



ELIZABETH GLASER  
PEDIATRIC AIDS  
FOUNDATION



END-OF-PROJECT REPORT

12 YEARS OF  
IMPLEMENTING PMTCT  
SERVICES IN CAMEROON

2000–2012



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# END-OF-PROJECT REPORT: CAMEROON

## 12 YEARS OF IMPLEMENTING PMTCT SERVICES IN CAMEROON

### ACKNOWLEDGMENTS:

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### ABBREVIATIONS AND ACRONYMS

AIDS	acquired immunodeficiency syndrome	PEARL	PMTCT Effectiveness in Africa: Research and Linkages to Care and Treatment
ANC	antenatal care	PEPFAR	U.S. President's Emergency Plan for AIDS Relief
ART	antiretroviral therapy	PMTCT	prevention of mother-to-child transmission (of HIV)
ARV	antiretroviral	QI	quality improvement
AWARE	Action for West Africa Region	UNAIDS	Joint United Nations Programme on HIV/AIDS
C&T	care and treatment	UNICEF	United Nations Children's Fund
CBCHS	Cameroon Baptist Convention Health Services	USAID	United States Agency for International Development
CDC	U.S. Centers for Disease Control and Prevention	WHO	World Health Organization
CoMCHA	Community Mother Child Health Aides	WHP	Women's Health Program
CORE	Continuum of Care Operations Research	YONEFOH	Youth Network for Health and Education
EGPAF	Elizabeth Glaser Pediatric AIDS Foundation		
EID	early infant diagnosis		
GLASER	Global AIDS System for Evaluation and Reporting		
HIV	human immunodeficiency virus		
HPV	human papillomavirus		
IEC	information, education, and communication		
IYCF	infant and young child feeding		
M&E	monitoring and evaluation		
PCR	polymerase chain reaction		

## EXECUTIVE SUMMARY

From February 2000 to December 2012, the Elizabeth Glaser Pediatric AIDS Foundation (EGPAF), a global leader and implementing partner for prevention of mother-to-child transmission of HIV (PMTCT) services, supported Cameroon Baptist Convention Health Services (CBCHS), a local nonprofit health-care organization in Cameroon, in initiating and implementing high-quality services for PMTCT. The program aimed at providing and scaling up PMTCT services in view of reaching virtual elimination of HIV infection in infants and children.

For 12 years, CBCHS and EGPAF have successfully implemented such services in six of Cameroon's 10 regions as part of routine maternal and child health services, in line with country guidelines. EGPAF has provided CBCHS both funding and a wide range of technical assistance in diverse programmatic areas to carry out the program. The program's twofold implementation approach focused on (1) expanding and optimizing PMTCT services and (2) strengthening the capacity and commitment of the existing health system at all levels to ensure a sustainable and cost-effective approach. For 11 years, CBCHS and partners successfully initiated, implemented, and scaled up a strategic mix of proven evidence-informed interventions and innovative strategies to increase efficiencies in programming and reduce bottlenecks in service delivery.

Working closely with the Cameroon Ministry of Public Health, CBCHS scaled up PMTCT coverage from five sites (in 2000) to 457 sites, ranging from large hospitals in urban areas to small clinics in remote villages; improved the range and quality of services in all four prongs of PMTCT; improved the quality of life of people living with HIV through innovative wraparound programs; improved rigorous monitoring and evaluation and quality improvement; and conducted scientific research to improve uptake and quality of PMTCT services in Cameroon. Cumulatively, 618,397 women were counseled and tested for HIV, 46,243 HIV-positive pregnant women received services, and observed HIV seroprevalence decreased from an average of 10.3% in 2000 to 5.0% in 2011 among women tested in antenatal care and labor and delivery. A total of 40,265 women received ARV prophylaxis and 21,345 infants received prophylaxis. Most participating health facilities are now strengthened to enroll HIV-positive pregnant women, mothers, and children into longitudinal HIV care and treatment.

Although efforts to scale up PMTCT coverage have greatly increased uptake of essential interventions, the service area needs additional support to boost infant ARV prophylaxis uptake, improve the supply chain of commodities to sites, and improve male partner involvement in PMTCT.

Efforts to increase program sustainability and government ownership have been a major program priority in the past few years, with significant progress in achieving resource diversification and building capacity of providers at all levels of the health system. In 2011, CBCHS won a Centers for Disease Control and Prevention (CDC) / President's Emergency Plan for AIDS Relief award for PMTCT implementation in the North West and South West regions, and by the beginning of 2012, funding support for those two regions shifted completely from EGPAF to CDC support. In the other four regions, CBCHS is working closely with district and regional officials to transition PMTCT service provision to government support. CBCHS and EGPAF will continue advocacy at all levels to realize virtual elimination of mother-to-child transmission in Cameroon by 2015.

### CAMEROON COUNTRY CONTEXT

Cameroon's population of 19.9 million faces one of the most severe HIV epidemics in West and Central Africa, with an adult HIV prevalence of 4.3%.<sup>1</sup> HIV prevalence among adults ages 15 to 49 ranges from 0.8% in the Extreme North Region to 5% in the North West Region.<sup>2</sup> Approximately 610,000 people currently live with HIV, and 37,000 individuals died as a result of AIDS as of 2009.<sup>3</sup> Cameroonian women are disproportionately affected, with an HIV prevalence of 5.6%, versus 2.9% for men,<sup>4</sup> and the estimated prevalence among pregnant women is high (7.3%).<sup>5</sup> Approximately 54,000 children under 14 years of age are infected with HIV, while a staggering 330,000 children have lost at least one parent as a result of AIDS.<sup>6</sup> In 2009, just 37% of pregnant women received HIV counseling and testing and only 27% of HIV-positive pregnant women and 25% of HIV-exposed infants received antiretrovirals (ARVs) for prevention of mother-to-child transmission of HIV (PMTCT).<sup>7</sup> There are marked regional disparities in access to services; the first antenatal care (ANC) attendance rate ranges from 20% in the Extreme North to nearly 64% in Adamawa, with a national average of 38% in 2010.<sup>8</sup> Maternal mortality is also on the rise in Cameroon, with a maternal mortality ratio of 690 per 100,000 live births in 2010 compared with 670 in 1990.<sup>9</sup>

In 1986 the government of Cameroon responded to the HIV epidemic by creating the National AIDS Control Committee to coordinate a national AIDS program. By 2000, the first five-year National Strategic Plan for HIV/AIDS was developed and implemented. Although such efforts have led to a rapid expansion of PMTCT services in urban centers of Cameroon, access to PMTCT services and antiretroviral therapy (ART) in rural communities, where the majority of the population lives, is still limited. To reach the national goal of virtual elimination of mother-to-child transmission by 2015 as targeted in the 2009–2015 National Strategic Plan and the Cameroon National Plan to Eliminate New HIV Infections in Children and Keep

Their Mothers Alive, PMTCT services must be extended to rural communities and access to more efficacious combination regimens must be improved.

### CBCHS, EGPAF, AND THE CAMEROON MINISTRY OF PUBLIC HEALTH

The Cameroon Baptist Convention Health Services (CBCHS) is an indigenous Cameroonian nonprofit organization founded more than 50 years ago with an underlying mission to provide care to all who need it as an expression of Christian love. CBCHS addresses both clinical and public health problems affecting individuals and communities in Cameroon in particular and in Africa at large. CBCHS runs five hospitals, 24 integrated health centers, 50 primary health centers, and a pharmaceutical production and distribution department as well as a comprehensive AIDS care and prevention program with 13 components, including PMTCT and care and treatment (C&T) (see Figure 1; red indicates programs that received Elizabeth Glaser Pediatric AIDS Foundation [EGPAF] funding support).

CBCHS's services are spread over six of Cameroon's 10 regions: North West, South West, Center, West, Adamawa, and Littoral. Services offered by CBCHS range from village primary health care to highly specialized hospital-based care with an integration of other social services. CBCHS works in partnership with national and international governmental and nongovernmental health-care organizations and funding agencies throughout sub-Saharan Africa and globally.

EGPAF is a global leader in the fight against pediatric HIV and AIDS, working in 15 countries to support the implementation of prevention, care, and treatment services; advance innovative research; and execute strategic and targeted global advocacy activities in order to bring dramatic change to the lives of millions of women, children, and families worldwide. EGPAF is currently supporting more than 5,400 sites around the world. Since EGPAF's international efforts began, EGPAF-supported programs have provided more than 14.2 million women with services to prevent transmission of HIV to their babies and enrolled more than 1.6 million people, including more than 125,000 children, into HIV care and support programs. More than 850,000 people, including nearly 70,000 children under the age of 15, have been started on antiretroviral treatment through EGPAF-supported programs.

1 MEASURE DHS, Cameroon: DHS 2011—Preliminary Report, 2011. <http://measuredhs.com/publication-rss-page.cfm>, accessed July 15, 2012.

2 Ministry of Public Health and National AIDS Control Committee, *Rapport Annuel des Activités du Programme National de Lutte Contre le SIDA*, 2010. 2010, Yaoundé.

3 Joint United Nations Programme on HIV/AIDS (UNAIDS), Cameroon Epidemiological Factsheet on HIV and AIDS, 2009.

4 MEASURE DHS, Cameroon: DHS 2011—Preliminary Report.

5 UNAIDS, Cameroon Epidemiological Factsheet on HIV and AIDS, 2009. 2009. [www.unaids.org](http://www.unaids.org), accessed July 15, 2012.

6 UNICEF, *State of the World's Children 2011—Adolescence: An Age of Opportunity*, February 2011. [www.unicef.org/sowc2011/](http://www.unicef.org/sowc2011/), accessed July 15, 2012.

7 World Health Organization (WHO), UNAIDS, and UNICEF, *Towards Universal Access Report 2010*, 2010. <http://www.who.int/hiv/pub/2010progressreport/en/>, accessed July 15, 2012.

