

Table A1

Replicating the Core RAND Results

	<u>Share with Any Medical Expenditures</u>		<u>Share with Hospital Admissions</u>		<u>Medical Spending (Share of FC Plan)</u>	
	RAND Results (1)	Replication (2)	RAND Results (3)	Replication (4)	RAND Results (5)	Replication (6)
Free Care	86.8%	86.9%	10.3%	10.2%	100%	100%
25% Coinsurance	78.7%	78.9%	8.4%	8.4%	85%	84%
50% Coinsurance	77.2%	77.3%	7.2%	7.1%	90%	89%
95% Coinsurance	67.7%	67.6%	7.9%	7.9%	69%	69%
Individual Deductible	72.3%	72.5%	9.6%	9.6%	81%	80%
p-value: all coefficients equal	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0030	0.0012
p-value: free care vs. 95% coinsurance	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	<u>Inpatient Spending (Share of FC Plan)</u>		<u>Outpatient Spending (Share of FC Plan)</u>		<u>N (Individual-Year Observations)</u>	
	RAND Results (7)	Replication (8)	RAND Results (9)	Replication (10)	RAND Results (11)	Replication (12)
Free Care	100%	100%	100%	100%	6,822	6,840
25% Coinsurance	91%	91%	76%	77%	4,065	4,063
50% Coinsurance	110%	108%	66%	65%	1,401	1,401
95% Coinsurance	77%	77%	60%	60%	3,727	3,724
Individual Deductible	91%	91%	69%	69%	4,175	4,175
p-value: all coefficients equal	0.3926	0.3720	< 0.0001	< 0.0001	--	--
p-value: free care vs. 95% coinsurance	0.0270	0.0458	< 0.0001	< 0.0001	--	--

Table Notes: The columns labeled "RAND Results" report results from Table 3.2 of Newhouse et al. 1993. The medical, inpatient, and outpatient spending means adjust for inflation using the CPI-U; these means are reported as shares of the free care plan mean because we were unable to determine the exact CPI-U adjustment used in Newhouse et al. The hypothesis tests cluster standard errors by family. In order to match the Newhouse et al. figures, the 25% coinsurance rate sample here includes 480 individuals who faced a coinsurance rate of 50% for dental and mental health services and 25% for all other services. For the purposes of the replication exercise here, we follow the the original RAND approach and exclude dental and outpatient mental health spending for medical spending; therefore the results here differ from the total spending results in Table 2 which include these categories.

Table A2

Quantile Regressions (Total Spending)

	10th pctile	20th pctile	30th pctile	40th pctile	50th pctile	60th pctile	70th pctile	80th pctile	90th pctile
Panel A: Quantile Regression Results - Total Spending									
Constant (Free Care Plan, N = 6,840)	79 (9)	230 (12)	366 (13)	523 (17)	731 (22)	1013 (31)	1490 (55)	2577 (124)	5478 (217)
25% Coins (N = 2,361)	-65 (10)	-145 (20)	-167 (20)	-220 (29)	-301 (33)	-407 (47)	-559 (87)	-919 (173)	-1859 (371)
Mixed Coins (N = 1,702)	-65 (11)	-116 (20)	-152 (20)	-206 (26)	-288 (36)	-389 (50)	-570 (90)	-1041 (192)	-1645 (447)
50% Coins (N = 1,401)	-65 (10)	-160 (17)	-203 (23)	-257 (33)	-339 (37)	-461 (53)	-692 (88)	-1215 (169)	-2488 (416)
Individual Deductible (N = 4,175)	-65 (10)	-160 (14)	-238 (16)	-285 (23)	-350 (32)	-403 (43)	-499 (75)	-697 (176)	-1164 (324)
95% Coins (N = 3,724)	-65 (10)	-160 (14)	-256 (16)	-351 (21)	-465 (27)	-604 (39)	-832 (70)	-1410 (153)	-2415 (321)
Panel B: Estimated Effects as Share of Free Care Plan Spending									
25% Coins (N = 2,361)	-83%	-63%	-46%	-42%	-41%	-40%	-38%	-36%	-34%
Mixed Coins (N = 1,702)	-83%	-50%	-42%	-39%	-39%	-38%	-38%	-40%	-30%
50% Coins (N = 1,401)	-83%	-70%	-56%	-49%	-46%	-46%	-46%	-47%	-45%
Individual Deductible (N = 4,175)	-83%	-70%	-65%	-55%	-48%	-40%	-33%	-27%	-21%
95% Coins (N = 3,724)	-83%	-70%	-70%	-67%	-64%	-60%	-56%	-55%	-44%

Table Notes: The omitted category is the free care plan. Standard errors are in parentheses below the coefficients. Standard errors are calculated based on 500 bootstraps clustered on family. Because assignment to plans was random only conditional on site and start month (Newhouse et al., 1993), all regressions include site by start month dummy variables, as well as year fixed effects; spending variables are in 2011 dollars, adjusted for inflation using the CPI-U. Site by start month and year dummy variables are demeaned so that the coefficients reflect estimates for the "average" site-month-year mix.

