CORE Group Polio Project

Midterm Evaluation 2015 (rev. 3/2017)

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Community Health Worker administering oral polio vaccine during a Supplemental Immunization Activity day, Narok County, Kenya. August 2015; K. Vergara.

CORE Group Polio Project Objectives

Objective 1: Build effective partnerships between agencies

Objective 2: Strengthen routine immunization systems

Objective 3: Support supplemental polio immunization activities

Objective 4: Support efforts to strengthen Acute Flaccid Paralysis (AFP) surveillance

Objective 5: Support timely documentation and use of information

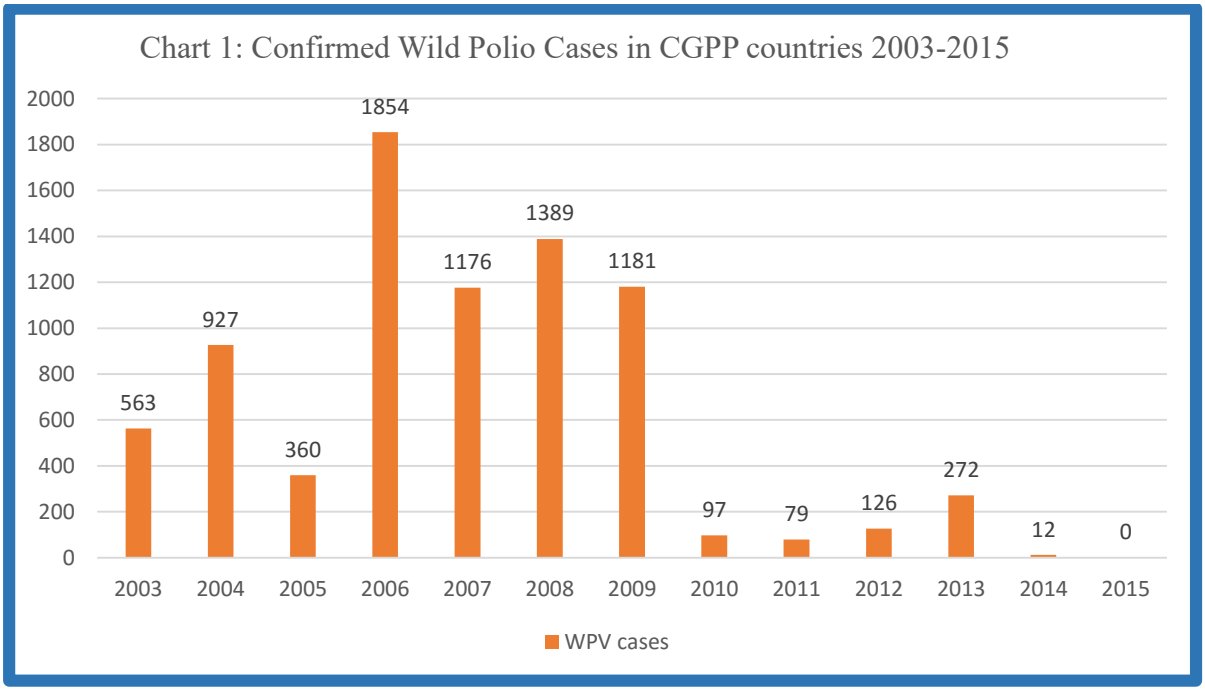
Abbreviations

AFP	Acute Flaccid Paralysis
BCG	Bacillus Calmette-Guerin vaccination
CHW	Community Health Worker
CHV	Community Health Volunteer (Kenya)
CMC	Community Mobilization Coordinator (India)
CV	Community Volunteer (Angola)
CGPP	CORE Group Polio Project (Angola, Ethiopia, Kenya, India, Somalia, South Sudan) or CORE Group *Partners* Project (Nigeria)
CORE	Collaboration and Resources for Child Survival
CRS	Catholic Relief Services
EOC	Emergency Operations Center (Nigeria)
EPI	Expanded Program on Immunizations
HoA	Horn of Africa
LGA	Local Government Area (Nigeria)
MOH	Ministry of Health
NDHS	National Demographic Health Survey
NGO	Non-Governmental Organization
OPV	Oral Polio Vaccine
Penta	Pentavalent Vaccine
RI	Routine Immunization
SIA	Supplemental Immunization Activity
UNICEF	United Nations Children's Fund
VCM	Voluntary Community Mobilizers (Nigeria)
VWS	Voluntary Ward Supervisors (Nigeria)
WHO	World Health Organization
WPV	Wild Polio Virus

Executive Summary

The continent of Africa did not record a single case of wild polio virus (WPV) in 2015 - an unparalleled public health achievement. Despite reaching this remarkable milestone, significant obstacles remain to eradicate polio. In response to this challenge, the Core Group Polio Project (CGPP) works in India and six countries in Africa: Angola, Ethiopia, Kenya, Nigeria, Somalia and South Sudan.

CGPP has made significant progress in its project countries through building effective partnerships, strengthening routine immunization systems, supporting supplemental polio immunization activities, bolstering Acute Flaccid Paralysis (AFP) surveillance and supporting timely documentation and use of information. The ultimate measure of CGPP's success can be found in the absence of wild polio virus cases recorded in its project countries in 2015.



* CGPP Countries in the above chart are Angola, Ethiopia, India, Kenya, Nigeria, and Somalia. South Sudan was not included in Chart 1.South Sudan reported zero cases of WPV in 2015. Source: WHO and CDC.

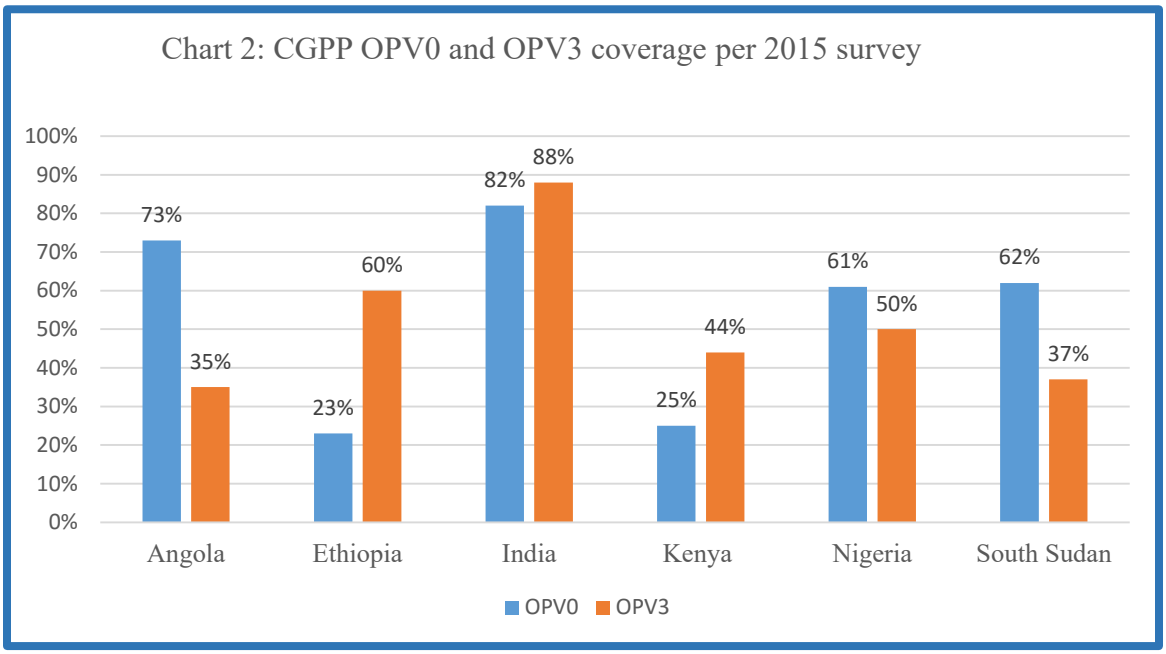
The goals of the 2015 Midterm Evaluation are:

- To describe the current status of CGPP;
- To explain the significant obstacles that have hindered or are still hindering progress;
- To recommend future actions; and
- To share with all interested parties the best practices observed in the CGPP countries.

CGPP partners with more than 40 local implementing organizations in addition to WHO, UNICEF, the Bill and Melinda Gates Foundation and the National Ministries of Health in Angola, Ethiopia, India, Kenya, Nigeria, Somalia and South Sudan. The 2015 study is based on qualitative evaluations conducted with partners and quantitative cluster surveys held in each project country except for Somalia. The surveys were designed to more accurately assess the key indicators of polio and routine immunization coverage, interpret health knowledge, attitudes and beliefs and provide programmatic feedback from beneficiaries. As opposed to less reliable administrative data, the 2015 evaluation aimed to provide a more accurate assessment of CGPP goals and objectives.

The 2015 midterm evaluation indicates that CGPP has made tremendous strides in capacity building; increased healthcare capacity to achieve both short- and long-term polio goals and better positioning for national and local health systems to respond to other public health needs. Survey results further show that community partnerships are a critical asset to polio immunization efforts; "CORE Group went places even the government didn't go," noted a partner in South Sudan. CGPP is known to respond with flexibility, speed and precision, especially in areas where large multi-national public health bodies are not able to do so. Accessing the community network on-the-ground improved needs assessment through understanding local cultural and social attitudes.

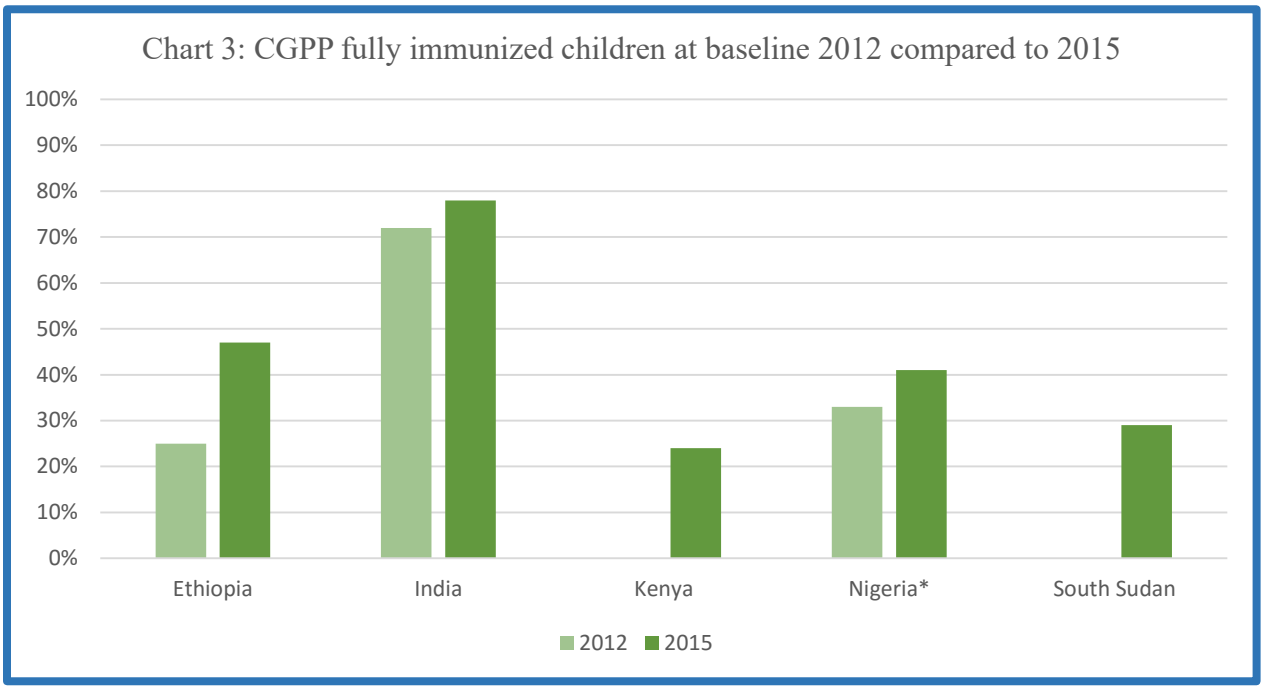
Results from the mid-term evaluation are promising. The rates of routine immunization, a critical pillar of polio eradication, have improved across all project countries except in Angola, where the percentages of fully immunized children decreased from 42% in 2010 to 26% in 2015. Acute Flaccid Paralysis (AFP) surveillance has increased in each project country as have supplemental immunization activities. Based on caretaker response, between 88 percent and 98 percent of children have received at least one dose of oral polio virus. OPV3 coverage rates range from 35 percent in Angola to 60 percent in Ethiopia.



*Data not available for Somalia. Source: Individual country CGPP cluster survey reports 2015.

With the exception of India, all birth dose and OPV3 coverage rates fall below the desired threshold for herd immunity from vaccine-preventable diseases. Disparities between country coverage rates call for assessment as to 'why', and also highlight the need to share best practices for OPV protocols. Disparities between OPV0 and OPV3 coverage within individual countries highlight the need for programmatic assessment; each dose should have the same coverage, if not, reasons for the difference should be identified and addressed.

With regard to supporting routine immunization systems, there has been an improving trend on full immunization coverage from the baseline in 2012 to 2015 in those countries where comparative survey data was available. (Baseline data was available for Ethiopia, Nigeria, and India.)



*Nigeria baseline data from 2014, not 2012.

**Data not available for Angola and Somalia. Baseline coverage n/a for Kenya and South Sudan.

Source: Individual country CGPP cluster survey reports 2015.

Likewise, the number of CGPP community health mobilizers has increased from approximately 3,995 in 2012 to more than 13,500 in 2015.

Large sections of the population are hard to reach due to logistical barriers, underdeveloped healthcare infrastructure, and insecurity. Additionally, mass population movements due to pastoralist lifestyles, internally displaced people and refugees add a challenge to achieving high vaccine coverage. The greatest threats to remaining free of WPV cases were identified by partners through Grounded Theory methodology included importation from abroad, accessing hard to reach areas, funding decreases, and potential complacency in light of recent success towards polio at the national and local levels.

In order to achieve global eradication of polio, a colossal coordination effort that crosses international borders and involves public and private stakeholders, local and national partners, and vastly different cultures is required. This midterm evaluation is a constructive look at the role CORE Group Polio Project has played as a key partner in global polio eradication efforts.

Background of CORE Group Polio Project

The CORE Group Polio Project started in 1999 as a component of CORE Group in an effort to specifically target global polio eradication.

The CGPP is structured on a Secretariat Model - a small team aimed at coordinating and collaborating with existing government and civil society organizations. The Secretariat team works to identify and engage in local capacity building as a strategy to work in a sustainable, efficient, effective and culturally appropriate manner. "The secretariat team efficiently extends the resources and expertise of multi-laterals and local governments" (video "The CORE Group Secretariat Model,"2014.) Currently, CGPP is active in seven countries: Angola, Ethiopia, India, Kenya, Nigeria, Somalia, and South Sudan.

Figure 1: CORE Group Polio Project Countries 2015

Polio has decreased by 99.9% globally due to the the advent of the polio vaccine more than 60 years ago and subsequent international public health effort campaigns. As of October 21, 2015 there have been a total of 51 cases of wild poliovirus reported in the world. No Wild Polio Virus (WPV) Type 3 has been reported anywhere in the world since November 2012, no WPV2 has been recorded since 1999, and no WPV1 has been found in Africa since August 2014 in Somalia. (IMB Report, 2015)

To date, wild polio virus is only endemic in two nations: Afghanistan and Pakistan.

The continent of Africa has not had a wild polio virus case since 2014 and is hoping to achieve polio-free status upon reaching the three year mark without a new case. The CORE Group Polio Project (CGPP) has been an active partner in polio eradication since 1999. CGPP acts as a coordinating body between stakeholders spanning from international health organizations to national ministries of health to local civil societies. Acting in a small secretariat-model in high-risk countries, they link efforts on all levels of public health infrastructure and help to increase efficiency, eliminate duplicity, and reach the hardest-to-reach populations. While the polio vaccine itself is the component that will chemically protect individuals, it is arguably the coordination aspect of the fight against polio that will protect populations.

Table 1: OPV0, OPV3, and Penta 3 coverage in children in CGPP countries

CGPP country	OPV0 in CGPP supported counties	Polio Immunization Coverage for OPV3 in CGPP supported counties	Penta 3 in CGPP supported counties
Angola*	73%	35%	36%
Ethiopia**	23%	60%	61%
India^	82%	88%	n.a.
Kenya^^	25%	44%	45%
Nigeria`	61.2%	49.6%	46.7
South Sudan``	61.75%	37.35%	54.4%

*CGPP Cluster Survey Angola 2015

**Ethiopia Midterm Evaluation for Headquarters, 2015

^ Indian MTE report 2015

^^ Kenyan CGPP Household Cluster Survey 2015

` Nigerian CGPP Household Cluster Survey 2015

`` South Sudan CGPP Household Cluster Survey 2015

It is important to note that the percentage of coverage for OPV3 in CGPP supported counties unilaterally falls below the national administrative data average, but a closer look reveals the strategic and deliberate positioning of the project. CGPP systematically focuses efforts towards the most challenging populations; whether that be in post-conflict areas of South Sudan, the hard to reach pastoralist regions of Ethiopia, or the most densely populated states in India, CGPP heads directly into the most challenging environments to increase polio vaccination coverage where the need is highest. Without the contribution of CGPP, coverage rates in these difficult areas would be much lower.

Rare cases of vaccine-derived polio virus exist in small but increasing numbers. This public health threat further diminishes support in populations skeptical of the oral polio vaccine as distrust and misinformation impede eradication efforts. The race to polio-free certification continues for several nations with the goal of switching to the inactivated polio vaccine (IPV.) IPV does not contain live virus and will eliminate the occurrence of vaccine-derived polio virus. The IPV will present its own set of obstacles, however, as it will be injected rather than administered with two oral drops. This will change the logistical and training needs of the current OPV administering countries that already face significant challenges to their national public health infrastructures.

Financing and organizing through this end phase of eradication is daunting. However, the alternative of giving in to the unrelenting spread of polio virus presents a far more expensive global health forecast.

Global CGPP Status and Comparison of 2015 Cluster Surveys

Study Design

The quantitative surveys conducted in 2015 utilized the 30 by 10 cluster sampling method with each primary sampling unit (village or ward) randomly selected from active CGPP regions. Households with children ages 12 to 23 months were selected for the interview.

It is important to note that these cluster study results are not representative of the entire country and were conducted in project areas with the greatest obstacles to vaccination.

Table 2: Comparison by CGPP Country of Indicators - caretaker education level, OPV coverage, & CHV as source of information

CGPP Country	% of mothers/caretakers who have completed primary level of education	% of children who ever received oral polio vaccine	% of respondents for whom Community Health Volunteer was a source of info on Immunization Program
Angola	38%	88%	44%
Ethiopia	32% (read & write)	98%	41% (70% health worker)
India	34	98	64%
Kenya	11%	98%	64%
Nigeria	15%	96%	32%
South Sudan	16%	91%	54%

Table 3: Comparison by CGPP Country of types of work/means of living for respondents of survey

	Top 3 types of work/means of living		
CGPP Country	Agriculture	Business	Livestock
Angola	35%	20%	-
Ethiopia	15%	5.0%	11%
India	5.4%	1.0%	-
Kenya	-	-	-
Nigeria	32%	47%	1.0%
South Sudan	89%	18%	9%

(respondents could choose more than one option)

Table 4: Comparison of CGPP Country Indicators regarding OPV and full immunization

CGPP Country	% of mothers/caretakers who said multiple doses of polio vaccination to children is good for them	% of children age 12-23 months who were immunized with the OPV0 in the first two weeks of birth in CGPP project areas by card and card plus recall	% of children age 12-23 months who were immunized with the OPV3 before age 12 months in CGPP project areas by card and card plus recall	% of children age 12-23 months who were immunized were fully vaccinated with conventional vaccines before age 12 months in CGPP project areas by card and recall
Angola	-	73%	35%	-
Ethiopia	84%	23%	60%	47%
India	87%	98%	83%	78%
Kenya	87%	25%	57%	36%
Nigeria	83%	61%	50%	83%
South Sudan	70%	62%	37%	36%

Table 5: Comparison of CGPP Country Indicators regarding reasons for vaccination

	Top 3 reasons for vaccinating or completing the childhood routine vaccinations as reported by mothers/care takers		
CGPP Country	Vaccination prevents disease	Vaccination is important	Vaccination keeps my child healthy
Angola	-	-	-
Ethiopia	65%	56%	46%
India	74%	37%	46%
Kenya	51%	59%	40%
Nigeria	-	-	-
South Sudan	59%	46%	38%

(Respondents could choose more than one option)

- Blank values indicate the survey question was not asked in the same manner and thus could not be directly compared on this chart

This implies that those who complete vaccination for their children are informed of the protective benefits and have received health education about vaccination. This population is therefore more sensitized to health promotion and could be more receptive to other health services such as prenatal care and recommended water and sanitation practices.

Table 6: Comparison of CGPP Country Indicators regarding AFP knowledge, CHV visits, & cross border visitors

CGPP Country	**% of mothers/caretakers who could report correct signs and symptoms of AFP**	**% of mothers/caretakers who reported a home visit by community health volunteers/mobilizer**	**% of households that reported that they visit or get visitors from the other side of border**
Angola	42%	29%	13%
Ethiopia	53%	51%	-
India	88%	90%	-
Kenya	52%	49%	43%
Nigeria	45%	54%	n.a.
South Sudan	24%	46%	44%

n.a. = not applicable; survey question was not asked in the same manner and thus could not be directly compared on this chart

Global CGPP Qualitative Data

Study design

In order to capture a contemporary and comprehensive picture of the CORE Group Polio Project polio eradication efforts, sixty-five qualitative interviews were conducted with stakeholders in seven countries where CGPP has an active presence: Angola, Ethiopia, India, Kenya, Nigeria, Somalia, and South Sudan. Interviews were semi-structured and included one-on-one and small focus group formats. Stakeholders included members of the national Ministries of Health from each country, international non-government organizations, the World Health Organization, the United Nations Children's Fund, the Bill & Melinda Gates Foundation, the United States Centers for Disease Control and Prevention, local civil society partners, local ministry of health coordinators, and community health volunteers.

Greatest contributions of CGPP

CORE Group's greatest impact is shaped by its presence on the ground. Having people connected to the community is critical to the polio immunization efforts. One partner in South Sudan expressed that the "CORE Group went places even the government didn't go." Establishing deep connections with local civil service organizations allows CGPP to be more flexible and swift than large multi-national public health bodies.

Access where other organizations cannot go

> "Some of the partners (UNICEF, WHO) were not allowed to work in insecure areas – they could not work there. CGPP came in and could mobilize in those areas." (interview with Dr. Andrew Etsano, Executive Director of Emergency Operations Center, Abuja, Nigeria, August 2015)

Additionally, CGPP can quickly access the on-the-ground community network to ensure a more thorough needs assessment while being sensitive to cultural attitudes and beliefs.

Following the people through water, rain, and milk

Excerpt from Ethiopian interview regarding the 15 million pastoralists and the need to embrace critical local knowledge:

> "Within every district there can be a normal movement pattern. They will go to the rivers or water bed --- you can expect that. And then in the dry season you can predict where the population will go. You can map….the riverbank, the watering point, and mineral licks for the animals. And grazing land during the wet season. … But in the drought, that is harder to predict. They may travel 100-200k and cross borders. …HEW's (Health Extension Workers) and other traditional elders that know **water** and **rain** and environment... Then they come together and ask them, how is the climate? how is the rain?…At the market place, if you see the **milk** is coming from the east then you know the pastoralists are there. If you see it coming from west, then you know that is where they are." (Interview with Abdi Abdulalu, Executive Director of Pastoralist Concern, Addis Ababa, Ethiopia, August 2015)

Community knowledge informs how healthcare can be most effectively organized. Without full engagement at the community-level, large populations will be underserved and vaccination coverage will be inadequate to prevent future outbreaks.

In the context of a health program that is executed on the street and often in the homes of community members, cultural sensitivity cannot be more critical. Trust is essential.

To understand the impact of GCPP, one must widen the lens beyond polio outcomes. Inherent in stopping transmission of the polio virus are actions that strengthen communities and partnerships. Capacity building was consistently identified as the greatest contribution made by GCPP and expressed throughout project countries at all levels, from national Ministries of Health to local community health volunteers. Capacity has been built through cold chain establishment and support, health partnerships, training, health education, increased health system awareness and utilization, and an increased number of people working toward a common health goal. This asset can be harnessed to improve other health outcomes and by achieving other community and national goals. Additionally, the infrastructure built through the polio eradication efforts of CGPP contributes to disaster preparedness and can contribute to improved disaster response in the future.

Advocacy

One of the main objectives in CGPP is "building effective partnerships between agencies." These partnerships are built on communication and advocacy for issues supporting polio eradication. A key stakeholder from UNICEF in Angola identified CGPP's greatest role as a "voice for advocacy with the federal government."(interview with Dr. Sam Oboche Agbo, Chief of Child Survival and Development, UNICEF, Luanda, Angola, August 2015) CGPP staff are

present at micro-planning sessions at the federal government level, the municipal level, and the community level to maintain advocacy. Beyond health outcomes, CGPP partners identified other organizational improvements that have been made as a result of the polio eradication effort.

Challenges

Until the polio virus is eliminated from every corner of the world, every country is at risk of importation and outbreak. Many challenges remain to eradication. In the context of the CGPP countries, importation was cited as a chief concern by many stakeholders. Officials from Ethiopia, South Sudan, Kenya, and Somalia expressed that importation was a real concern as they have experienced past outbreaks due to importation. Horn of Africa countries with large population movements, fluid borders, and populations with low immunization coverage exist at near-perfect conditions for importation and outbreak. Indian officials expressed importation as a threat to the country's polio-free status due to their proximity to Pakistan and Afghanistan, where the wild polio virus remains.

Funding is yet another threat to polio immunization programs. Nigerian health officials expressed concern due to no new case being reported in 12 months. Celebration is warranted but tempered by knowledge that funding and commitment must be sustained, even without new cases, until global eradication can be achieved. Headlines in popular media often confuse the issue by "Declaring Nigeria polio free!" (Daily Times of Nigeria, 2015). Government officials and budgetary decision-makers may logically assume that national polio activities can be de-funded in light of this success. Since India has been deemed to be polio-free, officials there assert that complacency is one of their greatest threats.

> "Our biggest threat is **complacency**. We have done it – forgetting that it is right across the border. We need to keep the polio agenda at the top – That is where **advocacy** is still important. The government can easily get drowned in all the (other) things that they need to do." (Interview with Dr. Sunil Bahl, Technical advisor to the National Polio Surveillance Program, WHO Southeast Asian Regional Office, Delhi, India, September 2015)

In addition to the government perspective, the general public may also lose motivation to vaccinate their children with the perceived notion that the virus does not exist where they live.

<u>Hard to Reach Areas</u>

Significant physical challenges exist in project locations. Limited electricity in some areas make it challenging to maintain the "cold chain," or the uninterrupted refrigeration of vaccine needed to ensure its effectiveness. Some roads, such as in parts of South Sudan, are impassable during the rainy season making national polio campaigns near impossible during those months. (CGPP Secretariat Director of South Sudan, Dr. Anthony Kisanga, nterview Juba, South Sudan 2015)

In Ethiopia, some regions require that healthcare workers carry their own water supply and traverse harsh environments in extreme heat.

> "They build the capacity of the staff. Because of that, our staff has a chance to raise awareness in the community. If it were not for CGPP, we could not have implemented the program at all, especially in the hard-to-reach areas. In the clinics? We can do ourselves, but not without CGPP could we do hard-to-reach areas…**When we need them, they are there**." (interview with Dr. Tilahun Dafurso, Director, Health & HIV/ AIDS program, Ethiopian Evangelical Church Mekane Yesus-Development and Social Services Commission, Addis Ababa, Ethiopia, August 2015)

Finally, when healthcare workers do reach these areas, there are often other health care needs apart from polio vaccination that may be perceived as more urgent by the local people.

Religion

Religion has been both a barrier to polio vaccination and a facilitator of polio vaccination in countries where the CORE Group is present. In most of the targeted regions, religion plays an important role in the lives of the people. Whether Muslim, Christian or other denomination, the messages from the religious leaders can be very influential in the area of health decision-making. The clergy members not only lead communities in spiritual practice but they often look out for the physical well-being of their constituents. If they are skeptical of health initiatives, they may warn their members to avoid participating. In northern Nigeria, there were Imams that initially forbade their religious members to accept the oral polio vaccine out of skepticism about the ingredients in the vaccine. While this may have seemed like an obstacle to population immunization initially, CORE Group has embraced the strong leadership of religious leaders in these communities and invited them to be partners in the polio eradication effort.

> "You need the gate keepers of society to talk to the people…Some religious groups do not believe in vaccinations but CGPP was able to create demand in the community." (interview Dr. Andrew Etsano, Executive Director of Emergency Operations Center, Abuja, Nigeria, August 2015)

Targeting health education efforts towards the religious leaders can be an opportunity to incorporate them as advocates for polio eradication. They can galvanize their community, raise awareness for polio campaigns, and offer valuable programmatic suggestions to the vaccination teams. In Ethiopia for example, one partner shared the following:

> "EPI (Expanded Program on Immunization) in Gambella (District in Ethiopia) was 15% in the region. Then we used pastors to promote the vaccination in their sermons. Because of this, the rate is now 60%. If you use the religious leaders that is a very good opportunity." (interview with Dr. Tilahun Dafurso, Director, Health & HIV/AIDS program, Ethiopian Evangelical Church Mekane Yesus-Development and Social Services Commission, Addis Ababa, Ethiopia, August 2015)

In northern Nigeria, one Muslim leader was responding to his community that was distrustful of the polio immunization efforts and wary of the oral vaccine ingredients. As a gesture to prove to his community that the vaccine was safe, he gathered the entire town and publicly shared the benefits of the vaccination and explained how it would protect the health of children. Then to prove the safety of the vaccine, he opened a vial and drank the contents. Smacking his lips and amidst laughter from the community, he encouraged all of the community to participate in the polio campaign that day.

Other examples exist where CGPP partners have incorporated religious text to express polio messaging. Koranic passages that promote health and the avoidance of disease have been used in culturally sensitive polio vaccination awareness materials. Vaccine refusals are very low in Kenya, for example, and are reported to be decreasing across most of the CGPP countries. While refusals still exist, CGPP strategies in awareness raising, health education, and community involvement have been very successful.

Opportunities

CORE Group advocates for polio eradication efforts at all levels. They promote health education to community members and government officials alike. Recently, in Nigeria CGPP was invited to be a member of the national polio response coalition housed in the Emergency Operation Center (EOC). They participate in national polio campaign planning and execution activities, immunization coverage updates, and long-term strategic planning. During a recent change in government leadership, the EOC team, of which CGPP is an active member, lobbied for the new president to support the polio eradication efforts. Seen in the picture below, newly-elected President Muhammadu Buhari is administering an oral polio dose to his infant granddaughter.

From left, President Buhari, Katsina State Governor Aminu Masari, and Executive Director of the Nigerian EOC Dr. Andrew Etsano, NGR Guardian News, 2015.

This is another example of the “all hands on deck” nature of the polio eradication efforts in Africa.

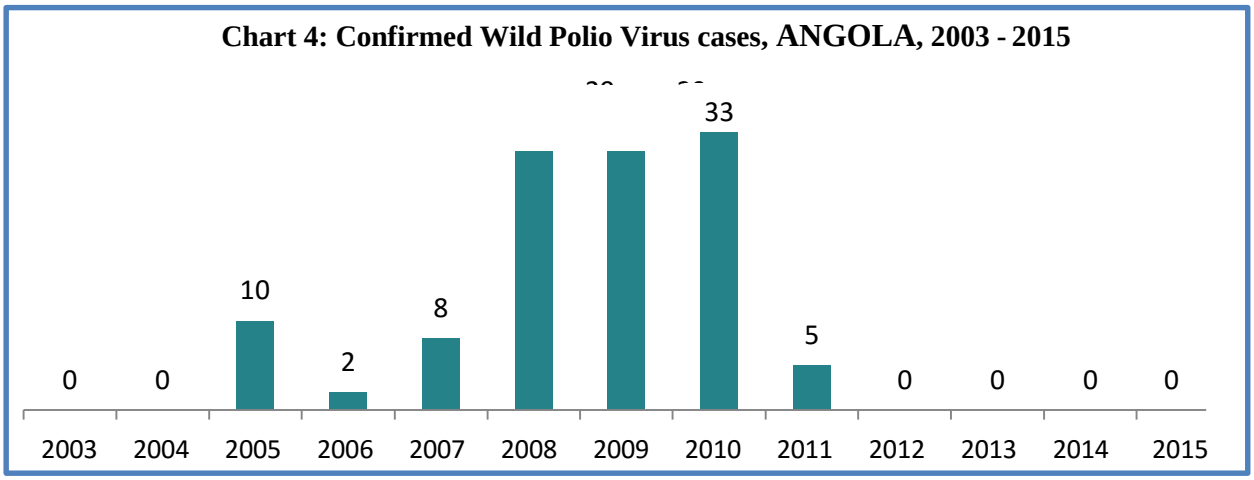
Interpreting data related to polio eradication efforts in Africa and India requires a deep understanding of the context of surrounding challenges. The data collection must be executed on a large scale and in the context of varying degrees of infrastructure limits. In Ethiopia, for example, the last census was taken more than 25 years ago and the region has since undergone huge population change. Across the Horn of Africa, there are millions of pastoralists, people who migrate with their flock of animals following water and grazing opportunities. International borders are fluid and the distances that individuals travel are immense. Pastoralist Concern, a CGPP partner in Ethiopia, estimates that there are 15 million registered Ethiopian pastoralists or semi-pastoralists.

Pastoralist walking with his livestock; CGPP Partners Pastoralist Concern Association Ethiopia and Save the Children USA, 2006.

Traditional population estimates and census practices are often based on permanent housing which would not be appropriate in this context. Under the same caveat, nor would traditional medical care facilities and distribution practices be appropriate. Health data necessary to make policy and practice decisions is challenged when immunization coverage rates are positioned as a percentage of the total population. For example, it is not uncommon for some polio immunization coverage in Ethiopia and other CGPP locations to be reported as over 100% coverage. At first glance, this mathematical impossibility might lead an outsider to believe that the data is not useful. However, a deeper look at the challenges to the data reveal a robust data system with valuable statistics. Confidence can be placed in the number of vaccinations given. If a team of polio vaccinators show up with the understanding that there are 1000 children under five years old in a given population and they find and are able to vaccine 1500 children under five years old, it is reported that the vaccination rate is 150%. The numerator (number of vaccinations given) is recorded meticulously, appropriately aggregated at local, district, and national levels and can be used to plan for future immunization campaigns. The denominator (total eligible population) is often times less reliable making that assessment require closer scrutiny.

Fortunately, independent monitoring of immunization campaign success offers an additional measure of coverage. Post-campaign coverage assessments do not depend on population estimates, but rather they calculate coverage based on the number of children visually captured with a vaccination marking versus the total number of children seen in a rapid assessment. Each child that receives an oral polio vaccination (OPV) during a campaign is marked with a black marker on the fingernail of their littlest finger. This semi-permanent marker lasts several days and ensures that vaccinators do not double vaccinate children. It also allows them to quickly assess vaccine delivery without exhaustive individual data (medical records, home address, etc) Post-campaign assessors randomly select an area within the campaign location and look at the first 30 eligible children. If all of the children have a blackened little finger, then they report 100% coverage. If only 25 of the 30 children have a blackened little finger marking, then they report 83% coverage achieved during the campaign. While this rapid test also has limitations, it circumvents the antiquated population census data and is more reliable.

Country Report: ANGOLA



Source: WHO and CDC.

Overview:

Angola has quickly extinguished WPV outbreaks in the last twelve years despite great obstacles. Not shown in the above time frame was the astounding accomplishment of CGPP upon initial involvement in Angola. In 1999, there were approximately 1000 cases of WPV. CGPP started operations in Angola in 2000, and in 2001 there were zero new cases. CGPP did not assume sole credit for the success. They credited the remarkable success to the coordination, capacity building, and micro-planning with existing systems on the ground in Angola. In those categories, however, CGPP's involvement was inextricable.

