Distributing insecticide-treated bednets during measles vaccination: a low-cost means of achieving high and equitable coverage

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Objective To achieve high and equitable coverage of insecticide-treated bednets by integrating their distribution into a measles vaccination campaign.

Methods In December 2002 in the Lawra district in Ghana, a measles vaccination campaign lasting 1 week targeted all children aged 9 months–15 years. Families with one or more children less than five years old were targeted to receive a free insecticide-treated bednet. The Ghana Health Service, with support from the Ghana Red Cross and UNICEF, provided logistical support, volunteer workers and social mobilization during the campaign. Volunteers visited homes to inform caregivers about the campaign and encourage them to participate. We assessed pre-campaign coverage of bednets by interviewing caregivers leaving vaccination and distribution sites. Five months after distribution, a two-stage cluster survey using population-proportional sampling assessed bednet coverage, retention and use. Both the pre-campaign and post-campaign survey assessed household wealth using an asset inventory.

Findings At the campaign exit interview 636/776 (82.0%) caregivers reported that they had received a home visit by a Red Cross volunteer before the campaign and that 32/776 (4.1%) of the youngest children in each household who were less than 5 years of age slept under an insecticide-treated bednet. Five months after distribution caregivers reported that 204/219 (93.2%) of children aged 9 months to 5 years had been vaccinated during the campaign; 234/248 (94.4%) of households were observed to have an insecticide-treated bednet; and 170/249 (68.3%) were observed to have a net hung over a bed. Altogether 222/248 (89.5%) caregivers reported receiving at least one insecticide-treated bednet during the campaign, and 153/254 (60.2%) said that on the previous night their youngest child had slept under a bednet received during the campaign. For households in the poorest quintile, post-campaign coverage of insecticide-treated bednets was 10 times higher than pre-campaign coverage of households in the wealthiest quintile (46/51 (90.2%) versus 14/156 (9.0%)). The marginal operational cost was US$ 0.32 per insecticide-treated bednet delivered.

Conclusion These findings suggest that linking bednet distribution to measles vaccination campaigns may provide an important opportunity for achieving high and equitable coverage of bednets.

Keywords Bedding and linens/supply and distribution; Immunization programs/organization and administration; Delivery of health care, Integrated/economics; Malaria/prevention and control; Mosquito control/organization and administration; Measles vaccine/supply and distribution; Costs and cost analysis; Ghana (*source: MeSH, NLM*).

Mots clés Literie et linge/ressources et distribution; Programmes de vaccination/organisation et administration; Distribution intégrée soins/économie; Paludisme/prévention et contrôle; Lutte contre moustique/organisation et administration; Vaccin antimorbilleux/ressources et distribution; Coût et analyse coût; Ghana (*source: MeSH, INSERM*).

Palabras clave Ropa de cama y ropa blanca/provisión y distribución; Programas de inmunización/organización y administración; Entrega integrada de atención de salud/economía; Paludismo/prevención y control; Control de mosquitos/organización y administración; Vacuna antisarampión/provisión y distribución; Costos y análisis de costo; Ghana (*fuente: DeCS, BIREME*).

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Voir page 200 le résumé en français. En la página 200 figura un resumen en español.

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Introduction

A key goal of malaria control is to provide insecticide-treated bednets (ITNs) to 60% of African children aged younger than 5 years (*1*). However, in 2001 WHO and UNICEF reported that ITN coverage in 19 sub-Saharan countries was 2% (*2*). While commercial markets for ITNs can theoretically be expanded substantially they have not yet done so. Even if they did, the poorest households might be unable to afford nets and insecticide at any price. Alternative methods of subsidizing or distributing ITNs are needed (*3*). Mass vaccination campaigns may offer a model for an alternative approach. In sub-Saharan Africa, mass vaccination campaigns against polio, tetanus and measles routinely achieve high coverage. These campaigns target large segments of the population and usually include high-risk populations and areas that are difficult to reach. These campaigns integrate logistics, social mobilization and careful assessments. Since 2001 the Measles Initiative has supported mass measles vaccination campaigns in 25 sub-Saharan countries, delivering vaccinations to more than 120 million children and achieving high coverage (> 90%) in virtually all campaigns (*4*). The Measles Initiative was started in 2001 with the core partners WHO, UNICEF, the United Nations Foundation, the US Centers for Disease Control and Prevention, and the American Red Cross. It works closely with many other partners to support ministries of heath with implementation of WHO/UNICEF strategies. In order to show that an equitable distribution of ITNs could be achieved at low cost with high coverage, we integrated free distribution into a mass vaccination campaign against measles.

