CORE GROUP POLIO PROJECT
FY11 Annual Program Report

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EXECUTIVE SUMMARY

In October of 2007 the CORE Group Polio Project (CGPP) received funding from the USAID Global Bureau intended to continue the polio eradication activities begun under the earlier USAID-funded Polio Eradication Initiative. The CGPP grant provides funding of up to US$30 million for five years, ending in September 2012. The FY11 USAID obligation for CGPP was $1,003,855 in Angola, $825,360 in Ethiopia and $2,424,465 in India. An additional $2,894,271 designated for global level costs brings the FY11 total to $7,147,951. This year, USAID funding has been complemented with the contribution of an additional $2,349,825 in funding from the Gates Foundation, which has enabled the CGPP to expand its activities in Angola and begin activities in South Sudan.

2011 may well go down in the history books as a turning point in the Global Polio Eradication Initiative, a year in which India and Angola both interrupted transmission of wild polio virus and Ethiopia continued a three year running streak of no new cases. All three countries have maintained Non-polio AFP surveillance rates above two per 100,000 in children under 15 and high coverage in Supplemental Immunization Days although routine immunization coverage remains low in many areas. The CGPP continues to play a meaningful role in their contribution to independent campaign quality monitoring in Angola, high level social mobilization in India, and serving hard to reach populations in Ethiopia, reducing the number of unvaccinated children and thereby stopping the spread of wild polio virus. In partnership with the MOH, UNICEF, WHO, CDC, Rotary and others, the CGPP contributed to a better implementation of the established polio eradication strategies resulting in a marked reduction and probable interruption of wild polio virus over the past four years of project implementation.

Globally, the CGPP's emphasis in 2011 was two-fold: both to further refine project implementation and strategies where necessary and to present the project's contributions to a broader audience. In this way, the project enhanced its capacity to understand the remaining barriers to population immunity and creatively address those barriers. Specifically, the project expanded the unique community messages targeted in India; and better defined the specific populations at highest risk of missed immunizations – pastoralist populations – in Ethiopia. In Angola, the project targeted local level advocacy, health system management, capacity building, and quality monitoring in addition to their long standing commitment to community mobilization at the family/household level In each, the secretariat team has used its ground-level knowledge and national level influence to shape polio eradication activities in response to rapidly shifting, urgent needs.

The project made significant progress in consolidating and disseminating its findings this year; the project's results appeared in an academic publication for the first time and formed the basis for several presentations at professional conferences. Three additional academic articles are awaiting review. In addition, CGPP secretariat staff presented across several continents at venues ranging from GAVI to professional conferences to Technical Advisory Groups (TAG). Furthermore, communication among CGPP secretariats increased through an opportunity for the secretariats to come together and share training and behavior change strategies and materials.

In **Angola,** only five new cases of WPV have been confirmed during 2011, the last in July, as compared to 33 in 2010, leading to cautious optimism that the WPV may have been interrupted. Nevertheless, there is still concern over the quality of AFP surveillance.

Throughout FY11, the CGPP focused on strengthening its collaboration with the MOH and mobilizing stakeholders and key leaders at the district and sub-district levels with the goal of improving campaign quality

and monitoring nationwide. To achieve this goal, Angola's FY11 strategy focused on building coordinator and vaccinators' capacity and strengthening sub-district commitment and ability to develop and implement accurate micro-plans. In addition, the CGPP has assumed leadership of campaign quality monitoring, conducting trainings in Luanda and beyond and compiling, analyzing, and presenting the results.

Combining complementary Gates Foundation funding with that received from USAID, the CGPP has expanded into four additional provinces in Angola. This Gates-funded project promises to be particularly important in Lunda-Norte, the location of a large outbreak in 2010 which spread to the Democratic Republic of Congo, and in Uige where the lastest two cases of polio were reported. The Gates funding also allowed intensification of efforts in Angola's historically high-risk Luanda-Benguela corridor.

While **Ethiopia's** last confirmed case of WPV was in the spring of 2008, it continues to remain a CGPP priority country as it is a nation with a large pool of un- and under-immunized children surrounded by countries at high-risk for polio transmission. CGPP-Ethiopia's efforts are largely focused on supporting MOH initiatives, many of which are also financed by GAVI. CGPP-Ethiopia continues to engage the government health system, both at the national and the community level, to create nation-wide polio eradication opportunities with a primary focus on reaching more isolated/mobile communities. CGPP-Ethiopia is currently developing more targeted mechanisms to address the needs of specific populations such as pastoralists and other border crossing sub-populations.

In FY11, no vaccine-derived poliovirus (VDPV) cases have been reported, a trend which is often related to improvements in routine vaccination coverage. Nevertheless, maintaining high routine polio immunization coverage and rigorous AFP surveillance across the nation, particularly in high-risk border areas, is essential to preventing a re-introduction of polio transmission.

In **India**, the CGPP's FY11 activities focused on three main areas: 1) broadening the scope of social mobilization efforts to promote universal population immunity, 2) maintaining high coverage attained in vulnerable communities in the northern state of Uttar Pradesh (UP) and 3) strengthening partnerships with key organizations to increase the efficiency of emergency responses to wild polio virus (WPV) outbreaks.

The number of polio cases in India has fallen very rapidly between 2010 and 2011, the last reported case in January 2011. The northern state of Uttar Pradesh has not detected any cases of wild poliovirus type 1 (WPV1) since November, 2009 nor of wild polio virus type 3 (WPV3) since April, 2010.

CGPP-India has strengthened collaboration with the International Expert Advisory Group (IEAG) and successfully implemented its High Risk Block Plan - specifically those related to migrant groups and the promotion of key sanitation and hygiene behaviors - through communications activities and materials development. Although routine immunization rates for the entire country have improved over the last several decades, coverage still falls well short of the threshold level believed to be the minimum necessary level to interrupt WPV.[1] Additionally, though there is a high acceptance among mothers for repeated polio doses, the CGPP's CMCs continue to address low routine immunization coverage and retention of immunization records through more carefully targeted household visits. This year, following a positive evaluation of its efforts CGPP-India was invited to join the social mobilization component of UNICEF's emergency outbreak initiative in West Bengal.

List of Acronyms and Abbreviations

ADP	Area Development Program
ADRA	Adventist Development and Relief Agency International
AFP	Acute flaccid paralysis
ANM	Auxiliary nurse midwife
BCC	Behavior change communications
CARE	Cooperative for Assistance and Relief Everywhere, Inc.
CBO	Community-based organization
CBS	Community-based (AFP) surveillance
CF	Child Fund
CGPP	CORE Group Polio Project (began in FY08)
CMC	Community Mobilization Coordinator
CORE	Collaboration and Resources for Child, Maternal and Community Health
CORE PEI	CORE Group Polio Eradication Initiative (1999-2007)
CRS	Catholic Relief Services
DPT	Diphtheria, pertussis, tetanus vaccine (DPT3 refers to the 3rd dose)
FCHV	Female Community Health Volunteer
GAPS	Geographic assessment of planning and services
HQ	Headquarters
HMIS	Health management information system
HRA	High-risk area
ICC	Inter-agency Coordinating Committee (for Polio Eradication)
IEAG	India Expert Advisory Group
IR	Intermediate Result
IRC	International Rescue Committee
LEAP	Learning through evaluation with accountability and planning
LQAS	Lot quality assurance sampling
M&E	Monitoring and evaluation
MNT	Maternal/neonatal tetanus
MOH	Ministry of Health
MTE	Mid-term evaluation
NGO	Non-governmental organization
NID	National Immunization Day
NPAFP	Non-polio acute flaccid paralysis
NPEV	Non-polio enterovirus
NPSP	National Polio Surveillance Project
NS	National Secretariat
OPV	Oral polio vaccine
OPV-Zero	Oral polio vaccine – 1st dose, provided to newborns within 15 days of birth
PCI	Project Concern International
PEI	Polio Eradication Initiative
PPCC	Polio Partners Coordinating Committee
PVO	Private voluntary organization
RED	Reaching Every District
RI	Routine immunization

SC	Save the Children Federation
SD	Secretariat Director
SIA	Supplemental Immunization Activity (includes NIDs, SNIDs and “mop-up” campaigns)
SMNet	Social Mobilization Network
SNID	Sub-national Immunization Day
SO	Surveillance Officer
TAG	Technical Advisory Group
TCG	Technical Consultative Group
TFI	Task Force on Immunization
UNICEF	United Nations Children’s Fund
UP	Uttar Pradesh
USAID	United States Agency for International Development
WHA	World Health Assembly
WHO	World Health Organization
WPV	Wild Poliovirus
WV	World Vision
WV-US	World Vision United States

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GLOBAL OVERVIEW

In FY2011, the CGPP was implemented by 12 US-based members of The CORE Group and their local partners in Angola, Ethiopia and India. Led by World Vision, these US-based partners include:

- Adventist Development and Relief Agency
- African Medical and Research Foundation
- Africare
- CARE
- Catholic Relief Services
- ChildFund International
- International Rescue Committee
- Plan International
- PCI

- Save the Children
- Salvation Army World Service Office
- World Vision-US

(A thirteenth partner, American Refugee Committee, operates in South Sudan only, receiving Gates funding but not USAID funding.)

In each country, the CGPP partners were led by National Secretariats responsible for creating and maintaining the project's relationships and communications with key national and international stakeholders; setting the CGPP technical strategy; ensuring the quality of project implementation and ensuring that CGPP activities support national and global Polio Eradication Initiative (PEI) efforts. With training and supervision from the Secretariats, the US-based organizations and their local NGO partners supervised and supported thousands of local community members, including mothers and religious and community leaders who promoted participation in routine and supplemental immunization and engaged in awareness building and active case searching in support of AFP surveillance. Figure 1 illustrates the administrative structure of the CGPP.