8 Ministry of Public Health and National AIDS Control Committee, *Rapport Annuel des Activités du Programme National de Lutte Contre le SIDA*, 2010. 2010, Yaoundé.

9 WHO, UNICEF, United Nations Population Fund (UNFPA), and World Bank, *Trends in Maternal Mortality: 1990 to 2010*. WHO, UNICEF, UNFPA and The World Bank Estimates, <http://africa.unfpa.org/public/pid/10773>, accessed July 22, 2012.



Since February 2000, EGPAF has collaborated with CBCHS in pioneering and significantly scaling up PMTCT services in Cameroon, providing services at 457 sites in six of the 10 regions of the country (see map below). The PMTCT program began in 2000 in two referral hospitals in rural Cameroon through EGPAF's Call to Action private funding; this was among the first PMTCT programs in the country. CBCHS's early experiences in PMTCT were used to spearhead the first national PMTCT strategy at a conference in 2002, "Hope for the Next Generation" (see Figure 2), sponsored by CBCHS, EGPAF, the Centers for Disease Control and Prevention (CDC), UNICEF, and the Cameroon Ministry of Public Health.

Through December 2011, more than 2,000 health-care workers were trained to implement PMTCT at 457 health facilities, ranging from large hospitals to small clinics in remote villages in six of Cameroon's 10 regions. The Cameroon program received support through generous private donations from the Gates Foundation and Johnson & Johnson, as well as the support of

the U.S. Agency for International Development (USAID), to fund the implementation and continuation of PMTCT services in antenatal clinics, labor-and-delivery wards, postpartum care, and infant welfare clinics through direct support of training, staffing, commodities, and supervisory visits. In 2003, the director of CBCHS, Professor Pius Tih Muffih, received EGPAF's prestigious International Leadership Award for his leadership in developing a national effort to combat HIV/AIDS. The grant enabled the program to establish a national Center of Excellence for AIDS Prevention and Control; roll out a large-scale training effort for district medical officers, chief medical officers, nurses, midwives, and laboratory technicians to establish PMTCT services; and collect and analyze data on HIV test acceptance rates, HIV seroprevalence, and HIV treatment among pregnant women and their HIV-exposed infants and infected children. The CBCHS PMTCT program has the full support of the Cameroon Ministry of Public Health at the national, regional, and district levels through a formal partnership agreement and emphasizes an integrated approach

**FIGURE 1: CBCHS AIDS CARE AND PREVENTION PROGRAM COMPONENTS**





**FIGURE 2: “HOPE FOR THE NEXT GENERATION” CONFERENCE TO DEVELOP THE FIRST NATIONAL PMTCT STRATEGY, JUNE 2002**

to service delivery. For several years, CBCHS has played a consistent role as technical leader of PMTCT implementation within Cameroon, and it continues to serve as a catalyst for systematic expansion of the national program throughout the country. The USAID-funded program Action for West Africa Region (AWARE) identified the CBCHS PMTCT program as the “Best and Promising Practice” worth replicating in other West and Central African countries. From 2004 to 2008 CBCHS trained health-care workers from 11 countries and provided technical assistance for PMTCT program initiation and strengthening in five West African countries. Health facilities throughout Cameroon regularly contact the CBCHS program with requests to support PMTCT activities and trainings. The CBCHS/EGPAF PMTCT program has been and continues to be one of the primary providers of PMTCT services in Cameroon, second only to the Ministry of Public Health.

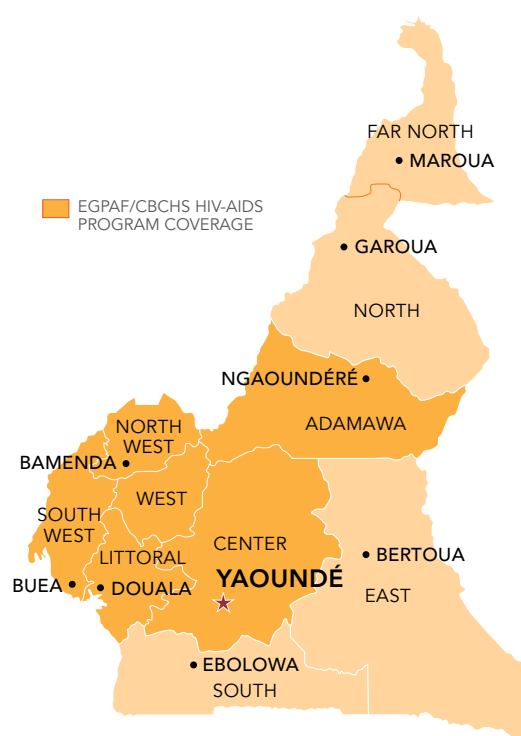
## BUILDING LOCAL SUSTAINABILITY

Over the past several years, the partners have put major emphasis on resource mobilization and program sustainability. CBCHS and EGPAF significantly increased the number of funding opportunities pursued, and they began to implement a new model for proposal development. CBCHS took the lead on identifying several local and international funding opportunities, responding to them in collaboration with EGPAF technical staff. In 2010 alone, 13 proposals were submitted (excluding follow-on funding) to a wide array of donors.

In 2011, with support from EGPAF and the Clinton Health Access Initiative, CBCHS secured a five-year award from the CDC for PMTCT activities in two regions, the North West and South West. EGPAF supported CBCHS to apply for this opportunity as the prime implementing agency with EGPAF as a subgrantee to provide targeted technical assistance and continued capacity-building support. Project implementation began in October 2011, and by January 2012, the North West

and South West regions had completely transitioned from EGPAF to CDC funding support. The project has greatly enhanced CBCHS’s visibility at the national, regional, and district levels, and it has enabled CBCHS to increase the geographic coverage and scope of its programs within the two regions, especially in remote rural communities. CBCHS also received an additional 200,000 British pounds from ViiV Healthcare for use in community mobilization to increase PMTCT uptake in the North West Region over a period of three years. CBCHS is working closely with the Ministry of Public Health to transition PMTCT program implementation in the four non-CDC project regions to the government by December 2012.

**FIGURE 3: MAP OF CAMEROON INDICATING CBCHS/EGPAF PMTCT PROGRAM COVERAGE**





## OVERALL OBJECTIVES FOR 2000–2012

The initial, overall aims for the PMTCT program were as follows:

**1. Increase the availability of high-quality PMTCT services to at least 80% of the health facilities in each of the health districts of the six regions covered by CBCHS. “High-quality” is defined as all CBCHS-supported PMTCT sites offering basic, essential PMTCT services. Those services include the following:**

- Pre- and post-test counseling
- HIV testing
- Maternal and infant nevirapine and zidovudine prophylaxis
- Early infant diagnosis (EID) of HIV
- Infant feeding and nutritional counseling
- Effective referral to care and treatment facilities
- Increased PMTCT uptake through community mobilization

**2. Improve the range and quality of services in all four prongs of PMTCT in all CBCHS-supported PMTCT sites, as follows:**

- Improve the uptake of HIV testing during pregnancy.
- Establish methods to follow up with HIV-exposed infants.
- Improve the quality of PMTCT services offered in all sites.
- Build capacity of personnel for effective service delivery and program management.
- Provide family planning services and cervical cancer screening to support group members.
- Reduce the number of young women living with HIV through community AIDS education, contact tracing, and youth education.
- Increase the number of people tested for HIV in the general population in all the districts served by CBCHS.

## PROJECT ACHIEVEMENTS

### 1. Rapid Scale-Up in Service Delivery and Service Quality

The Cameroon program rapidly increased the scale of integrated PMTCT services in the country while increasing program quality and implementing critical wraparound HIV/AIDS services.

The Cameroon program increased the number of supported PMTCT sites from five sites in 2000, the year the first PMTCT services were offered, to 457 sites in December 2011 (see figure 4). The program was the second-largest implementer of services in the country after the Ministry of Public Health.\*

In 2008, CBCHS/EGPAF shifted its focus from a rapid scale-up of sites to improving the quality of overall PMTCT service delivery with a focus on infant ARV uptake and increasing uptake of more efficacious combination prophylaxis regimens to reflect the revised national PMTCT guidelines.

More than half of all sites (55%) receiving CBCHS/EGPAF support were government facilities. Figure 5 shows the proportion of PMTCT sites being supported by the program out of the total number of PMTCT sites nationally (2011 national data on number of sites are not yet available).

The program had a particularly strong footprint in the North West and West regions, where 41% and 28%, respectively, of the program's total sites were located as of December 2011 (see Figure 6).