Methods

Population and geographical area

During the week of 9–13 December 2002, a mass measles vaccination campaign was conducted in 9 of the 10 provinces in Ghana. It targeted 7.9 million children aged 9 months–15 years. Lawra district, in the Upper West Region of Ghana, is a rural area of extreme poverty with no social marketing schemes for insecticide-treated bednets. An estimated 68.3% of the population live below the extreme poverty line of 700 000 cedis per adult per year (US$ 86.00) and the literacy rate is about 10% (*5*). Household coverage of ITNs in northern Ghana was estimated at 4.4% (*6*).

The official estimate of the total population in Lawra is 90 642, with 18 128 children younger than 5 years old (Lawra District Health Services, unpublished data, 2002). During a national polio immunization day, 28 973 children less than 5 years old were vaccinated in the district (Ghana Expanded Program on Immunization, unpublished data, 2002). We assumed that an equal number of children would attend a measles vaccination campaign. From previous measles campaigns in Ghana, we estimated that each caregiver would bring an average of two children younger than 5 years. Therefore, we estimated that a total of 14 500 ITNs would be needed.

There were 28 fixed vaccination and distribution sites in the district. These were staffed by three or four people: a trained health worker or vaccinator, a recording clerk, and one or two volunteers from the Ghana Red Cross. Each vaccination and distribution site served an average of approximately 500 households. The fixed sites were typically at health centres; temporary sites were located at places convenient to the rural population (such as in villages, at markets or in churches); and mobile sites targeted schools.

Materials

A total of 14 600 ITNs were obtained through Agrimat, Inc. (SiamDutch, Inc., Bangkok, Thailand) and the UNICEF/Ghana country office. This included 4520 long-lasting nets (with the brand name of DAWA) and 10 080 nets pretreated with 20 mg/m² deltamethrin, which met WHO standards for safety and effectiveness. All nets were rectangular and extra-large sized (150 cm x 180 cm x 190 cm), and so could accommodate several people sleeping in a covered bed.

Social mobilization

The logistical demands of transporting, distributing and monitoring the distribution of ITNs precluded house-to-house distribution. Because measles vaccination was to be given at fixed sites, we used those fixed sites as distribution sites. Intensive social mobilization was conducted to assure high rates of attendance at the sites.

One year earlier community-wide registration had been done throughout the district in preparation for a filariasis treatment campaign. Those registration lists were updated and made available to each vaccination and distribution site. Several days before the campaign at each vaccination site one volunteer from the Ghanaian Red Cross attempted to visit every home in the site's catchment area. The volunteers informed caregivers about the measles vaccination campaign, assessed whether they were eligible for ITN distribution, and explained how to properly use the ITNs. Only person-to-person communication was used to inform the community about the bednet distribution. Mass media were not used because it was feared that large numbers of people from outside the target district would come to the sites expecting to receive ITNs. However, local radio broadcasts, posters and banners were used to advertise the measles campaign.

ITN distribution

All children aged 9 months to 15 years arriving at a vaccination site were vaccinated against measles. Caregivers accompanying one or more children aged less than five years old were given an ITN. The names of the children and caregiver were checked against the filariasis registry and added if they were not there. At the end of the vaccination campaign, the Red Cross volunteers were instructed to deliver an ITN to a child's home if no one from that address had received a net and if there were nets remaining.

