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DREF final report
Ghana: Meningitis outbreak

International Federation of Red Cross and Red Crescent Societies

DREF operation n° MDRGH006
GLIDE n° EP-2012-000034-GHA
30 October, 2012

The International Federation of Red Cross and Red Crescent (IFRC) Disaster Relief Emergency Fund (DREF) is a source of un-earmarked money created by the Federation in 1985 to ensure that immediate financial support is available for Red Cross Red Crescent response to emergencies. The DREF is a vital part of the International Federation's disaster response system and increases the ability of National Societies to respond to disasters.

Summary: CHF 76,060 was allocated from IFRC's Disaster Relief Emergency Fund (DREF) in April 2012 to support the National Society in delivering immediate assistance to some 3,200 households (16,000 beneficiaries) affected by the Cerebrospinal Meningitis (CSM) outbreak in Upper East Regions of Ghana.

The operation lasted for three months, during which time Ghana Red Cross Society (GRCS) mobilized and trained 160 volunteers to carry out social mobilization for vaccination activities. As the leading organization in social mobilization during emergencies and national immunizations, Ghana's Ministry of Health relies heavily on Red Cross volunteers to mobilize communities for health preventive measures and surveillance during such emergencies.

Volunteers mobilizing target group (2-29 years) for the CSM vaccination in April and May, 2012 during the DREF operation-GRCS

The outbreak of CSM in the Upper East Region affected 466 people and claimed 38 lives with a case fatality rate (CFR) of 8 from week 1 to 29 (Ghana Health Service, Upper East).

The trained volunteers targeted 3,200 households with an average family size of 5 (16,000 people) to be reached with health messages on the meningitis outbreak, prevention and control. However, due to the magnitude of cases, volunteers were able to reach a total of 26,045 people**.**

Meningitis related IEC materials were adapted, printed and distributed to the target population. Radio jingles and TV discussions on the importance of avoiding crowding especially in public gatherings and while sleeping were broadcast in local dialect. Advocacy visits and meetings were held with key partners, such as the Ministry of Health, WHO, traditional and religious leaders as well as school heads. These motivated the communities to support Red Cross work.

The Swiss Red Cross sent a health delegate to assist in the training of more volunteers in all the districts of the affected region. Over 100 volunteers including Mothers Club Members were trained by the delegate.

The European Commission Humanitarian Aid and Civil Protection (ECHO) contributed to the DREF in replenishment of the allocation made for this operation.

The major donors and partners of DREF include the Australian, American and Belgian governments, the Austrian Red Cross, the Canadian Red Cross and government, Danish Red Cross and government, the European Commission Humanitarian Aid and Civil Protection (ECHO), the Irish and the Italian governments, the Japanese Red Cross Society, the Luxembourg government, the Monaco Red Cross and government, the Netherlands Red Cross and government, the Norwegian Red Cross and government, the Spanish Government, the Swedish Red Cross and government, the United Kingdom Department for International Development (DFID), the Medtronic and Z Zurich Foundations, and other corporate and private donors. Details of all contributions to the DREF for 2012 can be found on: http://www.ifrc.org/docs/appeals/Active/MAA00010_2012.pdf.

The IFRC, on behalf of the National Society, would like to extend thanks to all for their generous contributions.

<click here for the final financial report, or here to view contact details>

The situation

In January 2012, a Red Cross volunteer conducting household education on another DREF operation on yellow encountered the first case from the Kassina Nakana District (KND), where CSM symptoms detected on a young girl were reported to the Disease Control officer in the district. The case was traced and the patient invited to the district hospital where she was diagnosed and confirmed with W135. Thereafter, more cases were reported from Kassina Nakana and other districts in the region.

On 23rd February 2012, the Upper East Director for Health declared CSM outbreak where 102 people were affected with 16 deaths occurring (week 6-8) in three districts. These districts were Builsa, Kasena Nakana (KND) and Kasena Nakana West (KNW) with a total population of 257,467 people.

The region is also prone to outbreaks such as yellow fever, anthrax, cholera among others usually occuring every year in the dry season (October-April). Confirmed cases after week 29 were 466 with 38 deaths recorded in the Upper East Region of the country (GHS, U/E/R). Table 1 below depicts the CSM situation after week 29.