While faced with tremendous obstacles, it is of concern that a decrease in immunization coverage has been detected in Angola. Fully immunized coverage fell from 42% in 2010 to 26% in 2015. Although RI coverage percentages were superior in most cases to levels found in 2012, the vaccination coverage noted in this study has not reached the levels found in

(Photo: Children playing in a district where CGPP partners with community volunteers, Luanda, Angola, 2015; K. Vergara)

the study in 2010. Per the 2015 survey, polio coverage for polio 0 was 71%, 53% for polio 1, 46% for polio 2 and 35% for polio 3. However, polio 0 coverage was notably lower than polio 0 in 2010 (87%). Pentavalent coverage was 60% for penta 1, 49% for penta 2 and 36% for penta 3. Measles coverage was 72% as indicated by RI card and recall, which was significantly higher than in 2012 (44%).

Encouraging improvements have been seen with regard to important indicators associated with CGPP community volunteers. For example, 41% of respondents knew the community volunteer (CV) as opposed to 21% in 2012 and 24% in 2010. Additionally, 29% of all respondents were visited by CVs in 2015 as opposed to 26% in 2012 and 12% in 2010 in the last polio campaign. Social mobilization during last campaign showed that 44% of respondents knew of the campaigns through community volunteers, highlighting the important role the CV plays in health promotion.

A further look into reasons why some children were not vaccinated in Angola revealed three categories for CGPP Angola to address. Respondents cited the following barriers: distance to the vaccination post, lack of inventory of needed vaccines, and lack of knowledge of where to obtain a vaccine.

Also, cross-border travel was noteworthy in CGPP districts. Approximately 12% of respondents crossed international borders to other countries and 13% of the respondents reported having received visitors from other countries. While international travel is less than other CGPP countries report, opportunity still exists for importation of polio into Angola.

Methodology: A quantitative survey was conducted to evaluate CGPP Angola through the perspective of caretakers of children age 12 to 23 months old. The collection of data was accomplished in July 2015 and the interviews, with a questionnaire of closed and semi-open questions, were embedded in a Smartphone. In addition to the quantitative survey, a total of 10 semi-structured qualitative interviews were conducted, ranging from individual to small focus group format to gain perspectives from CGPP Angola partners. The interviews include perspectives from the following:

CORE Group Polio Project - ANGOLA

Angola Federal Ministry of Health National

Direccion Nacional Salud Publica (DNSP)

National Polio Program Immunization Sector - Luanda Province

Tchikos

UNICEF

World Health Organization

World Vision & Africare focus group

(Photo: Community volunteer meeting in Sambizanga, Angola, August 2015; P. Sapalalo)

Sambizanga neighborhood community field visit to meet with community health agents

Salvation Army field visit to community health post, and CV monthly meeting location

(Photo: CORE Group Secretariat staff in Luanda, Angola, 2015; K. Vergara)

Socio-demographic Characteristics

The caretakers who were interviewed for the quantitative survey had an average age of 28 years, average schooling of grade 7, preferred speaking Portuguese, and the majority of respondents identified as Catholic.

Objective 1: Build effective partnerships between agencies

> "The EPI (Expanded Program on Immunization) Department is only two people. They are understaffed. (CGPP has) very good knowledge of management…making sure systems are functional…helping partners follow through with these. (Their) documentation is very critical" (interview Dr. Sam Oboche Agbo, Chief of Child Survival and Development, UNICEF, Luanda, Angola, August 2015)

Partnerships in Angola from the international level to the community volunteer level are responsible for the success in interrupting past WPV outbreaks and for the success in preventing current outbreaks.

The project seeks to train community volunteers to educate families in improving their attitudes and proper health practices.

CGPP Angola is focused on children under five years of age in twelve provinces at high risk of polio importation. Five provinces (Lunda Norte, Lunda Sul, Moxico, Uige and Zaire) are considered high risk mainly due to their geographical proximity to the Democratic Republic of Congo. Three provinces (Luanda, Kwanza Sul and Benguela) are considered high risk due to the urban density of the populations in these regions, low levels of sanitation and low routine immunization coverage. Other provinces were added (Moxico, Kuando Kubango, Namibe, Cabinda and Huambo) to help prevent the possible import or export of the virus to other neighboring countries and as well as circulation within the nation.

The CGPP Angola seeks to train community volunteers (CV) to educate families in improving their attitudes toward health promotion behaviors and engage in positive health practices. The volunteers gather the children's vaccination data, identify faulty routine immunization and campaigns, motivate communities to participate in routine immunization activities, support additional activities to eradicate polio and actively search for cases of Acute Flaccid Paralysis (AFP) in communities.

In order to achieve these outcomes, partnerships between multi-lateral international agencies (WHO, UNICEF), the National Ministry of Health, international non-government organizations, and local civil society organizations are supported by microplanning, communication, and best-practice sharing.

Objective 2: Strengthen routine immunization systems

As mentioned, it is of concern that a decrease in immunization coverage has been detected in Angola. Vaccine coverage was low overall. As confirmed by verification on a routine immunization card, BCG vaccine coverage was 92%, Polio 3 was 34%, Penta 3 was 33%, measles was 31%, and yellow fever was 12%. They also measured coverage of other vaccines such as Pneumo 3 as 19%, and Rotavirus 2 as 12%. It is important to note is that these percentages are conservative and do not include coverage based on verbal recall. While these percentages are

superior in most cases to levels found in 2012, the vaccination coverage of this study has not reached the levels found in the study in 2010.

Encouragingly, 70% of the respondents reported that their children received polio vaccine in the last vaccination campaign. Also, knowledge increased significantly about vaccines and their importance and about acute flaccid paralysis.

Basic Routine Immunization Schedule, Vaccinator Manual, Angola 2014

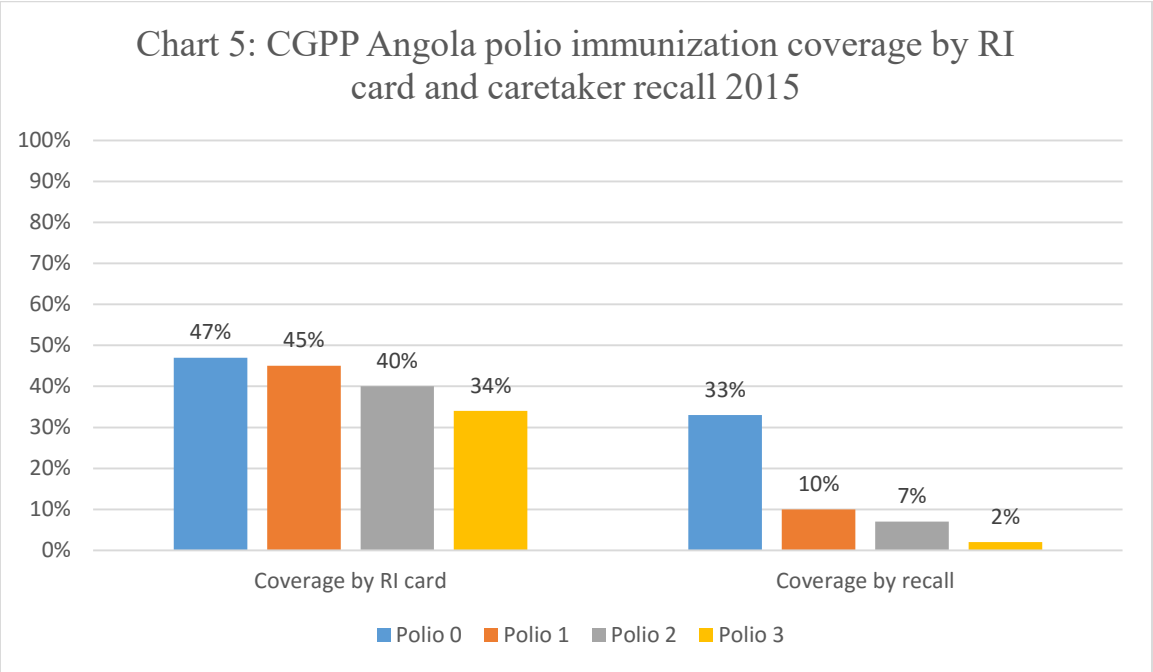
Figure 2: Basic Routine Immunization Schedule, Vaccinator Manual, Angola 2014

Polio immunization coverage

The polio vaccine is given to children in four doses: Polio 0 at birth (the first two weeks), Polio 1 at two months, Polio 2 at four months, and Polio 3 at six months.

In situations where vaccination cards were not available, the researchers asked the caretaker if the child received the polio vaccine in the vaccination centers. They also asked if this vaccine was two drops given in the mouth of the child. For positive responses, researchers asked the caretaker how old the child was when they received the vaccine.

The graph below shows polio vaccination coverage for each of the four doses as assessed by verification on an RI card, and when the card was not present, assessed by verbal recall. It is important to note that oral reports could be subject to recall bias.



Disparities also exist with regard to location: the immunization coverage in 2015 was 43% peri-urban health centers, 35% in urban health centers, and 26% in rural centers.

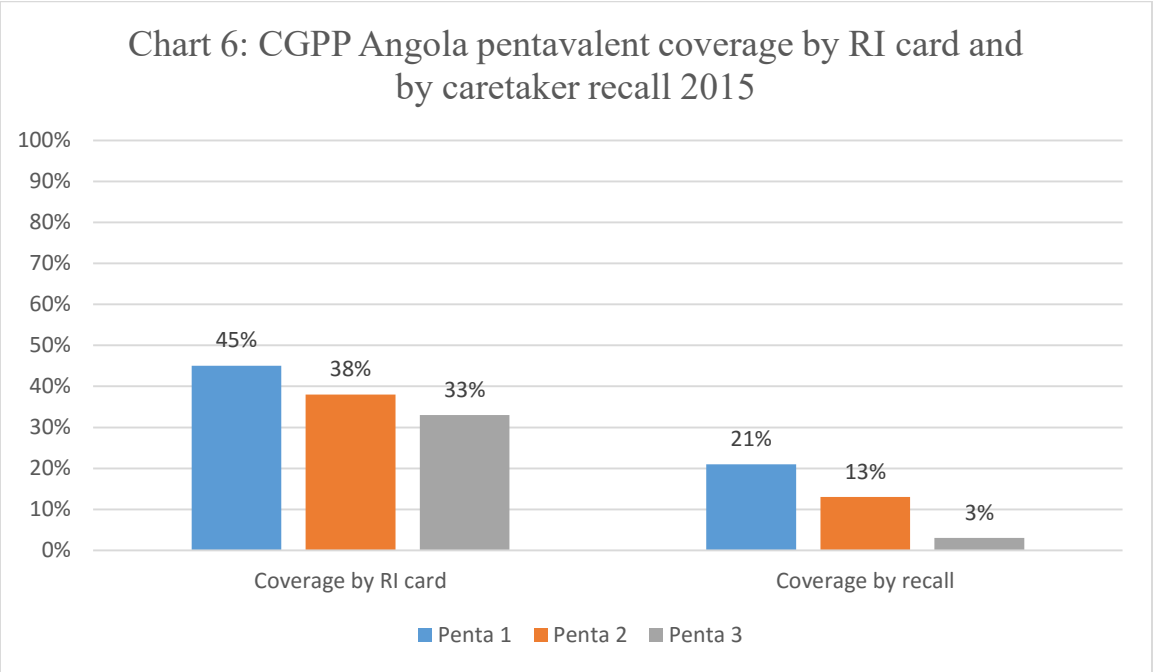
Interestingly children who received the polio vaccine 3 had caretakers with higher academic achievement than the children who did not receive the polio vaccine 3. The average education of caretakers of children receiving the polio vaccine 3 was 5.91 (corresponding to 6th grade) and the average education of caretakers of children who did not receive polio vaccine 3 was 4.62 (corresponding to Grade 5).

The caretakers who are more fluent in Portuguese have more vaccinated children (43% coverage) than the caretakers who speak other national languages (33% coverage). The children of unemployed caretakers had higher vaccine coverage (44%) than children of caretakers who worked outside of the home (32%).

Vaccination coverage of pentavalent

RotaTeq is a combined vaccine injection type. The pentavalent vaccine protects children against: diphtheria, tetanus, whooping cough, meningitis and other infections caused by Haemophilus influenzae type B and Hepatitis B. This vaccine is given in 3 doses: the first dose given at two months, the second dose at four months and the third dose at six months of age.

For children who did not have vaccination cards, the researchers asked the caretakers if the children had received a vaccine called RotaTeq (or simply Penta) in the vaccination centers. And they clarified that this vaccine was an injection that was administered in the left thigh of the child. In affirmative answers, attempts were made to know the times in which the child received this vaccine.



Unlike the BCG and polio coverage, the penta coverage in 2015 was not different from those found in the study covering 2010. This represents a significant increase to the low coverage found in the 2012 study.

The analysis of caretaker characteristics for pentavalent coverage is very similar to that for polio vaccination. Caretakers of children who received the vaccine penta3 had a higher level of education than the caretakers of unvaccinated children. The average education of caretakers of vaccinated children was 5.78 (corresponding to a 6th grade education) and the average in caretakers with unvaccinated children was 4.65. Unemployed caretakers were more likely to vaccinate their children (46%) than employed caretakers (35%).

Measles vaccination coverage

The measles vaccine is administered in injectable form at nine months of age. It is made from live attenuated measles. The vaccine stimulates the immune system of the individual causing the formation of antibodies against the virus and thus if that person is exposed again, the individual will not develop the disease.

Information on vaccination coverage of measles is presented in the chart below. This graph shows that 72% coverage was reported when both RI card and recall were considered. The fact that measles is only administered at nine months, closer to the time of the study (eligible children were between 12 and 23 months old), may have contributed to the high number of vaccinations remembered, although the study did not test this specific hypothesis.

It was observed that the current coverage does not present statistical differences with the 2010 study of coverage. The current coverage is significantly higher (72%) compared to the 2012 study of coverage (44%).

Additionally, measles coverage was higher in peri centers (78%) then in urban centers (73%). The caretakers who have vaccinated children had a higher average education (5.78 corresponding to a 6th grade education) than the caretakers who have children not vaccinated (3.44, corresponding to a 3rd grade education). The caretakers who speak Portuguese were more likely to have had their children vaccinated (81%) compared to caretakers who speak other national languages (64%).

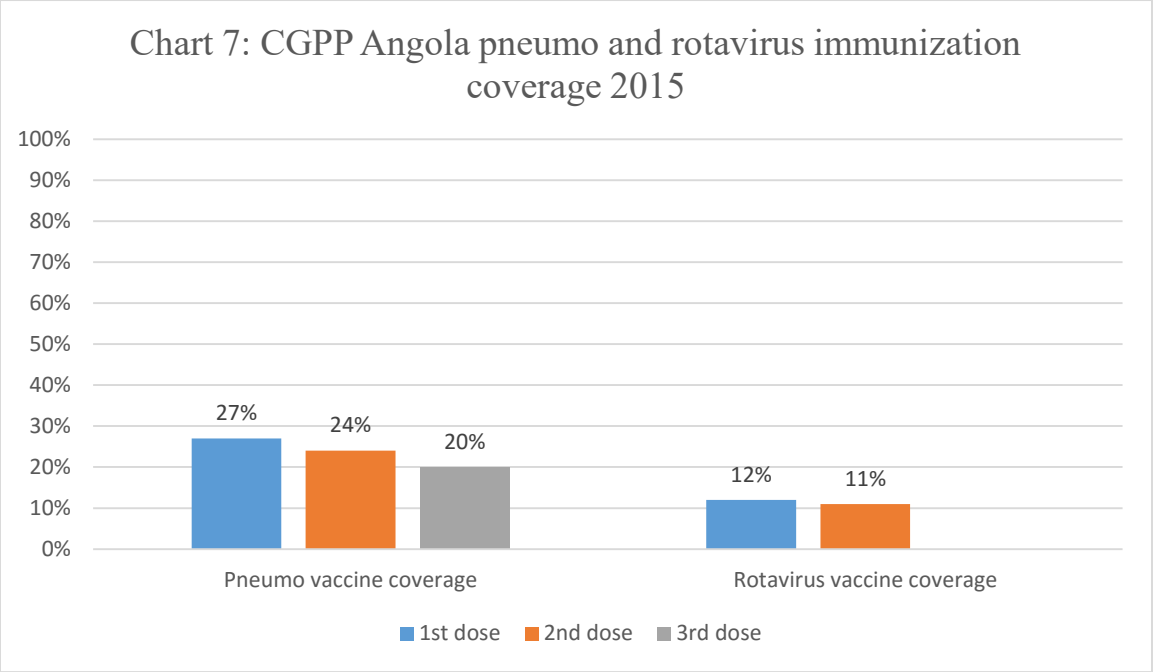
Also, unemployed caretakers were more likely to have had their children vaccinated against measles (77%) than employed caretakers (68%). And lastly, religious caretakers were more likely to vaccinate their children than non-religious caretakers.

Since 2014 the Ministry of Health expanded the list of vaccines available to children. Vaccines for hepatitis B, rotavirus and pneumo were included. Another dose of measles vaccine was added to be administered at 15 months of age, along with vitamin A supplement.

This study has included the coverage of rotavirus and pneumo vaccines. These vaccines are administered in three doses and two doses respectively. The first dose of pneumo and rotavirus are given at two months old. The second dose of each is administered at four months old. At six months, only pneumo is administered since the rotavirus is only two-phase.

For these vaccines only the information provided by the vaccination cards was considered.

The chart below shows the information on vaccination coverage of pneumo and rotavirus. The vaccination of the first dose of pneumo was 27% and the first dose of rotavirus was 12%. Vaccination coverage of the second pneumo was 24% and 11% of rotavirus. The coverage of the third dose of pneumo was 20%.



Reported reasons for non-vaccination

Distance to the vaccination site

The distance from the health centers to the residences of the population is among the main causes of non-vaccination. This is particularly significant in rural centers and by people who work outside the home. "For you to go to the vaccination post (you) have to miss a day or two (of work)," said one participant in Kwanza Sul province.

The survey also showed that non-religious participants are the ones who complain the most about the distance from health centers. The study did not identify the reasons for this association, but the researchers believe that this relationship is more spurious than factual.

Lack of vaccine in the post

Perceptions of the lack of vaccines in posts were expressed mostly by participants in the peri-urban areas and by those who use the Portuguese language. Perceived lack of vaccines was clearly caused by health professionals who confirmed the absence of vaccination activity in the vicinity or health facilities. This only occurred in establishments belonging to the technicians themselves. Other variables would give greater importance to this association. It is believed for example, that socio-economic status of participant and type of employment would reduce this association. The level of education has also been tested and is statistically significant, showing a trend for participants with higher levels of education more likely to affirm the absence of vaccines in the health centers.

"They say they do not have vaccines, but vaccinate the children of friends, or if you have money show you where they are going to vaccinate your child," explained one participant in Namibe province.

Perceptions of the lack of vaccines in health posts may also be a confounding factor for caretakers.

Beliefs and Attitudes towards vaccination

Another reason given for non-vaccination of children was the lack of belief in the importance of the vaccine. It was understood that "importance of the vaccine" meant the respondents' belief in their effectiveness. "Vaccines are another trade. Many are making money with this," said a participant of the central Huambo province. "In the past we lived well and without … vaccine," said a participant of the Kwanza Sul province.

This information was supported by participants from both rural and urban areas. Most who had this notion were from lower educational groups and those not using the national language. Workers who had some employment and the non-religious also said likewise.

The vaccinators did not come in the village / neighborhood

Some participants mainly dependent on advanced vaccination teams reported that the vaccinators do not appear regularly in their localities. "Sometimes we (waited for) months, (and) they did not appear. How do we vaccinate our children?" asked one participant in Kuando Kubango. Researchers identified in some health units that participants reported failures of car mobile teams,

lack of fuel and other problems that hinders the movement of teams. Older participants were the ones that stood out in this complaint.

Not sure where to vaccinate children

Some study participants said they did not know where to go to vaccinate their children. They reported that there were constant changes of the vaccination post, which confused those seeking this service. "(They) changed the vaccine post to another hospital," complained one participant in the Moxico province. "They changed the vaccination room" reported another participant in the Lunda Norte province. Participants mainly in the urban areas reported that they were not aware of where to obtain a vaccination for their children.

Objective 3: Support supplemental polio immunization activities

CGPP understands the importance of broadly publicized vaccination campaigns. Based on the 2015 survey results, 51% of respondents heard of the vaccination campaign from the Radio, 44% through community volunteers, 37% through television, 33% from friends or neighbors, and 20% from family (multiple answers were allowed).

In the last vaccination campaign, 70% of study participants said that their children received polio vaccine. In 2010, 93% of study participants reported that their child had been vaccinated in the

last campaign. In the 2012 study there were 80% who reported the same thing. This steadily decreasing trend is of great concern.

Photo: Advertisement of a National Supplemental Polio Immunization Activity Day, Luanda, Angola 2015; K. Vergara

Shortages

In addition to routine immunization activities, four national supplemental vaccination campaigns were conducted each year. While this helped boost rates of vaccination coverage, it also created a deficit in the normal supply of vaccine available for routine immunization. In 2011, CGPP Angola targeted efforts in areas that experienced shortages in vaccines. When assessed in 2012, the shortages had been corrected but coverage still did not rebound to pre-shortage levels in 2010.

Objective 4: Support efforts to strengthen AFP surveillance

AFP surveillance is actively tracked and reviewed regularly at the district and national levels in Angola. Clear objectives to improve AFP surveillance have been identified and progress has been noted on all objectives over time.

Table 7: WHO Angola National AFP Surveillance Indicators Summary July 2015

Indicators	Target	2011	2012	2013	2014	2015*
NP-AFP rate per 100,000 ≤ 15 Yrs	≥ 3.0	2.5	3.2	3.0	2.7	3.2
Stool adequacy	≥ 80%	87%	89%	90%	93%	94%
Investigated ≤ 2 days of notification	≥ 80%	85%	89%	88%	94%	95%
Specimen arriving at lab ≤ 7 days since collection	≥ 80%	9%	24%	36%	38%	45%
Specimen arriving in good condition	≥ 90%	99%	97%	96%	99%	96%
Non-polio enterovirus isolation rate	≥ 10%	12%	23%	19%	16%	20%
Lab result within 14 days of receipt	≥ 80%	97%	96%	94%	94%	90%

* Data as of 29th July 2015

Despite these positive trends, some concern exists that surveillance is not as robust as what is needed. A partner from Africare expressed reservations concerning the surveillance of the country. She believed that, due to limited human resources, not enough surveillance would be done. Bolstering AFP surveillance capabilities at the community level would directly assist the MoH at the district and national level to achieve their mutually desired outcomes.

Objective 5: Support timely documentation and use of information

Information sharing has been a key component to the success in Angola. Social communication during the last campaign showed that 51% of respondents knew of the campaigns through the radio, 44% through community volunteers, 37% through the television, 33% through friends and 20% from family members.

Additionally, 40% of respondents said they had received information on polio through the volunteers. This is considerably higher than 30% in 2012 and 37% in 2010 when respondents were asked the same question. 79% of respondents know that a child should receive the polio vaccine in the first two weeks of life which is statistically significant as compared to 25% in 2010 and 62% in 2012. 56% of respondents also knew facts about infantile paralysis. This is significantly higher than 35% in 2010 but lower than the 62% in 2012.

The level of general knowledge of caretakers about vaccines, as well as general knowledge about polio, increased substantially. Radio, volunteers, health workers and television were identified as main sources of information.

Additionally, to support information sharing and usage, the CGPP Angola secretariat presented its research findings to the international public health community at the 2015 American Public

Health Association Annual Meeting in Chicago, Illinois. The study entitled, "Improvement of Polio Campaigns through the use of GPS in Independent Monitoring in Angola" was authored by W. Peter Njofon, Ana Pinto, and C Nfornyam. The Angola secretariat presented an assessment of the use of GPS technology during campaign quality monitoring. This assessment highlighted the usefulness of GPS in unearthing underlying causes of poor coverage and in improving the tools provided to vaccinators and the accountability of vaccinators. These findings were presented to add to the scientific body of polio eradication best practices and help inform other public health interventions in Angola and abroad.

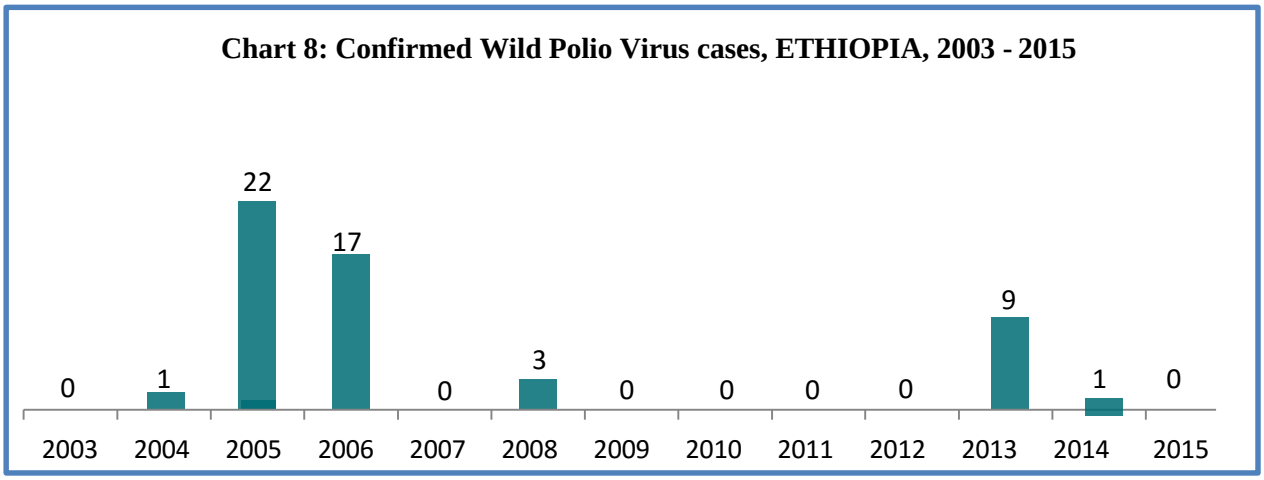
Overall Recommendations for CGPP Angola

1. In addition to routine immunization activities, four national supplemental vaccination campaigns were conducted each year. While this helped increase rates of vaccination coverage, it also created a deficit in the normal supply of vaccine available for routine immunization. The MoH should be notified of any shortages and assisted with obtaining an accurate number of immunizations needed for routine immunization and for planned immunization campaigns. Where deficits occur, strategic plans should be made to target high risk areas in future campaigns while recognizing limitations in supply.
2. Volunteers should expand the involvement of community leaders and should also subscribe to the aims of the health care community development agents of local administrations.
3. In home visits, community volunteers should continue to monitor the vaccination cards of children. They should instruct mothers on recording the dates of vaccination. Volunteers should also encourage health facilities to distribute vaccination cards to all mothers.
4. Immunization dropout rates should be reversed. Communication activities and advocacy for the mobile immunization activities in communities are two elements that can assist in reducing the lack of vaccination of children.
5. Communities should be more involved in vaccination campaigns. They must develop effective communications that encourage mothers to feel the need to vaccinate their children. To this end, the mothers should be encouraged to seek a vaccination agent, and not simply wait for the teams that are going through the homes.
6. It is important to maintain the level of knowledge about the vaccine and polio among caretakers. Other avenues of information should be explored, such as churches and schools, to maximize existing knowledge.
7. Project officials should address the main reasons for non-vaccination of children by making vaccination posts more accessible; increase the number of posts so that caretakers do not need to travel as far to reach them; ensure uninterrupted supply of vaccine wherever possible and improve communication in advertising exactly where and when vaccine will be available for both RI and campaigns.

8. CGPP Angola should aim to register volunteers in the structure of community development agents thus helping to maintain the sustainability of community stakeholders. Volunteers should also advocate health facilities to improve accessibility of health services and improve the monitoring of mothers, with emphasis on completing and retaining routine immunization cards.

Community health workers at the meeting location in Sambizanga neighborhood of Luanda, Angola, 2015; K. Vergara

Country Report: ETHIOPIA



Source: WHO and CDC

Overview: Despite significant importation threats of WPV from neighboring countries, Ethiopia reported no new cases of polio in 2015. CGPP Ethiopia has been a critical partner in this achievement. CGPP Ethiopia was established in November 2001 mainly to interrupt polio transmission in the nation's hard-to-reach areas. The prompt and complete interruption of the outbreak that occurred in 2013 was evidence of the programmatic successes in Ethiopia. Other successes are found in the significant increase of OPV3 coverage from 35% in 2012 to 60% in 2015, as determined by CGPP cluster survey data. While the increasing trend is encouraging, 60% OPV3 coverage still leaves an unacceptably large 0 portion of the population unprotected.

0

CGPP efforts towards increased coverage need to be bolstered. Additionally, CGPP efforts towards increased acute flaccid paralysis (AFP) surveillance at the community-level have showed an increase in community awareness and knowledge (52% in 2012 to 71% in 2015), as well as an improved and steady non-polio AFP rate in CGPP districts.

During the 2015 mid-term evaluation, the stakeholders interviewed repeatedly and independently identified one of the greatest strengths of CGPP as "capacity building" in Ethiopia. Specifically, capacity has been built in training health extension workers (HEW) and community volunteers (CV), bolstering and establishing community-based surveillance for acute flaccid paralysis (AFP), supporting an uninterrupted cold-chain, providing health education materials, and initiating cross-border collaboration with local governmental bodies. Other benefits that have been provided by CGPP include profound social mobilization and increased awareness about polio and other vaccine-preventable diseases. Many civil society organizations noted CGPP's contribution to transportation needs, fuel, and per diem pay for health workers traveling to hard-to-reach areas.

In general, a strong working relationship exists between the CORE group, the CSO partners, WHO, UNICEF, and the Federal Ministry of Health. During the 2015 evaluation, all partners reflected that CORE was the group that was "on the ground." WHO, UNICEF, and the Federal Ministry of Health all commented independently that CORE Group was present in places where no one else wanted to go.

> "…They have the health message, they know the languages, they go to the watering hole, and go to where the people are. On a microphone and a motorbike." (Interview Abdi Abdulalu, Executive Director of Ethiopian NGO Pastoralist Concern staff talking about CORE Group Polio Project, August 2015)

Frequently, if stakeholders referred to the classic hard-to-reach areas, the comment with respect to CORE Group was "they are *there,*" even when no one else (other organizations addressing polio) was there.

Table 8: 2015 CGPP Ethiopia Implementing Partners

Partner PVOs and NGOs	Regional State(s)	No. Woredas	No.<5 children	No.<1 children	No. CVs 2014	No. CVs 2015
African Medical and Research Foundation (AMREF)	SNNPR	8	103,460	24,093	383	244
Catholic Relief Services (CRS)	B.Gumuz, Somali	14	130,823	30,466	460	2,710
CARE	Oromiya	6	66,602	15,510	188	187
Ethiopian Evangelical Church Mekane Yesus (EECMY)	Gambella, SNNPR	14	77,050	17,943	577	688
Ethiopian Orthodox Church (EOC)	Oromiya	5	67,717	15,770	353	345
International Rescue Committee (IRC)	B.Gumuz, Gambella	13	62,991	14,669	853	2,215
Pastoralist Concern (PC)	Somali	6	71,008	16,536	455	506
Save the Children	Somali	5	96,421	22,454	326	256
Wabishebele Development Association	Somali	5	51,396	11,969	188	97
World Vision	B. Gumuz	4	34,403	8,012	513	513
Organization for Welfare Development in Action (OWDA)	Somali	5	54,839	12,771	NA	181
TOTAL		85	816,710	190,193	4,296	7,942

Methodology: In addition to the quantitative cluster survey conducted in each CGPP country, a total of ten semi-structured qualitative interviews were conducted, ranging from individual to small focus group format. (Survey and qualitative interview tools are included in the appendices) The interviews include perspectives from the following bodies:

AMREF

CARE

CORE Group Polio Project – Ethiopian Secretariat

Ethiopian Evangelical Church Development & Social Services Commission

Ethiopian Federal Ministry of Health

Pastoralist Concern Association

Rotary International

Save the Children

UNICEF

World Health Organization

In order to monitor performance, a Mid-Term Evaluation (MTE) survey was also completed in the months of June and July 2015, which was then compared to the 2012 baseline survey study findings. This was a continuation of CGPP's commitment to on-going timely evaluation and monitoring, and builds on evaluations from 2010. The quantitative data from the cluster study and the qualitative data from the in-person interviews were analyzed and combined in a mixed methods approach below to illustrate CGPP's involvement in polio eradication in Ethiopia.

Socio Demographic Characteristics

The total sample of the cluster survey included mothers/caretakers of 600 children between the ages of 12 and 23 months. A total of 577 (96.17%) with completed surveys were included for data analysis. The study subjects were mainly rural residents 95%, primarily Muslim 51%, and 32% could read and write. The samples' included the following district distribution: Benshangul Gumuz 16.64%, Gambella 6.76%, Oromia 18.02%, SNNP 18.72%, and Somali 39.86%.

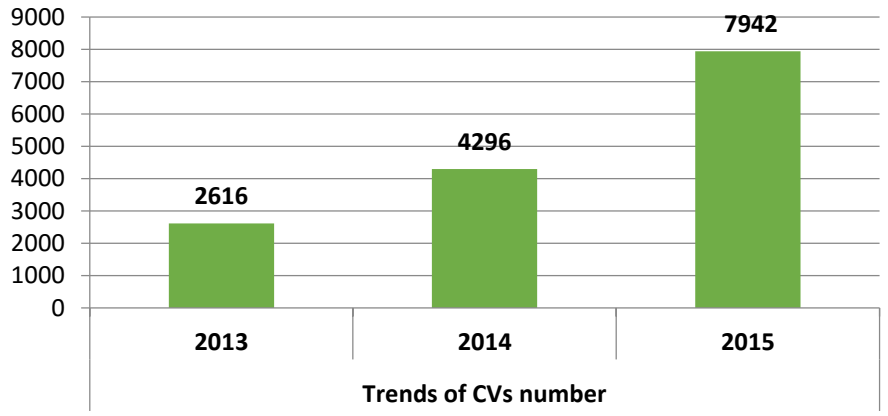
The following findings will be presented as they address the fundamental objectives of the global CORE Polio Project.

Objective 1: Build effective partnerships between agencies

> "They are working in the very hard to reach areas so we want to use their platform there. We believe (they are) mobilizing the community, creating the awareness (of) immunization and polio in general. **We see them as good partners.**" (Interview with Liya Wondwassen, Expanded Program on Immunization Manager, Ethiopian Federal Ministry of Health, Addis Ababa, Ethiopia, August 2015)

In order to accomplish the national polio eradication goals, coordination of international, national, and community-level partnerships must be continually supported.

Chart 9: CGPP Ethiopia number of community volunteers 2013-2015



The impact of CGPP Ethiopia partners was best reflected in two key indicators on the survey. Knowledge of polio increased from 58.3% in the baseline survey to 95.1% at the Midterm Evaluation survey. This is a clear result of partnerships between national and local civil society organizations, increased health education for the community, increased visibility of health extension workers, increased reach to a greater proportion of the community, and increased dialogue about polio. This is also the first step to augmenting health behaviors, increasing polio immunization acceptance, creating increased demand for vaccine, and ultimately increasing polio immunization coverage.