Assessment

We conducted two assessments, an exit interview immediately after vaccination and a post-campaign population-based survey. On the days of distribution and vaccination, caregivers leaving vaccination sites were asked about their experience with ITNs and the social mobilization for the campaign. Volunteers recruited by the Lawra district Red Cross conducted the exit interview. The volunteers were adults who could read and write English. Volunteers were instructed to choose field sites that met certain requirements. These sites had to be in a geographical area known to the volunteer; they had to be community-based sites at which caregivers would be present (not schools because caregivers would not be present); and they had to be sites where ITNs were being distributed. Because some of the vaccination teams were mobile, the assessors moved with them from site to site. Each volunteer visited approximately four sites in the course of three days.

The second assessment was a household survey conducted five months after the campaign. The purpose of this survey was to measure whether households had received, retained and used the bednets. A two-stage cluster sample was used, with clusters selected on the basis of population-proportional sampling. Within each cluster, a random starting point was selected and households were chosen based on their proximity to the starting point. There were a total of 28 surveyors and 3 supervisors.

In both surveys, the wealth of each household was determined by asking a series of standard questions and a scoring system derived from the Ghana Demographic and Health Survey as developed and reported by The World Bank (7). The questions assessed what possessions the family owned, such as a radio, and what their living conditions were like, for example, what type of house they lived in and their source of water. The lowest 20% of scores were designated the first (poorest) quintile, the second lowest 20% as the next poorest quintile and so on.

In both surveys, volunteers read the survey questions from and recorded answers on hand-held computers known as personal digital assistants (PDAs). The PDAs used in this study were the Visor Neos (Handspring, Inc., Sunnyvale, CA, USA) with the Palm Operating System version 3.5 (Palm, Inc., Milpitas, CA, USA). The PDAs were supplied by Satellife, a non-profit organization in Boston, MA, USA, that applies information technology to solving health problems in developing countries. Programming was done prior to shipping to the field using Pendragon Forms 3.2 (Pendragon, Inc., Libertyville, IL, USA). A data analysis specialist (R.D.) oversaw training, data collation and analysis. The assessment data were transferred from the PDAs to a database in a laptop computer using the synchronizing software and cradle supplied with the PDA. Data were analysed using Epi Info version 6.0 and Epi Info version 2002; proportions were compared using χ^2 tests. Non-responses were excluded from the analysis.

To determine the proportion of children sleeping under ITNs, we included in the analyses only those children in families that reported receiving bednets from the campaign, ignoring pre-existing nets (because it was not possible to reliably determine if they had been treated with insecticide). To determine measles vaccination status, we asked caregivers to report whether their children who were aged 9–59 months had been vaccinated against measles during the campaign. For all other analyses involving children, we asked caregivers to refer only to their children who were younger than 59 months of age. To assess whether an outcome measure was correlated with increasing wealth we considered each wealth quintile as a separate stratum and applied the χ^2 test for trends (using Epi Info version 6.0). Cost information was taken directly from the funded budgets for the Ghana Red Cross and the Ministry of Health. Records with missing responses were excluded from analyses.

Role of the funding source

Results

Surveys

Exit interviews were conducted at 78 sites, of which 70 were in villages and 8 were in towns. Of these, 65 were at temporary outreach sites, 7 were at fixed health centres and 6 were at schools. A total of 818 surveys were completed, of which 802 were valid. There was a mean of 30 completed surveys per volunteer, a mean of 10.1 surveys per day and a mean of 11.6 per site. Of the 802 respondents, 758 (94.5%) were female with a median age of 30 years (range = 10–70) (data not shown). They lived a median of 1.0 km from the vaccination site (range = 0–48 km), and 75% lived less than 2.0 km away (data not shown). Among these respondents, 776 accompanied children who were younger than 5 years old. A total of 1519 children lived in the homes of these caregivers (mean = 1.9; range = 1–12). A total of 1613 children were brought by caregivers to the sites (mean = 2.1; range = 0–9), with 1445 (89.6%) bringing three or fewer children. Some children were brought by neighbours, friends or members of their extended family.

In the post-campaign community survey, there were 262 completed surveys, of which 250 were for children less than 5 years old and 221 were for children aged 9 months–5 years.

