GR 6307
Public Economics and Development

3. Anti-Poverty Programs: Reaching the Poor

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Outline

Motivating Facts

Theory

Evidence from Rich Countries

Targeting in Developing Countries: Who gets the Benefit?

Transfer Design: What is the Benefit?

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Targeting in Developing Countries: Who gets the Benefit?

Cohen Dupas & Schaner (AER 2015) *Price Subsidies, Diagnostic Tests, and Targeting of Malaria Treatment: Evidence from a Randomized Controlled Trial*

Cohen et al (2015): Overview

- Usually, the targeting tradeoff is that people who know they are ineligible may try to mimic the deserving types in order to gain access to the transfer.
- What if incentives are aligned (government and households agree on who should receive the transfer) but households don't know whether they're eligible?
- Here: Malaria treatments: artemisinin combination therapies (ACT)
  - Huge benefits if have malaria.
  - no direct benefits if don't have malaria, people don't learn real reason they're sick, speeds up development of parasite's resistence.
  - But people who are sick don't know for sure whether they have malaria (or something else) so many people take malaria treatments just in case.
- Experiment in Kenya to test impact of
  - better diagnosis technology
  - subsidies for ACTs

Cohen et al (2015): Setting

- Malaria causes 200 million illnesses, kills 600K people a year
- Many countries (ncluding Kenya) provide ACTs for free at public health facilities if diagnosed with malaria. But...
  - diagnosis often incorrect
  - stockouts common
  - Have to pay fees, travel far, line up, etc...
- Many households go to private drugstores to get ACTs or other over-the-counter medications (40–97% of the market!)
- Large subsidies to ACTs to improve access. Subsidy $\sim 95\%$ of cost

Cohen et al (2015): Model

- When households receive an illness shock they pick an action

$$a \in \begin{cases} h & \text{seek diagnosis at a formal health facility} \\ s & \text{buy ACTs at a shop} \\ n & \text{buy non-ACT drugs or do nothing} \end{cases}$$

- Households who fall ill form a subjective probability that the illnes is malaria with probability π

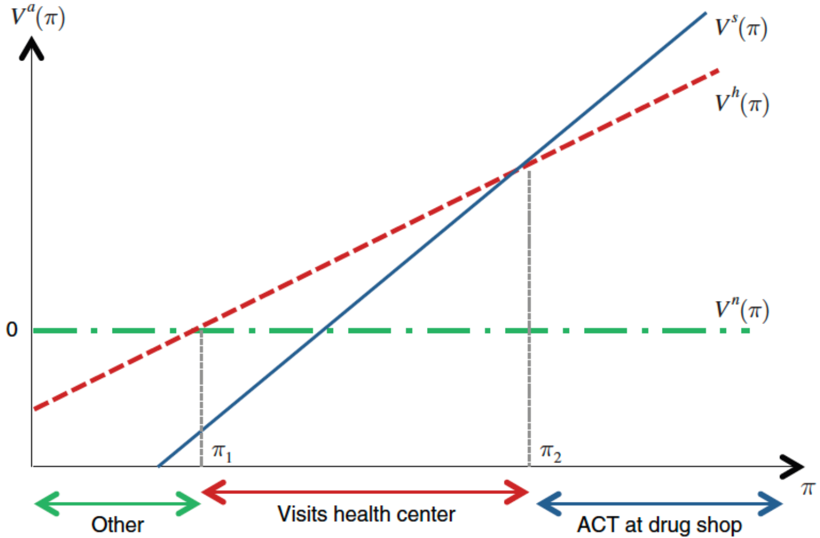
$$\begin{aligned} V^a(\pi) &= \pi\left[U_P^a(\pi) - p_P^a(\pi)\right] + (1-\pi)\left[U_N^a(\pi) - p_N^a(\pi)\right] \\ &= \pi V_P^a(\pi) + (1-\pi) V_N^a(\pi) \end{aligned}$$

where P denotes malaria-positive, N malaria negative.
- Assume value of acting increasing with π: $\partial\left(V^a(\pi) - V^n(\pi)\right)/\partial\pi > 0$ for $a \in \{h, s\}$
- Go to the drug shop iff

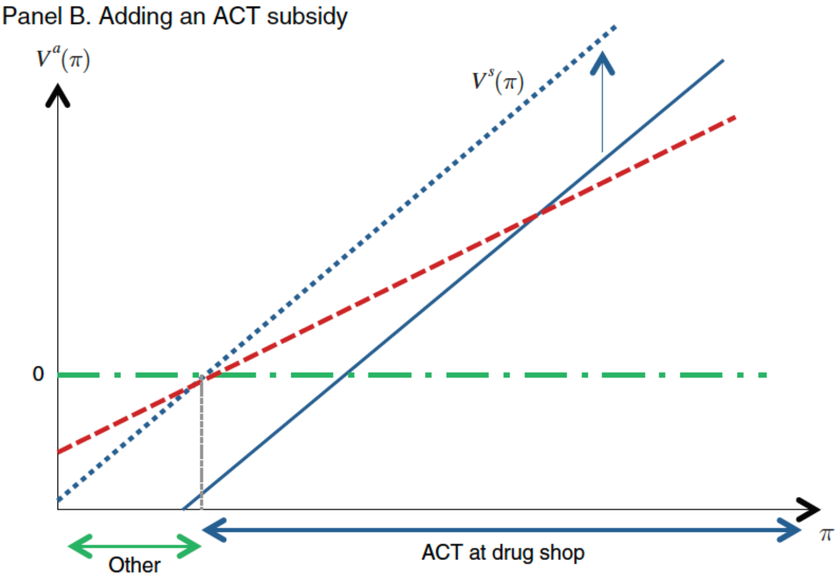
$$V^s(\pi) > \max\left\{V^h(\pi), V^n(\pi)\right\}$$

