Malaria: Studies Reporting Behavior Change Outcomes

Title	Authors	Journal & Link	Location	Population	Intervention Description	Outcomes	Design	Sampling Method	SOE Score [1]	SMBC [2]
Narrowing the treatment gap with equitable access: mid-term outcomes of a community case management program in Cameroon	**Littrell M, Moukam LV, Libite R, Youmba JC, Baugh G**	Health Policy and Planning, 2013, 28(7): 705-716 http://heapol.oxfordjournals.org/cgi/pmidlookup?view=long&pmid=23144228	East region of Cameroon	Households/ Children under 5	Community case management for childhood ilnesses. CCM package provided community-based diagnosis, treatment and referral for suspected malaria with artemisinin combination therapy (ACT) and diarrhoeal disease with ORS and zinc through community health workers (PSI)	**Behaviorial Factors** Awareness, access and attitudes towards CHW services among caregivers improved with intervention **Behaviors** Children living in intervention vs comparison areas were significantly more likely to receive treatment at a public health facility or through a CHW for fever and diarrhoea Appropriate treatment was significantly higher among children in intervention vs comparison areas including: antimalarial treatment for fever , ACT for fever , ORS for diarrhoea and zinc for diarrhoea	Quasi-experimental	Purposive	4	1: Behavior, Method mix
Improvements in access to malaria treatment in Tanzania following community, retail sector and health facility interventions -- a user perspective	**Alba S, Dillip A, Hetzel MW, Mayumana I, Mshana C, Makemba A, Alexander M, Obrist B, Schulze A, Kessy F, Mshinda H, Lengeler C**	Malaria Journal, 2010, 9(163): 1-16 http://www.malariajournal.com/content/9/1/163/	Ifakara, Tanzania	Treatment-seeking surveys of people who had suffered a fever case in the previous 14 days	Social Marketing for improved treatment seeking	**Behaviorial Factors** Improvements in understanding causes of malaria (from 62% to 84%); higher treatment coverage with anti-malarials (86% to 96%) **Behaviors** Increases in health facility attendance as first treatment option for patients older than five years (27% to 52%); more timely use of anti-malarials (80% to 93-97% treatments taken within 24 hrs).	Observational	Probability	4	3: Behavior, Segmentation, Methods mix
Household ownership and use of insecticide treated nets among target groups after implementation of a national voucher programme in the United Republic of Tanzania: plausibility study using three annual cross sectional household surveys	**Hanson K, Marchant T, Nathan R, Mponda H, Jones C, Bruce J, Mshinda H, Schellenberg JA**	British Medical Journal, 2009, 339: 1-10 http://www.bmj.com/content/339/bmj.b2434	Tanzania	Household survey	Social marketing combined with the National Voucher Scheme targeting mothers of young children at antenatal clinics	**Behaviorial Factors** ITN ownership increased from 18% to 36% **Behaviors** Among infants under 1 year of age, use of an ITN increased from 16% to 34%	Observational	Probability	4	3: Exchange, Segmentation, Methods mix

Notes

1. Strength of Evidence Score 2. Social Marketing Benchmark Criteria

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Access to artemisinin combination therapy for malaria in remote areas of Cambodia	**Yeung S, Van Damme W, Socheat D, White NJ, Mills A**	Malaria Journal, 2008, 7(96): 1-14 http://www.malariajournal.com/content/7/1/96	Cambodia	Individuals with a history of fever in the last three weeks in areas with village malaria workers (VMWs), outreach clinics, and in areas with no intervention	Social marketing of blister-packaged artesunate and mefloquine (Malarine ®) and RDTs through VMWs and outreach	**Behaviors** Only 17% of individuals in non-intervention areas reported having had a biological diagnosis for their most recent episode of illness. This was significantly higher in the areas with VMWs (63%) and outreach (35%); VMWs and outreach workers reported always using RDTs. In contrast, only 15% of tests at private health facilities and 69% public health facilities were by RDT; VMW scheme and outreach significantly increased the likelihood of being seen by a trained provider (Adjusted Odds Ratios (AOR) of 148 and 4 respectively) and of receiving A+M (AORs of 2.7 and 7.7 respectively).	Quasi-experimental	Probability	5	6: Behavior, Customer orientation, Insight, Competition, Segmentation, Methods mix
Distribution Systems of Insecticide-Treated Bed Nets for Malaria Control in Rural Burkina Faso: Cluster- Randomized Controlled Trial	**Müller O, De Allegri M, Becher H, Tiendrebogo J, Beiersmann C, Ye M, Kouyate B, Sie A, Jahn A**	PLoS ONE, 2008, 3(9): e3182 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2527521/	Burkina Faso	Households	Subsidized ITN distribution through social marketing with or without free ITN distribution (free distribution took place through antenatal clinics)	**Behaviorial Factors** ITN ownership increased in SM with free distribution areas more than in SM only areas from baseline to follow-up **Behaviors** Increases in Bednet use in previous night was similarly higher in both groups from baseline to follow-up; use among pregnant women and children under five increased in SM with free distribution from 44% to 50% and in SM only from 37% to 44%.	Experimental	Probability	6	3: Behavior, Segmentation, Methods Mix
Effect of expanded insecticide-treated bednet coverage on child survival in rural Kenya: a longitudinal study	**Fegan GW, Noor AM, Akhwale WS, Cousens S, Snow RW**	Lancet, 2007, 370(9592): 1035–1039 http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(07)61477-9/abstract	Kenya	Children aged 1–59 months	Combined approach of social marketing and free distribution of ITNs	**Behaviors** Increase in ITN use by children aged less than 5 years from 7% in 2004, to 23·5% in 2005, to 67% in 2006 **Health** ITN use was associated with a 44% reduction in mortality	Observational	Probability	4	0

