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Monitoring ivermectin distributors involved in integrated health care services through community-directed interventions - a comparison of Cameroon and Uganda experiences over a period of three years (2004-2006).

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Abstract

Objectives: To assess and compare the effectiveness of ivermectin distributors in attaining 90% treatment coverage of the eligible population with each additional health activity they take up.

Methods:

Introduction

Community-directed interventions (CDI) is an approach where the community is given adequate information to get involved in decision-making, organization, and mobilization of resources to tackle any challenges that affect its health. This approach has been utilized in some community health programs such as control of malaria, lymphatic filariasis and schistosomiasis, eye care, maternal and child health, nutrition and immunization (Winch et al, 2002; Ndyomugyenyi and Kabatereine, 2003; Richards et al, 2006; and Ford et al, 2005). The concept of integration of health care is about harmonising different, but interdependent services using same delivery system in order to achieve multiple objectives. It is also about changes in operations in health care system, which bring together inputs, delivery, management and organization of particular service functions. World Health Organisation (WHO) encourages countries to develop sustainable health infrastructure that can provide health care in an integrated fashion in order to reach

referred too as a kinship may own and occupy land in a specific geographical area within a community.The Carter Center and APOC financed training of this type of distributors as they served their kindred without expecting many any incentives. Therefore, Cameroon was undergoing a major transition during the study period. In Uganda the kinship approach had been implemented since 2000. Therefore, selection and training of distributors in Uganda was based at the kinship level within a community, while in Cameroon it was not yet the case in every community. That is why there were more distributors in selected communities in Uganda than in Cameroon.

Study design and Sampling

Random sampling in lists of districts and communities was done using the random number table, with at least 30% of each of them being selected. Based on the population of individual selected district, communities were randomly selected from a list of communities at 95% confidence level for homogeneous population annually (Salant & Dilman, 1994). Each year, 8 of 23 districts in Cameroon and 5 of 11 in Uganda would be randomly selected. At least 95% of the distributors in selected communities every year in each country program would be interviewed. Only distributors from randomly selected districts and communities of Cameroon, 288 (in 2004), 357 (in 2005), and 348 (in 2006), and Uganda, 703 (in 2004), 611 (in 2005) and 789 (in 2006) were interviewed. The number of communities and distributors, as well as total population in each selected sample, every year in each program were computed. The population figures were computed from community households registers. It is from this information that distributors per community, and population per distributor were calculated.

Ivermectin distributors' Face to face Interviews: A semi structured questionnaire was used in interviewing distributors, and where appropriate, probing questions asked in order to ascertain the knowledge of, and involvement in CDTI activities. The questionnaire elicited information such as whether the distributor: (i) distributed ivermectin or not; (ii) worked only in his or her kinship; (iii) served outside his or her community; (iv); was involved in other health activities; and if yes, how many other health activities the CDD was involved in; (v) was supervised; and (vi) would distribute ivermectin during the following year. Other factors considered were: (i) who selected the distributor; (ii) from where was the distributor selected; (iii) treatment coverage; (iv) whether the distributor treated kindred (family members) or not, (v) how long it took to complete the distribution exercise; and (vii) whether community members helped in mobilising other community members during treatment exercise.

The interviews were organised and executed by the Carter Center personnel and ministry of health (MOH) staff at various levels of the health system. The monitoring team included an epidemiologist, social scientists, and various categories of health workers. Where possible, 3 research assistants who were university students assisted in training interviewers, helped distributors and their supervisors to tally community registers from selected communities, and ensured proper recording of responses in the questionnaires by trained interviewers. Trained interviewers were mainly teachers and retired civil servants who resided outside the communities where they carried out interviews in order to avoid biased responses. Two interviewers had three days to interview all the distributors within their respective resident communities.

Mass treatment data: Data on treatment coverage attained by distributors was determined by tallying population information and treatment records in community household registers (CHRs) provided by respective programmes in each community. These CHRs were updated every year by the respective distributors and with assistance from health workers. Total eligible population is defined as total population minus children below 5 years of age who are excluded from treatment. Treatment coverage as a proportion of the number of persons treated divided by the eligible population was applied to answer the question on treatment coverage in every distributor's questionnaire.

Data analysis

The responses from questionnaires were entered and coded record files and analysed with EPI-INFO (Versions 6.04 and Window), statistical software from the USA Centers for Disease Control (CDC), Atlanta GA. Data from yes or no questions was analysed statistically using simple Chi-square test and graphic illustrations generated in MS Excel. The analysis focused on attainment of 90% treatment coverage of eligible population. The effect of additional activities on treatment coverage attained by individual distributors, their willingness to continue dispensing ivermectin in future, and other factors that could enhance or hinder their performance were considered.

