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HEALTH, POPULATION, & NUTRITION OFFICE HEALTH SYSTEMS BASELINE SURVEY REPORT 2015

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Health, Population, & Nutrition Office Health Systems Baseline Survey Report

2015

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ACRONYMS

C4H	Communicate for Health
CAPI	Computer-Assisted Personal Interviewing
CDCS	Country Development Cooperation Strategy
CHAP	Community Health Action Plan
CHC	Community Health Committee
CHO	Community Health Officer
CHPS	Community-Based Health and Planning Services
CHV	Community Health Volunteers
DDHS	District Director of Health Services
DHIMS2	District Health Information Management System
DHS	Demographic and Health Survey
E4H	USAID/Ghana Evaluate for Health Project
GHS	Ghana Health Service
GoG	Government of Ghana
HSBS	Health Systems Baseline Survey
LEAP	Livelihood Empowerment Against Poverty
MCSP	Maternal and Child Survival Program
MOH	Ministry of Health
MSI	Management Systems International
NHIS	National Health Insurance Scheme
OTSS	Outreach Training and Supportive Supervision
TNS	TNS RMS Limited International
QA	Quality Assurance
QI	Quality Improvement
RDT	Rapid Diagnostic Test
RING	Resiliency in Northern Ghana Program
SDHT	Subdistrict Health Team Leaders
SPRING	Strengthening Partnerships, Results and Innovations in Nutrition Globally
T3	Test, Treat and Track Initiative
USAID	United States Agency for International Development
WHO	World Health Organization

EXECUTIVE SUMMARY

Despite significant advances in the health of Ghana's population over the past 20 years, the country still faces significant challenges in areas such as maternal and child health, child nutrition, reproductive health and infectious diseases. To help address these challenges, USAID/Ghana is investing in a number of health sector projects, with the ultimate goal of achieving equitable improvements in Ghana's health status. These investments primarily seek to increase access to integrated health services, expand the availability of community-based resources, strengthen and increase the responsiveness of the health system and improve health sector governance and accountability.

This report presents findings from a health systems baseline survey (HSBS) that Management Systems International (MSI) and Mathematica Policy Research conducted as part of USAID's Evaluate for Health (E4H) project. The E4H project launched in September 2014 and is designed to provide overall evaluation support for USAID's health portfolio in Ghana. The HPNO health systems baseline study collected data from March to May 2015 to determine the current levels of key health systems indicators of relevance to USAID's investments.[1]. The baseline study's two main objectives were to (1) guide program implementation and set early targets and (2) enable an evaluation of USAID's investments using a pre-post design that will compare indicator levels in the future with those levels at baseline.

Here, we list the key research questions that drove the identification of indicators for the baseline study and describe the baseline data collection. We then summarize the key findings related to each research question and describe our future evaluation plans.

A. Research Questions

Mathematica and MSI identified the research questions that the baseline study sought to inform through discussions with USAID/Ghana's Health, Population, and Nutrition Office (HPNO) and its primary implementing partners at the time of the baseline launch. The final list of research questions reflects those determined to be most relevant to USAID's investments and of greatest interest to stakeholders that could not be answered using existing data sources, but were feasible to answer using a quantitative health facility survey and qualitative data collected from key health service informants and clients.

The final research questions are organized into four thematic areas:

1. **Quality of care and services**
    - What is the state of the quality of care across Ghana in community-based health and planning services (CHPS) zones and sub-district health centers?
    - Is there a continuum of care throughout the health hierarchy from community to CHPS zone to health center to district hospital?
    - What is the state of the quality of services?
    - Do facilities have access to needed supplies?
    - Do facilities have access to essential equipment?
    - How satisfied are clients with the quality of care and services provided?

[1] The HSBS collected data in all ten regions of Ghana, with an oversampling of health centers and CPHS facilities in the five USAID focal regions. The HSBS collected qualitative data only in the five USAID focal regions

2. **Culture of quality assurance and quality improvement**
   - Are data used for making decisions?
   - Does the use of data for decision-making lead to service improvements?

3. **Community and governmental support for CHPS**
   - How engaged are communities? Do they exhibit ownership and empowerment?
   - How do district assemblies support CHPS?

4. **Health insurance**
   - Is health insurance coverage increasing?
   - Does having health insurance coverage change how and where people receive care?

B. Data Collection

The baseline study relied on both quantitative and qualitative data collected by the data collection firm TNS in Ghana. Quantitative data collection occurred through a survey of community- and subdistrict-level health facilities (CHPS zones and health centers, respectively) in all 10 regions of Ghana. The sample was representative of all CHPS zones and health centers in Ghana, enabling us to provide national-level estimates. However, we oversampled in five focal regions in which USAID plans to invest most heavily — the Central, Greater Accra, Northern, Volta and Western regions — to provide precise estimates for this group. Mathematica designed the facility survey instrument with input from MSI and its local E4H staff, USAID staff, implementing partners and the Ghana Health Service. The survey collected basic descriptive data about the sampled facilities, together with a range of indicators relevant to the research questions. Almost 98 percent of the targeted facilities responded to the facility survey, yielding a final sample size of 597 facilities (451 CHPS zones and 146 health centers).

To complement the facility surveys, we collected qualitative data in the five USAID focal regions. These data were collected from key informant interviews and focus groups at the district level (district directors of health services [DDHSs] and District Assembly members); the subdistrict level (subdistrict health team [SDHT] leaders); and the community level (CHPS zone clients, community leaders, and community health committee [CHC] members). Participation in the interviews and focus groups was high, with more than 97 percent of the targeted interviews completed. In total, we completed 170 qualitative interviews (152 key informant interviews and 18 focus groups) across the five focal regions.

C. Key Findings

We triangulated information from the quantitative facility survey and qualitative interviews and focus groups to identify aspects of the health system that were working well as well as important gaps in each of the four thematic areas into which the research questions were organized. These baseline findings can inform USAID programming strategies focused on system improvement, as well as enable future evaluation of USAID's investments. Our key baseline findings, organized by thematic area, follow:

1. Quality of care and services

Facilities typically provide most of the services they are expected to deliver, but some important gaps in service provision remain.

CHPS zones and health centers are expected to offer a range of basic health services. Many of these services in the areas most relevant to USAID interventions — malaria, maternal and child health, family planning, and child nutrition — were commonly provided. For example, 80 percent of CHPS zones and all health centers had at least one staff member providing treatment for malaria, while 88 percent of health

centers reported conducting deliveries (CHPS zones are not expected to conduct routine deliveries). Further, 84 percent of CHPS zones and 91 percent of health centers reported providing both key family planning services of counseling and contraceptives, while more than 80 percent of CHPS zones and health centers had child nutrition registers or record books that had been updated within the previous two months.

However, there are still important gaps in some aspects of service provision in these areas. For example, only about two-thirds of CHPS zones and health centers tested all or almost all of the clients who arrived with a fever in the past two months for malaria, as prescribed by national guidelines. In addition, only about 62 percent of CHPS zones reportedly offered antenatal care services, although all CHPS zones are expected to do so (93 percent of health centers provided this service). Finally, only 16 percent of CHPS zones and 29 percent of health centers had recorded children's height data in their nutrition registers or record books; although child height data are not routinely collected in Ghana, such measures could assist in identifying children who are stunted (low height for age).

CHPS zones and health centers are providing community-based health services, especially through home visits, and community health volunteers are active in a variety of roles.

CHPS zones and health centers are expected to provide a variety of community-based health services, including home visits to clients for both routine care and specific health needs. Almost all CHPS and health centers conducted at least one home visit in the two months before the survey, with routine visits the most common type of visit compared to follow-up, special, postnatal, and school visits. In addition, more than 90 percent of CHPS zones and health centers had community health volunteers (CHVs) to help provide community-based care. These CHVs played a variety of roles, which commonly included conducting home visits and disease surveillance, providing first aid, mobilizing and sensitizing the community for health management action and a range of other functions (see Table ES-1). Another aspect of community-based care in CHPS zones in particular consists of regular meetings, known as *durbars*, held by the CHPS staff in their communities to discuss important health topics. Overall, 44 percent of CHPS zones reported holding a *durbar* in the two months prior to the facility survey.

