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Health 2 Go

Progress Report through June 30, 2019

9/30/19

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castapebble

Abbreviations

BCCDP: Barekuma Community Collaborative Development Project

CHPS: Community-Based Health Planning and Services

CBA: Community-Based Agent

CHN: Community Health Nurse

CHO: Community Health Officer

GHS: Ghana Health Services

H2Go: Health 2 Go

ICCM: Integrated Community Case Management

IMCI: Integrated Management of Childhood Illness

MOH: Ministry of Health

SDG: Sustainable Development Goals

UN: United Nations

UNICEF: United Nations Children's Fund

WHO: World Health Organization

H2Go Summary of Accomplishments

Wawase CHPS Zone Pilot - Serving 1,500 People (Kpong, Eastern Region of Ghana)

- 35 months of continuous service in 6 communities in the Lower Many Krobo District
- All 10 CBAs remain active and effective, and all equipment has been well utilized
- Communities recognize CBAs as front-line service providers
- Procured funding for an additional year to keep the Wawase CHPS Zone Pilot operational (Dec. 2018)
- 8,541 educational home visits by CBAs on illness prevention, nutrition and health promotion
- Among approximately 200 children under age 5, there were 1,773 illnesses treated in the community setting (Nov. 2016 through June 2019)
    - 1,128 malaria; 347 diarrhea; 298 pneumonia
    - 144 children referred to collaborating health facilities for serious and life-threatening illnesses
- Engagement of communities through 5 multi-community durbars (Town Hall Meeting) to discuss program (Oct. 2016, Mar. 2017, Sep. 2017, Oct. 2018, Dec. 2018)
- Routine monthly meetings with District Health Leadership to continually improve the program
- 31 monthly Supportive Supervision Visits provided on-site to CBAs (Dec. 2016-June. 2019)
- 7 Refresher Trainings including clinical training at collaborating hospitals (Jan. Apr., Jul. 2017; Jan., Aug. 2018.; Mar. 2019)
- Completed GIS Mapping, Census, and Health Behavior Survey in communities (June 2017)
- Launched in 6 communities of the Wawase CHPS zone (Nov. 2016)
- Completed initial basic training for 12 GHS personnel and 10 CBAs (July, Aug. 2016)
    - 5 days Manager/Facilitator training + 3 days supervisor training + 6 days Community Based-Agent training + 2 days community internship; 16 training days total
- Press event at Ensign with coverage from national TV and 12 newspaper journalists
- Identified 6 target communities, received official welcome by chiefs (May 2016)
- Formed direct linkage to hospital and health facility that receive referrals by Health 2 Go
- Established strong relationships with GHS Lower Manya Krobo District Health Director, Kpong sub-District Director, key District Public Health and Community leaders
- Initiated Health 2 Go Program in Ghana with partnership of University of Utah, Ensign College of
- Public Health, Cast a Pebble Foundation and Ghana Health Service (GHS) in 2015

BCCDP Serving Approximately 20,000 People (Ashanti Region of Ghana)

- 14 months of continuous service in 20 communities in the Atwima Nwabiagya North District
- 30 CBAs remain active and effective, and all equipment remains operational
- Communities recognize CBAs as front-line service providers
- Procured funding for one-year supply of medicines from Cast-A-Pebble Foundation after previously committed source did not follow through (Dec. 2018)
- 9,188 educational home visits by CBAs on illness prevention, nutrition and health promotion
- Among approximately 2,200 children under age 5, there were 2,953 illnesses treated in the community setting (Oct. 2018 through Jun. 2019)
    - 1,294 malaria,, 839 diarrhea, 820 pneumonia/Acute Respiratory Illness (ARI)

    - 58 children referred to collaborating health facilities for serious and life-threatening illnesses
- Engagement of communities through 2 multi-community durbars (Town Hall Meeting) to launch program (May 2018)
- 13 monthly Supportive Supervision Visits provided on-site to CBAs (Jun. 2018-Jun. 2019)
- 2 Refresher Trainings including clinical training at collaborating hospital (Jan. 2019; June 2019)
- Launched in 20 communities of the BCCDP in Atwima Nwabiagya North District (May 2018)
- Completed initial basic training for 14 GHS personnel and 30 CBAs (Feb, Apr. 2018)
    - 5 days Manager/Facilitator training + 5 days supervisor training + 5 days Community Based-Agent training + 1-day community internship; 16 training days total
- Press event at Ensign with coverage from national TV and 12 newspaper journalists (Jan 2018)
- Established strong relationships with Atwima Nwabiagya North District Health, Berekese sub-District, key sub-District Public Health and community leaders in BCCDP in Ashanti Region

Executive Summary

Overview

Health 2 Go is a community-based primary healthcare program that focuses on improving the health of children under 5 years of age, including newborns and pregnant women. The program is currently implemented in two geographically diverse areas in Ghana. While the traditional model of health care requires people to go to facilities to access basic services, Health 2 Go employs the approach of bringing the health system to the doorsteps of the people in their communities. The program is designed to overcome obstacles that cause similar programs to fail and to support countries in reaching United Nations' Sustainable Development Goal (SDGs) targets to reduce child deaths to no more than 25 deaths per 1,000 live births and maternal deaths to 70 or less per 100,000 live births by 2030. Ghana's current rate for child deaths is 59 deaths per 1,000 live births and for 319 maternal deaths per 100,000 live births. The vast majority of both child and maternal deaths are preventable.

Since November 2016, Health 2 Go has had continuous service in the six small communities of the Wawase CHPS Zone, serving 1,500 people in a remote area of the Kpong sub-District of the Lower Manya Krobo District (Eastern Region) in Ghana. In May 2018, Health 2 Go expanded to a larger demonstration site of the Barekuma Community Collaborative Development Program (BCCDP), which consists of 20 communities with approximately 20,000 residents in the Barekese Sub-district of the Atwima Nwabiagya North District (Ashanti Region). The overarching goals are for Health 2 Go to be scalable to a level that allows for country-wide implementation and to be able to adapt and expand this program to other countries.

The Health 2 Go Difference

- High quality training, equipment and supplies
- Effective supervision structure
- Communities as engaged partners
- Clear integration into the health system
- Focus on prevention, health promotion and early treatment

Results

- **Wawase CHPS Zone: Among Approximately 200 Children under age 5, (Nov. 2016 - Jun. 2019)**
  - 1,773 Illnesses treated: 1,128 malaria, 347 diarrhea, and 298 pneumonia/Acute Respiratory Illness (ARI); 144 children referred to hospital for serious illnesses; and 8,541 household health educational visits
- **BCCDP: Among Approximately 2,200 Children under age 5, (Oct. 2018 - Jun. 2019)**
  - 2,953 illnesses treated: 1,294 malaria; 839 diarrhea; 820 pneumonia/ARI); 58 referrals for serious illness; and 9,188 household health educational household visits

Vision, Community Capacity, and Impact at Home

A defining principle of the program is the vision to create capacity for communities to be healthy, well, and self-reliant. The real impact of the program is intended to be in the home where inequities of society are most felt, which begin in the first five years when children are developing, including during the mother's pregnancy, affecting long-term outcomes in health and quality of life. Impact at home can impact communities and countries.

Introduction

Making Measurable Impact to Improve Health Outcomes

One of the greatest challenges faced by developing countries today is providing community-based resources to health care which improve outcomes and make a measurable impact. Although substantial progress has been made globally to improve health since the 1990s[1] the traditional model of health care in which the people access resources at a health facility outside of their community hasn't worked well. It is challenging to reach vulnerable populations who frequently live far from health centers, making it difficult to achieve country and global health goals.[2] All countries have committed to achieving the target Sustainable Development Goals (SDG) for reducing child deaths to no more than 25 deaths per 1,000 live births by 2030, yet many developing countries are not currently on track to meet this ambitious goal.[3] Ghana's current rate for child deaths is 59 deaths per 1,000 live births.[3] Attempting to solve the issue of access to health resources, multiple programs have been developed to improve community health. The issue has been that they've often been designed without considering the potential risks that could limit their effectiveness, and then have been implemented poorly, resulting in their impact disappointing stakeholders.[4]

Creating Capacity for Health Development through Health 2 Go

Having witnessed firsthand the ineffectiveness of poorly designed and implemented community health programs as they worked on global health projects around the world, Professor Stephen Alder and Mr. Rick Haskins knew that a better strategy was needed. Drawing on decades of highly successful careers in public health, academia, and business, they committed to take a different approach. With the motto of, *'Let's do community health, but let's do it right,'* Alder and Haskins established the vision of 'creating capacity for communities to be healthy, well and self-reliant.' Believing in the philosophy of community-engagement, they set out to find partners to create a model approach to facilitate capacity for communities to improve the health of their own populations. Thus, Health 2 Go was developed with the mission to change the face of global health starting in Ghana.

Health 2 Go in Ghana

Ghana provides favorable capacity for implementation of the pilot project due to established partnerships, previous experience working in Ghana with communities, and alignment with Ghana Health Services' national strategy of improving access of health services in communities.

The initial Wawase CHPS Zone Pilot for Health 2 Go was implemented in the six small communities of the Wawase CHPS zone in the Lower Manya Krobo Municipality of the Eastern Region, for about 1,500 residents and has been successfully implemented since November 2016. In May 2018, the program scaled up to a 'Demonstration Site' of 20 more communities serving about 20,000 people in the Barekuma Community Collaborative Development Program (BCCDP) in the Atwima Nwabiagya North District of the Ashanti Region. Lessons learned will be used to inform expansion to other district-level sites and to engage the leadership of Ghana to scale the program country-wide, and then used for expansion into additional countries.

Child Deaths

It is estimated that 69 million children will die between 2016-2030 unless committed and consistent action is taken.[3] Major killers of children under age 5 are pneumonia, malaria, and diarrhea with malnutrition being an underlying cause in nearly 50 percent of these deaths.[5,9]

Inequities impacting the household level are also determining factors in a child's chance of survival,[3] including:

- Lack of access to health care
  - Children die because they live too far from a health facility[5]
- Poverty
  - Poorer children are almost two times as likely to die before age 5 than wealthier children[3]
- Low maternal education level[3]
  - Children whose mothers have no education are three times as likely to die than children whose mothers received secondary education[3,6]
- Household poor health practices
  - related to behaviors such as delayed care seeking, nutrition, water, sanitation, etc.[3]

Children from households that are poor not only face higher risks of dying, but account for a larger percentage of child deaths than children from wealthy families.[3]

Most child deaths are preventable, and most illnesses are easily treated at low cost if healthcare is accessed early.[5]

Call to Action

The United Nation's (UN) calls upon all countries to reduce under age 5 child deaths to no more than 25 deaths per 1,000 live births by 2030 as part of the UN Sustainable Development Goal (SDG) targets.[1,3]

In order to meet child health targets, UNICEF has called for countries to address inequities which affect health outcomes of the disadvantaged the most, as the poor and marginalized will need to make faster progress since they account for a greater percentage of child deaths.[3]