Cohen et al (2015): Model

Panel A. No ACT subsidy



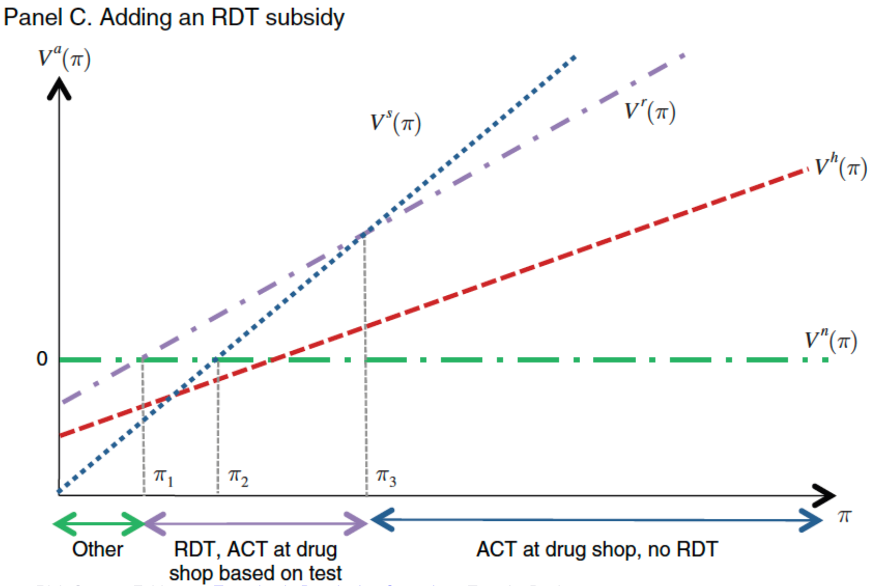
Cohen et al (2015): Adding an ACT Subsidy



Cohen et al (2015): Model

- Effects of subsidy:
  - More access: More people get ACTs
  - Worse targeting: People induced to use ACTs have lower π
  - Better targeting possible if lots of poor people with high π can't afford ACTs.
- What about Retail Diagnosis Test (RDT) to improve accuracy of π?
  - introduce $V^r(\pi)$: Value of taking the RDT and then getting ACT if positive.
  - $V^r(\pi) > V^s(\pi)$ at low π since V^s relatively more attractive as π increases.

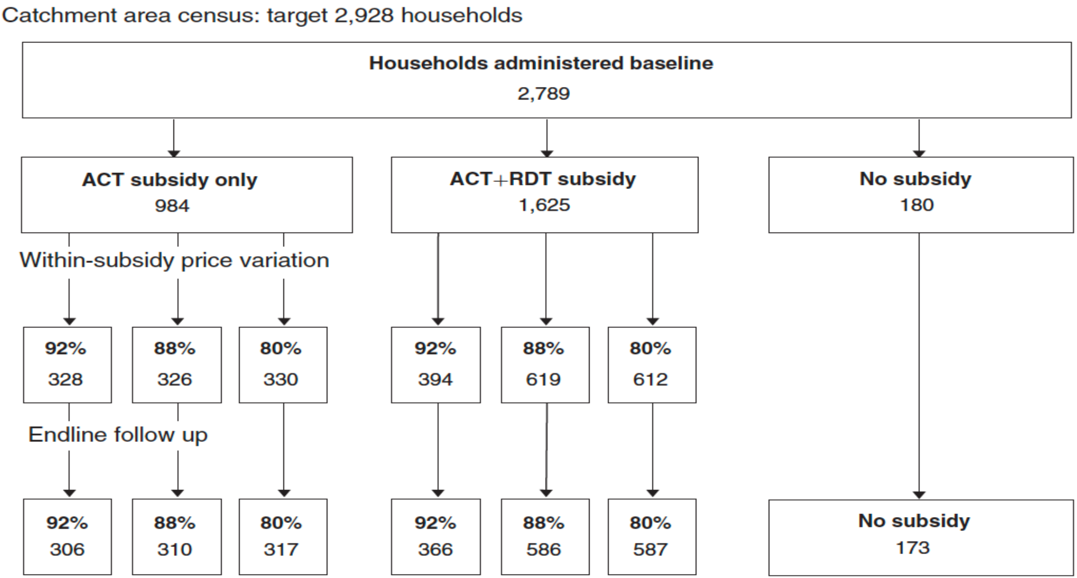
Cohen et al (2015): Effect of RDT



Cohen et al (2015): Experimental Design

- Experiment in Western Kenya in May–December 2009
- Sample 4 rural drug shops. Sample all households in 4 km catchment radius
- Ecery household interviewed for baseline survey
- At the end of the interview, households get 2 ACT vouchers and 2 RDT vouchers if applicable.
- Vouchers redeemable at the local drug shop
- Enumerators explain what RDT is and how it works