TABLE ES-1. KEY COMMUNITY-BASED SERVICES OFFERED IN PREVIOUS YEAR, AMONG FACILITIES WITH CHVS (PERCENTAGE OF FACILITIES)

Service Offered	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Home visits — assess, advise and educate on health	47.7	51.1	49.6	42.3	60.6	52.6
Conduct disease surveillance, identify cases, and report	39.5	55.0	48.2	55.9	72.1	65.0
Mobilize and sensitize community for health management action	32.2	54.1	44.6	40.5	53.9	48.0
In hard-to-reach areas, provide first aid and treatment of minor ailments	30.1	47.9	40.1	43.3	61.7	53.6
Disseminate health information, including nutrition	27.9	43.9	36.9	37.9	60.7	50.7
Communicate between CHO and community on health status of community	23.4	47.0	36.8	26.5	57.2	43.7
Assist CHO with home visits, outreach and work at the CHPS	30.1	32.9	31.7	34.1	45.8	40.6
Support the organization of community *durbars*	19.4	40.3	31.2	25.9	55.6	42.5
Home visits — follow-up on defaulters	22.7	35.8	30.1	28.2	34.6	31.8
Refer clients to CHO for disease treatment,	25.4	28.1	26.9	21.2	45.4	34.8

Service Offered	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
family planning or nutrition						
Support antenatal, postnatal and infant care	19.8	28.2	24.5	30.4	40.9	36.3
Collaborate with CHO, support CHPS service delivery	15.7	22.1	19.3	20.3	33.2	27.5
Assist in compiling and updating community register and profile	7.3	15.7	12.0	14.3	36.0	26.5
Provide condoms and family planning information	8.7	12.1	10.7	12.1	14.3	13.3
Something else	39.9	24.0	31.0	37.5	25.9	31.0
Sample size	251	167	418	77	52	129

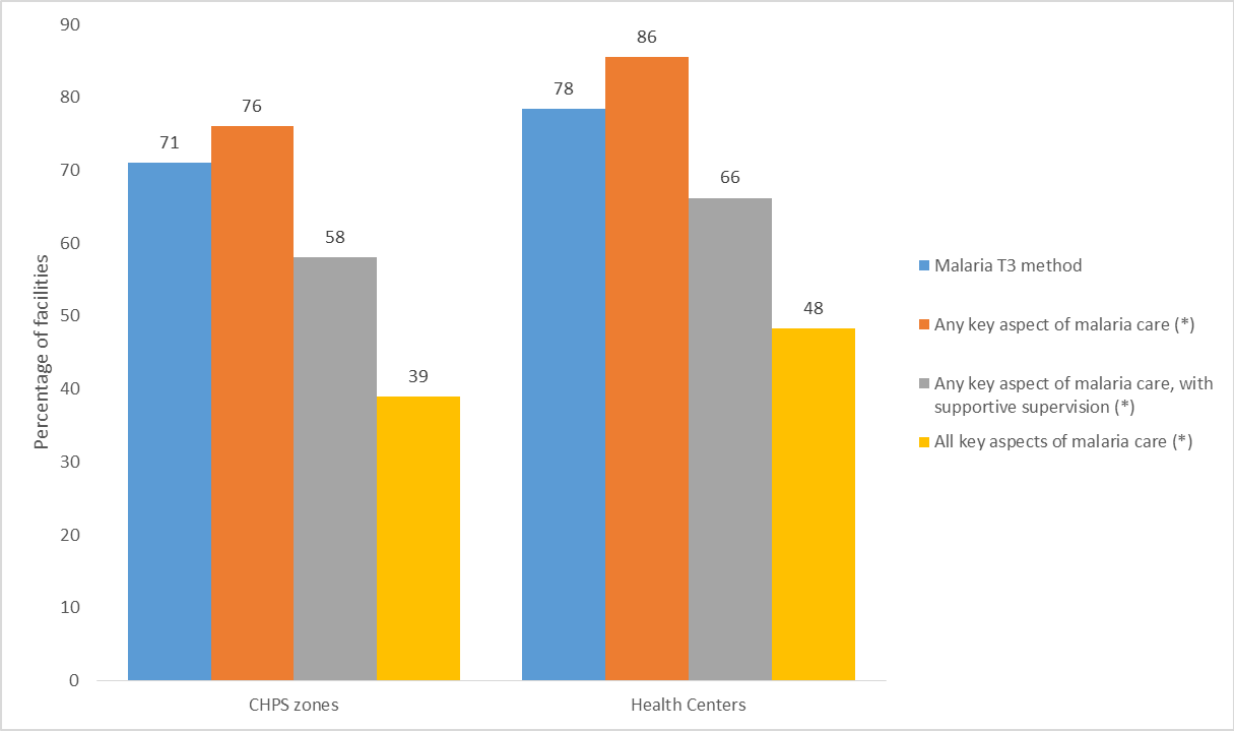
Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted to adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Because multiple responses were possible, percentages total more than 100.

There are important gaps in staff training, and even more so when one considers "high-quality training" defined as "receipt of supportive supervision."

Health staff in CHPS zones and health centers receive training for the provision of key caregiving services. In terms of malaria caregiving (Figure ES-1), 71 percent of CHPS zones reported having at least one staff member trained in the malaria "test, treat, and track" (T3) method in the previous 12 months. In addition, 76 percent of CHPS zones reported that at least one staff member had been trained in any of five other key topics related to malaria caregiving (treatment guidelines, recognizing a suspect case, refresher training on rapid diagnostic kits, differential diagnoses, and malaria in pregnancy). However, only 58 percent had at least one staff member who was trained in *and* received supportive supervision on any of these key topics, and only 39 percent had staff trained in *all* these topics (with or without supportive supervision). This pattern of training for malaria caregiving was similar for health centers, although the percentage of facilities with trained staff was higher than in CHPS zones by between 9 and 17 percentage points, depending on the measure (Figure ES-1).

There was a similar pattern for training on caregiving related to nutrition and maternal and child health, with training gaps for specific topics that became more severe when we examined quality of training as measured by supportive supervision. For example, although 47 percent of CHPS zones had a staff member trained in infant and young child feeding in the previous 12 months, only 33 percent had a staff member who was trained and received supportive supervision.

FIGURE ES-1. FACILITIES WITH AT LEAST ONE STAFF MEMBER TRAINED IN MALARIA-RELATED CAREGIVING TOPICS IN THE PREVIOUS 12 MONTHS (NATIONAL PERCENTAGE OF FACILITIES)



Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Means are weighted using weights that adjust for sampling probabilities. Sample size varies across columns because of item nonresponse: N=444–450 (CHPS zones) and N=141–144 (health centers).
* Key aspects of malaria care are: treatment guidelines for malaria, recognizing a suspect malaria case, refresher training on rapid diagnostic kits (RDTs), differential diagnoses for malaria and malaria in pregnancy (MIP).

Many facilities, especially CHPS zones, do not have written treatment protocols available on site, or follow standard guidelines for sanitation and infection control.

The availability of guidelines is an important measure of the quality of care, because without these protocols, the provision of appropriate care is less likely. Nationally, we found that 30 percent of CHPS zones and 82 percent of health centers reported having written protocols for managing maternal and newborn care, and 39 percent of CHPS zones and 56 percent of health centers reported having written protocols for managing acute undernutrition (these percentages were lower when we only considered written protocols that were verified by our interviewers). We also examined the use of widely accepted measures related to sanitation, disposal, sterilization, and infection control, which are important to ensure that facilities offer a healthy environment for their clients. For sanitation and disposal, almost all CHPS zones and health centers had at least some standard measures in place, but there was substantial variation in the use of specific measures. For sterilization, almost 37 percent of CHPS zones reported that they had no specific measures in place, although only about 3 percent of health centers reported this. Finally, almost 45 percent of respondents at CHPS zones and 19 percent of health centers reported that they did not have any specific measures of infection control in place, such as separating clients with contagious diseases from healthy clients.

Maintaining adequate stocks of medicines and supplies is one of the most significant obstacles facing CHPS zones and health centers.