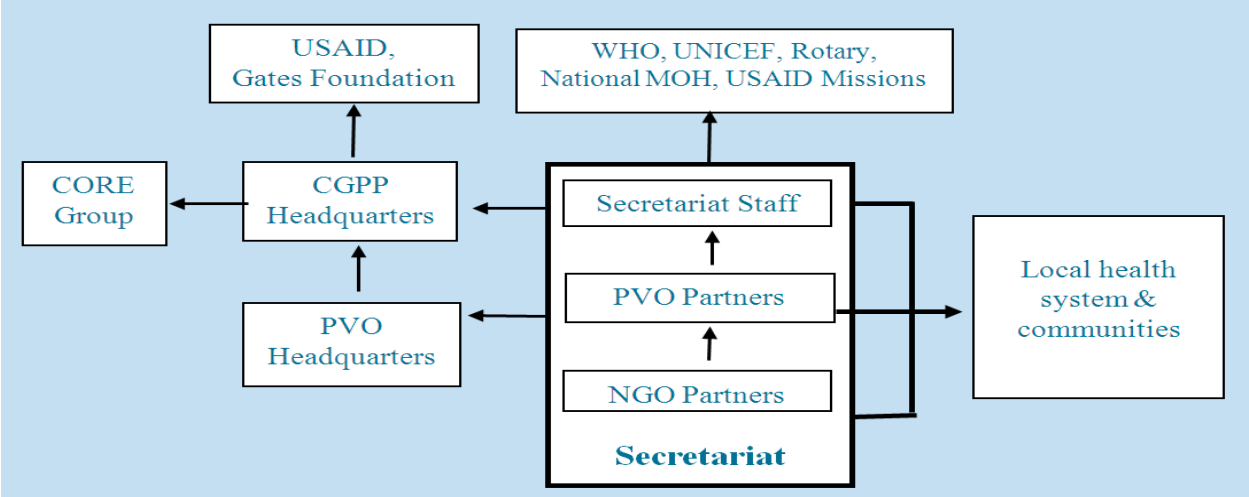


Figure 1. Core Group Polio Project Organizational Structure

CGPP activities at the community level have consisted of: community-based surveillance; the development of registries for children and pregnant women and the tracking of children and their immunization status; social mobilization to build community support for routine and campaign immunization activities; and capacity-strengthening at the local level for government health workers who implement routine immunization (RI) activities and supplemental immunization activities (SIAs) (Figure 2).

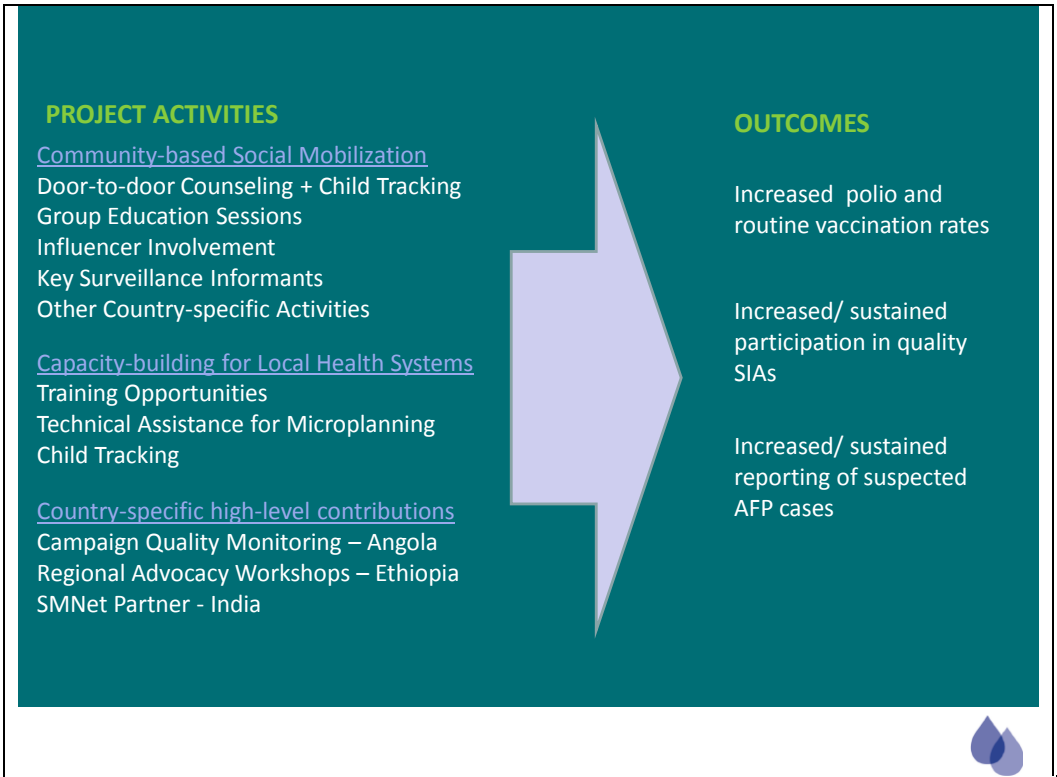


Figure 2. Overview of CORE Group Polio Project Activities in Angola, Ethiopia and Uttar Pradesh, India

Throughout FY11, the CGPP continued to pursue the following six strategic objectives:

- Objective One: Build effective partnerships between agencies
- Objective Two: Strengthen national and regional immunization systems (Routine Immunization)
- Objective Three: Support national and regional planning and implementation of supplemental polio immunization
- Objective Four: Support efforts to strengthen AFP case detection and reporting
- Objective Five: Support timely documentation and use of information
- Objective Six: Support PVO/NGO participation in either a national and/or regional certification activities

As the project completes the fourth year of this grant in a rapidly evolving epidemiologic situation, this report provides a global and country-by-country overview of CGPP activities, related trends and achievements throughout FY11. To review the big picture, CORE secretariats and members have developed strong effective partnerships among NGOs and international agencies including the MOH and spearheading partners in Angola, Ethiopia, and India with a recognized presence on the ICCs of each country and at international fora such as the TAG meetings in Africa. Mid-term evaluation results show moderate gains in routine immunization

but routine immunization rates remain extremely low and in need of much improvement. CORE partners have supported and monitored Supplemental Immunization Activities (SIAs) in all three countries, contributing to a reduction in missed children (around 1% missed in UP, India and 5% in Angola). In light of the low routine immunization numbers, SIAs have clearly been the driving force in polio case reduction. Non-Polio AFP rates are above the WHO norm of two per 100,000 in children under 15 in all three countries and significantly higher in India. CORE members have published journal articles on the work in India, presented at conferences on the work in Ethiopia, and contributed to independent monitoring in Angola. A review of the case numbers in all three countries demonstrates a significant reduction in cases, leading to cautious optimism that all three may well be on their way to virus interruption. Ethiopia has not had a case since 2008, India saw its last case in UP in 2010 and in the country in January 2011, and Angola's number of cases have plummeted from 33 in 2010 to only 5 in 2011.

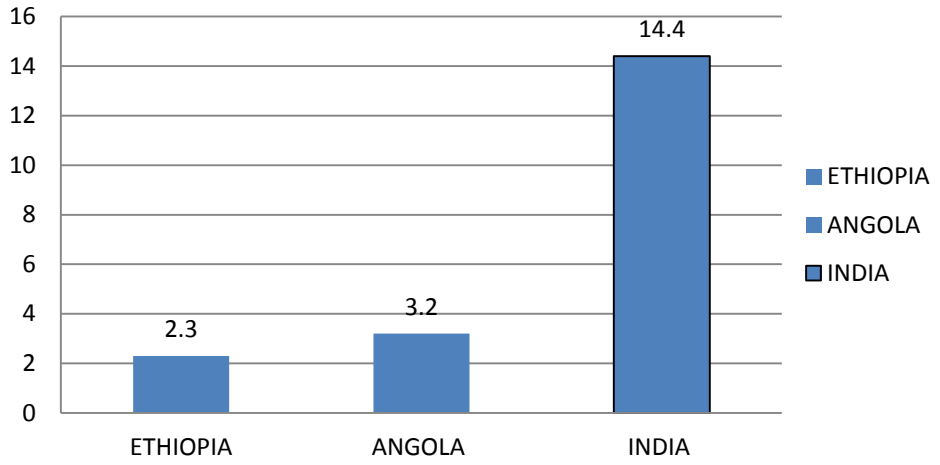


Figure 3: Non-polio AFP (NPAFP) rate, WHO surveillance data, 2011

During the summer and fall of 2010, a mid-term review was conducted through household surveys in each of the three countries to assess project activities. Respondents were caregivers of children aged 12-23 months of age. This year, the CGPP compared mid-term and baseline data to measure impact and understand the current status of key indicators. The results were consolidated into a full report and shared at the CORE Group's spring meeting and Global Health Council annual conference.

The table and graphs below illustrate some of the findings from the mid-term review on key indicators related to knowledge of polio vaccination and AFP, overall routine immunization, polio vaccination coverage, and national NPAFP polio rates.

	ETHIOPIA	ANGOLA	INDIA

	(%)	(%)	(UP) (%)
Knew correct timing of first polio dose	40	Data not available	77
Ever heard of AFP	61	40	60
Knew correct signs of AFP	55	38	48

Table 1: Knowledge of polio and AFP – Midterm Evaluation

In general, the figures in Table 1 represent an improving trend in knowledge about birth dose, but a stable or declining trend in knowledge about AFP. Intensive efforts devoted to improving quality of immunization services may have led to a reduced emphasis on community awareness of AFP symptoms. Volunteer training and behavior change materials for FY10 and FY11 have placed a renewed emphasis on community awareness of AFP. It is worth noting that surveillance indicators have not declined in CGPP areas. More targeted CGPP surveillance activities such as case search at facilities with MOH and WHO counterparts and monthly meetings with community leaders such as clerics and traditional healers may have a greater impact than activities targeted at general audiences. The project is considering assessing additional intermediate measures of the CGPPs impact through these mechanisms in the FY12 evaluation activities.