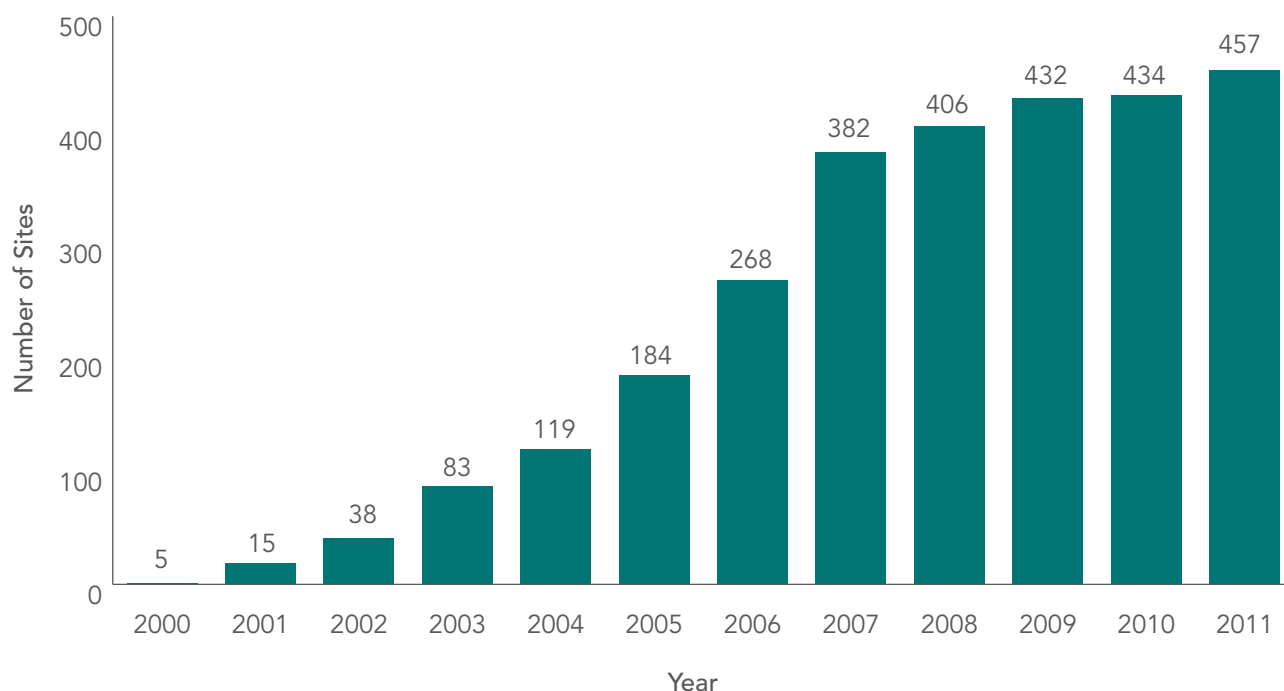
More than 618,397 women were counseled and tested for HIV from 2000 to 2011, with the counseling and testing uptake increasing over the years following continuous HIV and AIDS education in the communities (see Figure 7).

A total of 46,243 HIV-positive women were reached with services. The HIV seroprevalence among those tested decreased over the years, as Figure 8 shows.

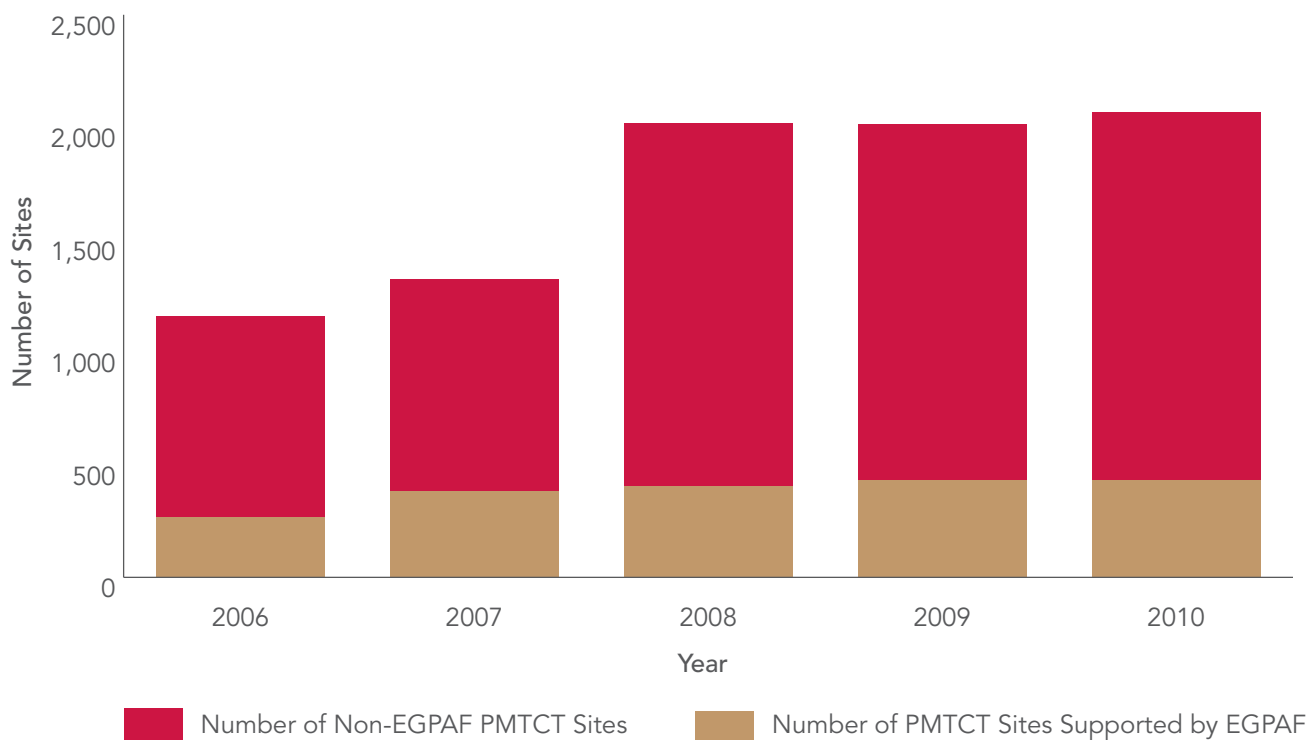
The uptake of maternal prophylaxis increased over the years, but double-counting for this indicator was identified as a major challenge in 2010 following the implementation of the revised national PMTCT protocol (option A of the World Health Organization [WHO] 2010 guidelines), which entails that prophylaxis be started as early as 14 weeks and therefore requires multiple refills before delivery and during the postpartum period (see “Staying at the Forefront of New International Guidelines and Scientific Evidence” later in this report for a description of steps taken to address these challenges). Infant ARV prophylaxis uptake remains the program's greatest challenge, with only a

\* Note that data are reported only through December 2011 to facilitate comparisons of full years' worth of data.

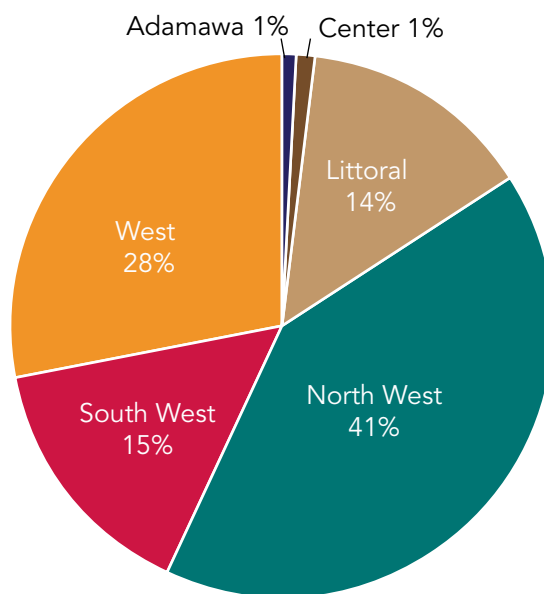
**FIGURE 4: NUMBER OF PMTCT SITES SUPPORTED BY THE CBCHS/EGPAF CAMEROON PROGRAM**



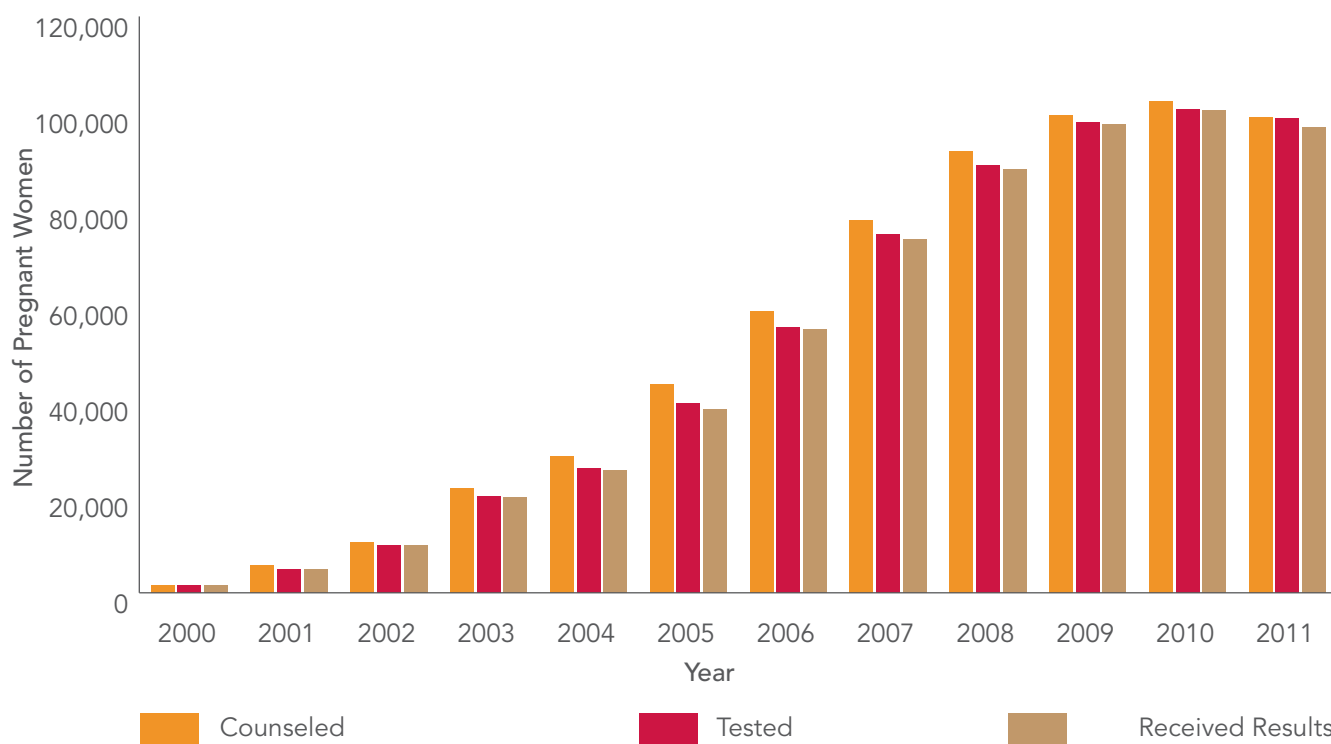
**FIGURE 5: PROPORTION OF PMTCT SITES SUPPORTED BY CBCHS/EGPAF PROGRAM OUT OF TOTAL PMTCT SITES NATIONALLY, 2007–2010**