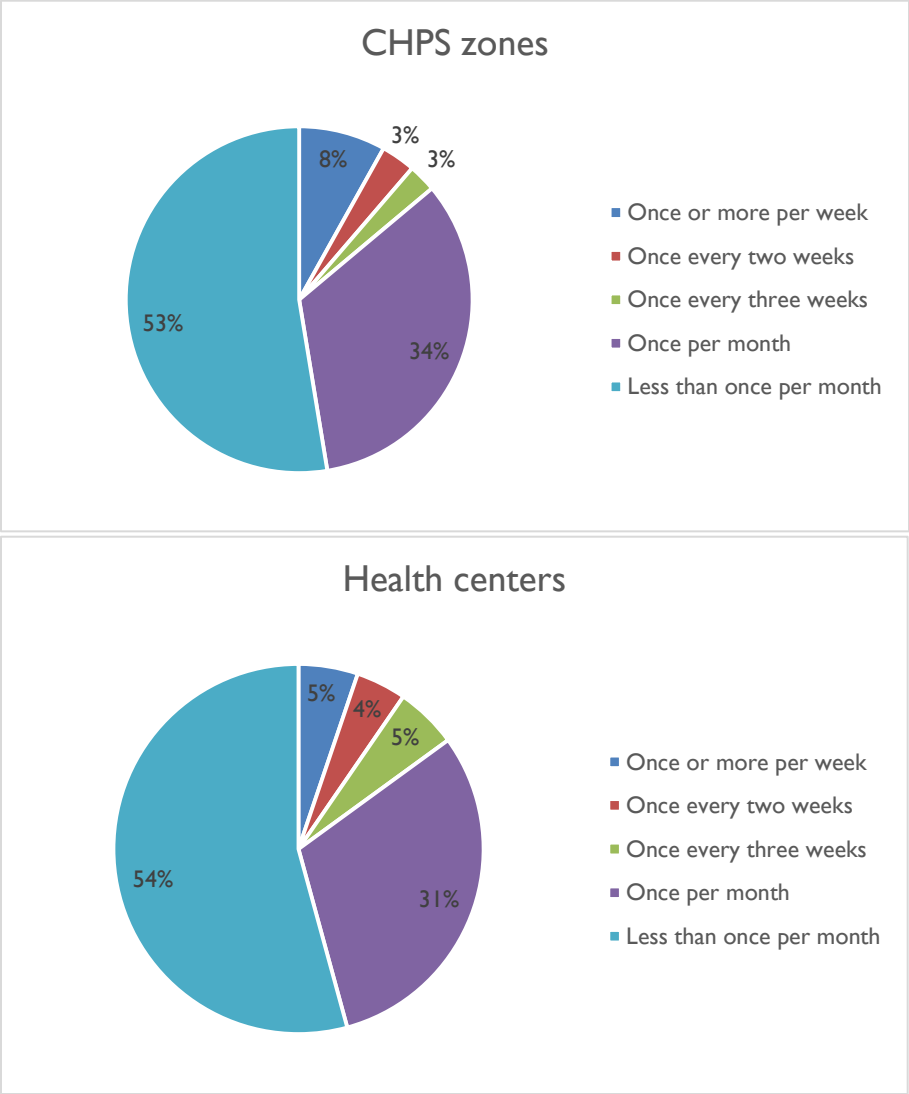
Effective management of supply chains is important to ensure that essential medicines, supplies and equipment are available in health facilities. Qualitative interviews with DDHSs and SDHT leaders, combined with information from the facility survey, identified several major challenges to the effective operation of the supply chain in CHPS zones and health centers. These include challenges in accurately and systematically tracking supplies at facilities, financial constraints (specifically, delays from the National Health Insurance Scheme [NHIS] in reimbursing health facilities for services and supplies), stock-outs at the regional level and the complexity of supply chain logistics, especially in terms of transportation and storage of supplies and medicines. In the facility survey, we asked all facilities how often they were unable to provide prescribed medicines, vaccines or other supplies clients needed due to a stock-out. Almost half of CHPS zones and health centers reported that this situation occurred at least once per month (see Figure ES-2), which could leave clients without critical commodities, reduce convenience for clients and increase costs.

In our qualitative interviews, most clients and community leaders had a very positive opinion of CHPS zones, although they recognize challenges in terms of supplies, equipment, facilities and staff.

A key measure of the quality of care in facilities is the level of client satisfaction. We asked clients, as well as community leaders and District Assembly members about their own satisfaction with the care and services of CHPS zones and health centers in their area, and their perceptions of others' satisfaction. Overall, most of the clients interviewed had a very positive opinion of the CHPS zones, especially in terms of the dedication and concern of the staff, and the promptness of the treatment they received. The community leaders we interviewed also spoke very highly of the services provided by the CHPS zones. Many clients, community leaders, and District Assembly members cited the accessibility of health care offered by CHPS zones—which is offered both at CHPS compounds that are located in or close to clients' communities and through home and community visits—as one of the system's most positive aspects.

Suggestions from clients and community leaders on potential improvements in care and services in CHPS zones included conducting more frequent home and community visits, securing a more reliable supply of medications, hiring additional health care workers, undertaking infrastructure improvements (including constructing CHPS compounds and improving accommodation for health workers), purchasing more advanced equipment, as well as expanding the types of services offered. Clients' satisfaction with health centers was more mixed, with some of the clients interviewed dissatisfied with delays at the facility and their interactions with nursing staff, but their overall impressions were still positive.

FIGURE ES-2. FREQUENCY WITH WHICH FACILITY CANNOT SUPPLY CLIENTS' NEEDS DUE TO A STOCKOUT (NATIONAL PERCENTAGE OF FACILITIES)



Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Means are weighted using weights that adjust for sampling probabilities. Sample size is N=409 (CHPS zones) and N=143 (health centers).

The system for referring clients from CHPS zones and health centers to other health facilities is standardized and well understood by health staff, although only between 1 and 2 percent of clients are referred.

Interviews with CHC members indicated that the referral process at CHPS zones is fairly standardized and well understood by health staff, with health workers expected to assess each client and provide a referral note to another facility (usually a health center) as needed. However, only 2 percent of clients in the average CHPS zone in the two months prior to our facility survey were referred out. Similarly, in that same time span, only 1 percent of clients in the average health center were referred out. CHC members also suggested that clients who are referred can face considerable obstacles in following through on the referral, especially in finding and paying for transportation and financing treatment. In the average CHPS

zone, only about one-quarter of clients who were referred returned to the original CHPS zone with completed referral feedback notes from the facility to which they were referred.

2. Culture of quality assurance and quality improvement

About half of health centers and CHPS zones have a quality assurance/quality improvement (QA/QI) plan in place, although these plans are not always active.

Health centers are expected to have a team of staff that is focused on QA/QI activities and meets on a regular basis to discuss quality improvements that could be made and how current efforts are working (CHPS zones are typically too small to support having such a team, and are normally part of the subdistrict QA/QI team). According to the facility survey, about 43 percent of health centers nationally reported having active QA/QI teams (Table ES-2). About 35 percent of health centers had a QA/QI team that met at least once in the three months before the survey, suggesting that most active QA/QI teams were meeting regularly. Nearly half of CHPS zones and health centers reported that they had a QA/QI plan in place, and more than one-third both had a plan in place and had taken steps to implement elements of the plan within the two months before the survey that our interviewers could observe (for example, seeing new equipment that was purchased or observing progress on construction). About one-quarter of the health centers had an *active* QA/QI plan, which is defined as both having a plan in place and a team that met at least once in the three months before the survey. However, our findings suggest that at least some QA and QI activities occur in health centers that do not meet both of these criteria.

TABLE ES-2. EXISTENCE OF QA/QI TEAMS AND PLANS (PERCENTAGE OF FACILITIES)

	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Facility has an active QA/QI team	n/a	n/a	n/a	42.4	43.1	42.8
Facility has an active QA/QI team that met at least once in the previous three months	n/a	n/a	n/a	29.4	39.1	34.6
Facility has a QA/QI plan in place:						
Plan exists and seen	30.5	37.3	34.1	24.3	28.4	26.5
Plan exists, but not seen	17.2	13.1	15.0	22.2	24.0	23.2
No plan	52.4	49.6	50.9	53.5	47.6	50.3
Facility has a QA/QI plan and took interviewer-verified steps to implement it in the previous two months	34.6	39.9	37.5	30.0	40.2	35.6
Facility has an active QA/QI plan[a]	n/a	n/a	n/a	21.9	31.7	27.1
Sample size	272–276	163–169	435–445	85–89	54–55	139–144

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data

Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.

[a] Defined as having an active QA/QI team that met at least once in the previous three months and a QA/QI action plan in place.

n/a = not applicable (question was not asked for CHPS zones)

Facilities — even those without formal plans — conduct a wide variety of QI activities, including those related to infrastructure, supplies, staffing and community outreach.

All SDHT leaders we interviewed noted that their work plans included steps related to QA/QI, even if they did not have a specific team or QA/QI plan in place. The SDHT leaders we interviewed described specific examples of QA/QI efforts that had been implemented within the past year, which included the following: (1) monitoring using client surveys to identify areas for improvement or assess the extent of improvement over time; (2) physical infrastructure improvements or equipment purchases; (3) steps to improve the overall cleanliness in facilities; (4) ensuring reliable stocks of medications and other supplies; (5) community education and outreach; and (6) staff training.

Data collection is occurring in most facilities to inform local needs and to feed into the District Health Information Management System (DHIMS2), and data quality is generally perceived to be good.

In qualitative interviews with SDHT leaders, many noted the need to collect and track data from health facilities on a regular basis, both to feed into the DHIMS2 and to enable facilities to track local issues such as current stocks of commodities, the incidence of diseases, vaccinations, and referrals. In our facility survey, 58 percent of CHPS zones and 73 percent of health centers reported having active data validation teams to verify their data before they are sent monthly to the subdistrict or district levels for aggregation into DHIMS2. Despite the fact that not all facilities have active data validation teams, most SDHT leaders interviewed reported that they felt the overall quality of the data collected at CHPS zones and health centers was good. More than half of the SDHT leaders we interviewed also noted that data collection staff in their facilities are implementing systematic checks of data for accuracy, and are eager to learn from past mistakes. However, the SDHT leaders did mention some challenges in the process of trying to collect high quality data, especially the lack of technology (in the form of computers or tablets and reliable Internet connections).

Data are commonly used for a variety of purposes at the CHPS, subdistrict and district levels; however, the use of data in planning and decision-making is not universal or systematic.

Our qualitative interviews suggested that facility-level data are being used for decision making at several levels. At the district level, these data inform decision-making at District Assemblies to determine the appropriate financial and logistical support to provide to health facilities. DDHSs use the DHIMS2 data for decision making and performance tracking for facilities, discussing performance as shown by the data during quarterly meetings with CHPS and health center staff. All SDHT leaders that we interviewed agreed that having facility-level data is useful, and that the process of collecting and using these data has brought many positive changes for facilities. These include the ability to assess quality of services, to gauge success of QI changes, and to inform decisions on areas where further improvements are needed.