Table A3
Covariate Balance at Assignment

	Free Care	25% Coins	Mixed Coins	50% Coins	Individual Deductible	95% Coins	FC vs. 95%	p-values		
								FC vs. 25%	25% vs. 95%	all equal
Panel A: Covariates Included in Finite Selection Model										
log family size	0.88	0.85	0.82	0.87	0.87	0.89	0.84	0.55	0.47	0.83
share (of family) female	0.51	0.55	0.53	0.55	0.53	0.55	0.11	0.25	0.98	0.65
share (of family) age 0 to 5	0.10	0.11	0.08	0.08	0.10	0.09	0.72	0.42	0.31	0.68
share (of family) age 6 to 17	0.19	0.18	0.19	0.20	0.18	0.19	0.70	0.69	0.52	0.96
share (of family) age 18 to 44	0.48	0.46	0.51	0.49	0.49	0.50	0.38	0.55	0.23	0.79
age data missing	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.58	0.61	0.96
all family members white	0.83	0.81	0.82	0.84	0.84	0.82	0.59	0.65	0.96	0.95
race data missing	0.02	0.01	0.01	0.01	0.02	0.02	0.90	0.31	0.30	0.49
male family head is a high school graduate	0.33	0.35	0.39	0.54	0.40	0.40	0.06	0.62	0.37	0.04
male family head beyond high school	0.35	0.39	0.32	0.24	0.34	0.32	0.40	0.41	0.17	0.39
male family head education data missing	0.25	0.27	0.31	0.33	0.27	0.28	0.36	0.54	0.93	0.54
female family head is a high school graduate	0.40	0.43	0.43	0.40	0.43	0.40	0.99	0.51	0.54	0.92
female family head beyond high school	0.30	0.29	0.27	0.26	0.28	0.30	0.97	0.94	0.92	0.98
female family head education data missing	0.16	0.14	0.15	0.11	0.16	0.13	0.20	0.56	0.72	0.67
log family income (adjusted for family size)	9.31	9.36	9.29	9.35	9.31	9.30	0.87	0.33	0.29	0.90
family income missing	0.06	0.09	0.06	0.03	0.07	0.08	0.53	0.26	0.52	0.47
anyone in family working	0.83	0.85	0.82	0.92	0.84	0.85	0.51	0.58	0.97	0.30
work data missing	0.02	0.02	0.01	0.02	0.02	0.03	0.34	0.59	0.59	0.43
maximum hourly wage of family members	5.07	5.18	4.96	5.01	5.42	5.16	0.67	0.71	0.95	0.86
hourly wage data missing	0.20	0.21	0.22	0.12	0.20	0.18	0.48	0.82	0.48	0.21
family had preexisting coverage	0.85	0.84	0.84	0.89	0.86	0.89	0.06	0.84	0.13	0.37
preexisting coverage data missing	0.06	0.05	0.03	0.04	0.05	0.06	0.82	0.44	0.57	0.07
share of family members reporting excellent health	0.45	0.52	0.44	0.55	0.47	0.49	0.14	0.06	0.45	0.12
share of family members reporting very good health	0.41	0.36	0.44	0.32	0.40	0.39	0.49	0.17	0.43	0.22
share of family members reporting fair/poor health	0.00	0.00	0.00	0.01	0.00	0.00	0.45	0.29	0.32	0.69
share of family members reporting frequent pain	0.19	0.16	0.20	0.18	0.20	0.18	0.66	0.12	0.28	0.60
pain data missing	0.00	0.01	0.00	0.01	0.00	0.00	0.34	0.43	0.34	0.44
share of family members worried about health	0.25	0.20	0.26	0.22	0.26	0.23	0.24	0.10	0.46	0.23