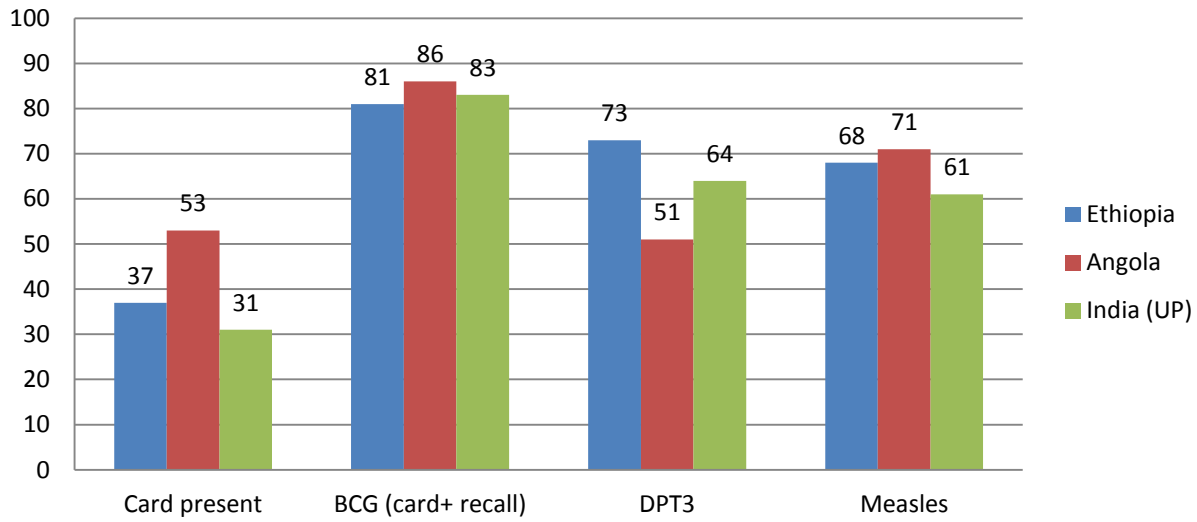


Figure 4: Routine Immunization Coverage in CGPP catchment areas- Ethiopia, Angola and India (UP) - Mid-term Review 2010

Figure 2 above illustrates routine immunization coverage based on a review of cards and caretakers' recall in the three project catchment areas. By and large, the results are similar in all three areas; although card retention is considerably higher in Angola than in Ethiopia and India. Pentavalent/DPT3 coverage is highest in Ethiopia (73%) and lowest in Angola (51%). The gap between Pentavalent/DPT3 coverage and targeted coverage levels highlight ongoing gaps in the routine immunization system. OPV0 figures showed moderate improvements over the CGPP's

baseline but remained far too low to block transmission without supplemental immunization days.

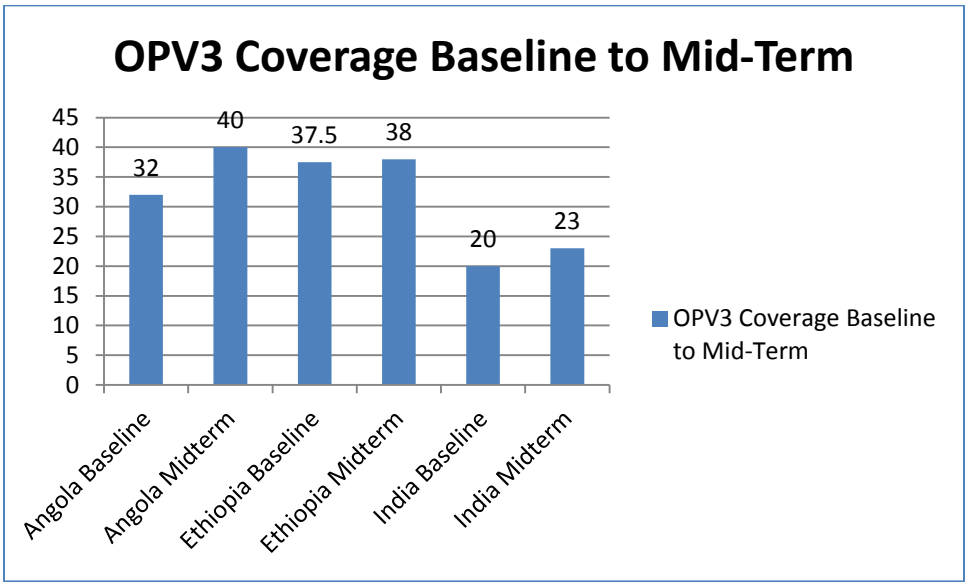


Figure 5: Routine and campaign vaccination coverage in CGPP catchment areas in Ethiopia, Angola and India (UP), Mid-term Review 2010

The proportion of mothers reporting that their child received a vaccination during the last campaign remains high across all three countries despite the fact that full coverage of all required polio vaccinations is considerably lower. This suggests that although campaigns appear to be reaching their targets, population immunity may be threatened by poor routine immunization resulting in insufficient total lifetime doses.

- ✓ Knowledge Sharing

The CGPP participated in panel presentations at the Global Health Council's annual meeting during FY11. Presenters affiliated with the CGPP included Filimona Bisrat, who presented on using polio eradication as a platform for integration of other public health initiatives and Dr. Henry Perry (Johns Hopkins), who offered an evaluation of the CORE Group Polio Project. The panel included two other co-presenters: Rajib DasGupta, who discussed social resistance using a social determinants framework, and Lora Shimp, who spoke on the importance of using community involvement in reaching under-immunized populations in northern Nigeria. A representative from each country was present at the Global Health Council's annual conference, which provided the opportunity for the secretariats to review and compare the different countries' strategies.

- ✓ Leveraging USAID Funds in Key Countries with Gates Complementary Funding

While no cases have been detected in South Sudan since June 27, 2010, the country remains at high risk for polio transmission, either undetected or imported, for a number of reasons. First,

both Ethiopia and South Sudan have large cohorts of susceptible children due to extremely poor routine immunization coverage. The border between the two is also porous and houses very mobile populations. In addition, environmental sampling in Egypt in 2010 detected wild polio virus related to the strain circulating in South Sudan in 2008. While country and state level surveillance indicators have improved over the last 12 months, sub-national gaps in surveillance may persist, intensifying the challenge of controlling undetected cases of circulating polio virus. Throughout FY11, CGPP-South Sudan has established a secretariat and identified and trained community volunteers using the CGPP model developed with USAID funding.

In addition, activities in Angola have received significant funding from the Gates Foundation, now comprising nearly a quarter of the total funding for FY11 ($1,003,855 from USAID and $353,907 from the Gates Foundation). The Gates and USAID components of Angola activities are seamlessly integrated, contributing to a robust overall program approach that is combating polio in Angola. For example, the program addressed changing social mobilization needs in communities by developing new materials (including counseling cards) for volunteers with Gates Foundation funding and provided training and supervision to new and existing volunteers on the use of new materials with USAID funding.

POLIO ERADICATION EFFORTS: COUNTRY REVIEWS

ANGOLA

Polio Status: Re-established transmission

CGPP Active: since 2000

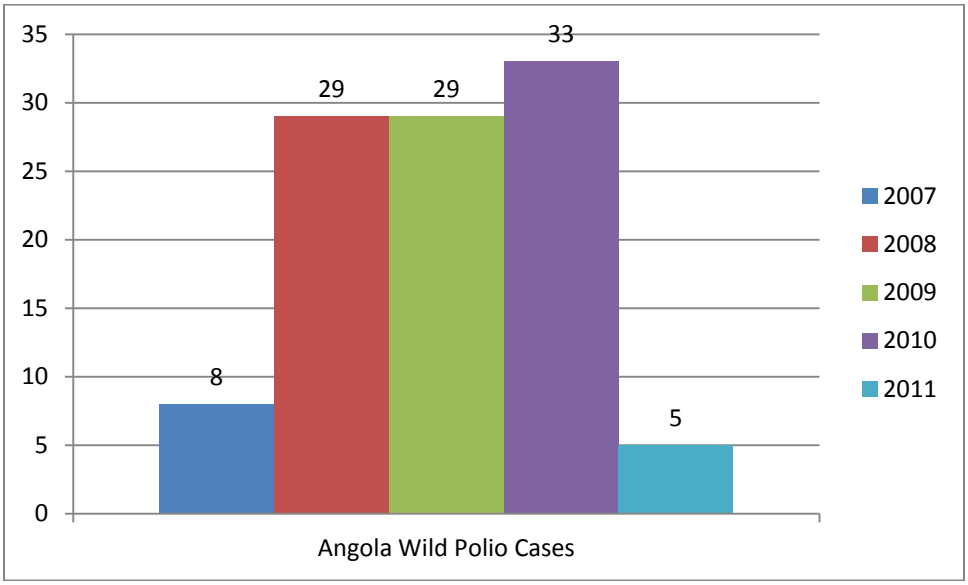
CORE Group Members and reach:

- Africare
- Catholic Relief Services
- Save the Children
- Salvation Army World Service Office
- World Vision
- Local partners

Total Number of beneficiaries: 9,422,824

USAID Funding for FY11:$1,003,855

When the CGPP-Angola was initiated in 2000, the country was experiencing a major WPV outbreak with over 1,000 cases of WPV, primarily concentrated in the capital city of Luanda. Intensive efforts by the MOH, WHO, UNICEF, Rotary, the GGPP and others, interupted the ciruculation of wild polio viurs in 2001. Angola remained polio free until 2005, when a wild polio virus strain from India was reimported due to poor surveillance and poor routine immunization. Additionally, Angola exported wild polio virus to the DRC and the Congo. In 2010, 33 confirmed cases of WPV were identified. Two of these confirmed cases were identified in CGPP catchment areas, and both were reported by CGPP staff. Only 5 cases of wild polio virus were reported in 2011, the last in July, leading to cautious optimism that the transmission of wild polio virus has once again been interupted in Angola.



The CGPP partner PVOs in Angola - Africare, Catholic Relief Services, Save the Children US, Salvation Army World Service, and World Vision – work with the Angolan Ministry of Health (MOH), WHO, UNICEF, Rotary, the Angola Armed Forces, the Angolan Red Cross and local churches to fight polio in Angola. CGPP-Angola is working in 40 high-risk districts in 12 provinces reaching 9,422,824 children under the age of fifteen each year. Activities in FY11, supported primarily by funding from USAID ($1,003,855) with complementary funding from the Gates Foundation,have enabled CGPP-Angola to expand in four provinces (Two new provinces, and additional volunteers in two provinces previously covered by the project).

CGPP-Angola continues to push forward in the battle to interrupt polio tranmission by mobilizing community volunteers, building local capacity and comitting to implement high-quality vaccination campaigns and identify cases of acute flaccid paralysis (AFP). This year, the project focused on several key areas including: 1) targeted case search among community leaders and urban health facilities to enhance the detection of AFP, 2) support to strengthen effective campaigning, 3) monitoring campaign quality, and 4) conducting additional local level advocacy meetings to more effectively mobilize leaders at district (*municipio*) and sub-distrcit (*communa*) levels.

Objective 1: Build effective partnerships between agencies

CGPP-Angola has established a strong working relationship with the MOH and spearheading partners in Angola, playing an important role in the national ICC meetings and working closely with the MOH, UNICEF, and WHO to plan, implement and monitor all aspects of polio eradication in Angola.