A multivariate regression model with treatment coverage and a number of independent variables mentioned above was performed using STATA 8.0 for Windows (StataCorp LP in Texas USA) in order to find out true predictors of 90% treatment coverage with additional health activities. The eight covariates (independent variables) which were included in the model were that a distributor worked: (i), outside his or her community, (ii) within 1 km from his/her homestead, (iii) among kindred, (iv) was responsible for less than 20 households, (v) completed distribution within a week, (vi) was selected by community members (vii) was

A high percentage of distributors who were involved in CDTI alone in both programmes attained at least 90% treatment coverage compared those who were involved in additional

activities. The reasons given indicated that those not continuing were: young females getting married outside their communities, individuals seeking jobs outside their communities, and some were too old or ill to continue. The multivariate regression did not yield significance of the coefficients as the average percent of distributors that attained 90% were few since the data analysed had only 3 years for each program.

Discussions

The results show that a significant number of ivermectin distributors in Cameroon and

complete ivermectin distribution in their own communities, and attain 90% treatment coverage. It is possible that distributors who treated community members outside their communities had a tougher job in mobilizing, educating and treating individuals than those who worked within their respective communities. Their workload also may have been heavy and unmanageable. In the case of Uganda, over three quarters of the distributors during the study period worked within a kilometer from their individual homesteads. It seemed that their sheer numbers, within their respective kinship/neighborhood areas, ensured a low workload for each one of them, and reduced considerably time spent on health care activities.

link that had been missing between the health care system and the beneficiaries in affected communities.

The present study demonstrated that community selected distributors are likely to have a low attrition rate, that those not selected by the communities. Even the few who were not continuing in that role had a positive attitude towards CDTI (Katabarwa and Richards, 2001). The reasons for not continuing CDTI activities were the expected positive societal values such as getting a job, being married outside ones community, and weakness due to old age or illness. That is why every community should have a mechanism for selecting and training new distributors every year in order to replace the ones that may not continue serving them.

In conclusion, additional health activities could potentially undermine the performance of distributors. However, maintaining fewer households per distributor and possibly among kindred, and close supervision may improve their effectiveness. In order to attain this, regular monitoring of public health programmes that depend on community involvement is necessary to verify performance and assess indicators of efficiency. Integration has become a "buzz" word yet there is still a lot not yet known about it. The present study is a step towards understanding factors and measures of effectiveness that influence positively or negatively the distributors as regards their involvement in integration of health activities.

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Figure 3: Trend in attaining 90% of treatment coverage when distributors are involved in CDTI alone and every additional health activity in Cameroon (2004, n=288; 2005,