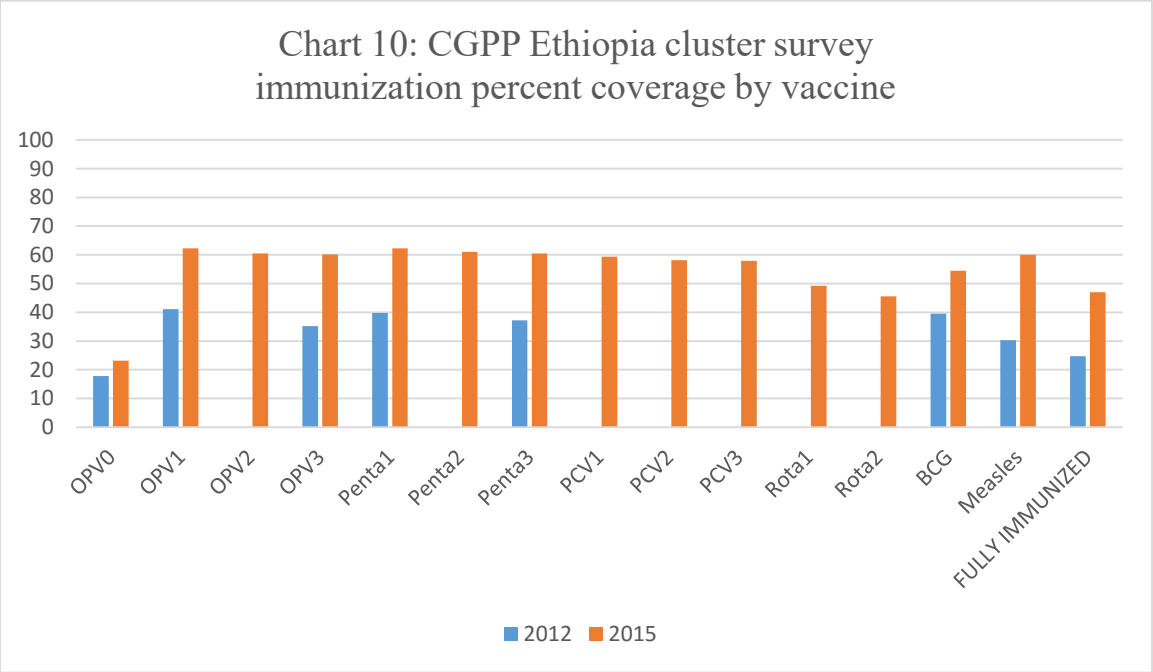
The second key indicator revealed an increase in accurate knowledge of the polio vaccine itself. Because the oral polio vaccine is given several times as a function of achieving greater community coverage, there has been resistance in the past from parents/caretakers questioning 'why' their child had to receive repeated doses. Questions have arisen about the effectiveness of the vaccine (Why do they have to have so many doses for it to work?). Additionally, there was concern that so many doses may be harmful to the children. When parents/caretakers were questioned at baseline only 59.3% of them responded that the child would be "more protected" when they received multiple doses of polio vaccine. However by the MTE, 84.2% of the parents/caretakers responded that their child would be "more protected" when they received multiple doses of polio vaccine. This was the result of systematic health education and social mobilization efforts by CGPP in the same districts and partnerships with AMREF, CARE, Ethiopian Evangelical Church Development & Social Services Commission, Ethiopian Federal Ministry of Health, Pastoralist Concern Association, Rotary International, Save the Children, UNICEF, and the World Health Organization. Having community buy-in and accurate

knowledge of the benefits and nature of OPV creates the social environment for sustained partnership with communities.

Objective 2: Strengthen routine immunization systems

In Ethiopia, the administrative data immunization rate is calculated by the Ministry of Health and includes children less than 12 months who are fully vaccinated. There are significant barriers to determining the denominator in several districts, or "woredas", due to difficulties tracking a pastoralist or semi-pastoralist population. There are an estimated fifteen million pastoralists who are registered as Ethiopian citizens, however the borders between the surrounding countries are fluid and the population migrates over sometimes great distances. Obviously, this presents significant obstacles to tracking immunization for individual children, and also it complicates the ability of the local, regional, and national government to determine vaccine coverage at any given point. CGPP thus conducts the systematic cluster surveys to obtain a reliable, cross-sectional assessment of immunization coverage and health promotion outcomes. By design, the rapid surveys do not depend on dated census or problematic population estimates, and therefore can be used to extract a more dependable immunization coverage assessment.

According to CGPP's 2015 cluster survey, across every available vaccine given for routine immunization in Ethiopia, there was dramatic and encouraging improvement on coverage of the different antigens and their subsequent doses.



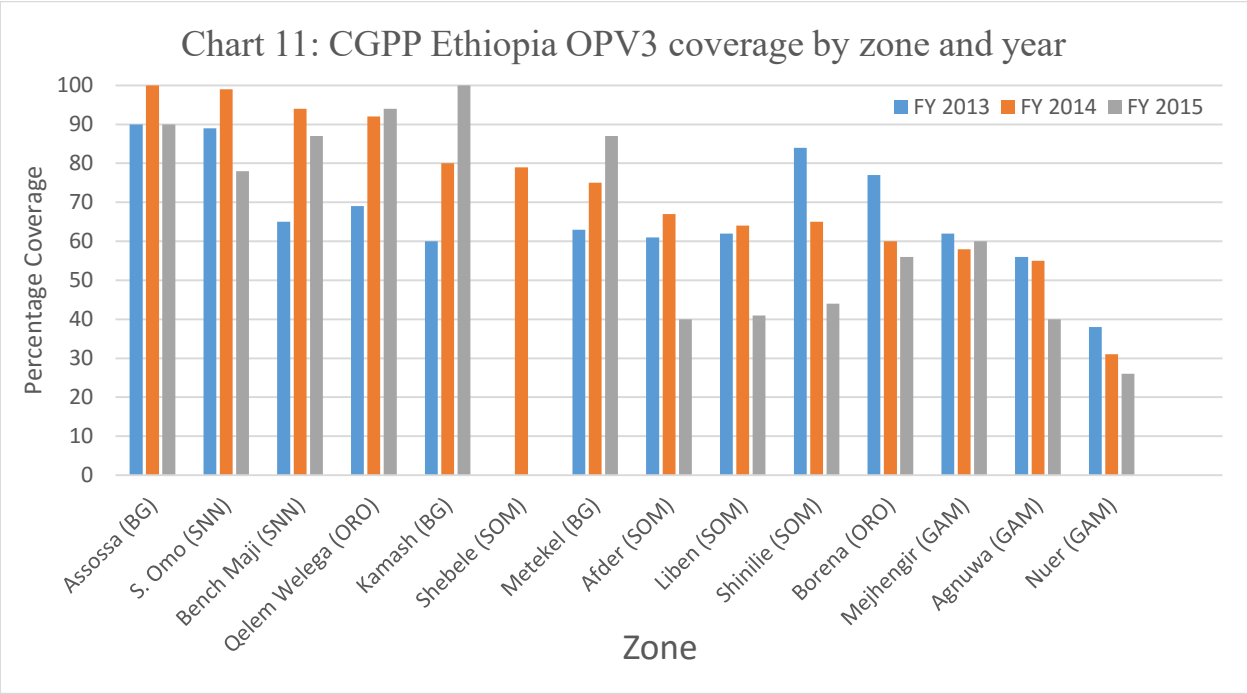
(PCV and Rota vaccines were not introduced in Ethiopia at the time of the baseline survey and data was not collected on OPV2 and Penta2 for the baseline survey report.)

Table 9: CGPP Ethiopia vaccine coverage 2012 baseline compared to 2015 midterm evaluation

Vaccine	**Baseline 2012**	**Midterm Evaluation 2015**
OPV0	17.8%	23.2%
OPV1	41.1%	62.2%
OPV2	n.a.	60.5%
OPV3	35.2%	60.1%
Penta1	39.8%	62.2%
Penta2	-	61.0%
Penta3	37.2%	60.5%
PCV1	-	59.3%
PCV2	-	58.1%
PCV3	-	57.9%
Rota1	-	49.2%
Rota2	-	45.5%
BCG	39.5%	54.4%
Measles	30.3%	60.0%
Fully Immunized	**24.7%**	**47%**

Most notably, every vaccine had improved coverage from those assessed at the 2012 baseline to the 2015 MTE, showing a profound impact on some of the highest risk districts in Ethiopia. The greatest impact from 2012 to 2015 was seen in the improvement of OPV3 coverage from 35.2% to 60.1%, in Penta3 coverage from 37.2% to 60.5%, and in measles coverage from 30.3% in 2012 to 60% in 2015. The fully immunized coverage rate also improved dramatically from 24.7 to 47%. It is important, however, to recognize that this still leaves more than half of the community susceptible to life-threatening and preventable disease. While this data shows that CGPP involvement has affected a tremendous improvement, coverage rates still fall short from what is needed to appropriately protect the population.

A closer look at OPV3 coverage shows a clear disparity between districts as well as the need for improved coverage in several CGPP areas.



Source: 2013 and 2014 MOH Ethiopia administrative data and 2015 CGPP Ethiopia Household Survey

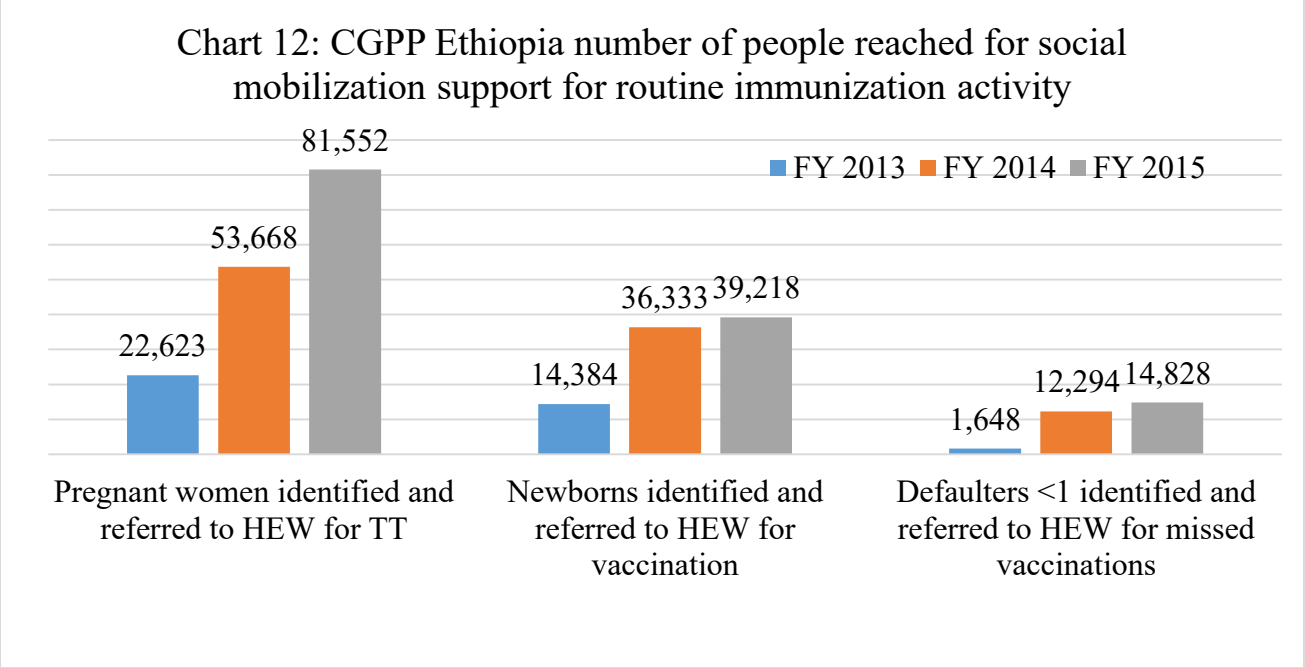
One of the challenges to improving routine immunization in the Ethiopian context was the large migratory population. The pastoralist and semi-pastoralist populations "follow the water" with their animal herds and do not have fixed living locations. There are some repeated, and somewhat predictable, historic migratory patterns during normal climate conditions. Drought, famine, and other environment influences, however, can significantly influence the movement of many pastoralist communities and drastically effect the total population in a given district.

Despite these substantial challenges to polio eradication and healthcare in general, CGPP continued to extend great effort towards these communities. CGPP reported that Ethiopia has not had an endemic polio case in the country for more than a decade however they have needed to respond to imported cases and subsequent outbreaks. The last outbreak occurred in 2013-14 due to importation from Somalia, where the virus was still endemic. While Ethiopia has achieved polio-free status, it remains at risk of re-introduction and outbreak if polio exists anywhere. The threat to Ethiopia is very high due to the proximity of countries with even lower routine immunization rates as well as an enormous pastoralist population in the region and fluid borders with Kenya, Somalia, Eritrea, Sudan, and South Sudan.

As a means to buffer the threat of importation, the efforts of CGPP Ethiopia are targeted toward the border regions of the country. Both the government and the CSO partners have commented that CORE Group has been critical in "mobilizing the community" and raising awareness through health education in these areas.

Objective 3: Support supplemental polio immunization activities

In addition to bolstering routine immunization, CGPP also supports supplemental polio immunization activities (SIAs) through microplanning, coordination of agencies before and during immunization campaigns, HEW and CV involvement, per diem payment assistance, and transportation. Other key components of supporting SIAs are raising awareness and social mobilization.



(Data source: CGPP Ethiopia 2015 project reports)

Simply increasing the health-related dialogue about polio within a community can increase vaccination uptake and efficiency of an SIA. In the 2015 Cluster Survey, an outstanding 95.1% had heard about polio, and 58.4% of respondents identified correctly that an infant should receive the first dose of polio vaccine within two weeks after birth. While this does reflect a positive impact of CGPP health awareness raising and community education, there are disparities between some of the high risk districts that must be addressed.

Additionally, on questions asking what happens if the child receives many doses of polio vaccine, 84.2% said the child will be more protected. On the quality of vaccination service about 73.3% rated the service as 'good' and another 9.9% rated the service as 'excellent.'

On the question of what motivates mothers/caretakers to take children for vaccination, the answers cited were that vaccination prevents disease 64.5%; is important, 56%; and, keeps my child healthy,46.1%. This improving knowledge base sensitizes the population to polio and creates an environment in the community open to SIAs.

Objective 4: Support efforts to strengthen AFP surveillance

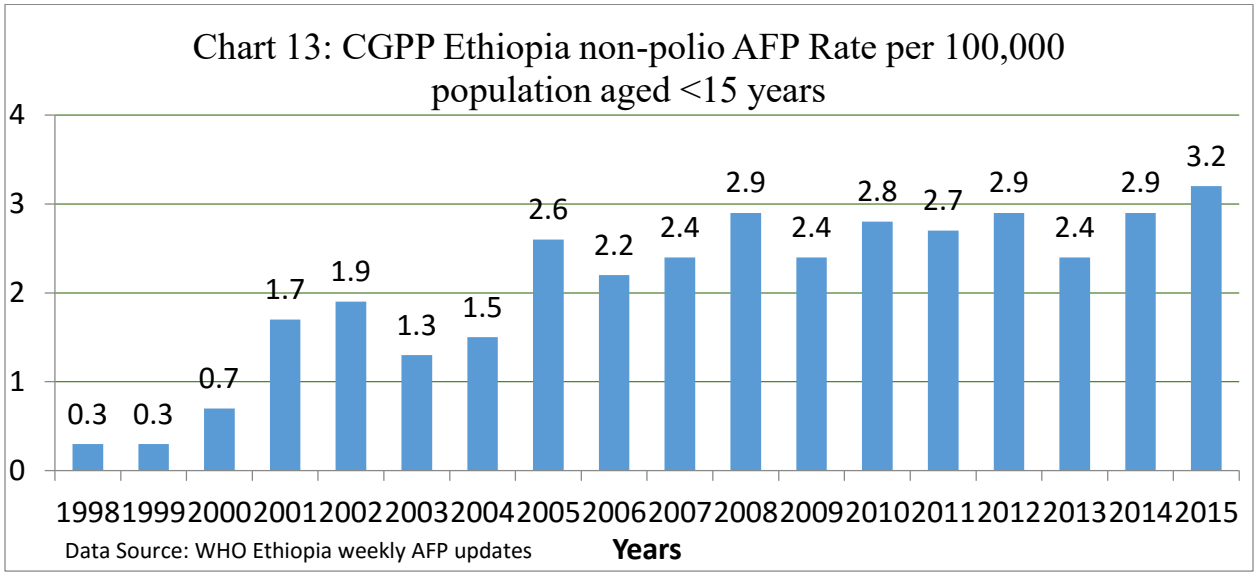
One important initial step in improving acute flaccid paralysis (AFP) surveillance is the knowledge in the community to accurately identify these symptoms as related to potential polio infection. Knowledge, attitude and practice, as assessed in the 2015 cluster survey, showed appreciable improvement in awareness of AFP though there was a downward trend in being able to accurately describe the symptoms of AFP.

Table 10: CGPP Ethiopia Knowledge related to AFP

Cluster Survey questions	2012 Baseline Responses	2015 Survey Responses
Ever heard of AFP?	58.2%	71.6%
Correctly identified signs of AFP: child stops walking/crawling	57.4%	52.5%
Correctly identified signs of AFP: limp limbs	39.2%	29.3%

This knowledge base provides the foundation upon which AFP surveillance can be built. CGPP includes AFP identification in the training of HEWs and supports community health education on the topic in all of its districts, including in the hard to reach areas.

In addition to increased health education and AFP awareness, there has been a steady improvement with regard to appropriate rates of non-polio acute flaccid paralysis (NP-AFP).

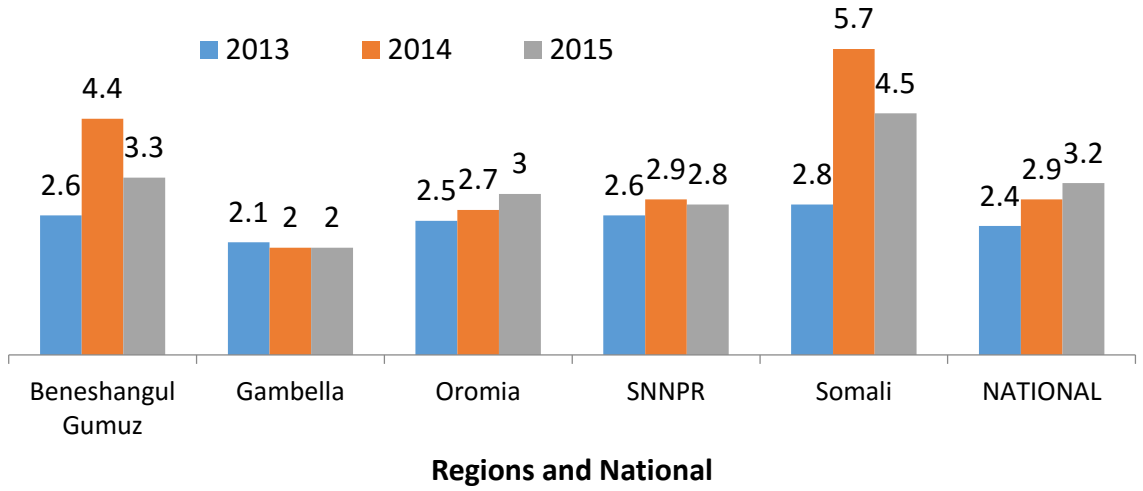


Identifying AFP that is not caused by polio but rather other conditions that are expected to occur naturally in the population is an indicator that the surveillance system is functioning appropriately. This requires that the AFP case was identified, local health system was notified, stool samples of

the suspected case were obtained, and laboratory diagnostics were adequately performed to determine if polio was present.

In CGPP districts, there was a higher rate of AFP identified showing that the chain from identification, health system awareness, and laboratory protocol is highly functional. Still disparities between the districts exist that need to be addressed.

Chart 14: CGPP Ethiopia non-polio AFP rates 2013, 2014 and 2015 in CGPP regions



Data Source : WHO Ethiopia weekly polio updates

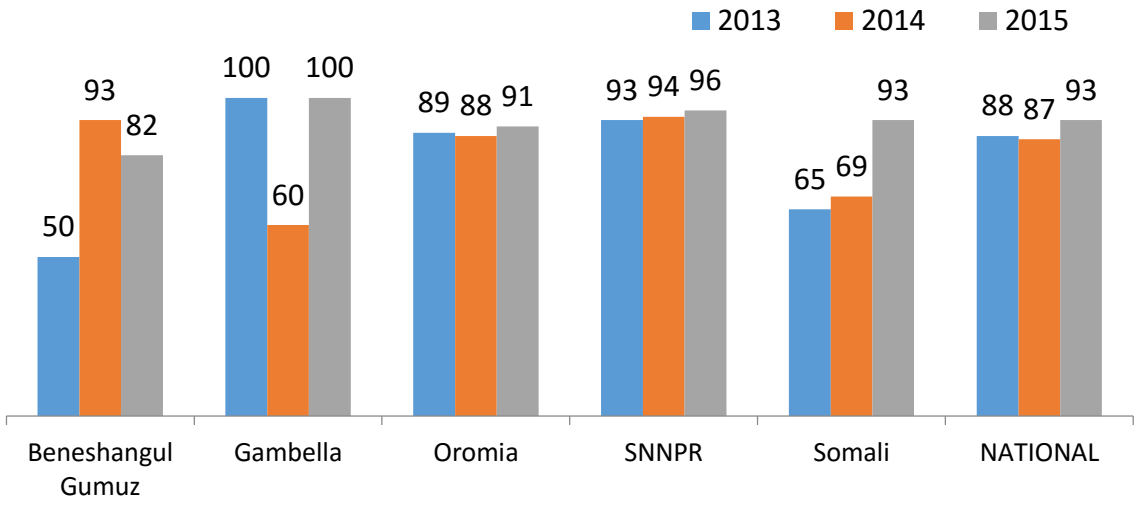
Stool adequacy used to determine if a suspected case was NP-AFP or WPV has also shown a positive trend, with the best adequacy achieved in 2015.

Table 11: CGPP Ethiopia laboratory stool adequacy for AFP stool samples 2007-2015

Year	Stool adequacy (%)
2007	87
2008	82
2009	82
2010	85
2011	88
2012	89
2013	87
2014	87
2015	93

Specifically in CGPP districts, there have been high stool adequacy results, with the exception of Beneshangul Gumuz which falls the furthest below the national rate (82% vs. 93% National).

Chart 15: CGPP Ethiopia stool adequacy (%) of AFP 2013, 2014 and 2015 in CGPP Regions



Data Source : WHO Ethiopia weekly polio updates

Objective 5: Support timely documentation and use of information

There have been several efforts to bolster and improve documentation and use of information by the CGPP Ethiopia partners. First, regular evaluations and tracking that continuously happens throughout the year and the regular updates that CGPP provides to the National Ministry of Health and global partners continues to be exemplary. Second, CGPP has supported efforts to improve documentation at the administrative level as well as at the community level. One example is the improved vaccination card retention rate.

Vaccination card retention is a preferred indicator of evidence of vaccination over verbal recall. Parents/caretakers that keep the vaccination card can provide a more reliable record of immunization with eliminated recall bias, thus CGPP partners have emphasized that the parents/caretakers keep the card. There has been a notable positive trend in card retention in CGPP districts as seen below.

Table 12: CGPP Ethiopia district vaccination card retention 2012 and 2015

Vaccination Card Retention	2012 Baseline	2015 Midterm Evaluation
Card seen by data collectors of mothers who retained the card	65.1%	70.5%

Additionally, to support information sharing and usage, the CGPP secretariat presented its research findings to the international public health community at the 2015 American Public Health Association Annual Meeting in Chicago, Illinois. Two studies' findings were presented to add to the scientific body of polio eradication best practices. The first was entitled, "AFP Surveillance Status and Community Awareness of Polio in Pastoralist and Semi-pastoralist Communities of Ethiopia" by Kibrom Tesfaye. The study was an assessment of local-level AFP surveillance systems in hard-to-reach project areas revealing specific areas for follow-up and improvement. And the second study was entitled, "Assessment of child vaccination and knowledge of mothers on polio vaccination in CGPP implementation districts of Ethiopia" by Leggese Bezabih. This study focused on the results of a baseline assessment of new high-risk, hard-to-reach project areas highlighting routine immunization and campaign coverage and caretakers' knowledge, attitude, and practices related to polio and AFP surveillance. Not only did these presentations inform the global community of progress and implementation in the Ethiopian context but also shared a framework for success and highlights several best practices in public health that can be used in other communities around the globe.

Recommendations

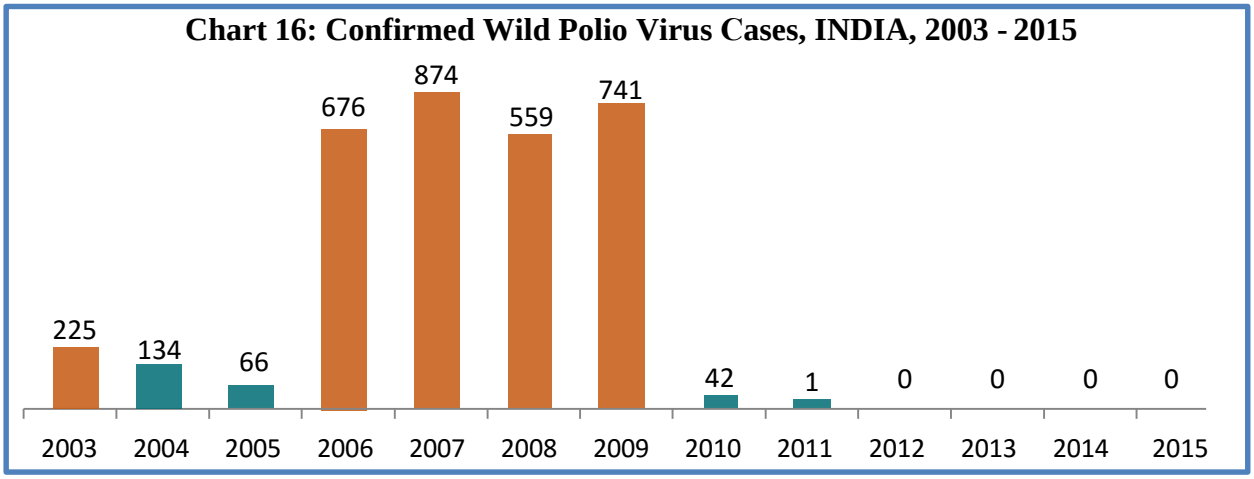
Based on the findings from the quantitative 2015 Cluster Survey and the qualitative interviews conducted for the MTE in August-September 2015, the following recommendations are made.

1. Improve recording and retention of vaccination cards and registration books. Finalize any material revisions by February 2016. Plan for HEW training (re-training) in March 2016 to bolster community education activities with regard to vaccination card recommendations throughout the year.
2. Increase focus on improving outcomes in the poorest performing regions (Somali and Gambella). Timely action needs to be taken in these two highest risk regions in a concerted effort involving national and local partners. Hold a CGPP microplanning meeting in February 2016 with partners working in Somali and Gambella to specifically schedule actions for the Health Extension Workers to do in the districts to improve polio health education. Ensure robust CGPP participation in every SIA scheduled for these districts.
3. In zones with poor performance (below 50%) coverage on the 3rd dose of the different antigens, coordinate with the Ethiopian MoH to assist with increased number of HEWs in those zones. Ensure that HEW training includes emphasis on routine immunization completion and re-training to ensure accurate messaging is reaching the community.
4. While the trend is improving, respondents' knowledge on polio birth dose vaccination is still low. Coordinate with the MoH to ensure that ante-natal health protocols include polio birth dose vaccination information. Design neck-worn lanyard laminated visual card to be worn by HEW during SIAs promoting birth dose polio vaccination by end of February 2016.

5. Unfortunately, the frequency of CV's visits to their catchment area is LOWER than at the baseline performance evaluation. This may be due to the introduction of the new approach implemented by the Ethiopian Government during the same time period. The new "health development army" (HDA) aims to increase the number of community health advocates at the local level. There is the potential that this new national program may have been running parallel with the CV's program, thus a closer look at the how the CV's engaged in the CGPP can continue to achieve the polio eradication aims while simultaneously maintaining alignment with HDA directives is needed. Increasing the number of CV's is also needed to improve CGPP outcomes.
6. A small sample size in Gambella was observed that led to difficulty in interpreting the results. In general, there is a need to increase the total sample size proportional to other regions for a detailed analysis.
7. Identify current gaps between and within regions for further studies.
8. Plan for the next evaluation. Ensure that CGPP Cluster Surveys and data entry platforms are standardized across countries, minimizing variation except where it is essential, to improve the ability to make cross-country statistical comparisons and streamline the evaluation process.

CGPP Ethiopia Secretariat staff during a traditional coffee ceremony, Addis Ababa, Ethiopia, August 2015; K. Vergara

Country Report: INDIA



Orange for any year with over 150 wild polio virus cases

Teal for any year with less than 150 wild polio cases

Source: WHO and CDC

Overview:

India has not had a wild polio case since 2011 and today serves as a model for global polio eradication. Challenging environments with lower socioeconomic profiles and high population density have been addressed with coordination, accountability and data-driven policies. These achievements are also closely linked to best-practice sharing. The CGPP Secretariat has created a culture of collaboration and intellectual generosity that is not very different than its meal-sharing values. The open-table nature of their data sharing has greatly benefited partners within India as well as in other CGPP countries. Repeatedly, CGPP partners reported that the greatest benefit of CGPP India has been their capacity building from the community level to the international level. As evident by the project's wide reaching impact, other health interventions aspire to replicate the infrastructure created by CGPP India's polio efforts through its high standards in data collection and analysis.

Young boys with permanent limb paralysis from polio virus, SEARO

Indian public health experts who served as former project staff are now building human capacity through their polio eradication efforts in other countries, such as Somalia and Kenya. Moreover, CGPP India functionaries also provide support as STOP members in Afghanistan, Nigeria, Uganda and South Sudan.

The 2015 MTE cluster survey showed an encouraging increase in full immunization coverage based on data from both the government-issued routine immunization card and the CGPP-developed routine immunization card. Full immunization was found to be about 72% in 2012 and steadily increased to almost 78% in 2015. Close attention is still needed, however, to bolster full immunization coverage and to close disparity gaps in coverage.

Methodology: In addition to the quantitative cluster survey conducted in each CGPP country, a total of six semi-structured qualitative interviews were conducted in individual and small focus group format. The interviews include perspectives from the following bodies:

CORE Group Polio Project – India, Secretariat

CORE Group Polio Project – Data Manager Manojkumar Chaudhary

WHO Southeast Asian Regional Office (11 countries)

ADRA

PCI

Catholic Relief Services

In order to monitor and assess performance, a Mid-Term Evaluation (MTE) survey was completed in 2015 and then compared to the 2012 and 2010 survey findings. This was a continuation of CGPP's commitment to on-going timely evaluation and monitoring. The quantitative data from the cluster study and the qualitative data from the in-person interviews were analyzed and combined in a mixed methods approach below to illustrate CGPP's involvement in polio eradication in India.

Socio-demographic Characteristics (2010, 2012, 2015)

In CGPP India, all evaluations were conducted by external agencies. A total of 603 women (mothers of a child between 12-23 months old) were interviewed for the 2010 study. A total of 600 mothers were interviewed in 2012 and 702 mothers were interviewed for the 2015 evaluation. Overall an increasing pattern of literacy status was observed in these successive studies. In 2010, only 35 % of respondents had ever attended school, which increased to 41 % in 2012 and to near 52 % by 2015. The percentage of women who have received higher education (Graduation, Post Gradation, Diploma) was found to be lower and slightly decreasing (16% in 2010, 8% in 2012 and 9.5% in 2015.) Religious distribution for the respondents across all three studies were: mostly Muslim, 60 to 70%, and Hindu, 30 to 40%. In all three studies, not more than one tenth of the households surveyed had mothers working outside the home.

Sociodemographic Characteristics Specific to the Midterm Evaluation 2015

A total of 60 Primary Sampling Units (PSUs) were covered. Total PSUs selected from urban areas were around 42 % (n=25), while remaining 58 % (n=35) were the rural PSUs. Approximately 44% of respondents fall in the age group of 18-25 years old followed by around 38% in the age group 26-30 years old.

More than half of the respondents were illiterate. Around 16 % of the respondents received education up to the fifth grade. The majority of the respondents (96.8%) preferred to converse in Hindi in their day-to-day life. Specifically for the MTE, 73% of respondents were Muslim and around 26% were Hindus. Regarding working status of the respondents, only a small percentage (9%) reported that they go out of the home to work for money. The majority of the respondents mentioned that their children were being taken care of by their 'mothers-in-law' (55.5%) followed by 'other family members' (such as sisters and sisters-in-law) (34.2%) and/or 'elder children of the family' (21.5%).

With regard to hygiene, the availability of soap and water was recorded in more than half of the households, though it was only observed in those households where a toilet was available. It was notable that in a substantial percentage (around 22%) of households, neither water nor soap was available. While these outcomes are not meant to directly correlate to polio vaccine coverage, they aid CGPP partners in recognizing the other challenges in the daily life of their beneficiaries.

Table 13: 2015 CGPP India Implementing Partners

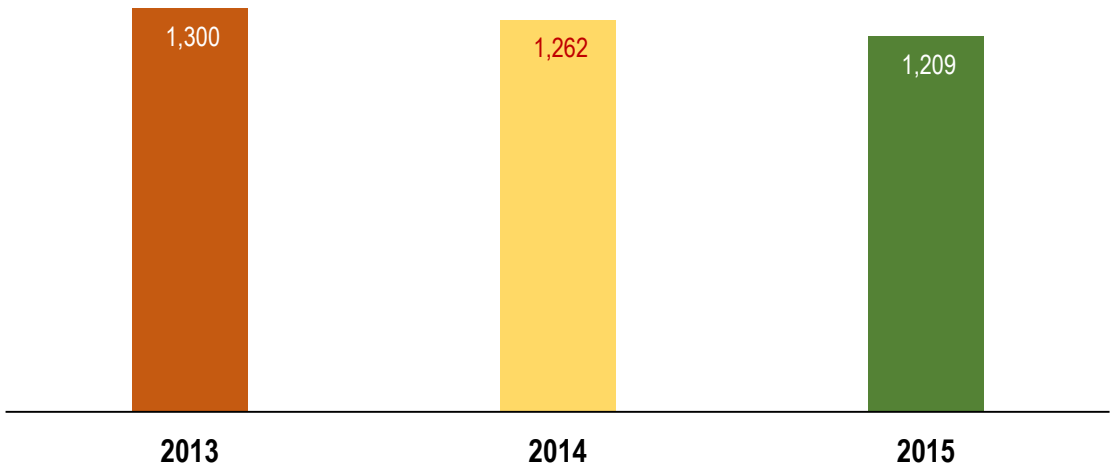
CGPP Partners	Regional State(s)	District(s)	No.<5 children 2012	No.<5 children 2015	No. CVs 2012	No. CVs 2015
Innovative Approaches for Social Development Society	UP, India	Baghpat	48,185	44,943	120	110
ADRA	UP, India	Bareilly	34,117	25,046	100	85
Malik Social Welfare Society, Rampur	UP, India	Rampur	25,913	22,582	85	80
Gorakhpur Environmental Action Group	UP, India	Mau	31,010	23,783	80	66
Meerut Seva Samaj	UP, India	Saharanpur	32,400	23,721	91	66
Sarathi Development Foundation	UP, India	Shahjahanpur	46,596	34,784	105	87
Holy Cross Welfare Trust & Sarathi Development Foundation	UP, India	Sitapur	46,031	36,807	126	106
Society for All Round Development	UP, India	Meerut	38,654	33,162	106	93
Adarsh Sewa Samiti	UP, India	Moradabad	99,142	47,499	340	160
PCI & Jan Kalyan Samiti	UP, India	Muzaffarnagar	80,944	64,831	192	154
Mahila Jagriti Sewa Samiti	UP, India	Sambhal*	--	58,607	--	162
Jan Kalyan Samiti	UP, India	Shamli**	--	14,081	--	40
TOTAL	UP, India	All 12 districts	482,992	429,846	1,345	1,209

* Sambhal – New district in FY13, separated from Moradabad
** Shamli – New district in FY13, separated from Muzaffarnagar

Objective 1: Build effective partnerships between agencies

In order to accomplish the national polio eradication goals, coordination of international, national, and community-level partnerships must be continually supported. The partnership established with the community is a vital aspect to the success of polio eradication.