Ghana Context

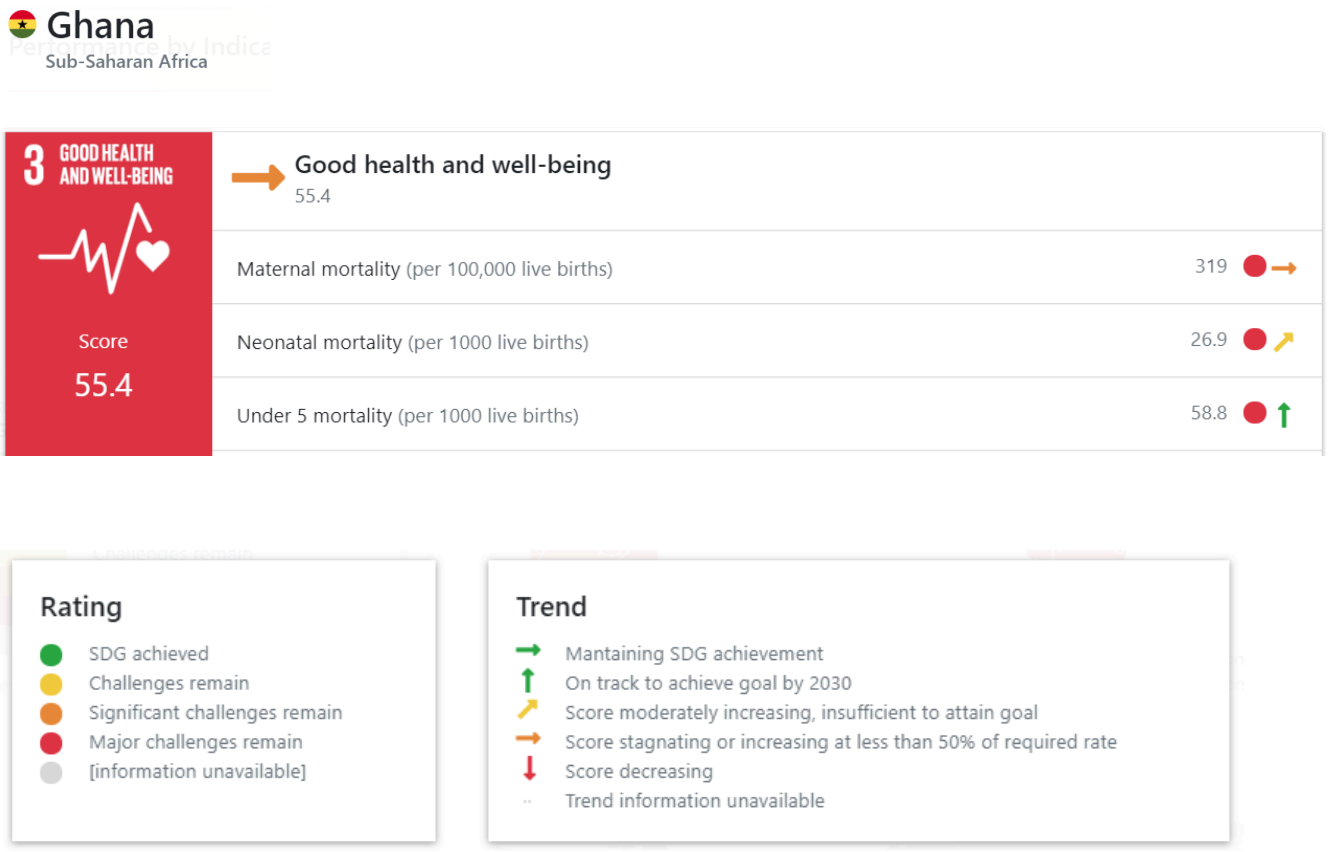
In Ghana, there are 54,000 deaths of children under-5 years of age annually resulting in a child mortality rate of 59 deaths per 1,000 live births.[7] Three preventable causes were responsible for half of deaths of children ages 1-59 months in Ghana during 2015.[7]

Deaths Ages 1-59 Months

- Malaria (22%)
- Pneumonia (17%)
- Diarrhea (12%)
- Malnutrition-a contributing cause in almost health of child deaths[5,9]

Major Challenges Remain

The UN SDG Index Dashboard indicates major challenges remain for Ghana to meet SDG targets by 2030 for child health as depicted below by the red circle rating for under age 5, newborn, and maternal mortality.[10] While Ghana has made significant progress in reducing child (and maternal deaths) since the 1990's., as have other developing countries, substantial efforts still need to be made. Trends indicate that if Ghana's current rate of progress continues, it is on track to achieve the under 5 SDG target by 2030, but not progressing enough to achieve newborn or maternal SDG targets by 2030 However, it is important to realize that the pace needs to be sustained in order to stay on track to meet under age 5 targets for child health and needs to increase to achieve newborn and maternal targets by 2030. Additionally, it is significant to note that It is only recently that Ghana increased progress enough to be reclassified as 'on track' to achieve the SDG target for under age 5 child health, since In a 2016 UNICEF report, Ghana was classified as 'not on track' to reach the SDG of 25 deaths per 1,000 live births by 2030.[3]



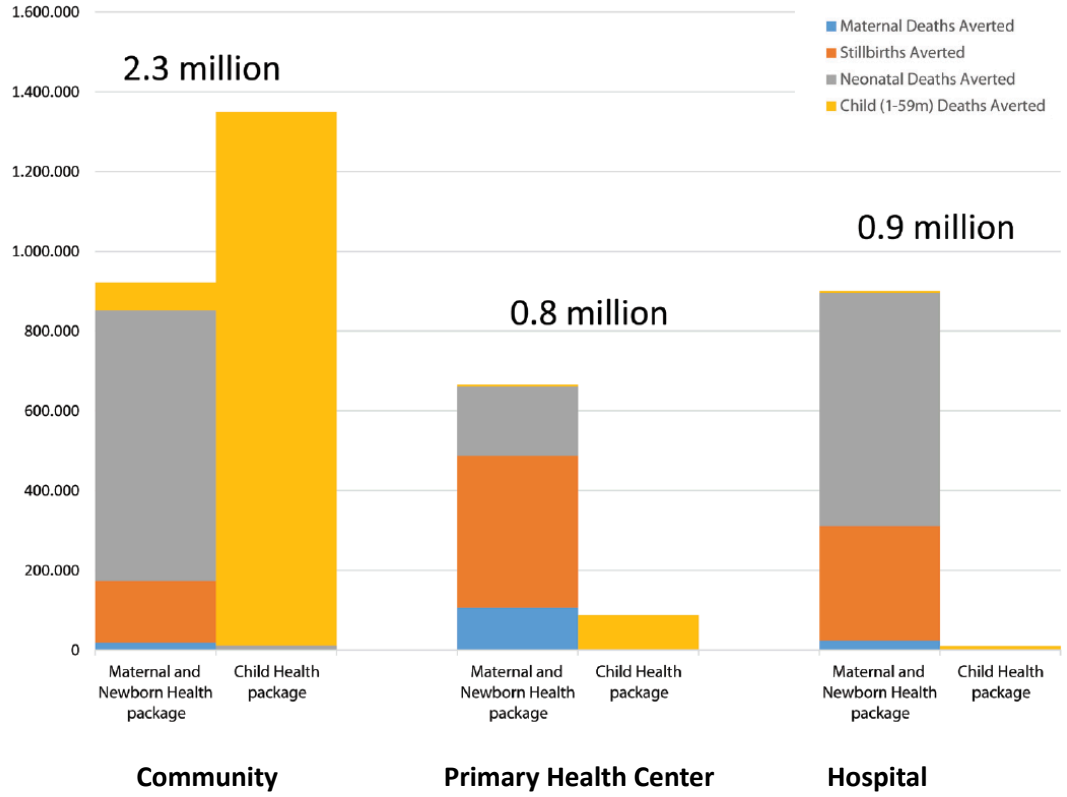
Source: https://dashboards.sdgindex.org/#/GHA

Community Health

Health Care Delivery Platforms

The potential impact community-based primary health care along with engaging with communities in often overlooked, even though research indicates that easily implemented community interventions can increase healthcare coverage and reduce deaths.[11] In a comprehensive review of evidence of effectiveness of community-based primary care to improve child, newborn and maternal health, Black and colleagues report that the community level platform provides the most potential opportunity to prevent deaths, which could be reduced by 2.3 million per year if the total package of evidence-based interventions for communities reached all children and mothers. In comparison, interventions needing implemented at primary healthcare centers and in hospitals would prevent less than half of the total number of deaths (0.8 million, 0.9 million).[11]

Comparison of Maternal, Perinatal, Newborn and Child Deaths that can be Averted by Health–Care Packages through three Service platforms



Source: (Black et al, 2017)

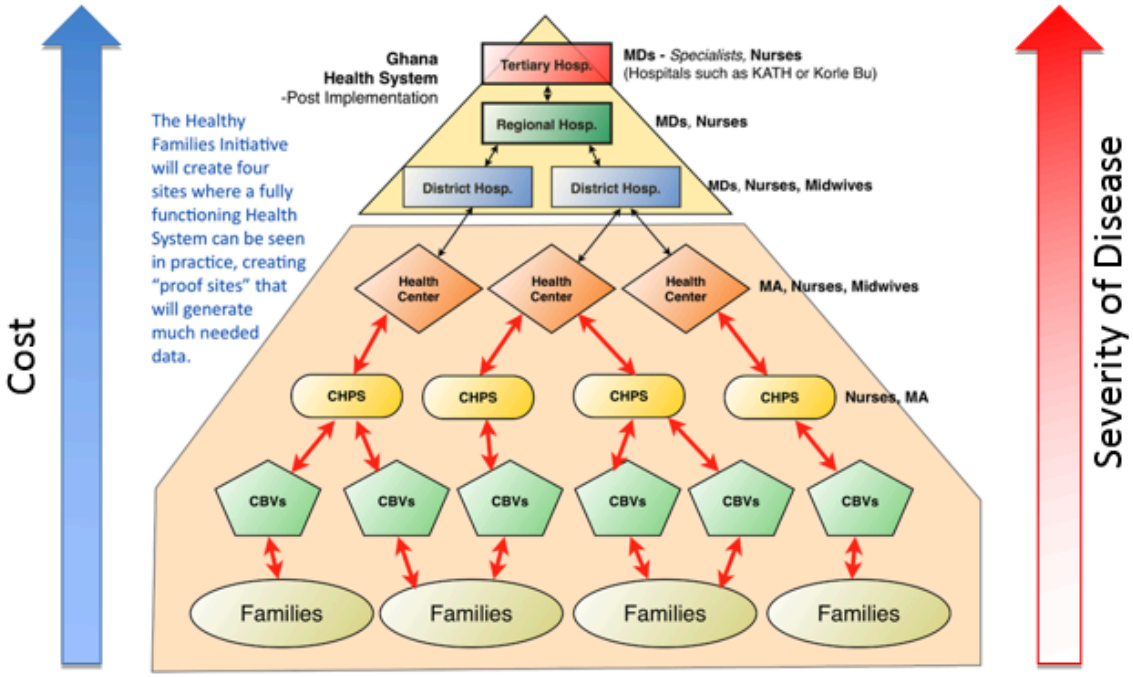
Recommendations from the Expert Panel of Black and colleagues, calls for strengthening health systems through community-based primary healthcare, tracking resources, and recognizing that communities are a valuable resource to bridge the gap between health systems and communities. The community platform can reach people where they live who have the greatest needs to improve health outcomes.[11]

The Health Model, Severity of Disease, and Costs

The significance of the community and household levels in a health care model and their respective potential to prevent illness, improve health, and control costs is underappreciated.

Many resources are allocated to improving health at the top level of the health triangle where costs are highest and outcomes uncertain, yet few resources are invested at the base levels to improve health where the potential returns are greatest. The Ghana Health Systems Model depicted below highlights the relationship between health care access, severity of illness and cost.

If health care is delayed, due to lack of access in the community, severity and cost for each higher-level care accessed increases, and outcomes are uncertain.



If health care is accessed early at the family level and treated in the community, and then managed at home, both severity and costs are lower, and outcomes are generally positive.

Past Efforts of Community-based Programs

Although past efforts have been made to address health at the community level through various programs, problems with such programs have been common[8] including inadequate training, equipment & supplies; lack of effective supervision; failure to engage communities, and disconnection from health system. As a result of these common problems, community health workers are often unable to serve their communities without essential medicines, equipment, ongoing training and supervision. Thus, it is not surprising programs have experienced low demand and uptake of services from residents.

Program Overview

What is Health 2 Go?

