Appendix A for "Malaria testing and treatment in Uganda: evaluating the impact of the introduction and use of rapid diagnostic tests in drug shops"

APPENDIX A1: Robustness of Impact Results to Changes in Sample Definition and Functional Form

A1a. Suspected Malaria Episodes Only

To demonstrate that our results are not dependent on the sample definition based on fever episodes, this table reproduces the analysis presented in Table 4, using only the sample of patient-reported suspected malaria episodes.

Table A1a. Impact of RDT Training in Drug Shops on Treatment Seeking, Malaria Testing and Medication Taking for Suspected Malaria Episodes									
	N (Suspected Malaria Episodes)	Unadjusted				Adjusted			
		β	p-value	95% CI	%D	β	p-value	95% CI	%D
Malaria Testing									
Received Any Malaria Test	7,011	0.131	(0.063)	[-0.008 - 0.269]	33.22	0.102	(0.109)	[-0.023 - 0.227]	25.87
Received Any Malaria Test (Children	2,538	0.209	(0.009)	[0.054 - 0.363]	49.03	0.173	(0.014)	[0.036 - 0.310]	40.58
Medication Taking									
Took ACT	7,042	0.042	(0.440)	[-0.066 - 0.150]	10.93	0.036	(0.469)	[-0.062 - 0.133]	9.37
Took ACT (Children Under 5)	2,548	0.022	(0.727)	[-0.104 - 0.148]	5.61	0.008	(0.907)	[-0.124 - 0.140]	2.04
Took ACT (Among those Taking an Antimalarial)	5,028	-0.026	(0.685)	[-0.151 - 0.100]	-4.59	-0.023	(0.689)	[-0.137 - 0.091]	-4.06
Took Any Antimalarial	7,042	0.115	(0.001)	[0.050 - 0.180]	16.98	0.092	(0.000)	[0.042 - 0.143]	13.58
Took Any Antibiotic	7,042	0.037	(0.253)	[-0.027 - 0.101]	15.57	0.057	(0.067)	[-0.004 - 0.119]	23.98
Treatment Seeking									
Ever Visited Public Hospital or Clinic	7,042	0.075	(0.197)	[-0.040 - 0.190]	25.92	0.059	(0.234)	[-0.039 - 0.157]	20.39
Ever Visited Private Hospital or Clinic	7,042	0.018	(0.552)	[-0.042 - 0.078]	6.89	-0.003	(0.914)	[-0.063 - 0.057]	-1.15
Ever Visited Any Drug Shop or Pharmac	7,042	-0.008	(0.854)	[-0.096 - 0.080]	-2.81	0.043	(0.330)	[-0.045 - 0.131]	15.09
Ever Visited Program Drug Shop									
Ever Sought Any Care	7,042	0.076	(0.025)	[0.010 - 0.142]	9.09	0.085	(0.015)	[0.017 - 0.153]	10.16
Notes:									
Adjusted β includes month fixed effects and village fixed effects.									
All regressions include standard errors adjusted for clustering at the village level (the level of randomization).									
%D=(β/pre-intervention mean for febrile illness episodes in treatment areas)x100									

A1b. Illnesses Experienced Prior to BCC campaign only

To demonstrate that our results have been properly adjusted for the roll-out of the cross-cutting, randomized BCC campaign that happened 6 months into the study, this table reproduces the analysis presented in Table 4, restricting the sample to febrile illness episodes experienced prior to the introduction of the BCC campaign.

Table A1b. Impact of RDT Training in Drug Shops on Treatment Seeking, Malaria Testing and Medication Taking--Restricted to Pre-BCC Campaign

	N (Suspected Malaria Episodes)	Unadjusted				Adjusted			
		β	p-value	95% CI	%D	β	p-value	95% CI	%D
Malaria Testing									
Received Any Malaria Test	16,677	0.071	(0.006)	[0.021 - 0.121]	27.39	0.065	(0.016)	[0.013 - 0.117]	25.08
Received Any Malaria Test (Children	5,713	0.091	(0.009)	[0.023 - 0.159]	29.42	0.072	(0.044)	[0.002 - 0.141]	23.28
Medication Taking									
Took ACT	16,766	0.011	(0.674)	[-0.042 - 0.065]	3.77	0.013	(0.633)	[-0.040 - 0.065]	4.45
Took ACT (Children Under 5)	5,735	0.016	(0.651)	[-0.055 - 0.087]	4.97	0.007	(0.838)	[-0.065 - 0.080]	2.17
Took ACT (Among those Taking an Antimalarial)	9,172	0.005	(0.883)	[-0.063 - 0.073]	0.93	0.005	(0.884)	[-0.058 - 0.067]	0.93
Took Any Antimalarial	16,766	0.028	(0.327)	[-0.029 - 0.084]	5.16	0.028	(0.319)	[-0.028 - 0.085]	5.16
Took Any Antibiotic	16,766	-0.005	(0.865)	[-0.065 - 0.054]	-1.93	0.005	(0.866)	[-0.056 - 0.066]	1.93
Treatment Seeking									
Ever Visited Public Hospital or Clinic	16,766	0.016	(0.479)	[-0.029 - 0.060]	5.38	0.024	(0.243)	[-0.017 - 0.066]	8.07
Ever Visited Private Hospital or Clinic	16,766	-0.026	(0.310)	[-0.078 - 0.025]	-11.44	-0.028	(0.303)	[-0.081 - 0.026]	-12.32
Ever Visited Any Drug Shop or Pharmac	16,766	0.034	(0.357)	[-0.039 - 0.106]	8.19	0.034	(0.339)	[-0.036 - 0.103]	8.19
Ever Visited Program Drug Shop	16,766	-0.030	(0.379)	[-0.096 - 0.037]	-19.00	-0.027	(0.421)	[-0.095 - 0.040]	-14.06
Ever Sought Any Care	16,766	0.019	(0.455)	[-0.032 - 0.071]	2.45	0.026	(0.328)	[-0.026 - 0.078]	3.35