Pre-campaign social mobilization and ITN ownership

Of those participating in the campaign, 636/776 (82.0%) reported that a Red Cross volunteer had visited their home before the campaign (Table 1). Of the 776 caregivers reporting that they had used a bednet prior to the campaign, 145 (18.7%) said they had a bednet in their home; 34 (4.4%) reported that the bednet had been treated with an insecticide in the previous six months; and 32 (4.1%) reported that their youngest child had slept under a treated bednet on the previous night (Table 1). While these rates were low for all income levels, there was a significant trend towards higher rates in the wealthier quintiles.

Post-campaign ITN coverage

After the campaign 222/248 (89.5%) caregivers reported that they had received an ITN during the campaign. On inspection of the houses by the survey teams, 234/248 (94.4%) homes were found to have a bednet, and 170/249 (68.3%) had a bednet hung over the child's bed. This represented a mix of bednets owned prior to the campaign and bednets distributed during the campaign. In 168/257 (65.4%) homes caregivers reported that the youngest child had slept under a bednet the previous night. In 153/254 (60.2%) homes, the child had slept under an ITN provided during the campaign. For each of these indicators of coverage, there was no trend towards higher coverage among wealthier quintiles.

ITN retention

Of those who reported receiving an ITN during the campaign, 234/248 (94.4%) were observed to have a net in their home after the campaign. However, some of these nets may have been in the home prior to the distribution, and it was not possible to distinguish whether these were nets that had been distributed during the campaign. Of those who reported receiving a net, 5/227 (2.2%) households reported that they had sold it (data not shown).

Table 1. **Results of exit interview and post-campaign survey of insecticide-treated bednets (ITNs) and their use, Ghana 2002**

Variable	Wealth quintile					Total	P-value
	Lowest	**2**	**3**	**4**	**Highest**	**Total**	
Exit interviews during campaign							
No. households surveyed	151	157	153	159	156	776	
No. of homes visited by volunteer	118 (78.1)[a]	135 (86.0)	130 (85.0)	116 (73.0)	137 (87.8)	636 (82.0); 79.3–84.7[b]	0.10
Bednet observed in home	23 (15.3)	27 (17.2)	30 (19.6)	26 (16.4)	39 (25.0)	145 (18.8); 16.1–21.5	0.06
Treated bednet observed in home	4 (2.6)	2 (1.3)	9 (5.9)	5 (3.1)	14 (9.0)	34 (4.4); 3.0–5.8	<0.01
Child slept under treated bednet during previous night	4 (2.6)	2 (1.3)	9 (5.9)	5 (3.1)	12 (7.7)	32 (4.1); 2.7–5.5	<0.02
Community survey 5-months post-campaign							
No. vaccinated during campaign	47/51 (92.2)	43/51 (84.3)	45/50 (90.0)	44/50 (88.0)	41/48 (85.4)	220/250 (88.0); 83.3–91.8	
No. reporting ITN received	46/51 (90.2)	47/ 50 (94.0)	42/48 (87.5)	46/50 (92.0)	41/49 (83.7)	222/248 (89.5); 85.7–93.3	0.28
Bednet observed in home	47/51 (92.2)	48/50 (96.0)	48/49 (98.0)	47/50 (94.0)	44/48 (91.7)	234/248 (94.4); 90.7–96.9	0.79
Bednet observed over bed	35/52 (67.3)	36/49 (73.5)	31/49 (63.3)	29/50 (58.0)	39/49 (79.6)	170/249 (68.3); 62.1–74.0	0.73
Child slept under bednet during previous night	33/53 (62.3)	34/48 (70.8)	32/52 (61.5)	31/53 (58.5)	38/51 (74.5)	168/257 (65.4); 56.6–71.2	0.67
Child slept under campaign ITN during previous night	30/52 (57.7)	32/48 (66.7)	29/51 (56.9)	30/52 (57.7)	32/51 (62.7)	153/254 (60.2); 54.2–66.2	0.94

[a] Figures in parentheses are percentages.
[b] Figures in italics are 95% confidence intervals.

Impact of ITN distribution of measles vaccination coverage

Altogether, 204/219 (93.2%) children aged 9 months–5 years were vaccinated against measles. Among children eligible for measles vaccination who received ITNs during the campaign, 183/192 (95.3%) had been vaccinated (data not shown). Those children whose caregivers reported receiving an ITN were more likely to have been vaccinated than children of those who did not receive an ITN (Table 2, risk ratio = 2.20; 95% confidence interval = 0.99–4.90).