Table 1: Regional CSM case summary

District/Municipals	Meningitis Cases						
	NMA	Strep	Human Influ	W135	Confirmed	All cases	Deaths
Bawku M	0	0	0	2	2	11	0
BWD	0	0	0	0	0	0	0
Bolga M	1	3	0	12	16	38	2
Bongo	0	5	0	6	11	24	3
Builsa	0	19	0	36	55	162	11
GTD	0	0	0	1	1	7	1
KND	0	8	0	32	40	136	11
KNW	0	6	0	26	32	72	9
TND	1	0	0	3	4	16	1
Region	**2**	**41**	**0**	**118**	**161**	**466**	**38**

Source: GHS, UE 2012

In April 2012, Ghana Red Cross with support from IFRC embarked on an ambitious house to house health education exercise on meningitis targeting over 3,200 families (16,000 beneficiaries) in the three most affected districts of Upper East Region. The intervention was timely in containing the outbreak which was spreading fast due to ignorance of the disease, its cause, mode of spread and prevention.

A large proportion of the targeted vulnerable population was vaccinated against CSM, achieved through social mobilization activities of GRCS volunteers who encouraged people to turn up for vaccination. Intervention of the volunteers significantly increased the reporting of absolute cases from 102 to 466 after week 29 while reducing the case fatality rate (CFR) from 12.8 % to 8.0%. This operation was expected to be implemented in 3 months, completed by 31st May 2012 and reported within 90 days of the implementation.

Table 2: Week 1 to 29 CSM case breakdown summary

District	Strep	NMA	NMB	W135	LPND	Negative	Total cases	Deaths	CFR
Builsa	19			36	3	104	**162**	11	6.3
KND	8			32		96	**136**	11	7.6
KNW	6			26	1	39	**72**	9	12.7
Bawku M				2	1	8	**11**	0	
Bolga M	3		1	12		22	**38**	2	6.7
Bongo	5			6		13	**24**	3	15
Garu				1	1	5	**7**	1	14.3
Talensi N		1		3		12	**16**	1	
Region	**41**	**1**	**1**	**118**		**299**	**466**	**38**	**8**

Source*: *GHS-Upper East, 2012

Red Cross and Red Crescent action

Ghana Red Cross Society (GRCS) responded to the CSM outbreak in the Upper East region with support from IFRC. As an auxiliary to the government, and a lead volunteer organization, GRCS supported the efforts of Ghana government through assistance to the most vulnerable community members of Upper East Region's 3 districts (Builsa, KND and KNW).

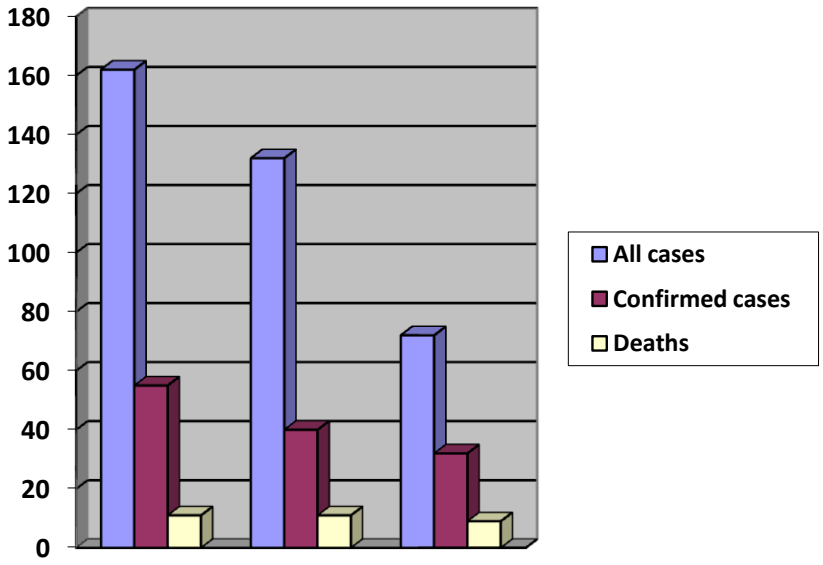


Chart 2: graphical representation CSM cases in the 3 most affected districts

IFRC approved a DREF of CHF 75,420 to train volunteers, mobilize communities for the CSM vaccination and carry out health education in the three month period. A total of 160 volunteers were trained who helped reach 3,200 households with CSM prevention messages. The operation target was to mobilize people between the ages of 2-29 years for vaccination against Type A and W135 CSM as well as behavioural change. As the largest volunteer based organization, GRCS played an integral part in social mobilization which was very effective in addressing the spread of the outbreak.