Figure 1

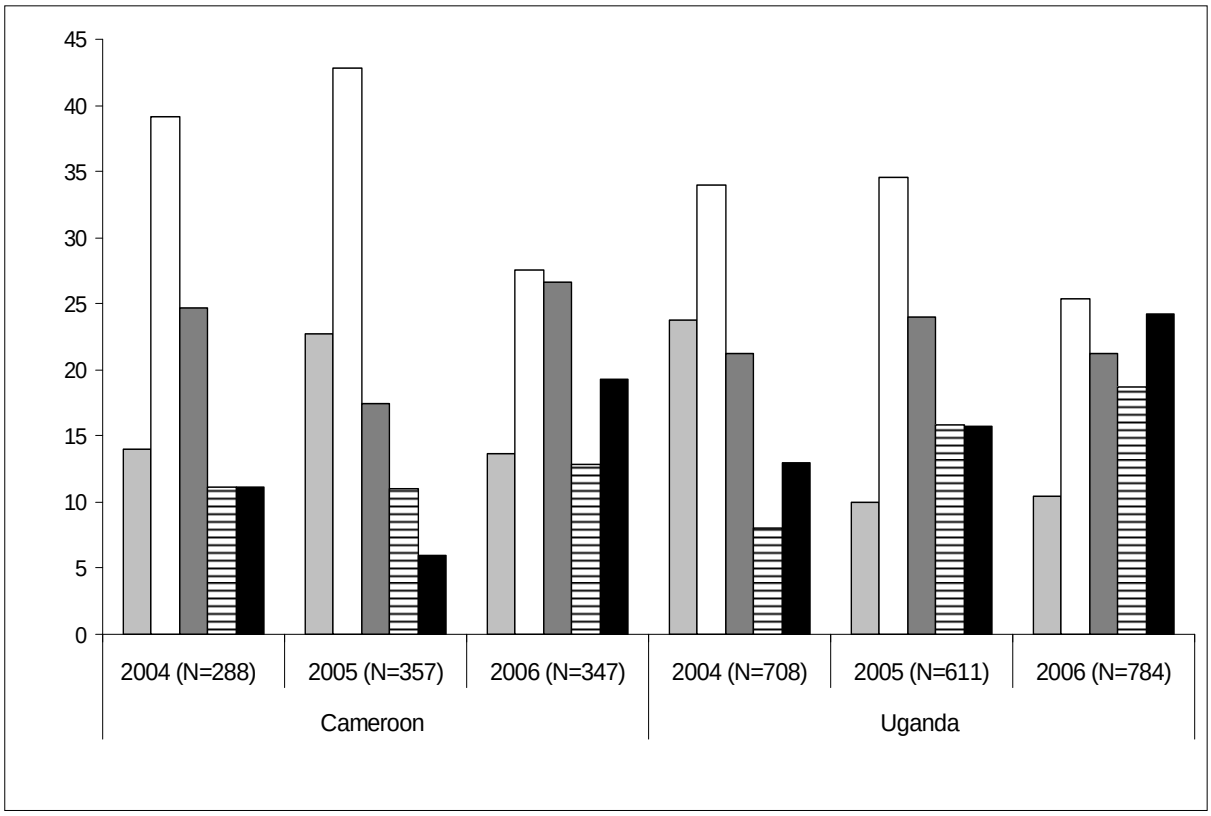
45
40
35
30
25
20
15
10
5
0
2004 (N=288)
2005 (N=357)
2006 (N=347)
2004 (N=708)
2005 (N=611)
2006 (N=784)
Cameroon
Uganda