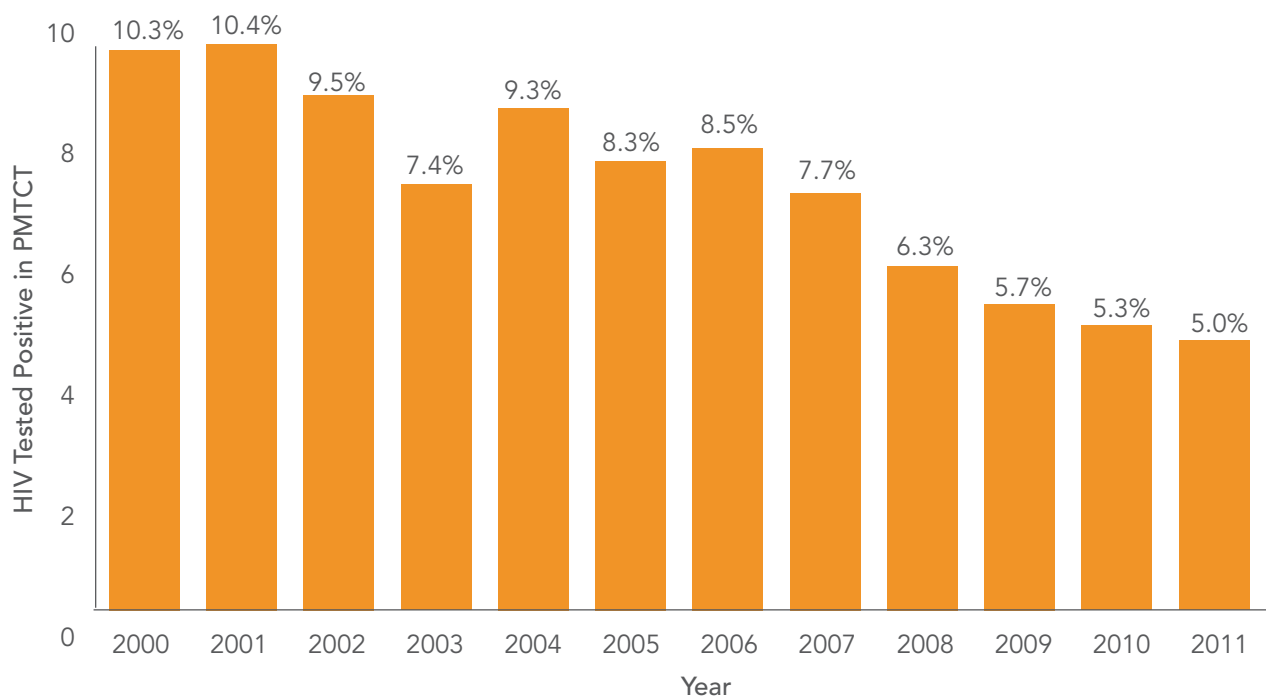
**FIGURE 6: PERCENTAGE OF SITES PER REGION AS OF DECEMBER 2011**



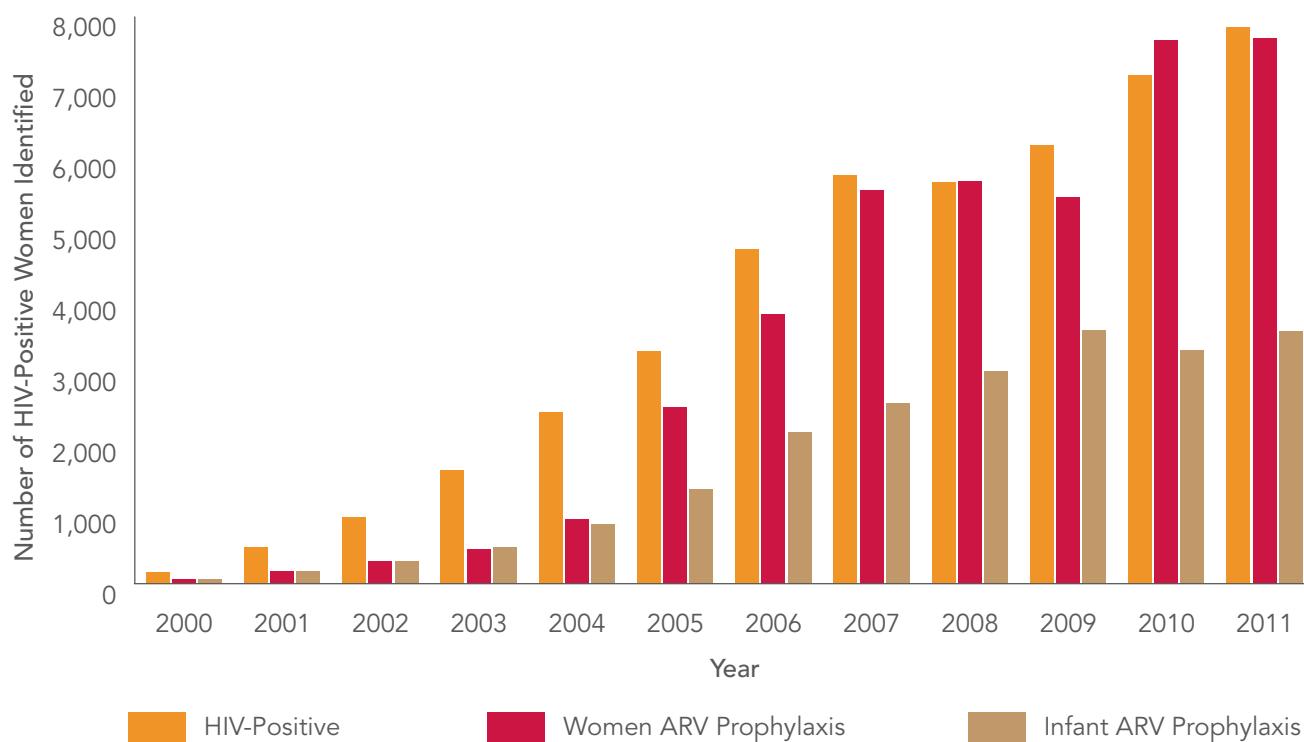
**FIGURE 7: NUMBER OF PREGNANT WOMEN RECEIVING HIV COUNSELING, TESTING, AND RESULTS, 2000–2011**



**FIGURE 8: HIV SEROPREVALENCE AMONG PREGNANT WOMEN TESTED IN ANTENATAL CARE AND LABOR AND DELIVERY, 2000–2011**



**FIGURE 9: NUMBER OF HIV-POSITIVE PREGNANT WOMEN IDENTIFIED, AND NUMBER OF MOTHERS AND INFANTS RECEIVING ARV PROPHYLAXIS, 2000–2011\***



\* Some double counting of women on prophylaxis occurred when they came back for AZT refills beginning in 2010.

very slight increase over the years. A total of 40,265 (80%) HIV-positive women identified through the program received maternal ARV prophylaxis, whereas 21,345 (52%) HIV-exposed infants received the infant prophylaxis (see Figure 9).

Infant testing by polymerase chain reaction (PCR) was low compared with the number of HIV-positive women identified, with a cumulative total of 6,846 HIV-exposed infants tested at six weeks of age, of whom 855 were positive (12.5%). A total of 3,296 HIV-exposed infants were tested using rapid testing (at three months after breastfeeding and/or 12 to 18 months of age), and 778 tested positive (23.6%) from 2003 to 2011.

These infants were either brought back by their mothers for testing through the PMTCT program, identified at support group meetings; however most infants were identified as HIV-positive when they presented at health facilities already sick leading contributing to the relatively high number of HIV-positive infants observed as compared with number of HIV-positive women. The CBCHS and National PMTCT Programs implemented more effective prophylaxis and treatment for HIV positive mothers (WHO Option A) in 2010. The programs are now focusing on improved follow up of HIV exposed infants. Ongoing evaluation is planned to more accurately assess the mother to child transmission rates occurring following these improvements in care.

As Table 3 shows, the Cameroon program consistently exceeded the annual targets for most of the indicators, except in 2011 when some targets were not met following a reduction in funding and levels of effort.

## 2. Improved Range and Quality of Services, in All Four Prongs of PMTCT, in All CBCHS-Supported PMTCT Sites

**PMTCT Program Model:** The CBCHS PMTCT program model emphasized integration of services into antenatal care visits, labor and delivery, postpartum care, and infant welfare clinics. CBCHS worked closely with district medical officers and faith-based institutions to initiate PMTCT services at sites requesting such services. After reviewing the requests, CBCHS signed memoranda of understanding with facilities outlining the package of support to be provided, including training, facilitative supervision, and supply chain management support. New facilities received standard government patient registers and monthly reporting forms. Sites with critical infrastructure needs, such as confidential counseling spaces, were targeted for minor renovations. CBCHS organized comprehensive, four-day trainings for new site staff on PMTCT service provision using a PMTCT manual written by CBCHS and EGPAF that was revised as new national prevention and treatment guidelines

were issued. Refresher courses were also periodically held based on need. As the number of supported sites grew and expanded into new districts and regions, the program hired 10 PMTCT coordinators to provide quarterly facilitative supervision, organize trainings, attend district coordination meetings, and generally oversee the success of the PMTCT programs in their designated areas. A general coordinator was assigned to oversee the activities of the 10 coordinators and provided needed technical assistance to the staff. The coordinators were all highly experienced nurses, and each set up a coordination office at district hospitals to facilitate closer collaboration with district medical officers. At biannual coordination meetings, coordinators shared experiences and learned from each other. Each PMTCT coordinator oversaw anywhere from 10 to more than 70 sites over a large geographic and sometimes difficult-to-access terrain due to poor roads and travel conditions. In spite of the many challenges and responsibilities, the coordinators developed strong relationships with district medical officers and site-level providers as well as community-based organizations in their catchment areas.