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Sustained high coverage of insecticide-treated bednets through combined Catch-up and Keep-up strategies	**Grabowsky M, Nobiya T, Selanikio J**	Tropical Medicine and International Health, 2007, 12(7): 815–822 http://onlinelibrary.wiley.com/doi/10.1111/j.1365-3156.2007.01862.x/abstract	Ghana	Households with at least one child less than 5 years of age	Mass, free distribution (Catch-up) of insecticide-treated bednets (ITNs) during measles vaccination campaigns, followed by antenatal clinic-based social marketing for routine Keep-up on ITN coverage and use	**Behaviorial Factors** 95.7% of children slept in a household that had a net, 86.1% slept in a household that had a campaign net **Behaviors** 59.6% of children slept under an ITN	Observational	Probability	4	4: Behavior, Exchange, Segmentation, Method mix
Increasing coverage and decreasing inequity in insecticide-treated bed net use among rural Kenyan children	**Noor AM, Amin AA, Akhwale WS, Snow RW**	PLoS medicine, 2007, 4(8): e255 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1949846/	Bondo, Greater Kisii, Kwale, and Makueni Districts, Kenya	Children age 0-4 years	At baseline only commercial social marketing (PSI) was in place. Heavily subsidized MCH clinic distribution (PSI) and free distribution were implemented during the course of the study	**Behaviors** At baseline only 7% of children slept under a net treated with insecticide within 6 months the night before the survey. At 12 months, this increased to 23% and at 24 months this increased to 67% with the majority of ITNs obtained via free distribution and heavily subsidized distribution at MCH clinics	Observational	Probability	4	4: Exchange, Competition, Segmentation, Methods mix
The effect of delivery mechanisms on the uptake of bed net re-impregnation in Kilifi District, Kenya	**Snow RW, McCabe E, Mbogo CN, Molyneux CS, Some ES, Mung'ala VO, Nevill CG**	Health Policy and Planning, 2007, 14(1):18-25 http://heapol.oxfordjournals.org/content/14/1/18.long	Kilifi District, Kenya	Households	Retreatment of ITNS was initially offered for free house-to-house, then free at sentinel sites, and then through social marketing and sales	**Behaviors** Net re-impregnation coverage decreased from 97% during free house-to-house delivery to 61-67% when free re-treatment moved to sentinel sites to 7% after the social marketing model was implemented	Experimental	Probability	5	3: Behavior, Exchange, Methods mix
The impact of a hybrid social marketing intervention on inequities in access, ownership and use of insecticide-treated nets	**Agha S, Van Rossem R, Stallworthy G, Kusanthan T**	Malaria Journal, 2007, 6(13): 1-11 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1794246/	Eastern Province, Zambia	Household survey; Men and women ages 15-49	ITN subsidy and social marketing intervention to increase knowledge, access, and use of ITNs as part of the Roll Back Malaria Campain. Distribution was through public health facilities.	**Behaviorial Factors** Knowledge of malaria and ITNs, access to ITNs, beliefs about malaria protection, ownership (number of ITNs in the household) **Behaviors** Usage of ITNs (respondent usually sleeps under a net)	Quasi-experimental	Probability	5	7: Customer orientation, Behavior, Insight, Exchange, Competition, Segmentation, Methods mix