Cohen et al (2015): Experimental Design



Cohen et al (2015): Balance

	Control group mean (1)	92 percent ACT subsidy (T1) (2)	88 percent ACT subsidy (T2) (3)	80 percent ACT subsidy (T3) (4)	RDT subsidy (T4) (5)	Joint test: all subsidies = 0 (6)	Observations (7)
		Regression coefficients and standard errors					
Characteristics of interviewed household head							
Female	0.867	0.017	0.029	0.040	0.010	1.25	2,789
	[0.341]	(0.029)	(0.028)	(0.028)	(0.012)	{0.287}	
Age (years)	41.7	−1.98	−3.22**	−2.44*	0.185	1.61	2,646
	[17.3]	(1.46)	(1.44)	(1.45)	(0.626)	{0.170}	
Education (years)	5.10	0.141	0.381	0.151	0.169	1.17	2,774
	[4.00]	(0.343)	(0.341)	(0.342)	(0.161)	{0.323}	
Literate	0.575	0.047	0.050	0.027	0.000	0.621	2,782
	[0.496]	(0.042)	(0.042)	(0.042)	(0.020)	{0.647}	
Married	0.783	−0.015	0.004	0.006	−0.015	0.514	2,784
	[0.413]	(0.035)	(0.035)	(0.034)	(0.016)	{0.725}	
Subsistence farmer	0.589	0.052	0.039	0.059	−0.005	0.612	2,787
	[0.493]	(0.042)	(0.042)	(0.042)	(0.019)	{0.654}	
Number dependents	4.12	−0.263	−0.096	−0.077	0.021	0.809	2,663
	[2.78]	(0.223)	(0.221)	(0.222)	(0.098)	{0.519}	

Cohen et al (2015): Balance

	Control group mean (1)	92 percent ACT subsidy (T1) (2)	88 percent ACT subsidy (T2) (3)	80 percent ACT subsidy (T3) (4)	RDT subsidy (T4) (5)	Joint test: all subsidies = 0 (6)	Observations (7)
		Regression coefficients and standard errors					
Household characteristics							
Number members	5.48	−0.354	−0.233	−0.197	0.024	0.885	2,789
	[2.77]	(0.217)	(0.214)	(0.215)	(0.092)	{0.472}	
Fraction adults	0.623	−0.035*	−0.048***	−0.024	0.002	2.23*	2,337
(ages 14+)	[0.235]	(0.020)	(0.019)	(0.020)	(0.009)	{0.063}	
Acres land	2.72	−0.660**	−0.601*	−0.571*	0.197*	1.63	2,250
	[3.69]	(0.330)	(0.327)	(0.324)	(0.117)	{0.164}	
Distance from	1.68	0.012	0.012	0.002	0.010	0.523	2,788
drug shop (km)	[0.917]	(0.023)	(0.022)	(0.022)	(0.011)	{0.719}	
Distance from	6.57	−0.018	−0.036	−0.043	0.044*	0.796	2,785
closest clinic (km)	[2.47]	(0.060)	(0.059)	(0.059)	(0.027)	{0.528}	
Baseline malaria knowledge and health practices							
Number bednets	1.77	−0.031	−0.060	0.028	0.005	0.476	2,784
	[1.43]	(0.120)	(0.121)	(0.120)	(0.057)	{0.753}	
Share HH members	0.561	0.023	0.006	0.030	−0.012	0.612	2,661
slept under net	[0.397]	(0.034)	(0.034)	(0.034)	(0.017)	{0.654}	
Only mosquitoes	0.517	0.045	0.011	0.024	−0.020	0.842	2,789
transmit malaria	[0.501]	(0.042)	(0.042)	(0.042)	(0.020)	{0.499}	

Cohen et al (2015): Balance

Heard of ACTs	0.399	0.016	0.017	0.030	0.001	0.197	2,771
	[0.491]	(0.042)	(0.041)	(0.042)	(0.020)	{0.940}	
ACT is preferred antimalarial	0.207	−0.023	−0.029	−0.049	−0.002	0.978	2,771
	[0.406]	(0.034)	(0.034)	(0.033)	(0.015)	{0.418}	
Heard of RDTs	0.128	0.039	0.020	0.021	−0.011	0.682	2,786
	[0.335]	(0.030)	(0.029)	(0.029)	(0.014)	{0.604}	
Treats water regularly	0.408	−0.036	−0.018	0.004	0.023	1.13	2,779
	[0.493]	(0.041)	(0.041)	(0.041)	(0.019)	{0.339}	
Number of presumed malaria episodes last month	1.20	0.015	−0.008	−0.029	0.033	0.200	2,789
	[1.22]	(0.102)	(0.103)	(0.103)	(0.050)	{0.939}	
Cost per episode (among those seeking care)							
Total cost (US $)	1.63	0.140	−0.040	−0.217	0.131	0.725	1,319
	[1.86]	(0.293)	(0.250)	(0.238)	(0.174)	{0.575}	
Sample size in treatment	180	328	326	330	1,625		

