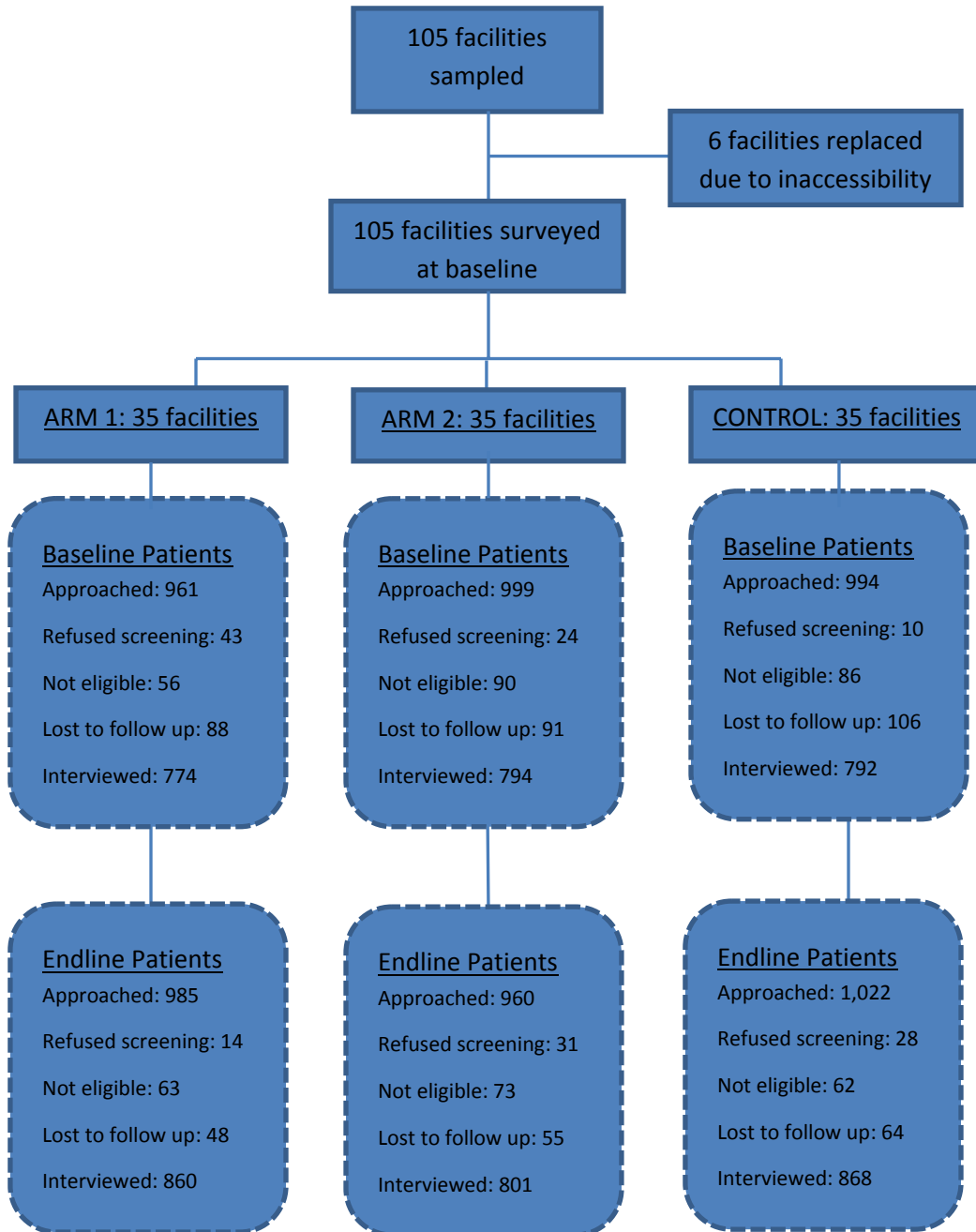


Supplementary Material

S1 Figure: Flowchart of facility and patients surveyed and sampled



Notes: Randomization took place after baseline data collection. Lost to follow up indicates the patient was eligible and consented but survey staff did not have a chance to interview them before they left the facility.

S1 Table: Malaria, pneumonia, and diarrhea case management results from analysis of a per-protocol population*