Chart 17: CGPP India Number of community volunteers 2013-2015



In 2010, less than one third of the respondents could recall the home visit of a CMC (Community Mobilization Coordinator). In 2015, more than 75% of the respondents reported that a CMC had visited their home in the last three months. This is an important and positive result of several factors: partnerships between national and local civil society organizations, increased health education for the community, increased visibility of CMCs, increased reach to a greater proportion of the community, and increased dialogue about polio. Another important factor related to an increase in recall of CMC visits was based on more inter-round house based activities (IPC) of CMCS for issues other than polio, ie, RI, diarrhea, sanitation, breast feeding, etc.
This is also a critical step to augmenting health behaviors, increasing polio immunization acceptance, creating increased demand for vaccine, and ultimately increasing polio immunization coverage.

A highly visible celebration of the partnership with the community and CGPP is visible in Uttar Pradesh, one of the most densely populated states in all of India. When community mobilization efforts interrupted wild polio virus transmission and increased polio vaccine coverage, the community celebrated with the construction of an archway commemorating and celebrating the historic achievement.

The systematic health education and social mobilization efforts were made by CGPP India and partnerships with ADRA, PCI and Catholic Relief Services. Having community buy-in and accurate knowledge of the benefits and nature of OPV creates the social environment for sustained partnership with communities.

Polio Gate constructed in Uttar Pradesh, India 2014; CGPP India Secretariat

Empowerment and bank accounts

Much of the work that occurs in the community with regard to polio vaccine coverage happens by and among women. Recognizing the critical role that women play in reaching unvaccinated children, CGPP recruited and paid female community health workers at the very beginning of the project. However, many women only had the option of storing their earnings at home, often in insecure environments. CGPP India responded to this need by opening 1500 bank accounts for their female community health workers to safely deposit their earnings. This simple act was a step toward empowering women to be able to make independent financial decisions. It also fostered greater transparency and accountability at the state and district level. These actions align with CGPP objectives through building community capacity and trust and further serve to strengthen vital partnerships.

Objective 2: Strengthen routine immunization systems

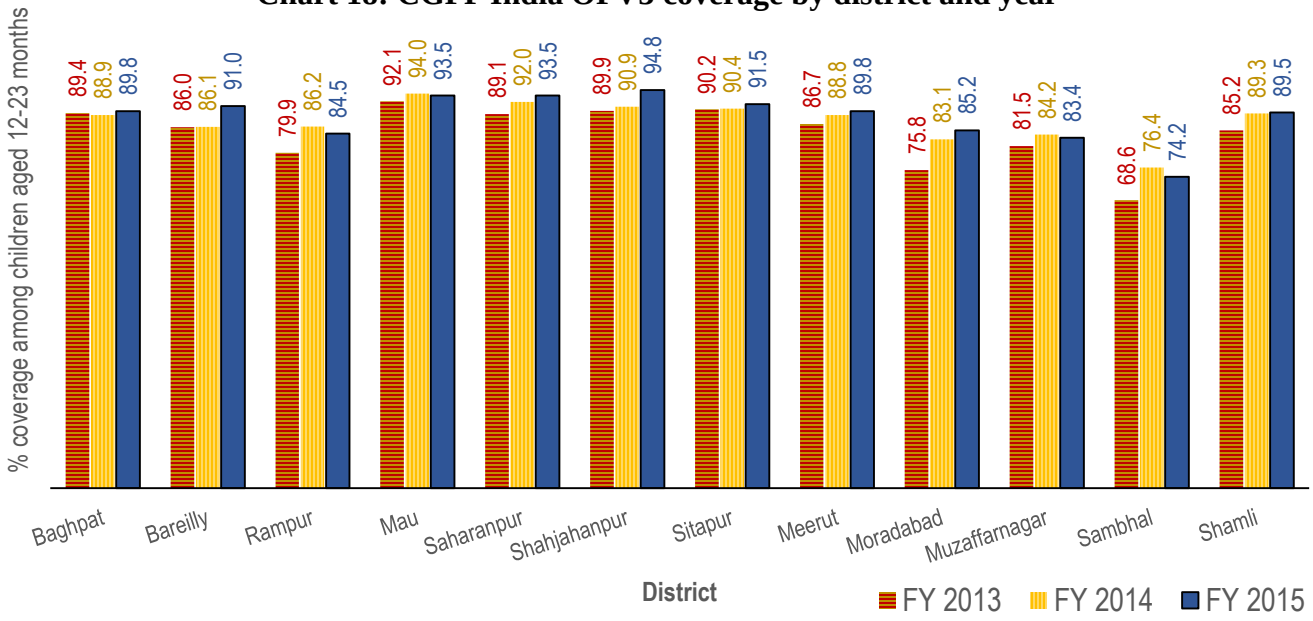
Overall, routine immunization coverage is high and has shown improvement across all vaccines since 2012. All individual vaccine coverage rates are over 80%, and the fully immunized rate is 77.5%.

Table 14: CGPP India vaccine coverage 2012 baseline compared to 2015 midterm evaluation

Vaccine	**Baseline 2012** (As per RI cards: n=489)	**Midterm Evaluation 2015** (As per RI cards: n=627)
OPV0	64.2%	81.7%
OPV1	91.2%	95.5%
OPV2	87.2%	92.3%
OPV3	82.6%	87.9%
DPT1	94.1%	96.0%
DPT2	91.2%	92.7%
DTP3	85.9%	87.7%
BCG	97.3%	97.1%
Measles	79.6%	81.0%
Fully Immunized	**72%**	**77.5%**

Disparities in OPV3 coverage were identified through the use of project administrative data collected in the form of monthly progress reports. Sambhal reported 74% OPV3 coverage versus Shahjahanpur that recorded nearly 95% coverage. Closing the coverage disparity is needed to better protect all districts. In general, trends on improving coverage exist, except in Sambhal, Muzaffamagar, Mau and Rampur districts.

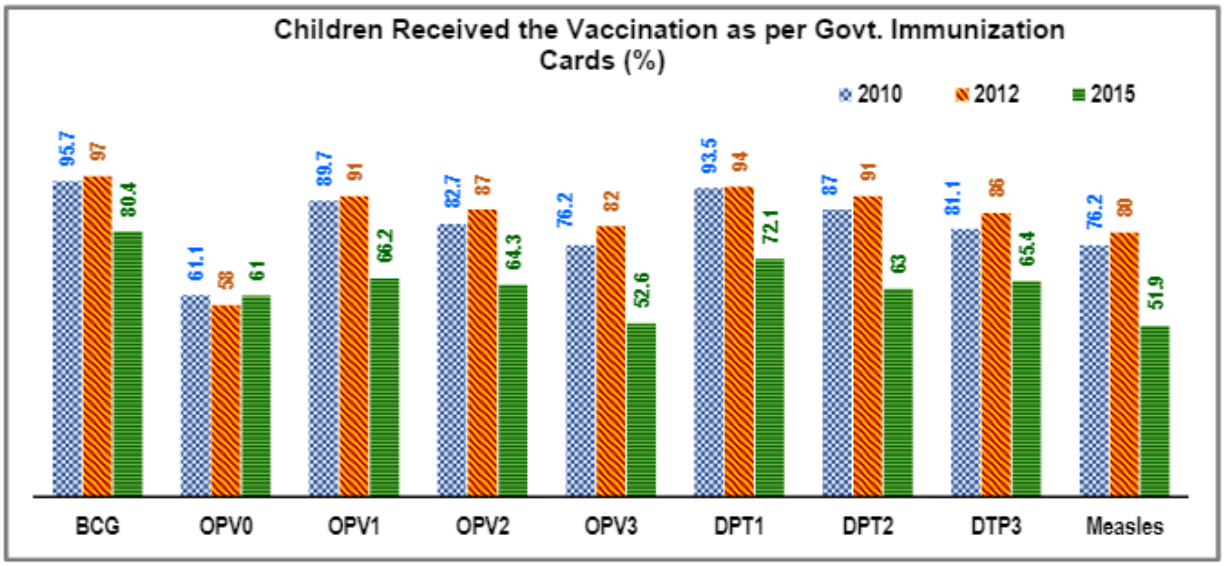
Chart 18: CGPP India OPV3 coverage by district and year



Source: Monthly progress reports from CGPP India

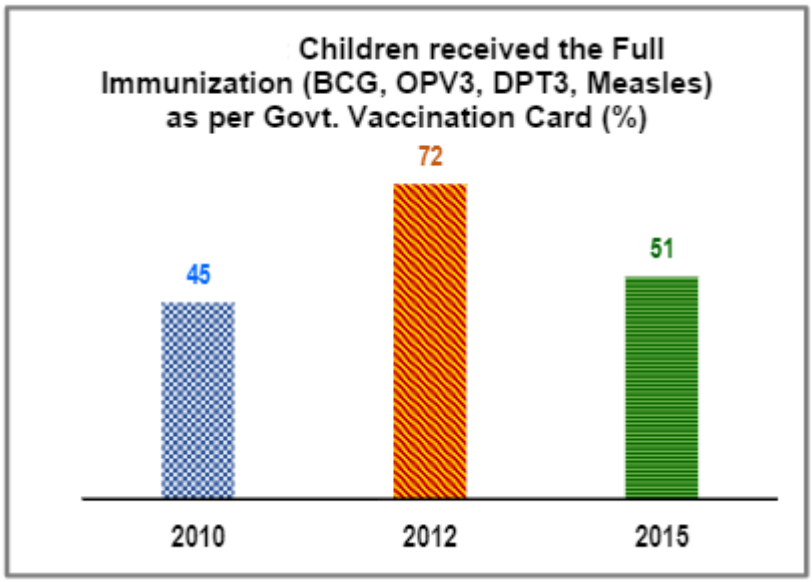
If coverage rate was determined solely by data collected from the government-issued RI card, then a decrease in full immunization coverage is evident in the 2015 MTE cluster survey. According to the government RI card, full immunization was approximately 45% in 2010, which increased to 72% in 2012, and then decreased to 51% in 2015. Furthermore, only 25.5 percent of mothers could show the government RI cards in 2015, compared to 31 percent in 2010. In response to this noteworthy declining trend, CGPP India introduced a popular "congratulatory card," or Badhaii Patra, after the birth of a baby. The card has been used by vaccinators as RI cards, particularly in areas that are impacted by a shortage of government-issued RI cards.

Chart 19: CGPP India routine immunization coverage by government RI card



Source: CGPP India MTE Report 2015

Chart 20: CGPP India children received full immunization as per government RI card



From the 2010 MTE to the 2015 MTE, the percentage of mothers having and showing at least one type of card increased from 55 percent to 89 percent.

When the Badhaai Patra was included for all other vaccinations, the coverage rates were found to be satisfactory (i.e. above 80 %) across vaccines. Highest coverage was observed for BCG vaccine at 98 % and followed by OPV0 at 97.1%. The combined coverage of OPV 3 and DPT-3 was about 89% and Measles coverage was found to be 82%. Assessing Routine Immunization coverage by using the 'recall method', BCG and OPV0 coverage was 98% in 2015. This has, however, traditionally been a less reliable indicator.

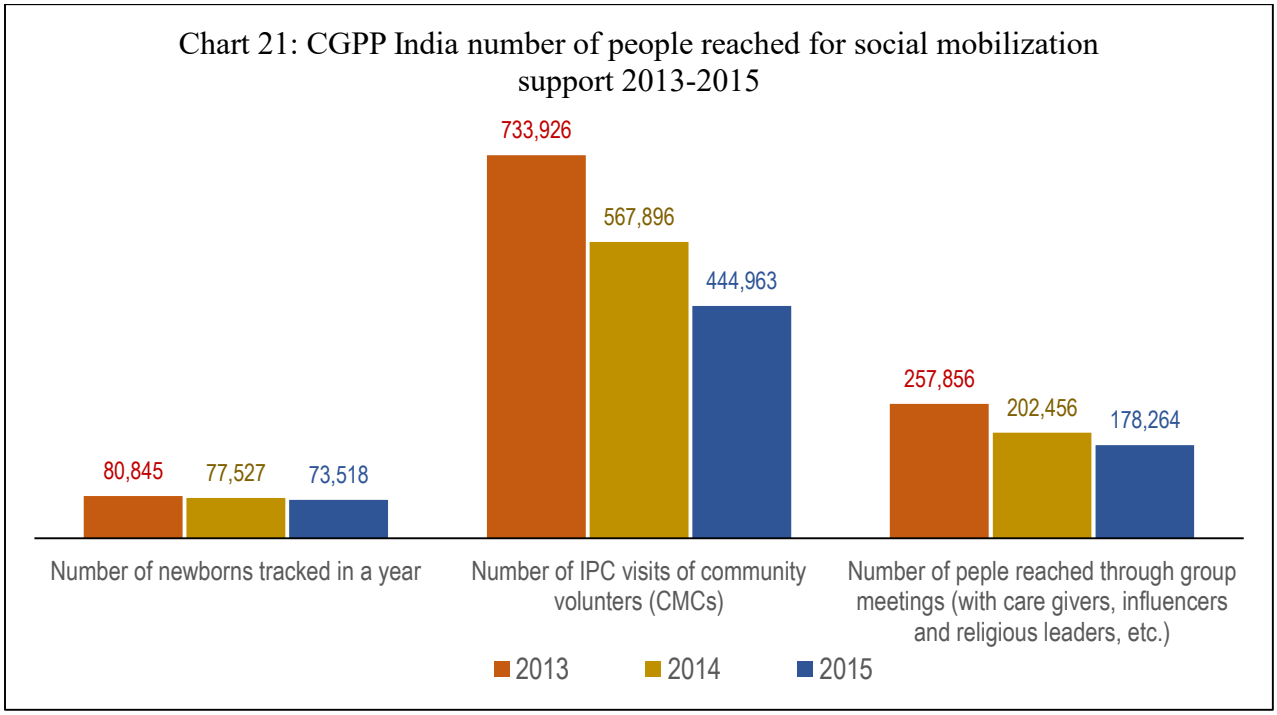
Community Mobilization Coordinator speaking with mother, CGPP India; Rina Dey

Questions regarding accessibility on the MTE revealed that almost all of the respondents (97.5%) could reach the immunization site within 30 minutes by walking and the same percentage of respondents mentioned that they were satisfied with the services of Routine Immunization in their area.

Knowledge surrounding polio and immunizations in general was strong. Around three fourths of respondents stated that they were motivated to immunize their child because it prevents disease. Regarding the reasons for not immunizing their child, 10.6% of the respondents mentioned that their child was not well at the time of immunization followed by their child was away or not at home. Few respondents mentioned that they were not aware of the need of the immunization for their child.

Objective 3: Support supplemental polio immunization activities

Simply increasing the health-related dialogue about polio within a community can increase vaccination uptake and efficiency of an SIA. Social mobilization is a key pillar in CGPP India's community involvement.



Source: Monthly progress reports from CGPP India.

Community Mobilization Coordinators: Contacts and Services

Nearly 68% of respondents could recall that a health volunteer had visited their house in the previous month and more than 75% of respondents mentioned that a CMC had visited their house in the last three months. This shows that CGPP CMC's are an active and familiar part of the community. Despite several IEC materials provided to the CMCs by CORE, the majority of the respondents (40.2%) could recall 'Badhaai Patra' or congratulatory card over other materials. And interestingly, 91% of the respondents said that they learned relevant health information from the CMCs during a home visit.

The "mothers' meetings" organized by the local CMCs are meant to improve health education in the community specific to polio immunization as well as other health recommendations. The majority of respondents (80.5%) mentioned that they learned about 'cleanliness' followed by 'immunization' (74.0%) and 'polio' (72.1%) during the mothers' meetings. About 47% of respondents mentioned that they learned about the use and importance of oral rehydration solution, followed by 'hand washing' (44.2%).

Information about Polio Dosage and Polio Rounds

There was a notable difference in the knowledge level of respondents about polio birth dose from 2010 to 2015. Approximately 77% of respondents were aware of the polio '0' dose in 2010, while only 64% knew of it in 2012 and around 65 % in 2015. In 2010 around one fifth of the respondents had mentioned the correct dates of polio rounds, which dropped to almost one tenth in 2012. The most recent 2015 study showed a marginal improvement with one out of every seven respondents. This discrepancy may reflect recall bias due to the difficulty of citing exact dates when the recall period is more than two or three months.

On a positive note, nearly all the respondents mentioned that their child had received a polio vaccine at least once. Incremental progress also has been observed over the successive years in the number of households visited by vaccinators; about 80% of households were visited by vaccinators during the polio rounds in 2010 with the rate increasing to a 90 % in 2012 and 91% in 2015. Additionally, the proportion of respondents who visited polio booths during the latest polio round in 2015 has doubled from that in 2010. This key indicator reflects the awareness and motivation by caregivers and the community to actively seek immunization as opposed to waiting for house visits from vaccinators.

Polio Vaccinations on the Move

The goal during a supplemental polio immunization campaign is to vaccinate all children under five years old in just five days. In India, that equates to vaccinating 170 million children in a very short period of time. (WHO, Technical Advisor to the National Polio Surveillance Program, August 2015) Recognizing that they would not reach all the children at home or at school, government vaccinators equipped with OPV joined bus riders to reach children that were in transit during a polio campaign.

Photo courtesy of WHO NPSP India

Other favorable trends were noted with regard to attitudes and beliefs surrounding the polio vaccine. Over the last five years, misconceptions of polio have reduced substantially. In the last survey, the majority of respondent mentioned that repeated dosage of polio vaccine would protect the child. However, it is important to note that a small percentage did respond that repeated dosage of polio vaccine may harm the child. Even a small percentage of respondents with misinformation can threaten a community vaccination coverage rate so health education must continue. As high as around 91% of respondents mentioned that their households were visited by the vaccinators during the latest polio round and the majority of the respondents 63.5 percent, mentioned that CMCs had informed them about the most recent polio round. One of the most encouraging measures of the last survey was that 89% of respondents had received polio drops during every polio round.

The work of the CMCs in the community is the cornerstone of the success of all supplemental polio immunization activities. This improving knowledge base sensitizes the population to polio and creates an environment in the community open to SIAs.

Objective 4: Support efforts to strengthen AFP surveillance

> "They (CGPP are there in the **WORST** areas, and that is where we need the **BEST** surveillance" (interview with Dr. Sunil Bahl, Technical Advisor to the National Polio Surveillance Program, WHO Southeast Asian Regional Office, Delhi, India, September 2015)

Across all three surveys, more than 60% of respondents had heard of Acute Flaccid Paralysis (AFP). Information on correctly identifying the signs of AFP is present among the respondents who ever heard of AFP.

Table 15: CGPP India cluster survey questions related to AFP

CGPP India: Cluster Survey questions	**2012 Baseline Responses**	**2015 Survey Responses**
Ever heard of AFP?	77%	68%
Correctly identified signs of AFP: child stops walking/crawling	76%	67%
Correctly identified signs of AFP: limp limbs	62%	88%

As many as 98% of the respondents mentioned that they would contact a hospital if they noticed AFP, indicating a strong knowledge base of AFP in the community. Health education efforts can, however, be made to raise awareness. While the healthcare community has clear action plans in place for when an AFP case is identified, the community members are at the front-line of surveillance. Increased awareness and accurate knowledge in the community precede healthcare system action.

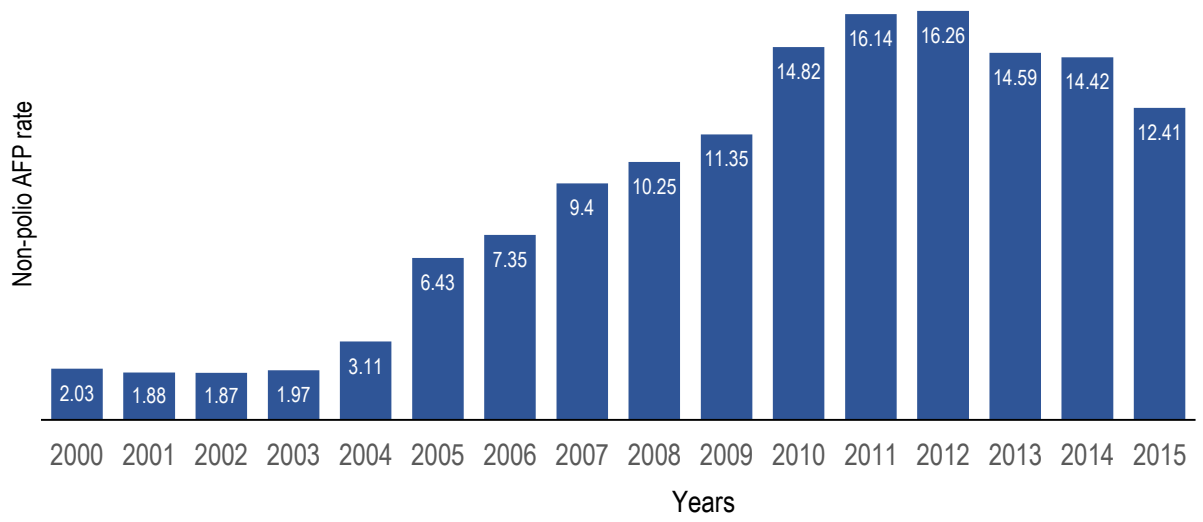
In addition to increased health education and AFP awareness, there has been a steady improvement with regard to appropriate rates of non-polio acute flaccid paralysis (NP-AFP).

Identifying cases that are non-AFP indicates a robust surveillance system. This requires that the AFP case was identified, local health system was notified, stool samples of the suspected case were collected, and laboratory diagnostics were adequately performed to determine if polio was present.

In CGPP districts, there was a higher rate of AFP identified showing that the chain from identification, health system awareness, and laboratory protocol is highly functional. Still disparities between the districts exist that need to be addressed.

Stool adequacy used to determine if a suspected case was NP-AFP or WPV has also increased since 2000, but has begun a noticeable decline since 2012.

Chart 22: CGPP India non-polio AFP Rate per 100,000 pop. aged <15 years



Source: WHO

Stool adequacy rates for AFP stool samples in India remain high and have not shown great variation in adequacy since 2007. Still, improvement can be made in this area specifically targeted at the laboratory and procedural protocols for stool samples.

Table 16: India laboratory stool adequacy for AFP stool samples 2007-2015

Year	Stool adequacy (%)
2007	84
2008	84
2009	83
2010	83
2011	84
2012	87
2013	90
2014	87
2015	88

(Data source: https://extranet.who.int)

Objective 5: Support timely documentation and use of information

CGPP India has bolstered its efforts to improve documentation and use of information by providing strong regular evaluations and tracking to the National Ministry of Health and to global partners. Additionally, CGPP has supported efforts to improve documentation at both the administrative and community levels (ie. improved vaccination card retention rate.)

Vaccination card retention is a preferred indicator of evidence of vaccination in comparison to verbal recall. Parents/caretakers that keep the vaccination card can provide a more reliable record of immunization with eliminated recall bias. CGPP partners have thus emphasized that the parents/caretakers keep the card in their possession. About two thirds of respondents failed to show the government immunization cards during the 2010 and 2015 studies.

CGPP India responded to the low routine immunization card retention rate by developing a "Congratulatory card" or Badhaai Patra, that was given to recognize the birth of a new baby. The Badhaai Patra looked less like a government record-keeping document, and more like a celebration of the infant. The new card contains all of the immunization information that the government card had but it was more mother-friendly, more decorative, and aimed to be a memento of the birth so the mother would be more inclined to keep it. As seen below, this innovative and community-focused immunization card improved immunization record retention and was clearly preferred by mothers and vaccinators as well.

Table 17: GPP India district vaccination card OR congratulatory card (Badhaai Patra provided by CGPP India) retention

Vaccination Card Retention	2012 Baseline	2015 Midterm Evaluation
Card seen by data collectors of mothers who retained the card	83%	89%*

* Percent mothers shown either government RI cards or congratulatory card provided by CGPP India

This action by CGPP India to develop the new card directly advanced the CGPP objective of supporting documentation and use of information.

Additionally, to support information sharing and usage, the CGPP secretariat presented their research findings to the international public health community at the 2015 American Public Health Association Annual Meeting in Chicago, Illinois. The study entitled, "The Valuable Role of Children in Community Mobilization for Polio Eradication" was authored and presented by CGPP Secretariat Director Dr. Roma Solomon and Rina Dey. The authors concluded that the use

of simple and accurate messages coupled with creative interventions (in-school education, children's brigades) can lead to the effective involvement of children, teachers, and their communities in social mobilization activities. These findings were presented to add to the scientific body of polio eradication best practices and help inform other interventions in India and abroad.

Photo: CORE Group India Secretariat staff, Delhi, India September 2015; K. Vergara

Overall CGPP India Recommendations

Based on the findings from the quantitative 2015 Cluster Survey and the qualitative interviews conducted for the MTE in August-September 2015, the following recommendations are made for CGPP India.

1. Approximately 23% of respondents suggested that vaccination sites should be located at more approachable places so that it would be easier for the mothers to reach the site with their child. Efforts should be made to conduct the immunization rounds at the village level

institutions i.e. AWCs or in school buildings. Also, such centres/institutions could be branded as the Immunization Centre/Polio Services Centres.

2. Bolster CMC health education activities to improve knowledge of polio doses, timing of administration and importance, particularly about zero polio dose.

3. While polio vaccine coverage is high during campaigns, improved capture of missed children is needed. Review procedures to track missed children and how CMCs from different villages can communicate over mobile phones to cover children in transit.

4. Incorporate increased use of the government provided routine immunization card during CMC health education activities. Additionally, share the increased retention rate of the Badhaai Patra compared to the government issued RI with the NMoH. Suggest altering the government card to improve retention rates overall.

5. Support other health improvement activities during CMC visits and health education forums. Immense inter-sectoral convergence is required to promote the use of household toilets. The CMCs should be in touch with the PRI's, BDO's and Rural Development officials to promote and connect the communities to those officials, who can facilitate toilet construction.

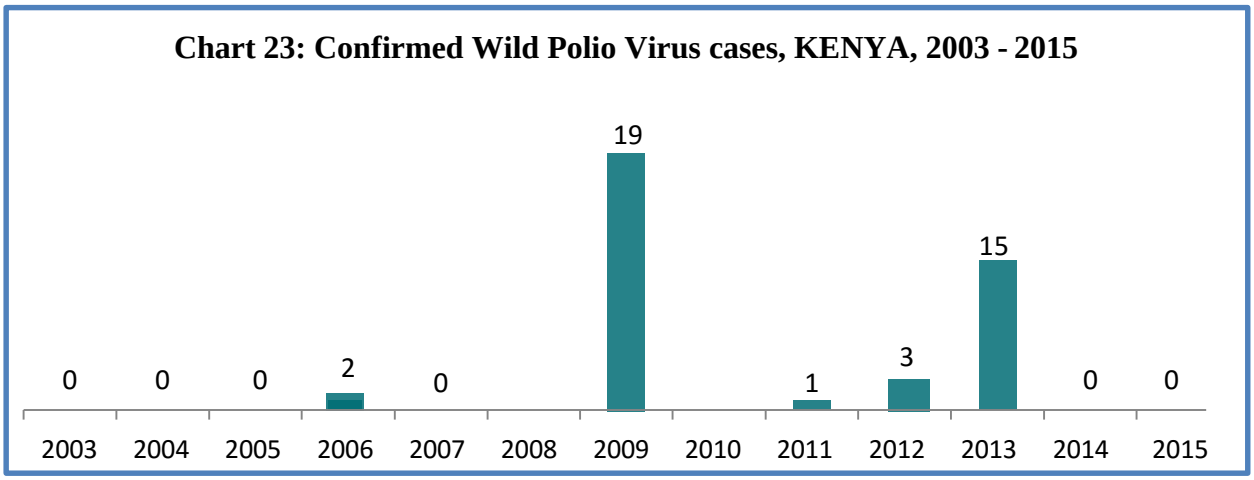
6. Improve continuing education and training for CMCs with specific focus on
   - Effective use of IEC materials available locally i.e. Routine Immunization Cards and other IEC materials.
   - How to communicate with other stakeholders i.e. health personnel, BDOs, PRIs, Rural Development personnel, CDPOs etc.
   - How to explore local opportunities and resources for improving RI, ORS, sanitation and toilet construction.

7. Develop a self-evaluation tool for the CMCs to incorporate in continuing education training, and share the tool with other CGPP sites internationally.

8. Improve efforts to make Home Visits and Mothers' Meetings activities interesting and effective by encouraging sharing of local success and failure stories, anecdotes and awarding, local champions etc.

Photo courtesy Rod Curtis, Unicef.

Country Report: KENYA



Source: WHO and CDC.

Overview:

CGPP Horn of Africa (HoA) started operation in Nairobi, Kenya in 2014 with the aim of coordinating efforts to address polio eradication in the region. While the polio campaign coverage in Kenya is high at 95%, routine immunization remains low at under 60% as determined by vaccination card verification during this survey.

Movement across borders is high, with almost half of the people surveyed having traveled across borders. The border regions have sub-optimal immunization coverage as evidenced by past polio outbreaks in these areas. Hence it is important to ensure improved polio mass vaccination as well as routine immunization for border populations to prevent cross border importation.

Both knowledge and vaccination coverage indicators for these regions are not currently adequate and highlight the need for a balanced intervention between health service provision as well as community behavior change.

While the last case of endemic wild polio in Kenya was in 1984, the country is under threat of importation from countries that have experienced more recent outbreaks. The last importation case was in 2013 from Somalia. The focus of the CGPP HoA activities are in the high risk border counties and in the city of Nairobi, which is considered an international point of entry as well.

Kenya has a well-established infrastructure with good roads and a bustling economy. The health care system is established and is moving toward a more reliable data sharing systems using SMS between the sub-county, county, regional and national levels. Currently, health data is aggregated at the county and regional level and entered into a central electronic database.

In discussing data with CGPP partners in Kenya, it was clear that the most reliable assessment of vaccine coverage is the independent monitoring data that occurs after a campaign. Otherwise,

the estimates of coverage rates were based on dated census data that has questionable reliability. The population in the Horn of Africa is highly mobile and fluid across international borders and can change within a given area exponentially. Public health in this context cannot be based on the same epidemiology techniques used in stable population environments.

Table 18: CGPP Kenya project beneficiary target population 2015

County	Population	Sub-county	Border Health Facilities **	Sub-county populations		
				Under 1yr old	Under 5yrs old	Under 15yrs old
Nairobi	3,994,003	Kamukunji	5	10,252	44,434	109,830
Garissa	660,932	Dadaab, Fafi & Hulugho	9	8,985	44,037	109,569
Marsabit	343,636	Moyale & North Horr	12	6,961	53,428	95,126
Turkana	1,256,150	Loima, Turkana & W. Kibish	19	13,635	83,870	312,072
Wajir	800,577	Wajir E., Wajir N. & Wajir S.	20	14,667	65,671	219,526
Mandera*	265,724	Lafey, Mandera E. & Mandera S.	14	6,643	22,586	55,802
Total	**7,321,022**		**79**	**61,143**	**314,026**	**901,925**

* Mandera population to be verified.

** Kamukunji is not a border county, it is rather a sub county of Nairobi

Source: Ministry of Health, Kenya 2015

Hand-in-hand, a child leads a Community Health Volunteer during a national supplemental immunization campaign, Narok County, Kenya, August 2015; K. Vergara

Methodology: The 2015 cluster survey in Kenya is the baseline for future evaluations. CGPP Horn of Africa (HoA) conducted 30 cluster households surveys in five counties of Kenya – Turkana, Marasbit, Wajir, Garissa and Kamukunji (Nairobi). The objective of the survey was to establish baseline population level indicators for target setting and program planning.

The indicator estimates were computed for each of the survey counties. County specific indicators were then aggregated with equivalent weights to account for the size of the populations of various counties.

In addition to the quantitative cluster survey conducted in each CGPP country, a total of 8 semi-structured qualitative interviews were conducted. They ranged from individual to small focus group format. Additionally, a field visit to take part in a national Supplemental Immunization Day in Narok County was done. The interviews include perspectives from the following bodies:

CORE Group Polio Project – Kenya Secretariat Bal Ram Bhui, Mercy Lutukai, Somane Mohamed and Nico Petty

Kenyan Ministry of Health – Disease Surveillance and Reponse Unit

Kenyan Ministry of Health – National Vaccine and Immunization Program (NVIP)

UNICEF

WHO

American Red Cross

Catholic Relief Services

Kenya Red Cross

International Rescue Committee (representative based in Turkana border county)

Nairobi Ministry of Health team – Kamukunji Sub County (CGPP sub county within Nairobi)

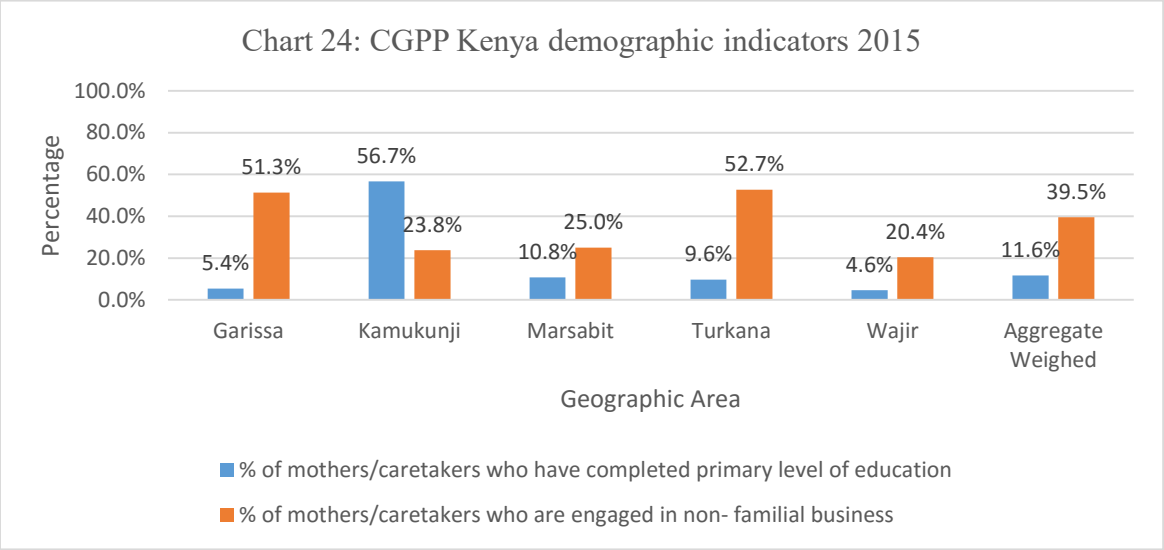
FIELD VISIT: Supplemental Immunization Activity campaign in Narok County, 3 hours outside of Nairobi, Kenya

The quantitative data from the cluster study and the qualitative data from the in-person interviews were analyzed and combined in a mixed methods approach below to illustrate CGPP's involvement in polio eradication in Kenya.

Socio-demographic Characteristics

In each of the five counties, the survey sample consisted of 240 households with children aged 12-23 months in 30 clusters. Respondents were mothers or caretakers of children. The survey was conducted in border sub counties of selected counties.

A small percentage (about 12%) of the women were literate with a primary or higher level of education. Of those, 4 in 10 are engaged in work that earns some income. Most of the project target population was illiterate and was engaged in unpaid familial household work.



The following findings are presented as they address the fundamental objectives of the global CORE Polio Project.