Notes: The first column shows average values of characteristics for the control group. Columns 2–5 show regression coefficients and standard errors on indicated treatment groups (the omitted category is the control group). All regressions include a full set of strata dummies. Column 6 shows *F*-statistics and *p*-values from a test of whether the three ACT subsidy coefficients are jointly equal to zero. Standard deviations are in brackets, standard errors are in parentheses, and *p*-values are in braces. All tests are based on heteroskedasticity robust standard errors. The exchange rate at the time of the study was around 78 Ksh to US$1.

Cohen et al (2015): Data

- 3 data sources

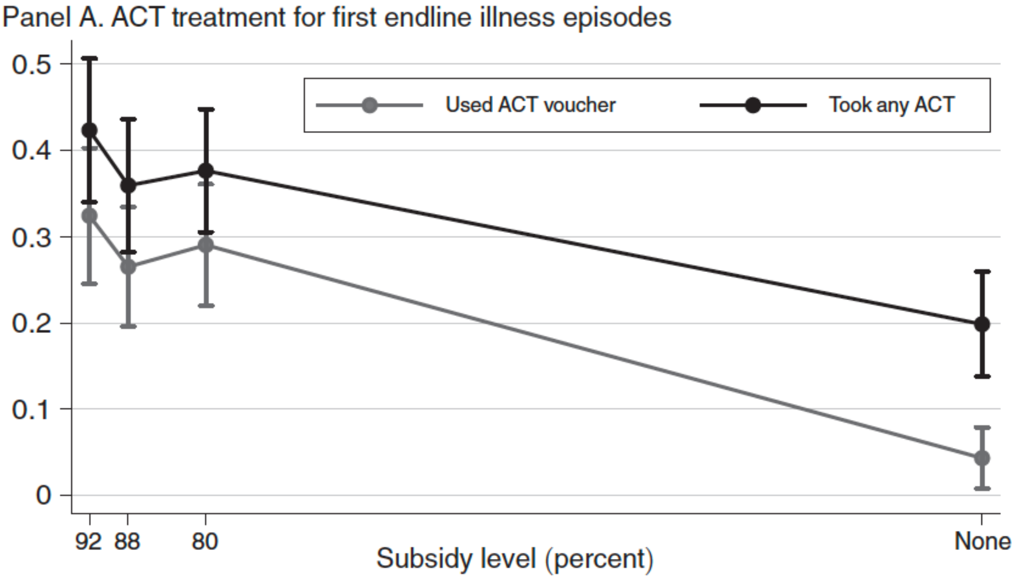
1. Administrative data from drug shop. Captured by surveyors posted at the 4 shops every single day. Contains 1,700 drug shop visits over 4 months.
   1.1 Also administer "surprise ADTs" to random subset of people who redeem ACT voucher (to measure true malarial status)
2. Endline survey data from 4 months after vouchers distributed. Includes recall data on all illnesses, where/what treatment sought.
3. Symptoms database: 1-year after vouchers, surveyors did unannounced household survey. Ask if anyone is ill and collect all symptoms and administer RDT. Use these to construct "predicted" malaria scores (proxy for π)

Cohen et al (2015): ACT Acces

$$y_{eh} = \delta + \mathbf{ACTsub}_h'\boldsymbol{\alpha} + \mathbf{x}_h'\gamma + \lambda_{strata} + \varepsilon_{eh}$$

	Took ACT (1)	Took ACT from drug shop (2)	Took ACT from health center (3)	Visited drug shop (4)	Visited health center (5)	Sought no care (6)	Took malaria test (7)	Took antibiotic (8)
Panel A. Pooled impact								
Any ACT subsidy	0.187***	0.222***	−0.038	0.167***	−0.079*	−0.096***	−0.014	−0.072**
	(0.038)	(0.031)	(0.030)	(0.046)	(0.042)	(0.036)	(0.038)	(0.034)
Panel B. Impact by subsidy level								
B1. ACT subsidy	0.225***	0.249***	−0.024	0.159***	−0.055	−0.110***	−0.031	−0.046
= 92 percent	(0.053)	(0.046)	(0.037)	(0.058)	(0.053)	(0.042)	(0.048)	(0.043)
B2. ACT subsidy	0.161***	0.217***	−0.056	0.167***	−0.070	−0.097**	−0.042	−0.062
= 88 percent	(0.050)	(0.043)	(0.037)	(0.058)	(0.052)	(0.042)	(0.047)	(0.040)
B3. ACT subsidy	0.178***	0.206***	−0.035	0.173***	−0.106**	−0.085*	0.023	−0.100***
= 80 percent	(0.048)	(0.042)	(0.035)	(0.054)	(0.047)	(0.045)	(0.046)	(0.038)
p-value: B1 = B2 = B3 = 0	0.000***	0.000***	0.498	0.004***	0.164	0.048**	0.533	0.066
p-value: B1 = B2 = B3	0.531	0.723	0.660	0.968	0.535	0.846	0.362	0.304
DV mean (control group)	0.190	0.071	0.119	0.488	0.286	0.226	0.214	0.185
Observations	631	631	631	631	631	631	631	631

