



Evaluation of free malaria case management for children under 5 years and pregnant woman in Benin

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Abstract

In 2011, the government of the Republic of Benin decided the free malaria cases management for pregnant women and children under 5 years. Started in November 2011, this initiative helped to ensure a free malaria cases management of 48574 cases of uncomplicated malaria in 2012 for children less than 5 years and 6888 for pregnant women. Similarly 77% of health centers are actually implementing the initiative and 96% of health centers have been reimbursed at least once.

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Introduction

In the world, 99 countries are affected by the transmission of malaria and nearly are exposed to the risk of infection (Danis & Gentillini, 1998; Gentillini, 1991; OMS, 2008). It is estimated that environs 276 million cases occurred in 2010 with surrounding 655 000 victims (Kweka *et al.*, 2011; WHO, 2010; WHO, 2011; WHO, 2012). More than 90% of malaria deaths occur in Africa and 80% of victims are children less than 5 years (Coz, 1973; Zakharova, 1983; Bradley *et al.*, 1986; Chippaux *et al.*, 1989; Alonso *et al.*, 1991; Lengeler *et al.*, 1996).

In Benin in 2011, the incidence of uncomplicated malaria per 100 inhabitants was 13.2. This rate is estimated at 49.6 for children aged less than one year, to 28.1 for those aged 1 to 4 and 9.0 from 5 to 14 years (WHO, 2012). Then, the government of Benin decide to reduce the number of children who die all year and contribute to achieve the Millennium development goal 6. So, In november 2011 the program named "prise en charge gratuite des cas de paludisme chez les femmes enceintes et les enfants de moins de 5 ans" began. Main objective of this study is to verify after a year of application in all health area, if children and women are who have malaria beneficiary the program of free malaria case management.

Materials and Methods

This study is a descriptive cross-sectional to assess the implementation of free malaria cases management in health public centers and assimilated. This study took place over a period of 12 months with the collection of data in December 2012 and November 2013. The data of 2012 and 2013 were compared to assess progress.

Monitoring of the implementation of the free malaria cases management is done in the 12 departments of the country and in all 34 public health zones of the country.

National hospitals, departmental hospitals, health area hospitals (districts), and Health centers are questioned. In each of the selected structures, key persons are: the Director of the hospital, administrative and financial officials, coordinator medical doctor, and the chief of health center. In each sanitary zone, household's residing in the locality that benefited from free malaria cases management are also targeted. Hospitals and health centers that are not part of the Ministry of health structures do not practice free malaria cases management. They are therefore not included in this study.

Based on study targets, the sample size were determined as follows: (Table 1) data collection was conducted with all the targets of the study by an integrated tool which includes i) a card counting at the level of health structures ii) an interview with key persons iii) a guide with households.

Table 1. Summary of the size of the sample on the basis of targets.

Targets of study	Sampling Method	sample
Primary Targets		102
National hospitals	Exhaustivity	2
Departmental hospitals	Exhaustivity	5
Sanitary zone hospitals	Exhaustivity	27
Districts hospital	02 Per ZS	68
Secondary targets		156
The Director of the hospital	Exhaustivity	27
Administrative and financial officials	Exhaustivity	27
Coordinator Medical Doctor	Exhaustivity	34
The chief of HC	02/ZS	170
Tertiary targets		
Beneficiary households	5 households/ZS	170

The data collection was made by a team of three people by department. The profited data collection agents can appreciate as well the quality of the implementation of the strategy at the level of the clinic/medicine- pediatric, motherhood, the financial and accounting service. The data collected were entered into epi data version 3.1 mask, and the data were analyzed in the soft were epi info version 3.5.1. Frequency

tables were produced to populate the tracking key indicators. A triangulation of information has been made before consider it as valid. Anonymity is respected which in relation to the data collected at all levels; the photos were made with the free and informed consent of the persons concerned.

Results of the study

Total 252 health centers have been assessed, 95 in 2012 and 157 in 2013. The table below shows the structures visited per year and per Department. (**Table 2**)

Table 2. Health centers evaluated in 2012 and 2013 per year and per Department.

Department	Areas hospitals	Visited structures 2012	Visited structures 2013
Mono/Couffo	4	8	20
Ouémé/Plateau	5	16	25
Zou/Collines	6	17	28
Borgou/Alibori	7	19	31
Attacora/Donga	5	14	25
Atlantique/Littoral	7	21	18
Total	34	95	157

Table 3. Health centers not engaged or released free malaria cases management for children under 5 years and pregnant at the time of visits.