worry data missing	0.00	0.00	0.00	0.01	0.00	0.00	0.45	0.29	0.32	0.69
share of family members hospitalized last year	0.10	0.07	0.12	0.09	0.12	0.12	0.10	0.05	0.00	0.02
hospitalization data missing	0.01	0.01	0.01	0.00	0.01	0.02	0.09	0.49	0.65	0.27
average number of med visits last year for adults	5.29	4.41	5.32	4.37	5.53	5.23	0.89	0.06	0.08	0.14
med visits for adults data missing	0.39	0.36	0.34	0.38	0.37	0.32	0.32	0.40	0.95	0.53
average number of med visits last year for kids	3.52	3.12	3.28	3.30	3.88	3.35	0.61	0.24	0.52	0.44
med visits for kids data missing	0.78	0.79	0.78	0.78	0.78	0.79	0.89	0.83	0.92	1.00
Joint F-test										0.24
Panel B: Variances Not Included in the Finite Selection Model										
had private (non-work) insurance	0.25	0.23	0.19	0.22	0.25	0.26	0.65	0.69	0.47	0.44
private insurance data missing	0.07	0.06	0.06	0.06	0.06	0.09	0.25	0.40	0.08	0.22
had employer-provided insurance	0.73	0.75	0.75	0.79	0.76	0.79	0.04	0.53	0.36	0.43
employer-provided insurance data missing	0.08	0.06	0.05	0.07	0.06	0.09	0.43	0.29	0.11	0.09
had public insurance	0.08	0.10	0.09	0.07	0.10	0.09	0.77	0.51	0.67	0.93
public insurance data missing	0.06	0.05	0.03	0.04	0.04	0.06	0.94	0.21	0.26	0.08
share of family members that grew up in a city	0.26	0.28	0.27	0.19	0.27	0.23	0.18	0.59	0.15	0.09
share of family members that grew up in a suburb	0.09	0.06	0.09	0.06	0.09	0.09	0.76	0.09	0.17	0.44
share of family members that grew up in a town	0.42	0.41	0.40	0.55	0.39	0.45	0.32	0.79	0.33	0.03
background info missing	0.01	0.01	0.00	0.00	0.02	0.02	0.02	0.54	0.13	0.04
share of family members with a regular doctor	0.96	0.95	0.95	0.99	0.94	0.98	0.36	0.63	0.30	0.33
doctor data missing	0.32	0.32	0.32	0.29	0.31	0.32	0.88	0.80	0.88	0.01
share of family members that had a medical exam in previous year	0.51	0.53	0.50	0.61	0.49	0.53	0.58	0.72	0.95	0.19
medical exam data missing	0.01	0.03	0.02	0.00	0.01	0.02	0.10	0.15	0.52	0.12
log prior year medical expenditures	4.13	3.89	4.24	4.23	4.10	4.24	0.39	0.17	0.06	0.47
medical expenditures data missing	0.20	0.22	0.18	0.12	0.22	0.21	0.69	0.56	0.79	0.24
share of family members with any routine dental care last year	0.73	0.68	0.69	0.81	0.74	0.70	0.31	0.27	0.76	0.19
routine dental care data missing	0.15	0.16	0.16	0.19	0.21	0.15	0.96	0.86	0.83	0.21
share of family members with any special dental care last year	0.61	0.55	0.63	0.68	0.57	0.61	0.87	0.19	0.17	0.27
special dental care data missing	0.15	0.16	0.16	0.19	0.21	0.15	0.96	0.86	0.83	0.21
Joint F-test										0.02
N (families assigned)	564	170	209	77	495	372				