Health 2 Go delivers the health system to communities

- Builds community capacity through education and health promotion
- Treats basic illnesses in communities
- Bridges the gap between health system and communities
- Connects complicated illnesses to health facilities

Current System

• People → Healthcare

Health 2 Go

• Healthcare → People

Health 2 Go Mechanisms include

- Appropriate use of the health care system
- Community Health Workers known as Community Based Agents (CBAs)
- World Health Organization (WHO)/UNICEF Integrated Community Case Management of Childhood Illness
- Children under age 5 □ mothers □ families □ communities

Overcomes common challenges of community- based programs:

Common Challenges	Health 2 Go Solutions
• Inadequate training, equipment, supplies	• Quality training, equipment, supplies
• Lack of effective supervision	• Effective supervision structure
• Failure to engage communities	• Communities are engaged partners
• Disconnected from health system	• Clear integration into the health system
• Insufficient focus on prevention	• Focus on prevention, health promotion and early treatment

The Health 2 Go Difference

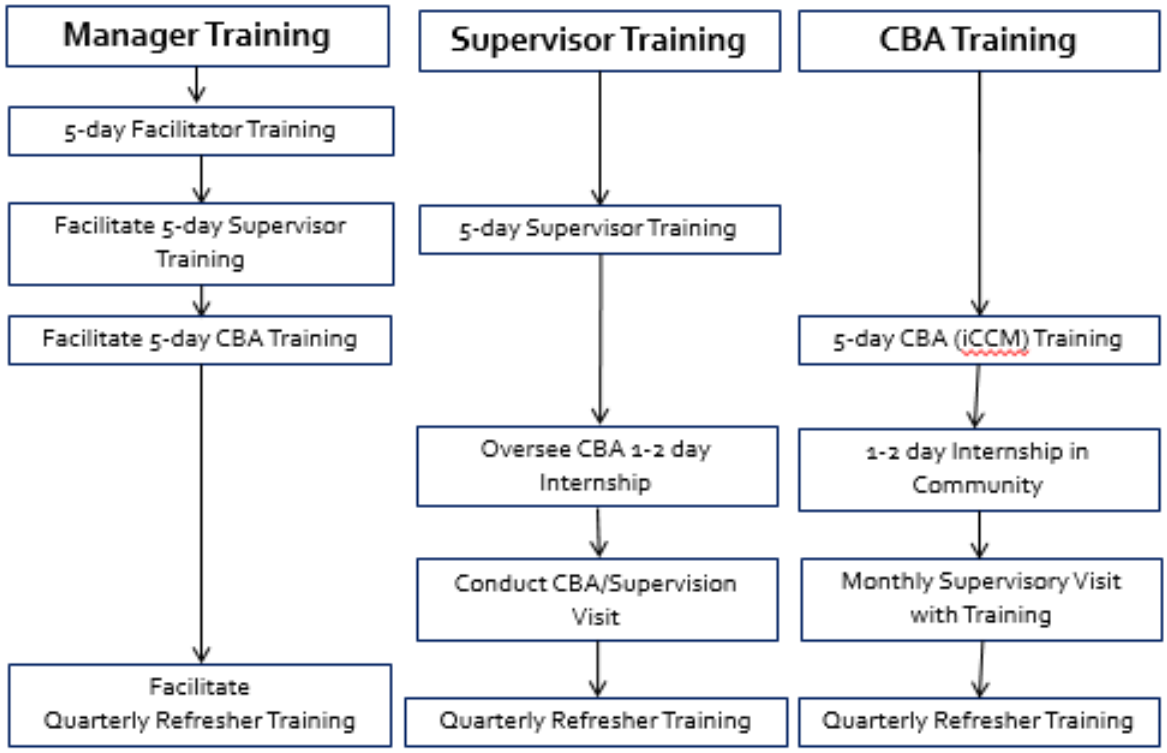
Health 2 Go is unique, in that District and sub-District personnel who oversee the Health 2 Go program as managers are highly engaged in the program and provide direct linkage to health facilities, since they are trained and serve as facilitator/managers. The managers then train supervisors and

community-based agents (CBA) who will serve in communities. The purpose is to provide opportunity so that strong relationships are built among managers, supervisors, and CBAs during the trainings across the levels of health workers. Not only does it ensure that program personnel have deep knowledge of the program, but they take responsibility and ownership of the program as well.

The five differentiating features of Health 2 Go include:

1. **Quality Training, Equipment, and Supplies**
    - **Rigorous Initial Training + Refresher Trainings**
        - Utilizes World Health Organization (WHO)/UNICEF gold standard curriculum
        - Includes classroom and clinical training at selected partnering hospitals within the area
        - Facilitator/Manager: 5-day facilitator/manager training + 5 day supervisor + 5-day ICCM training
        - Supervisor: 5-day supervisor training including iCCM basic training
        - Community Based Agent (CBA): 5-day ICCM basic training +1-2-day community internship
        - Competency exam must be passed by 80% for Health 2 Go certification
        - Refresher Training: 2-day quarterly

H2Go Training Model

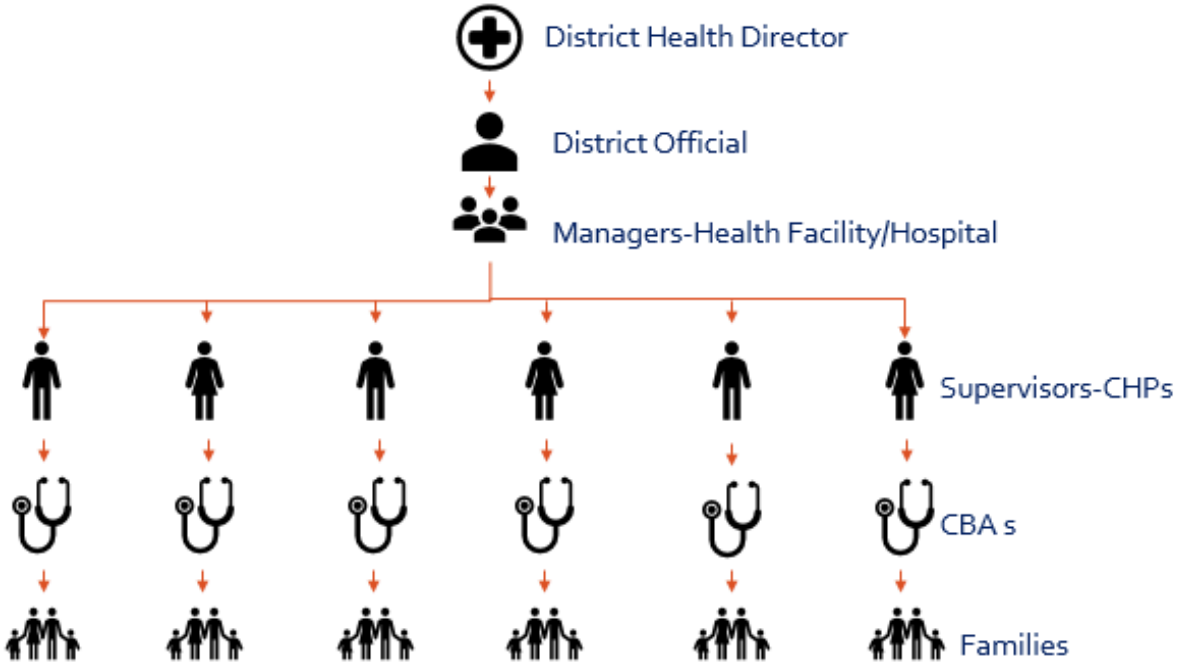


H2Go training topics	
	Introduction of H2Go
	Expectations of participants during training
	Integrated community case management (ICCM) of childhood illness overview
	Hand washing
	Pregnant woman danger sign assessment
	Newborn (0 to 2 months old) danger signs assessment
	General danger signs in children (2 months to 5 years old)
	Fever/malaria in children (2 months to 5 years old)
	Cough/pneumonia in children (2 months to 5 years old)
	Diarrhea in children (2 months to 5 years old)
	Nutrition in pregnant women, infants, and children
	Documentation
	Home visits
	Role of the CBA

- **Quality Equipment, Medicines and Supplies**
  - Mobility: Bicycle with solid tires, fully enclosed chain; raincoat and boots; light
  - Communication: cell phone
  - Identification: H2Go logo shirts and messenger bag
  - Same brands of medicines and supplies used by GHS
  - Drugs sourced through Regional Medical Stores
  - Restocking occurs during monthly supervision visit
  - Stock out plan in place

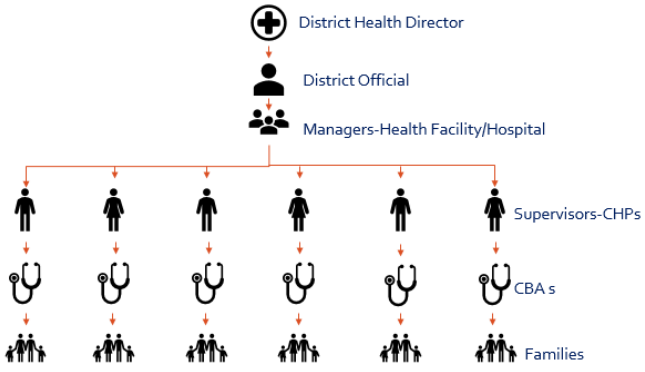
2. Effective Supervision

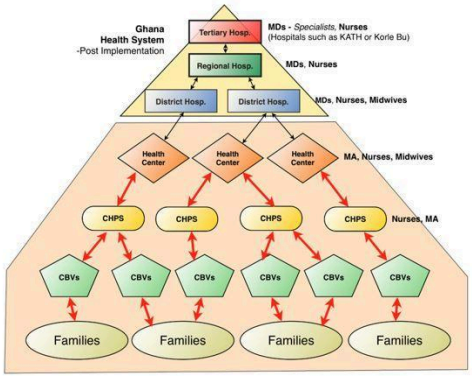
- Structured to reinforce linkage to health facilities and integration in the health system
- Supportive supervision (CBAs receive support and develop relationships)
- Community Health Nurses providing Outreach services in the communities serve as supervisors
- Routine monthly visits



3. **Community Engagement**
    - Communities are engaged through all stages of H2Go
    - Official entry/welcome into communities
    - Routine durbars (town hall meeting) for feedback on H2Go activities within the communities

4. **Clear Integration into Health System**
    - H2Go structure aligns with the Ghana Health Model
    - Integrated from the District level to sub-district level to CHPs zone down to community level
    - District Health administrators, providers, and nurses serve as H2Go managers and supervisors
    - Strong linkage to health facilities and hospitals that receive referrals by Health 2 Go Community
    - Strong leadership and ownership of program by District Health





5. Focus on Prevention, Health Promotion, and Early Treatment

- Educational home visits are a core program component. CBAs routinely educate mothers/caregivers during monthly household visits on prevention of illness, health promoting behaviors, nutrition and seeking early treatment for illness.
- CBAs incentives aligned with prevention. CBAs receive performance-based stipend according to the number of household visit. CBAs are required to perform 10 home visits per week for a total of 40 per month to receive entire stipend.
- CBAs support Outreach preventive services. CBAs encourage mothers during home visits to bring their children to Outreach activities where they access life-saving interventions such as immunizations.

"Our dream is to see communities where women are empowered and equipped with basic knowledge on health, especially child health, and continuously strive to improve and reduce child mortality. We believe that we can change our communities by positively impacting them."

Mrs. Irina Ofei, Municipal Director of Health Service, Lower Manya Krobo Municipality

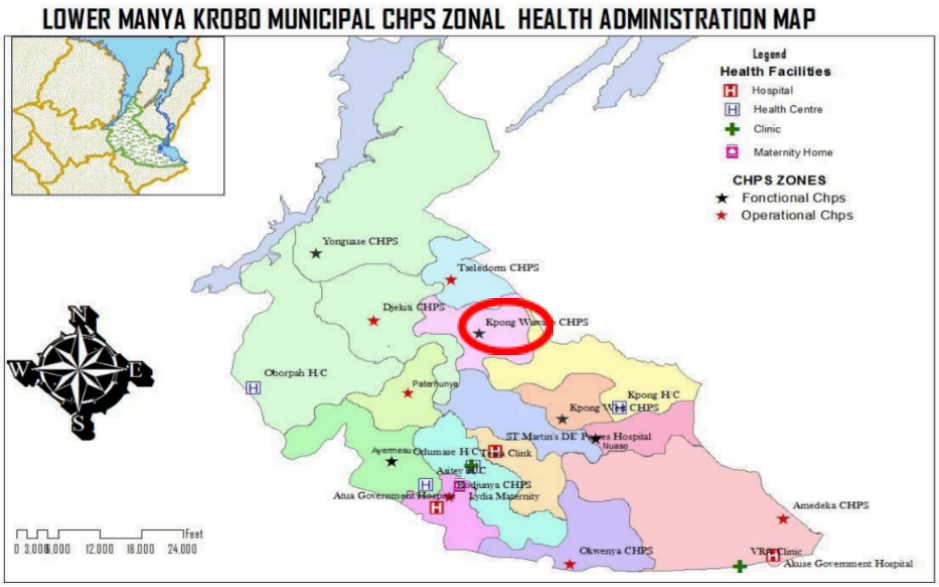
Health 2 Go: Wawase CHPS Zone Pilot

Implementation Overview

Health 2 Go launched in six (6) small communities serving approximately 1,500 people in the Wawase CHPS zone in the Kpong sub-district of the Lower Manya Krobo District in the Eastern Region of Ghana on Oct. 24, 2016. It is approximately 3 hours to the nearest health facility, which includes walking long distances, then obtaining public transportation.