Our facility survey data support SDHT leaders' reports that facility-level data are useful, and are commonly used for a variety of purposes, including to plan community outreach, improve supply chain logistics, allocate resources and develop action plans (Table ES-3). However, the systematic use of data in planning and performance tracking is more limited. For example, although data are expected to be used at the local level to inform performance monitoring, 72 percent of CHPS zones and 57 percent of health centers did not have a data monitoring plan. In addition, only 16 percent of CHPS zones and 30 percent of health centers had charts to systematically monitor progress on specific indicators.

TABLE ES-3. DATA USE (PERCENTAGE OF FACILITIES)

	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Facility used data generated by the CHPS zone/s for the following specific purposes in the previous 12 months:[a]						
Plan community outreach	65.7	59.4	62.3	77.1	70.9	73.8
Help allocate resources	62.2	58.5	60.2	79.8	76.4	78.0
Improve supply chain and logistics	56.8	49.9	53.0	76.7	67.4	71.7
Help develop action plans	52.2	53.5	52.9	67.0	64.0	65.4
Identify training needs	43.3	47.6	45.6	68.2	63.7	65.8
Plan or decide anything else	18.1	14.9	16.3	27.0	17.8	22.0
Sample size	261–280	167–172	428–452	83–88	52–55	135–142

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.

[a] Because multiple responses were possible, percentages sum to more than 100.

3. Community and governmental support for CHPS

CHCs are generally playing the role envisioned by government policy in providing support to CHPS zones, although they face several challenges.

The roles and responsibilities described by the CHC members we interviewed in the USAID focal regions generally aligned with the goal set forth by the Ghana Health Service (GHS)—to assist health workers in caring for the community. Some of the main roles and responsibilities CHC members mentioned included acting as a liaison between community members and health workers, performing health care tasks such as assisting with weighing children and administering vaccines, and educating communities to help prevent the spread of disease. Many CHC members mentioned they were responsible for other tasks such as disseminating health-related information, and keeping the area around the health facility clean and safe. This wide variety of tasks illustrates the roles and the responsibilities of the position developing to meet the needs of the community and perhaps being shaped by the skills and interests of CHC members, within the broad parameters of the work they are supposed to perform.

However, CHCs currently face several challenges. These include the absence of a CHC in almost one-third of CHPS zones (according to the facility survey), difficulty in staffing CHCs because of the volunteer nature of the position, and a need for improved training and monitoring. In addition, many CHCs are not viewed as strategically effective by CHPS zones. Fewer than half of CHPS zones with a CHC reported that their CHC's were highly effective at mobilizing resources for the CHPS to provide services to the community, and only 60 percent reported that their CHC was effective in mobilizing the community for health action. Finally, engagement of CHCs with community members is limited—most of the clients we interviewed were unaware of the existence of the CHCs, and most of the others were unsure of the roles and responsibilities of this body.

Community members in general are not engaged in strategic efforts to help their CHPS zones and are unaware of their specific health rights.

When asked about the impact community members have on their CHPS zone, most CHC members mentioned the practical assistance community members provide to the nurses and staff providing the health services (such as providing food), as well as to facility maintenance. However, no CHC member we interviewed mentioned that community members felt empowered to create change at a more strategic level. We also found that, while clients and community leaders were generally aware of their right to seek health care provided by the CHPS zones, most respondents were not aware of the more specific health rights developed in the GHS patient charter. The lack of awareness of community members in terms of their rights and responsibilities as health clients could hamper their ability to support and affect community-level health services.

Community leaders and CHC members are involved with community health action plans, which are typically developed through an informal process.

One specific way in which community leaders, CHC members, and community members can support CHPS zones and health centers is through developing and enacting community health action plans. About three-quarters of the community leaders interviewed as part of the qualitative data collection mentioned having a community health action plan, which generally was created through collaboration among community members and community leaders, such as elders and church leaders. CHCs also play an important role in developing these plans: according to the facility survey, among the CHPS zones with a CHC, about half of the CHCs played a leading role in developing such a plan. The process for designing the action plans typically tends to be informal, although data are used in some cases in designing the plan or tracking progress. These community health action plans cover a range of topics, which vary by community, and can include identifying resources to support various areas of health (for example, to conduct deliveries, provide family planning services, offer child weighings, and provide health-related education), increase staffing, address medicine stock-outs, and construct additional infrastructure.

District Assembly members are informed and interested in supporting CHPS zones and health centers in their districts; however, the lack of district funds is an important challenge.

District Assembly members interviewed noted they consider CHPS zones a top priority and try to support them to the best of their ability. All of the District Assembly members interviewed indicated that they incorporate community health action plans into their development plans, and that important health issues and projects related to CHPS zones and health centers are discussed at quarterly District Assembly meetings. Both District Assembly members and DDHSs described financial and nonfinancial support that District Assemblies provide to CHPS zones and health centers. Financial support includes assistance in areas such as infrastructure construction or improvements, procuring drugs and equipment, and providing health-related education to the community; however, shortages of funds can be a significant obstacle to providing this support. District Assemblies also provide nonfinancial support, which includes technical and logistical assistance, supervisory visits, and assistance in organizing *durbars*.

DDHSs and District Assembly members have strong working relationships with USAID and look forward to further improving them.

All DDHSs interviewed in the USAID focal regions reported having strong working relationships with USAID, and several mentioned being excited about the level of communication and joint decision-making they have seen in their interactions with USAID. Half of the District Assembly members interviewed reported that their districts are either currently working with USAID or have in the past. These District Assembly members mentioned several possible ways to improve their collaborations with USAID, including training on project management to ensure that staff can comply with the requirements of

USAID funding, and the creation of a monitoring process so that any concerns can be quickly shared with USAID.

4. Health insurance

Membership in health insurance schemes is widespread and increasing.

The overwhelming majority of clients we interviewed in the USAID focal regions reported they were members of the NHIS, and most of them thought that the number of people with health insurance in their communities had increased over the past year. This was consistent with the views of most of the CHC members and community leaders we interviewed. According to our facility survey data, CHPS zones and health centers are indeed receiving clients who are members of the NHIS, with almost 75 percent of CHPS zones and 96 percent of health centers submitting at least one NHIS claim in the two months before the survey. Further, nearly two-thirds of all CHPS zones and health centers reported an increase in the number of clients who were part of the NHIS in the two months before the survey (although about one-quarter of centers mentioned a reduction in the number of NHIS clients).

Health insurance membership does not affect where clients can receive care, nor does it seem to greatly affect the quality of care received.

Most clients and community leaders we interviewed reported that they did not think that insurance status affected where individuals received health care. Our survey data also suggest that facilities are not factoring clients' insurance status into their referral decisions. Only 7 percent of CHPS zones and 5 percent of health centers that referred clients made referral decisions in the previous two months that were influenced by whether the client had insurance coverage. We also explored whether health insurance was associated with the quality of health services received by clients. In our facility survey, 82 percent of CHPS zones and 90 percent of health centers reported that, from their perspectives, the quality of services is the same for those with and without insurance. However, opinions on the difference in quality of care for those with and without insurance were substantially more variable among the clients, community leaders and CHC members we interviewed.

D. Complementarity with Ghana Demographic and Health Survey

The recent release of the 2014 Ghana Demographic and Health Survey (GDHS) provides a unique opportunity for USAID, GoG and their health sector partners to compare cross-cutting findings from the HSBS and the GDHS in order to improve implementation of health interventions and to inform key health sector decisions.

The HSBS complements the GDHS by providing insights into how process and contextual factors at the health center and CHPS levels might contribute to certain of the population-level outcomes in the GDHS report. Health systems are the pillars that support the effective delivery of health services. By comparing related findings (see Section VII), we hope that more effective and targeted responses within the District Health Systems will be possible, notably as concerns malaria, maternal and child health, and nutrition, which are areas of continuing low performance in Ghana.

E. Future Evaluation Plans

The planned health systems performance evaluation for USAID/Ghana's Health, Population, and Nutrition Office portfolio will use a pre-post design to assess changes in indicators over time. The baseline findings in this HSBS report provide pre-intervention values of selected key indicators against which changes will be measured at two further points in time: a midline in 2017 and an endline in 2019. The development of the midline and endline surveys will take into account the many useful suggestions made by reviewers of this

report, to provide more refined estimates of certain indicators of particular interest to stakeholders. The midline and baseline may also focus more intensely on health systems in the Northern Region given the level of USAID investment there and the 2014 GDHS findings that flag the many health issues of the region's population. The midline and endline will enable us to measure changes for the focal region group over time and see how those translate into changes in national indicators. Although we will not be able to attribute any documented changes specifically to the USAID interventions, it will be valuable to document trends in outcomes of importance to the health sector and in which USAID has invested. We plan to use qualitative information to assess the extent to which the USAID interventions might have contributed to the observed changes.