Costs of vaccination and ITN distribution

The cost of measles vaccination during the campaign was approximately US$ 0.76 per child; this included US$ 0.46 for logistics and social mobilization and US$ 0.30 for the vaccine, syringes and other commodities. The total cost of procuring the 14 600 insecticide-treated bednets was US$ 49 400, or US$ 3.42 per bednet distributed. The measles vaccination campaign contributed to ITN distribution in terms of programme planning, social mobilization, the costs of salaries for some health workers, and the costs of transportation for some personnel and the costs

of some supervision. The marginal costs of ITN distribution are those costs that occurred in addition to the costs of the measles vaccination campaign. The total cost of ITN distribution was US$ 4650, including US$ 2355 for training and supervision, US$ 1745 for transportation and US$ 450 for community education. The total cost of distribution was US$ 4650 for 14 600 ITNs or an average of US$ 0.32 per ITN.

Discussion

These findings suggest that the distribution of insecticide-treated bednets can be rapidly achieved at low cost by linking it to measles vaccination campaigns. The key features of this approach were intensive social mobilization, distribution of ITNs at the time when children were vaccinated and use of community organizations for logistics. This approach may be particularly appropriate in poor rural areas where there are no other distribution schemes.

Our costs were lower than those reported for other distribution schemes. Bednets were given away without charge, and because distribution was integrated into a measles vaccination

Table 2. **Impact of receipt of insecticide-treated bednet (ITN) on receipt of measles vaccine as reported by caregivers in population-based survey, Ghana 2002**

	Received vaccination	Did not receive vaccination	Risk of receiving vaccination
No. receiving ITN	196	3	8.52
No. not receiving ITN	20	6	3.33

Risk ratio = 2.20 (95% confidence interval = 0.99–4.90).

campaign, the marginal costs of accessing this additional service were negligible. The total distribution cost to the providers was US$ 0.32 per ITN delivered. In a large and well planned social marketing programme for ITNs in the United Republic of Tanzania, costs were US$ 1.70 per ITN for marketing and logistics (*8*). A leading social marketing scheme cites programme costs of US$ 6.00–15.00 above the sales price for every bednet (*9*). The total operational cost was US$ 0.87 per child (excluding the cost of commodities such as vaccines, syringes and ITNs). If all costs of distribution were assigned to ITNs, the distribution cost was less than US$ 1.00 per child.

The benefit of vaccines in preventing disease accrues directly to the public through the averted costs of treatment at publicly-funded clinics and hospitals. Providing free services and continuously reducing other non-cost barriers to accessing these services is a hallmark of successful vaccination programmes. Any cost associated with accessing ITNs, including the consumer's costs of accessing free bednets, presents a barrier that may decrease uptake. Recent calls to increase the distribution of ITNs in developing countries have suggested that their distribution should be similar to that of vaccination — that is, they should be freely available to all who would benefit (*10*).

The location chosen for this project is one of the poorest and most isolated regions of Ghana. It had no social marketing schemes for ITN distribution or re-treatment of nets with insecticide. The level of extreme poverty (with 68.3% living below the poverty line) means that most families can only purchase an ITN by choosing to buy less food than is necessary to meet their family's minimum caloric needs or to forgo other basic needs. Because ITNs were free and the barriers to accessing them were low during the campaign, our approach achieved high levels of equity. For households in the poorest quintile, post-campaign coverage for ITNs was 10 times higher than pre-campaign coverage for households in the wealthiest quintile (90.2% versus 9.0%). Despite this poverty, only 2.2% of households reported that they had sold the bednet distributed by the campaign. It seems unlikely that this low rate of "leakage" would have any commercial impact. For this study population, we have made provisions to re-treat the nets with insecticide according to Ministry of Health and WHO guidelines.