Communities include:

1. Aplah
2. Abobeng
3. Wawase
4. Piengua
5. Obelemanya
6. Atotorsi



Preceding the official program launch in the Wawase CHPS Zone, initial training took place for 12 GHS Personnel and 10 CBAs which occurred at Ensign College with clinical sessions held St. Martin's Hospital and Atua Hospital during July and August of 2016. Following initial basic training, CBAs performed a 2-day community internship in their respective communities during Aug 2016, which was overseen by H2Go Supervisors and Managers. In conjunction with the introduction of the program, two multi-community Durbars were held in which residents expressed gratitude for the program being implemented in their communities. CBAs were given bikes, medicines, cell phones, rain gear and solar torches. CBAs began serving their communities on Nov. 1, 2016.

The communities continue to receive services from H2Go CBAs and supporting Ghana Health Services (GHS) personnel trained as H2Go Managers and Supervisors, with no interruption of continuity since implementation began in November 2016.

Impact of Health 2 Go

The Impact of the H2Go Wawase CHPS Zone Pilot and the service of CBAs to families in their communities cannot be overstated. All CBAs are actively engaged in serving families through conducting

routine household visits to educate mothers and caregivers on nutrition, preventing illness, and promoting health through behaviors such as handwashing.

Recent H2Go Wawase CHPS Zone Pilot Activities

In addition to ongoing service by CBAs to treat common child illness in the community, refer serious life-threatening illness, perform monthly home visits to educate mothers, and routine monthly supervisory visits by GHS Community Health Nurses/Officers trained as H2Go supervisors, one further H2Go activity took place which was a CBA equipment assessment, conducted by the H2Go Ensign team and university students.

CBA Equipment Assessment

The assessment of CBA equipment and supplies was conducted on June 20, 2019 by a 17 member team that included the President of Ensign College (Prof. Stephen Alder) and his wife, two H2Go personnel from Ensign College including the country principal investigator (PI) Dr. Stephen Manortey, and 13 students representing four different U.S. universities (University of Utah, BYU, Utah State, and North Carolina Chapel Hill). The team conducted a comprehensive assessment of all ten CBA's equipment, supplies, and medicines. The exercise revealed that while most CBAs had an adequate supply of medicines, some of the equipment, including bicycles, needed to be replaced or repaired, and a few disposable supplies needed to be restocked.

Below is a brief summary of findings:

- **Medicines:** Majority of CBAs had an adequate provision of medicines and malaria tests.
- **Uniform:** H2Go shirts were in good condition. However, rain boots were in poor condition as they were well worn.
- **Bicycles:** 2 of 10 of the bicycles were not functional due to chains rusting and chain enclosures falling off. Rear racks and baskets were either broken or falling off. And seats were extremely worn. However, both the bike frames and the solid tires were in good condition.
- **Cell Phone:** 8 of 10 of the cell phones were not functional.
- **Medicine boxes/supplies**: 10 of 10 of the interiors were in poor condition due to lining peeling.
- **Solar torch**: Some of the Goal Zero solar torch lights were no longer charging.
- **Record Keeping/Documentation:** CBA Registers and referral books were falling apart**.**

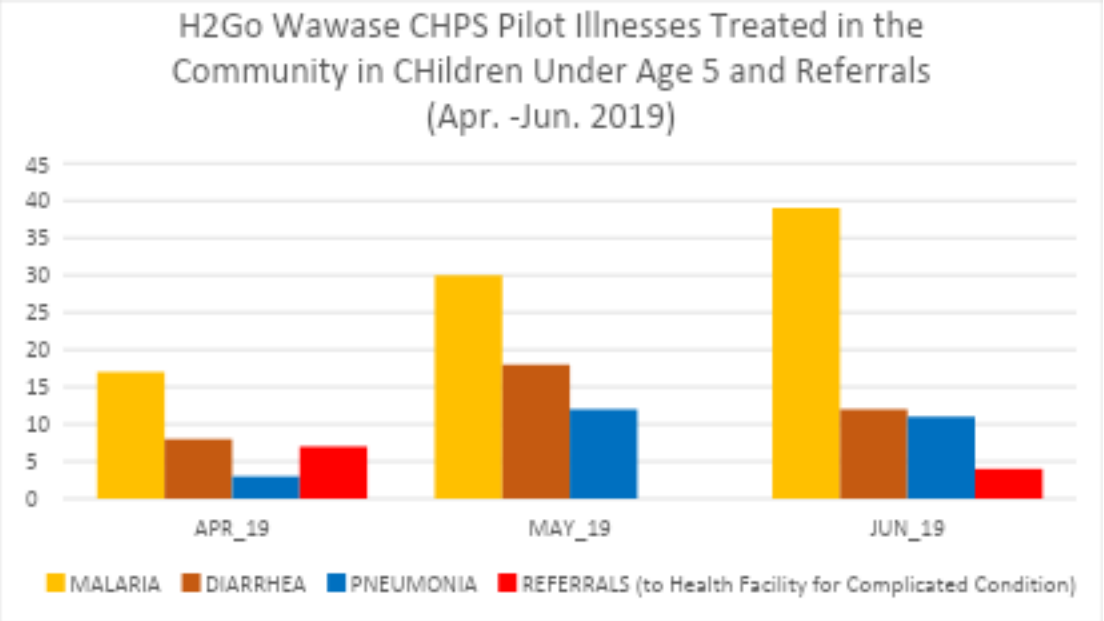
The equipment assessment serves three purposes. First, replacing, repairing or replenishing equipment and supplies as deemed necessary to ensure all CBAs are able to perform their responsibilities serving their communities. Second, to develop a standard schedule for replacement, repair, and replenishing of equipment and supplies to inform program operations for expansion. Finally, costs of replacement, repair and replenishing equipment and supplies are factored into H2Go budget projections to ensure program sustainability.

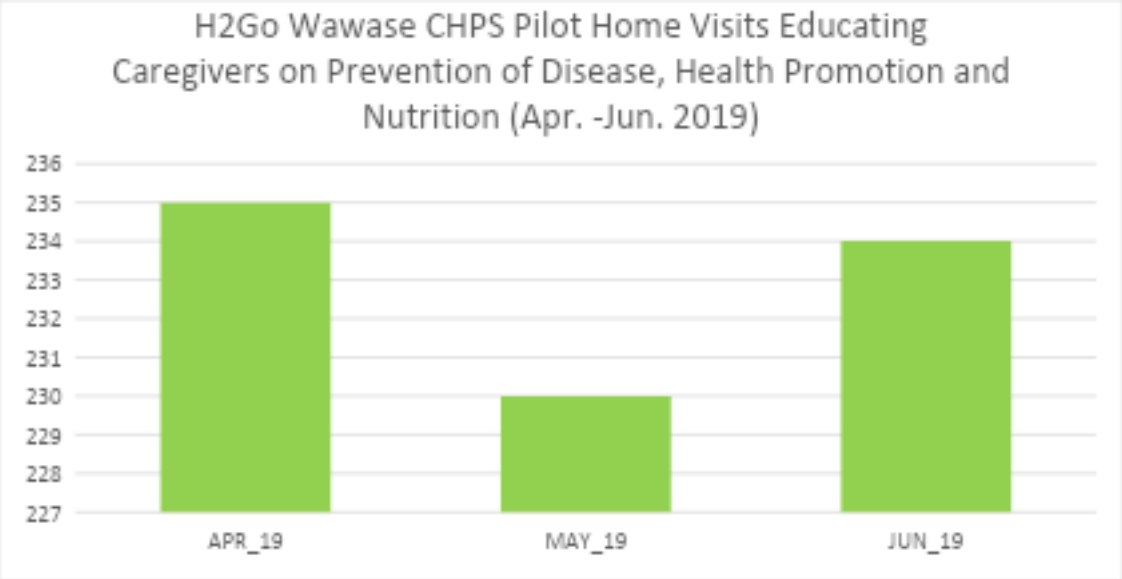
Wawase CHPS Zone Results

From April to June 2019, results are as follows:

Among approximately 200 children under age 5,

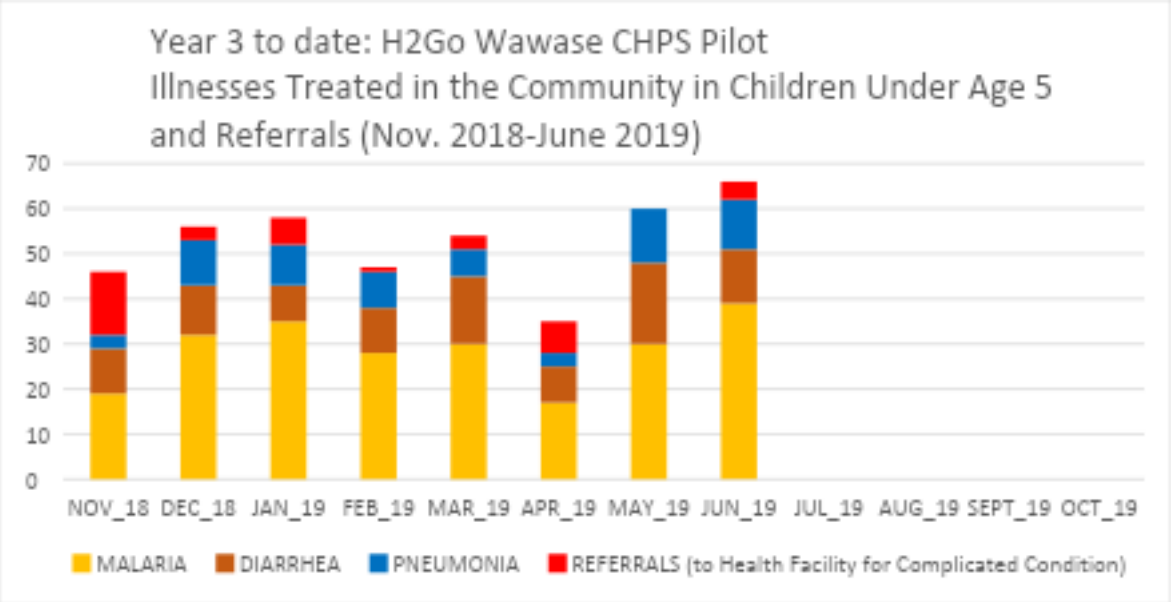
- 150 Illnesses treated in the community by H2Go CBAs
  - 86 malaria; 38 diarrhea; 26 pneumonia/Acute Respiratory Illness (ARI);;
- 11 referrals were made to hospital for serious illness and life-threatening illness
- 699 Home Visits





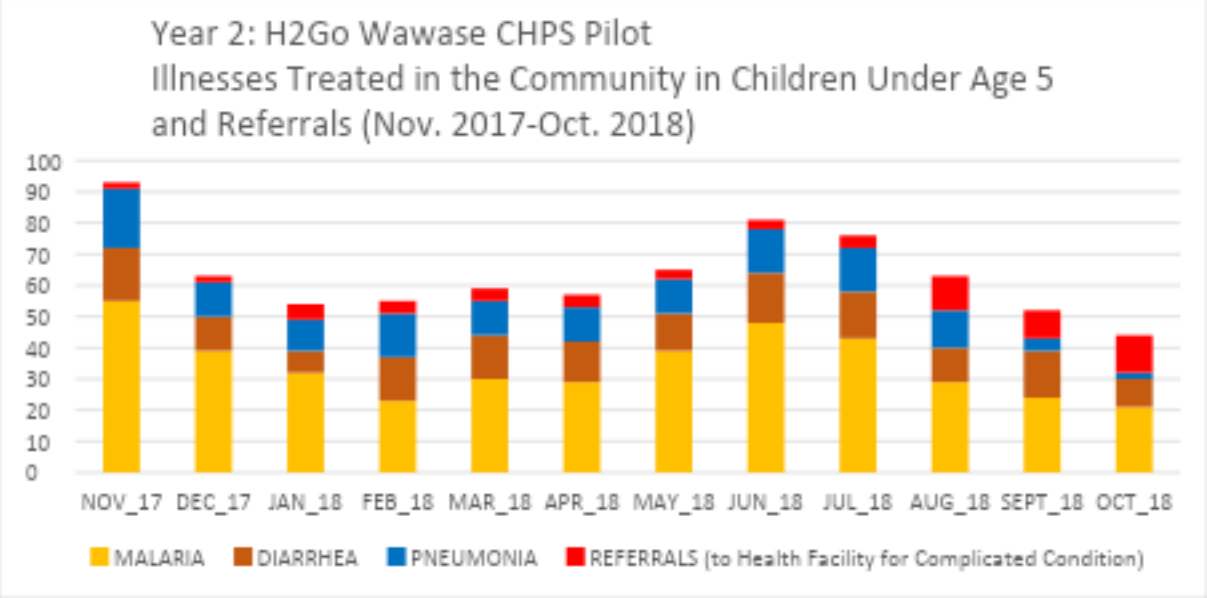
Year 3 to date (Nov. 2018-June 2019) . Among approximately 200 children under age 5:

- 384 Illnesses treated in the community by H2Go Wawase CHPS Zone CBAs
    - 230 malaria; 92 diarrhea; 62 pneumonia/Acute Respiratory Illness (ARI)
- 38 Referrals to health facility for serious and life-threatening illnesses
- 1,820 Home Visits



Year 2: Among approximately 200 children under age 5: (Nov 2017-Oct. 2018):

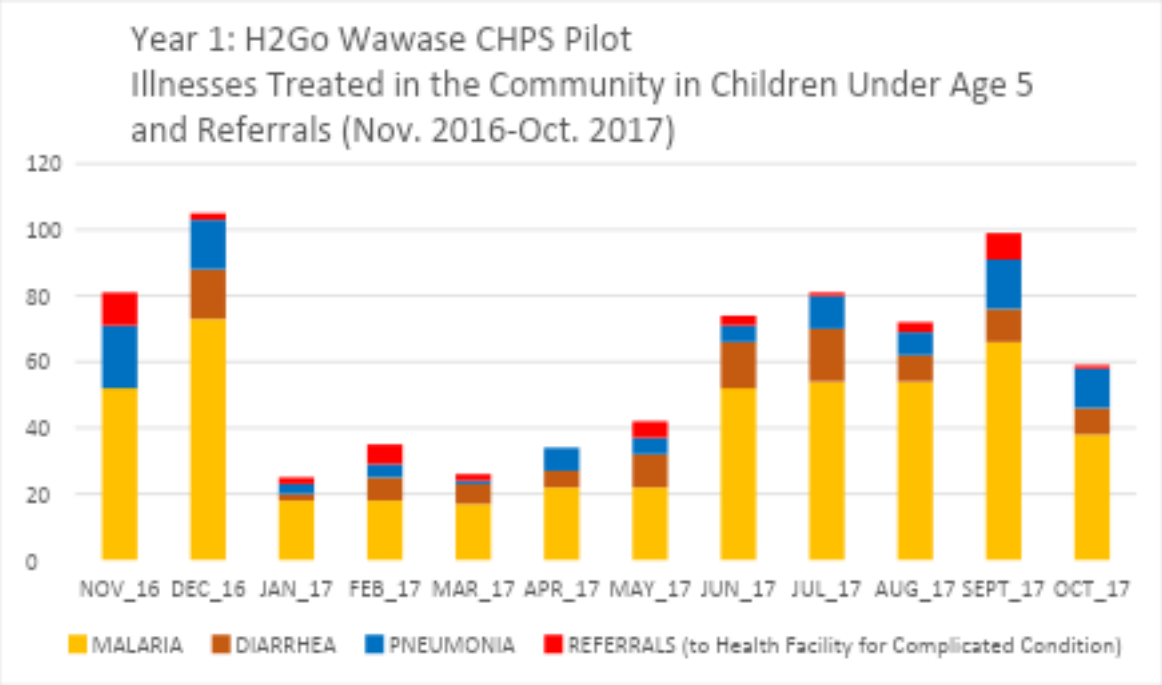
- 699 Illnesses treated in the community by H2Go Wawase CHPS Zone CBAs
    - 412 malaria; 154 diarrhea; 133 pneumonia/Acute Respiratory Illness (ARI)
- 63 Referrals to health facility for serious and life-threatening illnesses
- 3,197 Home Visits



Year 1: Among approximately 200 children under age 5: (Nov 2016-Oct. 2017):

- 690 Conditions treated in the community by H2Go Wawase CHPS Zone CBAs
    - 486 malaria; 101 diarrhea; 103 pneumonia/Acute Respiratory Illness (ARI)
- 42 Referrals to health facility for serious and life-threatening illnesses

- Home Visits: 3,524



CBA Abednego Mensah counsels a mother on the results of malaria test in Piengua.

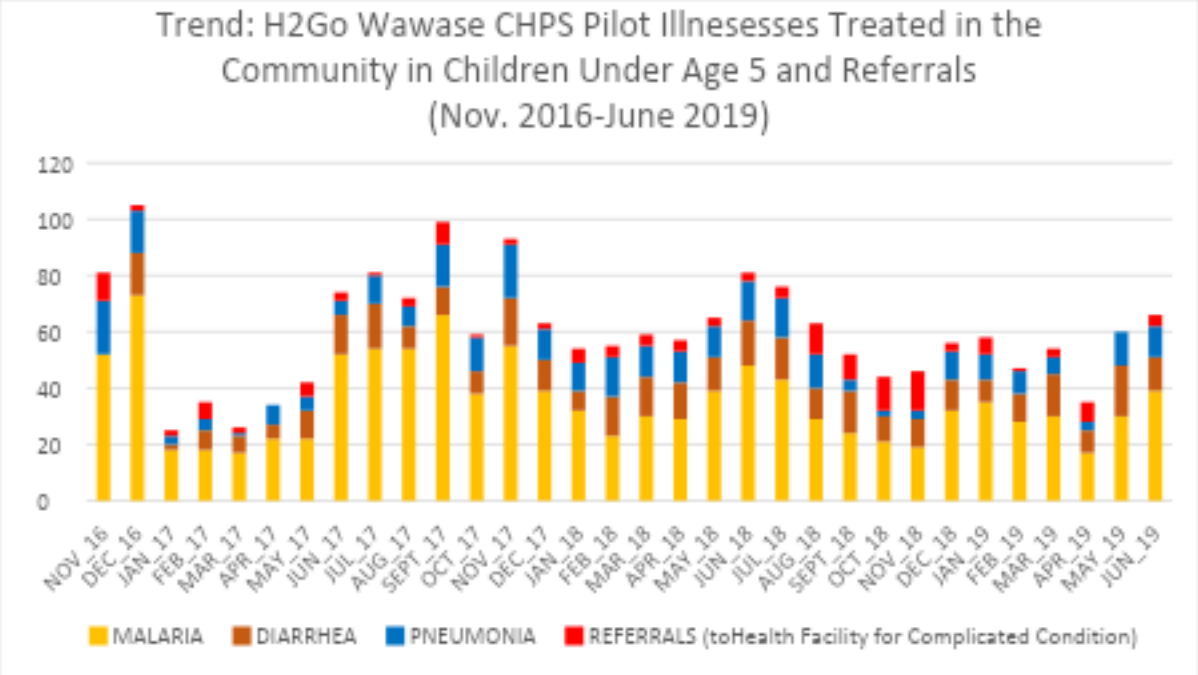
Trends to date (Nov 2016-Jun. 2019):

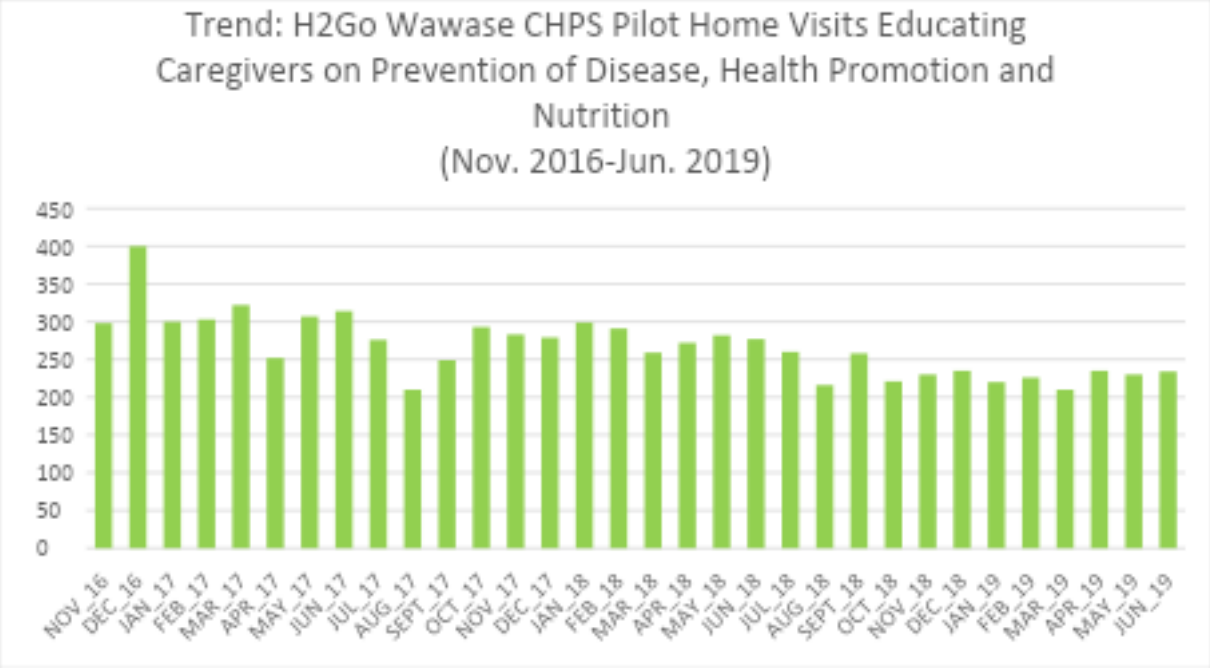
Trend-Project total: Among approximately 200 children under age 5:

- 1,773 Illnesses treated in the community by H2Go Wawase CHPS Zone CBAs

- 1128 malaria; 347 diarrhea; 298 pneumonia/Acute Respiratory Illness (ARI)

- 144 children referred to collaborating health facilities for serious and life-threatening illnesses
- 8, 541 Home visits





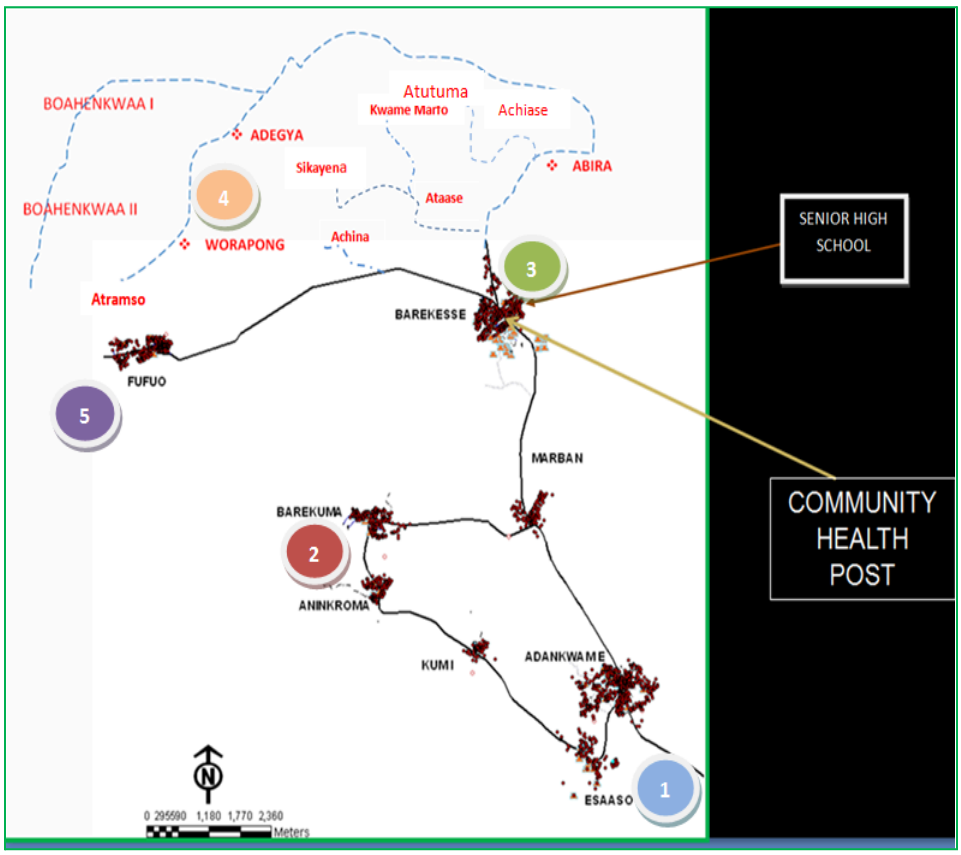
Health 2 Go BCCDP Demonstration Project

Implementation Overview

The expansion of Health 2 Go into a larger Demonstration project for the BCCDP follows the success of the Kpong Pilot, launching in May 2019. Approximately 20,000 people in 20 rural communities in the Atwima Nwabiagya North District near Kumasi in the Ashanti Region are being served by 30 H2Go CBAs.