Table Notes: The dependent variable is given in the left hand column. Regressions are run at the family level and include site by contact month fixed effects (see Table 1 for definition and discussion of "contact month"). Coefficients are plan averages adjusted for the site by contact month fixed effects (i.e. coefficients on plan dummies from regressions without a constant). Site by contact month dummy variables are demeaned so that the coefficients reflect estimates for the "average" site-month mix. Data on refusals at the Dayton site were lost, so regressions exclude Dayton observations (1,137 (20%) of all enrollees). Variables are parameterized as in the Finite Selection Model; for details, see Newhouse et al. (1993, Appendix B).

Table A4
Covariate Balance at Completion

	Free Care	25% Coins	Mixed Coins	50% Coins	Individual Deductible	95% Coins	p-values			
							FC vs. 95%	FC vs. 25%	25% vs. 95%	all equal
Panel A: Pre-Experiment Utilization Variables										
hospitalized in year before expt	0.11	0.10	0.10	0.08	0.11	0.09	0.42	0.73	0.73	0.73
hospitalization data missing	0.03	0.02	0.01	0.02	0.02	0.02	0.08	0.03	0.56	0.15
had a regular doctor	0.92	0.93	0.92	0.93	0.91	0.91	0.61	0.83	0.55	0.92
doctor data missing	0.22	0.22	0.23	0.21	0.22	0.21	0.13	0.90	0.43	0.00
had a medical exam in year before expt	0.50	0.53	0.45	0.53	0.43	0.49	0.54	0.38	0.20	0.02
medical exam data missing	0.04	0.02	0.04	0.02	0.03	0.04	0.94	0.22	0.36	0.57
num doc visits in year before expt	4.98	4.35	4.82	3.96	5.15	4.45	0.09	0.10	0.77	0.03
doc visits data missing	0.19	0.17	0.16	0.16	0.19	0.19	0.91	0.31	0.39	0.59
log medcl expenditures in year before expt	3.45	3.47	3.41	3.34	3.46	3.32	0.24	0.88	0.26	0.73
medical expenditures data missing	0.38	0.39	0.33	0.32	0.38	0.39	0.48	0.76	0.81	0.17
any routine dental visits in year before expt	0.73	0.70	0.71	0.78	0.71	0.71	0.71	0.53	0.76	0.72
routine dental visits data missing	0.39	0.33	0.38	0.37	0.41	0.36	0.33	0.10	0.41	0.26
any nonroutine dental visits in year before expt	0.54	0.50	0.58	0.59	0.53	0.54	1.00	0.29	0.33	0.49
nonroutine dental visits data missing	0.39	0.33	0.38	0.37	0.41	0.36	0.33	0.10	0.41	0.26
Joint F-test										< 0.0001
Panel B: Non-Utilization-Related Baseline Covariates										
female	0.51	0.51	0.53	0.52	0.54	0.52	0.49	1.00	0.58	0.58
age 6 to 17	0.29	0.27	0.33	0.28	0.25	0.30	0.72	0.51	0.38	0.04
age 18 to 44	0.42	0.45	0.44	0.44	0.46	0.43	0.39	0.07	0.33	0.13
age 45 +	0.17	0.13	0.12	0.15	0.16	0.15	0.42	0.09	0.35	0.21
white	0.85	0.82	0.85	0.87	0.85	0.81	0.05	0.29	0.57	0.24
race data missing	0.47	0.45	0.46	0.45	0.42	0.46	0.55	0.24	0.56	0.08
hs graduate	0.21	0.23	0.24	0.22	0.25	0.21	0.82	0.40	0.56	0.13
education beyond hs	0.18	0.22	0.18	0.19	0.20	0.20	0.54	0.16	0.40	0.74
education data missing	0.01	0.01	0.00	0.01	0.01	0.01	0.63	0.46	0.31	0.08
grew up in a city	0.27	0.26	0.28	0.20	0.28	0.27	0.84	0.80	0.94	0.25
grew up in a suburb	0.11	0.10	0.10	0.12	0.11	0.11	0.79	0.52	0.69	0.93
grew up in a town	0.38	0.38	0.37	0.47	0.37	0.37	0.58	0.90	0.76	0.10
background data missing	0.40	0.40	0.42	0.39	0.37	0.41	0.78	0.97	0.85	0.37
log baseline family income	8.98	9.13	8.99	9.16	9.05	9.02	0.70	0.07	0.22	0.25
log baseline family income squared	82.48	84.36	82.36	84.37	83.26	82.63	0.90	0.09	0.17	0.42
family income data missing	0.05	0.07	0.03	0.03	0.06	0.07	0.54	0.65	1.00	0.42
anyone in family working at baseline	0.89	0.91	0.84	0.92	0.88	0.88	0.81	0.33	0.30	0.32
work data missing	0.01	0.01	0.01	0.00	0.01	0.00	0.02	0.29	0.77	0.05
insured at baseline	0.86	0.88	0.86	0.89	0.89	0.89	0.42	0.49	0.99	0.90
insurance data missing	0.06	0.03	0.03	0.03	0.04	0.05	0.34	0.02	0.14	0.05
employer-provided insurance	0.59	0.58	0.58	0.64	0.62	0.59	0.92	0.72	0.79	0.90
employer-provided insurance data missing	0.27	0.24	0.24	0.25	0.25	0.27	0.92	0.01	0.03	0.09
private insurance	0.14	0.14	0.16	0.09	0.15	0.16	0.44	0.92	0.66	0.70
private insurance data missing	0.27	0.24	0.24	0.24	0.26	0.27	0.86	0.01	0.04	0.02
public insurance	0.09	0.08	0.07	0.08	0.07	0.07	0.46	0.59	0.88	0.93
public insurance data missing	0.05	0.03	0.03	0.03	0.04	0.05	0.43	0.02	0.13	0.08
excellent health at baseline	0.51	0.53	0.50	0.54	0.50	0.50	0.85	0.58	0.51	0.95
good health at baseline	0.38	0.37	0.42	0.35	0.40	0.40	0.53	0.66	0.38	0.66
health status data missing	0.05	0.03	0.03	0.04	0.04	0.05	0.42	0.04	0.19	0.17
experienced pain at baseline	0.16	0.16	0.17	0.15	0.16	0.17	0.78	0.67	0.53	0.95
pain data missing	0.05	0.04	0.03	0.04	0.04	0.05	0.41	0.17	0.46	0.36
worried about health at baseline	0.21	0.19	0.23	0.18	0.21	0.19	0.31	0.52	0.87	0.56
worry data missing	0.05	0.03	0.03	0.04	0.04	0.05	0.41	0.04	0.19	0.16
Joint F-test										< 0.0001
Joint F-test (both panels)										< 0.0001
N (number of individuals completing)	1,799	596	450	350	1,119	958				