GRCS Volunteers with support from IFRC also carried out health education activities throughout the period of this operation using IEC materials adapted from Ghana Health Service including other Epidemic Control for Volunteers (ECV) materials on meningitis for social mobilization. Jingles, TV and radio messages were also used to mobilize communities for the vaccination.

Ghana Health Service started the first vaccination round on the target age group with 40,000 doses on 14th March 2012 in the three affected districts. The type of vaccines administered included trivalent A, C and W135 polysaccharide vaccine.

Although GRCS volunteers did their best to mobilize the affected communities for vaccination, coverage was still low. The reason for this was twofold; (1) the first consignment of the W135 vaccine (40,000 doses) was not enough to cover the whole target age group; (2) the second consignment consisting of the balance (20,000 doses) arrived late and very few people turned up for vaccination.

Table 3: CSM cases and Vaccination coverage (VC) in 3 most affected Districts

District	All cases	Confirmed cases	VC (%)	Deaths
Builsa	162	55	71.2	11
KND	136	40	58	11
KNW	12	32	51	9

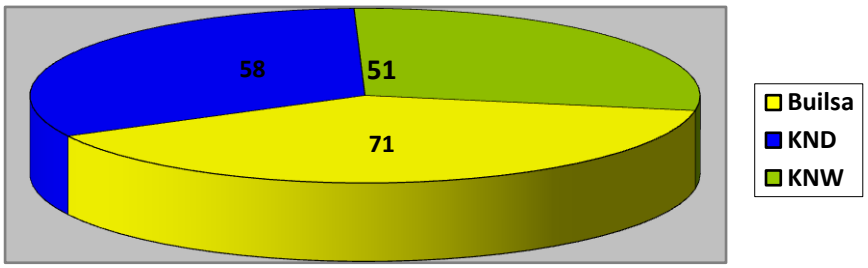


Chart 1: Percentage of vaccination coverage in the three epidemic affected districts

As depicted in the Chart 1 above, Builsa had the highest coverage of 71.2 % because most of the vaccines were sent there during the peak of the epidemic, while KND and KNW had 58% and 51% respectively. Nonetheless, the Director of Health Service in his report acknowledged Red Cross as the only nongovernmental organization which played a role in mobilizing the communities for vaccination.

The region is prone to epidemics which are experienced almost every year with yellow fever, CSM and cholera occurring in 2012. Incidentally, as the volunteers worked to reduce the incidence of the CSM cases, there was an outbreak of cholera which affected 160 people and claimed 4 lives in KND and KNW. Volunteers who were trained to handle the different type of all epidemics intensified the health education, surveillance and referral of suspected cases to the health facilities. Cholera posters and leaflets for IEC activities were quickly dispatched to the affected communities to supplement the ECV materials given during the yellow fever and CSM DREF operations.

Table 2: Regional Cases Summary by Sex by District Week 1-29

	Cases		Deaths		Total
District	M	F	M	F	cases
BKU	6	5	0	0	***11***
BWD	0	0	0	0	***0***
Bolga M	21	17	1	1	***38***
Bongo	15	9	1	2	***24***
Builsa	93	67	7	4	***160***
Garu T	5	2	0	1	***7***
KND	60	76	7	4	***136***
KNW	35	37	5	4	***72***
Talensi N	7	9	1	0	***16***
Region	242	222	21	16	**464**

Source: GHS-Upper East, 2012

As depicted in table 2 above, Builsa, KND and KNW were the only districts where CSM cases were above the threshold with more people affected. These districts received W135 vaccines and GRCS mobilized the communities for subsequent vaccination. Even though pockets of cases were reported spread all over the region, vaccination activities only covered the three most affected districts. However, GRCS sourced additional support from Swiss Red Cross; the only PNS in country, to support the training of more volunteers from other districts as a preventive measure.