Communities include:

1. Boahenkwaa I
2. Boahenkwaa II
3. Adegya
4. Worapong
5. Atramso
6. Sikayena
7. Achina
8. Atutuma
9. Kwame Marto
10. Ataase
11. Achiase
12. Abira
13. Berekesse
14. Marban
15. Fufuoo
16. Barekuma
17. Aninkroma
18. Kumi
19. Adankwame
20. Esaaso



Initial Training

Preceding the launch of the H2Go BCCDP Demonstration Project in communities, initial training was completed for 14 GHS Personnel and 30 CBAs which occurred at Ensign College with clinical sessions held St. Martin's Hospital and Atua Hospital in Kpong during February and April of 2018.

Community Internship

Following initial basic training, CBAs performed a 1-day community internship on April 25, 2018 in three communities. The primary purpose of the internship is to provide CBAs an opportunity to repeatedly practice newly learned clinical skills, particularly performing rapid diagnostic tests (RDT) for malaria and reading results, while receiving supportive supervision by Managers and Supervisors. Additionally, the community internship engages communities and introduces them to the H2Go program. The three communities where the internship occurred included Barekese, Barekuma, and Fufuo.

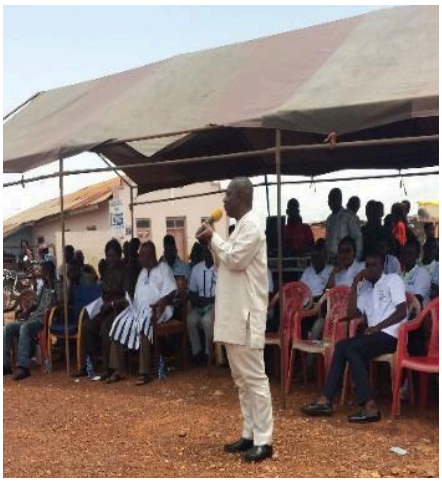
Turnout of mothers with children was high, as the H2Go Community Internship had been announced in communities the week prior to the event. Over 250 children were tested for malaria, and treated if

results were positive, by CBAs. In addition to testing for malaria, CBAs assessed children for pneumonia, diarrhea, danger signs, and malnutrition. Children were treated for respective conditions or referred if necessary. Newly trained H2Go GHS personnel serving as BCCDP Managers and Supervisors provided oversight and mentoring.

H2Go BCCDP Demonstration Project Launch and Press Event

BCCDP was launched on April 26, 2018 in two multi-community Durbars. Press coverage was provided by national TV and radio stations, including Metro TV and UTV.

- Adegya Community
- Fufuo Community



In attendance were Ashanti Regional Director of Health Services (Dr. Tinkorang); Atwima Nwabiagya District Director of Health Services (Dr. Kingsley Osei-Kwakye); H2GO Team (Dr. Manortey, Gideon Acheampong and Daniel Opoku Agyemang); Prof. Steve Alder; Traditional leaders, Assemblymen and women, H2Go BCCDP Manger/Facilitators, Supervisors, and CBAs. Speakers included Prof. Ansong, Dr. Manortey, Dr. Osei-Kwakye, and Dr.

Tinkorang. Traditional leaders also spoke to show appreciation and support for the project. CBAs were given their certificates and logistics following the durbars.

Recent H2Go BCCDP Activities

In addition to routine activities related to ongoing service by CBAs to treat common child illnesses in the community, refer serious life-threatening illness, conduct monthly home visits to educate mothers, and routine monthly supervisory visits by GHS Community Health Nurses/Officers trained as H2Go

supervisors, two formal H2Go activities occurred. These included a site visit by the Country PI, Dr. Manortey and a Quarterly Refresher Training.

Site Visit

On May 21, 2019, Dr. Stephen Manortey, the Country Principal Investigator (PI) traveled to Berekese for site visit to the BCCDP project. The main objective of the visit was to receive feedback from CBAs on their activities in the field, review documentation of their registers, and obtain information on any challenges CBAs are having as they conduct their routine activities in the community. Personnel from Ghana Health Service's Berekese Health Center conducted the supportive supervision visit, selecting three communities to visit (Achina, Worapong, Adegya), which included a total of six CBAs. While all of the CBAs indicated they were comfortable implementing information and skills learned in training, and had no difficulties, a review of the CBA Registers indicated that two of the six CBAs were having challenges with some aspects of documentation, which was subsequently addressed by supervisors. Additionally, it was determined that proper documentation would be reinforced during the upcoming refresher training. Other feedback from CBAs included trouble with the initially supplied battery torchlights, a request for an increase in the monthly CBA stipend, and an appeal to hold community durbars (town hall meetings) to ensure a continuous support of community members for the H2Go program. Following the supervisory visit to CBAs, the team returned to Berekese to discuss aspects of the H2Go program with community health nurses trained as supervisors.

Dr. Steve Manortey and H2Go BCCDP Managers reviewing community registers of CBAs from the Achina (left), and the Warpong (right) communities.

Refresher Training

A 2-day Refresher Training was held at with classroom sessions taking place at the SDA Nursing Training School and the clinical session occurring at St. Patrick's Hospital in Barekese, Kumasi June 27-28, 2019. In

attendance was the recently appointed Atwima Nwagiagya North Health Director, Mr. Eric Sarpong, 3 H2Go Ghana team members from Ensign College, 5 Berekese Health Center trained as H2Go Facilitator/managers, 8 GHS Community Health Officers trained as H2Go Supervisors, and 29 CBAs.

Shaibu Mohammed, the Berekese sub-District Directed, who is trained H2Go Facilitator/Manager, served as the lead facilitator.

Classroom Sessions

The following topics were covered:

Documentation (record keeping)

A brief review of documentation of the sick child, reminding CBAs to fill out the name, age, sex, and all of the fields on the registration form. CBAs were invited to asked questions. Samuel addressed documentation questions on how to document follow up visits, how to document a child with a fever who has a negative rapid malaria test.

Danger Signs in Pregnancy

A midwife who is trained as a H2Go facilitator/manager provided an interactive session with CBAs, asking them questions on some danger signs that can be identified in pregnant women. She provided a quick review on how to interact with pregnant women, and link them to care.

Joana Baffoe facilitating a session on 'Danger Signs in Pregnancy'

Danger Signs in Newborns (age 0-2 months)

Items reviewed included a brief overview of newborn danger signs, case and case studies of newborns with danger signs. Documentation procedure was also reviewed.

General Danger Signs (in children under age 5)

Video clips were used to review general danger signs in sick children which need prompt referral to a health facility. Questions from CBAs were addressed, with a recap of the session.

RDT Results Quiz and Drug Expiration Dates Test

CBAs were asked to identify whether an RDT result was either positive, negative or invalid. This was following by the reading of expiration dates on RDTs. CBAs were to identify whether RDT kits were expired or safe for use.


Left, CBA observing RDT cartridge during RDT results quiz. Right, Supervisors reviewing quiz results.

Fever and Malaria

A PowerPoint presentation outlining causes, prevention, symptoms and treatment on malaria was conducted. Danger signs of severe illness that needs prompt referral were reviewed. Following a question and answer period, a practical session was conducted in which CBAs performed rapid diagnostic tests (RDT) for malaria on each other, each having a turn, while supervisors oversaw the process using a 20-point checklist. In conclusion, a brief review on treatment and counseling the caregiver was given.

Tepid Sponging and Suppository

A demonstration was given to CBAs which reviewed the process of tepid sponging for children with high fevers, and how to give a suppository for severe illness related to malaria prior to referral. CBAs asked questions and received clarification on areas of uncertainty.

Nutrition

A PowerPoint presentation was given, outlining the definition of malnutrition, signs and symptoms in children, and then addressed proper nutrition practices for mothers and caregivers to provide in the home. A demonstration was given on how to assess for pedal edema, and how to assess nutritional status using the Middle Upper Arm Circumference (MUAC) tape. CBAs were called upon to explain how to assess for pedal edema and use the MUAC tape.

Cough and Pneumonia

A presentation was provided to CBAs reviewing the causes, prevention, symptoms and treatment of pneumonia. Video clips were used to demonstrate fast breathing in children, followed by video exercises. CBAs indicated whether or not a child had fast breathing. Questions from CBAs were addressed.

Diarrhea & Home Visits

A quick review of diarrhea in children was conducted. Causes and symptoms, and treatment were reviewed, which included showing video clips of assessment of diarrhea and dehydration in children. The skin pinch test to identify dehydration was demonstrated to CBAs followed by a practical sessions in which CBAs demonstrated the skin pinch on a partner, treatment at home (mixing Oral Rehydration Solution (ORS) and giving zinc) while supervisors and facilitators oversaw to ensure correct protocol. At the conclusion, a brief lecture was given reviewing routine monthly home visits.

Competency Exam

As part of the refresher training, CBAs were expected to take a competency exam to evaluate their knowledge. CBAs were examined on all the training sessions they were taking through including; RDT results reading, drug expiry date reading, breathing rate, chest in-drawing determination, case studies and treatment regimen. This session lasted for approximately two hours.

Left, a section of CBAs during the competency exam. Right, Supervisors evaluating exam scripts of CBAs while a debriefing session is ongoing.

Clinical Sessions

Inpatient and Outpatient Sessions

A clinical session at the Saint Patrick's Hospital occurred on the second day of training. Inpatient and Outpatient practical sessions were organized for all participants, in which three groups of ten participants alternated between Inpatient and Outpatient wards alternating at regular time periods. Each group of CBAs was led by two managers and three supervisors and taken to either the children's inpatient ward, outpatient clinic, or maternal/neonate ward. Each CBA was assigned to assess at least three children using the registrar, and properly documenting cases. Areas included danger signs, fever/malaria, cough/pneumonia, diarrhea, and malnutrition. CBAs practiced assessing breathing rate, stiff neck, fever and chest in drawing. After each participant finished attending to a child, the facilitator or supervisor addressed areas of the assessment that needed to be strengthened through supportive supervision and mentoring.