District-level advocacy: The CGPP originally planned to conduct provincial-level advocacy workshops with governors and other officials. However, the CGPP revised its advocacy strategy to work directly with district-level civil authorities and health workers as the concentration of authority for spending lies at the district-level. Participatory advocacy workshops were held accordingly in 73 percent of CGPP districts to mobilize stakeholders and key leaders at the district (municipio) and sub-district (communa) levels with the dual goals of strengthening stakeholders' commitment to polio eradication while building their capacity to develop and implement accurate microplans. Municipal authorities, prominent religious leaders, health administrators, carefully selected district-level CSO representatives, and Soba (traditional authority) representatives participated in the workshops.

Working with a Brazilian UNICEF staff member deployed by the CDC's Stop Transmission Of Polio (STOP) program, the project developed a participatory workshop designed to simultaneously improve the district's micro-plan while engaging local leaders. This workshop was held in Luanda with 40 participants (National and Provincial MOH, CORE, WHO, UNICEF and Red Cross). The objective was to identify how a problem can influence the failure of vaccination campaigns and how best to collectively identify a corrective action. The training enabled participants to support municipal authorities to overcome problems and improve the quality of campaign preparation and implementation.

Objective 2: Strengthen routine immunization systems

Routine OPV3 rates went from 32% to 40% in project areas from baseline in 2008 to mid-term in 2010 but they are still too low.

Angola

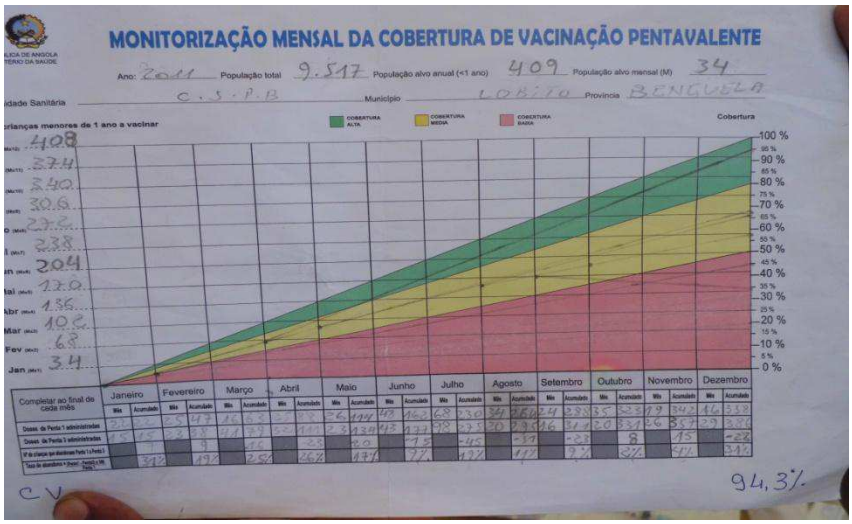
Indicator	Baseline		Midline		Difference	P-value
	N	%	N	%		
BCG coverage by card	-	-	467	49.25	-	-
OPV0 coverage by card	383	43.34	467	48.82	5.48	0.1109
OPV1 coverage by card	383	45.17	467	46.90	1.73	0.6147
OPV2 coverage by card	383	38.90	467	43.25	4.35	0.2000
OPV3 coverage by card	383	32.38	467	39.61	7.24	0.0292
DPT1 coverage by card	383	44.91	467	45.18	0.27	0.9373
DPT2 coverage by card	383	38.12	467	41.11	2.99	0.3755
DPT3 coverage by card	383	29.77	467	37.90	8.14	0.0129
Measles coverage by card	-	-	467	36.62	-	-

CGPP partners have introduced various new initiatives to increase coverage. In response to national discussions on low routine immunization rates and high dropout rates, CGPP partnered

with the MOH, WHO, and UNICEF (National Technical Team) to create a registry of all children under 5 years old to enhance child tracking of vaccination. As a part of this system, community health workers give cards to mothers which give them priority access to vaccination at health facilities. The aim of these registers is to increase routine immunization coverage, reduce dropout rates and systematize home visits by volunteers. In 2011 2,660 volunteers in 40 districts registered 8,321 children and referred 4,789 children.

- ✓ Innovating to address Routine Immunization

CGPP-Angola piloted a new approach to track routine immunization appointments, which entails using *chit*, or numbered squares, to track mothers after they leave the health post. The pilot program in Praia Bebé, Lobito municipality, Benguela province raised immunization coverage from 49% to 72% in 2011.

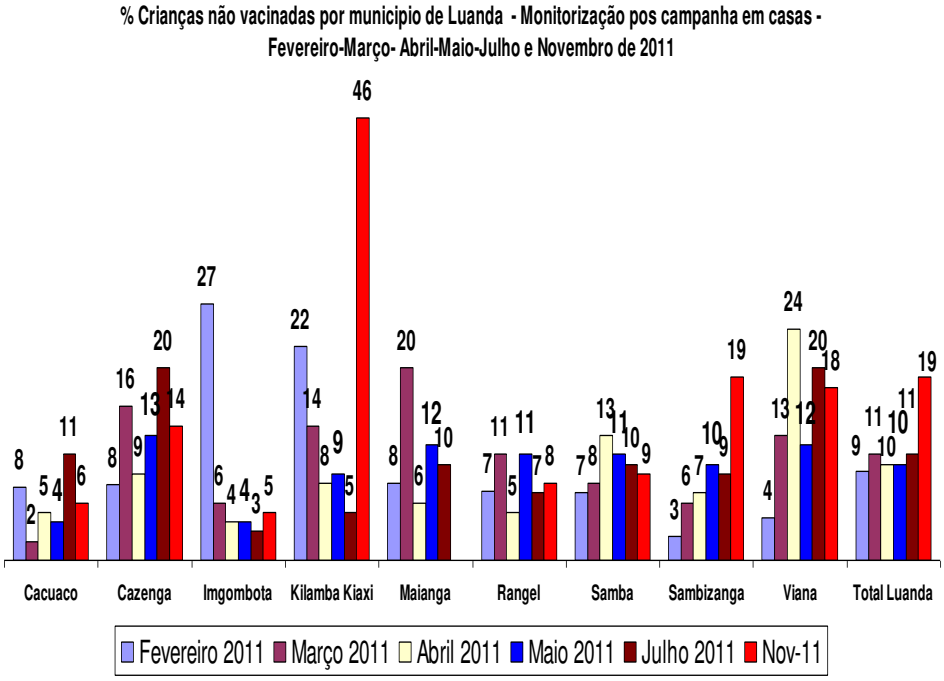


Data from the child tracking registries was used to intensify social mobilization and the strategic placement of immunization booths in market areas. The volunteers are part of the mobilization teams in their respective municipalities and conduct house to house mobilization. In 2011 the volunteers gave 6,911 health talks in places with a high concentration of people such as Markets, health centers, Churches, and community meeting centers.

Estimates of child/pregnancy tracking – FY11	
# of newborns identified and referred to vaccination posts	692
# of zero-dose children identified and referred to vaccination posts	434
# of defaulters identified and referred to vaccination post	4431
# of pregnant women identified and referred to vaccination post	2858
Estimates of select volunteer activities – FY11	
House-to-house visits	108,739
Visits with community leaders	7,025

Objective 3: Support supplemental polio immunization activities

The government of Luanda province announced polio eradication as a priority for 2011 and committed itself to ensuring the success of polio eradication campaigns and routine immunization activities. Angola conducted SIAs during 10 of 12 months this fiscal year. The CGPP partners played an important role in independent campaign monitoring, providing data on the percentage of children missed in each round of SIAs.



Support and strengthen cross-border coordination in cooperation with district-level MOH and NGO partners. Border-crossing locations were identified and targeted in all border districts to develop solid micro-plans for RI and campaigns on both sides of the border and thus ensure that all children are reached when crossing the border. Although the CGPP planned to conduct several meetings at the district level on both sides of the DRC/Angola border this year, many have been postponed or rescheduled due to low levels of accountability and commitment by the DRC. Despite this delay, CGPP-Angola continued to further polio prevention activities on the Angolan side of the border by coordinating the installation of vaccination booths on Angolan land at all border crossings in CGPP areas. Along the Namibian border, two cross-border meetings were successfully conducted, providing vaccination booths and RI services on both sides.

Border Districts with entry points

Provinces	Districts	Entry Points	Border Names	# vaccination posts	Children Vaccinated
Zaire	M.Congo	1	Luvo	1	2,022
Uige	M. Zombo	3	Cuango	1	6,841
Lunda Sul	Muconda	4	Jogi, sakambuzi, Cambué, Chiluai	1	2,942
Moxico	Luau	4	Luau, Mahinga, Sachipeze, Marco 25	4	3,796
K.Kubango	Dirico	5	Dirico sede,Mucusso,Temuangue,Kangongo,Bambi,Chamutwe,Sambio e Chamavera	1	1,831
	Calai	6 (10)	Calai Sede,Sofe,Massokwete,Tchimbimbi,Chitombwe,NdanboNdanbo,Vanda,Lupololo e Cafulo	1	4,170
	Cuangar	5 (8)	Cuangar sede ,Catwitwi,Mapandato,Chimanha,Mangondo,Cambumbu,Missesse e Candendele	1	4,469

Objective 4: Support efforts to strengthen AFP surveillance

The 2010 mid-term evaluation results indicated that despite mass media campaigns promoting vaccination and AFP surveillance, knowledge of AFP among mothers was very low. Nevertheless, national and project area Non-polio AFP rates are at or above WHO standards of 2 per 100,000 children under 15 years of age. CGPP-Angola has focused on supporting the MOH in its AFP surveillance efforts by working with community volunteers to perform 9,148 house to house visits in Luanda and 12,232 in Benguela. Africare also conducted intensive case searches at 15 hospitals and health centers in Luanda and seven hospitals and health centers in Benguela, identifying 12 Cases in Luanda and two in Benguela.