The CBCHS central pharmacy, laboratory, and PMTCT coordinators carefully monitored the dispensation and usage of PMTCT commodities, including nevirapine and test kits at sites, to ensure continuous supply. Pharmacy staff and PMTCT coordinators built the capacity of site-level staff and district medical officers in logistics, quantification, and forecasting and trained pharmacists in the new national guidelines, ordering, and stock management. Over the years, CBCHS received Determine HIV test kit donations from Abbott Laboratories through Axios International and Direct Relief International and Viramune (nevirapine) donations from Boehringer Ingelheim/Axios International. CBCHS received those donations through CENAME (the National Centre for Essential Drugs Procurement and Medical Disposables). CBCHS then coordinated the distribution of the donated Determine tests and Viramune to all the CBCHS-supported PMTCT facilities, thereby reducing stock-outs at those facilities.

To reach pregnant women in remote rural villages and communities, the PMTCT program provides essential services within primary health centers staffed by health promoters and trained birth attendants. These primary health centers are part of CBCHS's Life Abundant Program, which was founded on the principle of "conscientization," a process whereby each local community determines its own health needs, formulates its own strategy to provide primary health care, and funds its own health care, within its limited financial resources. This required a great deal of community input and cooperation and the formation of health committees composed of concerned volunteers in each



TABLE 1: PMTCT PROGRAM PCR RESULTS, 2000–2011

Year	Number PCR Tests Received	Number Positive PCR Results
2000	46	10
2001	105	17
2002	204	35
2003	389	64
2004	414	51
2005	244	30
2006	8	1
2007	239	25
2008	472	34
2009	1,121	112
2010	1,717	238
2011	1,887	238
<b>Total</b>	<b>6,846</b>	<b>855</b>

TABLE 2: TOTAL NUMBER OF HIV-POSITIVE WOMEN AND INFANT RAPID TESTING, 2003–2011

Year	Total Number of HIV-positive women	HIV-Exposed Infants Tested by Rapid Test, 12–18 Months	Positive Infants
2000	159	0	0
2001	517	0	0
2002	939	0	0
2003	1,597	43	3
2004	2,415	159	18
2005	3,279	113	30
2006	4,713	126	49
2007	5,761	308	63
2008	5,666	373	82
2009	6,185	748	145
2010	7,167	639	113
2011	7,845	787	275
<b>Total</b>	<b>46,243</b>	<b>3,296</b>	<b>778</b>

**TABLE 3: TOTAL NUMBER OF HIV-POSITIVE WOMEN AND INFANT RAPID TESTING, 2003–2011\*\***

Year	PMTCT Sites (Results / Target)	Counseled (Results / Target)	Tested (Results / Target)	HIV-Positive Women (Results / Target)
2007	112% (374 / 332)	104% (78,204 / 75,000)	112% (75,362 / 67,500)	108% (5,787 / 5,346)
2008	101% (402 / 400)	114% (91,864 / 80,000)	117% (88,914 / 76,000)	94% (5,660 / 6,019)
2009	100% (426 / 425)	99% (99,465 / 100,000)	101% (97,871 / 97,000)	100% (6,185 / 6,208)
2010	96% (434 / 450)	93% (102,423 / 110,000)	94% (100,737 / 106,700)	112% (7,167 / 6,402)
2011	100% (452 / 450)	89% (98,410 / 110,000)	92% (98,076 / 106,700)	113% (7,729 / 6,829)

\*\* Note that annual targets reflect the life of the Johnson & Johnson funding of the Cameroon program only, from 2007 to 2011.

village.

Beginning in 1985, the health committees selected literate women and men who were trained as birth attendants. They first provided PMTCT services in these remote villages in 2002. This model was very successful, with 40 Life Abundant Program sites actively providing PMTCT services by 2011. It is the only program in Cameroon that has trained birth attendants, now called Community Mother Child Health Aids (CoMCHAs), to provide HIV counselling and testing and ARV prophylaxis. Supervisory nurses from the Life Abundant Program make periodic visits to the primary health centers to monitor and improve the quality of care, including PMTCT services. Physicians and nurse midwives provide baseline and refresher training for the CoMCHAs and supervisory nurses.

Key data indicators were collected primarily by service providers and recorded in various registers found in all service delivery areas. Information from the registers was used to fill the monthly reporting forms, which are transmitted to the program offices. The grouped data were then entered into Excel spreadsheets by data clerks under the supervision of PMTCT coordinators. Electronic copies were transferred to monitoring and evaluation (M&E) officers at the PMTCT Coordination Office and uploaded into GLASER for analysis. Data feedback and progress reports were generated on a quarterly basis and shared with the Ministry of Public Health, funding partners, and service providers at the health facilities. PMTCT coordinators

cross-checked completed data forms against information in the registers, and the M&E officers cross-checked electronic data against hard-copy reports. On a quarterly basis, data quality assessments were conducted at a sampling of sites selected by M&E officers, EGPAF, and funding partners to ensure the quality of data collection and reporting.

**Clinical PMTCT Service Delivery Model:** At first ANC visits, nurse counselors gave group talks on all laboratory tests recommended (hemoglobin, urinalysis, blood type, syphilis, and HIV), ARV prophylaxis for HIV-positive mothers, and the importance of attending all four antenatal visits and delivery in a health facility. Counselors also provided information on how women could share their test results with their partners, family planning information, prenatal nutrition, and well child care. After the group session, all women received individual pre-test counseling and could opt out of any of the recommended laboratory tests. Women received same-day test results and were encouraged to return with their partners for subsequent ANC visits for couples voluntary counseling and testing. To encourage male partner participation, all women were given invitation letters signed by respected community leaders requesting men to accompany their partners to “discuss the well-being of their unborn child.” This approach increased male partner participation in PMTCT, although overall rates were still very low.

### STORY OF HOPE: FLORENTINE



Florentine and her son, Faith (Photo:CBCHS)

Florentine is a young woman living and working in Bamenda, Cameroon. When she was 19 years old, Florentine received two pieces of good news during a visit to her physician—she was pregnant and HIV-negative. Unfortunately, that wasn't the truth. Not only did she later find out that she was HIV-positive, but when her father-in-law discovered her status he asked Florentine to leave his home.

Florentine's parents took her in, and she received follow-up antenatal care at a health facility run by CBCHS, one of the Elizabeth Glaser Pediatric AIDS Foundation-supported PMTCT sites.

Florentine joined a support group for people living with HIV and took nevirapine, a cost-effective intervention that has been essential in dramatically reducing mother-to-child transmission of HIV. Her baby boy, Faith, also received ARV prophylaxis soon after birth. Faith is now a healthy 11-year-old who continues to live HIV-free.

After her positive experience with CBCHS's PMTCT program, Florentine began working at CBCHS as a chairperson for CBCHS's support groups; there are now 90 such groups throughout Cameroon with more than 3,000 members. Under Florentine's leadership, these groups help to reduce HIV stigma in the communities where they are active. They also provide families in need with infant-weaning food, important nutritional counseling, and training on specific income-generating activities.

All women received post-test counseling, and pregnant women who tested HIV-positive were referred to the nearest C&T facility for CD4 testing and to attend a psychosocial support group, if available in their area. During labor and delivery, all women with unknown HIV status were tested; ARV prophylaxis was provided and women were given appointments for follow-up postpartum care. HIV-positive mothers were counseled on safe infant-feeding options, and they received prescribed ARV prophylaxis regimens for themselves and their HIV-exposed infants. Mothers were encouraged to bring their children to an infant welfare clinic for routine immunizations, continued ARV prophylaxis, and EID. At most sites, mother-baby pairs who did not attend follow-up appointments received phone calls from nurses to reintegrate them into care.

### 3. Improvement in Quality of Life for People Living with or Affected by HIV/AIDS through Innovative Wrap-around Programs

The CBCHS/EGPAF PMTCT program was closely linked and integrated with other components of CBCHS's AIDS Care and Prevention Program. This ensured that the holistic needs of PMTCT clients and their families were met and improved PMTCT uptake and retention. These wraparound programs included psychosocial support groups for adults and children

living with HIV, support for orphans and vulnerable children, youth health and education programs, contact tracing and partner notification, and the Nutrition Improvement Program.

#### **Psychosocial Support for People Living with HIV and Support for Orphans and Vulnerable Children:**

EGPAF and CBCHS aimed to provide not only medical C&T to HIV-infected people, but also psychosocial support. Over the years, CBCHS improved the lives of PMTCT clients through about 90 support groups for women, men, and family members who were HIV-infected or were affected by HIV/AIDS (e.g., foster parents of AIDS orphans). Participants come together to empower themselves by sharing experiences and receiving training on living positively with HIV and AIDS, nutritional and adherence counseling, and opportunities to engage in income-generating projects. Annual support group conferences are organized within each region to bring together support group members so they can share their experiences and achievements and review activities, successes, challenges, and plans for the upcoming year. With close to 5,000 registered members, the support groups are, for the most part, self-supporting through engaging in income-generating activities, with occasional financial and regular administrative help provided by the CBCHS/EGPAF program to meet the medical, psychosocial,



**FIGURE 10: MEMBERS OF THE CHILDREN'S SUPPORT GROUP AND THEIR COORDINATORS AFTER ONE OF THEIR MONTHLY MEETINGS**

and spiritual needs of the members. Support group members have also been involved in advocacy and awareness-raising efforts at the local and national levels, making presentations to government officials, in churches, and on national television and radio and international radio.