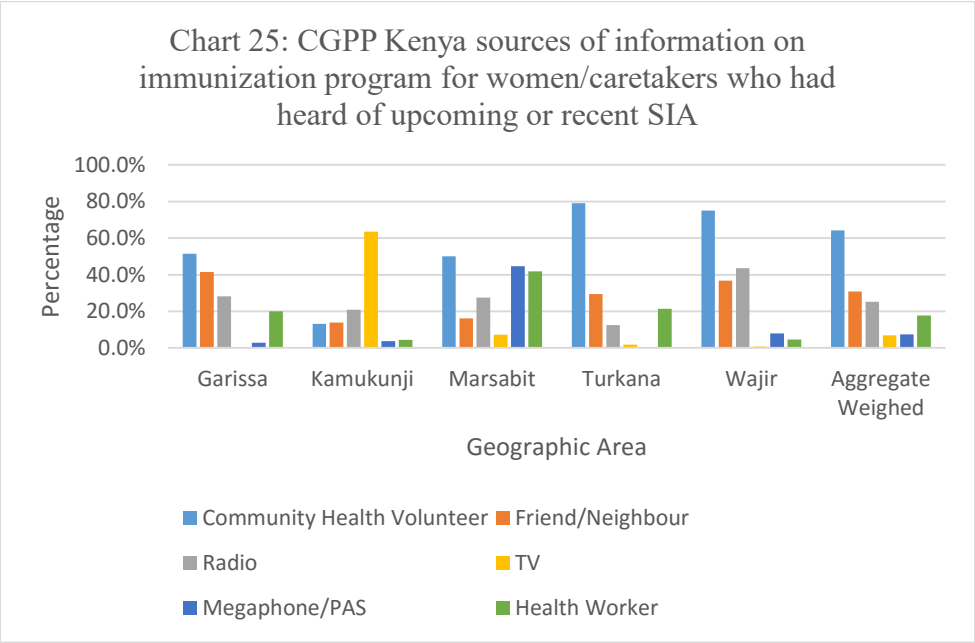
Objective 1: Build effective partnerships between agencies

> "CORE Group and civil society involvement is **not auxiliary** in Kenya…(it is an) essential component to polio eradication." (interview with Bob Davis, current Measles Delegate to the Red Cross, Nairobi, Kenya, August 2015)

CGPP HoA (Horn of Africa) in Nairobi, Kenya partners with agencies to achieve polio eradication outcomes in Kenya and focuses on efforts aimed in the larger Horn of Africa region. Many of the operations in Somalia are coordinated from Nairobi as well as various cross-border activities.

Because the CGPP HoA is embarking on cross-border initiatives for polio eradication, the survey aimed to measure the cross border movement behaviors of the population. Of interest, 43% of the respondents said they do visit or get visitors from the other side of the border. People cross the border primarily for pastures for their animals (61%), trade (54%) and water (35%). Note that this population is generally pastoralist. In order to address the vaccination needs of a mobile population over fluid international borders, coordination of agencies on both sides of the border must occur. CGPP HoA recognizes that community members are critical in this effort.

The 2015 cluster survey revealed that community health volunteers are the key change agents in the community for individual and household behavior changes. Half of the population said they are visited by a CHV at times other than the polio vaccination campaign on health matters. The health messages are effectively being spread by the CHVs. In all but one sub county, the CHVs were identified as the main source of information on the immunization program.



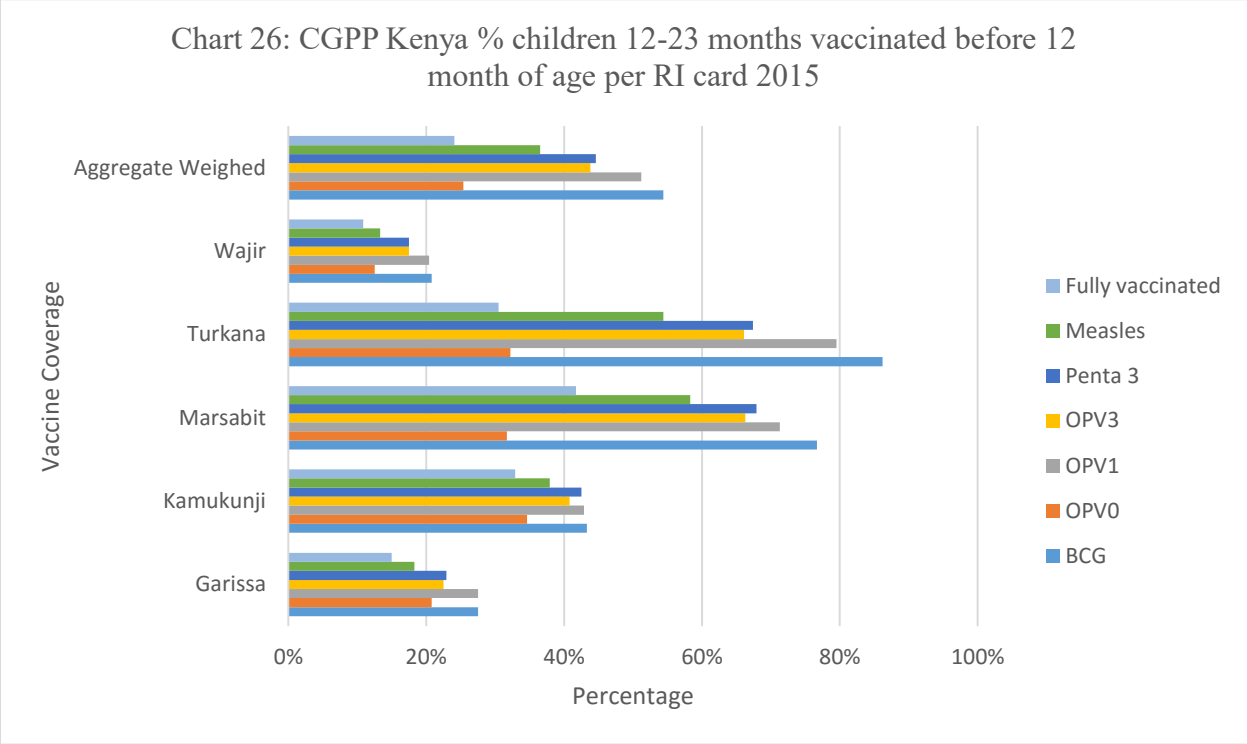
> "(Some agencies have) a big check book. CORE Group is not **cash rich** but they are **people rich**." (interview with Bob Davis, current Measles Delegate to the Red Cross, Nairobi, Kenya, August 2015)

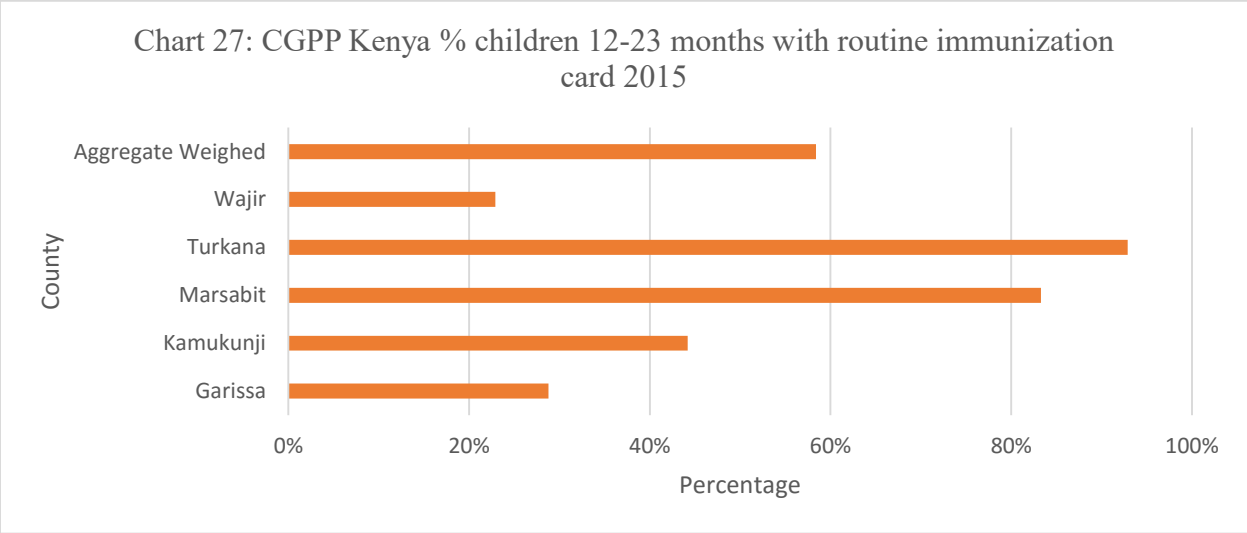
The human asset helps to carry out the directives of the larger stakeholder organizations. While the survey revealed that the messages of the CHVs were effective, it also revealed that visits to the villages by CHV should be increased. The CORE Group is committed to establishing cross-border partnerships to enhance the benefits of the CHV efforts.

Objective 2: Strengthen routine immunization systems

Routine immunization coverage shows that 58% of the children had immunization cards available at the time of the survey. For those whose card was not available or any written record was not available, immunization data was collected based on what the mothers could recall. According to the cards, the polio birth dose was received by only 24% of children within two weeks after birth. Adding the recall response numbers, however, raised the result to 64% of the children. Similarly, 44% of the children got three doses of polio based on the card, and 57% by card and recall.

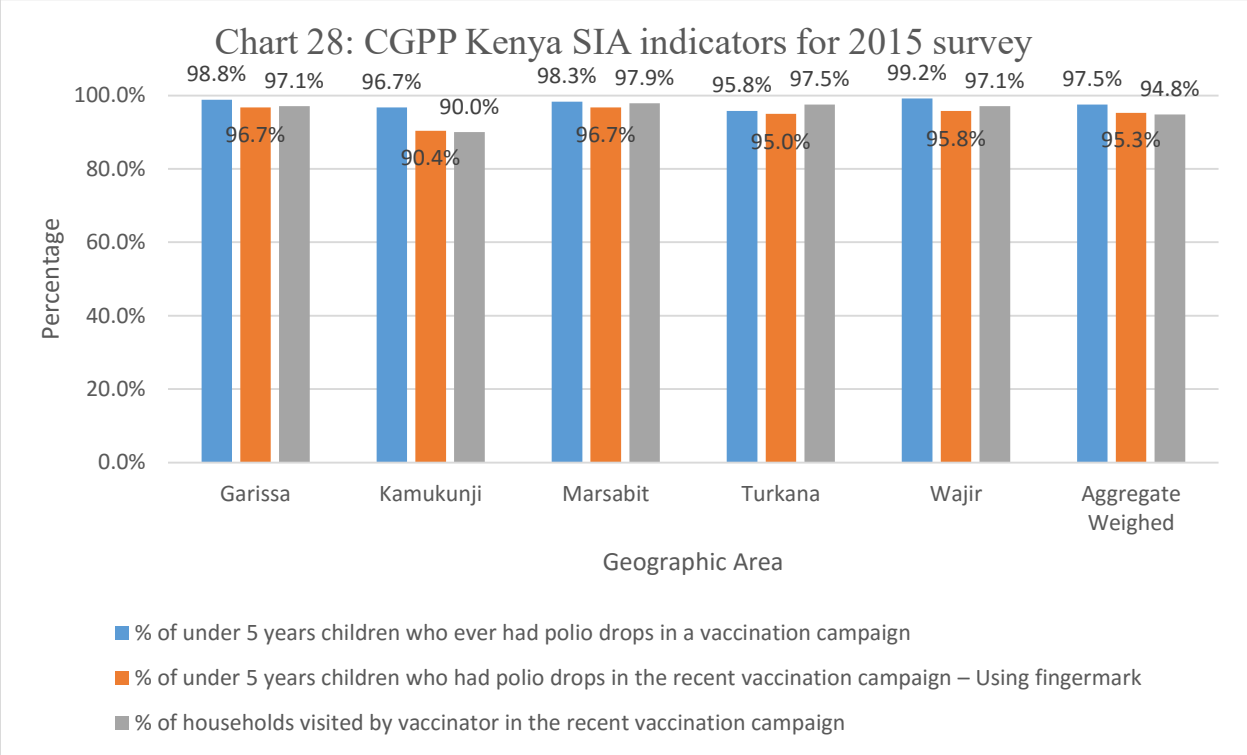
A high difference in immunization coverage by card and card plus recall (for polio 3 – 44% vs 57%, Penta 3 – 45% vs. 76% and measles – 37% vs. 77%) is a serious issue in this survey. Given that card retention is not so high, data by card only could underestimate the coverage. However, very high coverage by recall could also pose serious validity questions. Given the poor socioeconomic and health infrastructure in the project counties the routine immunization coverage could be lower.





Objective 3: Support supplemental polio immunization activities

Encouragingly, 95% of children under 5 years of age were vaccinated in polio vaccination campaigns preceding the survey. In Kenya, a polio vaccination campaign was conducted in August and September 2015. The campaign employed a complete house-to-house strategy to vaccinate all children under 5 years of age. As shown below, 95% of households were visited by a vaccination team.



As polio campaigns are conducted numerous times annually, OPV3 may not be a good indicator of routine immunization. Penta3 and Measles vaccination would be a more reliable indicator. Based on the card, 45% of the children received three doses of Penta and 37% of the children received the measles vaccination. However, by card and recall combined, about 76% of the children received each vaccine.

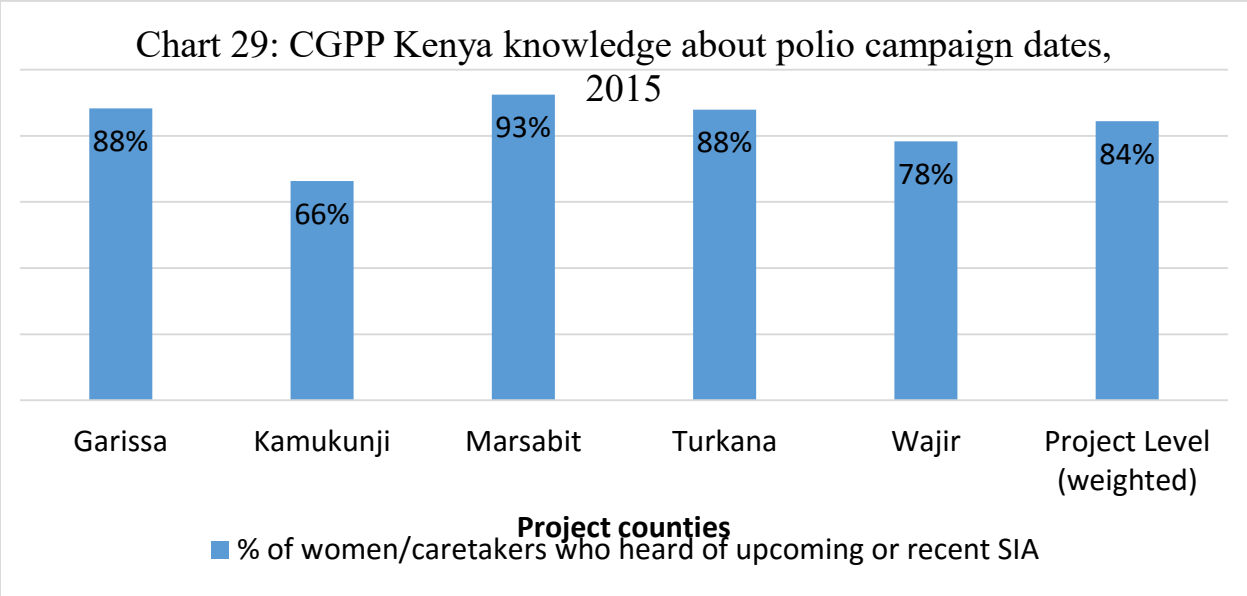
Fully immunized children by first birthday accounts for 30% by card and 36% by card plus recall. In this survey, a child having BCG, 3 doses of polio, 3 doses of Penta and 1 dose of measles by his or her first birthday is considered fully immunized.

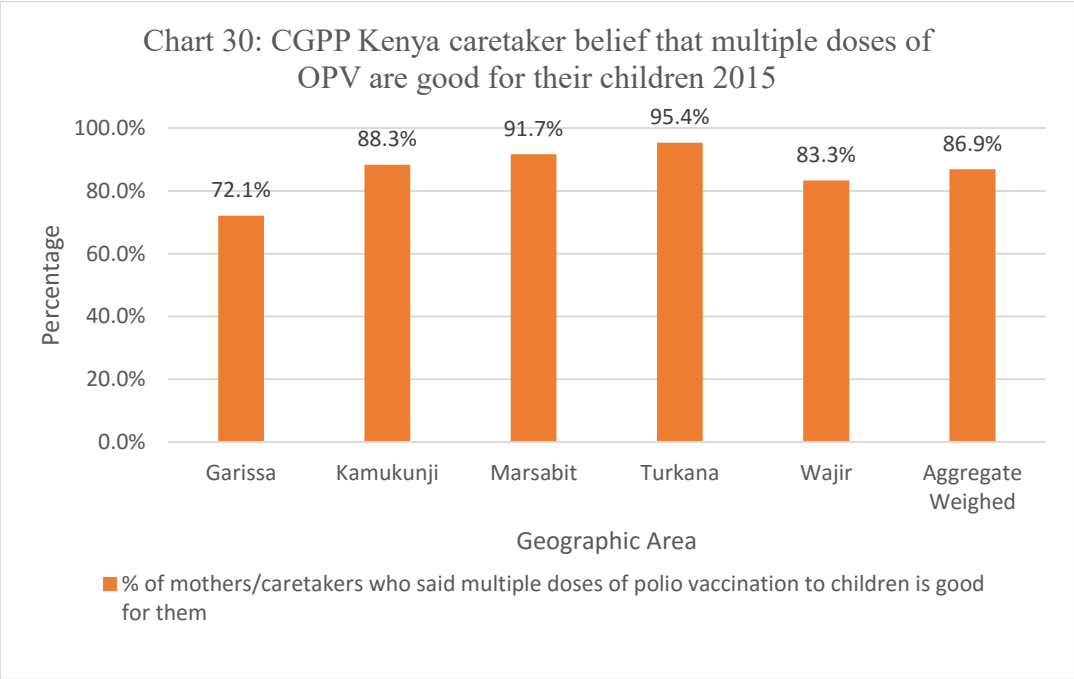
A high difference in immunization coverage by card and card plus recall is a serious issue in this survey. Given that card retention is not so high; data by card only could underestimate the coverage. However, Kenya CGPP Survey 2015's very high coverage by recall could also pose serious validity questions. Given the poor socioeconomic and health infrastructure in the project counties, the routine immunization coverage could be lower.

While overall polio vaccination is high, it is important to note that in project border regions, there still remain areas that are hard to reach and likely have unvaccinated populations.

Community Health Volunteer marking a house indicating that the children received OPV during a supplemental polio immunization campaign, Narok County, Kenya, August 2015; K. Vergara

Knowledge about polio campaign dates and knowledge about the benefits and safety of the polio vaccine are generally very good. The disparity between districts needs to be addressed and efforts to improve knowledge in these districts should be prioritized.





Objective 4: Support efforts to strengthen AFP surveillance

Population knowledge of acute flaccid paralysis (AFP), or suspected polio disease, is important so that people report such cases to a health facility. Approximately half of the respondents correctly identified the key signs and symptoms of polio. This reveals an opportunity for CHVs to address AFP during village visits. Health education including AFP should be increased through CHV trainings and subsequent microplanning for additional community meetings.

Objective 5: Support timely documentation and use of information

To support information sharing and usage, the CGPP Horn of Africa secretariat presented its research findings to the international public health community at the 2015 American Public Health Association Annual Meeting in Chicago, Illinois.

The study entitled, "The Cross Border Initiative for Polio Eradication in the Horn of Africa: Operationalizing and Strengthening" was authored and presented by the CGPP HoA Secretariat Director Bal Ram Bhui. The Horn of Africa regional secretariat described a systematic process to institutionalize a cross-border initiative for polio eradication, which focuses on strengthening the commitment and ownership of border health offices and buy-in from other non-health sectors. These findings were presented to add to the scientific body of polio eradication best practices and help inform other interventions in the Horn of Africa and abroad.

Overall Recommendations for CGPP Kenya

1. More programmatic information is needed to inform microplanning and community needs.

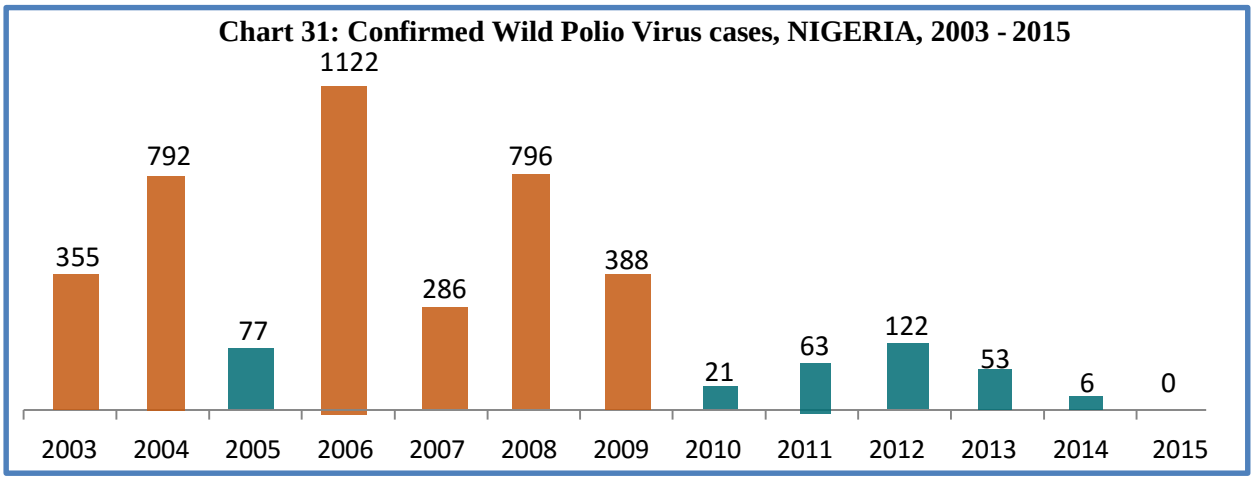
2. There was significant disparity on varying indicators across the districts. Close attention is needed to address the specific needs of each district rather than retaining the same plan for all districts.

3. Community health volunteers are the key change agents in the community for individual and household behavior changes. Increase the frequency of CHV visits to improve health education and polio awareness.

4. Increase transparency with partners as to how CGPP Kenya determines where to focus their efforts. UNICEF and WHO representatives seemed unclear with CGPP decision-making procedures. While nearly all programmatic decisions are made in close collaboration with partners, the process could be shared with all partners as a way to show transparency and accountability. Additionally, this could invite valuable input from other stakeholders if they have independent assessments of risk throughout the country.

CGPP Horn of Africa Secretariat staff, Nairobi, Kenya, August 2015; K. Vergara

Country Report: NIGERIA



Orange for any year with over 150 wild polio virus cases

Teal for any year with less than 150 wild polio cases

Source: WHO, CDC and Nigeria Emergency Operations Center

Overview:

As the most populous nation of Africa, it was once thought impossible for Nigeria to achieve zero cases of wild polio virus. This extraordinary achievement was realized in 2015 because of unprecedented coordination at multiple levels. Due to its outstanding community mobilization, synchronization of local civil society organizations, and leadership of the CGPP Secretariat in Abuja, CGPP was invited to be a critical partner in the Nigeria Emergency Operations Center (EOC). CGPP offers a unique skill set and well-developed outreach abilities that are highly valued by other international and national partners.

<u>Access where other organizations cannot go</u>

"Some of the partners (UNICEF, WHO) were not allowed to work in insecure areas – they could not work there. CGPP came in and could mobilize in those areas." (interview with Dr. Andrew Etsano, Executive Director of Emergency Operations Center, Abuja, Nigeria, August 2015)

Local presence and cultural understanding is acutely necessary when mistrust exists towards the Nigerian government, towards international initiatives, and towards outsiders in general. CGPP Nigeria extends its coordinated polio eradication efforts to areas that are hard to reach, both physically and culturally.

While Nigerian administrative data show a 13 percentage point increase in the population of fully vaccinated children since 2003, there are many factors that challenge this national data. In response, CGPP conducted a quantitative 30 cluster survey and a qualitative survey to obtain a more reliable and specific assessment of project districts.

According to the CGPP Midterm Evaluation (MTE) in 2015, there has been a general improvement in the immunization status of children surveyed. The coverage of the vaccines at MTE is generally higher than those at the baseline in project districts. Overall, there was an increase in coverage for all doses of OPV except for OPV2. Results showed a marked improvement for OPV0 and BCG when baseline and MTE results are compared. This may be due to efforts made by the Voluntary Community Mobilizers (VCM) and Voluntary Ward Supervisors (VWS) who are in the field mobilizing community members for vaccination, tracking pregnant women and newborns and reporting them on a weekly basis.

There was a decrease in the percentage of respondents that correctly identified the age when a baby needs to receive birth dose polio vaccine. However, it was encouraging that 89% at the MTE compared to 74% at baseline believed that many doses of polio vaccine pose no harm to a child and would protect the child. This shows an increase in knowledge and could be attributed to the efforts made by trained CGPP staff working in the communities especially the VCMs and VWS who go from household-to-household educating and mobilizing members of communities.

Moreover, 75% of the respondents at the MTE believed that no child would be hurt by the polio vaccine, a significant increase from the 66% at baseline. For Nigeria, this shows a critical improvement in de-bunking popularized misinformation. In recent years there has been mistrust of the polio vaccine with some groups believing that the vaccine contained contraceptive chemicals or that multiple doses of the vaccine would harm a child. The improvement seen at the MTE is evidence that health education and community knowledge of the vaccine has improved. The tireless efforts of the CGPP community volunteers to dissemenate accurate polio and health messages bolsters support for the Nigerian Ministry of Health and the Emergency Operations Center to carry out related health activities.

Unfortunately, a slightly lower percentage of caregivers at the MTE (15%) were able to produce an RI card when asked to see it compared with baseline (19%). This occurred across all surveyed states except Kano, where 26% of vaccination cards were seen at MTE compared with 15% at baseline. Additionally, more caregivers (47% MTE compared to 43% baseline) claimed to have RI cards but were not seen as at the time of data collection. This reduction in the percentage of caregivers with RI cards compared with the baseline result could be due to population increase with no available RI cards. Regardless, card retention remains a big issue across the CGPP focal states thus there is a need to quickly intervene. Caregivers do not know the importance of keeping vaccination cards which are sometimes limited or not available in some health facilities.

In conclusion, there is general improvement in the immunization status of children surveyed. The coverage of polio vaccine at MTE is generally higher than those of the baseline in districts where CGPP is working. While the general awareness of caregivers on the benefits of the polio vaccine has also increased, a slightly lower proportion know the age at which a child should receive polio vaccine for the first time. Compared to the baseline, more caregivers know that polio vaccine poses no harm to the child but will actually protect the child. This is a plus for the CGPP program since this is one of the most important myths and misconceptions about polio vaccine that leads to non-compliance. Looking forward, planning is imperative to increase the RI card retention rate which is a major issue across Nigeria.

Kaduna State Community Volunteers going house to house during a Directly Observed Polio Vaccine campaign vaccinating every child under 5 years old, Nigeria, August 2015; K. Vergara

Table 19: 2015 CGPP Nigeria Implementing Partners						
CGPP Partners	Regional State(s)	District(s)	No.<5 children 2014	No.<5 children 2015	No. CVs 2014	No. CVs 2015
International Medical Corps (IMC)	Kano	6	80,510	83,000	130	300
	Borno	7	43,316	44,656	167	500
Save the Children International (SCI)	Katsina	2	84,331	86,939	50	100
Catholic Relief Services (CRS)	Kaduna	2	37,232	38,384	50	100
	Yobe	8	159,811	164,754	250	500
Total		**25**	**405,201**	**417,733**	**647**	**1,500**

Methodology: In addition to the quantitative cluster survey conducted in each CGPP country, a total of 17 semi-structured qualitative interviews were conducted, ranging from individual to small focus group format and also a field visit. Survey and qualitative interview tools are included in the appendices. The interviews include perspectives from the following bodies:

CORE Group Partners Project Secretariat staff- NIGERIA

CGPP Nigeria Director Dr. Samuel Usman

Executive Director of the National Nigerian Emergency Operations Center (EOC)

Borno State Executive Director of Public Health for Ministry of Health

Borno State Ministry of Health Incident Manager and PEI director

Catholic Relief Services

Kaduna State CGPP Volunteer Community Mobilizer Coordinator

Kaduna State Ministry of Health EOC Incident Manager

Kaduna State Volunteer Community Mobilizers, field visit

Kano State Ministry of Health EOC Incident Manager

Katsina State Ministry of Health & EOC Incident Manager, Director of Public Health

Kobe State Ministry of Health Incident Manager

Nigerian Ministry of Health Director of Primary Healthcare

Rotary International, National Programme Coordinator

Save the Children

United States Centers for Disease Control & Prevention

USAID

In order to monitor performance, a Mid-Term Evaluation (MTE) survey was completed in the months of June and July 2015 and compared with 2014 baseline survey study findings. This was a continuation of CGPP's commitment to on-going timely evaluation and monitoring. The quantitative data from the cluster study and the qualitative data from the in-person interviews were analyzed and combined in a mixed methods approach below to illustrate CGPP's involvement in polio eradication in Nigeria.

Socio Demographic Characteristics

The socio-demographic characteristics of respondents show that about 60% of them were from rural areas, although the proportion varies across focal states. This information is of great importance because differentials in the coverage levels show that the proportion of children fully vaccinated is lower for children in rural areas (16%) than in urban areas (43%) (NDHS, 2013). Thus, the relatively lower vaccination coverage noted in this survey could be attributed to the fact that 60% of the respondents were from rural areas.

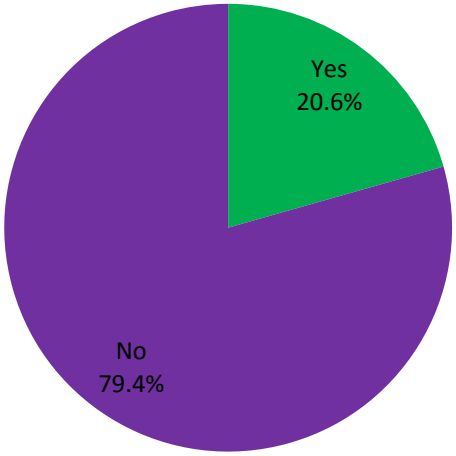
Caregivers of children 12-23 months surveyed were predominantly (93%) female and about 65% of the all respondents ever attended school. This is important to note as a mothers' educational attainment affects the health of their children. Children whose mothers have no education are far less likely to be fully vaccinated (7%) than children whose mothers have more than secondary education (64%) (NDHS, 2013). The fact that 35% of the respondents surveyed for the MTE had never attended school had a notable impact on the survey findings.

Table 20: CGPP Nigeria socio-demographic characteristics of respondents at MTE

	Residence		**Gender of caregiver**		**Ever attended school?**	
Surveyed States	Rural N (%)	Urban N (%)	Male N (%)	Female N (%)	Yes N (%)	No N (%)
Kaduna	29 (9.7)	271 (90.3)	5 (1.7)	295 (98.3)	259 (86.3)	41 (13.7)
Kano	192 (63.8)	109 (36.2)	37 (12.3)	264 (87.7)	136 (45.2)	165 (54.8)
Katsina	150 (50.7)	146 (49.3)	6 (2.0)	290 (98.0)	263 (88.8)	33 (11.2)
Yobe	221 (73.2)	81 (26.8)	39 (12.9)	263 (87.1)	186 (61.6)	116 (38.4)
Borno	300 (100.0)	0 (0.0)	12 (4.0)	288 (96.0)	133 (44.3)	167 (55.7)
All States	892 (59.5)	607 (40.5)	99 (6.6)	1400 (93.4)	977 (65.2)	522 (34.8)

Only 21% of the respondents work outside home while most (79%) are full-time housewives or work within their home. Among those who work outside home, 47% work in business and office jobs and 32% are farmers.

Chart 32: CGPP Nigeria percentage of respondents who work outside home, 2015



The following findings will be presented as they address the fundamental objectives of the global CORE Polio Project.

Objective 1: Build effective partnerships between agencies

In order to accomplish the national polio eradication goals, coordination of international, national, and community-level partnerships must be continually supported. CGPP Nigeria has very quickly initiated operations, built partnerships at the national, municipal, and local level, and mobilized 1500 community volunteers in an impressive two-year period.

Listening to Partners

Misinformation about the safety of the polio vaccine was creating some vaccine refusals in communities in Nigeria. Community volunteers and civil society organizations on the ground suggested that even the name of CORE Group "Polio" Project (CGPP) was a barrier to health education and promotion. So CGPP listened, brainstormed with local stakeholders, and decided to change their name. In Nigeria, CGPP is now CORE Group "Partners" Project (CGPP). This is another example of the dedication to cultural sensitivity and the deep value that CGPP places on the voices of the people they serve.

Mobilizer Contact

Across the states surveyed, over half (54%) of the respondents claimed to be visited by the voluntary community mobilizers on days other than during the period of Supplemental Immunization Activities (SIA). Especially before or after the SIAs or rounds (in-between round activities CGPP community volunteers conduct regular visits to houses in their settlements. The chart below shows the percentage of those who received these visits.

Table 21: CGPP Nigeria 2015 survey question: Do you remember being visited at your home by a Volunteer Community Mobilizer (VCM) at times other than days of a vaccination campaign?

Surveyed States	**Yes** N (%)	**No** N (%)	**Don't Know** N (%)
Kaduna	227 (75.7)	73 (24.3)	0 (0.0)
Kano	165 (54.8)	134 (44.5)	2 (0.7)
Katsina	160 (54.1)	115 (38.9)	21 (7.1)
Yobe	152 (50.3)	115 (38.1)	35 (11.6)
Borno	108 (36.0)	190 (63.3)	2 (0.7)
All States	812 (54.2)	627 (41.8)	60 (4.0)

This presence and visibility of VCMs in the community helps to gauge cultural attitudes and beliefs, build trust with community members, and show ongoing investment in the well-being of the population. By establishing these partnerships with the community, CGPP has helped to decrease vaccine refusal, improved the efficiency of national campaigns and created a valuable dialogue about health promotion. Perhaps most importantly, CGPP partnering has helped build capacity in the community to be able to respond to other health threats as well as take part in other preventive health activities.

One finding in the 2015 Cluster Survey revealed the majority of respondents believed that for a child to receive all vaccines, the government health facility is the most appropriate place. This highlights an opportunity for CGPP community volunteer mobilizers upon which to build. Continuing to strengthen the relationship between community and health facility will increase demand for vaccine and increase health seeking behaviors. It is therefore crucial that all necessary vaccines are not out of stock in government health facilities, which has occurred in the past. Communicating any shortages of vaccine and also the importance of maintaining supply back to the municipal and national level should be an additional aim for CGPP Nigeria.

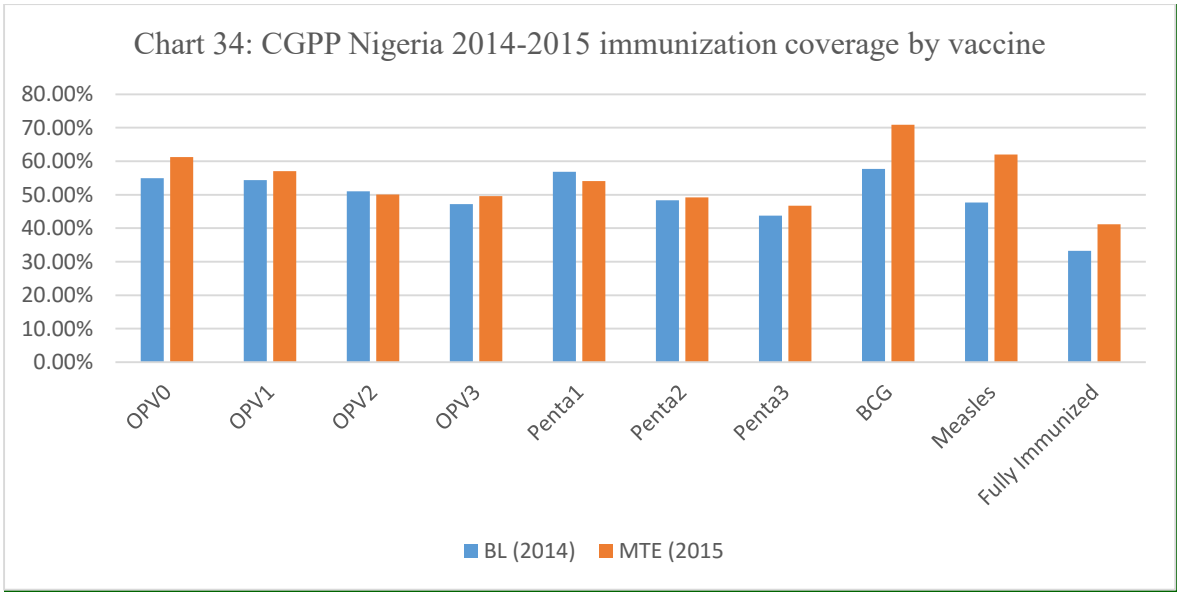
CGPP Nigeria has been exemplary in the swiftness they have shown in developing working partnerships with the Nigerian Ministry of Health, the National Emergency Operations Center, several high risk State Health Officials, Rotary International, the United States Centers for Disease Control & Prevention, USAID, Catholic Relief Services, and 1500 community volunteer mobilizers.