Achievements against outcomes

Emergency health

Outcome: Further spread of CSM epidemic is controlled through prevention, resulting in reduced morbidity and mortality in the affected region.	
Outputs	**Activities planned**
• All Red Cross activities are implemented in a coordinated way thus avoiding duplication of services with other actors. Red Cross experience is also shared with others at coordination meetings and during surveillance, reporting, response and advocacy activities at the national and district levels; • 160 well trained and motivated volunteers have been able to reach the beneficiaries and have provided life saving support to those falling sick from the epidemic; • 160 volunteers IEC materials supplied to the volunteers; • Sensitization, health education, early case detection and referral reduce morbidity and mortality; • Volunteers have been provided with welfare and logistics; • The fundamental principles of the Red Cross/Red Crescent Movement are understood and respected	• Participate actively at coordination meetings at the national and local levels in order to obtain the relevant statistics; • Train 10 regional managers on epidemic control for volunteers (ECV) tool kit, including case surveillance and case referral. • Train 160 Red Cross volunteers from 3 districts on social Health Education (house to house), psychosocial support, contact tracing and case referral. • Distribute IEC materials to volunteers (100 posters per community and 100 leaflets per community); • Collaboration with the MoH and GHS, WHO, UNICEF, and other members of the epidemic management committee (EMC) in efforts to engage in community CSM prevention activities such as surveillance, referrals, sensitization, education • Provide the volunteers and team with welfare and logistics support as detailed in the budget attached; • Promote and respect the fundamental principles of the Red Cross/Red Crescent Movement.

Upon declaring the outbreak of CSM in some districts in the Upper East Region, the 3 most affected districts were selected for public health education. A total of 160 Red Cross volunteers were trained to mobilize respective communities for vaccination. The topics covered during the training sessions included signs and symptoms of CSM, causes, mode of transmission, prevention, vaccination and vector control. Others were health education, social mobilization and counselling techniques in the event that some community members resist vaccination.

The volunteers were also trained on a reporting format designed for the campaign. After the training, each volunteer was given IEC materials such as CSM posters and leaflets as well as a T-shirts (for identification) for the campaign. The orientation was carried out in collaboration with the Ghana Health Service (Disease control unit).

The GRCS trained volunteers collaborated with Community Health Planning System (CHPS) personnel from Ghana Health Service (GHS) in educating the community members on how to prevent the spread of CSM. They also carried out CSM response activities by educating households on the importance of sleeping in ventilated places and caution in overcrowded areas especially social gathering.

The volunteers also carried out psychosocial support exercises on those infected and affected by CSM and also distributed over 15,000 assorted IEC materials to target communities.

Ten regional managers were also trained on ECV, case surveillance and referral. GRCS maintained collaboration with MoH and GHS, WHO, UNICEF and other members of the EMC, as part of engagement efforts in community yellow fever prevention activities such as surveillance, referrals, sensitization, education and immunization (vaccination). Ghana Red Cross Health Coordinator also visited the affected districts to monitor the DREF implementation and give technical support to the volunteers in the field.

Over 90% of the districts visited by the Red Cross managed to contain the spread of CSM and the constituent population made aware of the epidemics. In addition all Red Cross activities were implemented in a coordinated way avoiding duplication of services with other actors. Red Cross experience was also shared with others during coordination meetings, surveillance, reporting, response and advocacy activities at the national and district levels.

Environmental, Sanitation and Hygiene campaign

These were additional as volunteers were trained on ECV; environmental, sanitation and personal hygiene training was covered during CSM activities, geared towards reducing the spread of the CSM virus and to ensure community resilience from epidemics. The all inclusive training benefited the CSM affected communities since they were also struck by a cholera outbreak. Cholera IEC materials were supplied at the national level for the communities to enhance their knowledge.

The trained volunteers in the three most affected districts educated community members on signs and symptoms of CSM; prevention including personal hygiene; environmental sanitation; sleeping in ventilated rooms as well as avoidance of overcrowded areas. The volunteers also carried out case detection and early reporting to the health facilities.

