad, \$20 = Info, \$110	0.000	0.000		
Base ad, \$110 = Info, \$20	0.005	0.002		
Base ad, \$110 = Info, \$110	0.977	0.937		
Info, \$20 = Info, \$110	0.001	0.000		
Mean of Untreated	0.061	0.061	0.061	0.061
Controls?	No	Yes	No	Yes
N	2,204	2,204	2,204	2,204

Notes: *10%, **5%, ***1% statistical significance. Heteroscedastic-robust standard errors presented in parentheses. Panel A provides Poisson estimates from equation (1) in Columns 1 and 2; from equation (2) in Columns 3 and 4. Controls are the 2014-2018 opioid overdose rates, quintile dummies related to the opioid overdose rate, share Black, share White, share Hispanic, share ages 25-44, and urbanicity. Panel B shows p-values from statistical tests for the null hypothesis that the two listed estimates are equal.

Table A5: Main Results with State Fixed Effects

Panel A: Main Estimates	(1)	(2)	(3)	(4)
	Site Users		Quantity Purchased	
Any Ad		0.457*** (0.170)		0.176 (0.244)
\$20 price		0.167 (0.170)		0.439** (0.192)
Base Ad, \$20	0.817*** (0.216)		0.729*** (0.277)	
Base Ad, \$110	0.399** (0.181)		0.136 (0.268)	
Info/stigma, \$20	0.328 (0.240)		0.462 (0.294)	
Info/stigma, \$110	0.504** (0.214)		0.209 (0.280)	
Panel B: P-Values				
Base ad, \$20=Base ad, \$110	0.055		0.027	
Base ad, \$20 = Info \$20	0.055		0.314	
Base ad, \$20 = Info, \$110	0.158		0.035	
Base ad, \$110 = Info, \$20	0.766		0.223	
Base ad, \$110 = Info, \$110	0.620		0.773	
Info, \$20 = Info, \$110	0.502		0.348	
Mean of Untreated	4.130	4.130	0.126	0.126
Controls?	Yes	Yes	Yes	Yes
State Fixed Effects	Yes	Yes	Yes	Yes
N	2,204	2,204	2,204	2,204

Notes: *10%, **5%, ***1% statistical significance. Heteroscedastic-robust standard errors presented in parentheses. "Site Users" are number of unique Google cookies that visit the company's website. Panel A provides Poisson estimates from equation (1) in Columns 1 and 3; from equation (2) in Columns 2 and 4. Controls are the 2014-2018 opioid overdose rates, quintile dummies related to the opioid overdose rate, share Black, share White, share Hispanic, share ages 25-44, and urbanicity. State fixed effects also included. Panel B shows p-values from statistical tests for the null hypothesis that the two listed estimates are equal.

Table A6: Other Outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Panel A: Main Estimates												
Any Ad		Sessions				New Sessions				Number of Buyers		
\$20 Price												
Baseline, \$20	1.115*** (0.301)	0.968*** (0.289)	0.690*** (0.201)	0.541*** (0.213)	0.782*** (0.253)	0.643*** (0.232)	0.561*** (0.189)	0.415*** (0.181)	1.034*** (0.323)	0.912*** (0.312)	0.265 (0.247)	0.140 (0.251)
Baseline, \$110	0.651*** (0.234)	0.533*** (0.227)		0.260 (0.197)	0.558*** (0.223)	0.437*** (0.200)	0.025 (0.193)	0.079 (0.158)	0.231 (0.293)	0.131 (0.286)	0.595*** (0.223)	0.628*** (0.201)
Information, \$20	0.606** (0.279)	0.558*** (0.268)			0.341 (0.242)	0.291 (0.225)			0.647*** (0.280)	0.580** (0.278)		
Information, \$110	0.726*** (0.255)	0.547*** (0.257)			0.564*** (0.228)	0.394* (0.214)			0.297 (0.279)	0.145 (0.277)		
Panel B: P-Values												
Base ad, \$20=Base ad, \$110	0.150	0.087			0.406	0.326			0.016	0.006		
Base ad, \$20 = Info, \$20	0.153	0.157			0.122	0.137			0.227	0.226		
Base ad, \$20 = Info, \$110	0.250	0.142			0.425	0.268			0.021	0.006		
Base ad, \$110 = Info, \$20	0.881	0.918			0.403	0.483			0.150	0.077		
Base ad, \$110 = Info, \$110	0.788	0.950			0.982	0.828			0.819	0.956		
Info, \$20 = Info, \$110	0.705	0.969			0.397	0.650			0.203	0.081		
Mean of Untreated	5.124	5.124	5.124	5.124	3.342	3.342	3.342	3.342	0.112	0.112	0.112	0.112
Controls?	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
N	2,204	2,204	2,204	2,204	2,204	2,204	2,204	2,204	2,204	2,204	2,204	2,204

Notes: *10%, **5%, ***1% statistical significance. Heteroscedastic-robust standard errors presented in parentheses. Panel A provides Poisson estimates from equation (1) in Columns 1, 2, 5, 6, 9, and 10; from equation (2) in Columns 3, 4, 7, 8, 11, and 12. Controls are the 2014-2018 opioid overdose rates, quintile dummies related to the opioid overdose rate, share Black, share White, share Hispanic, share ages 25-44, and urbanicity. Panel B shows p-values from statistical tests for the null hypothesis that the two listed estimates are equal.