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The use of Insecticide-Treated bed Net in a semi-urban community in south-south, Nigeria	**Ordinioha B**	Nigerian Journal of Medicine, 2007, 16(3): 223-226 http://www.ncbi.nlm.nih.gov/pubmed/17937157	South-south Nigeria	Households	Social marketing of ITNs	**Behaviors** Of 311 ITNs sold through the project, 18.28% were properly deployed during monitoring visit; 79.59% of properly deployed nets were occupied by children under five	Observational	Purposive	3	3: Behavior, Segmentation, Method mix
Comparison of coverage with insecticide-treated nets in a Tanzanian town and villages where nets and insecticide are either marketed or provided free of charge	**Maxwell CA, Rwegoshora RT, Magesa SM, Curtis CF**	Malaria Journal, 2006, 5(44): 1-6 http://www.malariajournal.com/content/5/1/44/	North-east Tanzania	Household survey; Men and women	Social marketing of ITNs and insecticide	**Behaviorial Factors** % of households that purchased a net, % of households with intact treated nexts **Behaviors** % of households reporting usage in urban and rural areas that had social marketing were compared to areas with free distribution	Observational	Purposive	2	0
Socially marketed insecticide-treated nets effectively reduce Plasmodium infection and anaemia among children in urban Malawi	**Mathanga DP, Campbell CH, Taylor TE, Barlow R, Wilson ML**	Tropical Medicine and International Health, 2006, 11(9): 1367-1374 http://onlinelibrary.wiley.com/doi/10.1111/j.1365-3156.2006.01684.x/abstract	Ndirande, Blantyre, Malawi	Children age 6-59 months	ITN social marketing (PSI)	**Behaviorial Factors** Knowledge of ITNs **Behaviors** 42% of children reported ITN use the previous night **Health** 17% (295/1721) of children had a positive P. falciparum smear at enrolment. Use of ITNs was associated with 52% protective efficacy against Plasmodium parasitemia. More than two-thirds of children were anaemic, yet the mean haemoglobin concentration was significantly higher in children using ITNs than in those not using nets.	Observational	Probability	4	2: Segmentation, Methods mix
Use and misuse of a discount voucher scheme as a subsidy for insecticide-treated nets for malaria control in southern Tanzania	**Tami A, Mbati J, Nathan R, Mponda H, Lengeler C, Schellenberg JR**	Health Policy Plan, 2006, 21(1):1-9 http://heapol.oxfordjournals.org/content/21/1/1.long	Kilombero and Ulanga districts, southern Tanzania	Previously pregnant women, or primary caregivers of children under 5 years of age, whose names were written on a sampled voucher.	A social marketing programme of ITNs and net treatment, including a voucher scheme for targeting subsidies of ITNs for children under 5 years and pregnant women through mother-and-child (MCH) clinics	**Behaviors** 92% of women interviewed slept under a net during pregnancy and of those, 26.5% had used the ITN bought with the voucher; 65% of the women given a voucher because they were pregnant used the ITN acquired with that voucher during pregnancy; Of 93 households with children under 5 years, 77 (83%) reported that all under-fives (103) had slept under a net in the previous night	Observational	Purposive	3	4: Behavior, Exchange, Segmentation, Methods mix

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Title	Authors	Journal & Link	Location	Population	Intervention Description	Outcomes	Design	Sampling Method	SOE Score [1]	SMBC [2]
Spatial effects of the social marketing of insecticide-treated nets on malaria morbidity	**Abdulla S, Gemperli A, Mukasa O, Armstrong Schellenberg JR, Lengeler C, Vounatsou P, Smith T**	Tropical Medicine and International Health, 2005, 10(1): 11–18 http://onlinelibrary.wiley.com/doi/10.1111/j.1365-3156.2004.01354.x/abstract	Tanzania	Households	Social marketing of ITNs	**Behaviorial Factors** Coverage, distribution pattern and resultant spatial effects **Behaviors** Percent of children using a treated net **Health** Prevalence of parasitaemia, mild anaemia (Hb <11 g/dl) and moderate/severe anaemia (Hb <8 g/dl) in children under five; children living in areas of moderately high ITN coverage were about half as likely to have moderate/severe anaemia	Observational	Probability	4	0
DEET mosquito repellent sold through social marketing provides personal protection against malaria in an area of all-night mosquito biting and partial coverage of insecticide-treated nets: a case-control study of effectiveness	**Rowland M, Freeman T, Downey G, Hadi A, Saeed M**	Tropical medicine & international health, 2004, 9(3): 343-350 http://onlinelibrary.wiley.com/doi/10.1046/j.1365-3156.2003.01183.x/abstract	Behsud district, Nangahar province, eastern Afghanistan	Case-control study of outpatients with febrile illness	Social marketing of a repellent soap containing DEET	**Behaviors** Mosbar was purchased by 43% of households. among the control group. There was a strong association between Mosbar use and ITN use, as 81% of Mosbar users also possessed ITN. **Health** The use of Mosbar was associated with a 45% reduction in the odds of malaria after adjusting for ITN and other unmatched factors	Quasi-experimental	Purposive	4	2: Insight, Methods mix
Cost-effectiveness of social marketing of insecticide-treated nets for malaria control in the United Republic of Tanzania	**Hanson K, Kikumbih N, Armstrong Schellenberg J, Mponda H, Nathan R, Lake S, Mills A, Tanner M, Lengeler C**	Bulletin of the World Health Organization, 2003, 81(4): 269-276 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2572445/	Kilombero and Ulanga districts, Tanzania	Case-control study on child survival and demographic surveillance system	ITN and insecticide social marketing	**Behaviors** ITN coverage, measured as the proportion of children that slept under a treated net the previous night, was 14% in Ulanga and 23% in Kilombero in July and August 1999. **Health** Given the estimate of 27% for protective efficacy from the case–control study, this indicates 96 deaths averted or 2588 DALYs averted in 1999.	Quasi-experimental	Purposive	4	5: Customer Orientation, Insight, Exchange, Segmentation, Method mix