Based on clinical trials of ITNs in western Kenya, Hawley et al. have demonstrated that the key determinants of the effectiveness of large-scale programmes to distribute bednets are the proportion of households with ITNs (coverage), the proportion of individuals properly using ITNs each night (adherence), and the proportion of bednets properly treated with insecticide (treatment) (*11*). For this project, we demonstrated high levels of coverage (89.5%) and adherence (68.3%), and 100% of the nets distributed had been pretreated. Hawley et al. also suggested that the impact on disease reduction depends on the proportion of nearby households with ITNs, not just on the prevention of mosquito bites for individuals who sleep under bednets. To maximize their public health impact, high cover-

age of treated nets is essential (*12*). Mass distribution provides a mechanism for achieving this high coverage and the proposed effect on the community.

There are several features of ITNs and mass measles vaccination campaigns that favour the sustainability of a combined approach. First, high coverage and low cost favour investing in this combined approach as compared with, for example, subsidizing the sales of bednets. Second, the underlying measles campaigns are recommended in all sub-Saharan African countries (*13*). As practised in the Americas and in Africa, after an initial campaign for children aged 9 months–15 years, subsequent campaigns are conducted every 3–4 years for children aged 9 months–5 years; thus a total of 150 million children receive campaign vaccinations each year (*14*). Each vaccination represents a potential opportunity to deliver ITNs. Third, long-lasting ITNs should last 3 years under normal conditions; ITNs require replacing at the same interval as measles vaccination campaigns take place. Finally, there are substantial resources provided to countries for ITN distribution (such as those through the Global Fund to fight AIDS, Tuberculosis and Malaria) that are not being used as quickly or as effectively as originally envisioned. The approach outlined here may offer a mechanism to achieve the intended coverage, equity and cost goals for those funds.

We believe that linking the distribution of insecticide-treated bednets to measles vaccination campaigns presents an important opportunity for reaching malaria control goals and merits larger-scale implementation and evaluation. ∎

Résumé

Distribution de moustiquaires imprégnées d'insecticide pendant la vaccination antirougeoleuse : un moyen peu coûteux d'assurer une couverture étendue et équitable

Objectif Afin d'obtenir une couverture étendue et équitable en matière de moustiquaires imprégnées d'insecticide, on a intégré la distribution de ces accessoires à une campagne de vaccination antirougeoleuse.

Méthodes En décembre 2002, dans le district ghanéen de Lawra, on a mené une campagne de vaccination antirougeoleuse d'une semaine visant tous les enfants de 9 mois à 15 ans. Une moustiquaire imprégnée d'insecticide gratuite a été attribuée aux familles comptant un ou plusieurs enfants de moins de cinq ans. Le Ghana Health Service, avec l'appui de la Croix rouge ghanéenne et de l'UNICEF, a fourni un soutien logistique et des volontaires et a assuré la mobilisation sociale pendant la campagne. Les volontaires ont visité les foyers pour informer les parents ou les parents substituts au sujet de la campagne et les encourager à y participer. Les auteurs ont évalué la couverture en matière de moustiquaires avant la campagne en interrogeant les parents ou parents substituts quittant les lieux de vaccination et de distribution. Cinq mois après la distribution, une enquête en grappes en deux étapes, faisant appel à un échantillonnage proportionnel à la population, a évalué la couverture en matière de moustiquaires, ainsi que la conservation et l'utilisation de ces accessoires. Avant, comme après la campagne, l'enquête a évalué le patrimoine des ménages grâce à un inventaire des biens.

Résultats Lors de l'entretien subi à l'issue de la campagne, 636/776 (82,0 %) des parents ou parents substituts ont indiqué qu'ils avaient reçu la visite à domicile d'un volontaire de la Croix rouge avant la campagne et que 32/776 (4,1 %) de leurs jeunes enfants de moins de cinq ans dormaient sous une moustiquaire imprégnée d'insecticide. Cinq mois après la distribution, les parents ou parents substituts ont indiqué que 204/219 (93,2 %) de leurs enfants de 9 mois à 5 ans avaient été vaccinés pendant la campagne. On a constaté que 234/248 (94,4 %) des ménages disposaient d'une moustiquaire imprégnée d'insecticide et que 170/249 (68,3 %) d'entre eux avaient une moustiquaire suspendue au-dessus d'un lit. Dans l'ensemble, 222/248 (89,5 %) des parents ou des parents substituts ont indiqué avoir reçu au moins une moustiquaire imprégnée d'insecticide au cours de la campagne et 153/254 (60,2 %) ont affirmé que la nuit précédente, leur plus jeune enfant avait dormi sous une moustiquaire reçue pendant la campagne. Dans le cas des ménages appartenant au quintile le plus pauvre, la couverture en matière de moustiquaires imprégnées d'insecticide après la campagne était 10 fois plus élevée que celle des ménages appartenant au quintile le plus riche avant la campagne (46/51 [90,2 %] contre 14/156 [9,0 %]). Le coût marginal de l'opération se montait à US $ 0,32 par moustiquaire imprégnée d'insecticide délivrée.