Notes:

Adjusted β includes month fixed effects and village fixed effects.

All regressions include standard errors adjusted for clustering at the village level (the level of randomization).

%D=(β/pre-intervention mean for febrile illness episodes in treatment areas)x100

A1c. Logistic Regression Analysis

This table reproduces the analysis conducted for Table 4, but uses logistic regression (and reports odds ratios) rather than linear probability models. All specifications are otherwise the same as in Table 4.

Table A1c. (Logistic Regressions) Impact of RDT Training in Drug Shops on Treatment Seeking, Malaria Testing and Medication Taking for Febrile Illness Episodes

	Unadjusted					Adjusted*			
	N	Odds Ratio	(p-value)	[95% CI]		N	Odds Ratio	(p-value)	[95% CI]
Malaria Testing									
Received Any Malaria Test	22,560	1.280	(0.024)	[1.033 - 1.587]		22,560	1.264	(0.037)	[1.014 - 1.575]
Received Any Malaria Test (Children Under 5)	8,090	1.317	(0.033)	[1.023 - 1.696]		8,090	1.235	(0.119)	[0.947 - 1.610]
Medication Taking									
Took ACT	22,697	1.084	(0.527)	[0.844 - 1.394]		22,697	1.111	(0.424)	[0.859 - 1.437]
Took ACT (Children Under 5)	8,134	0.964	(0.819)	[0.706 - 1.317]		8,134	0.941	(0.728)	[0.669 - 1.324]
Took ACT (Among those Taking an Antimalarial)	12,210	0.985	(0.920)	[0.734 - 1.322]		12,203	0.981	(0.894)	[0.744 - 1.295]
Took Any Antimalarial	22,697	1.247	(0.052)	[0.998 - 1.559]		22,697	1.275	(0.043)	[1.008 - 1.615]
Took Any Antibiotic	22,697	0.985	(0.908)	[0.767 - 1.266]		22,697	1.034	(0.806)	[0.792 - 1.349]
Treatment Seeking									
Ever Visited Public Hospital or Clinic	22,697	1.011	(0.919)	[0.813 - 1.259]		22,697	1.091	(0.450)	[0.870 - 1.369]
Ever Visited Private Hospital or Clinic	22,697	0.867	(0.346)	[0.645 - 1.166]		22,677	0.855	(0.401)	[0.594 - 1.232]
Ever Visited Any Drug Shop or Pharmacy	22,697	1.206	(0.279)	[0.859 - 1.695]		22,697	1.224	(0.261)	[0.860 - 1.742]
Ever Visited Trained Drug Shop	22,697	0.826	(0.427)	[0.515 - 1.324]		21,998	0.809	(0.458)	[0.461 - 1.418]
Ever Sought Any Care	22,697	1.240	(0.226)	[0.875 - 1.756]		22,697	1.288	(0.169)	[0.898 - 1.848]

Notes:

Adjusted odds ratio includes month fixed effects and village fixed effects.

All regressions include standard errors adjusted for clustering at the village level (the level of randomization).

APPENDIX A2: Testing Reliability

In order to assess the reliability of self-reported test results, participating households were instructed to store test slips from clinic or drug shops when possible. Out of a total of 6746 reported tests, test slips were available for 1,744 episodes (26%) overall, and for 113 episodes (13%) with reported diagnosis at drug shops. Overall, positivity rates were remarkably high, with positivity rates > 80% across all categories. Self-reported positivity rates were on average about 4 percentage points higher than the positivity rates based on test slips.

Table A2: Reliability of Self-Reported Test Results

	Drug shops			Other Health Facility		
	Slip available	Slip not available	Total N	Slip available	Slip not available	Total N
	113	741	854	1,631	4,261	5,892
Positive (N)	94	673	767	1366	3734	5,100
Negative (N)	19	68	87	265	527	792
Positivity %)	83.2%	90.8%	89.8%	83.8%	87.6%	86.6%

For episodes where slips were available, self-reported and observed (slip-based) drug results were aligned in 96.5% of all cases; 43 respondents (2.5%) reported a positive test when the slip was negative., and 18 respondents (1%) reported a negative result when the slip was positive.