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Insecticide-treated bednet use, anaemia, and malaria parasitaemia in Blantyre District, Malawi	**Holtz TH, Marum LH, Mkandala C, Chizani N, Roberts JM, Macheso A, Parise ME, Kachur SP**	Tropical Medicine and International Health, 2002, 7(3): 220–230 http://onlinelibrary.wiley.com/doi/10.1046/j.1365-3156.2002.00846.x/abstract	Blantyre District, Malawi	Households with at least one child less than 5 years of age	Social marketing of ITNs (PSI)	**Behaviorial Factors** Bednet ownership was low (20.5% of households) **Behaviors** Only 3.3% of rural children under 5 had slept under a net the previous night, compared with 24.0% of urban children **Health** Rural children under 5 in households without nets experienced a statistically significant higher prevalence of malaria parasitaemia [RR 4.9] than children in households with at least one bednet	Observational	Probability	4	6: Behavior, Customer Orientation, Insight, Exchange, Segmentation, Methods mix
Prevention of malaria in Afghanistan through social marketing of insecticide-treated nets: evaluation of coverage and effectiveness by cross-sectional surveys and passive surveillance	**Rowland M, Webster J, Saleh P, Chandramohan D, Freeman T, Pearcy B, Durrani N, Rab A, Mohammed N**	Tropical medicine & international health, 2002, 7(10): 813-822 http://onlinelibrary.wiley.com/doi/10.1046/j.1365-3156.2002.00940.x/abstract	Afghanistan	Cross-sectional surveys of housholds and passive surveillance from clinics using case-control design	ITN and insecticide social marketing	**Behaviors** Nets were purchased by 59% of families. **Health** Cross-sectional surveys demonstrated a 59% reduction in the risk of Plasmodium falciparum infection among ITN users compared with non-users and the passive surveillance method showed a 69% reduction in the risk of symptomatic P. falciparum malaria among ITN users; reductions in risk of P. vivax infection was also seen, but only statistically significant under passive surveillance	Observational	Probability	4	2: Exchange, Methods mix
Socially-marketed rapid diagnostic tests and ACT in the private sector: ten years of experience in Cambodia	**Yeung S, Patouillard E, Allen H, Socheat D**	Malaria Journal, 2001, 10(243): 1-14 http://www.malariajournal.com/content/10/1/243	Cambodia	Providers and households	Social marketing of RDTs and ACT	**Behaviorial Factors** Providers knowledge of RDTS and ACT, product availablity, sales/selling price; Consumer awareness of RDTS and ACT **Behaviors** Providers selling practices and Consumer buying practices of ACTs; Providers use of RDTS	Observational	Purposive	2	7: Behavior, Customer Orientation, Insight, Exchange, Competition, Segmentation, Methods Mix

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Title	Authors	Journal & Link	Location	Population	Intervention Description	Outcomes	Design	Sampling Method	SOE Score [1]	SMBC [2]
KINET: a social marketing programme of treated nets and net treatment for malaria control in Tanzania, with evaluation of child health and long-term survival	**Schellenberg JR, Abdulla S, Minja H, Nathan R, Mukasa O, Marchant T, Mponda H, Kikumbih N, Lyimo E, Manchester T, Tanner M, Lengeler C**	Trans R Soc Trop Med Hyg, 1999, 93(3): 225-31 http://www.sciencedirect.com/science/article/pii/S0035920399900019	Kilombero and Ulanga Districts in South-western Tanzania	Cross-sectional survey among households	ITN and insecticide social marketing	**Behaviorial Factors** 24% of households had at least one treated net **Behaviors** 18 months after launching, 46% of 312 families with children aged under 5 years reported that their children were sleeping under treated nets	Observational	Probability	3	6: Behavior, Customer orientation, Insight, Exchange, Segmentation, Methods mix

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