Strategy

Methods adopted in getting the messages across to the targeted population involved:

- House to House visits and education using pamphlets and ECV community tools;
- Educating market women, church/mosque audiences and school children including teachers
- Use of megaphones;
- Households discussions targeting parents and guardians with emphasis on the population aged between 2-29 years old considered as most vulnerable
- Strategic pasting of posters and distribution of hand outs to households, individuals and institutions such as churches, mosques and schools;
- Radio jingles and TV discussions on the CSM outbreak in local dialect.

Targeting Beneficiaries households

Target population included the general public with emphasis on those aged between 2-29 years old. Churches, mosques and market women were targeted because of the characteristic close interactions among members of these groups. During the vaccination campaign, groups of beneficiary households were registered and an encircled CSM mark used to identify the households reached with campaign messages which also enhanced monitoring and supervision. Over 15,000 people benefited from the IEC materials, produced with financial and technical support from IFRC and Ghana Health Service respectively.

Outcomes

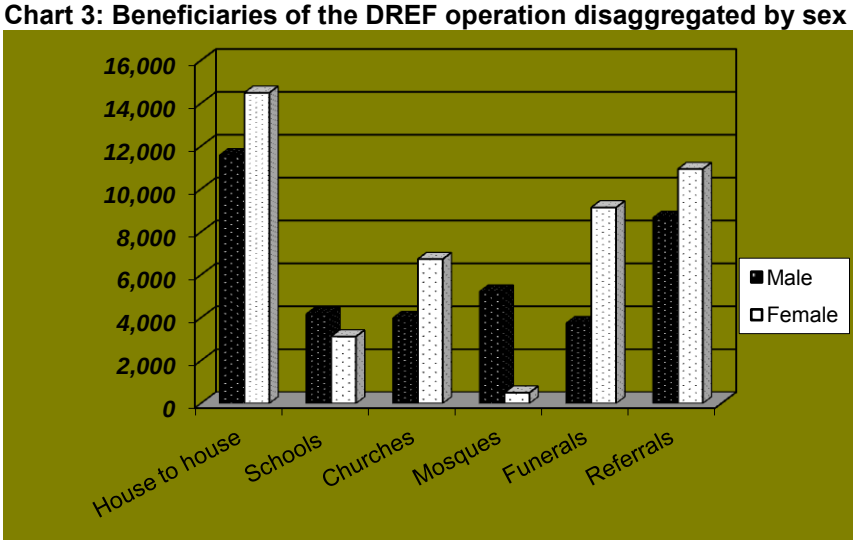
A total of **26,045** beneficiaries were reached with information on CSM in the most affected districts by Red Cross volunteers using the house to house visit approach. A total of **64** schools were visited by the volunteers consisting of **6,429** students in total reached through school outreach activities; **10,699** people were reached through church visits; **5,704** people through mosque visits; **12,871** people through funeral ground contact education while **19,574** were referred to vaccination and health centres for treatment.

Table 3: Data Summary Sheet for Social Mobilization: April-June 2012

TYPE OF GROUP		DISTRICTS			Total
		Builsa	KND	KNW	
HOUSE TO HOUSE	**Total**	**9,461**	**7,875**	**8,709**	**26,045**
	Male	4,023	3,546	3,995	**11,564**
	Female	5,438	4,329	4,714	**14,481**
SCHOOLS	**Number**	27	16	21	**64**
	Total	**5,594**	**430**	**405**	**6,429**
	Male	2,602	267	294	**3,163**
	Female	2,992	163	111	**3,266**

CHURCHES	**Number**	11	18	15	**44**
	Total	**4,402**	**3,724**	**2,573**	**10,699**
	Male	1,532	1,711	731	**3,974**
	Female	2,870	2,013	1,842	**6,725**
MOSQUES	**Number**	13	8	32	**53**
	Total	**427**	**1,089**	**4,188**	**5,704**
	Male	315	982	3,911	**5,208**
	Female	112	107	277	**496**
PUBLIC GATHERINGS	**Total**	**3,874**	**3,875**	**4,416**	**12,165**
	Male	1,987	287	355	**2,629**
	Female	1,887	3,580	4,061	**9,528**
FUNERALS	**Total**	**6,237**	**2,042**	**4,592**	**12,871**
	Male	1,799	933	1,005	**3,737**
	Female	4,438	1,109	3,587	**9,134**
REFERRALS	**Total**	**7,883**	**5,442**	**6,249**	**19,574**
	Male	3,561	2,314	2,773	**8,648**
	Female	4,322	3,128	3,476	**10,926**