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I. INTRODUCTION

Despite significant advances in the health of Ghana's population over the past 20 years, there is still much room for improvement. For example, Ghana's maternal mortality ratio decreased by 50 percent from 1990 to 2013 (World Bank 2015), but is likely to fall short of the Millennium Development Goals' target of a 75 percent reduction by 2015. Ghana also is still well above the average for countries at a similar stage of economic development (World Bank 2015). Similarly, the under-5 mortality rate (defined as the probability that a newborn will die before age 5) decreased by about 40 percent from 1990 to 2013, but it too is unlikely to reach the two-thirds reduction targeted by the Millennium Development Goals by 2015, and is higher than the average for other lower– to middle-income countries (World Bank 2015). In addition, even though child malnutrition in Ghana is less prevalent than in neighboring countries, the population continues to face nutrition challenges. For example, recent estimates suggest that almost one in five children younger than 5 is stunted (defined as having a height-for-age more than two standard deviations below the World Health Organization's (WHO) child growth standards median (Ghana Demographic and Health Survey (DHS) 2015). The burden of diseases such as HIV, malaria, and tuberculosis also remains high in Ghana (WHO 2015).

Substantial investments in Ghana's public health system have accompanied the advances in health improvement in recent years. However, further health improvements are likely to require more investments, especially to expand access to quality health services and strengthen the national and community-based health systems (United States Agency for International Development (USAID)/Ghana's Country Development Cooperation Strategy (CDCS) 2013–2017). To address these needs, USAID/Ghana is supporting a number of projects that seek to increase access to integrated health services, expand the availability of community-based resources, strengthen and increase the responsiveness of the health system, and improve health sector governance and accountability. These improvements will contribute to progress toward one of USAID/Ghana's key development objectives under its CDCS, which is to achieve equitable improvements in health status in Ghana.

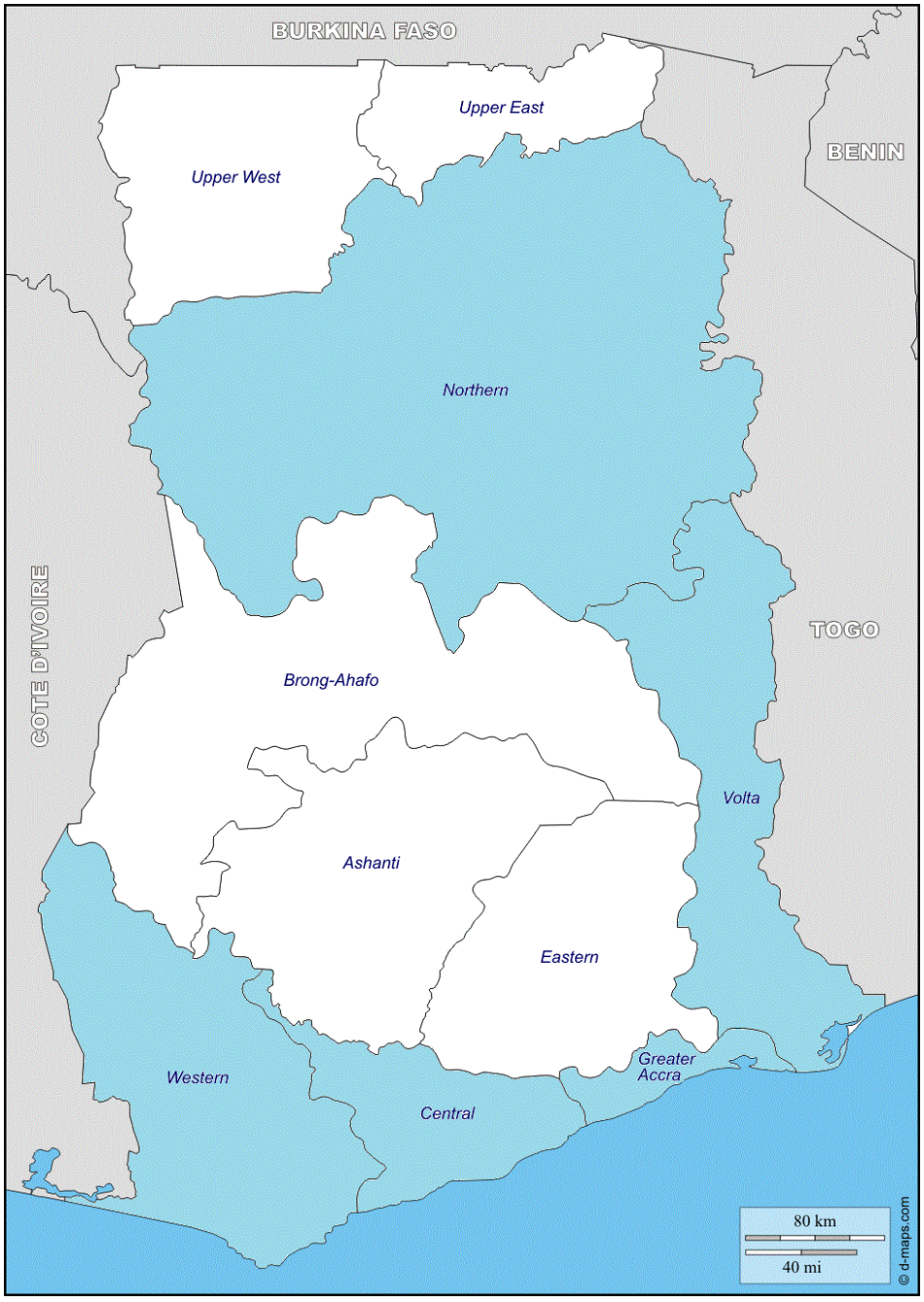
This report presents findings from a baseline study that was conducted as part of USAID's Evaluate for Health (E4H) project. The E4H project, overseen by Management Systems International (MSI) and which launched in September 2014, is designed to provide overall evaluation support for USAID's health portfolio in Ghana. The E4H baseline study collected data from March to May 2015 to determine the current levels of key health indicators of relevance to USAID's investments. The baseline study's two main objectives were to (1) guide USAID program implementation and set early targets and (2) enable an evaluation of USAID's investments using a pre-post design that will compare indicator levels in the future with those levels at baseline.

MSI and Mathematica Policy Research conducted the baseline study, which relies on primary quantitative and qualitative data. The quantitative data were collected through a survey of health facilities in all 10 regions of Ghana. USAID's interest focused on measuring quantitative baseline indicators in five focal regions in which it plans to invest most heavily — the Central, Greater Accra, Northern, Volta, and Western regions (Figure 1). However, we collected quantitative data from facilities in all 10 regions because some of USAID's investments (in particular, those related to malaria, maternal and child health, and nutrition)) are not restricted to the focal regions, and because some stakeholders expressed an interest in measuring baseline indicators (and changes over time) at the national level. The qualitative data for the baseline study were collected from community-level stakeholders, subdistrict health team leaders, and district-level decision makers in the five focal regions.

We begin by describing USAID's health portfolio in Ghana and listing the key research questions that drove the identification of indicators for the baseline study. We then briefly describe the performance

evaluation design that can be used to analyze changes over time in these indicators. Finally, we provide a road map for the rest of the report.

Figure 1. The Five Focal Regions for USAID's Health Investments in Ghana



Source: d-maps.com. "Ghana/Republic of Ghana."
Available at http://d-maps.com/carte.php?num_car=4676&lang=en. Accessed August 11, 2015.
Note: Focal regions are shaded in teal.

A. Overview of USAID's Health Portfolio

USAID's health portfolio in Ghana aims to improve various aspects of the Ghanaian health system through investments in a variety of projects. For the purpose of this baseline study, we consulted with the implementing partners of five major USAID-funded health projects that were in their start-up or expansion stage, and reviewed their project design and monitoring and evaluation documents to guide the baseline study design.[2] We were able to conduct the baseline before or just as project implementation began. We briefly describe below these five USAID-funded projects: (1) Systems for Health; (2) Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING)-Nutrition; (3) the Maternal and Child Survival Program (MCSP); (4) the Resiliency in Northern Ghana (RING) program; and (5) MalariaCare.

To implement health projects, USAID works closely with the Ghanaian Ministry of Health (MOH) and the Ghana Health Service (GHS). The MOH formulates policy, monitors and evaluates performance, and mobilizes resources for health sector development. The GHS is the public service provider and largest MOH agency (GHS Law Act 525). It is responsible for maintaining high levels of performance in the provision of preventive and clinical care services as well as health promotion at the community, subdistrict, district, and regional levels. It also manages institutions at these levels (Quality Assurance Strategic Plan for GHS 2007–2011).

The first project, **Systems for Health,** implemented by University Research Corporation LLC, is designed to impact on and increase the sustainability of the fundamental building blocks of the Ghanaian health system in an integrated manner. It includes activities that help to balance supply and demand for health services and increase gender equity. Systems for Health is working in the areas of maternal and child health, family planning/reproductive health, nutrition, and infection prevention and control, using a quality improvement approach. It is also supporting community-level health services through programmatic and infrastructure support for Ghana's CHPS program. Systems for Health is a five-year project running from 2014 to 2019 and is working in the five focal regions described above.

The second project, Strengthening Partnerships, Results, and Innovations in Nutrition Globally **(SPRING-Nutrition),** is implemented by John Snow, Inc. The project aims to reduce stunting by 20 percent in two regions—Northern and Upper East. SPRING/Ghana's activities address anemia reduction (including the potential roll-out of several micronutrient powders); infant and young child nutrition; water, sanitation, and hygiene; aflatoxin reduction; and support to the Livelihood Empowerment Against Poverty (LEAP) Program, which provides cash transfers and health insurance.