Figure 2

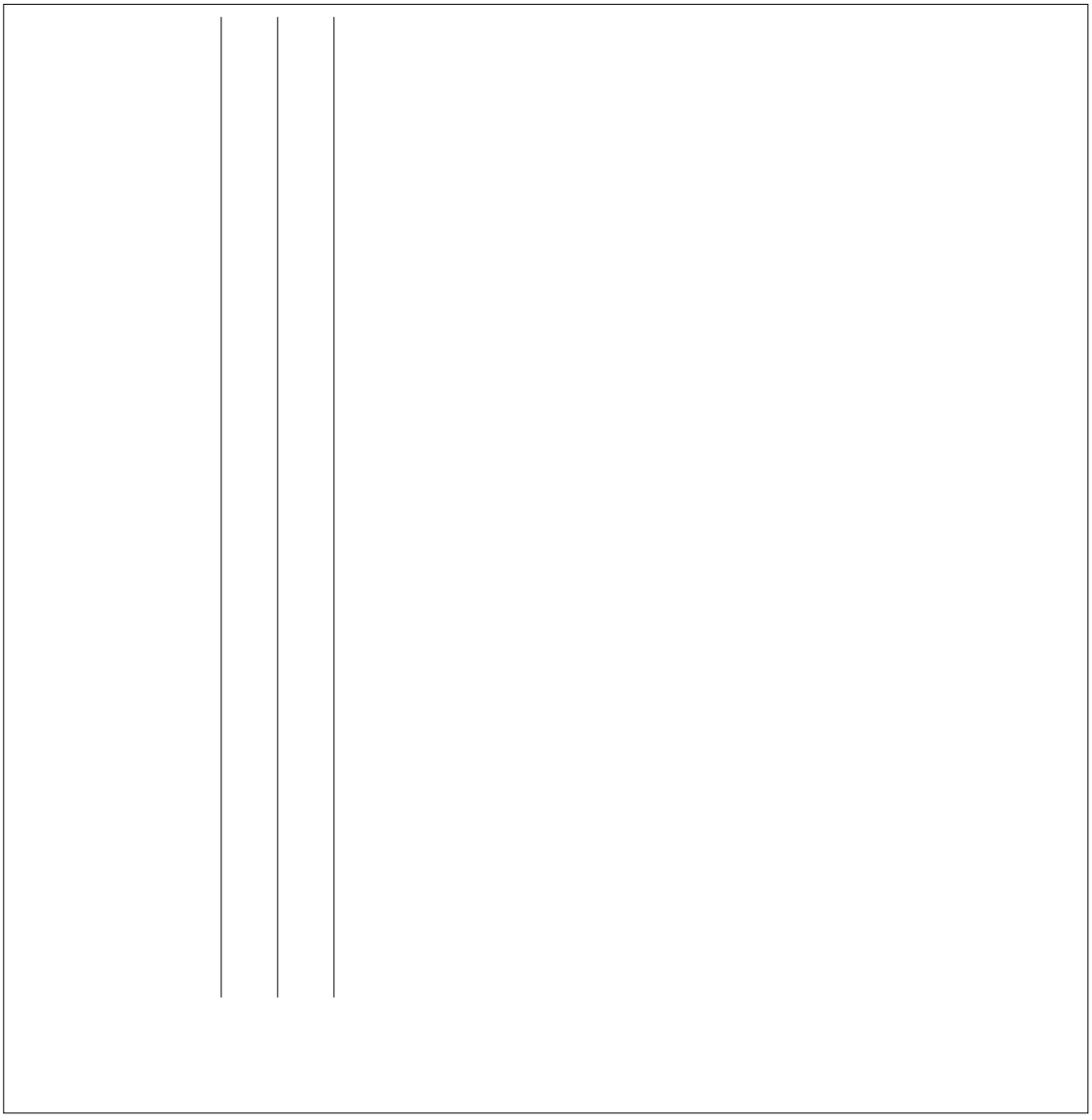

Figure 3

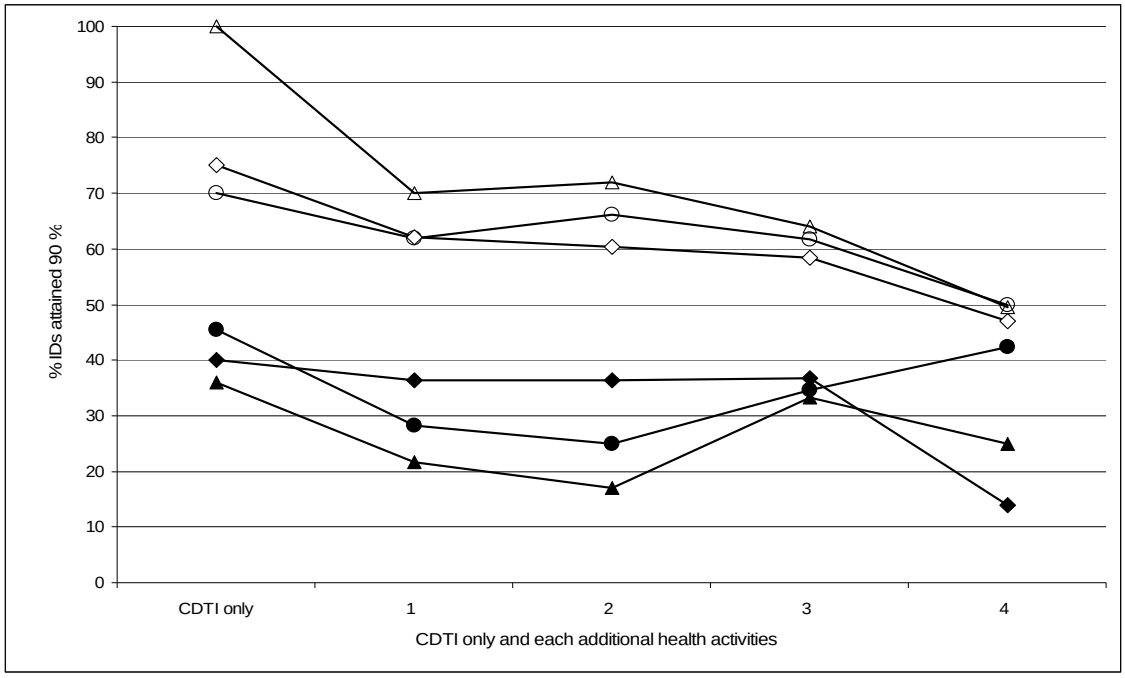
100
90
80
70
60
50
40
30
20
10
0
% IDs attained 90 %
CDTI only
1
2
3
4
CDTI only and each additional health activities

Table 3: Comparing ivermectin distributors in Cameroon 2004 (N= 94); 2005, (N= 81); and 2006, (N=77) and Uganda in 2004, (N=480); 2005, 2006, (N= 480) who attained 90% treatment coverage on factors that enhanced or hindered their effectiveness.

	2004	2005	2006	P-value for the chi-square test of association		
				2004/ 2005	2005/ 2006	2004/ 2006