Chart 3: Beneficiaries of the DREF operation disaggregated by sex

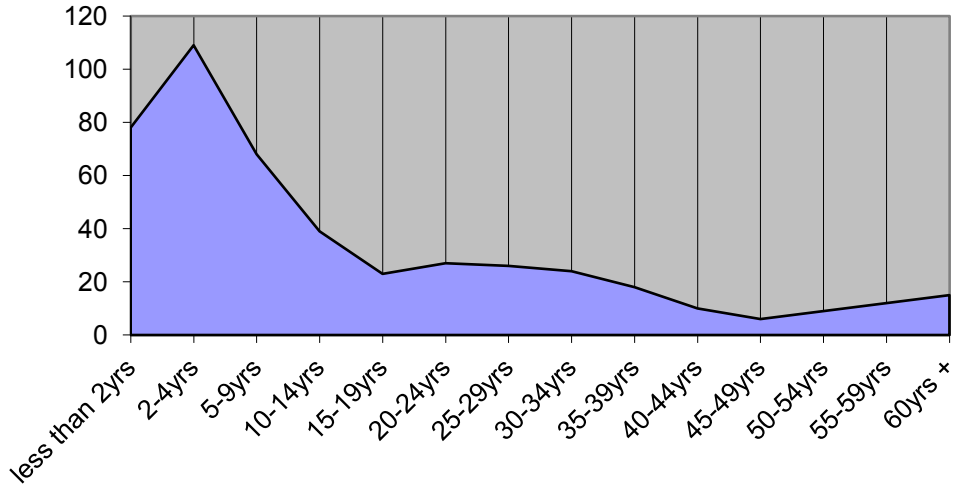


According to data collected in the field, women and young girls benefited more from the DREF operation as depicted in Chart 3 above. The only exception was in the mosques where, considering their frequent use, more men than women were reached through mosque visits.

Table 4: Regional trend of confirmed cases by Age

Age	Confirmed Cases
<2yr	78
2-4yrs	109
5-9yrs	68
10-14yrs	39
15-19yrs	23
20-24yrs	27
25-29yrs	26
30-34yrs	24
35-39yrs	18
40-44yrs	10
45-49yrs	6
50-54yrs	9
55-60yrs	12
60+	15
Total Cases	464

Chart 4: Graphical representation of affected population by Age



Ghana Health Service in collaboration with WHO only targeted to vaccinate the population aged 2-29 years due to the high cost of vaccines. Statistics collected by volunteers indicated that this age group was indeed the most vulnerable to the CSM virus. As depicted on Chart 4 above, of all the groups at risk, the sub-group aged 2-4 was the most affected recording an absolute score of 109 confirmed cases between February and May, 2012.

Challenges:

- The W135 strain was alien to the Ghanaian health sector (coming from neighbouring Burkina Faso) and required a different type of vaccine than that usually used.
- Vaccines were not sufficient to cover all the targeted population and therefore only selected priority communities were vaccinated.
- The last consignment of vaccines arrived late coinciding with the rainy season and since the local population associates CSM with the dry and windy weather, many shunned the vaccination, and coverage was therefore lower.

Lessons Learned

- Regular collaboration effort among different actors during epidemics is important
- The importance of prompt intervention during emergencies ensure stability of the situation
- Monitoring and supervision of the project is key
- The trend of an epidemic is reversible if volunteers are trained, motivated and equipped with requisite messages and materials
- Training of volunteers on epidemic control is cost effective in controlling subsequent epidemics

Recommendations

- There is need to sustain volunteer interest in the wake of epidemics which could be achieved through volunteer insurance and identification
- Conscious efforts are needed by the IFRC to roll out ECV manual in National Societies during onset of epidemics
- A long term intervention is necessary to successful control the disease
- Extending of interventions to districts neighbouring the affected ones should be undertaken to prevent re-introduction of the disease into the already controlled areas;