The third project is the **Maternal and Child Survival Program (MCSP).** Implemented by JHPIEGO[3], the project is organized around three strategic objectives that focus on improving reproductive, maternal, newborn, and child health: supporting increased coverage and use of evidence-based, high quality interventions; closing innovation gaps to improve health outcomes among high-burden and vulnerable populations; and fostering effective policymaking, program learning, and accountability.

The fourth project is the **Resiliency in Northern Ghana (RING)** program. Implemented by Global Communities, this project is a partnership effort under USAID's Feed the Future initiative. RING aims to contribute to the GoG's efforts aimed at sustainably reducing poverty and improving the livelihoods and nutritional status of vulnerable populations in specific districts in the Northern Region. The project is

2 One other USAID-funded health project was also discussed during the design of this study, but was awarded only during the design phase, so could not be consulted in detail. This sixth project is Communicate for Health (C4H), implemented by FHI 360 (a nonprofit human development organization), which was awarded in November 2014, and focuses on behavior change communications within the Ghana Health Service (GHS), the public health service provider.

3 JHPIEGO is a nonprofit health organization affiliated with The Johns Hopkins University. It was formerly the Johns Hopkins Program for International Education in Gynecology and Obstetrics.

organized around three complementary components: increasing the consumption of diverse quality foods, especially among women and children; improving behaviors related to nutrition and hygiene among women and young children; and strengthening local support networks to address the ongoing needs of vulnerable households.

The fifth project, **MalariaCare,** is implemented by Path. In Ghana, MalariaCare is working in seven regions to improve malaria case management across the continuum of care—from communities to health facilities—in both the public and private sectors. The project collaborates with the National Malaria Control Program and other partners to build case management capacity at all levels of the health system. Main activities include strengthening quality assurance (QA) and quality improvement (QI) systems and supporting routine systems for malaria monitoring and evaluation.

B. Research Questions

The research questions that the baseline study sought to inform were identified through discussions with project stakeholders (USAID's Health, Nutrition and Population Office and its primary implementing partners). These discussions drew on a conceptual framework developed by USAID that illustrates the key pathways through which USAID's investments are expected to result in changes in health outcomes (Appendix A, Figure A.1). Several criteria determined the final list of research questions. First, the final questions were determined to be most relevant to USAID's investments and of greatest interest to stakeholders, either for planning or evaluation purposes. Second, they reflect questions that cannot be answered using existing data sources, such as the Ghana DHS. Since such data sources exist to inform population-level questions, our final list of research questions reflect questions that are feasible to answer using a quantitative health facility survey and qualitative data collected from key stakeholders.

We have organized the final research questions into four thematic areas:

1. Quality of care and services

- What is the state of the quality of care across Ghana in community-based health and planning services (CHPS) zones and health centers? [4]
- Is there a continuum of care throughout the health hierarchy from community to CHPS zone to health center to district hospital?
- What is the state of the quality of services?
    - Are appropriate and complete suites of services offered?
    - Do staff have access to implementation guidelines?
    - Are staff trained?
- Do facilities have access to needed supplies?
    - Is access to supplies timely, or are there stock-outs?
    - Is the access to supplies through the supply chain sustainable?
- Do facilities have access to essential equipment?
- How satisfied are clients with the quality of care and services provided?

[4] As we describe in Chapter II, CHPS zones are community-level health facilities and health centers are subdistrict-level health facilities.

2. **Culture of quality assurance and quality improvement**

- Are data used for making decisions?
  - What types of data are collected?
  - Are the collected data of good quality?
  - Are data disaggregated at usable levels (geographic and gender)?
- Does the use of data for decision-making lead to service improvements?

3. **Community and governmental support for CHPS**

- How engaged are communities? Do they exhibit ownership and empowerment?
  - Is there a community-to-care linkage?
  - Is there a community health committee (CHC)?
  - Are users educated about their health rights and empowered to press for them?
- How do district assemblies support CHPS?

4. **Health insurance**

- Is insurance coverage increasing?
- Does insurance coverage change how and where people receive care?

C. Evaluation Design

The planned USAID health sector performance evaluation will use a pre-post design to assess changes in indicators over time. The baseline findings in this report provide pre-intervention values of selected key indicators against which changes will be measured at two further points in the intervention and post-intervention periods (midterm and endline, respectively). The pre-post design reflects USAID's desire to focus resources on a baseline that can inform a diversity of projects nationwide, with more rigorous evaluation designs (such as random assignment) reserved for more targeted interventions. At each data collection time point, we will describe quantitative outcomes at the national level and for the five focal regions as a group. Reporting the levels of the outcomes for these regions as a group will enable us to measure changes for the focal regions over time and see how those translate into changes in national indicators.[5] For certain USAID interventions — notably those related to the MalariaCare and MCSP project — national-level changes are more relevant because these projects are not restricted to the focal regions.

An important caveat of the pre-post evaluation design is the inability to attribute any documented changes specifically to the USAID interventions. This is because we will not be able to rule out that some of the measured changes might have occurred in the absence of the interventions (either because of trends over time, or perhaps due to interventions by the GoG or other agencies).[6] Nonetheless, it will be valuable to document trends in outcomes of importance to the health sector and in which USAID has invested, and

5 The SPRING-Nutrition and RING projects are only being implemented in one of the focal regions, the Northern region (and SPRING-Nutrition is also in the nonfocal region Upper East). Therefore, changes in indicators relevant to these projects (nutrition-related indicators) might be modest when estimated for the five focal regions as a whole. The evaluation will have limited statistical power to estimate changes for the Northern region alone, although these estimates might still be of interest to these projects.

6 To improve attribution, it might be possible to implement a comparison group design that compares changes in key indicators over time in the focal regions to changes in the non-focal regions (a "difference-in-differences" approach). However, this design would face several challenges, including: (1) the small number of regions would result in estimates with low statistical precision; (2) some of the interventions in the USAID health portfolio are not restricted to the focal regions; and (3) there are many health interventions from many agencies and organizations being implemented in various regions across Ghana (including focal and non-focal regions), which would complicate the interpretation of the results. Therefore, we intend to focus on the pre-post changes over time, acknowledging the challenges to attribution.

use qualitative information to assess the extent to which the USAID interventions might have contributed to the observed changes.

D. Road Map of the Report

In Chapter II, we describe the data sources used in this baseline study, including the quantitative and qualitative components, and describe the basic characteristics of the public health facilities in our sample. In Chapters III through VI, we present findings related to the four thematic areas addressed by the research questions: (1) the quality of care and services, (2) the culture of QA and QI, (3) community and governmental support for CHPS, and (4) health insurance.[7] Finally, in Chapter VII, we summarize the findings, discuss implications, and outline the time line for evaluations.

7 Appendix E includes tables that provide confidence intervals for all the quantitative findings included in the body of the report.

II. DATA SOURCES AND FACILITY CHARACTERISTICS

In this chapter, we describe the data collected as part of the baseline study and briefly summarize the characteristics of the health facilities that were the focus of data collection. As mentioned in Chapter I, we collected quantitative data from health facilities in all 10 regions of Ghana and qualitative data from health sector stakeholders in the five focal regions. TNS, a local data collection firm, conducted all data collection activities from late March to early May 2015. In this chapter we start with a brief description of the structure of the health system in Ghana, as it informed the sampling decisions, and we then describe samples and types of information gathered as part of the quantitative and qualitative data collection efforts, respectively (for further details on the sampling, data collection, and analysis approach, see Appendix B). We end the chapter with a brief summary of the characteristics of the health facilities.

A. Structure of Ghanaian Health System

We drew on the structure of the Ghanaian health system to identify the appropriate health facilities for the quantitative survey. In Ghana, the district is the lowest administrative unit of local government and a major unit of primary health care organization and management for service delivery. As illustrated in Figure 2, within each district, health service delivery and the local government structures and services are defined by the same borders and are organized in a three-tier hierarchy that includes (from the lowest to the highest levels) the community level (with community-based health and planning services [CHPS]), the subdistrict-level (with health centers), and the district level (with district hospitals).[8]