Objective 2: Strengthen routine immunization systems

As seen in the graphics below, vaccine coverage has improved in all CGPP Nigeria districts with the exception of slight decreases in OPV2 and Penta1 coverage. The biggest improvements were seen in measles coverage (47%baseline vs. 62%MTE) and BCG (57% baseline vs. 70% MTE). The overall trend shows improvements in routine immunization coverage. Noteworthy is the fact that the percentage of “fully immunized” children increased substantially from 33% to 41% during a 1-year time period. While these figures are encouraging, it is still critical to recognize that this coverage falls far below what is needed to protect the population appropriately from deadly and preventable diseases.

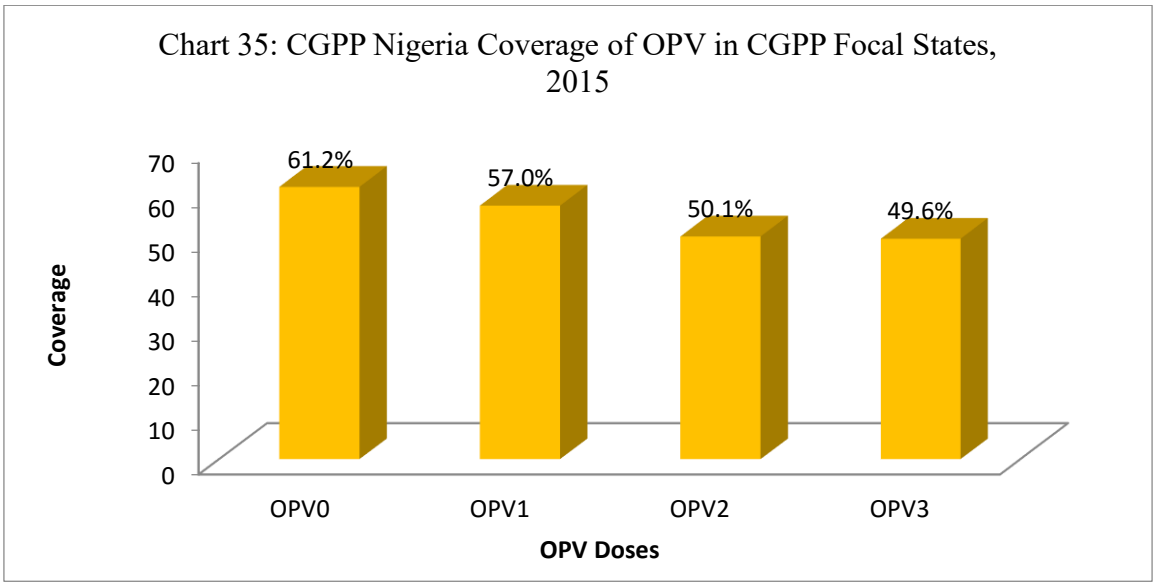
Table 22: CGPP Nigeria vaccine coverage; 2014 baseline compared to 2015 midterm evaluation

Vaccine	**Baseline 2014**	**Midterm Evaluation 2015**
OPV0	54.9%	61.2%
OPV1	54.4%	57.0%
OPV2	51.0%	50.1%
OPV3	47.2%	49.6%
Penta1	56.8%	54.1%
Penta2	48.3%	49.2%
Penta3	43.8%	46.7%
BCG	57.7%	70.9%
Measles	47.7%	62.0% m
Fully Immunized	33.2%	41.2%

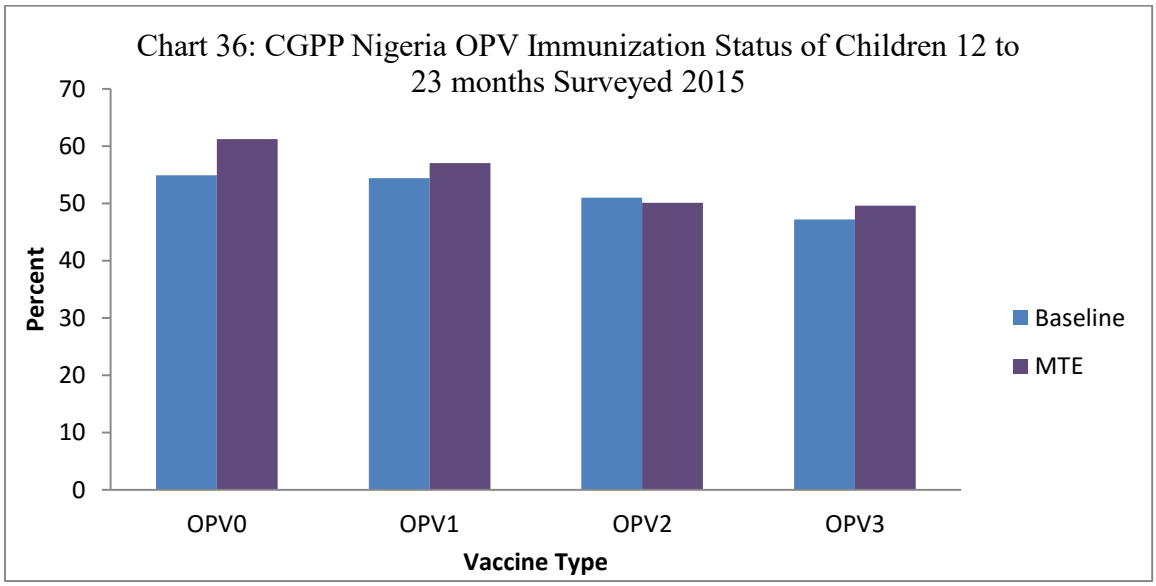


Polio Immunization Coverage

The OPV immunization status of children surveyed is shown below. It shows the percentage of children who received OPV steadily reduced from OPV0 to OPV3.



A comparison between OPV coverage (OPV0 to OPV3) at baseline and at Mid-Term Evaluation (MTE) is shown below. In each case, the Midterm coverage was higher except for OPV2 which was very slightly lower at the Midterm than at the Baseline. These increases occurred directly after the CGPP initiatives began work in the high risk focal states.



The 2015 CGPP Cluster Survey also revealed positive feedback with regard to the respondents' knowledge of where to receive routine immunizations. Most (92%) of the respondents across the

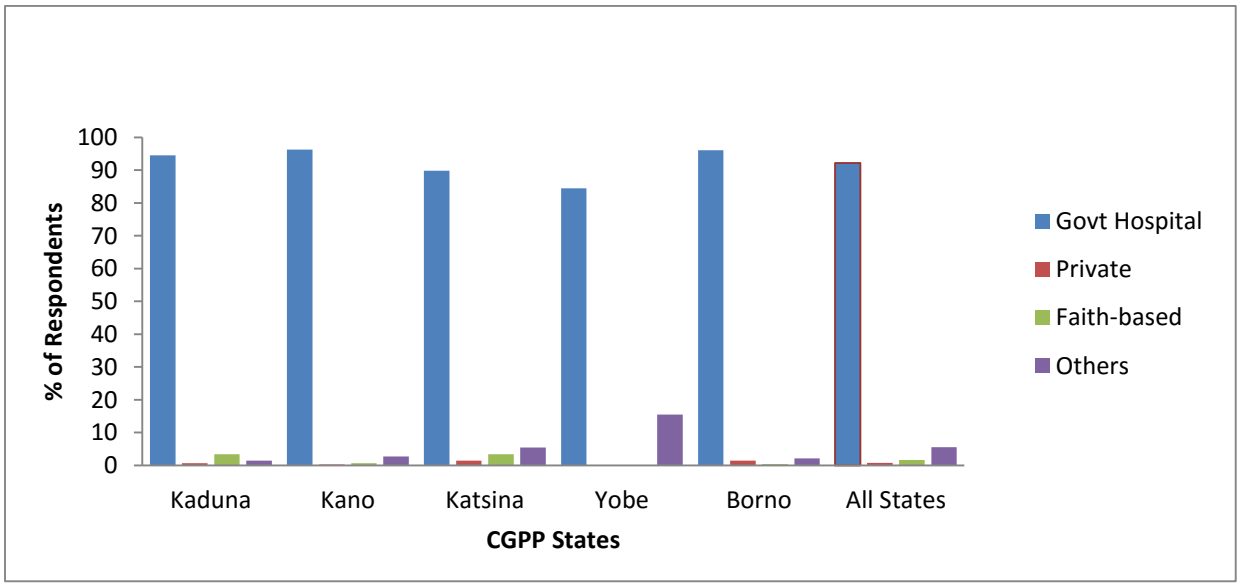
states responded that they would take a child to government hospital to be immunized for all recommended vaccines.

Table 23: CGPP Nigeria knowledge of where to take a child to be immunized for ALL vaccines

	Government Hospital N (%)	**Private-Hospital** N (%)	**Faith-based clinic/Hospital** N (%)	**Other** N (%)
Kaduna	277 (94.5)	2 (0.7)	10 (3.4)	4 (1.4)
Kano	285 (96.3)	1 (0.3)	2 (0.7)	8 (2.7)
Katsina	264 (89.8)	4 (1.4)	10 (3.4)	16 (5.4)
Yobe	251 (84.5)	0 (0.0)	0 (0.0)	46(15.5)
Borno	269 (96.1)	4 (1.4)	1 (0.4)	6 (2.1)
All States	1346 (92.2)	11 (0.8)	23 (1.6)	80 (5.5)

Questions assessing knowledge and attitudes toward routine immunization show that most (92%) of the respondents across the states will take a child to government hospital to be immunized with ALL vaccines (see below).

Chart 37: CGPP Nigeria; locations identified by respondents where a child could receive all vaccinations

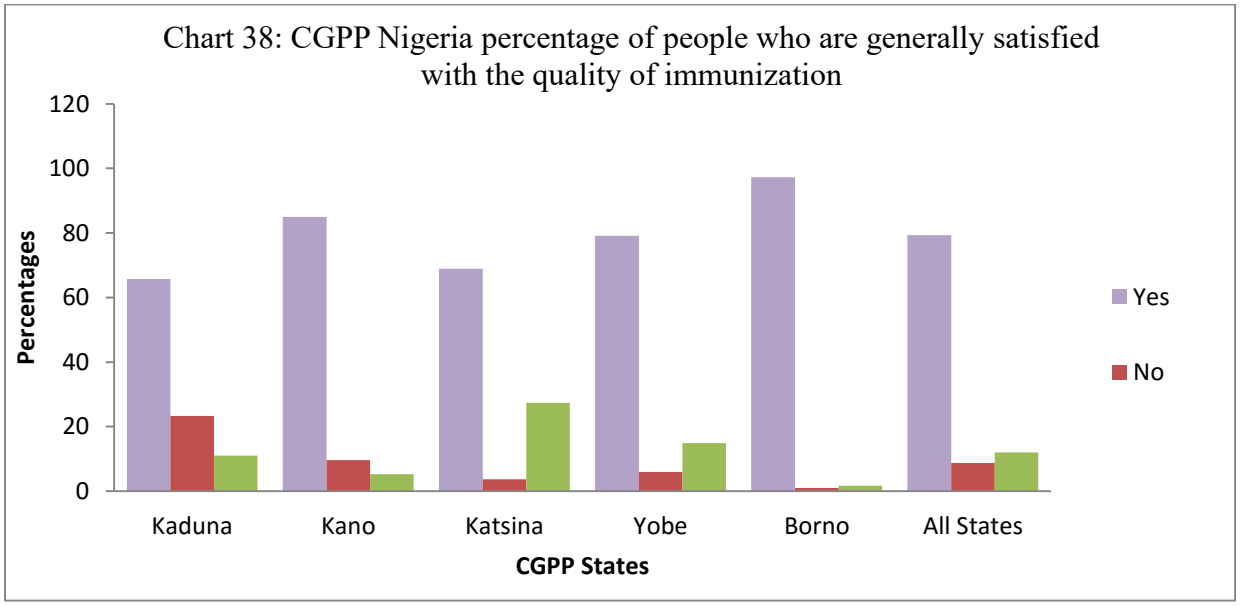


Additionally, results for the MTE show that the majority (79%) of respondents across CGPP states, ranging from 66% in Kaduna and 97% in Borno, are generally satisfied with the quality of immunization services in their communities. This indicator reveals that the relationships in the

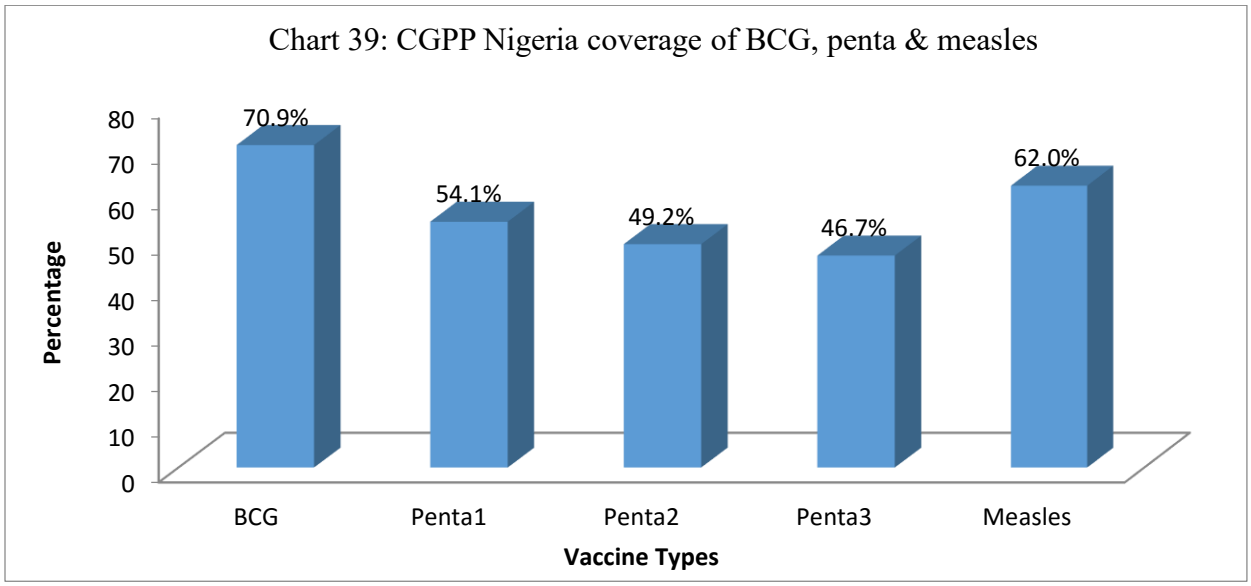
community are positive and they are building a capacity upon which further routine and preventive health interventions can be built.

Table 24: CGPP Nigeria 2015 Cluster Survey; Level of satisfaction on quality of immunization services of people in the community

Surveyed States	**Yes (**N (%)	**No (**N (%)	**Don't know/No Response** N (%)
Kaduna	197 (65.7)	70 (23.3)	33 (11.0)
Kano	256 (85.0)	29 (9.6)	6 (5.3)
Katsina	204 (68.9)	11 (3.7)	81 (27.4)
Yobe	239 (79.1)	18 (6.0)	45 (14.9)
Borno	292 (97.3)	3 (1.0)	5 (1.7)
All States	1188 (79.3)	131 (8.7)	180 (12.0)

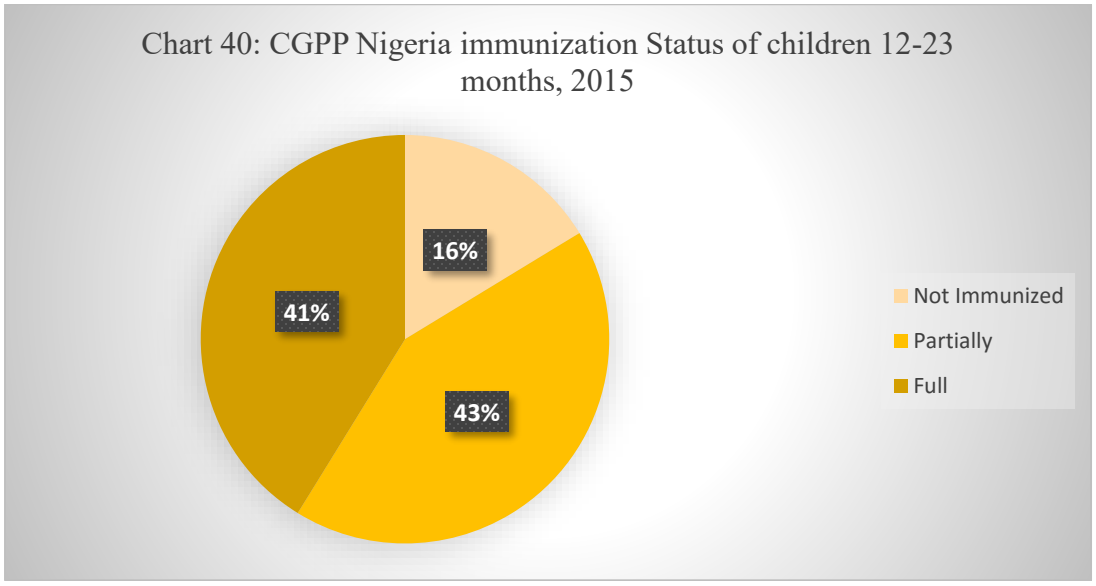


As seen below, 71% of the children surveyed had received BCG and 62% already had at least 1 dose of measles. More children also had Penta 1 when compared with Penta 3. This finding is quite similar with previous population survey findings. (NDHS, 2013)



Percentage of children 12-23 months fully immunized

According to WHO, a child is considered fully vaccinated if he or she has received a BCG vaccination against tuberculosis; three doses of vaccine to prevent diphtheria, pertussis, and tetanus (DPT); at least three doses of polio vaccine; and one dose of measles vaccine. These vaccinations should be received during the first year of life (NDHS, 2013). From the MTE, a total of 41% were fully immunized. Of the children surveyed, 43% were partially immunized, while 16% had no proof of any vaccination.



According to national administrative data, only one-quarter (25%) of children age 12-23 months are fully vaccinated with BCG, measles, and three doses each of DPT and polio vaccines (NDHS, 2013). The 2015 Cluster Survey assessment revealed that CGPP focal areas have 41% of children 12-23 months fully immunized. This is a direct impact of the CGPP-supported social mobilization and health promotion activities that increase uptake for these vaccines.

Objective 3: Support supplemental polio immunization activities

Apart from supporting routine immunization efforts in Nigeria, CGPP is active in supporting supplemental polio immunization activities in high risk states. An increased number of polio campaigns was critical in achieving the zero new cases in the past year. Areas in northern Nigeria especially have experienced violent conflict and civil unrest rendering some districts unreachable by the Ministry of Health. While the impact of this conflict is vast, interruption of health care services and, of course, routine immunization services resulted as well. Thus even more importance is put on the supplemental polio immunization activities. Populations that have been displaced by the conflict can be reached in supplement campaigns if they migrate to non-conflict areas.

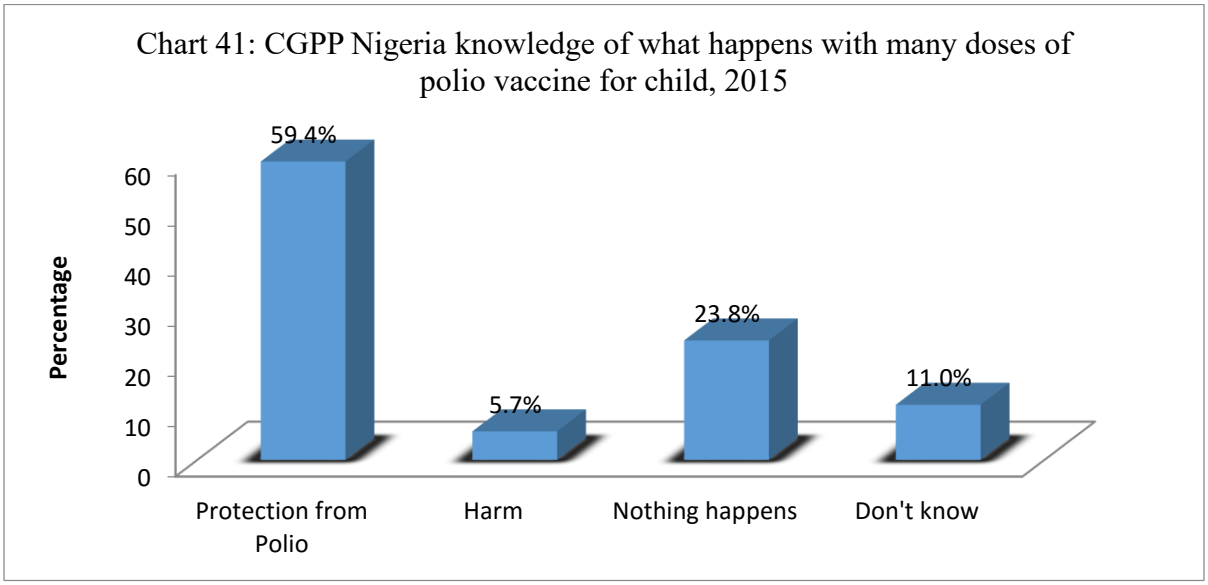
Additionally, great importance is placed on local knowledge, attitudes, and beliefs related to polio immunization to increase the acceptance in the community and build capacity. Accurate knowledge is also an indicator that the community health education and health promotion activities are effective.

In the CGPP 2015 Cluster Survey, 68% of the interviewees responded correctly that a baby needs to receive Polio vaccine within the first two weeks of life, while 32% responded "later than two weeks" or didn't know.

Table 25: CGPP Nigeria At what age does a baby need to receive the Polio Vaccine for the first time?

Surveyed States	**First two weeks** N (%)	**Later** N (%)	**Don't Know** N (%)
Kaduna	262 (87.3)	20 (6.7)	18 (6.0)
Kano	222 (73.8)	60 (19.9)	19 (6.3)
Katsina	223 (75.3)	52 (17.6)	21 (7.1)
Yobe	207 (68.5)	48 (15.9)	47 (15.6)
Borno	107 (23.7)	162 (54.0)	31 (10.3)
All States	1021 (68.1)	342 (22.8)	136 (9.1)

Fifty-nine percent of the respondents knew that many doses of polio vaccine increases protection for a child while about 24% believe that nothing happens or no harm is caused if a child receives many doses of polio vaccine. However, a small percentage still had poor knowledge in this area.



Addressing barriers to compliance with supplemental polio immunization activities

There were a few noted reasons for non-compliance that the VCMs had identified. There were religious beliefs mostly in the Muslim population that were a barrier to the polio vaccine. Some religious leaders had given direct advice not to accept the polio vaccine. In other cases, the CGPP and Nigerian health workers had very positive relationships with the Muslim religious leaders and were active community mobilizers in the polio eradication activities, encouraging their communities to accept OPV.

> "You need the gate keepers of society to talk to the people…Some religious groups do not believe in vaccinations but CGPP (was) able to create demand in the community." (interview with Dr. Andrew Etsano, Executive Director of Emergency Operations Center, Abuja, Nigeria, August 2015)

Additionally, there were misconceptions about the vaccine that contributed to issues of non-compliance, such as containing "family planning" chemicals that could cause infertility. A pharmacist and a religious leader had broadcast this erroneous claim to the population. While the claim has since been dispelled, it is often difficult to undo the effects from misinformation.

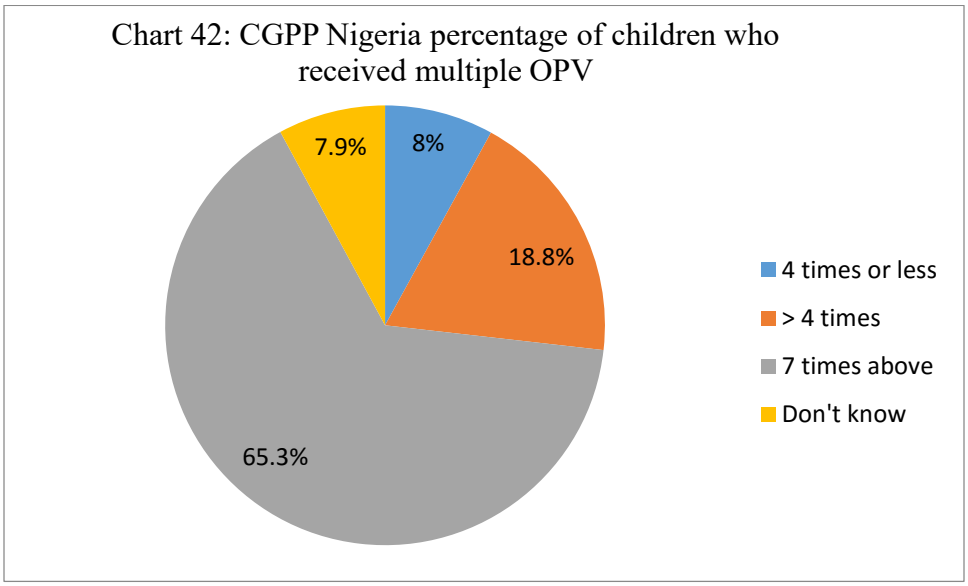
VCMs reported additional concerns from parents who did not like the repeated number of OPV given to their children and questioned the effectiveness of a dose as it needed to be given multiple times. VCMs responded with health education covering aspects of how and why vaccines work.

SIA Coverage

The vast majority of respondents confirmed that children had OPV before the MTE (95.8%). About 96% reported that children 12-23 months had OPV at least once since birth.

Table 26: CGPP Nigeria survey 2015 "Has child ever received Polio vaccine?"

Surveyed States	**Yes** N (%)	**No** N (%)	**Don't Know** N (%)
Kaduna	288 (96.0)	11 (3.7)	1 (0.3)
Kano	292 (97.0)	9 (3.0)	0 (0.0)
Katsina	280 (94.6)	14 (4.7)	2 (0.7)
Yobe	282 (93.4)	20 (6.6)	0 (0.0)
Borno	294 (98.0)	6 (2.0)	0 (0.0)
All States	1436 (95.8)	60 (4.0)	3 (0.2)



The majority of the respondents reported that their family was visited by a vaccinator during the last SIA prior to the MTE. This also reveals the effectiveness of the CGPP community volunteer mobilizers in their house-to-house visit protocol.

Table 27: CGPP Nigeria family visited by vaccinators during the most recent polio round

Surveyed States	**Yes (%)**	**No (%)**	**Don't know** (%)
Kaduna	91.3	8.7	0.0
Kano	80.4	19.3	0.3
Katsina	92.6	5.1	2.4
Yobe	83.1	14.9	2.0
Borno	88.3	11.3	0.3
All States	87.1	11.9	1.0

Parades, Clowns and Polio

Several innovative field strategies were employed to attract eligible children. The neighborhood in Kaduna was comprised of cement and mud houses with walled fronts and not many window openings facing the unpaved narrow road. Thus, VCMs could walk by and not know if there were children at home. Volunteers came up with a way to draw the children outside: a mini-parade of two dancing clowns from the neighborhood. They played music and wore silly costumes that made their behinds exaggerated in size. In one parade, two young men had painted their faces blue and were using a megaphone to broadcast the music. When the two clowns danced to the music, the children thought it was hilarious to see their big behinds bobbing around. The laughter of the children drew out more children, curious to see the fun. Soon there was a full parade of laughing children following the VCMs. Volunteers used this opportunity to check the little fingers of the children as they played. When they found an unmarked hand, they would confirm that the child was approved by their family to receive the vaccine, and then give the OPV right there in the street.

Any child who received OPV would be awarded with a small green whistle. They then happily tooted their new whistle along the parade, in turn creating more noise to reach beyond the housing walls and attract more children outside. For very young children not yet walking, mothers would received powdered milk packets as a small gift. Created by community members, this public health activity was highly efficient and effective. For the children, the event became a celebration.

CGPP Voluntary Nigeria Community Mobilizers and community members in the northern state of Kaduna during a Directly Observed Polio Vaccine (DOPV) activity, August 2015; K. Vergara

Objective 4: Support efforts to strengthen AFP surveillance

One important initial step in improving acute flaccid paralysis (AFP) surveillance is the knowledge in the community to accurately identify these symptoms as related to potential polio infection. CGPP addresses this need in the health education and promotion spread by the local VCMs in the community. Knowledge, attitude and practice, as assessed in the 2015 cluster survey, showed appreciable improvement in awareness of AFP. There was, however, a downward trend in being able to accurately describe some of the symptoms of AFP.

Table 28: CGPP Nigeria knowledge related to AFP, 2015

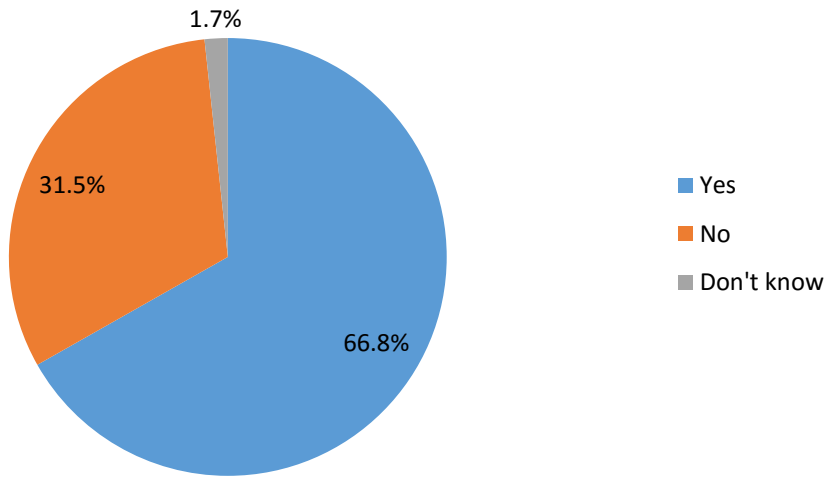
Cluster Survey questions	**2014 Baseline Responses**	**2015 Survey Responses**
Ever heard of AFP?	54.0%	66.8%
Correctly identified signs of AFP: child stops walking/crawling	57.9%	49.8%
Correctly identified signs of AFP: limp limbs	35.4%	45.0%

When the responses were stratified by municipal state, there was some variation that must be addressed with regard to AFP awareness. In Borno and Katsina, states with many challenges to security, less than half of the respondents had ever heard of AFP. This indicates that there is a pressing need for polio-related health education and an opportunity for increased community buy-in.

Table 29: CGPP Nigeria "ever heard of AFP", 2015

Surveyed States	**Yes** N (%)	**No** N (%)	**Don't Know** N (%)
Kaduna	222 (74.0)	75 (25.0)	3 (1.0)
Kano	242 (80.4)	57 (18.9)	2 (0.7)
Katsina	137 (46.3)	142 (48.0)	17 (5.7)
Yobe	255 (84.4)	45 (14.9)	2 (0.7)
Borno	146 (48.7)	153 (51.0)	1 (0.3)
All States	1002 (66.8)	472 (31.5)	25 (1.7)

Chart 43: CGPP Nigeria knowledge of AFP among respondents



Half (50%) of those who ever heard explained that a child with AFP stops walking or crawling while 45% affirmed that AFP is characterized by limp limbs.

Chart 44: CGPP Nigeria 2015 survey question "Please explain what happens to a child with paralysis or weakness of the limbs."

Surveyed States	**Child stops walking/ crawling** N (%)	**Limp limbs** N (%)	**Others** N (%)	**Don't Know** N (%)
Kaduna	171 (57.2)	115 (38.5)	0 (0.0)	13 (4.3)
Kano	157 (39.9)	216 (55.0)	16 (4.1)	4 (1.0)
Katsina	80 (51.6)	75 (48.4)	0 (0.0)	0 (0.0)
Yobe	177 (49.6)	160 (44.8)	9 (2.5)	11 (3.1)
Borno	101 (58.0)	54 (31.0)	1 (0.6)	18 (10.3)
All states	686 (49.8)	620 (45.0)	26 (1.9)	46 (3.3)

Majority (85%) of the respondents would visit a health clinic or hospital in case of weak limb in a child while 8% would visit traditionalist for herbs. This also shows that majority of the population in CGPP focal areas know the appropriate intervention in a case of suspected paralysis and validates the success of the program in raising the awareness of its target beneficiaries.

Table 45: CGPP Nigeria 2015: person to contact besides family if child had paralysis

Surveyed States	**Clinic/Hosp/LGA health dept** N (%)	**Traditional healer/ Herbalist** N (%)	**Bone setter** N (%)	**TBA** N (%)	**VCM** N (%)	**Others** N (%)
Kaduna	295 (82.9)	23 (6.5)	12 (3.4)	2 (0.6)	24 (6.7)	0 (0.0)
Kano	263 (79.2)	19 (5.7)	4 (1.2)	3 (0.9)	43 (13.0)	0 (0.0)
Katsina	214 (84.6)	22 (8.7)	3 (1.2)	2 (0.8)	11 (4.3)	1 (0.4)
Yobe	289 (79.4)	59 (16.2)	2 (0.5)	2 (0.5)	9 (2.5)	3 (0.8)
Borno	293 (88.0)	1 (0.3)	17 (5.1)	13 (3.9)	2 (0.6)	7 (2.1)
All States	1354 (85.3)	124 (7.8)	38 (2.4)	22 (1.4)	39 (2.5)	11 (0.7)

Stool adequacy used to determine if a suspected case was NP-AFP or WPV has also shown a positive trend, although only the last two years are shown here for CGPP districts.

Table 30: CGPP Nigeria laboratory stool adequacy for AFP stool samples 2014-2015

Year	Stool adequacy (%)
2014	97
2015	98

This knowledge base provides the foundation upon which AFP surveillance can be built. CGPP includes AFP identification in the training of VCMs and supports community health education on the topic in all of their districts, including the hard to reach areas.

The identification of AFP that is not caused by polio but rather by other conditions that are expected to occur naturally in the population is an indicator that the surveillance system is functioning appropriately. This requires that the AFP case was identified, local health system was notified, stool samples of the suspected case were obtained, and laboratory diagnostics were adequately performed to determine if polio was present.

Overall, there seems to be a robust system with regards to laboratory tested stool adequacy. The community awareness and knowledge of AFP, however, needs urgent improvement. Rapid detection in the community and subsequent rapid diagnosis is imperative to address any polio outbreak swiftly. In this case, the community is the best partner for detecting AFP and a vital force in polio eradication.

Objective 5: Support timely documentation and use of information

There have been several efforts to bolster and improve documentation and use of information by the CGPP Nigeria partners. First, regular evaluations and tracking happens throughout the year and the CGPP provides regular updates to the National Ministry of Health and global partners. And, second, CGPP has supported efforts to improve documentation at the administrative level as well as at the community level.

Vaccination card retention is the preferred indicator of evidence of vaccination over verbal recall. Parents/caretakers who keep the vaccination card can provide a more reliable record of immunization with eliminated recall bias, CGPP partners have thus emphasized that the parents/caretakers keep the card. Unfortunately, there has been a notable decreasing trend in card retention in CGPP districts as seen below.