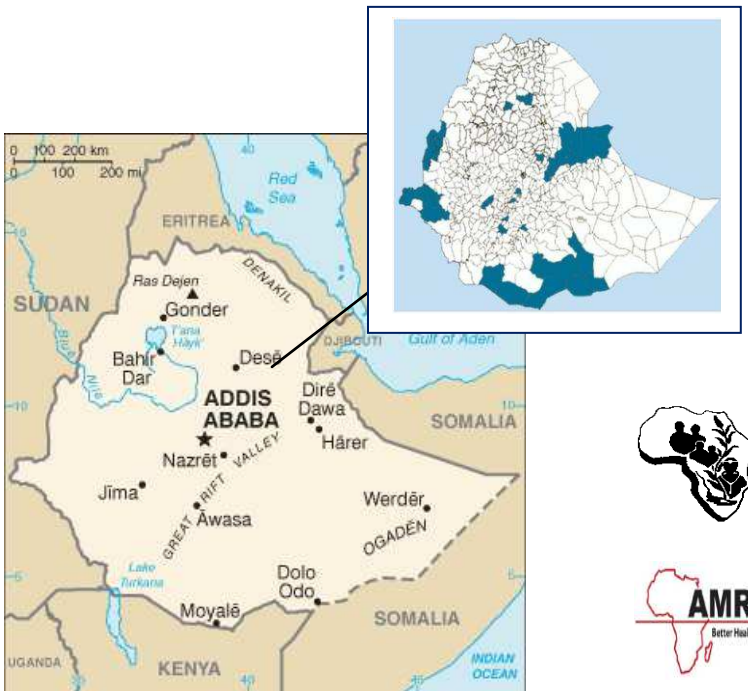
Districts	**Estimated Population of children <15 years**	**Number of estimated AFP cases**	**Number of confirmed AFP cases**	**Non Polio AFP (NPAFP) rate**
Cazenga	601.545	12	12	1.7
K. Kiaxi	416.374	8	12	2.6
Sambizanga	270.003	5	10	2.7
Viana	350.579	7	21	4.3

Table 2: Surveillance indicators for AFP detection in CGPP districts, Angola

Objective 5: Support timely documentation and use of information

CGPP-Angola contributed to campaign quality by playing a leading role in independent campaign monitoring. A chart of the percentages of missed children developed from the independent monitoring data is included above under objective three. During SIA implementation, CGPP partners present monitoring data at the end of day briefing with MOH and district officials to identify areas in need of more attention. Thereafter they are placed in a database and presented to the provincial health department and the national ICC. CGPP-Angola has consistently advocated at ICC meetings for adapting strategies based on campaign results.

ETHIOPIA



Polio Status: at high-risk for importation from neighboring countries

CGPP Active: begin in 2002

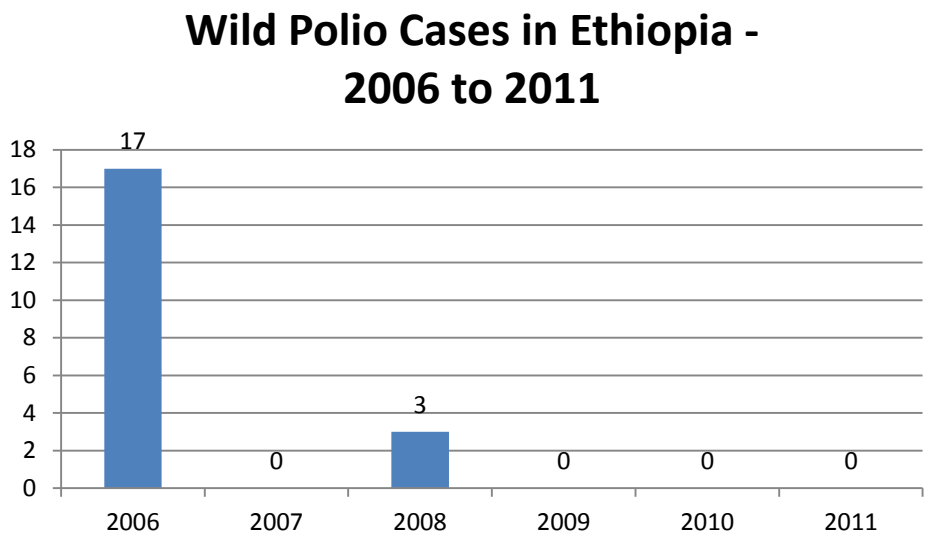
Total Number of beneficiaries: 2,039,905

Funding for FY11: $ 825,360

CORE Group Members:

- Africare
- Child Fund
- Save the Children
- International Rescue Committee
- World Vision
- Plan
- African Medical and Research Foundation
- Catholic Relief Services
- 4 local NGOs

Ethiopia has made significant progress in the control of polio outbreaks in the last four years, with the last confirmed case in 2008, resulting from an outbreak in Southern Sudan that spread throughout the Horn of Africa. Nonetheless, Ethiopia continues to remain at risk of WPV importation and transmission due to a high risk of circulation in neighboring countries, suboptimal routine immunization rates, and porous borders enabling high population movement. As a country at risk for importation from its neighbors, Ethiopia must strengthen routine immunization coverage and maintain adequately sensitive surveillance if it is to ensure a polio-free future.



The CGPP partner PVOs in Ethiopia – AMREF, CARE, ChildFund, IRC, Plan, Save the Children, and World Vision – work with the Ethiopian Ministry of Health, WHO, UNICEF, Rotary, and four local NGOs to fight polio in Ethiopia. CGPP-Ethiopia is working in 55 districts in seven regions reaching over two million children under the age of 15 each year. CGPP-Ethiopia collaborates to strengthen and expand the reach of immunization systems and to support communities in identifying and reporting AFP cases that are beyond the reach of the government health system.

Objective 1: Build effective partnerships between agencies

The CGPP-Ethiopia recognizes the importance of building partnerships and engaging key stakeholders and partners in order to promote buy-in at all levels. Throughout FY11 CGPP-Ethiopia engaged in several high-level advocacy initiatives to promote polio prevention activities including the national ICC meeting, WHO bimonthly meetings, integrated measles SIAs and PCV committee taskforce meetings, USAID partner meetings as well as the National Annual HSDP Review Meetings.

In addition to high-level advocacy initiatives, the CGPP-Ethiopia conducted an Annual Planning Forum for CGPP Partners which took place in July, further building on the successes of prior years of advocacy work in strengthening government will and stressing the importance of vaccine related health. Participants included *woreda* health offices, regional health bureau representatives, and partner field officers as well as head office staff. Updates on current immunization status, new vaccine introduction, SIAs and surveillance were shared along with project progress and best practices.

Several visits were made to **Southern Sudan** throughout FY11 to assist in their development of new programming. The Ethiopia secretariat provided support and guidance in preparing the detailed implementation plans (DIP), conducting related stakeholder workshops, and mentored the newly formed South Sudan secretariat. South Sudan staff also paid a visit to CGPP Ethiopia in the spirit of co-learning.

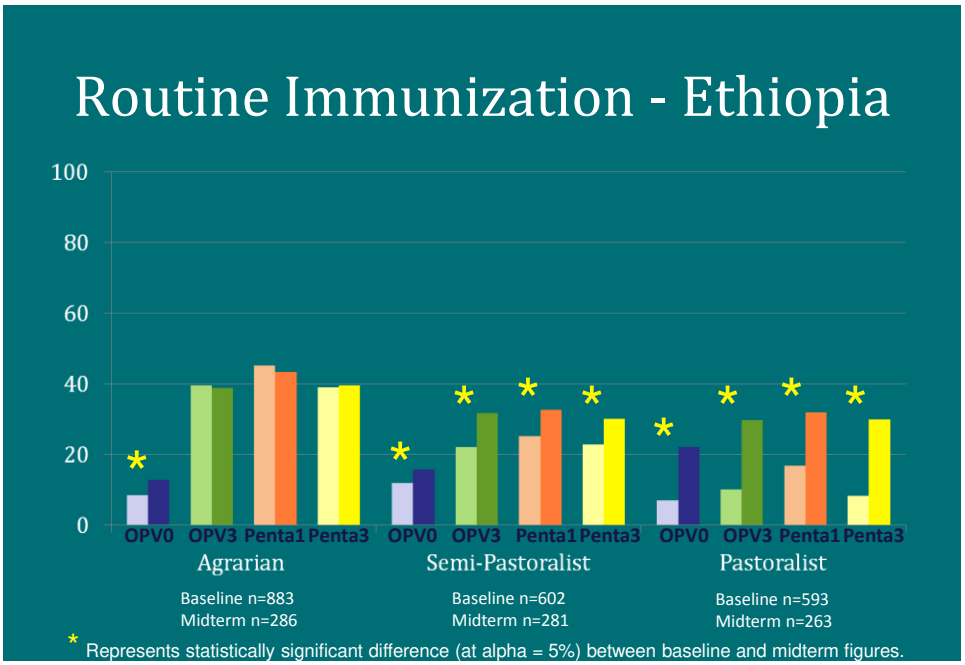
Objective 2: Strengthen routine immunization systems

CGPP-Ethiopia has increasingly refined its focus to identify especially high-risk mobile populations such as pastoralists and semi-pastoralists and populations in "silent"[2] or hard-to-reach nomadic or cross-border areas. In these areas, CGPP-Ethiopia and its partners have worked to identify new modes of communication to expand the reach of immunization messages. As a part of this effort, CGPP-Ethiopia continues its collaboration with the Ethiopian Evangelical Church MekaneYesus (EECMY) church system in the Gambella Region. Discussions regarding key objectives, major activities and monitoring and evaluation methods were conducted at the Regional Health Bureau and *Woreda* Health Office levels to facilitate dialogue between key health leaders and presbytery and other church leaders. Information on the importance of immunization was then included in priest's sermons and other religious events. This method ensured exposure of accurate polio information to a large number of people in the community through a trusted community gatekeeper. The model has been hailed as a success by partners including the Ethiopian MOH of and the WHO, who have requested CORE to replicate this model to access other hard-to-reach populations on the border shared by Ethiopia and eastern Sudan.

Ethiopia continues to experience wide variation from one region of the country to another even in the context of major government commitments to improving routine immunization coverage through the Expanded Program for Immunization (EPI). Ethiopia's routine immunization schedule includes a birth dose of oral polio vaccine (OPV0) as well as the three doses of OPV at 6, 10 and 14 weeks of age. However, limited access to health services and poor community awareness of the importance of immunization continue to be obstacles that hinder improved coverage. A high rate of home delivery also contributes to low rates of OPV0. According to the EDHS 2011 report the national home delivery rate is 90 percent which means only 10 percent of births were delivered in a health facility setting with opportunity to receive a birth dose of OPV0.