Florentine's "Story of Hope" is an inspirational example illustrating how one woman referred from the PMTCT program to support groups became a leader in CBCHS's support group network (see above).

In 2009, the program initiated support groups for children living with HIV, reaching a total of 172 children in 10 groups by December 2011. The children's support group members have the opportunity to engage in drama, singing, poetry writing, and arts and crafts in addition to counseling and adherence support. A select group of children, elected by their peers, have also formed a drama/singing troupe to perform in schools and churches and raise awareness about pediatric HIV/AIDS and combat stigma and discrimination.

The program also supported HIV and AIDS orphans and vulnerable children through the Chosen Children program started in 2001, which provides education and medical stipends to such children and psychosocial support and training on income-generating activities to caregivers. The impetus behind

the Chosen Children program was to complement the PMTCT program and prevent future infections among these children and their caregivers. The Chosen Children program also organizes workshops for caregivers on topics including first aid, essentials of HIV/AIDS, hygiene and sanitation, property rights of orphans, and challenges of raising orphans, among others. As of December 2011, more than 900 orphans and vulnerable children were receiving services through Chosen Children.

**Youth Network for Health and Education:** CBCHS started another arm of AIDS education in January 2003 called the Youth Network for Health and Education (YONEFOH), with an overall goal of reducing HIV prevalence among youths including young women of reproductive age.

Through YONEFOH, youths received education about sexual health and behaviors to reduce transmission of HIV and sexually transmitted infections. YONEFOH provided workshops and information, education, and communication (IEC) materials for youths in schools, universities, churches, workplaces, manjong houses (social associations), and other community-based settings; offered voluntary counseling and testing; and encouraged youths to form youth health clubs at school and to integrate health education into church-based youth associations. Sensitization activities were organized during



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World AIDS Day week, including marches, free HIV voluntary counseling and testing, competitions, drama, and songs. Many youths now know their HIV status and have adopted safer behaviors as a result of these efforts. In 2011 alone, a total of 45,963 youths were sensitized on HIV and AIDS. Ten workshops were organized to train youths as peer educators, and 1,317 were tested for HIV, with 23 (1.7%) testing positive. The program has raised HIV/AIDS awareness among youths, a hard-to-reach population; facilitated the work of hospital staff and counselors because many patients come already aware of some basic facts about HIV/AIDS; and helped increase care and support for people living with and affected by HIV/AIDS as a result of greater awareness and decreased stigma.

### **Increasing Testing Uptake and Disclosure of Partner's Positive Status Using Contact Tracing and Partner Notification:**

In 2007, CBCHS, with the support of EGPAF and the encouragement of the Ministry of Public Health, started the first Contact Tracing and Partner Notification program in West Africa. In Cameroon, patients newly diagnosed with HIV do not usually receive assistance in notifying their sex partners. The Contact Tracing and Partner Notification approach, which facilitates anonymous disclosure of individuals' HIV status to their sexual partners through the use of health advisors, has empowered many exposed people to know their status. Those that test positive are referred to necessary C&T. Trained health advisors ask HIV-positive clients (index cases) about their sexual partners over the past two years. Advisors inform partners confidentially of their risk of HIV infection, pre-test counsel them, and offer HIV testing in their home or a nearby clinic. Advisors educate the index cases and their partners on HIV prevention and risk reduction and refer them for care, if indicated. HIV-infected pregnant women are counseled to adhere to prophylaxis to reduce mother-to-child transmission. By December 2011, a total of 9,651 contacts of HIV-positive clients were identified, 6,818 (70.6%) were notified of their exposure to HIV, 5,080 (75%) were tested, and more than 53% tested HIV-positive.

### **Improvement in the Lives of Infants Born to HIV-Positive Clients:**

The Nutrition Improvement Program, initiated in 2008, trained service providers on safe infant- and young-child-feeding (IYCF) practices, introduced IYCF indicators at the site level, and developed IYCF training curricula and IEC materials for dissemination at health facilities and in communities. The Nutrition Improvement Program was operating in 27 sites and had trained 127 providers by March 2012. More than 800 children infected or affected by HIV and their caregivers have benefited from educational, nutritional, and medical care through the Nutrition Improvement Program.

### **Improving Access to Other Services That Help to Reduce Maternal Mortality and Improve Maternal Health:**

CBCHS began the first Women's Health Program (WHP) in 2007. The program includes four main components: cervical cancer screening and treatment of pre-cancers using a "see-and-treat" model; breast cancer screening and education; screening and syndromic management of sexually transmitted infections; and integrated family planning. The program was initiated because of the high number of women presenting with invasive, incurable cervical cancer that could have been prevented by screening and treatment of pre-cancers. Cervical cancer screening was prioritized for women who were support group members, because HIV increases the risk of acquiring cervical cancer. In an integrated manner, WHP services are offered through six clinic sites, and a lot of women are reached in remote areas through outreach services using an old U.S. Army van as a mobile clinic unit. WHP, in collaboration with the National Cancer Prevention Program, also initiated the first vaccination campaign in Cameroon in 2010 against human papillomavirus (HPV) and has successfully vaccinated more than 6,400 young girls aged 9 to 13. Post-vaccination follow-up was carried out with no major side effects. The senior WHP nurse is participating in a national committee to plan for the integration of HPV vaccine into the National Immunization Program.

## **4. Investing in Human Resources for Health**

The Cameroon program's approach to PMTCT implementation aimed concomitantly to develop human resources for health. The program built the capacity of site-level service providers and district-, regional-, and national-level public officials through trainings, refresher courses, site-level supportive supervision, and active participation in the Ministry of Public Health's district quarterly coordination meetings and national technical working groups.

Since 2007, about 2,000 health-care workers were trained in PMTCT implementation, IYCF, EID, and community linkages, among other topics. The majority trained were nurses, midwives, and laboratory technicians who carry out day-to-day PMTCT service provision at the sites. Quarterly, CBCHS provided site- and district-level data feedback reports to site staff and district medical officers. Those results were used to discuss program progress and challenges and to seek ways to address challenges during quarterly district coordination meetings.

To build the management and supervisory capacity of regional staff responsible for PMTCT services in 2010, the PMTCT program instituted an intensified model of technical assistance to each region. During these visits, all key regional staff were encouraged to share progress, challenges, and strategies to



overcome challenges identified. Regional staff then replicated the same exercises at the sites they supervised. The visiting CBCHS officers led sessions on data review to build capacity on data use for program improvement and decision making and to provide encouragement and recognition for staff's efforts.

## 5. Staying at the Forefront of New International Guidelines and Scientific Evidence

The Cameroon program staff revised all training materials, data collection tools, and programmatic interventions in 2006 and again in 2010 to reflect the latest scientific literature and international developments (e.g., WHO guideline revisions). Nutritional training and support for those living with HIV and infants exposed to or living with HIV have been huge challenges over the years—the disastrous effects of nutritional deficiencies and poor infant-feeding practices are obvious and quite alarming. To combat those deficiencies, the CBCHS started a Nutrition Improvement Program intended to improve the nutritional status of all mothers and infants who receive care in the health facilities following the 2006 WHO guidelines on infant feeding. The program's activities have been, among others, capacity building of health-care providers on infant-feeding counseling and integration, provision of nutritional education and individual counseling through demonstration of food preparation and consistency, and preparation of infant formula from other milk.

The Nutrition Improvement Program has successfully trained and retrained 172 health workers serving at 27 sites, and it has intensified education, teaching, and sensitization to ensure that proper and correct information on nutrition and infant feeding is disseminated. The Nutrition Improvement Program has also promoted and continues to promote safe infant-feeding practices, including safe breastfeeding practices and a lot of sensitization and celebration of World Breastfeeding Week in program sites. Some IEC materials have been developed and are in use, such as a comprehensive training manual, posters, brochures, and reporting material. All these tools have been shared with the Ministry of Public Health, which is very supportive of the Nutrition Improvement Program and is looking for possibilities of rapid replication in all other PMTCT sites.

The CBCHS program was the first implementing partner in Cameroon to revise its PMTCT training manual and site supervisory guides to reflect the revised 2010 WHO PMTCT guidelines and to train site staff on the new ARV regimens. CBCHS M&E staff worked with the national team to revise national tools to reflect the new guidelines.

## CBCHS/EGPAF QUALITY IMPROVEMENT TOOLS

- Quarterly facilitative supervision (PMTCT site checklist)
- Client-oriented provider efficient services
- Infection prevention checklist
- Site-level data quality assessments
- Quarterly data feedback used to develop site action plans following plan-do-study-act technique

## 6. Implementing Rigorous M&E and Quality Improvement

The program placed a high priority on data collection, analysis, monitoring data quality, and data use. CBCHS M&E staff collected monthly data from sites, entered the data into Excel spreadsheets, and reported quarterly to EGPAF, Cameroon Ministry of Public Health officials, and participating sites. Data submitted to EGPAF were stored in EGPAF's online database, GLASER, for data cleaning, automatic data quality checks, validation (including a manual review of the data to examine trends over time), and storage.

The M&E team carried out quarterly data quality assurance at selected sites to improve data quality. Program sites have learned to use service data to identify gaps and develop strategies for improvement. Regular data quality audits were initiated following the annual data review meeting, which was started in 2009 and extended to the site level through the PMTCT coordinators. Regional health personnel took part during the annual data reviews and greatly appreciated the initiative. Annual data reviews have become an integral part of most CBCHS programs and have been decentralized to the coordination area level. PMTCT coordinators also conducted quarterly supportive supervision visits to each site to assess service implementation progress and challenges, identify commodity need, resupply sites with HIV test kits and ARV prophylaxis, and assess staffing and training needs. Participants at data review meetings have often been amazed at the level of information embedded in the data collected for every program or project and excited to do something to fill the identified gaps.