Departments	Heath areas(ZS)	Evaluated HC 2012	Evaluated HC 2013	HC failing in 2012	HC failing in 2013
Mono/ Couffo	4	8	20	2(25%)	4(20%)
Ouémé/ Plateau	5	16	25	8(50%)	3(12%)
Zou/Collines	6	17	28	5(24%)	1(3.6%)
Borgou/ Alibori	7	19	31	8(42%)	0(0%)
Atacora/ Donga	5	14	25	10(71%)	1(4%)
Atlantique/ Littoral	7	21	18	2(10%)	1(5.5%)
Total	34	95	157	35(37%)	10(6.4%)

Table 4. Availability of inputs for free case management.

Department	Health areas	HC Estimated in 2012	HC Estimated in 2013	HC in breaking ACT and RDT 2012
Mono/Couffo	4	8	20	(1.25%)
Ouémé/Plateau	5	16	25	(25%)
Zou/Collines	6	17	28	9(47%)
Borgou/Alibori	7	19	31	0(0%)
Atacora/Donga	5	14	25	5(9.5%)
Atlantique/Littoral	7	21	18	0(0%)
Total	34	95	157	19(20%)

Table 5. Availability ACT and RDT.

Availability	RDT	ACT
Yes	122(84.7%)	134(88.2%)
No	22(15.3%)	18(11.8%)
Total	144(100.0%)	152(100%)

Effectiveness of the implementation of free Assessment allow to make the point of health units do not practice or having released the free malaria cases management for children under five years and pregnant women. Table II bellow shows that in 2012, 35 health units on 95 assessed were not engaged or we released free malaria cases management. In 2013, this figure is 10 of 157 health units (**Table 3**)

Malaria cases management guidelines are complied with in department hospitals and area hospitals vided with the exception of two or 6%. However most health centers do not respect these guidelines even though the documents are sent to all departments. (Table 4).

It appears from table IV that in 2012, 20% of health units vided have experienced complete break in RDT or ACT the day of the visit. 2013 data are presented in the tables below. (Table 5)

✓ 15% of centers practicing free malaria cases management experienced failure in RDT.

✓ 11.8% of health centers practising the free malaria cases management have broken down in ACT.

- ✓ Besides 3.5% of health centers have broken down in glucosed serum 10%
- ✓ 20.8% of health centers laboratories experienced failure in giemsa.
- ✓ 4% of health formations don't have paracetamol
- ✓ 20.7% and of health formations have respective at their disposal quinine tablets and injectable quinine.
- ✓ 5.83% of health centers having a available post of blood transfusion don't dispose blood in the moment of estimation

The checking of affectivity for free malaria cases management has been appreciated through visit on place or telephone calls of beneficiaries. The results prove that always.1) Addresses are not complete to facilitate to find beneficiaries almost all the sanitary zone (42 on 55 beneficiaries wanted) the phone number sometimes mentioned has been very important to find beneficiaries; 2) 94.7% of beneficiaries found (36/38) have confirmed have paid for their care, whereas they are invoiced for the free malaria cases management. (Fig 1), (Table 6)

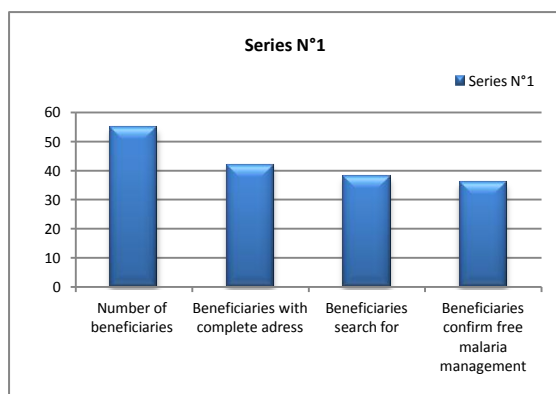


Fig 1. Distribution of presumed beneficiaries.

The determination of cases supported in 2012 and 2013 showed that the number of cases of uncomplicated malaria has decreased almost by half among children less than five years.

Reimbursement of free taking care fees to health formations in 2013 (Table 7).

Table 6. free case management of simple and complicated malaria in 2012 and 2013.

Category	Cases	2012	2013
Children under five year	Uncomplicated malaria	48 574	22345
	Complicated malaria	9 297	16 438
Pregnant women	Uncomplicated malaria	6 888	10 374
	Complicated malaria	2 507	1995
TOTAL		67 266	51 152

Table 7. Percentage of health center having been reimbursed at least once according to the department.