The following bar graph shows the levels of routine immunization at baseline and mid-term divided by agrarian, semi-pastoralist, and pastoralist project areas. Pastoralist and semi-pastoralist project areas saw statistically significant gains in routine immunization coverage from 2008 to 2010; although, these areas remain significantly below the 80 percent threshold. Agrarian areas began, in 2008, with comparatively higher routine coverage rates; however, they remained largely steady over the two year period.

[2] Areas where no previous AFP reports have been received



	% visited by a CGPP volunteer (apart from campaigns)		# visits	% attended a group education sessions facilitated by CGPP volunteer		# group education sessions
	Midterm	FY11 LQAS	FY11	Midterm	FY11 LQAS	FY11
Agrarian	49%	87%		28%	52%	
Pastoralist	19.2%	56%		21%	28%	
Semi-pastoralist	33.2%	49%		28%	46%	

Objective 3: Support implementation of supplemental polio immunization activities

CGPP-Ethiopia provided technical, logistical, and social mobilization support to the two Child Health Days conducted in October and February in fiscal year 2011. In addition, partners Pastoralist Concern and Save the Children responded to a measles outbreak originating among refugees in emergency areas in Somali Province. The two partner organizations assisted their respective woredas in organizing the small integrated measles and polio campaign and provided vaccine transport, cold chain assistance, and vaccinators. Despite the emergency situation in the region, CVSFPS maintained their prior level of support to the project and provided social mobilization support before and during the campaign.

Objective 4: Support efforts to strengthen acute flaccid paralysis (AFP) surveillance

A large part of CGPP's work in Ethiopia is focused on reaching underserved rural and mobile populations, improving the ability to identify AFP cases, and maintaining AFP surveillance quality which is currently at sub-optimal levels in approximately one-third of the country.

- ✓ Addressing identified gaps in surveillance

CGPP-Ethiopia's unique community- based disease surveillance model has been used to improve upon current AFP identification efforts in areas where no prior cases of AFP had been reported (also known as "silent" areas) as well as in hard-to-reach areas. Project volunteers conduct active AFP surveillance among households and mobilize community leaders and traditional healers to recognize and report cases of AFP directly to the government health system. In CGPP implementation woredas, 30 percent, 46 percent, and 65 percent of all reported AFP cases in 2009, 2010, and 2011, respectively, were reported by project volunteers as a result of their active community-based surveillance efforts.

FY	***Expected AFP Cases /yr***	***Performance***			***Remark***
		# AFP Cases Reported/ yr	***% Cases reported by a CVSFP***	***NPAFP Rate***	
2008	38	82	NA	4.3	The # compiled from partners quarterly report
2009	38	63	30%	3.3	The report compiled from WHO AFP line list for CGPP implementation Woredas
2010	40	41	46%	2.1	
2011	40	55	65%	2.7	

Objective 5: Support timely documentation and use of information

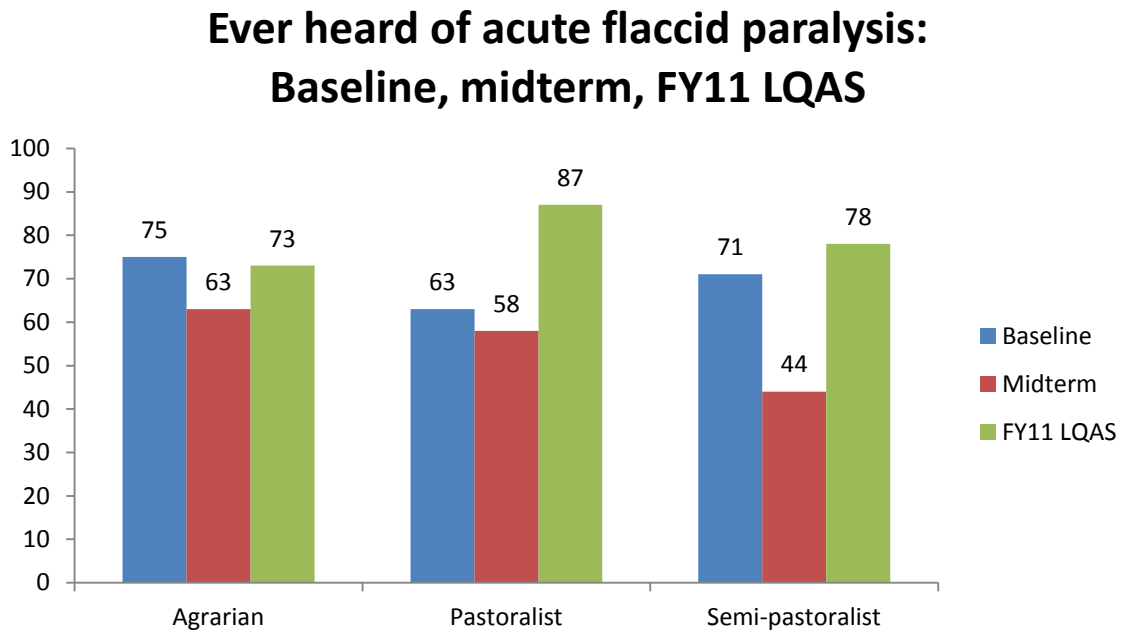
In FY11, the CGPP-Ethiopia team participated in several knowledge-generating and knowledge-sharing activities with an aim to both share CGPP-Ethiopia's unique strengths and to engage in the continuous process of quality program improvement.

An article, titled "Reaching beyond the health post: Community based surveillance for polio eradication" has been submitted to the journal *Development in Practice* and discusses the CORE Group Polio Project's introduction of community-based surveillance of acute flaccid paralysis in Ethiopia.

Over the past several years, CGPP-Ethiopia has worked to strengthen working relationships between government Health Extension Workers and project volunteers. These relationships have become a key component in the Ethiopia program, particularly in identifying pregnant women and newborns, and tracking defaulters. This year, CGPP-Ethiopia undertook an evaluation of their efforts to better understand the barriers and facilitators of collaboration between project volunteers and HEWs. The evaluation found that the program has been successful in promoting

strong partnerships marked by mutual respect, understanding and accountability. Project volunteers are critical for overburdened HEWs and for the acceptance and legitimization of the HEWs and their services in the communities. In the coming year, CGPP-Ethiopia will be focusing on the development of a formal, clear relationship structure and the implementation of a volunteer incentive/recognition program.

During FY11, CGPP-Ethiopia also organized an LQAS exercise designed to gauge progress on key indicators since the midterm evaluation. In particular, the midterm evaluation found knowledge of AFP among caretakers of children age 12 to 23 months to be unacceptably low. In response to the evaluation, CGPP-Ethiopia worked to reignite an emphasis on AFP surveillance, and FY11 LQAS results suggest that effort has paid off. The graph below shows the percentage of caretakers at baseline (2008), midterm (2010), and 2011 who had ever heard of acute flaccid paralysis. In pastoralist and semi-pastoralist areas, the percentage of caretakers in FY11 exceeds that at baseline. Agrarian areas saw a 10 percentage point increase from the midterm evaluation but remained just under the baseline figure. Overall, results show consistent progress on all indicators.



INDIA

Polio Status: Endemic, epicenter of WPV transmission

CGPP Active: since 2000

CORE Group Members:

- Adventist Development and Relief Agency
- Catholic Relief Services
- Project Concern International
- 11 national NGO partners (56 blocks/11 high-risk districts)

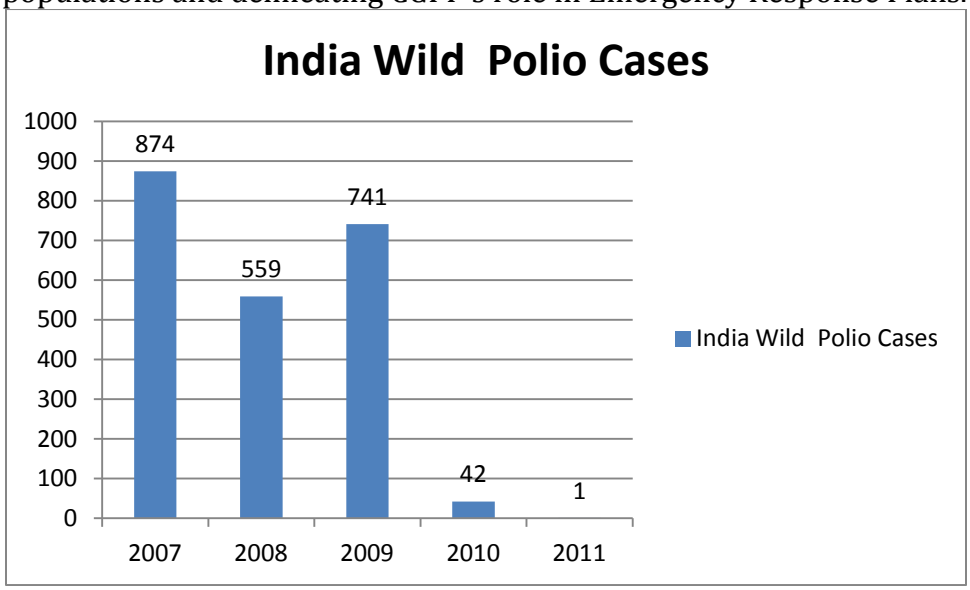
Total Number of beneficiaries: 13.6 million children under five

Funding for FY11: $2,424,465

India has made remarkable progress in the past twelve months in reaching high-risk populations. No cases have occurred in the past twelve months in UP and Bihar, and none has occurred in the entire country since January 2011. Nonetheless, complacency is a risk for the country and the polio eradication partners continue to strive diligently to maintain current polio eradication efforts. CGPP-India recognizes the high quality of surveillance already in place and the high level of resistance to polio vaccination in specific concentrated sub-populations. As such, CGPP efforts have been directed at reducing levels of resistance in these chronically underserved populations by continued social mobilization, further refining tactics to reach the highest risk populations and incorporating behavior change activities to promote preventive hygiene and sanitation behaviors that will improve population immunity.

CGPP-India's community-based approach to social mobilization, which encourages universal participation in routine and supplemental polio immunization activities, has proven thus far to be well-suited to reach the enormous numbers of vulnerable families with children under five years of age living in high-risk UP communities with poor infrastructure and access to health services.

Since the drastic reduction in polio cases in 2011, the biggest threat to the program is complacency among the staff and the challenge of maintaining community involvement in the absence of polio cases. Special strategies are in place to reach out to mobile/migrant populations and delineating CGPP's role in Emergency Response Plans.