Cohen et al (2015): Subsidy Level



Cohen et al (2015): Targeting

$$pos_h = \beta_0 + \beta_1 ACT88_h + \beta_2 ACT80_h + \varepsilon_h$$

TABLE 3—IMPACT OF RETAIL SECTOR ACT SUBSIDY ON ACT TARGETING

	Actual malaria status (1)	Predicted positivity (2)	Predicted positivity (3)
A. ACT subsidy = 88 percent	0.187**	0.112***	0.111**
	(0.081)	(0.042)	(0.053)
B. ACT Subsidy = 80 percent	0.182**	0.107**	0.040
	(0.084)	(0.043)	(0.052)
p-value: A = B = 0	0.038**	0.012**	0.104
p-value: A = B	0.955	0.906	0.179
DV mean (ACT 92 percent, no RDT)	0.563	0.424	0.422
Observations	190	189	178
Data source	Admin.	Admin.	Endline

Cohen et al (2015): Mechanism

	Used first voucher for patient under 14 (1)	Used first voucher for patient 14 or older (2)
Panel A. Does the ACT subsidy level reallocate ACTs across dosage groups?		
A. ACT subsidy = 88 percent	0.035	−0.057**
	(0.035)	(0.027)
B. ACT subsidy = 80 percent	0.031	−0.080***
	(0.034)	(0.026)
p-value: A = B = 0	0.540	0.007***
DV mean (ACT 92 percent, no RDT)	0.268	0.171
Observations	984	984
Subsample	All households	All households