In addition to ensuring data quality, quality improvement (QI) of PMTCT services has been a critical part of the program since 2008, when CBCHS introduced QI mechanisms following support from the USAID AWARE I project. CBCHS employs a range of tools to improve service provision (see inset); in fact, it is the only organization in Cameroon consistently using such mechanisms.

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Data feedback and progress reports are generated quarterly and shared with the Ministry of Public Health, funding partners, and service providers at the health facilities. PMTCT coordinators cross-check completed data forms against information in the registers, and the M&E officers cross-check electronic data against hard-copy reports. The feedback provided to sites forms the basis for QI strategies that are developed and implemented by the site staff with assistance from the coordinators. In effect, each supervisory visit by coordinators ends with an action plan developed based on identified challenges whose implementation supports the continuous QI efforts.

### 7. Conducting Research to Improve the Quality and Uptake of Services

By leveraging the program's access to site-level data and by creating a strong working relationship with service providers through the Johnson & Johnson-funded program, the Cameroon team was able to conduct several small- and large-scale research studies funded by other donors as well as undertake secondary data analyses. The results of those studies and secondary analyses were developed into abstracts presented at international conferences and published in peer-reviewed journals. Since 2000, more than 10 abstracts were accepted for presentation at conferences such as those of the International AIDS Society, International AIDS Conference on AIDS and STIs in Africa, and others, and 11 articles were published in such prestigious journals as the *Journal of the American Medical Association*, the *Journal of Acquired Immune Deficiency Syndromes*, and the *Journal of Midwifery and Women's Health*, among others (see Appendix 1 for a complete list of publications). Two major studies were carried out: the PMTCT Effectiveness in Africa: Research and Linkages to Care and Treatment (PEARL) study and the Continuum of Care Operations Research (CORE) study.

The PEARL study, funded by the CDC and EGPAF and conducted in Côte d'Ivoire, Cameroon, South Africa, and Zambia in 2007–2008, assessed the effectiveness of PMTCT interventions by testing cord blood samples for the presence of HIV antibodies to determine HIV prevalence. Positive cord bloods were then tested for the presence of nevirapine to determine what proportion of HIV-positive mothers actually took nevirapine (the PMTCT protocol at the time of the study). In addition, a survey was taken of 400 households in each of six communities (2,450 households total) to measure the prevalence of HIV among mothers who have children less than two years of age (living or dead), the use of PMTCT services, and the HIV-free survival of infants. Maternal adherence to nevirapine was on average 75% in Cameroon, higher than in the three other



**FIGURE 11: POSTER PRESENTED AT THE XIX INTERNATIONAL AIDS CONFERENCE, JULY 2012, WASHINGTON, D.C.**

countries, indicating high-quality service delivery.<sup>10</sup>

In 2009 with EGPAF funding, CBCHS initiated operations research to compare mother-to-child transmission rates and the proportions of HIV-positive mothers enrolled into care and treatment through two PMTCT C&T referral systems. A total of 145 PMTCT sites located within a 50-kilometer radius of CBCHS C&T centers were assigned to one of two referral systems. System I referred HIV-positive women from PMTCT sites to C&T centers on the day of diagnosis. In System II, linkage nurses drew blood from HIV-positive women on the day of diagnosis at the PMTCT facility and transported it to the nearest C&T center for CD4 testing. Women with a CD4 count less than 350 were referred to the C&T center for ART initiation, and women with a count greater than 350 began bi-therapy at the PMTCT facility, with a follow-up CD4 count done every six months. Of 1,196 HIV-positive women

10 E. Stringer et al., "Coverage of Nevirapine-Based Services to Prevent Mother-to-Child HIV Transmission in 4 African Countries," *Journal of the American Medical Association* 304, no. 3 (2010): 293–302.

identified, 58% of those in System I and 55% of those in System II were enrolled at C&T centers. In System II, HIV-positive women were significantly more likely to receive a CD4 test and multidrug ARV prophylaxis than in System I. The overall mother-to-child transmission rate was 3.1%, half the program's previous rate, indicating that more effective linkage of HIV-positive mothers to C&T programs reduced mother-to-child transmission rates.<sup>11</sup> The lessons learned from the CORE study were used in the overall PMTCT program to improve upon referral of HIV-positive pregnant women from PMTCT to C&T.

## 8. Resource Diversification and Building Program Sustainability

Whereas the demand for PMTCT services (and the number of mother–baby pairs presenting for services) continued to increase each year, private funding sources witnessed a continuous decrease. CBCHS established a grants department and hired a grants officer in 2009 when the search for alternative sources of funding was intensified. With EGPAF support, a workshop on proposal writing was conducted in 2010, training participants in the writing of funding proposals, letters of intent, and program briefs to showcase program achievements. Following those efforts, over the past two years CBCHS, with EGPAF support, has submitted 16 proposals to a wide array of donors, including ViiV Healthcare's Positive Action for Children Fund, the West African Ambassador's Fund, the University of North Carolina, the Cameroon Ministry of Public Health (as a subrecipient for the Global Fund Round 10 HIV/AIDS application), USAID, the European Commission, Cordaid, and, most recently, the CDC.

When the CDC released a funding opportunity announcement for PMTCT implementation in Cameroon in April 2011, EGPAF supported CBCHS to apply for that opportunity as the prime implementing agency. In a pioneering role reversal, EGPAF partnered with CBCHS as a subgrantee to provide targeted technical assistance and continued capacity-building support.

In the summer of 2011, CBCHS received the wonderful news that its proposal was successful, and project implementation began in full swing in October 2011. The project has greatly enhanced CBCHS's visibility at the national level, and it has enabled CBCHS to increase the geographic coverage and scope of its programs in the two English-speaking regions, especially in remote rural communities. CBCHS completely transitioned activities in the two regions by December 2011. Under this

project, CBCHS by 2012 was able to train more than 800 PMTCT service providers in the North West and South West regions, scaling up PMTCT services to more than 90% of health facilities. By 2016, the goal is to provide PMTCT services in all health facilities in those two regions, reaching 90% of all pregnant women.

The Ministry of Public Health partners have improved their collaboration and ownership at site, district, regional, and national levels; they now readily acknowledge the efforts of CBCHS. All PMTCT coordinators attend quarterly district Ministry of Public Health meetings and share reports from the CBCHS PMTCT program. CBCHS has become a regular member of the regional health coordination meetings in the North West and South West regions following the beginning of the PEPFAR project and is expected to lead in the discussion of PMTCT activities during such meetings. This is unlike before, when only some district medical officers and regions were very collaborative, as reflected in the disproportionate distribution of sites shown earlier in this report in Figure 4. The district coordination meetings provide an excellent forum for the discussion of successes of health programs and challenges, especially on commodity stock-outs. CBCHS staff were not regular participants in such meetings before the start of the project. PMTCT supervisory staff regularly visit the district offices and work closely with the district medical officers to facilitate the distribution of PMTCT commodities and jointly plan and conduct trainings. CBCHS staff now are regularly invited to participate in national PMTCT and elimination of mother-to-child transmission meetings, which was inconsistent in the past.

## MAJOR CHALLENGES FACED

### 1. Low Infant ARV Prophylaxis Uptake Rates

Infant ARV prophylaxis uptake remains the greatest challenge the program faces despite the numerous QI strategies initiated. According to the 2009 PMTCT Infant Nevirapine Survey administered by CBCHS with 59 participating sites, less than half of the sites had all the supplies necessary to dispense and/or administer infant nevirapine syrup, and there was a low correlation between the number of HIV-positive women who delivered at a given facility per month and the number of infant nevirapine doses administered in postpartum per month. Administration of infant ARV prophylaxis may be underreported because some of the busiest ANC facilities do not have maternity services, so the infant prophylaxis provided at the facility where the women deliver is not captured in the data where the woman received ANC.

11 P. Tih et al., "Comparing Two Strategies for Enrolling HIV-Infected Pregnant Women from Antenatal Care to Care and Treatment Services in Cameroon: Continuum of Care Operations Research (CORE) Study" (oral presentation at International AIDS Society, Rome, 2011).

### 2. Inconsistent Supply of Commodities to Sites Leading to Regular Stock-Outs and Missed Opportunities for PMTCT

The year 2007 saw a rapid scale-up of PMTCT at the national level following the beginning of free ARV provision to those in need and the use of the district approach. Demand for services increased as cost became less of a barrier. However, effective scale-up was hindered by the inconsistent supply of drugs and test kits at sites, leading to disruption in service provision.

### 3. Poor Quality of Maternal ARV Uptake Data (Double-Counting) Following the Implementation of the 2010 WHO Guidelines

Although data quality assurance has been instituted as a regular component of M&E activities, the capturing of maternal prophylaxis uptake is still problematic: poor recording, poor reporting, and double-counting sometimes lead to unreliable uptake percentages. Double-counting has made it difficult to assess progress in the provision of maternal ARV prophylaxis.

### 4. Low Male Partner Involvement

Though CBCHS has tried to include men, low male involvement continues to be a challenge for the PMTCT program. In most cases, pregnant women attend ANC without their partners. CBCHS has been working through various networks, including the Men as Partners program, to mobilize and get more men

involved in PMTCT and supporting their partners and children. All women attending ANC receive invitation letters signed by respected community leaders encouraging men to accompany their female partners to the clinic during subsequent visits. Although male partner involvement has improved, the rate of partners attending ANC and receiving voluntary counseling and testing is still around 10%.