"The very low levels of transmission of both WPV1 and WPV3, the evidence of very high immunity to WPV1 and rising immunity to WPV3 in the highest areas, the intensification of efforts to reach underserved, mobile and migrant groups, all indicates that India is in the final phase of polio eradication."

The 22nd Meeting of the India Expert Advisory Group (IEAG) for Polio Eradication

Objective 1: Build effective partnerships between agencies

Throughout FY11, the CGPP Secretariat continued to work to strengthen partnerships among government, UN and local polio program partners. CGPP partners met quarterly to discuss progress, achievements, challenges and strategies.

- ✓ Ongoing representation at state and national level

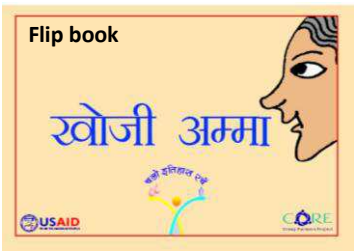
The CGPP-Secretariat continued to represent the community aspect of polio eradication at UP Polio Partner Meetings throughout FY11. Other organizations represented included WHO/NPSP, Rotary, MCHIP and UNICEF and UP government representatives. The UP polio partner meetings discuss the mechanics of effective collaboration to advance polio eradication in India and develop joint action plans for high-risk districts. In response to the urgent need to boost population immunity through all means available, the partners focused specifically on harmonizing existing routine immunization and polio micro-plans. This effort allowed a reduction in duplication of efforts and encouraged accountability for actions related to routine immunization. Routine immunization (RI) coordinators were hired by UNICEF and were

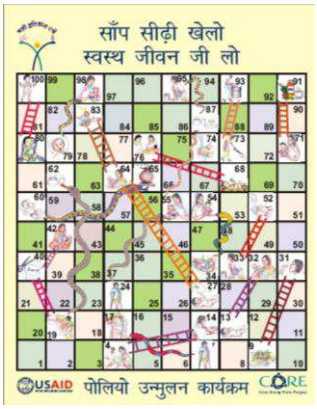
specifically mandated to work not only in the areas that have UNICEF supported community mobilization coordinators (CMCs) but also those supported by the CGPP, thus ensuring that all 66 high-risk blocks in UP are covered consistently. Additionally, joint efforts were made between the CGPP, UNICEF, and WHO/NPSP to validate information on migrants, a key population at high-risk for polio.

- ✓ Partnering to magnify impact of communication initiatives

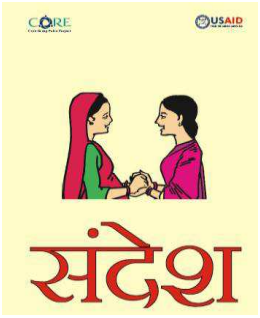
CGPP-India met with the Executive Director and several other representatives from the Communication Initiative (CI) to share expertise on how to maximize impact from communication initiatives in the field. Some of the CGPP's materials have been adopted by the rest of the SMNet and are often used as the basis for trainings and presentations, including a presentation of key communication information at a GAVI sponsored meeting in Geneva. The CGPP-India has been collaborating with its partners to incorporate more visual media and to leverage creative development of media such as videos to increase the impact and reach of communication activities.

In conjunction with UNICEF, CGPP-India used the results from the UNICEF-led KAP study and pre-test of the Communication Campaign to develop behavior change messages and materials. Jointly they developed flash cards, butterfly booklets, leaflets and a pictorial folder on hand washing, polio, routine immunization, diarrhea management and exclusive breastfeeding. They also developed a film on the science of polio called *"Destination not too far."*





Snakes and Ladder Game



Message booklet

Streamer

coregroup POLIO Project

USAID FROM THE AMERICAN PEOPLE

Objective 2: Strengthen routine immunization systems

CGPP-India continued to conduct a range of routine immunization activities focused on reaching children with OPV through routine immunization. These included holding health camps that enable MOH providers to offer routine polio immunization at the same time as other health services; promoting vaccination during visits to individual homes and group education sessions; and child tracking to refer children for routine immunization. The CGPP India team used participatory training to strengthen the capacity of CMCs to mobilize other family decision-makers in addition to mothers (fathers and mothers-in-law). The following graph depicts an improving trend in children receiving zero dose over the 12 months of FY 2011.

On an average, 44 percent of children received zero dose during October 2010 to September 2011

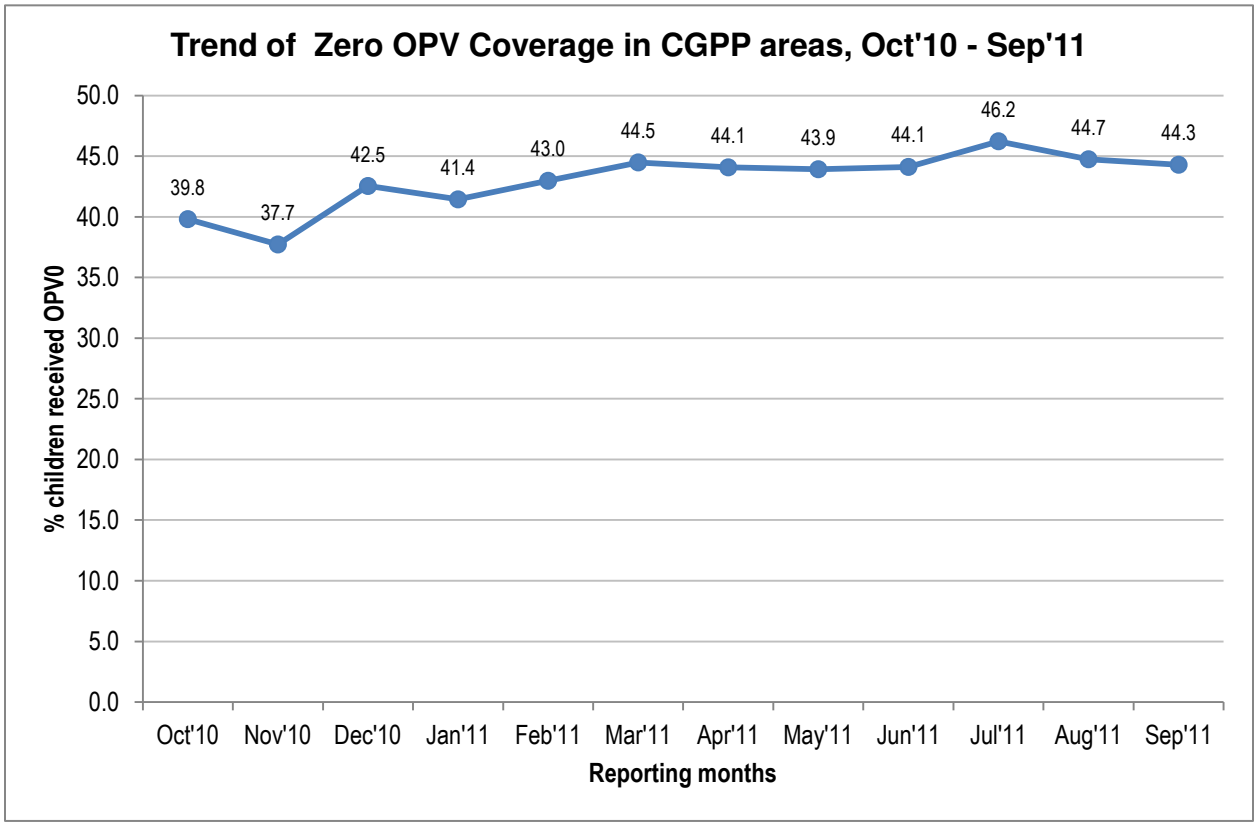


Table 14: Routine Immunization Coverage- By Immunization Card

	Midline	95% CI		Baseline	Change	p-value
	Estimate	Lower	Higher	Estimate	(FY10 – FY08)	
BCG Coverage By Immunization card						
Aggregate	29.26%	0.61	0.39	28.55%	0.71%	0.79
Intervention Clusters						
Cluster 1	31.80%	0.73	0.27	29.47%	2.33%	0.53
Cluster 2	26.67%	0.39	0.61	27.63%	-0.96%	0.79
OPV0 coverage by vaccination card						
Aggregate	18.68%	0.59	0.41	18.15%	0.53%	0.81
Intervention Clusters						
Cluster 1	18.69%	0.56	0.44	18.21%	0.48%	0.88
Cluster 2	18.67%	0.57	0.43	18.09%	0.58%	0.86
OPV1 coverage by vaccination card						
Aggregate	27.44%	0.92	0.08	23.93%	3.51%	0.16
Intervention Clusters						
Cluster 1	28.52%	0.77	0.23	25.83%	2.69%	0.46
Cluster 2	26.33%	0.89	0.11	22.04%	4.29%	0.22
OPV2 coverage by vaccination card						
Aggregate	25.29%	0.9	0.1	22.11%	3.18%	0.19
Intervention Clusters						
Cluster 1	27.21%	0.83	0.17	23.84%	3.37%	0.34
Cluster 2	23.33%	0.81	0.19	20.39%	2.94%	0.38
OPV3 coverage by vaccination card						

Objective 3: Support implementation of supplemental polio immunization activities

In FY11, CGPP-India further refined its social mobilization, data, and micro-planning systems to target the remaining pockets of chronically under-vaccinated children in critical sub-populations. The percentage of parent's responding that their child had ever received a polio vaccine went from 96% at baseline to 99% at mid-term. The percentage of parents responding that their child had received polio vaccine during the last SIA remained constant at a high of 99% at both baseline and mid-term.