Department	Health center Reimbursed		
	Yes	No	Total
Borgou	11(10.0%)	3(9.1%)	14(9.8%)
Alibori	14(12.7%)	3(9.1%)	17(11.9%)
Atacora	9(8.2%)	0(0.0%)	9(6.3%)
Donga	14(12.7%)	0(0.0%)	14(9.8%)
Zou	19(17.3%)	0(0.0%)	19(13.3%)
Collines	5(4.5%)	1(3.0%)	6(4.2%)
Mono	2(1.8%)	10(30.3%)	12(8.4%)
Couffo	5(4.5%)	8(24, 2%)	13(9.1%)
Atlantique	6(5.5%)	4(12.1%)	10(7.0%)
Littoral	5(4.5%)	1(3.0%)	6(4.2%)
Ouémé	11(10.0%)	3(9.1%)	14(9.8%)
Plateau	9(8.2%)	0(0.0%)	9(6.3%)
Total	110(100.0%)	33(100.0%)	143(100.0%)

Operated Reimbursement (Table 8), (Table9). 83.6% of health center members think that the free malaria cases management has really increased health centers and hospitals. (Table 10)

Table 8. Reimbursed amounts in 2013.

Currency	Total reimbursed	Amount paid Dec. 31 st , 2013	Amount paying	Engaged amount and prescribed
F CFA	612837470	322581095	61553445	228702930
USD	1225675	645162	123106	457406

Table 9. Percentage of health center confronted to some difficulties for the confirmation of cases.

Health center in problem	Frequency	Percentage
Yes	23	16.4%
No	117	83.6%
Total	140	100.0%

Table 10. Percentage of the members on the frequenting.

Perception of HC and hospitals on frequenting	Frequency	Percentage
The adding rate	102	83.6%
The reducing rate	4	3.3%
The rate is not changed	16	13.1%
Total	122	100.0%

Discussions

The current study has as purpose to estimate the accomplishment of the free malaria cases management of simple and complicated malaria among the children under five year and the pregnant Women. The discussion of the resultants will be based on: 1) The accomplishment of the purposes; 2) the validity the results. In order to accomplish the purposes given by this study we have taken as variable dependent: the reduction of the complicated malaria. Some variables have been discussed: 1) Quality of malaria cases management 2) Performance of the cared personnel 3) Capacity of the technic tray of the health formations 4) Organization of the health centers and 5) Delay to care.

The presence of the planner has certainly an effect on the behavior and may be the answers of the health agents at the time of questionnaire administration the responses quality may not be the real because the presence of the national Malaria control program agents has provoke sincerity or year that can bring about the angles. The quality of collected data at the time of register analysis and others tool came missing information in the files. The rates of missing answers to some questions at the time of analysis vary from 5% to 11%. The missing answer is a factor of wrong information because some answers if they have been given would influence the data interpretation. However, the fact of having investigated systematically the entire district and some health centers should reduce in principle this angle.

The searching of 402 documents of children has been realized instead of 325 foreseen. The observation of malaria cases management of the whole 19 children present during the days of the searchers and with the complicated malaria has been done and all their parents have been interviewed. Some decisions have been realized with all the health members present in health formations by taking into account the sick children. The observation and the planning have been realized in the all health formation. We can conclude that the foreseen purposes by studying have been realized.

In total, 102 health centers were provided by annual evaluation. In total, 252 health centers were assessed either 95 in 2012 and 157 in 2013. Health centers do not practice or having released the free support for cases of malaria in children under five years and pregnant women is 35 health units on 95 assessed in 2012 and 10 on 157 health units. There is a net decrease in the number of health centers in phase with the initiative which has increased from 35% in 2012 to 6% in 2013. In 2012, 20% of health centers have experienced failures of any kind. On the other hand, in 2013, this figure ranged from 4 to 11%. We can deduce that the high rate of failures in input has influenced the proportion of health center which don't implemented free cases management. On the other hand, one could estimate that by 2012, it was barely a year since the initiative was launched. A total of 170 intended beneficiaries, the evaluation team was able to find only 55 and contact that 38 in the community. This situation is due to the fact that the addresses are not always complete to facilitate the search for recipients. Sometimes mentioned telephone number has been of great assistance to search for recipients. 94.7% of recipients found (36/38) claimed have been supported for free case management (36). 5.3% (2/38) beneficiaries reported having paid for their care while they are charged for the free account. 83.6% of health workers believe that free support

induced an increase in attendance at health centers. This is due to the fact that populations have had information on the initiative and wanted to benefit from.

It is noted a decrease in the number of cases received between 2012 and 2013. This situation is due not only to implementing 2013 a tour fair management of cases of malaria in children under five in the villages lacustrine and related of Benin during the long season of rain but also to focus on the implementation of the new policies of support for malaria.

Conclusion

At the end of this evaluation of the free support of malaria in 34 health zones, it can be concluded that the support free cases of malaria in children under 5 years and pregnant women is effective. This initiative helped to ensure a free pick 48574 cases of uncomplicated malaria in 2012 in children under the age of 5 years and 6888 in pregnant women.

Abbreviations

WHO: world Health Organisation

UAC: University of Abomey Calavi

RDT: Rapid Diagnostic Test for malaria

ACT: Artemisinin based Combination Therapy

HC: Health Center

Scientific names: *Plasmodium falciparum*

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