### 5. Low Uptake of EID Services

CBCHS was one of the first implementers to train providers and initiate EID services. However, several challenges have hindered progress in ensuring that all HIV-exposed infants receive EID services. Cameroon has only two reference laboratories with PCR-testing capability, contributing to long turnaround times.

In addition, many mother–baby pairs do not return for postpartum services. Cumulatively, only a total of 6,846 HIV-exposed infants were tested by PCR since its introduction in 2000. Under the new CDC project, community volunteer peer educators have been engaged to follow up on mother–baby pairs with the hope that this will greatly improve the uptake of services in HIV-exposed children.

### 6. Limited Funding to Support Activities in Non-PEPFAR Regions

With the closeout of the Johnson & Johnson project, the program transitioned support for PMTCT in the North West and South West regions to the new CDC project in January 2011. However, funding from CDC/PEPFAR is limited to those regions. Despite the sustainability strategies put in place by the coordinators and district medical officers in view of the eminent transition of sites to the Ministry of Public Health by December 2012, there is still the fear services will drop drastically in the four other regions the CBCHS/EGPAF program supports. The program continues to receive written requests for the initiation of new sites, whereas efforts are limited to sustaining already-existing sites. Bridge funding is urgently needed to ensure continuation of PMTCT services until additional PEPFAR/governmental support is in place.



**FIGURE 12: DRIED BLOOD SPOT CARD DRYING AT LIMBE DISTRICT HOSPITAL, SOUTH WEST REGION**



## LESSONS LEARNED

In the overall implementation of PMTCT services with Johnson & Johnson funds through EGPAF, CBCHS has gained a lot of experience and learned many lessons.

### Partnership

The program's integrated public-private and other faith-based organization partnerships yielded remarkable results in increasing access to quality PMTCT services. This scaling up of quality PMTCT services was achieved through the integration of PMTCT services into antenatal and maternal and child health services of government, private, and faith-based partners. Those partners offered their structures and staff for the PMTCT services, and CBCHS provided the technical assistance in service provision. This integrative model has laid a foundation for using PMTCT as a channel for other health services pregnant women need, such as family planning, psychosocial support, and so on.

### Supervision

Regular supervision at sites enabled quick interventions in response to site-level challenges such as stock-outs or staff transfers, thereby maintaining quality of services. Through regular supervision, we can identify the frequent movement of staff, and we always budget for on-the-spot training and refresher courses to bridge the gaps. Supervision has also enabled sites to have the necessary commodities in time except during periods of overall country stock-out.

### Uptake of Services

Low infant ARV prophylaxis uptake remains the main programmatic challenge and is associated with loss to follow-up, frequent change of national drug protocols, and drug stock-outs.

We realize that male participation in PMTCT, although low, has increased over the years due to continuous education and sensitization. The program has an average male partner participation rate of 10%, compared with 2% nationally.<sup>12</sup> With continued education, the ignorance about men getting involved will gradually be history someday. Discordancy in couples' results, especially when the positive case turns out to be the woman, has been very difficult to manage.

We have learned that any pregnant woman presenting at a labor room without a record of her HIV status is a potential HIV-positive case. Pregnant women who have not yet accepted their

status often go to different health centers and go for delivery with no records due to fears of stigma and discrimination. Service providers at all labor rooms have been trained to counsel such women immediately and to test in order to administer ARV prophylaxis.

### PMTCT Supplies

The program depended on supplies from the government, whose system of supplying commodities was inconsistent. It became clear that stock-outs at sites were not necessarily the result of no supplies in the country but were sometimes a consequence of poor management. Districts and regions did not requisition in time or in the right quantities, and so commodities sometimes accumulated at the national pharmacy. CBCHS, however, did its best to facilitate the flow of commodities from the national level to the regions, districts, and sites through advocacy and using their vehicles to transport in some cases.

### Motivation

CBCHS learned that staff at the PMTCT sites were highly motivated when the program recognized their service with gifts no matter how small (for example, calendars and T-shirts printed with HIV messages).

### Capacity Building

CBCHS, a local nongovernmental organization with strong footholds in the community, has built its capacity over the years and can competitively apply for U.S. government and private funding, and thereby has become more sustainable. It did this through an effective partnership with EGPAF.

### Sub-programs

Support groups have gained capacity and now function on their own with little supervision and assistance from CBCHS. The stigma associated with HIV is no longer an issue among support group members as most openly share their testimonies whenever needed and even serve as counselors to those who are newly diagnosed with HIV.

The Chosen Children program restored hope to children orphaned by AIDS, as some of the children have completed vocational training and can now fend for themselves and support their siblings. Some have completed secondary and high school.

Through contact tracing, the partners and co-wives of pregnant women in polygamous homes can be tested for HIV and live positively thereafter with known HIV status.

<sup>12</sup> Ministry of Public Health, *Analyse des goulots et des disparités de la PTME au Cameroun*, November 2011. Yaoundé.



### Integration of Services

The PMTCT program was well integrated into antenatal care and labor and delivery, which facilitated optimal uptake of services in the prenatal and peripartum period. However, PMTCT was less well integrated into postpartum and infant welfare services, as evidenced by the low number of HIV-exposed infants receiving infant ARVs, early infant diagnosis, and rapid testing.

### Research

The CORE study found that more HIV-positive pregnant women received care when their CD4 specimens were collected at the site and taken to the C&T site by linkage staff. The study was done for health facilities situated not more than 50 kilometers from five C&T centers. Unfortunately there were no funds to scale up and continue with it throughout the entire PMTCT program.

### Monitoring and Evaluation

Using the data feedback process that CBCHS initiated, site staff can identify where their services are high performing and where they need improvement. The services of each site are graphed and charted and discussed with the various sites. The graphs and charts are then printed and put on office walls for encouragement.

Another M&E lesson regards double-counting. When the multidrug regimen was initiated nationally in 2009–2010, the program recorded the results, with some indicators going to more than 100%. The M&E team has worked hard to understand why and is now helping to avoid that in the future.

### FUTURE DIRECTIONS

- The CDC/PEPFAR project being implemented by CBCHS with EGPAF and Clinton Health Access Initiative technical support will continue in the North West and South West regions.
- The ViiV project will improve community involvement/mobilization and retention to care in the North West Region.
- CDC/PEPFAR project will pilot integration of family planning into HIV C&T and the implementation of Option B+ in select districts. Allowing trained nurses and lower-level health facilities to initiate women on treatment will be essential for achieving full coverage. Results from both studies shall be used to inform national strategy, policies on task shifting, and scale-up.
- CBCHS is working to identify new private donors to support sites in the four non-CDC-supported regions as well as to build the capacity of the Ministry of Public Health and service providers in those regions to implement PMTCT services without CBCHS/EGPAF support.
- CBCHS and EGPAF will continue advocacy at all levels to realize virtual elimination of mother-to-child transmission in Cameroon.
- The program will focus on reducing the proportion of mothers and HIV-exposed children who are lost to follow-up so that the progress in infant and maternal ARV uptake may be sustained. Strengthening integration of PMTCT into overall maternal and child health services, particularly those in the postpartum period, will help reduce loss to follow-up and increase care for HIV-exposed infants and their mothers.
- In collaboration with the Ministry of Public Health, regional health departments, EGPAF, the CDC, and the Clinton Health Access Initiative, CBCHS is working to improve supply chain management, infant follow-up (including EID), and linkages from PMTCT to HIV C&T.
- The CBCHS grant department will continue to source for funding opportunities to support the program while continuing with the already-existing local funding plans.

## APPENDICES

### Appendix 1. Stories of Hope

The following profiles feature members of the Cameroon Baptist Convention Health Services community support groups.

#### AGNES

“My name is Agnes. I am proud to say that I was not so carried away by my diagnosis when I discovered I was HIV-positive. I easily accepted the result and started thinking of a way forward. I cannot say where I got such courage from, but that is how I found myself reacting to the situation—and this positive reaction helped me overcome stigma, which was and is still prevailing. Being positive, in thought and action, does not mean people will not look down on you. In fact, many people point fingers and throw words at me, but others see me as their hero. All my children know about my status and each is giving his/her contributions to make my life much better. We all have battles to fight in this life; mine is the fight to live with HIV. I do not know what yours may be, but no matter what the battles may be, one thing I believe is that courage is the key to win them all.”



#### MERCY

Mercy did not believe she could ever be HIV-positive. She understood HIV as a disease for the promiscuous. During her second pregnancy in 2002, she was diagnosed as HIV-positive. Mercy said that life became more difficult for her in 2006, when her husband, also HIV-positive, passed away. Fear, discouragement, and resentment gripped her. Her sole responsibility toward her children overpowers her each day. She says, “I gave up life some time ago, but the encouragement, as I came closer to people of my [HIV-positive] status in the support group and to God, to whom I have given my life, have kept me till this time. I would like to say this to everyone reading my story: HIV is nothing to be scared of. If I can live with it, then you can too.”

## Appendix 2. The Cameroon Team's Published Research

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## ELIZABETH GLASER PEDIATRIC AIDS FOUNDATION

The Elizabeth Glaser Pediatric AIDS Foundation is a nonprofit organization dedicated to preventing pediatric HIV infection and eliminating pediatric AIDS through research; advocacy; and prevention, care, and treatment programs. Founded in 1988, EGPAF works in 15 countries around the world.

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Elizabeth Glaser acquired HIV through a blood transfusion and unknowingly passed the virus on to her daughter, Ariel, and her son, Jake. Following Ariel's death in 1988, Elizabeth joined with close friends Susie Zeegen and Susan DeLaurentis to create a foundation with one mission: to bring hope to children with AIDS. Elizabeth lost her own battle with AIDS in 1994, but thanks to the work of the Elizabeth Glaser Pediatric AIDS Foundation, Jake is now a healthy young adult, and hundreds of thousands of other children have a chance to lead longer, more vibrant lives.



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