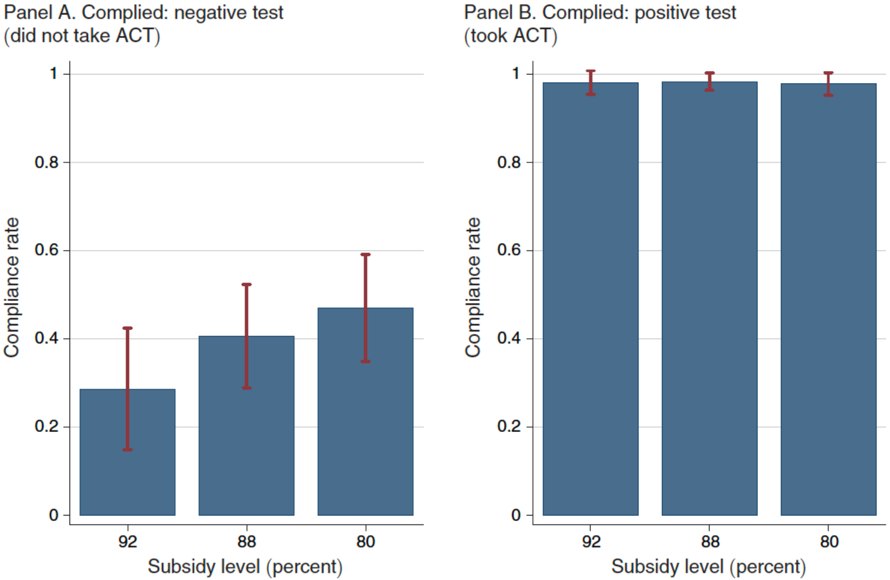
Cohen et al (2015): RDT

	Visited drug shop	Visited health center	Sought no care	Took malaria test	Took RDT test	Took microscopy test	Took ACT	Took antibiotic
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A. Across all ACT subsidy levels								
RDT subsidy	0.004	−0.013	0.010	0.216***	0.215***	−0.014	0.018	0.020
	(0.026)	(0.022)	(0.018)	(0.023)	(0.017)	(0.018)	(0.026)	(0.017)
DV mean (no RDT)	0.657	0.212	0.123	0.207	0.076	0.125	0.389	0.110
Panel B. By ACT subsidy level								
RDT subsidy × 92% ACT subsidy	−0.005	−0.018	0.029	0.258***	0.263***	−0.019	0.002	0.004
	(0.048)	(0.042)	(0.032)	(0.044)	(0.034)	(0.034)	(0.050)	(0.033)
RDT subsidy × 88% ACT subsidy	0.026	−0.045	0.007	0.252***	0.229***	0.000	0.042	−0.016
	(0.046)	(0.041)	(0.030)	(0.039)	(0.030)	(0.032)	(0.044)	(0.030)
RDT subsidy × 80% ACT subsidy	−0.012	0.023	−0.003	0.152***	0.166***	−0.021	0.016	0.070**
	(0.043)	(0.035)	(0.033)	(0.040)	(0.029)	(0.030)	(0.041)	(0.028)
88% ACT subsidy	−0.006	−0.002	0.014	−0.013	0.004	−0.016	−0.067	−0.011
	(0.058)	(0.052)	(0.038)	(0.048)	(0.032)	(0.041)	(0.058)	(0.038)
80% ACT subsidy	0.009	−0.041	0.020	0.050	0.028	0.007	−0.058	−0.047
	(0.055)	(0.047)	(0.040)	(0.049)	(0.032)	(0.040)	(0.056)	(0.035)
p-value: RDT terms jointly = 0	0.938	0.612	0.832	0.000***	0.000***	0.851	0.787	0.079*
DV mean (ACT 92%, No RDT)	0.667	0.222	0.104	0.194	0.069	0.125	0.444	0.125
Observations	1,993	1,993	1,993	1,993	1,993	1,993	1,993	1,993

Cohen et al (2015): RDT and targeting

		Surprise RDT reveals that patient is malaria-positive		
	Household sought treatment at drug shop (1)	Sample: patients who visited drug shop (2)	Sample: patients who bought subsidized ACT at drug shop (3)	Proportion that redeemed RDT voucher, conditional on seeking treatment at drug shop (4)
Panel A. Across all ACT subsidy levels				
RDT subsidy	0.025	0.009	0.081**	0.818
	(0.026)	(0.039)	(0.039)	
Panel B. By ACT subsidy level				
RDT subsidy × 92% ACT subsidy	0.028	0.127*	0.163**	0.792
	(0.045)	(0.070)	(0.070)	
RDT subsidy × 88% ACT subsidy	0.052	−0.058	0.018	0.837
	(0.044)	(0.063)	(0.062)	
RDT subsidy × 80% ACT subsidy	−0.010	−0.047	0.061	0.818
	(0.047)	(0.068)	(0.067)	
DV mean (ACT 92%, no RDT)	0.429	0.556	0.563	—
Observations	1,776	755	687	573

Cohen et al (2015): RDT compliance



Cohen et al (2015): Alternative Subsidy Schemes

	No subsidy (1)	ACT 92 percent subsidy (2)	ACT 88 percent subsidy (3)	ACT 80 percent subsidy (4)	ACT 80 percent + RDT subsidy (5)
Experimental estimates of access and drug shop targeting					
Total share taking ACT	0.190	0.415	0.351	0.369	0.385
Share taking ACT at drug shop	0.071	0.320	0.288	0.278	0.303
Share taking ACT at health center	0.119	0.095	0.063	0.084	0.078
Targeting at drug shop	1.000	0.563	0.750	0.745	0.806
Assumptions for estimates of under- and over-treatment					
Share of illness episodes that are malaria[a]	0.386	0.386	0.386	0.386	0.386
Targeting at health center (medium)[b]	0.750	0.750	0.750	0.750	0.750
Targeting at health center (high)	1.000	1.000	1.000	1.000	1.000
Targeting at health center (low)	0.650	0.650	0.650	0.650	0.650
Under- and over-treatment: Preferred estimates (assuming medium targeting at health center)					
Overall targeting	0.844	0.606	0.750	0.747	0.795
Over-treatment	0.048	0.266	0.143	0.152	0.129
Under-treatment	0.583	0.347	0.317	0.287	0.207

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Targeting in Developing Countries: Who gets the Benefit?

Transfer Design: What is the Benefit?

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Transfer Design: What is the Benefit?

- Baird McIntosh & Özler (QJE 2011) *Cash or Condition? Evidence from a Cash Transfer Experiment*

Baird et al (2011): Overview

- Should cash transfers come with conditions?
  - CCT: Market failures lead to underinvestment in education/health, conditions make transfers easier to “sell” politically
  - UCT: Conditions uneffective, and very costly to enforce
- Conditions are common around the world (attend school, attend clinics for checkups, government work) but
  - are they effective at increasing targeted behavior?
  - What other behaviors do they end up distorting?
- Explore these questions in an experiment in Malawi

Baird et al (2011): Setting

- Work in Zomba District in southern Malawi
- Sample 176 of the 550 Enumeration Areas (EAs) in 3 strata. 29 in Zomba city 119 within 16 km, 28 “far rural”.
- Survey to get census of never-married females aged 13-22. Those in school at baseline (87%) are the target population for the study.
- Randomly sample, stratifying by age and stratum, to get 2,907 schoolgirls.

Baird et al (2011): Experiment

T1: CCT arm (46 EAs). 12/2007 & 1/2008. offered parents monthly transfer on condition regularly attend school. Transfer amount to the parent randomly varied, $4, $6, $8, $10/month, and to the schoolgirl $1, $2, $3, $4, $5. Paid school fees.