Table 31: CGPP Nigeria district vaccination card retention 2014-2015

Vaccination Card Retention	2014 Baseline	2015 Midterm Evaluation
Card seen by data collectors of mothers who retained the card	19.2%	15.2%

Proportion of caregivers with a vaccination card for Child

This shows a comparison between the proportions of caregivers who have a vaccination card (Routine Immunization card) for a child during the survey. Overall results show a slight drop in proportion for those with card seen: 15% at MTE compared to 19% at baseline (see above). However, a higher percentage of caregivers at MTE (47%) than at baseline (43%) claimed to have the RI card, but could not provide it as at the time of interview (see below). The low figure from the CGPP MTE could be attributed to the insurgency in the CGPP focal states of Yobe and Born where 45 percent of children in the North East are reported to have not received any vaccinations at all (NDHS, 2013). Since a very high percentage (45%) of children did not receive any vaccinations at all, it will by extension, be expected that their parents or caregivers will not possess RI cards.

Table 32: CGPP Nigeria 2015 possession of a routine immunization card

Surveyed States	Survey period	Yes, Card seen (%)	Yes Card not seen (%)	No (%)
Kaduna	Baseline	30.9	42.4	26.7
	MTE	20.7	50.3	29.0
Kano	Baseline	15.0	36.8	48.2
	MTE	26.2	26.2	47.5
Katsina	Baseline	15.3	60.1	24.5
	MTE	8.1	60.5	31.4
Yobe	Baseline	22.0	49.8	28.2
	MTE	17.2	40.7	42.1
Borno	Baseline	8.6	26.6	64.7
	MTE	13.7	57.3	39.0
All States	Baseline	19.2	42.8	38.2
	MTE	15.2	47.0	37.8

Another measure CGPP has done to support information sharing and usage includes the CGPP Nigeria secretariat presentation of their research findings to the international public health community at the 2015 American Public Health Association Annual Meeting in Chicago, Illinois.

The findings of three different studies were presented. The first, entitled "The use of mobile phone technology for improved quality of reporting" was by CGPP Nigeria secretariat director Samuel Usman, Lee Losey, and Frank Conlon. The study described how the use of mobile phone technology in insecure areas of Northern Nigeria has become a safe, efficient, and effective method

for collecting and disseminating large amounts of data, thereby addressing issues of accountability and quality in the polio program.

The second study entitled "Enhancing population immunity to polio in vulnerable populations in India, Angola, Nigeria, and the Horn of Africa through CHW interventions" was presented by CGPP Deputy Director Lee Losey. The presentation detailed the activities and contributions of its cadre of community health workers toward the project's three main objectives (improving vaccination campaign quality, increasing RI coverage, and enhancing AFP surveillance).

The final study entitled "GIS mapping and improving quality of immunization program delivery" was presented by CGPP Nigeria secretariat director Samuel Usman, Lee Losey, Frank Conlon, and C Bessey. That study described how the use of GIS to map settlements and track the migration of internally displaced people has led to improvements in large-scale program planning, standardized implementation, and accountability in Nigeria's RI and polio eradication programs.

Not only did these presentations inform the global community of progress and implementation in the Nigerian context, but they also shared a framework for success and highlighted several best practices in public health that can be used in other communities around the globe.

Overall CGPP Nigeria Recommendations

Based on the findings from the quantitative 2015 Cluster Survey and the qualitative interviews conducted for the MTE in August-September 2015, the following recommendations are made.

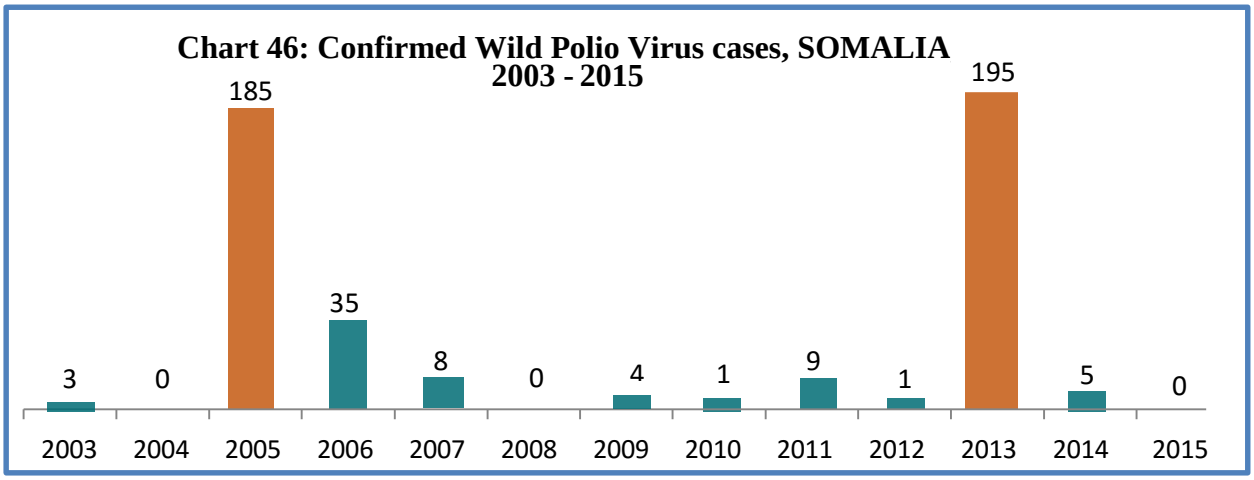
1. Rapidly assess how many vaccination cards are needed in each CGPP district by April 2016, report this to the NMoH, print and distribute needed RI cards in CGPP districts by May 2016. Support messaging to all of the community volunteers during their next training to encourage caregivers to retain the RI card.

2. Briefly review recommendations from other CGPP countries and tailor their suggestions for improved RI card retention by April 2016. For example, the Indian secretariat provides a plastic sleeve to hold the RI card and presents it to the mother of a newborn. The front of the RI card is designed as a celebratory birth announcement for the baby, improving the likelihood that the mother would keep the card as a memento as well as an RI card.

3. Rapidly assess all CGPP districts RI vaccine supply at the local government facility to be completed by April 1st, 2016. Communicate any deficiencies to the municipal health facility and the national Ministry of Health.

4. Bolster efforts in Borno and Katsina states to address correct AFP knowledge and awareness. Provide additional training for VCMs in Borno and Katsina to assist in continued health education in the community.

Country Report: SOMALIA



Orange for any year with over 150 wild polio virus cases

Teal for any year with less than 150 wild polio cases

Source: WHO and CDC.

Overview:

CGPP involvement in Somalia was just underway in 2015. Based in the regional offices of the Nairobi, Kenya CGPP Horn of Africa headquarters, project staff were primarily working on social mobilization efforts and supporting planning and activities. The polio outbreak in 2013 had been significant and had threatened the entire region due to fluid borders and large populations with low vaccination coverage. While the outbreak was quelled, there remain obstacles in Somalia that render it one of the highest risk locations. In some regions of Somalia, "all vaccination is banned" (interview UNICEF-Somalia, August 2015). There are areas of Somalia that are inaccessible to healthcare personnel including active conflict zones that prevent most preventive health activities.

CGPP has begun working on social mobilization and raising awareness with communities that are reachable. Somalia is one of the locations where cross-border activities are a key strategy to advancing polio eradication.

2015 CGPP Somalia Implementing Partners

Currently, CGPP is partnering with UNICEF-Somalia and American Refugee Committee (ARC) which both have some operations based in Nairobi, Kenya. Their aim is to grow numbers of social mobilizers with community members on the ground in Somalia and in the cross-border areas.

Table 33: CGPP Somalia Implementing Partners					
CGPP Partners	Regional State(s)	District(s)	No.<5 children 2015	District population by UNFPA	No. CVs 2015
American Refugee Committee (ARC)	Jubaland	Badhadhe	9,802	49,008	40
	Jubaland	Afmadow	13,022	65,108	16
Somali Aid	Jubaland	Dollow	8,204	41,020	27
	Jubaland	Belet-Hawa	17,337	86,684	23
	Jubaland	El-waq	6,192	30,958	25
	Jubaland	Bardere	32,876	164,379	8
TOTAL			87,433	437,157	139

Methodology: The cluster survey was not implemented in 2015 as operations were just beginning. Two qualitative interviews, however, were conducted with the Nairobi-based partners regarding operations in Somalia. The interviews include perspectives from the following bodies:

UNICEF-Somalia

American Refugee Committee

Objective 1: Build effective partnerships between agencies

One of the greatest contributions that CGPP is making in the context of Somalia is "the fact that they are putting the partners at the table" (Interview with Rebekkah Bernholt, American Refugee Committee- Somalia, Nairobi, Kenya August 2015) Bringing together the stakeholders that can move polio eradication efforts forward in Somalia will precede any success. CORE is laying the needed foundation for that collaboration.

Prevention of polio importation to other countries in the Horn of Africa region hinges on the cross-border immunization efforts in Somalia and neighboring countries.

> "CORE's role is **critical** – along the border. It will be difficult for them and for us." (Interview with Dr. Saumya Anand, UNICEF Somalia Monitoring & Evaluation Specialist (Polio) and Communication for Development Specialist (Polio), Nairobi, Kenya August 2015)

In order to accomplish the national polio eradication goals, coordination of international, national, and community-level partnerships must be continually supported. Partnerships exist

with ARC, UNICEF, and Somali Aid and efforts to engage community civil society members on the ground in Somalia are underway.

American Refugee Committee-Somalia staff based in Nairobi, Kenya, August 2015; K. Vergara

Objective 2: Strengthen routine immunization systems;

And

Objective 3: Support supplemental polio immunization activities

Efforts in Somalia are currently focused mainly on raising awareness at the community level for polio vaccination. Opening a dialogue, promoting health education, and engaging community members aims to sensitize communities and lay the groundwork to collaborate with them as key partners and stakeholders in polio eradication.

Objective 4: Support efforts to strengthen AFP surveillance

Stopping at nothing

Partners at UNICEF highlighted that in some areas,

"Vaccination is banned….but ***surveillance*** is not banned." (Interview with Dr. Saumya Anand, UNICEF Somalia Monitoring & Evaluation Specialist (Polio) UNICEF-Somalia, August 2015).

This is a critical starting point to recognize. It also embodies the brilliance found in many polio eradication champions across CGPP locations, latching onto the positive aspects in often bleak environments with staggering obstacles.

Work can start now to increase awareness about polio and identifying the signs and symptoms in the community without waiting for the complete surveillance infrastructure to be up and running. Surveillance starts with community identification. Health education can sensitize a community to accepting the polio vaccine as well.

Objective 5: Support timely documentation and use of information

Operations are continuing out of the Horn of Africa (HoA) offices in Nairobi, Kenya with active information sharing and communication with partners on the ground in Somalia. Additionally, CGPP HoA Somalia staff travel to Somalia regularly to support coordination and organization activities, while communicating closely and acting in lock-step with HoA Kenya-based staff.

Overall CGPP Somalia recommendations

Based on the qualitative interviews conducted for the MTE in August 2015 and feedback from the partners, the following recommendations are made.

1. Continue to raise awareness about the polio vaccine through the social mobilizers.
2. Meet weekly with the UNICEF-Somalia team to coordinate activities and focus efforts to avoid duplicity.
3. Long term planning is highly encouraged by CGPP partners. "Please plan long term; not short term. The impact will be seen 1 year." (Interview with Dr. Saumya Anand, UNICEF Somalia Monitoring & Evaluation Specialist (Polio) and Dr. Chaudhary Mohd Parvez Alam, Communication for Development Specialist (Polio), Nairobi, Kenya August 2015)
4. Increase cross-border discussions at the district level in Somalia and surrounding countries to identify appropriate transit points and evaluate the community acceptance.
5. Increase the number of community health volunteers in active regions and elicit feedback from current CHVs as to how best to improve health education and promotion.

Country Report: SOUTH SUDAN

Overview:

> "The Horn of Africa is very concerned. We have surpassed Somalia in unvaccinated children: 3.2 million under-fives (children under 5yrs old) with 400,000 (of those) totally unvaccinated… Any virus that comes here is like fire" (interview with South Sudan CGPP Secretariat Director Dr. Anthony Kisanga, Juba, South Sudan, September 2015)

Women carrying water containers past a government building in Juba, South Sudan, September 2015; K. Vergara

South Sudan is the newest nation included in the polio project. It was officially formed only four years ago, although CGPP started implementation there in 2010.

This new nation is still experiencing civil conflict in some counties that have been rendered inaccessible to official healthcare personnel. The situations worsened in December 2013 by an outbreak of the conflict that resulted in the displacement of more than 2.2 million people, 1.6 million of whom remain displaced inside South Sudan. Active conflict continues in the three states - Unity, Upper Nile and Jonglei. The situation in these states remains volatile, posing challenges to access and destruction of health facilities and of the cold chain.

It is estimated that 57% of all health facilities in the three states are not functioning and population displacement has resulted in a shortage of health personnel to support vaccination services.

A new peace agreement and cease-fire was signed at the end of August 2015. There remains, however, a high state of security and general unrest. While the capital Juba was considered safer than more remote regions, there was still a military enforced curfew at night. WHO and UNICEF personnel had not been cleared for transit to many areas which hindered their ability to extend reach and properly assess need. Local civil society organizations did not fall under the same restrictions which presented an invaluable position for organizations like the Core Group Polio Project. CGPP personnel can be the 'ears', 'voice' and 'hands' on the ground.

There is an estimated total of only 50 miles of paved road in the capital. The population is estimated to be just under 9 million people, distributed over 645 square kilometers; 70% of that population is under 30 years of age.

CGPP South Sudan Secretariat Director Dr. Anthony Kisanga, Juba, South Sudan, September 2015; K. Vergara

As reported by the Director of Primary Healthcare in the Ministry of Health, there is a large human resource deficit in the country. For one example, he shared that there are a total of "forty qualified midwives" in the new nation and one healthcare data officer for the whole country. The director kindly referred to him as "this poor fellow."

There are EPI officers in remote regions in South Sudan, but they may not have high literacy rates which provides training and communication obstacles. The use of cell phones is prevalent and expanding, and is clearly a "game-changer". Cell phones provide healthcare communication speed and ability in hard-to-reach areas. Movement of vaccinators is challenging as the road infrastructure is very limited. Flooding in the rainy season can cut off an area for several months.

Lack of security in South Sudan is one of the greatest obstacles to healthcare. There are regions where Ministry of Health and civil society personnel cannot travel and, thus, the population has not been immunized for polio or any other vaccine-preventable diseases for variable time periods. In one hard-to-reach area, staff from the American Refugee Committee reported that they had done health promotion activities with the local leaders before an immunization campaign. An adult member of the local parliament expressed that he had never had an immunization in his lifetime, but that he was content to know that his grandchildren will be immunized against some disease. This anecdotal verification of a potentially large unvaccinated populace, along with recent and ongoing epidemiological confirmation of outbreaks of other vaccine-preventable illnesses like measles, is evidence of a large susceptible and unprotected population. Population movement in the Horn of Africa due to the pastoralist or nomadic way of life for millions contributes to the near perfect circumstances for infectious disease outbreak and the potential for extensive transmission.

There are additional challenges present in South Sudan. For example, in Juba, the electricity is only available at the Ministry of Health (and CGPP offices) for limited hours during the day: not between 1:00-2:00 pm or after 6:00 pm. This means that internet connection stops then as well.

In the interview with UNICEF Horn of Africa's Dr. Okiror and Rustam Haydarov, they were very keen to share their perspective. One of the specific recommendations that Dr. Okiror made was the desire to have Core Group do cross-border activities with Uganda and South Sudan. He said that it "is a very critical border ... (and) it would be nice to be on the Uganda side as well, especially now that there is a systematic approach."

Dr. Okiror shared that his greatest concerns with the data fall under the categories of "information sharing" and "interpretation." Perspectives were shared that called for not sharing the raw data, but sharing the interpretation along with recommendations for action. In the light of serious human resource limitations, it was advocated respectfully for that "actually chewing (data)" would make it easier to swallow. "We need to present the data along with action items. This is what you need to do."

Two systems of reporting health data - paper and electronic - run parallel with one another and are not synchronized. From the perspectives of those on the ground, the same health outcomes are recorded but never produce the same results by the time they reach the national health system level. Some health workers report routine immunization on one form but do not report it on another believing it was previously reported. A great duplication in reporting duties exists for extraordinarily burdened health care workers.

American Refugee Committee, Juba, South Sudan, September 2015; K. Vergara

Additionally, there exists inadequate time or insufficient training of staff to aggregate and analyze the data. Initial reactions may be to eliminate the paper reporting system entirely and focus on the electronic health data collection and transfer. Cell phone and tablet software are available that could streamline data reporting and automate each municipal level aggregation. This would decrease the administrative time burden and allow rapid analysis of large data inputs. However, while the long-term benefits of adopting this system now would be enormous, so are the immediate financial and human resource needs of South Sudan. The stark context of South Sudan must be in focus while discussing any realistic recommendations.

The foundation of a public health system, as well as a national government, is being laid in South Sudan. It is a highly energetic environment perhaps in response to the new nation being in a precarious new balance.

Methodology: In addition to the quantitative cluster survey, a total of 11 semi-structured qualitative interviews were conducted, ranging from individual to small focus group format to the large national UNICEF polio debriefing to the South Sudanese Ministry of Health. The interviews include perspectives from the following bodies:

CORE Group Polio Project – Secretariat Director

American Refugee Committee

Bio-AID – local South Sudanese CSO

Republic of South Sudan - Ministry of Health – Director of Primary Healthcare

Republic of South Sudan - Ministry of Health – Director of EPI & Child Health

Bill & Melinda Gates Foundation

World Vision

AMREF

UNICEF – Dr. Anu Puri

World Health Organization

UNICEF – Horn of Africa representatives

With regard to the quantitative cluster survey methodology, each county had four teams comprised of two people per team. Mobile phones with GPS were used to track each household surveyed. Teams were coordinated by a lead surveyor from the Secretariat with the partners' project officers on the ground. A total of 240 households were planned to be surveyed per county and each team was to survey a minimum of 15 households per day.

Socio-demographic Characteristics of the 2015 Cluster Survey

Approximately 15% of respondents to the survey had completed primary education. Regarding livelihood, 89% were involved in agriculture, 18% business, and 9% livestock (respondents could have chosen more than one category).

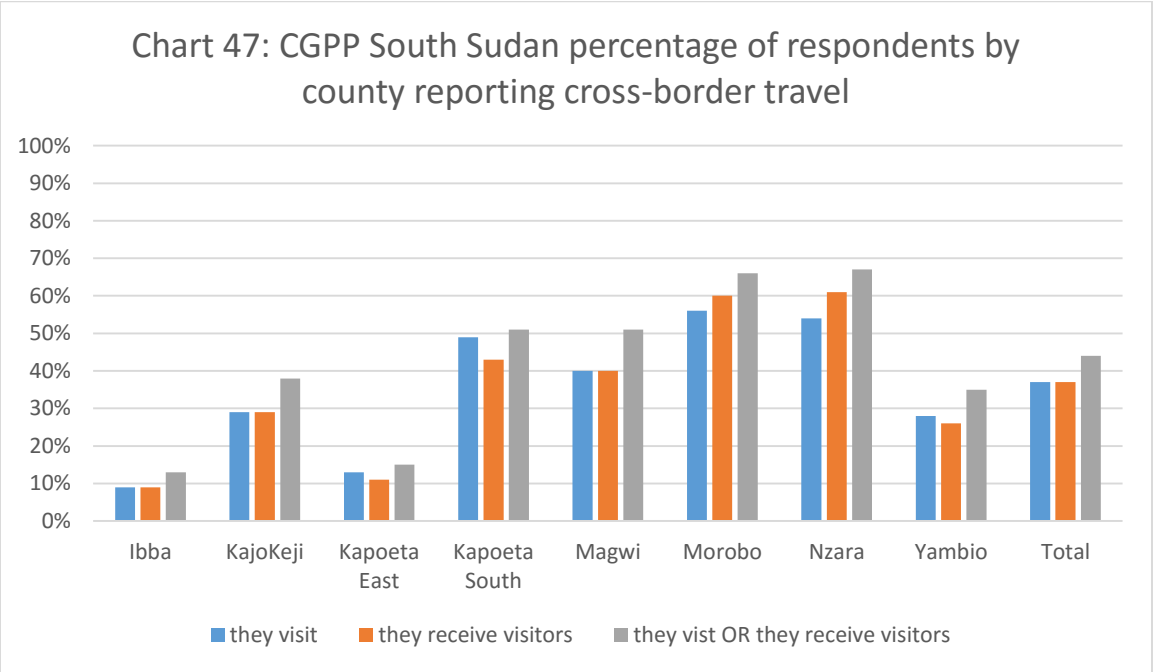
Objective 1: Build effective partnerships between agencies

The most critical partnership that exists for CGPP is the partnership built on the community level with community health mobilizers (CHM) and community members. As seen in the table below, about half of the respondents in the survey indicated that the community health mobilizer visited their home in the past six months other than during an SIA. This is evidence of the involvement of the CHMs in CGPP districts, the visibility and presence they have in the communities, and the trust and acceptance needed for home visits to occur. Strengthening this partnership lends to improved trust on health messages and more efficient and effective execution of SIAs and other health promotion interventions.

Table 34: CGPP South Sudan percentage of respondents who reported a home visit by the community health mobilizer in the past six months other than during an SIA

CGPP South Sudan	% of mothers/caretakers who reported of a home visit by community health volunteers/mobilizer in past 6 months other than during SIAs		
County	Yes		Total Count
	Count	Percent	
Ibba	70	29%	240
KajoKeji	121	61%	197
KapoetaEast	32	34%	94
KapoetaSouth	125	61%	206
Magwi	51	29%	174
Morobo	113	47%	241
Nzara	162	68%	238
Yambio	86	55%	155
Total	760	**49%**	1545

As seen in the chart below, cross-border partnerships are critical to protect a population that has significant exposure to environments across international borders. Visiting locations across an international border and receiving visitors from across international borders is common in many CGPP districts. In order to provide vaccine coverage for this population, the public health infrastructure should address this reality and coordinate SIAs.

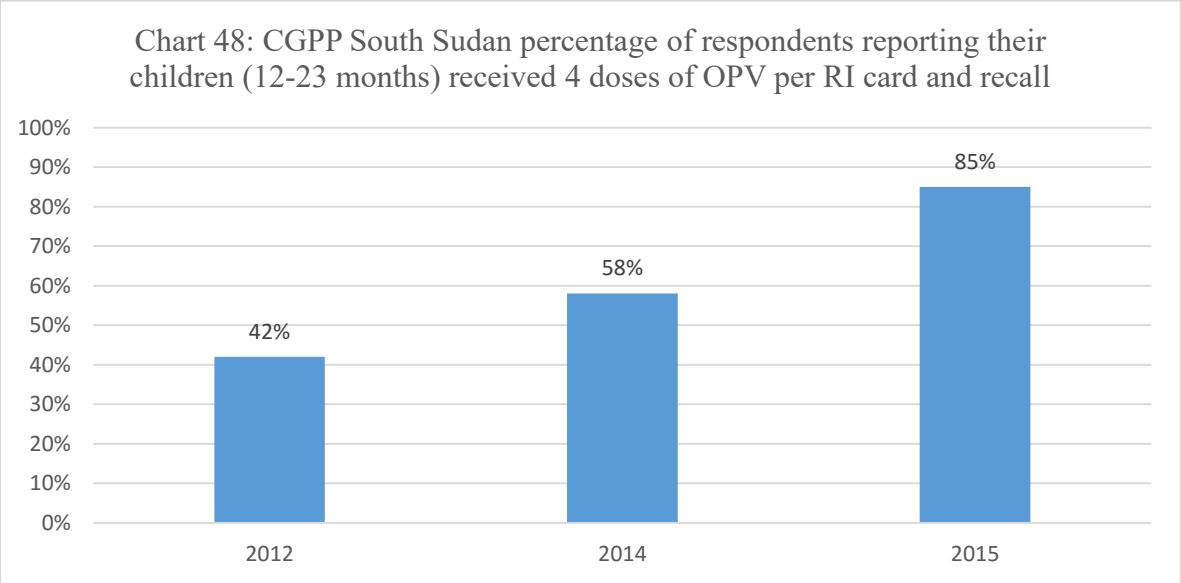


Objective 2: Strengthen routine immunization systems

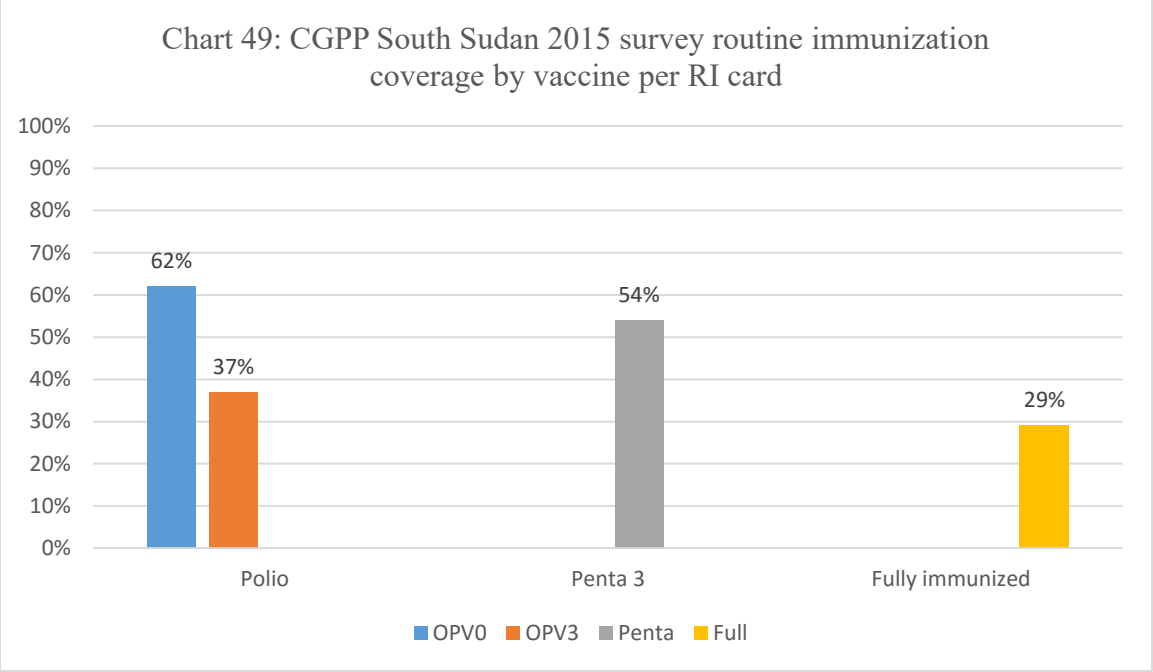
While 91% of respondents claimed that their children had received a polio vaccination at least once in their lives, disparities exist between counties where CGPP is active, with two counties falling below 80%. It is important to recognize that these counties have environments that are conducive for CGPP South Sudan to administer the cluster survey. One could deduce that counties that are unreachable for this type of activity were perhaps also not able to be served during previous campaigns. Thus, the population in those counties may have even higher percentages of children that have never received a single polio vaccination.

Table 35: CGPP South Sudan; percentage of children under 5yrs old who ever received a polio vaccination					
County	Yes		No, No Response, or Don't know		Total Count
	Count	Percent	Count	Percent	
Ibba	188	78.33%	52	21.67%	240
KajoKeji	192	97.46%	5	2.54%	197
KapoetaEast	88	93.62%	6	6.38%	94
KapoetaSouth	163	79.13%	43	20.87%	206
Magwi	168	96.55%	6	3.45%	174
Morobo	235	97.51%	6	2.49%	241
Nzara	225	94.54%	13	5.46%	238
Yambio	148	95.48%	7	4.52%	155
Total	1407	91.07%	138	8.93%	1545

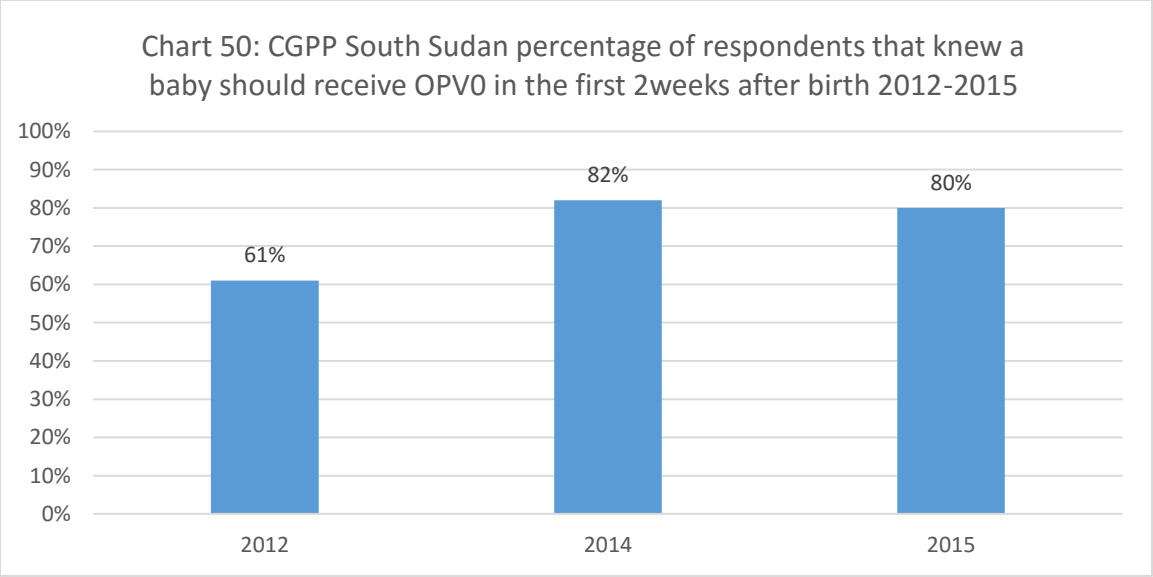
One of the most encouraging trends for CGPP South Sudan was the remarkable increase of respondents claiming their children received four doses of OPV (42% in 2012 to 85% in 2015). The combination of RI and SIAs show signs that coverage is increasing at least in areas where CGPP is focusing its efforts.



It is clear though that routine immunization is still very low and the percentage of respondents that report their children are "fully immunized" is only 29%.



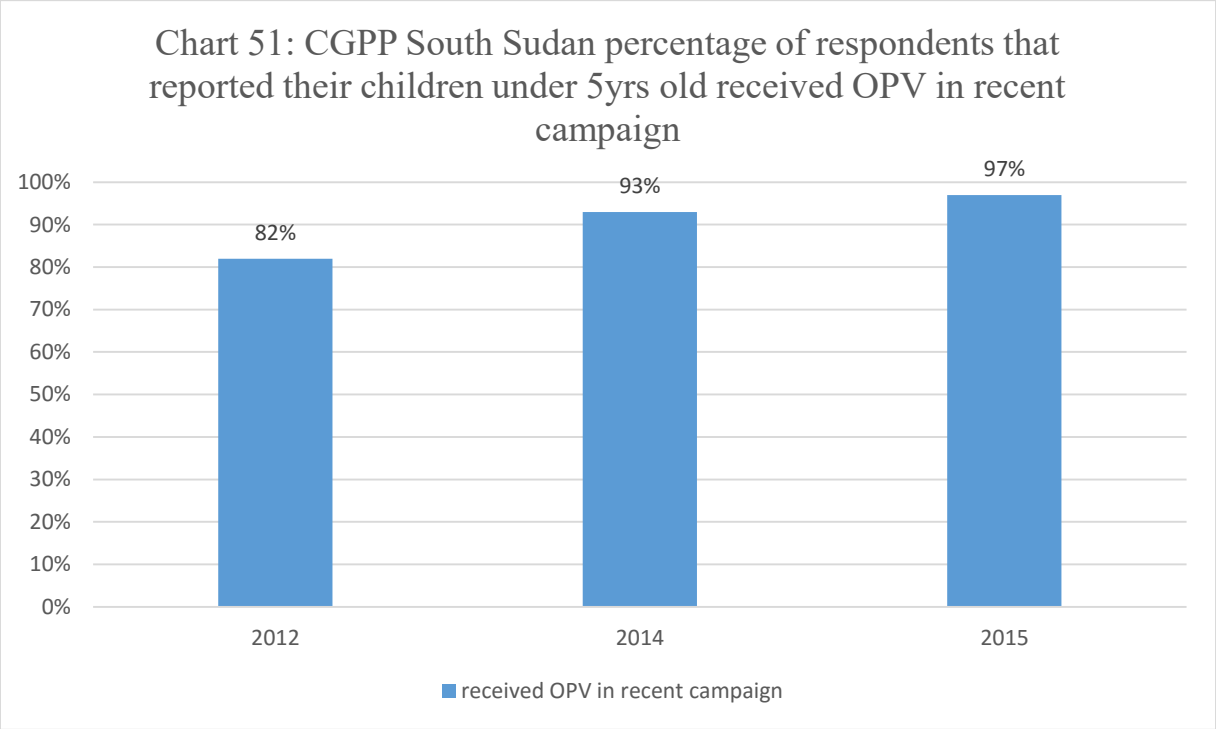
While infrastructure issues challenge RI coverage, there are hopeful indicators that show improvement in polio health knowledge. For example, the percentage of respondents that knew a baby should receive the first dose of polio vaccine (OPV) within the first two weeks of life improved from 61% in 2012 to 80% in 2015.



This achievement was due to the improvement in social mobilization conducted through a network of community volunteers that targeted women through health education focus groups.

Objective 3: Support supplemental polio immunization activities

Encouragingly, per the 2015 survey, 70% of respondents believed multiple doses of polio vaccination were good for their children. Yet, 28% still believed that some children (sick, etc) should not be vaccinated or might be hurt by polio vaccinations - revealing a need for continued targeted health education.



Supplemental immunization activities for polio eradication have been conducted in South Sudan since 1999. Over the period of the 2015 mid-term survey, four rounds of such immunizations were conducted across the entire country: November and December 2014 and February and March 2015. Coverage of these campaigns was assessed among children 12-23 months surveyed for childhood immunization, and it was found that 97% of the children surveyed received oral polio vaccination during the national immunization days, as reported by the mothers.

The achievement was due to additional resources provided by the project to the counties supported through the CORE Group Polio Project in terms of quality training of vaccinators, provision of extra vaccination teams, timely distribution of vaccines, provision of fuel for freezing ice packs, strengthening support supervision and intensification of social mobilization and communication through its network of community volunteers. (CGPP South Sudan, 2015)

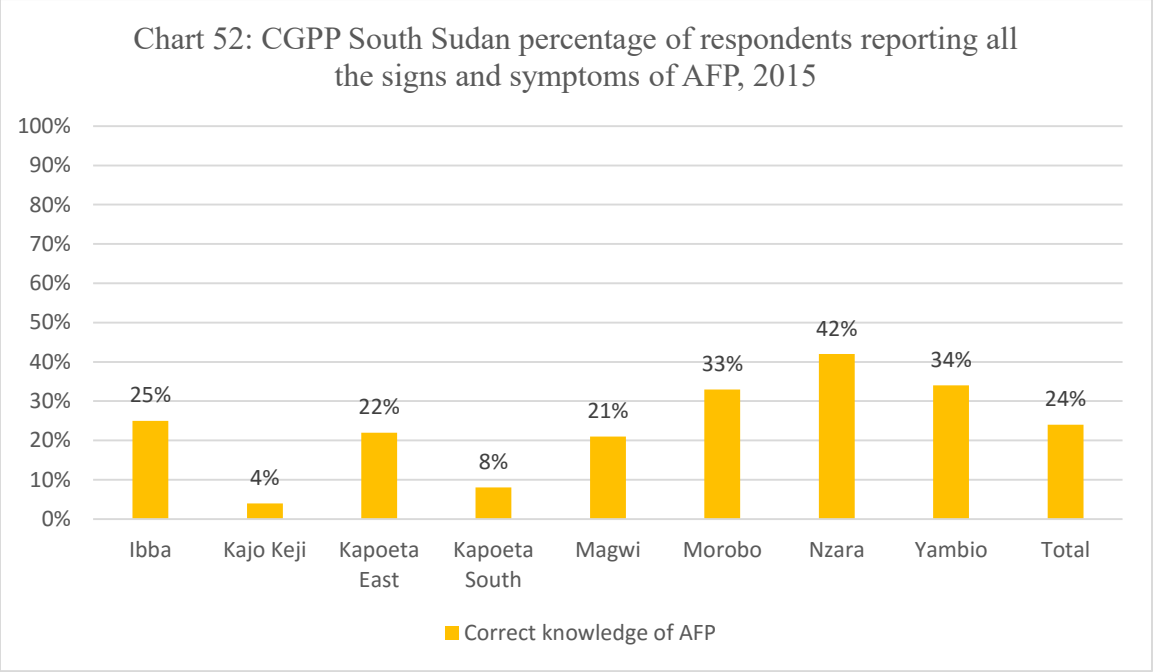
In general, 81% of households surveyed reported being visited by a vaccinator in the recent campaign and only 17% reported that they visited a vaccination booth during the campaign. This highlights the need and preference for the house-to-house visits.