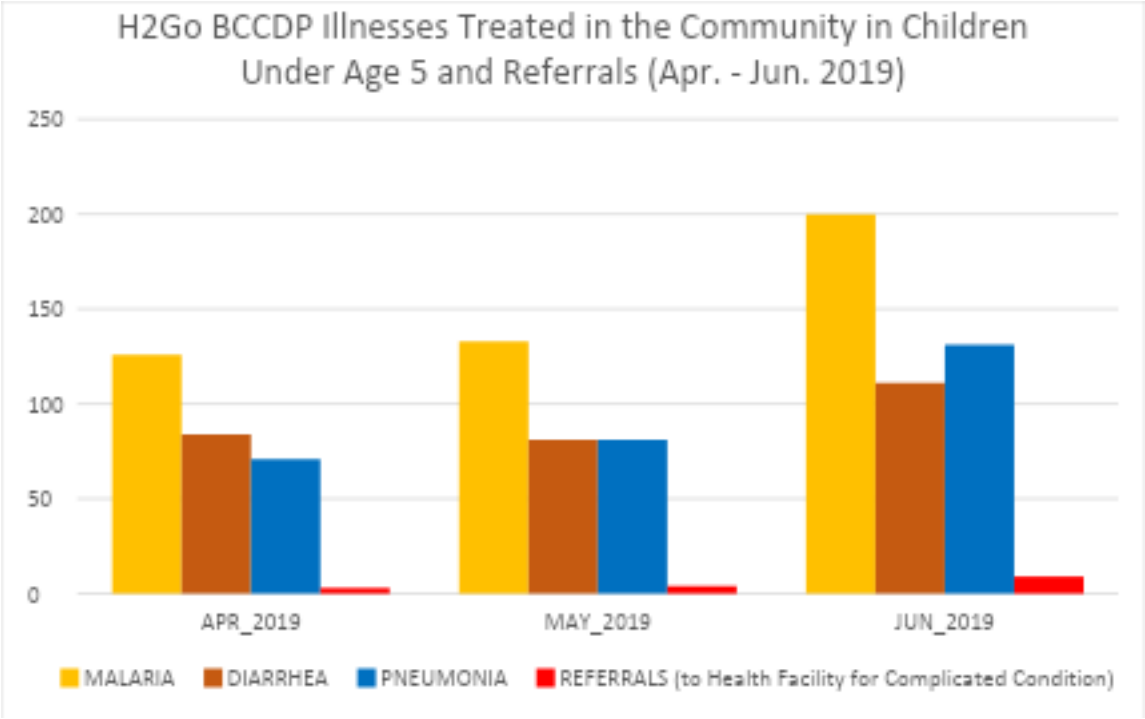
Conclusion-Successes and Challenges

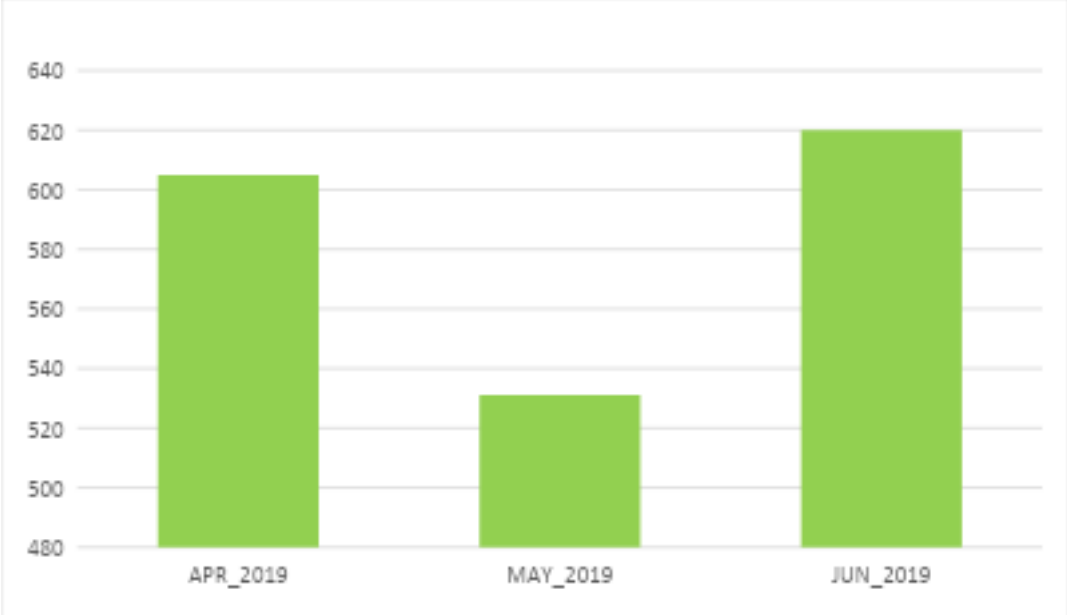
At the end of the training, Mohammed Shaibu led a session on the training evaluation from all participants. Participants shared their views on how the training was conducted overall. They agreed it was successful and very beneficial to their field practice. They subsequently shared their views on how they think the training and program can be improved.

Group photograph of training team and participants

Among approximately 2,200 children under age 5, (Apr. – Jun. 2019):

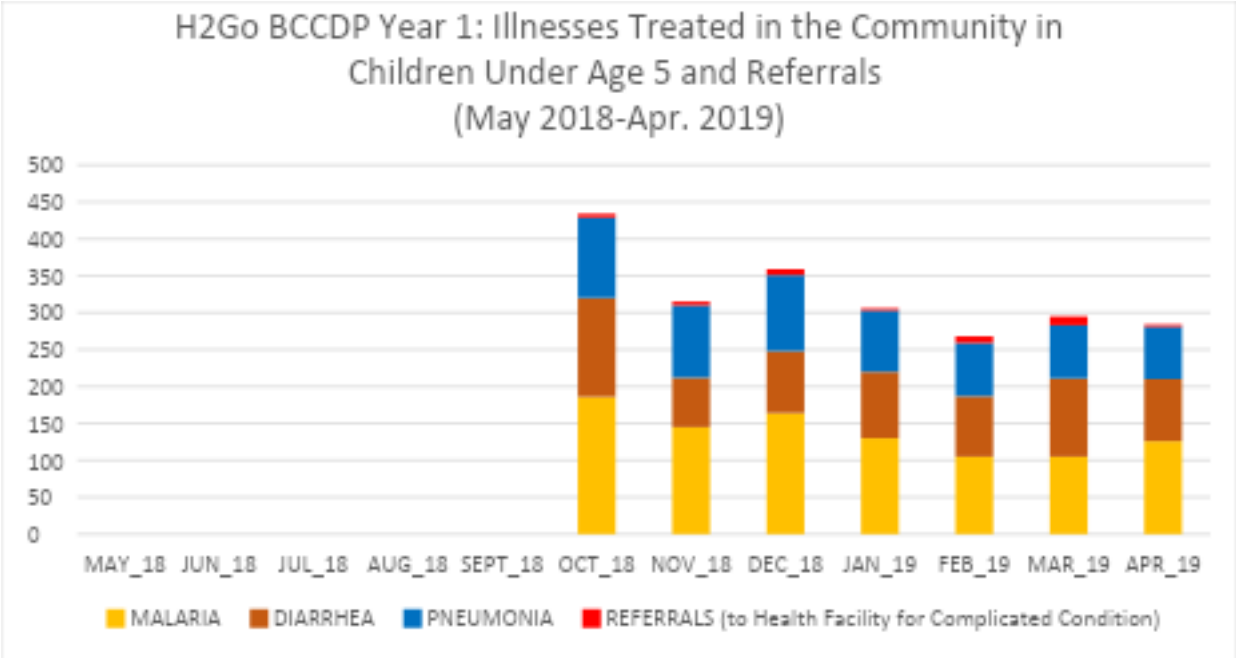
- 1,018 illnesses were treated in the community by H2Go BCCDP CBAs
    - 459 Malaria; 276 Diarrhea; 283 Pneumonia;/(Acute Respiratory Illness (ARI)
- 16 Referrals were made to health facilities for serious illness
- 1,756 Home Visits were conducted





Year 1: Among approx. 2,200 children under age 5, (May 2018 -Apr. 2019)*:

- 2,216 illnesses were treated in the community by H2Go BCCDP CBAs
    - 961 Malaria; 647 Diarrhea; 608 Pneumonia/Acute Respiratory Illness (ARI);
- 45 Referrals were made to health facilities for serious illness
- 8,037 Home Visits were conducted

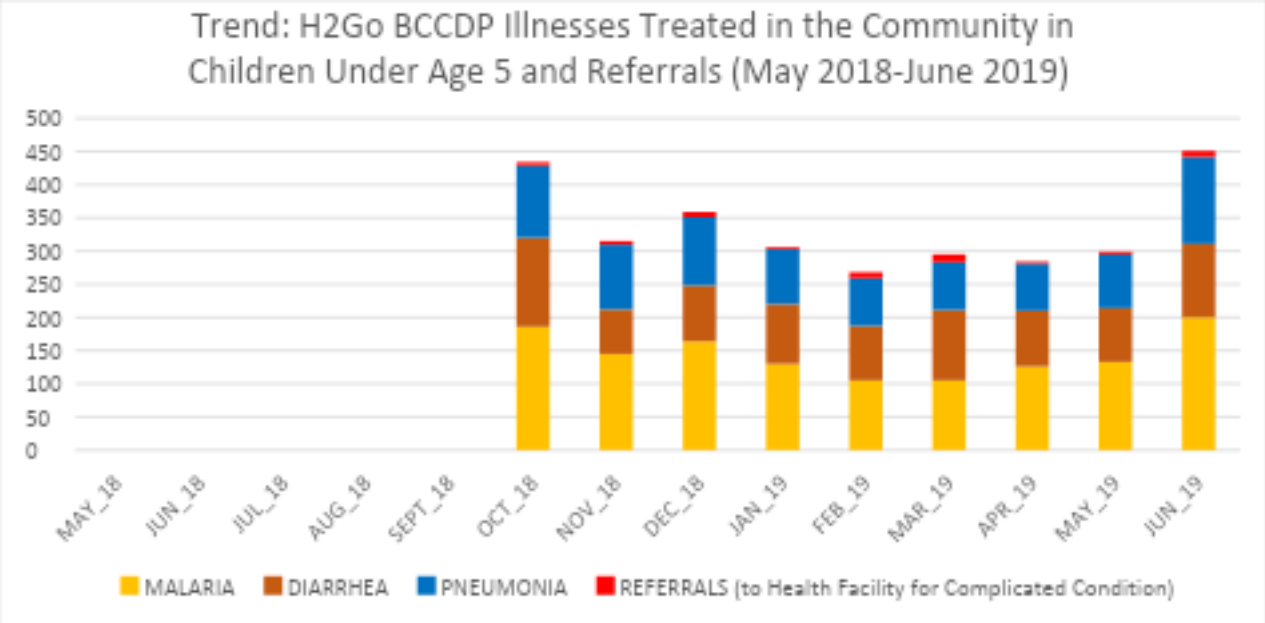


*CBAs did not have medicines until Oct. 2018, but began conducting home visits in May 2018

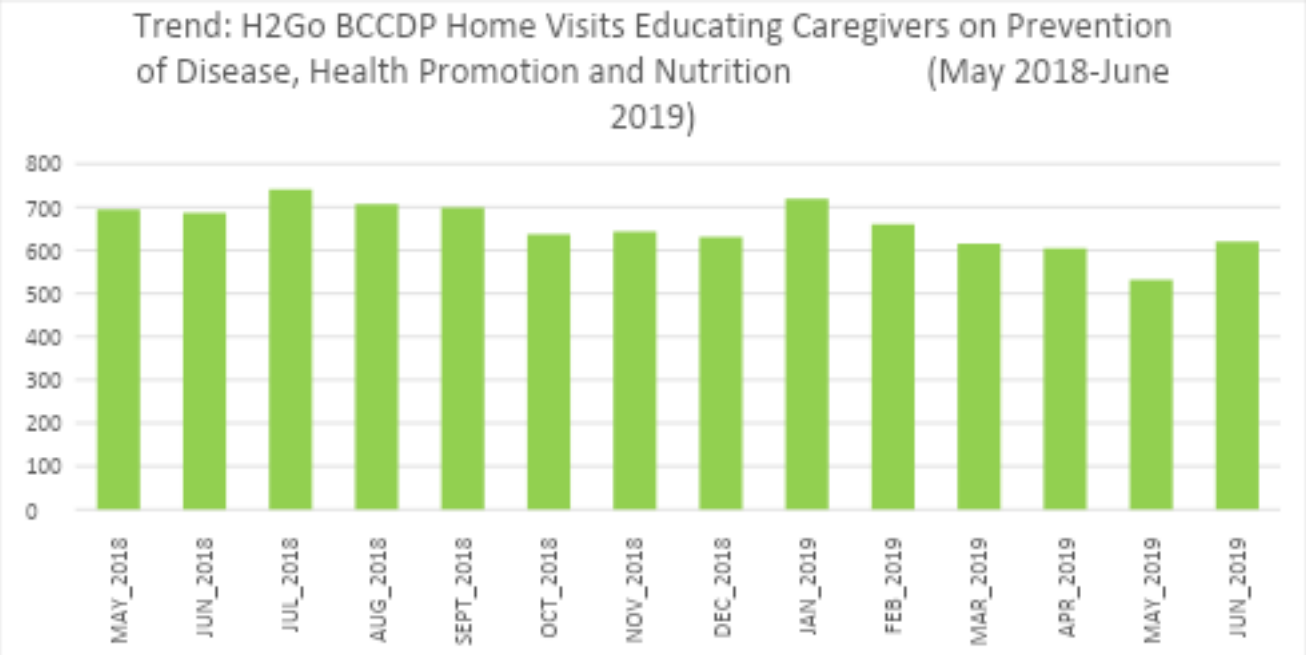
Trends to date (May 2018-Jun. 2019)*:

Trend-Project total: Among approximately 2,200 children under age 5:

- 2,953 illnesses treated in the community by H2Go BCCDP CBAs
- 1,294 malaria; 839 diarrhea; 820 pneumonia/Acute Respiratory Illness (ARI);
- 58 referrals for serious and life-threatening illnesses
- 9,188 household health educational household visits



*CBAs did not have medicines until Oct. 2018, but began conducting home visits in May 2018



Lessons Learned

Wawase CHPS Zone Pilot

Lessons learned from the Wawase CHPZ Zone Pilot have been significant as H2Go has tested Training, Implementation and Monitoring and Evaluation processes in a limited population and a manageable geographically defined site. In addition to improving overall healthcare and encouraging health prevention in households, the successful implementation of H2Go enabled health facilities to address urgent care more effectively.