T2: UCT arm (27 EAs). Identical offers, but no requirement to attend school

- Controls: (88 EAs).
- Track attendance, other outcomes for 2008, 2009

Baird et al (2011): Attrition

	Dependent variable					
	(1)	(2)	(3)	(4)	(5)	(6)
	=1 if surveyed in Round 3	=1 if surveyed in all three Rounds	=1 if took educational tests	=1 if information found in Round 2 survey	=1 if information found in Round 3 school survey	=1 if legible ledger found
Conditional treatment	0.020	0.021	0.029*	0.033	−0.000	0.116*
	(0.015)	(0.030)	(0.016)	(0.024)	(0.027)	(0.064)
Unconditional treatment	0.021	0.030	0.035*	−0.029	0.014	0.061
	(0.019)	(0.024)	(0.020)	(0.053)	(0.028)	(0.077)
Mean in the control group	0.946	0.893	0.929	0.890	0.935	0.378
Number of observations	2,284	2,284	2,284	2,284	983	821
Prob $> F$(Conditional = Unconditional)	0.965	0.797	0.801	0.246	0.627	0.513

Baird et al (2011): Enrolment

Panel A: Program impacts on *self-reported* school enrollment								
	Dependent variable: =1 if enrolled in school during the relevant term							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Year 1: 2008			Year 2: 2009			Year 3: 2010	
	Term 1	Term 2	Term 3	Term 1	Term 2	Term 3	Total terms (6 terms)	Term 1, post-program
Conditional treatment	0.007	0.019*	0.041**	0.049***	0.056***	0.061***	0.233***	0.005
	(0.011)	(0.011)	(0.017)	(0.017)	(0.018)	(0.019)	(0.070)	(0.025)
Unconditional treatment	0.034***	0.051***	0.054***	0.072***	0.095***	0.101***	0.406***	0.074***
	(0.010)	(0.011)	(0.018)	(0.021)	(0.022)	(0.021)	(0.079)	(0.026)
Mean in the control group	0.958	0.934	0.900	0.831	0.800	0.769	5.191	0.641
Number of observations	2,087	2,087	2,086	2,087	2,087	2,087	2,086	2,086
Prob > *F*(Conditional = Unconditional)	0.006	0.012	0.460	0.299	0.102	0.098	0.038	0.028
Panel B: Program impacts on *teacher-reported* school enrollment								
Conditional treatment	0.043***	0.044***	0.061***	0.094**	0.132***	0.113***	0.535***	0.058*
	(0.015)	(0.016)	(0.018)	(0.041)	(0.035)	(0.039)	(0.129)	(0.033)
Unconditional treatment	0.020	0.038**	0.018	0.027	0.059	0.033	0.231*	0.001
	(0.015)	(0.017)	(0.023)	(0.038)	(0.037)	(0.039)	(0.136)	(0.036)
Mean in the control group	0.906	0.881	0.852	0.764	0.733	0.704	4.793	0.596
Number of observations	2,023	2,023	2,023	852	852	852	852	847
Prob > *F*(Conditional = Unconditional)	0.173	0.732	0.067	0.076	0.014	0.020	0.011	0.108

Baird et al (2011): Misreporting

	Dependent variable	
	(1)	(2)
	Core respondents over-reporting	Teachers over-reporting
Conditional treatment	−0.093*	−0.021
	(0.052)	(0.035)
Unconditional treatment	−0.001	−0.014
	(0.058)	(0.038)
Mean in the control group	0.170	0.052
Number of observations	325	325
Prob > F(Conditional = Unconditional)	0.02	0.79

Baird et al (2011): Attendance

	Dependent variable: Fraction of days respondent attended school				
	(1)	(2)	(3)	(4)	(5)
	Term 1, 2009	Term 2, 2009	Term 3, 2009	Overall 2009	Term 1, 2010
Conditional treatment	0.139***	0.014	0.169**	0.080**	0.092**
	(0.045)	(0.033)	(0.085)	(0.035)	(0.041)
Unconditional treatment	0.063	0.038	0.118	0.058	−0.038
	(0.056)	(0.033)	(0.102)	(0.037)	(0.053)
Mean in the control group	0.778	0.849	0.688	0.810	0.801
Number of observations	284	285	192	319	211
Prob $> F$(Conditional = Unconditional)	0.129	0.334	0.358	0.436	0.010

Baird et al (2011): Attainment

	Dependent variable			
	(1)	(2)	(3)	(4)
	English test score (standardized)	TIMMS math score (standardized)	Non-TIMMS math score (standardized)	Cognitive test score (standardized)
Conditional treatment	0.140***	0.120*	0.086	0.174***
	(0.054)	(0.067)	(0.057)	(0.048)
Unconditional treatment	−0.030	0.006	0.063	0.136
	(0.084)	(0.098)	(0.087)	(0.119)
Number of observations	2,057	2,057	2,057	2,057
Prob $> F$(Conditional= Unconditional)	0.069	0.276	0.797	0.756