The reasons reported for not vaccinating children included the child was not at home (47%), the vaccination team did not come (33%), and the child was sick or sleeping (9%).

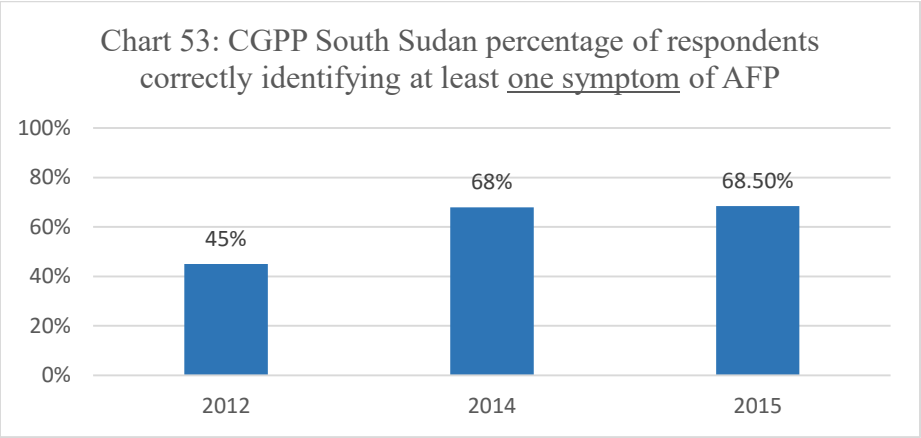
Three years ago, half (50%) of the mothers/caretakers interviewed believe that some children should not be vaccinated or may be harmed by polio vaccination. After intense health education efforts involving community leaders, women's group dialogues and use of different communication channels like radio talk shows or, traditional songs, this perception was reduced to only 28% in 2015.

Objective 4: Support efforts to strengthen AFP surveillance

In general, AFP knowledge is extremely low in the communities surveyed. In half of the districts surveyed, only one quarter of the respondents knew the signs and symptoms of AFP. This has critical ramifications with regard to surveillance. If community members do not know what to look for or what should be reported, then the healthcare community cannot respond quickly and appropriately.



There was some hopeful evidence of increase in AFP knowledge from 2012. The percentage of respondents to correctly identify at least one symptom of AFP increased from 45% in 2012 to almost 69% in 2015.



Most likely this achievement was attributable to the work of the community volunteers who were supplied with pictorial flip charts on acute flaccid paralysis during focus group discussions held in the community.

Almost all the respondents interviewed were able to mention that they would take their children to the nearest clinic or hospital, or tell a health volunteer if they showed paralysis on any part of their body. This represented a 50% increase from the 2012 survey to the 2015 survey.

Objective 5: Support timely documentation and use of information

Information sharing from the international level to the community level is critical to advance polio eradication. In South Sudan, more than half (54%) of respondents to the survey reported that the CGPP community mobilizers were their source of information regarding the polio campaigns. This positions CGPP partners to be vital messengers in polio vaccination promotions as well as other health promotional activities.

Regarding documentation, one of the most reliable verification methods is for health mobilizers to see the routine immunization card for each child kept by the caretakers. Unfortunately, RI card retention is extremely low (31%) when averaged out in CGPP South Sudan districts with a vast range between 3%-81%. Targeted efforts to the lowest regions (Kapoeta East 3%, Nzara 4%, Kapoeta South 12%) is needed immediately in order to lay the foundation to better assess immunization coverage in the future.

Overall CGPP South Sudan Recommendations

1. Address microplanning for future SIAs to increase number of team members during house to house vaccination. Of those that did not vaccinate their children in the last campaign, 33% of respondents claimed that they did not vaccinate was because the vaccination “team did not come."
2. Cross-border coordination of SIAs should be prioritized in light of populations that either visit or receive visitors from abroad. UNICEF representatives also suggest partnering in Uganda as that is considered a high-risk border.

3. Health education needs to be improved in the community addressing deficit of knowledge related to AFP and lack of awareness about the benefits of OPV. Knowledge and awareness of AFP is extremely low, creating an environment where AFP could be unrecognized and not allowing the health officials to respond quickly to any potential outbreak.
4. Budget for additional fuel and transportation costs in the hard to reach areas and plan for possible future fuel shortages.
5. Additional data collection tools (i.e. phones or paper questionnaires) should be provided to survey supervisors to avoid delays or loss of data. Also, portable solar chargers should be provided to data collectors to support them in areas where there is no electricity.
6. Length of questions for future surveys should be limited to essential indicators to decrease burden on respondents and survey administers.
7. Increase promotion of RI card retention specifically in Kapoeta East, Kapoeta South, and Nzara.

CORE Group Polio Project: Looking forward

Future health focus should be determined with national and local input to ensure buy-in and commitment. An example shared from South Sudan highlights the importance of working with the local community.

> "Now there is "ownership"… At the county level, we involve the county MOH in planning … We support them in their development of a work plan. We want the community to benefit from this project – so ALL the community health workers are from THAT community. So when they go to vaccinate the children – they say 'Oh, this is my uncle!'…They instill that kind of trust." (interview with Dr. Anthony Kisanga, South Sudan CGPP Secretariat Director, Juba, South Sudan, September 2015)

- Partners in CGPP countries resoundingly identified that the polio efforts should focus on routine immunization once polio is eradicated. Other health outcomes identified were improving anti-natal care, eradicating measles, and improving basic water and sanitation practices. Addressing malaria or tuberculosis were also suggested.

- Increase polio vaccine coverage with bolstering routine immunization.

> "Routine Immunization is the area that MOST needs this (CGPP) model." (interview with Carl Hasselblad, country lead for Bill & Melinda Gates Foundation, Juba, South Sudan, September 2015)

- Sustain momentum for transition micro-planning.

- Build human resource capacity through partnering with local civil society organizations: increase the number of community health workers and increase the number of local health training sessions.

- Increase the number and frequency of local health trainings.

- Continue raising awareness about polio immunization through community health education and partnerships with local civil society organizations.

- Advocate persistently at the national and municipal levels to ensure commitment and to fight complacency.

- Share challenges and best practices within the local context as well as across international borders.

- Increase cross-border communication and coordination and establish recommended procedures to initiate and maintain these relationships.

- Standardize the data management and analysis of the survey tools to improve efficiency in program evaluation.

The legacy of polio eradication needs to be more than the absence of one disease. The assets developed through the last 60 years of polio eradication efforts, although often difficult to monetize, are of tremendous value. The network of community health workers and volunteers and the increased knowledge base of the population with regard to health awareness and health services prepare a nation to better address other health outcomes. Capacity has been established and improved in the following ways: new partnerships, communication between multi-national organizations, and private and public sector coordination. Micro-planning protocols have been established at the national, municipal, and local levels, and the network of engaged individuals with a common health goal has grown internationally. Achieving public health accomplishments that were once thought impossible should embolden all partners to continue their efforts and, when polio is eradicated, readily take up other daunting health burdens.

APPENDIX 1: References

Centers for Disease Control and Prevention, Global Health: Polio, Updates on CDC's Polio Eradication Efforts, retrieved 10/15 from http://www.cdc.gov/polio/updates/

CGPP Angola, 2015. "Vaccination coverage among 12 to 23 month olds: Midterm Evaluation of CORE Group Polio Project" CGPP, USAID

CGPP Ethiopia Annual Review and Planning Meeting report, CCRDA, July, 2015

CGPP Ethiopian Midterm Evaluation Report, 2015. CGPP, USAID

CORE Group Polio Project in Ethiopia -Five Year Summary Report (2009-2013)

CGPP India, 2015. "Midterm evaluation report CGPP India", GOA Institute of Management, USAID, CGPP.

CGPP Kenya, 2015. CGPP Cluster Survey Results, CGPP Kenya

CGPP Nigeria, 2015. Midterm Evaluation; Household Cluster Survey

CGPP South Sudan, 2015. Midterm Evaluation Report

Daily Times of Nigeria, 2015. "Declaring Nigeria polio free!" September 30, 2015. 12/15 retrieved http://dailytimes.com.ng/declaring-nigeria-polio-free/

Ethiopian Medical Journal, July 2013. Special Issue on Contributing towards Polio Eradication in Ethiopia; July 2013, vol 51, supplement 1

Independent Monitoring Board of the Global Polio Eradication Initiative (2015) Now is the time for peak performance: twelfth report, October 2015. Produced after IMB Meeting in London, Oct 2015.

Nigeria Demographic and Health Survey 2013. National Population Commission, ICF International, 11/15 retrieved from http://dhsprogram.com/pubs/pdf/PR41/PR41.pdf

Pastoralist Concern Association Ethiopia, 2006. "On the Move: Understanding pastoralism in Ethiopia" USAID, PC, and Save the Children

Pastoralist Concern, 2013. "Voice of Pastoralist on Development" Issue No. 04, January 2013

USAID, CGPP, CCRDA, 2013. Laudable Efforts: Some good practices from CORE Group Polio Project in Ethiopia

World Health Organization, 2015. Immunization Monitoring Global Summary, 10/15 retrieved http://apps.who.int/immunization_monitoring/globalsummary/timeseries/tswucoveragepol3.html

APPENDIX 2: Qualitative Survey Tool

Country:

Date: / 09 / 2015

Time:

Interview ID: 00 - 000

Interview Format:

1. Organization:
2. Name:
3. Title:
4. Email:
5. What is your role in polio eradication?
6. What is your relationship to the CORE Group?
7. Do think CORE has made a meaningful contribution to polio eradication in your country?
8. Your country has not seen a case of polio since _____. What do you think was the key to your success in stopping polio?
9. What role do you think civil society or non-governmental organizations should play in polio eradication? Do they add anything of value?

SWOCA

10. **Strength**s – What have been the strengths or stronger aspects of the national polio eradication program? Prompts to the interviewee to address their specific level (national, local, etc) and varying aspects of organization, infrastructure, partnership with other sectors, partnership with CGPP.

11. **Weaknesses** – What could be improved in the program? Same prompts used in "Strength" section.

12. **Opportunities** – What future opportunities may be available due to the polio eradication effort? How has this coordinated effort built infrastructure that could be applied to future public health needs? How best should the infrastructure built through the polio program be used?

13. **Challenges** – What have been the obstacles preventing more rapid success in polio eradication? What have been the greatest threats to vaccination implementation? How did you respond to those challenges? Or, how are you responding now?

14. **Achievements** – What have been the greatest achievements of the polio effort in your country (your department, your community, etc)? What has CGPP helped you achieve specifically?

Additional Discussion Questions:

15. *From your perspective, have other health outcomes been effected by the polio eradication effort? Any health outcomes improved? Any health outcomes worsened? (rates of other vaccines, etc)

16. *How, if at all, has the CGPP had an impact that can be felt beyond polio activities? (other than specific health outcomes)

17. What belief systems did you encounter with regard to vaccination?

    a. Positive?
    b. Negative?

18. In every country, there are challenges with regard to data. What are the challenges here?

19. Is there anything more that I should know?

APPENDIX 3: Cluster Survey Tool (Ethiopia)

CORE Group Polio Project Global Evaluation Questionnaire Modules

The respondents to the questionnaire are women or caretakers with at least one child between 12 and 23 months old (children who have turned one year old, but not yet turned two years old)

Questionnaire Number: ☐

IDENTIFICATION OF INTERVIEW

GPS Recording_____

REGION: _____ ZONE:

WOREDA:_____ KEBELE:_____

VILLAGE/GOTE:_____ IMPLEMENTING PARTNER

INTERVIEWER'S NAME: _____ DATE OF INTERVIEW: / /

SUPERVISOR'S NAME: _____

SIGNATURE OF SUPERVISOR _____ DATE REVIEWED _____/_____/_____

Hello. My name is _____, and I work with CGPP/_____ and the _____ Woreda Health Office. We are conducting a midterm evaluation survey and we would like your participation in order to learn more about the vaccination status of your children and related factors. This interview should last no more than _____ minutes. The information that you volunteer will help CORE Group and the Ministry of Health to improve vaccination services. Your identity will not be disclosed.

Would you like to ask any questions about this interview?

Do you agree to be interviewed? ☐ YES ☐ NO

PART ONE			
MODULE 1: SOCIO-DEMOGRAPHIC PROFILE			
No.	**Question**	**Coding**	**Go to…**
1	Residence:	Rural ……..…….. 1 Urban……...…….…….…….2	
2	Sex of caretaker being interviewed:	Male …… 1 Female…….…….…2	
3	Can you read and write?	Yes…….…… 1 No…….....…….2	→ **Go to 3.1** → **Go to 4**
3.1	What is the highest level of education you completed?	Informal Education……....1 1-4……..	
4	What is your mother tongue?	Amharic...…….……..1 Oromiffa…….……2 Somali……..……...3 Agnua.…….…..4 Nuer……...…….5	

		Ari……..……6 Other (SPECIFY)...…….....……..…96 _____	
5	How old are you?	Response in years….. [ ][ ]	
6	Are you a permanent resident?	Yes…… …..1	→**Go to 6.1**
6.1	If yes, how long have you lived continuously in (*NAME PLACE OF CURRENT RESIDENCE*)? IF ALWAYS, ENTER AGE FROM Q5 IF LESS THAN A YEAR, ENTER 00	Number of years……. [ ][ ]	
6.2	If no, Specify the country/ if it is with in Ethiopia Specify Region, Zone, Woreda and kebelle	Specify_____ __	
7	What is your occupation?	House wives……..……1 Business/shop/office……2 House maid……...…3 Selling in street/market……4 Farming…… …. 5 Pastoralist……..6 Other (SPECIFY)……96 _____	

8	Who takes care of your children when you are not at home?	Respondent……1 Respondent's mother……2 Respondent's mother-in-law……3 Husband/partner……4 Older children……5 Neighbors/friends……6 Other……96	
9	What is your religion?	Ethiopian Orthodox……1 Other Christian……2 Islam……3 Waqe Fata……4 Other (SPECIFY)……96 _____	
MODULE 2: POLIO IMMUNIZATION KNOWLEDGE & ATTITUDES			
No.	**Question**	**Coding**	**Go to…**
10	Have you ever heard about polio	Yes……1 No……2	**→Go to 11** **→Go to 12**

11	How do you find out information about polio? **RECORD ALL MENTIONED**	Radio ……...…1 TV……..…….....2 Family……..…...3 Friend/Neighbor…….…….....4 Community Volunteer…….5 Printed materials/poster/banner……...6 Health workers……...…….....7 SMS……..…..8 Community leader……9 Church/mosque……..…..10 Other…….…..96	
12	At what age does a baby need to receive the polio vaccine, that is, drops in the mouth, for the first time?	First two weeks……1 Later…….…….…..…….2 Don't know……98	
13	What happens if a child receives many doses of polio vaccine?	Child is more protected from polio...……..1 Child may be harmed……....…...2 Nothing/child not helped or harmed…..….....3	

		Don't know/Not sure……..……..…...98	
14	Do you believe that there are some children who should not be vaccinated or might be hurt by polio vaccination?	Yes……..……1 No……..……..……..2 Don't know/Not sure……..…..…...98	→ **Go to 14.1** → **Go to 15** → **Go to 15**
14.1	Which children should not receive polio vaccination? **RECORD ALL MENTIONED**	Newborns……..……1 Sick children……..……..2 Physically handicapped children…. . . . . 3 Other(SPECIFY)……..….96 _____	
MODULE 3: ROUTINE IMMUNIZATION KNOWLEDGE & ATTITUDES			
15	Where can you take a child to be vaccinated with all vaccines? **RECORD ALL MENTIONED**	Health facility……..…….1 Private provider……..….2 Faith-based clinic……....3 Other (SPECIFY)……..…96 _____ Don't know……..…..98	

16	By what means do you travel to the place where people in your community generally go to get their children vaccinated?	By foot…… 1 By animal ride…….……....2 By bus…….. 3 By car or motorcycle……....4 I don't travel to that place……5	**→Go to 16.1** **→Go to 16.1** **→Go to 16.1** **→Go to 16.1** **→Go to 17**
16.1	How much time does it take to get to the place where people in your community generally go to get their children vaccinated?	Less than 30 minutes…..……..……1 30 minutes – under 1 hour..……..…2 1 hour to under 2 hours……3 2 hours to under 3 hours……...4 3 or more hours……....5	
17	Can you tell me if people in your community think the general quality of immunization services in the community is excellent, good, acceptable, fair, or poor?	Poor…….…….1 Fair…….. .....2 Good……3 Excellent…….4	

		Don't know……....98	
MODULE 4: ROUTINE IMMUNIZATION HISTORY			
	This module is designed to capture the routine immunization history of children <u>aged 12-23 months of age</u>. Ask the mother or caretaker how many children, who are <u>12 – 23 months of age</u>, live in the household. If there is more than one eligible child, select a child at random. Record vaccination information for the selected child.		
18	How many children aged 12-23 month live in this household?	Number of children…… [ ]	
19	What is the child's name?	NAME:_____	
20	Date of Birth	_____/_____/_____ DD MM YYYY	
21	Sex of child	Male…….1 Female…….....2	
22	Did (NAME) vaccinated?	Yes ……..……..……1 No ……...……2	→ **Go to 23** → **Go to 35**
23	Do you have a vaccination card for (NAME)? May I see it?	Yes, seen……...1 Yes, not seen…….2 No ……3	→ **Go to 24** → **Go to 26** → **Go to 28**

24	**1) COPY THE VACCINATION DATE FROM THE MOTHER CARD FOR EACH VACCINATION** **2) WRITE 44 IN THE DAY COLUMN IF THE CARD INDICATES THAT A VACCINATION WAS GIVEN BUT DOES NOT INDICATE A DATE**

		Day		**Month**		**Year**			
24.1	BCG…… ……								
24.2	OPV0…… ……..								
24.3	OPV1…… ……..								
24.4	OPV2…… ……								
24.5	OPV3…… ……								
24.6	Pentavalent 1…….								
24.7	Pentavalent2…… …..								

24.8	Pentavalent3…… …...									
24.9	Measles…… …..									
24.10	PCV 1……..…….									
24.11	PCV 2……									
24.12	PCV 3…….									
24.13	Rotavirus 1…….									
24.14	Rotavirus 2…….									

25	Has NAME received any vaccinations that are not recorded on this card, **NOT** including vaccinations given during polio campaigns?	Yes……..	→ **Go to 29**
		No……	→ **Go to 35**

NOTE: IF YOU HAVE RECORDED A DATE FOR ALL 14 VACCINATIONS IN THE GRID ABOVE FROM THE

Immunization status by history

26	If not seen, why?	I don't received…….…… Kept in the health facility ……. Missed ……. Locked in other place…… Other (specify) ……. _____	
27	**FOR CARD NOT SEEN COPY THE VACCINATION DATE FROM THE HEALTH FACILITIES CARD FOR EACH VACCINATION**		

		Day		Month		Year				
27.1	BCG…… ……									
27.2	OPV0…… ……..									
27.3	OPV1…… ……..									
27.4	OPV2…… ……									
27.5	OPV3…… ……									

27.6	Pentavalent 1…….									
27.7	Pentavalent2…… …..									
27.8	Pentavalent3…… …...									
27.9	Measles…… …..									
27.10	PCV 1……..……									
27.11	PCV 2……									
27.12	PCV 3…….									
27.13	Rotavirus 1…….									
27.14	Rotavirus 2…….									
28	Did (NAME) ever receive any vaccinations, **NOT** including vaccinations given during polio campaigns?				Yes……					→ **Go to 29**
					No……					→ **Go to 35**
					Don't know……..					→ **Go to 35**

29	Has (NAME) received a BCG vaccination against tuberculosis, that is, an injection in the arm or shoulder that usually causes a scar?	Yes…… No…… Don't know……..	
30	Has (NAME) received polio vaccine, that is, drops in the mouth?	Yes…… No…… Don't know……..	→ **Go to 30.1** → **Go to 31** → **Go to 31**
30.1	At what age was the polio vaccine received for the first time?	First two weeks……..…… Later…… Don't know…….……	
30.2	How many times was the polio vaccine received, **NOT** including during polio campaigns?	Number of times…… ☐ Don't know……...	
31	Has (NAME) received pentavalent vaccination, that is, an injection given in the left thigh or buttocks, sometimes at the same time as polio drops?	Yes…… No…… Don't know…….……	→ **Go to 31.1** → **Go to 32** → **Go to 32**
31.1	How many times was the pentavalent vaccination given?	Number of times…… ☐ Don't know……..	
32	Has (NAME) received a measles injection or an MMR injection – that is, a shot in the left arm at the age of 9 months or older – to prevent him/her from getting measles?	Yes…… No…….. Don't know…….……	

33	Has (NAME) received PCV vaccination, that is, an injection given in the right thigh or buttocks	Yes…… No…… Don't know……	→ **G 33.1** → **Go to 34** → **Go to 34**
33.1	How many times was the PCV vaccination given?	Number of times…… ☐ Don't know……98	
34	Has (NAME) received Rotavirus vaccination, that is, drops in the mouth like a polio vaccine?	Yes…… No…… Don't know……	→ **G 34.1** → **Go to 35** → **Go to 35**
34.1	How many times was the Rotavirus vaccination given?	Number of times…… ☐ Don't know……98	
35	What are the reasons why (NAME) has not gotten all the recommended vaccinations? **RECORD ALL MENTIONED**	Unaware of need……...… Unaware of vaccination site/time…… Vaccinators didn't come to village/house…… …..3 Vaccination site far……..…..4	

		No vaccine at vaccination site……..…5 Child sick on vaccination day…….....6 Child away on vaccination day……....7 Vaccination harms children……..…8 Vaccinator rude/unhelpful……....9 Other (Specify)……. 96 _____	
36	What motivates you or others in your community to vaccinate your children? **RECORD ALL MENTIONED**	Vaccination is important……...1 Vaccination prevents disease……....2 Vaccination keeps my child healthy……3 It is easy……....4 The health care worker told me I should .5 The CV told me I should……..…6 My family member(s) told me I should ...7 My friend(s) told me I should……...8	

		Other (Specify)…….……..…..…96 _____ Don't know……..…98	
37	Do you have any suggestions that could be done that would make you or others more likely to get your child vaccinated?	Friendly vaccinator……....1 Vaccination site with reasonable walking distance……..…..2 Shorter waiting time at the vaccination site……...3 Clean vaccination site……....4 Free or inexpensive services…….5 Availability of all antigens……6 Other (SPECIFY)……..…96 _____ Don't know/no suggestions…….98	
38	How do you decide when your child does not need any additional vaccinations?	I refer to immunization card……....1 I follow the nurses instructions…...……2	

	RECORD ALL MENTIONED	I refer to child's age……..……...3 After measles vaccine…….……..4 Child looks healthy…….……..…5 Child got sick after vaccination……6 Other (SPECIFY)……..……...96 _____ ____ I do not know how to decide……..98	
39	Have you ever had unpleasant experience at a vaccination site/session?	Yes…… …....1 No…… ….2 Never been to a vaccination site……...3	**→Go to 39.1** **→Go to 40** **→Go to 40**
39.1	What happened? **RECORD ALL MENTIONED**	Vaccinator not friendly……..…..…1 Vaccinator drunk……..…2 Adverse effect from vaccine…….3 Long waiting time……..…....4 Vaccination site is dirty/not clean…….5	

		Vaccination site closed…….6 No vaccine at the vaccination……...7 Vaccinator absent……..8 Vaccination is expensive……...9 Other (Specify)……..…..96 _____	

MODULE 5: SIA COVERAGE			
	SIA coverage of most recent round. Questions 40 - 50 pertain to the most recent polio round. Ask the questions to find out the vaccination status of a randomly selected child who is under 5 years of age in the household. The caretaker should answer all questions in module 5 in reference to the selected child under the age of five.		
40	How many children under 5 years of age live in this household?	No: _____	
41	What is the selected child's name?	NAME:_____	
42	Date of Birth	_____/_____/_____ DD MM YYYY	
43	Sex of child	Male…….....1 Female…….…….....2	

44	Has (NAME) ever received polio vaccination, that is, drops in the mouth, in a vaccination campaign?	Yes…….……1 No……. 2 Don't know.....98	
45	What was the date of the last vaccination campaign? **IF THE INTERVIEWEE APPROXIMATES THE DATE (I.E. TWO WEEKS AGO), ENTER THE CORRESPONDING DATE.**	**RECORD DATE** _____/_____/_____ DD / MM / YYYY Don't know/don't remember……..98	
46	Did NAME receive polio vaccination, that is, drops in the mouth, during the vaccination campaign on (INSERT DATE OF LAST CAMPAIGN)?	Yes…….……...1 No…….……2 Don't know…….98	**→ Go to 47** **→ Go to 46.1** **→ Go to 47**
46.1	Please tell me all of the reasons why (NAME) did not received polio vaccine in the most recent polio round on (INSERT DATE OF LAST CAMPAIGN)? **RECORD ALL MENTIONED**	Team did not come…….....1 Child not at home……....2 Newborn child…….3 Child sick or sleeping…….4 Caretaker refused polio vaccination…..….5 Other (Please Specify) …..... 96	
47		Number of times….	

	How many times total in NAME's life was the polio vaccine received?	Don't know……..98	
48	Was your family visited by vaccinators during the most recent polio round on (INSERT DATE OF LAST CAMPAIGN)?	Yes……...…… … . 1 No…… … . . 2 Don't know/don't remember……..……..98	
49	Did you visit a polio booth on (INSERT DATE OF LAST POLIO BOOTH)?	Yes……..1 No…… … . . 2 Don't know/don't remember….……..98	

50	How did you find out about the most recent polio round on (INSERT DATE OF LAST CAMPAIGN)? **RECORD ALL MENTIONED**	Radio …….....0 TV……..…… …....1 Family…… …....2 Friend/Neighbor…….…… …....3 Community Volunteer……..4 Printed materials/poster/banner……....5 Health workers……...…….…..6 SMS……..…. ….7 Community leader……8 Church/mosque…… …..9 Nowhere…… …...10 Other……. ...96	
MODULE 6: ACUTE FLACCID PARALYSIS			
51	Have you heard of acute flaccid paralysis, that is, sudden paralysis in children?	Yes……..….. .....1 No…….. .....2 Don't know…….…….…..98	**→ Go to 51.1** **→ Go to 52** **→ Go to 52**
51.1	Please explain what happens to a child with paralysis.	Child stops walking/crawling …….....1 Limp limbs…….…....….2	

	RECORD ALL MENTIONED	Other answer (SPECIFY)……..96 _____ Don't know……...98	
52	Who would you contact besides your family if *(NAME)* had paralysis, that is, stopped being able to move his/her arm or leg? **RECORD ALL MENTIONED**	Health Facility……..….…..….1 Traditional healer……..…...…2 Religious healing sites……..…….…...3 Community Volunteer....……..……4 Other (PLEASE SPECIFY).....96 _____	

MODULE 7: Information on Community Volunteers				
53	What is the name of the CGPP Community volunteer in your village? (mention local IPs name) **COMPARE THE NAME GIVEN HERE TO THE CVSFP NAME RECORDED ON PAGE 1 AFTER YOU HAVE COMPLETED THE SURVEY**	Name:_____ Don't know……...98	**Compare with name recorded on page 1** →	Match…...1 Not a match.....2
54	Do you remember being visited at your home by a CGPP Community volunteer at	Yes……...1		**→ Go to 54.1**

	times other than the days of a vaccination campaign?	No……..…...2 Don't know……...98	**→ Go to 55** **→ Go to 55**
54.1	What do you remember him/her discussing about with you? **RECORD ALL MENTIONED**	Polio campaign…….……..…..1 Vaccine preventable diseases and their vaccines…….....……..…...2 AFP/Polio……..…..….3 Other ……...…….…….....96 Nothing/Don't remember..……98	
55	Have you ever attended a group health education session given by a CGPP Community volunteer?	Yes……..…..1 No……..……2 Don't know……....98	**→ Go to 55.1** **→Go to 56** **→ Go to 56**
55.1	What were the topics of health education? **RECORD ALL MENTIONED**	Polio campaign…….……..…..1 Vaccine preventable diseases and their vaccines…….....……..…...2 AFP/Polio……..…..….3	

		Other ……...…….…….....96 Nothing/Don't remember..……98	
MODULE 8: CROSS-BORDER BEHAVIOR			
56	Do any of your family members visit the other side of the border?	Yes…… …….1 No…… …….....2 Don't know…….. 98	**→Go to 56.1** **→Go to 57** **→Go to 57**
56.1	Did you cross the border with your child (NAME)?	Yes…… …….1 No…… …….....2	**→Go to 56.2** **→Go to 56.3** **→Go to 57**
56.2	How often do your family members visit the other side of the border?	Regularly…… …….…1 Sometimes…… ……2	
56.3	For what reasons do they cross the border? **RECORD ALL MENTIONED**	For Pasture…… …...1 For water…….. …2	

		For trade……..……3 For Education……...…4 For cultural events……...5 For health care…….…6 Other reasons (specify) …….....96 _____	
57	Does your family get visitors from the other side of the border?	Yes…….…..…..1 No…….…….....2 Don't know…….98	**→Go to 57.1** **→Go to 58** **→Go to 58**
57.1	How often do they visit your family?	Regularly…….…….1 Sometimes……2	
58	Is there immigration check point along the border crossing point?	Yes……1 No……..2	

		Don't know……. 98	
59	Did your children ever been vaccinated during recent polio vaccination which is dropped on mouth at crossing point?	Yes…… …….1 No…… ……..2 Don't know…….… 98	**→Go to 60** **→Go to 59.1** **→Go to 60**
59.1	Why your children missed during Polio vaccination in the crossing points?	Sick…… ….….1 Vaccinators not available at the border……..2 Went for market…….....3 He has vaccinated previously …….4 Other reasons (specify)…….….96	
60	Have you ever been visited by Mobile health team who can give immunization and other health services?	Yes…… …..…1 No…… ….…..2	

		Don't know……...9 8	
61	Have you contacted by CVs at the border points for health education or AFP surveillance?	Yes…….1 No……..….2 Don't know…….…..9 8	

Thank the mother, for her participation

The respondents to the questionnaire are extension Workers and Community Volunteers in the project area.

IDENTIFICATION OF INTERVIEW

GPS Recording_____

REGION: ZONE: _____

WOREDA:_____ KEBELE:_____

VILLAGE/GOTE:_____ IMPLEMENTING PARTNER

INTERVIEWER'S NAME: DATE OF INTERVIEW: / /

SUPERVISOR'S NAME:

SIGNATURE OF SUPERVISOR _____ DATE REVIEWED _____/_____/_____

Hello. My name is _____, and I work with CGPP/_____ and the _____ Woreda Health Office. We are conducting a midterm evaluation survey and we would like your participation in order to learn more about the vaccination status of your children and related factors. This interview should last no more than _____ minutes. The information that you volunteer will help CORE Group and the Ministry of Health to improve vaccination services. Your identity will not be disclosed.

Would you like to ask any questions about this interview?

☐ ☐

PART TWO **Questions for Health Extension Workers (HEW) and Community Volunteers (CV) (Ask question 62 to 84 for one randomly selected kebelle Health Extension Worker and the selected village Community Volunteer)**			
MODULE 1: SOCIO DEMOGRAPHIC PROFILE			
62	What is your position?	HEW…… ……1 CV……...…… …….2	
63	Age	Years_____	
64	Sex	Female…….…… …….1 Male……... …….2	
65	Can you read and write (ONLY FOR CV)	Yes…… ……..1 No…….. ….…2	Go to Q65 Go to Q66
66	What is the highest grad you completed?	Grad completed.....	
67	How long have you worked as CV/HEW?	Years_____	
MODULE 2: KNOWLEDGE AND PRACTICE QUESTIONS			
68	Do you have a registration book/list for your activities in your Village/Got? (CVs SHOLUD AVILE THE LISTS)	Yes…….. ……1 No……. ……..2	Go to Q67.1 Go to Q69

68.1	May I see it	Yes……..……1 No…….……..2	Go to Q67.2 Go to Q68
68.2	Lists of Households	Seen……..….1 Not seen……2	
68.3	Lists of Pregnant women	Seen……..….1 Not seen……2	
68.4	Lists of Under 1year children	Seen……..….1 Not seen……2	
68.5	List of Immunization defaulters	Seen……..….1 Not seen……2	

68.6	CGPP training manual	Seen……1 Not seen……2	
69	Do you regularly organize monthly meetings for CVs at the health post? (ONLY FOR HEW)	Yes……1 No……2	Go to Q72 Go to Q69
70	If no, what are the reasons for not organizing? RECORD ALL MENTIONED	I was busy……1 I was not informed……2 CVs are not attending……3 Others (specify)……96	
71	Do you regularly attend monthly meetings organized at the health post? (ONLY FOR CV)	Yes……1 No……2	Go to Q72 Go to Q71
72	If no, what are the reasons for not attending? RECORD ALL MENTIONED	Meeting not organized……1	

		I was busy……..2 Meeting place far from home……3 Others (specify)...…..……..96	
73	Which childhood diseases can be prevented by vaccines? RECORD ALL MENTIONED	Polio…….……...……....1 Tuberculosis ……..……..……...2 Measles…….....……....3 Hepatitis B …….…….4 Tetanus……..….……..…5 Whooping Cough/Pertusis ……..…….….…..6 Meningitis …….……...…7 Pneumonia …….……..……8 Diphtheria …….…….……..9 Diarrhea…….…….…….…..…..…10 Other(Specify)…….……96	

74	Do you visit each household in your catchment once quarterly?	Yes……..……..…1 No…….……...2	Go to Q75 Go to Q74
75	If no, what are the reasons for not conducting house to house visit on regular basis? RECORD ALL MENTIONED	Not being trained……1 Don't have IEC materials……...…2 Geographic inaccessibility…….....3 Other competing issues…….….....4 I am not motivated……...……..5 Others (specify)…….……..…….....96	
76	Do you conduct AFP case searching in your catchment?	Yes…….……..……..…….…...…1 No…….……..2	Go to Q76 Go to Q77
77	How many AFP cases have you reported in the last one year?	Number……	

78	If no, what are the reasons for not conducting AFP case searching? RECORD ALL MENTIONED	Community is not cooperative to search AFP cases…1 No more Polio cases in my catchment……..…..2 Don't have time to search……...….3 Others (specify)……..…....96	
79	Do you submit monthly activities report to HEW/Woreda Health Office?	Yes….…… ……....1 No…… …….2	
80	Have you ever been supervised in the last 6 months?	Yes….…….……. …….1 No…….….…… ……..2	Go to Q80 Go to Q82
81	If yes, who visited you? RECORD ALL MENTIONED	(NAME ORGANIZATION) staff……..1 Woreda Health Office staff……..2 Health Center staff……....3 CORE Group staff……4	

		Others (Specify)……..…96	
82	Have you ever received feedback from the supervisors?	Yes….……..….1 No……..2	
83	What kind of Community Volunteers related documentation is there in the health post? (ONLY FOR HEW) RECORD ALL MENTIONED (VERIFY THROUGH OBSERVATION)	Case report…….…..1 Monthly activity report of CV...…….…….2 Minute of monthly CVs meeting…….…….3 Lists of CVs……..4 CGPP manual……5 Others(specify)……..…….96	
84	In your opinion, what should be done to improve Surveillance and immunization activities in your catchment?	_____ _____ _____	

Thank the HEW and CVs for their participation