Key learning includes:

- Determining the right amount of initial and refresher training
- Creation of additional tools and job aids to support CBA activities
- Development of a comprehensive CBA competency exam
- Linkage of supervision to training
- Community internship and supervision processes
- Appropriate equipment and replacement strategy

BCCDP Demonstration Project

Key lesson learned thus far include:

- Refinement of training model for adaptation in the community
- Reinforcing training skills with community internship
- Expansion to a larger site

Next Steps

With the implementation of the Wawase CHPS Zone Pilot and the expansion to the larger BCCDP Demonstration Project, H2Go aims to scale up to a larger area of District level, and create a means for country-wide implementation as well as adaptation and expansion to other countries.

- Present H2Go program to National House of Chiefs
- Prepare for expansion to a larger area of District level in Ho (Volta Region)
- Expand Countrywide in Ghana
- Prepare for implementation and expansion to additional countries
- Seek additional funding (USAID grant)
- Evaluate impact of the H2Go program

CHPS Zone (Wawase CHPS Zone Pilot < 2,000 pop.) □ Sub-District (BCCDP Demonstration Site, approx. 20,000 pop.) □ District Level (Approx. 100,000 pop.) □ Country-wide and Additional Countries

Appendix 1: Health 2 Go Timeline

2015

January -June

- Extensive research conducted on community-based programs
- Determined to begin with child and maternal health with the concept of eventually expanding to address other populations within the community
- Program outcomes and objectives identified
- Selected evidence based gold standard curriculum WHO/UNICEF Integrated Community Case Management, 'Caring for newborns and children in the community.'
- Connected with World Health Organization, UNICEF, Ghana MOH, and Child health leaders to obtain relevant program information and resources
- Health 2 Go logo designed

July-December

- Ghana visit to Kumasi and Kpong for needs assessment and site research (July 2015)
- Established and worked with a planning group
- Initiated Health 2 Go Program in Ghana with partnership of University of Utah, Ensign College of Public Health, Cast a Pebble and Ghana Health Service (GHS)
- Worked with Lower Manya Krobo Municipal Health to identify administrative personnel and site
- Identified a cluster of 6 small communities in the Wawase CHPs zone for Kpong Pilot
- Research and test equipment for program

2016

January – June

- Sourced CBA equipment in Ghana and US
- Worked with Municipal Health to identify 10 CBAs in communities in Wawase CHPS Zone
- Prepared material for Manager, Supervisor and CBA training
- Developed launch promotional materials, including press kits
- Engaged communities; received official entry and welcome by chiefs (May)
- Formed direct linkage to hospital and health facility that receive referrals by Health 2 Go

July – December

- Manager/Facilitator Training (5-days) conducted by former Ghana national (iCCM) facilitator to train 6 GHS administrators and providers as H2Go Wawase CHPS Zone Managers and Facilitators held at Ensign College with clinical sessions at St. Martin's and Atua Hospitals (July 4-8)
- Press event at Ensign with national TV and regional newspaper coverage to promote H2Go Kpong Pilot (July 14)
- Supervisor Training (3-days) to train 5 GHS Community Health Officers as H2Go Kpong Supervisors; held at Ensign College, St. Martin's and Atua Hospitals (July 25-27)
- CBA training (6-days) to train 10 community members as H2Go Wawase CHPS Zone CBAs held at Ensign College with clinical sessions at St. Martin's and Atua Hospitals (Aug. 1-6)
- CBA Community Internship (2-days) in CBAs communities in Wawase CHPS Zone (Aug. 23, Aug 30)
- Engagement of communities through multi-community durbars (town hall meeting) to introduce H2Go in Wawase CHPS Zone (Oct. 24)
- Official H2Go launch in 6 communities in the Wawase CHPS Zone; total pop. 1,500 people (Oct. 24)
- H2Go BCCDP CBA bikes, medicine boxes and supplies delivered (Oct. 24)
- CBAs begin service in H2Go Wawase CHPS Zone Pilot communities (Nov. 1)
- Supportive supervision provided for H2Go Wawase CHPS Zone Pilot CBAs beginning this month (Dec.)

2017

January – June

- First Kpong Refresher Training (1-day) held at Ensign College with clinical sessions at St. Martin's and Atua Hospitals (Jan.)
- Engagement of communities through multi-community durbars (Town Hall Meeting) to discuss program (Mar.)
- H2Go Wawase CHPS Zone Refresher Training (2-days) at Ensign College with clinical sessions at St. Martin's and Atua Hospitals (Apr.)
- Completed GIS Mapping, Census, and Health Behavior Survey in communities (June)

July-December

- H2Go Wawase CHPS Zone Refresher Training (2-days) at Ensign College with clinical sessions at St. Martin's and Atua Hospitals (Jul.)
- Engagement of communities through multi-community durbars (Town Hall Meeting) to discuss H2Go Wawase CHPS Zone program (Sep.)

2018

January – June

- H2Go Wawase CHPS Zone Refresher Training (2-days) at Ensign College with clinical sessions at St. Martin's and Atua Hospitals, included press coverage as part of H2Go BCCDP promotion (Jan. 18-19)
- Press event was held at Ensign College with Ghana National TV and regional newspaper coverage to promote H2Go expansion to BCCDP (Jan. 19)
- Met with Ghana Health Service (GHS) regarding medicine supply to ensure program's sustainability (Jan.)
- Established strong relations with Regional, District, sub-District, and community leaders associated with BCCDP (Jan.)
- Formed direct linkage to health facilities (Berekese Heath Center and St. Patrick's Hospital) that will receive H2Go referrals (Feb.)
- Completed the initial H2Go BCCDP 5-day training for 6 GHS administrators and providers trained as H2Go Managers/Facilitators (Feb. 19-23)
- Completed the initial H2Go BCCDP 5-day training for 7 GHS community health officers trained as H2Go supervisors (Apr. 16-20)
- Completed the initial H2Go BCCDP 5-day training for 30 community members trained as H2Go community-based agents (CBAs) (Apr. 16-20)
- 1 day H2Go Community Internship at 3 BCCDP communities (Berekese, Barekuma, and Fufuo) (Apr. 25)
- Engagement of BCCDP communities through 2 multi-community Durbars (town hall meetings) (Apr. 26)
- Press event at durbars with Ghana National TV, radio and newspaper (Apr. 26)
- H2Go BCCDP CBA bikes, medicine boxes and supplies delivered (Apr. 26)
- CBAs began service in H2Go BCCDP communities (May 1)
- Supportive supervision provided for CBAs beginning this month (Jun.)

July-December

- H2Go Wawase CHPS Zone Refresher Training (2-days) at Ensign College with clinical sessions at St. Martin's and Atua Hospitals (Aug.)
- H2Go team have agreed on supplying medicines for CBA's on-the-job training, scheduled to occur in September
- H2Go BCCDP CBA equipment and supplies such as torchlight, raincoat, and rainboots delivered (Sep.)
- 1-day H2Go BCCDP Refresher Training and distribution of 1-month medicine supply for Fufuo, Barekuma, and Maban Zones at Berekese (Sep. 27)

- 1-day H2Go BCCDP Refresher Training and distribution of 1-month medicine supply for Abira and Warpong Zones (Oct. 2)
- Engagement of communities through multi-community durbars (Town Hall Meeting) to discuss H2Go Kpong program at Abobeng and Wawase (Oct. 9)
- Engagement of communities through multi-community durbars (Town Hall Meeting) to discuss H2Go Kpong program held at Abobeng and Wawase (Dec. 11)
- Cast-a-Pebble agreed to fund H2Go BCCDP CBA medicines for one year (Dec.)
- Cast-a-Pebble indicated they would fund H2Go Wawase CHPS Zone Pilot for an additional year

2019

January –June

- H2Go BCCDP Refresher Training held SDA Nursing Training School and St. Patrick's Hospital in Barekese, Kumasi (Jan 17-18)
- Wawase CHPS Zone Refresher Training (2-days) at Ensign College with clinical sessions at St. Martin's and Atua Hospitals (Mar. 7-8)
- Site visit to BCCDP conducted (May 21)
- Assessment of H2Go Wawase Pilot Zone CBA equipment (June 20)
- H2Go BCCDP Refresher Training held at SDA Nursing Training School and St. Patrick's Hospital in Barekese, Kumasi (June 27-28)

Appendix 2: Budget

Wawase CHPS Zone Pilot

Health 2 Go: Kpong (Pilot) Expenses 10 CBAs serving 6 communities				
Costs	**Budget 7/1/15 to 12/31/20**	**Actual Expenditures 7/1/15 through 6/30/19**	**Amount Remaining on 7/1/19**	**Notes**
Medications	$ 7,062.02	$ 3,153.85	$ 3,908.17	
Program Equipment and Supplies	$ 38,252.56	$ 29,136.52	$ 9,116.04	Replacement of CBA equipment occurs Aug 2019
Training (Initial Basic + Refresher)	$ 52,270.24	$ 27,708.07	$ 24,562.17	More efficient training approaches allowed cost savings
Supervision	$ 9,843.72	$ 7,806.56	$ 2,037.16	
CBA stipends	$ 9,260.00	$ 6,566.29	$ 2,693.71	
Community Engagement	$ 2,327.08	$ 2,530.93	$ (203.85)	
Site Visits by Central H2Go Team	$ 13,000.00	$ 18,065.13	$ (5,065.13)	
Ghana H2Go Team Support	$ 54,101.00	$ 63,698.94	$ (9,597.94)	
Central H2Go Team Support	$ 80,406.00	$ 79,375.68	$ 1,030.32	
Monitoring & Evaluation	$ 13,477.38	$ 229.89	$ 13,247.49	
Total	**$ 280,000.00**	**$ 238,271.87**	**$ 41,728.13**	

BCCDP Demonstration Project*

Health 2 Go: BCCDP Demonstration Project 30 CBAs serving 20 communities				
Costs	**Budget 7/1/17 to 12/31/20**	**Actual Expenditures 7/1/17 through 6/30/19**	**Amount Remaining on 7/1/19**	**Notes**
Medications	$ 32,000.00	$ 6,686.26	$ 25,313.74	Cast a Pebble donation of $32,000 for CBA medications
Program Equipment and Supplies	$ 37,923.80	$ 38,523.13	$ (599.33)	
Initial Training	$ 42,984.00	$ 27,940.48	$ 15,043.52	More efficient training approach allowed for cost savings
Refresher Training	$ 98,980.00	$ 12,733.75	$ 86,246.25	More efficient training approach allowed for cost savings
Supervision	$ 5,076.92	$ 2,826.56	$ 2,250.36	
CBA stipends	$ 18,461.54	$ 9,126.44	$ 9,335.10	
Community Engagement	$ 2,779.49	$ 3,111.39	$ (331.90)	
Site Visits by Central H2Go Team	$ 26,844.25	$ 3,349.02	$ 23,495.23	
Ghana H2Go Team Support	$ 16,250.00	$ 5,683.38	$ 10,566.62	
Central H2Go Team Support	$ 74,700.00	$ 46,288.51	$ 28,411.49	
Monitoring & Evaluation	$ 6,000.00	$ -	$ 6,000.00	
Total	**$ 362,000.00**	**$ 156,268.91**	**$ 205,731.09**	

In general, scheduling shifted a few months due to the later than planned start date and the initial challenge of medications not being supplied through the existing national plan. Therefore, key activities such as refresher trainings have shifted forward. Since Cast a Pebble provided funding for medicines, the

project is advancing as planned. We have extended the project beyond the original end date of June 30, 2019 (reflected in the budget above) to December 31, 2020.

*Cast a Pebble Foundation directly purchased and donated bicycles and accessories through Rugged Cycles to Health 2 Go amounting to approximate retail value of $40,000, $30,000 of which is reflected in the BCCDP Demonstration Project *Program Equipment and Supplies* Budget.

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