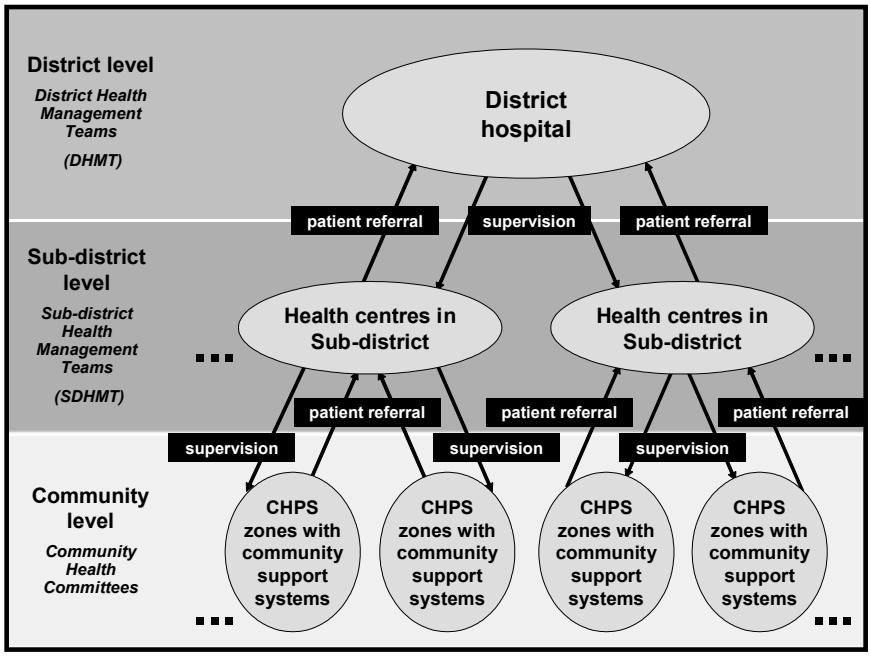
- At the community level, households are linked to a specific CHPS zone, a geographical area that covers about 750 households (a population of about 5,000). CHPS zones are designed to deliver basic primary health care services to households, mainly through outreach. A CHPS can have a structure or compound in which services are provided, but not all have one, so services are sometimes provided at other venues, including out-of-doors. CHPS zones typically include a community health officer (CHO), a trained community health nurse who might be assigned to a community within the zone; and trained community health volunteers (CHVs), nonsalaried community members who assist the CHOs. Community health committees (CHCs)—composed of community leaders drawn from the CHPS zone who volunteer to provide community-level guidance to their CHPS, mobilize the planning and delivery of health activities, and oversee the welfare of the CHOs in their communities (CHPS Implementation Guidelines 2014)—manage the CHPS zones.

- At the subdistrict level, health centers provide both preventative and curative services as well as outreach services to the communities in their catchment areas. They are the first point of referral for CHPS zones. In general, health centers are headed by a medical or physician assistant and staffed with program heads in the areas of midwifery, laboratory services, public health, environment, and nutrition. Each health center serves a population of 20,000 to 30,000. In addition to providing basic curative and preventive medicine, they also provide reproductive health services and minor surgical services such as incisions, suturing, and drainage.

- At the district level, district hospitals serve a large population of between 100,000 and 200,000, and provide more advanced care and surgical services. Health centers can refer severe or complicated cases to the relevant district hospital.

8 The health system also includes polyclinics, which serve urban populations much as health centers serve rural populations. However, there are only a few of these facilities and, as we note below, they were not included in our facility survey.

Figure 2. Primary Health Care Organization



Source: Ghana Health Service (2005)

B. Quantitative Data Collected Through Facility Surveys

Through discussions with USAID and its primary stakeholders, we identified community- and subdistrict-level health facilities (CHPS zones and health centers, respectively) as the appropriate sites for the facility survey. These lower-level health facilities are the primary locations at which Ghanaians receive basic health services, and most of the outcomes relevant to the research questions pertain to basic services. Thus, we conducted the quantitative survey in CHPS zones and health centers.

USAID's interest in establishing a baseline for the five focal regions and at the national level influenced our sampling approach. To describe key outcomes associated with USAID's investments in Ghana's health care system, the quantitative survey required a representative sample of CHPS zones and health centers in all 10 regions. In addition, the sample had to provide sufficient statistical power to detect meaningful changes in outcomes, especially for the five focal regions, while supporting a practical and feasible data collection strategy. We used a two-stage sampling scheme to select the facility sample, by randomly selecting districts in each region, randomly selecting subdistricts in each sampled district, and targeting for the survey *all* health centers and CHPS zones within each sampled subdistrict. We oversampled from the five focal regions, guaranteeing a sufficient sample for the five focal regions alone and, with reweighting, a sample representative of all 10 regions. (The sampling approach is described in more detail in Appendix B).

USAID staff and its implementing partners would ideally like data at relatively low levels of disaggregation, including the regional and district levels. However, the sample size requirements to produce reliable estimates at these levels would be very large and resource-intensive. Due to budget constraints and other design decisions, the samples for the quantitative survey are not large enough to provide statistically precise estimates at the regional or district levels. Rather, the study was designed to provide precise estimates at the national level or for the five focal regions as a group. If having precise estimates at lower levels, such as region or district, is important, the midterm and/or endline data collection efforts could reallocate sample to obtain more precise estimates in some regions where needed.

Mathematica designed the facility survey instrument with input from MSI, its local E4H staff, USAID staff, implementing partners, and GHS. It collected basic descriptive data about the sampled facilities, together with a range of indicators relevant to the research questions. These indicators focused on the quality of health care and services, the culture of QA and QI, community and governmental support for CHPS, and health insurance. Table 1 summarizes the key topics covered by the facility survey, and Appendix C provides a text version of the survey as it was programmed into the computer-assisted personal interviewing (CAPI) tablets used for data collection.[9]

TABLE 1. BASELINE SURVEY SECTIONS

Section	Key topics covered
Identifying information	Name of facility, region, district, subdistrict, town or community, GPS coordinates, photo, location description Type of facility Respondent's name, job title, length of tenure
Descriptive information	Number of CHVs, *durbars* (community health meetings)—number, topic, organization; number of clients; presence of working computer, cell phone, camera; access to texting, multimedia sharing, Internet
Quality of care	Referrals to and from facility—number, reason, receive returned feedback; written care protocols available; sanitation, sterilization, disposal, and contagion control measures; malaria testing and treatment protocols; training—topic, training type, provider, staff trained, numbers trained; OTSS; access to essential medications, equipment and supplies, stock-outs
Quality and access to services	Childbirth delivery (regular and emergency), antenatal care, family planning counseling and contraceptives, malaria; home visits—number and type
Culture of QA and QI	Collection of data from CHVs — type and frequency; referral records; antenatal services registers, nutrition registers or record books; data entered into registers; extent to which data are current; malaria tracking, data capture and reporting; training in these areas; QA/QI team, activities, action plans, progress — reported, tracked/monitored, displayed, up to date; data validation team; uses of data; inventory control tracking, planning and ordering
Community support for CHPS	CHCs — existence, type of work, quality of work; recruitment of CHVs, services they provide, support they receive; CHAPs

Note: OTSS = Outreach Training and Supportive Supervision; CHAPS = Community Health Action Plans.

Response rates to the facility survey were very high, with an almost 98 percent response rate among targeted facilities. The final sample size was composed of 597 facilities, including 451 CHPS and 146 health centers, of which about three-quarters were located in the focal districts.

Interviewers attempted to interview the person overseeing the operation of the health facility at the time of the survey (even if there was another staff member who would be in charge should he or she be present). Almost half of all respondents in sampled CHPS zones were CHOs and slightly fewer than half (47 percent) were community health nurses or enrolled nurses (Table 2). Fewer than 7 percent were midwives or public health midwives. Almost 82 percent of the respondents had worked in their role at the facility for at least one year, and thus should have good knowledge of what was taking place in the facility. At sampled health centers, 38 percent of respondents were community health nurses or enrolled nurses, about 23 percent were midwives or public health nurse midwives, and another 23 percent were

9 USAID and the implementing partners are interested in tracking a wide range of indicators. We are therefore presenting in this report an extensive amount of data for implementers' and USAID's planning and use. For evaluation purposes, many fewer indicators would be used, but for planning and tracking, we provide a full series.

medical or physician assistants in charge of the full facility (Table 2). More than 85 percent of respondents had worked in their role at the health center for at least one year.

Once consent for the interview was granted, interviewers asked respondents to collect up to 21 types of records, registers and reports for reference during the interview (the full list can be found on page 5 of the survey in Appendix C). Health centers typically had many of the requested documents. Most CHPS also had good documentation regarding the basic and limited services they render, such as immunizations, community visits and weighing children, as these are checked by their district coordinators. For CHPS zones without a compound, however, records were more limited, since storage was a challenge. Interviewers were instructed to request documents to verify data for questions whenever possible; where documents did not exist, health facility staff gave their best estimates. Interviewers generally did not record whether responses to specific questions were based on documents or were self-reported, except for a small number of indicators (about 14). For these indicators we were able to record whether the data was verified by an interviewer or not and disaggregated the data accordingly in the tables presented in subsequent chapters. In general, we expect there may be some over-reporting of desirable responses. Where feasible we tried to triangulate responses from different perspectives (community, sub-district, and district level; and/or qualitative and quantitative) to obtain a more complete picture.

TABLE 2. CHARACTERISTICS OF RESPONDENTS TO THE FACILITY SURVEY (PERCENTAGE OF FACILITIES)

Job Title of Respondent[10]	CHPS			Health centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Community health officer (CHO)	43.5	55.2	49.8	15.0	3.4	8.8
Community health nurse or enrolled nurse	57.1	38.5	47.0	40.9	36.2	38.4
Midwife or public health nurse midwife	4.7	8.6	6.8	17.3	28.0	23.0
Medical or physician assistant in charge of the full facility	0.3	0.8	0.5	26.6	20.4	23.3
Health care assistant clinical	0.0	0.4	0.2	3.3	1.9	2.5
Other	1.2	0.5	0.8	4.1	10.1	7.3
Respondent has worked in his or her role at the facility for at least one year	78.7	84.5	81.8	77.8	92.7	85.8
Sample size	280	172	452	90	55	145

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions.