Contact information

For further information specifically related to this operation please contact:

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For Performance and Accountability (planning, monitoring, evaluation and reporting):

- **IFRC Zone:** Robert Ondrusek, PMER/QA Delegate, Africa phone: +254 731 067277; email: robert.ondrusek@ifrc.org

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How we work

All IFRC assistance seeks to adhere to the Code of Conduct for the International Red Cross and Red Crescent Movement and Non-Governmental Organizations (NGOs) in Disaster Relief and the Humanitarian Charter and Minimum Standards in Disaster Response (Sphere) in delivering assistance to the most vulnerable.

The IFRC's vision is to inspire, encourage, facilitate and promote at all times all forms of humanitarian activities by National Societies, with a view to preventing and alleviating human suffering, and thereby contributing to the maintenance and promotion of human dignity and peace in the world.

The IFRC's work is guided by Strategy 2020 which puts forward three strategic aims:

1. Save lives, protect livelihoods, and strengthen recovery from disaster and crises.
2. Enable healthy and safe living.
3. Promote social inclusion and a culture of non-violence and peace.

International Federation of Red Cross and Red Crescent Societies

MDRGH006 - Ghana - Meningitis Outbreak

Appeal Launch Date: 05 mar 12

Appeal Timeframe: 05 mar 12 to 05 jun 12

Final Report

Selected Parameters	
Reporting Timeframe	2012/3-2012/10
Budget Timeframe	2012/2-2012/6
Appeal	MDRGH006
Budget	APPROVED

All figures are in Swiss Francs (CHF)

I. Funding

	Disaster Management	Health and Social Services	National Society Development	Principles and Values	Coordination	TOTAL	Deferred Income
A. Budget	**76,060**					**76,060**	
B. Opening Balance	**0**					**0**	
Income							
Other Income							
DREF Allocations	*73,158*					*73,158*	
C4. Other Income	***73,158***					***73,158***	
C. Total Income = SUM(C1..C4)	**73,158**					**73,158**	
D. Total Funding = B +C	**73,158**					**73,158**	
Coverage = D/A	**96%**					**96%**	

II. Movement of Funds

	Disaster Management	Health and Social Services	National Society Development	Principles and Values	Coordination	TOTAL	Deferred Income
B. Opening Balance	0					**0**	
C. Income	73,158					**73,158**	
E. Expenditure	-73,158					**-73,158**	
F. Closing Balance = (B + C + E)	0					**0**	

III. Expenditure

Account Groups	Budget	Expenditure						Variance
		Disaster Management	Health and Social Services	National Society Development	Principles and Values	Coordination	TOTAL	
	A						B	A - B
BUDGET (C)	**76,060**						**76,060**	
Relief items, Construction, Supplies								
Teaching Materials	2,870	2,793					**2,793**	**77**
Total Relief items, Construction, Su	**2,870**	**2,793**					**2,793**	**77**
Logistics, Transport & Storage								
Transport & Vehicles Costs	1,600	1,471					**1,471**	**129**
Total Logistics, Transport & Storage	**1,600**	**1,471**					**1,471**	**129**
Personnel								
National Society Staff	3,900	3,843					**3,843**	**57**
Volunteers	32,160	31,674					**31,674**	**486**
Total Personnel	**36,060**	**35,516**					**35,516**	**544**
Workshops & Training								
Workshops & Training	10,665	6,156					**6,156**	**4,509**
Total Workshops & Training	**10,665**	**6,156**					**6,156**	**4,509**
General Expenditure								
Information & Public Relations	19,279	18,618					**18,618**	**661**
Office Costs	150	274					**274**	**-124**
Communications	294							**294**
Financial Charges	500	3,864					**3,864**	**-3,364**
Total General Expenditure	**20,223**	**22,756**					**22,756**	**-2,533**
Indirect Costs								
Programme & Services Support Recov	4,642	4,465					**4,465**	**177**
Total Indirect Costs	**4,642**	**4,465**					**4,465**	**177**
TOTAL EXPENDITURE (D)	**76,060**	**73,158**					**73,158**	**2,902**
VARIANCE (C - D)		**2,902**					**2,902**	