Table Notes: The dependent variable is given in the left hand column. Regressions include all individuals who enrolled in the experiment and did not attrit. Coefficients are plan averages adjusted for the site by start month fixed effects (i.e. coefficients on plan dummies from regressions without a constant). Covariates are measured at baseline. Because assignment to plans was random only conditional on site and start month (Newhouse et al., 1993), all regressions include site by start month dummy variables. Site by start month dummy variables are demeaned so that the coefficients reflect estimates for the "average" site-month mix. Education measures are available only for individuals age 18 or older. Log income and log medical expenditures are defined as log(variable + 1) to accommodate values of zero.

Table A5

Sensitivity of Results to Extreme Worst-Case Bounds

	<u>Total Spending</u>			<u>Inpatient Spending</u>		<u>Outpatient Spending</u>		
	Share with Any (1)	OLS (Levels) (2)	OLS (Logs) (3)	Share with Any (4)	OLS (Levels) (5)	Share with Any (6)	OLS (Levels) (7)	OLS (Logs) (8)
Panel A: 95% coinsurance plan vs. free care (N = 10,564)								
(1) Baseline specification (from Table 2)	-0.170 (0.015)	-845 (119)	-1.381 (0.096)	-0.024 (0.007)	-217 (91)	-0.171 (0.016)	-629 (50)	-1.361 (0.093)
(2) Extreme bounds + adjustment for underreporting	0.022 (0.018)	939 (159)	0.084 (0.129)	NA	NA	0.021 (0.018)	372 (81)	-0.020 (0.121)
Panel B: 25% coinsurance plan vs. free care (N = 9,201)								
(1) Baseline specification (from Table 2)	-0.079 (0.015)	-648 (152)	-0.747 (0.095)	-0.022 (0.009)	-229 (116)	-0.078 (0.015)	-420 (62)	-0.719 (0.093)
(2) Extreme bounds + adjustment for underreporting	0.03 (0.017)	524 (177)	0.20 (0.117)	NA	NA	0.03 (0.02)	219 (83)	0.14 (0.11)
Panel C: 95% coinsurance plan vs. 25% coinsurance plan (N = 6,085)								
(1) Baseline specification (from Table 2)	-0.091 (0.020)	-197 (160)	-0.633 (0.120)	-0.002 (0.009)	12 (122)	-0.093 (0.020)	-209 (1)	-0.641 (0.117)
(2) Extreme bounds + adjustment for underreporting	0.167 (0.026)	1745 (186)	1.217 (0.168)	NA	NA	0.165 (0.027)	893 (91)	1.073 (0.159)

Table Notes: Table reports coefficients on plan dummies; the omitted category is the free care plan. The dependent variable is given in the column headings. Standard errors are in parentheses below the coefficients. Standard errors are clustered on family. Because assignment to plans was random only conditional on site and start month (Newhouse et al., 1993), all regressions include site by start month dummy variables, as well as year fixed effects to adjust for inflation. Log variables are defined as $\log(\text{var} + 1)$ to accommodate zero values. Level variables are adjusted for inflation using the CPI-U (and are reported in 2011 dollars). "Extreme bounds" are calculated following Manski (1990). Specifically, for each year in which an individual should have been but was not present in the experiment (due to refusal or attrition), we impute the values that would minimize the treatment effect. For binary outcomes (measures of whether the individual has any spending), we impute zeros for individuals absent from the lower cost sharing plans and ones for individuals absent from the higher cost sharing plans. For continuous outcomes (e.g., total spending), we impute zeros for individuals absent from the lower cost sharing plans and the 95th percentile of the sample distribution for individuals not participating in the higher cost sharing plans. While it is theoretically possible that non-participants in the higher cost-sharing plans could have had even higher (average) spending than the 95th percentile, it seems extremely unlikely, and so we view this approach as providing worst case bounds for the continuous as well as the binary outcomes. Adjustment for under-reporting is described in text.