Conclusion D'après ces résultats, il semblerait que lier la distribution de moustiquaires aux campagnes de vaccination antirougeoleuse fournisse une occasion importante de parvenir à une couverture étendue et équitable en matière de moustiquaires.

Resumen

Distribución de mosquiteros tratados con insecticida durante la vacunación antisarampionosa: una opción de bajo costo para lograr una cobertura alta y equitativa

Objetivo A fin de lograr una cobertura alta y equitativa con mosquiteros tratados con insecticida, decidimos integrar su distribución en una campaña de vacunación antisarampionosa.

Métodos En diciembre de 2002 se emprendió en Lawra, distrito de Ghana, una campaña de vacunación antisarampionosa de una semana de duración centrada en todos los niños de 9 meses a 15 años de edad. Como parte de la misma, se previó que se proporcionaría gratuitamente un mosquitero tratado con insecticida a todas las familias en las que hubiera uno o más niños menores de cinco años. El Servicio de Salud de Ghana, con el respaldo de la Cruz Roja de ese país y el UNICEF, contribuyó a la campaña con apoyo logístico, trabajadores voluntarios y movilización social. Los voluntarios visitaron los hogares para informar a los cuidadores acerca de la campaña y animarles a participar. La cobertura con mosquiteros anterior al inicio de la campaña se evaluó entrevistando a los cuidadores que abandonaban los centros de vacunación y distribución. Cinco meses después de la distribución se hizo una encuesta por conglomerados en dos etapas con muestreo proporcional de la población para determinar la cobertura con mosquiteros, así como la conservación y el uso de los mismos. Tanto en la encuesta previa a la campaña como en la posterior a ella se hicieron inventarios de los bienes domésticos para evaluar la riqueza de los hogares.

Resultados En las entrevistas realizadas al término de la campaña, 636 de 776 cuidadores (82,0%) señalaron que habían recibido la visita domiciliaria de un voluntario de la Cruz Roja antes de la campaña, y que 32 de los 776 niños (4,1%) más pequeños de cada hogar y menores de 5 años de edad dormían bajo un mosquitero tratado con insecticida. Cinco meses después de la distribución, los cuidadores informaron de que 204 de 219 niños (93,2%) de entre 9 meses y 5 años habían sido vacunados durante la campaña; se observó que 234 de 248 hogares (94,4%) disponían de un mosquitero tratado con insecticida; y en 170 de 249 (68,3%) había un mosquitero colgando sobre una cama. En total, 222 de 248 cuidadores (89,5%) declararon que habían recibido al menos un mosquitero tratado con insecticida durante la campaña, y 153 de 254 (60,2%) dijeron que la noche previa el más pequeño de sus hijos había dormido bajo un mosquitero recibido durante la campaña. En el caso de los hogares del quintil más pobre, la cobertura poscampaña con mosquiteros tratados con insecticida fue 10 veces mayor que la cobertura precampaña entre los hogares del quintil más rico (46 de 51 [90,2%] frente a 14 de 156 [9,0%]). El costo operacional marginal fue de US$ 0,32 por cada mosquitero tratado con insecticida efectivamente entregado.

Conclusión Los resultados indican que la vinculación de la distribución de mosquiteros a las campañas de vacunación antisarampionosa puede brindar una gran oportunidad para conseguir una cobertura alta y equitativa con mosquiteros.

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