Table 17: Percent of respondents who say their child has ever received a polio vaccination in a vaccination campaign

	Midline	95% CI		Baseline	Change	p-value
	Estimate	Lower	Higher	Estimate	(FY10 – FY08)	
Aggregate	99.17%	1	0	96.20%	2.97%	0
Intervention Clusters						
Cluster 1	99.33%	1	0	94.70%	4.63%	0
Cluster 2	99.00%	0.9	0.1	97.70%	1.30%	0.21

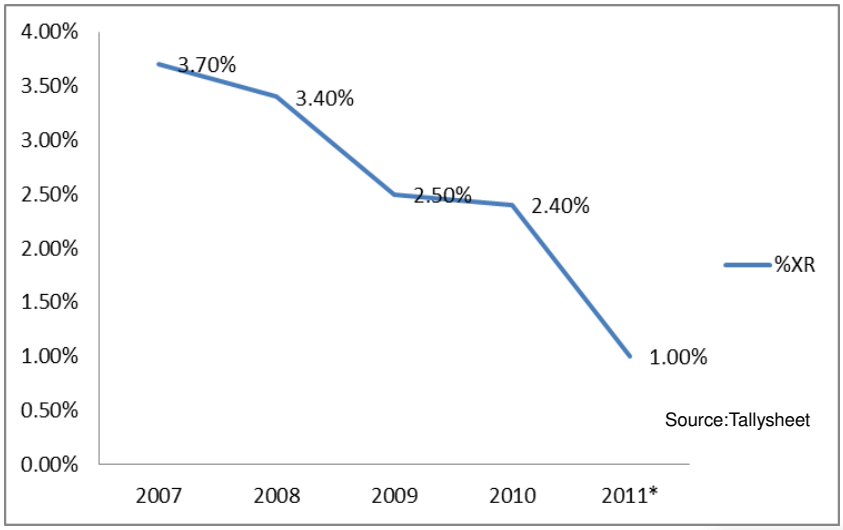
Table 18: Percent of respondents who say their child received a polio vaccination during the last vaccination campaign

	Midline	95% CI		Baseline	Change	p-value
	Estimate	Lower	Higher	Estimate	(FY10 – FY08)	
Aggregate	99.17%	0.13	0.87	99.67%	-0.50%	0.25
Intervention Clusters						
Cluster 1	99.34%	0.5	0.5	99.34%	0.00%	0.99
Cluster 2	99.00%	0.04	0.96	100.00%	-1.00%	0.08

CGPP partners in India continued to work on reaching "X" houses, defined as houses missed during campaigns. The following chart demonstrates the substantial progress made in reducing the percentage of missed houses from 3.7% in 2007 to 1% in 2011.

% Resistant Houses (XR) in UP - CMC areas

2007- 2011



- ✓ Reaching Mobile Children

The CGPP-India supports the strategic approach developed by the Government of India and partners for the final push on polio eradication in India. A main element of the approach is the migrant strategy designed to address especially low coverage rates among migrant and other mobile populations, as they are more likely to be missed even by the most rigorous house to house strategy. This population also poses a high risk of exporting the virus to currently polio free areas of India as the families move from state to state for seasonal labor. About 4,300 children belonging to mobile communities were tracked and vaccinated. This new approach uses registries to track migrant children and their immunization status as well as plan their immunization schedule.

- ✓ Social Mobilization to support hygiene and sanitation

The CGPP-India continues its leadership role in social mobilization through its work with UNICEF, Rotary International, the MOH of India and WHO's National Polio Surveillance Project (NPSP) in the Social Mobilization Network (SMNet). The CGPP-India worked closely with the other SMNet members to develop effective strategies to reach migratory populations, remaining pockets of religious and cultural resistance and to mobilize key family decision-makers such as mother-in-laws and fathers. The SMNet partners defined key messages to target sanitation, hygiene and breastfeeding behaviors. CGPP rewarded families for having toilets in their homes. CGPP-India has focused heavily on encouraging positive behavior change through activities that engage all elements of the community. Initiatives include sanitation drives with community participation, garbage collection and lane cleaning as well as information and counseling sessions.

In February 2011, CGPP was requested by UNICEF to join the **Emergency Response** efforts in two districts of West Bengal (See below). CGPP lead selection, training, supervision and monitoring of local NGOs in carrying out the social mobilization components of the SIAs held in the area. CGPP-India Secretariat staff coordinated with local NGOs in high priority areas of West Bengal to support MOH polio prevention efforts and provide social mobilization support to ongoing efforts there. This collaboration was jointly funded by USAID and the Gates Foundation (via UNICEF).

CGPP Consortium – W. Bengal
WORK AREAS

S.No.	District	Block	NGO	Gram Panchayat
1	Howrah	Domjur	Seva Kendra Calcutta	Bankra I
				Bankra II
				Kolora I
				Kolora II
				Moyhari I
				Moyhari II
				Salap II
		Borough 1A	Seva Kendra Calcutta & Women's Interlink Foundation	Ward 1-3, 11
		Borough 1B		Ward 7
		Borough 2A		Ward 10, 12-16
		Sub Zone IV		Ward 34
		Sub Zone V		Ward 39, 41
		Sub zone VI		Ward 47-49
		Uluberia	Seva Kendra Calcutta	Ward 3,4,6 & 10
2	Bardhman	Kulti	Asansol Burdwan Seva Kendra	Ward 1,3,5,6,8,18,21,30

Objective 4: Support efforts to strengthen AFP surveillance

Community based surveillance is the responsibility of the National Polio Surveillance Project (NPSP). Although CGPP does not actively engage in AFP surveillance, our MTR demonstrates high levels of appropriate behavior, with close to 60 percent responding correctly that they would contact a CMC or health facility in case of paralysis. In addition, the CGPP-India closely coordinates and shares data with the NPSP ensuring that any cases of AFP are reported promptly to CGPP staff and that this information is transmitted to NPSP.

Objective 5: Support timely documentation and use of information

Special advisor to the CGPP team, Bill Weiss, was first author of an article titled "Outcomes of polio eradication activities in Uttar Pradesh, India: the Social Mobilization Network (SM Net) and Core Group Polio Project (CGPP)" published in the journal *BMC Infectious Diseases* that examines vaccination outcomes in districts of the SM Net where the CORE Group works.

During May and June of 2011, CGPP-India trained its staff members to lead rolling quarterly Lot Quality Assurance Sampling (LQAS) quality checks in order to assess impact and better understand how to improve future program activities.

- **April to June 2011 – Preparatory phase:** Investigation tools (interview schedule) were drafted, pretested and finalised; prepared sampling frame, drawing samples; orientation and training of investigators
- **June to September 2011 - Data collection –** Data was collected by Block Mobilization Coordinators using semi-structured interview schedules
- **Sep – Oct 2011 - Data compilation-** Data was entered by District MIS coordinators; Data was cleaned and basic (frequency) analysis was performed.

Annex of additional Coverage Data:

Table 21. Immunization coverage by card among children aged 12-23 months old between baseline and midterm evaluation by regional cluster

Coverage by vaccination card	Regional cluster (%)						Weighted Aggregate (%)	
	Pastoral		Semi-pastoral		Agrarian			
	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm	Baseline	Midterm
BCG	4.2	31.9	0.0	31.0	0.1	42.7	0.4	41.6
OPV0	7.1	22.1	12.0	15.7	8.5	12.9	8.4	13.7
OPV1	18.9	32.3	26.1	33.5	45.2	43.7	43.1	42.6
OPV2	14.0	32.3	23.6	33.1	43.7	40.9	41.5	40.1
OPV3	10.1	29.7	22.1	31.7	39.5	38.8	37.5	38.0
PENTA1	16.9	31.9	25.2	32.7	45.2	43.4	43.2	42.3
PENTA2	12.1	31.2	24.1	31.7	42.2	41.6	40.2	40.6
PENTA3	8.4	30.0	22.8	30.2	39.1	39.5	37.0	38.6
MEASLES	1.7	27.4	0.0	23.8	0.6	34.3	0.6	33.6
N	593	263	602	281	883	286	2078	830

Table 23. Comparison of OPV0 coverage by vaccination card among children aged 12-23 months between baseline and midterm evaluation by regional cluster

Regional cluster and survey time	n	Numerator	Coverage (%)	Difference (%) Midterm-Baseline	Crude OR (95% CI)	P-value
Weighted Aggregate						
Baseline	**2078**	**189**	**8.4**		**Reference**	
Midterm	**830**	**139**	**13.7**	**5.3**	**2.01 (1.58, 2.56)**	**<0.001[a]**
Pastoral						
Baseline	593	42	7.1		Reference	
Midterm	263	58	22.1	15.0	3.71 (2.37, 5.82)	<0.001[a]
Semi-pastoral						
Baseline	602	72	12.0		Reference	
Midterm	281	44	15.7	3.7	1.37 (0.89, 2.09)	0.03
Agrarian						
Baseline	883	75	8.5		Reference	
Midterm	286	37	12.9	4.4	1.60 (1.03, 2.48)	0.03[a]

[a]Statistically significant at 5% level of significance

Table 26. Comparison of OPV3 coverage by vaccination card among children aged 12-23 months between baseline and midterm evaluation by regional cluster

Regional cluster and survey time	n	Numerator	Coverage (%)	Difference (%) Midterm-Baseline	Crude OR (95% CI)	P-value
Weighted Aggregate						
Baseline	**2078**	**542**	**37.5**		**Reference**	
Midterm	**830**	**278**	**38.0**	**0.5**	**1.43 (1.19, 1.71)**	**<0.001[a]**
Pastoral						
Baseline	593	60	10.1		Reference	
Midterm	263	78	29.7	19.6	3.75 (2.53, 5.55)	<0.001[a]
Semi-pastoral						
Baseline	602	133	22.1		Reference	
Midterm	281	89	31.7	9.6	1.63 (1.18, 2.27)	0.002[a]
Agrarian						
Baseline	883	349	39.5		Reference	
Midterm	286	111	38.8	-0.7	0.97 (0.73, 1.29)	0.83

[a]Statistically significant at 5% level of significance

Table 30. Comparison of measles coverage by vaccination card among children aged 12-23 months between baseline and midterm evaluation by regional cluster

Regional cluster and survey time	n	Numerator	Coverage (%)	Difference (%) Midterm-Baseline	Crude OR (95% CI)	P-value
Weighted Aggregate						
Baseline	**2078**	**15**	**0.6**		**Reference**	
Midterm	**830**	**237**	**33.6**	**33.0**	**54.97 (31.64, 97.1)**	**<0.001[a]**
Pastoral						
Baseline	593	10	1.7		Reference	
Midterm	263	72	27.4	25.7	22.0 (10.7, 46.3)	<0.001[a]
Semi-pastoral						
Baseline	602	0	0.0		Reference	
Midterm	281	67	23.8	23.8	188 (32, 7555)[b]	<0.001[a]
Agrarian						
Baseline	883	5	0.6		Reference	
Midterm	286	98	34.3	33.7	92 (37, 291)[b]	<0.001[a]

[a]Statistically significant at 5% level of significance, [b]Very small sample in the first column cell