	Baseline			Endline			Effect size (difference in differences)			
	Arm 1	Arm 2	Control	Arm 1	Arm 2	Control	Arm 1, % change (95% CI)	p-value	Arm 2, % change (95% CI)	p-value
Primary outcome: Correct case management of suspect uncomplicated malaria										
Overall correct malaria case management*	102/273 (34.9)	116/319 (33.9)	225/559 (42.8)	106/201 (55.1)	148/273 (51.8)	285/540 (59.6)	3.4 (-15.8, 22.5)	0.730	1.1 (-19.1, 21.2)	0.919
Secondary outcomes: Malaria										
1. RDT/BS performed	165/200 (82.5)	217/238 (92.3)	384/490 (79.6)	120/159 (74.5)	205/243 (87.1)	410/522 (78.1)	-6.5 (-19.2, 6.4)	0.326	-3.7 (-13.4, 6.0)	0.454
2. First-line AM*	136/158 (88.8)	156/192 (82.4)	238/272 (88.5)	72/84 (86.6)	95/103 (91.5)	177/190 (94.0)	-7.6 (-24.8, 9.7)	0.391	3.7 (-15.4, 22.8)	0.706
3. If AL, correct dose	117/142 (84.6)	141/148 (97.2)	210/265 (82.3)	43/45 (95.7)	76/78 (98.7)	136/139 (98.3)	-4.9 (-29.2, 19.3)	0.691	-14.5 (-30.1, 1.2)	0.068
4. If AL, tablets dispensed	122/125 (97.9)	145/148 (99.3)	214/222 (97.2)	45/46 (97.7)	76/89 (84.4)	135/136 (99.8)	-2.8 (-9.9, 4.2)	0.431	-17.5 (-33.8, 11.3)	0.035
5. First dose AL given	17/122 (12.9)	9/145 (5.5)	39/213 (27.8)	2/45 (3.3)	20/76 (28.4)	15/135 (12.6)	5.6 (-28.6, 39.9)	0.744	38.1 (0.9, 75.5)	0.045
6. If AL, patient knows dose	85/122 (71.2)	103/145 (69.2)	173/214 (86.0)	39/45 (85.7)	60/76 (79.3)	99/135 (77.7)	22.8 (9.4, 36.2)	0.001	18.4 (2.8, 33.9)	0.021
7. If AL, patient told to complete	77/122 (65.2)	77/146 (54.0)	119/214 (60.1)	21/45 (44.6)	45/76 (62.9)	71/135 (53.7)	-14.2 (-36.0, 7.8)	0.208	15.3 (-4.6, 35.5)	0.132
8. IF RDT neg, no AM	75/81 (92.5)	103/106 (99.1)	168/181 (95.9)	78/78 (99.7)	131/132 (99.5)	232/238 (98.4)	4.6 N/A	N/A	-2.1 N/A	N/A
9. Correct treatment severe malaria	1/15 (4.0)	1/14 (3.9)	0/32 (0.0)	0/5 (0.0)	0/6 (0.0)	0/6 (0.0)	-4.0 N/A	N/A	-3.9 N/A	N/A
Secondary outcomes: Pneumonia and Diarrhea										

1. HW measured respiratory rate if child had cough/difficult breathing	3/62 (4.8)	3/80 (3.0)	0/120 (0.0)	0/53 (0.0)	0/69 (0.0)	5/161 (1.9)	-6.7 N/A	N/A	-4.9 N/A	N/A
2. Prescription of first-line antibiotic for children with pneumonia [†]	13/23 (50.4)	23/35 (65.3)	29/42 (59.0)	18/26 (69.8)	27/36 (73.4)	48/68 (73.0)	5.4 (-35.8, 46.8)	0.795	-5.9 (-46.0, 34.2)	0.774
3. First dose of antibiotic given at facility	1/13 (5.0)	0/23 (0.0)	1/29 (4.4)	0/18 (0.0)	1/27 (4.6)	1/48 (0.7)	-1.3 N/A	N/A	8.3 N/A	N/A
4. Prescription of ORS to children with diarrhea ^{**}	30/48 (55.4)	47/63 (75.1)	48/81 (58.6)	9/18 (45.3)	13/24 (59.5)	39/69 (55.7)	-7.2 (-35.0, 20.5)	0.608	-12.7 (-44.9, 19.3)	0.434

Note: Artemether-lumefantrine (AL)-related indicators for patients with suspected malaria. Suspect uncomplicated malaria: 72% at baseline and 60% at endline. Test positivity rate (facility malaria test): 47.5% at baseline and 35.1% at endline. 90% patients attended facilities with AL in stock at baseline, 84% at endline.

‡ All application case management actions done for patient with suspected uncomplicated malaria (Box 2).

* Among patients testing positive at facility for malaria or suspect malaria cases not tested at facilities unable to test

† Among children with clinically-diagnosed pneumonia, according to re-examination during exit interviews.

** An alternative definition definition for correct diarrhea treatment including both ORS and zinc was used, but was lower overall: 38.2% and 35.0% at endline, with no significant differences by arm. This indicator was not used for diarrhea case management as zinc stocks were not systematically measured during the survey.

* Per-protocol population includes only those patients in arms 1 and 2 at endline treated by health workers who reported receiving SMS. Baseline observations include all patients at facilities in arm 3 and facilities in arms 1 and 2 where at least one health worker at endline reported receiving SMS.

S2 Table: Mean scores (out of 9) on clinical case scenarios, by study arm and time point

	Study Arm			P-value
	Malaria- only	Malaria, pneumonia, and diarrhea	Control	
Baseline	6.51	6.46	6.00	0.163
Endline	6.47	6.30	6.40	0.836
Endline PP*	6.88	6.45	6.40	0.450

* HWs who reported receiving messages