Baird et al (2011): Marriage & Pregnancy

	Dependent variable			
	(1)	(2)	(3)	(4)
	=1 if ever married		=1 if ever pregnant	
	Round 2	Round 3	Round 2	Round 3
Conditional treatment	0.007	−0.012	0.013	0.029
	(0.012)	(0.024)	(0.014)	(0.027)
Unconditional treatment	−0.026**	−0.079***	−0.009	−0.067***
	(0.012)	(0.022)	(0.017)	(0.024)
Mean in the control group	0.043	0.180	0.089	0.247
Number of observations	2,087	2,084	2,086	2,087
Prob > F(Conditional = Unconditional)	0.024	0.025	0.265	0.003

Baird et al (2011): Decomposition

- How to rationalize these results? Imagine 3 strata of schoolgirls:

1. UCT Compliers: UCT is sufficient to keep them in school. Differences in program impact must be due to intensive margin responses to conditionality
2. CCT Compliers: Enrolled under CCT but not UCT. Conditionality lowers opportunity cost of schooling.
3. Noncompliers: Never enrol. Only receive transfers under UCT.

- Overall effects depend on sizes of the three strata and effects in each group.

Baird et al (2011): Strata Sizes

	(1) Enrolled	(2) Not enrolled	(3) Total
Control, %	1.7	46.9	19.9
(row %)	(59.8)	(40.2)	(100.0)
Conditional treatment, %	0.5	50.8	16.0
(row %)	(69.2)	(30.8)	(100.0)
Unconditional treatment, %	0.3	25.2	10.1
(row %)	(60.5)	(39.5)	(100.0)
Total, %	1.1	44.2	17.2
(row %)	(62.7)	(37.3)	(100.0)

Baird et al (2011): Enrolment and Marriage

	Dependent variable			
	(1)	(2)	(3)	(4)
	=1 if enrolled term 1 2010	=1 if ever married	=1 if ever married	=1 if ever married
	All	All	Enrolled	Not enrolled
Conditional treatment	0.058*	−0.026	−0.012	0.033
	(0.034)	(0.037)	(0.015)	(0.097)
Unconditional treatment	−0.000	−0.088***	−0.011	−0.159**
	(0.036)	(0.030)	(0.010)	(0.067)
Mean in the control group	0.598	0.199	0.017	0.469
Sample size	844	844	490	354
Prob > F(Conditional = Unconditional)	0.099	0.106	0.857	0.088

Baird et al (2011): Age Heterogeneity

	Dependent variable			
	(1)	(2)	(3)	(4)
	Total number of terms enrolled (school survey)	Standardized English test score	=1 if ever married	=1 if ever pregnant
Conditional treatment	0.467***	0.141*	−0.023	−0.008
	(0.159)	(0.073)	(0.017)	(0.028)
Unconditional treatment	0.257	−0.116	−0.051**	−0.059***
	(0.157)	(0.102)	(0.020)	(0.020)
=1 if Over 15	−0.786***	−0.546***	0.122***	0.176***
	(0.244)	(0.058)	(0.026)	(0.027)
Conditional treatment * Over 15	0.290	0.017	0.037	0.104*
	(0.291)	(0.089)	(0.056)	(0.054)
Unconditional treatment * Over 15	0.103	0.245**	−0.067	−0.032
	(0.255)	(0.110)	(0.042)	(0.046)
Number of unique observations	852	2,057	2,084	2,087
Prob > F(Conditional = Unconditional)	0.095	0.031	0.188	0.067
Prob > F(Conditional * Older = Unconditional * Older)	0.364	0.059	0.097	0.027

Baird et al (20110: Transfer Amount Elasticities

	Dependent variable			
	(1)	(2)	(3)	(4)
	Total number of terms enrolled (school survey)	Standardized English test score	=1 if ever married	=1 if ever pregnant
Conditional treatment, individual amount	0.024	−0.032	−0.002	0.006
	(0.051)	(0.029)	(0.008)	(0.012)
Unconditional treatment, individual amount	−0.048	−0.019	−0.016	0.013
	(0.064)	(0.038)	(0.011)	(0.013)
Conditional treatment, household amount	−0.027	−0.000	0.001	0.005
	(0.035)	(0.016)	(0.007)	(0.010)
Unconditional treatment, household amount	0.081***	−0.058**	−0.017**	−0.002
	(0.031)	(0.029)	(0.007)	(0.009)
Conditional treatment, minimum transfer amounts	0.572***	0.202*	−0.011	0.001
	(0.213)	(0.118)	(0.044)	(0.052)
Unconditional treatment, minimum transfer amounts	0.094	0.175	0.001	−0.089*
	(0.167)	(0.132)	(0.040)	(0.050)
Number of unique observations	852	2,057	2,084	2,087
Prob > F(Conditional = Unconditional), individual amount	0.390	0.788	0.300	0.702
Prob > F(Conditional = Unconditional), household amount	0.025	0.082	0.069	0.614
Prob > F(Conditional = Unconditional), minimum amount	0.046	0.877	0.834	0.203