C. Qualitative Data Collection

To complement the facility surveys, we collected qualitative data in the five focal regions, focusing on one district in each region.[11] The E4H team purposively selected these five districts with input from USAID and its implementing partners. Selection criteria included districts that implementing partners will work in early in their project's implementation period, districts that are somewhat representative of the

10 Because respondents could hold more than one job title, multiple responses were possible. Therefore, percentages sum to more than 100.
11 We also collected qualitative data from a sixth region, Upper East, at the request of one implementing partner as an add-on while in the field. However, the analysis of the data collected there will not be part of this baseline report, as that region is not part of the qualitative sample frame for the baseline, which is the five focal regions.

region as a whole, or districts that were exemplary in terms of providing basic health care services. Within each of the five selected districts, we selected two of the sampled subdistricts in which to collect qualitative data. Criteria for selecting the subdistricts were similar to those used for selecting districts, but ease of access was an additional criterion. Within each selected subdistrict, we selected two communities from which to recruit qualitative data collection participants using the same criteria as were used for subdistricts.

The main modes of qualitative data collection were key informant interviews and focus groups with six types of participants:

- **District level.** We attempted to interview two types of decision makers in each selected district. One was the **district director of health services** (DDHS), who is the head of the district health management team and the official responsible for tracking health issues for GHS in each district. The DDHS was able to provide important perspectives on the process of making and implementing district-level decisions about health care delivery. The second included **District Assembly members**, who are elected, play an integral role in the socioeconomic development of their communities, and are expected to have knowledge about and provide support to the health services in their districts.

- **Subdistrict level**. In each of the selected subdistricts, we attempted to interview **subdistrict health team leaders** (SDHT leaders). SDHT leaders collect health data from CHPS zones and incorporate the information into the District Health Information Management System (Version 2) (DHIMS2) national database.[12] These interviews were designed to improve our understanding of data in CHPS zones and health centers, particularly with regard to record keeping, reporting, and evidence-based decision-making.

- **Community level**. To gain the community-level perspective on the quality and delivery of health services, we conducted interviews and focus groups with three types of local-level participants. First, we conducted individual key informant interviews with four **CHPS zone clients** in each selected community to obtain their perspectives on health care delivery and quality (about half had also been clients of health centers). Second, we conducted interviews with **community leaders** in the selected communities. These community leaders included chiefs, current and former assembly members, teachers and school leaders, religious and spiritual leaders, a queen mother, and others who play important roles in their villages or towns. Third, in each of the communities we also aimed to conduct one focus group interview with members of the **CHC**. As mentioned earlier, CHCs support community-based health activities in CHPS zones. When there was not a functional CHC, we attempted to conduct the focus group with CHVs.

Participation in the interviews and focus groups was very high, with more than 97 percent of the targeted interviews completed. In total, we completed 170 qualitative interviews (152 key informant and 18 focus groups) across the five focal regions (Table 3).

12 DHIMS2 is a comprehensive health information management system that enables health facilities that are able to enter their summary reports directly into an electronic database for reporting and analyzing health data at every level of the GHS. CHPS zones send their data to the subdistrict or the district level to have them entered into this nationwide database.

TABLE 3. SAMPLE SIZES FOR QUALITATIVE DATA COLLECTION

Data source	Geographic area from which participants are selected	Mode	Number of interviews/focus groups per geographic area	Number of geographic areas	Total interviews/ focus groups targeted	Total interviews/ focus groups completed
District						
District Assembly members	District	Interview	2	5	10	10
District director of health services	District	Interview	1	5	5	5
Subdistrict						
Subdistrict health officers	Subdistrict	Interview	2	10	20	17
Community						
Health care clients	Community	Interview	4	20	80	80
Community leaders	Community	Interview	2	20	40	40
CHC members	Community	Focus group	1	20	20	18
				Total key informant interviews	**155**	**152**
				Total focus group interviews	**20**	**18**
				Total interviews	**175**	**170**

*This distribution contains only interviews from the five focal regions, not those conducted in Upper East.

Mathematica designed the qualitative interview guides with input from MSI, USAID staff and implementing partners. Table 4 summarizes the data collected from each participant type to inform outcomes regarding client satisfaction, the continuum of care, community engagement, governmental support for CHPS, and health insurance (Appendix D contains the interview protocols used for the qualitative data collection).

The qualitative data collection guides were not translated into local languages due to budget and time constraints. Instead, translation of some key terms into Ga and Twi was conducted by interviewers during training. Qualitative interviews were conducted in these two languages, but the interviewers did not have the benefit of consistent translations of all key concepts. Languages used throughout the qualitative data collection were English, Twi and Ga. As such, interviewees were selected based on their ability to communicate in those languages, which necessarily limited the choice of interviewees, especially among health service client and community leader interviewees in Northern Region and Volta Region. This limitation will be addressed in the mid- and endline surveys by adding two main northern languages to the mix of languages for qualitative interviews.

As with any qualitative data collection effort, an important limitation is that responses are subjective and could reflect the biases of respondents and/or a tendency to provide desirable responses, rather than the true situation on the ground. Further, some of the functionality of health centers and especially CHPS zones is still nascent, and there may be many variations in how they are operating across the country. To help mitigate these issues, the qualitative analysis triangulated information from different sources to the extent possible to identify commonalities and differences in the responses; however, we cannot rule out

that some biases remain. In future rounds of data collection, we may include additional stakeholders, such as program staff, to provide additional perspectives.

TABLE 4. QUALITATIVE DATA TOPICS

Participant type	Key topics covered
District Directors of Health Services	How data are used by health facilities to inform health-related decisions, such as supply chain management and training needs, and the availability and use of treatment guidelines and protocols at local and subdistrict facilities Collaborating with the District Assembly and USAID on health initiatives Community-level engagement and support for CHPS zones in their districts
District Assembly members	The ways in which District Assemblies support the health system Whether and how they collaborate with USAID, and suggestions to make future collaborations more fruitful How decisions are made regarding health service delivery and the extent to which data inform decisions Characteristics of the CHPS zones in their districts, and District Assembly members' perceptions of the quality of care and community engagement
Subdistrict health officers	The culture of QA and QI Data collection and tracking Quality of data Use of data for QI and decision-making How CHPS zones follow guidelines regarding data collection and reporting The availability and use of tools and mechanisms for supply chain management The availability of treatment protocols Community engagement
CHPS zone clients	Use and satisfaction with CHPS zone services Use and satisfaction with health center services Health insurance How their community engages with the CHPS zone
Community leaders	Patients' rights Perceptions of the quality of CHPS zone care and services Linkages between communities and health care, such as through community support for CHPS zones, the work of their CHCs, community action plans, and other community engagement Health insurance
CHC members	CHCs' roles and responsibilities How CHCs support CHPS zones Community-to-care linkages Quality of care and services in their CHPS zone, including how the referral system works Community support for their CHPS zone Community engagement

D. Basic Characteristics of Health Facilities

As described previously, we collected both quantitative and qualitative data related to CHPS zones and health centers. To help understand what these facilities do, and to set the stage for the research questions discussed in the next four chapters, this section presents some basic characteristics of these facilities. When relevant, we also summarize some of the perceptions of clients and district-level decision makers about them.

1. CHPS Zones

The facility survey collected data on the number of clients CHPS facilities received in the two months before the survey. We included all CHPS facilities regardless of whether CHPS staff received patients in a CHPS compound or elsewhere. Table 5 shows that the nationwide median number of clients for a CHPS facility was 235 in the two-month period before the survey, and the mean was 346; however, there was substantial variation across facilities. CHPS facilities in the five focal regions, on average, served more clients than those in the nonfocal regions, with the mean and median numbers of clients both about 100 clients higher for the focal regions. CHPS zones across the country had a mean of about six CHVs working with them, with a median of four.

Many District Assembly members described the role of CHPS zones as making health care more accessible to communities. In particular, they are regarded as more accessible because CHPS compounds and mobile CHOs are often closer to rural communities than even health centers or higher-level facilities. They also are thought of as a first stop for health care and a place where illnesses can be triaged, reducing the burden on other health facilities and providing convenient treatment options for injuries requiring first aid or events such as snake bites that require quick medical attention. Their proximity to local communities and the design of their services conducting home and community visits also position CHPS to help with overall wellness through community education and regular wellness care, especially for pregnant women and new mothers. Multiple respondents perceived that the availability of the CHPS system has reduced maternal and infant mortality rates by providing better pre- and post-natal care, as well as supervising more deliveries. Respondents also thought that CHPS reduced the cost of accessing health services both by lessening the cost of transportation and by addressing health events more quickly so that people can return to work sooner.

Clients mentioned they sought from CHPS zones family planning, pregnancy check-ups, care for children with illnesses requiring medication and other medical attention, and care for their own illnesses—very often malaria. A small number of respondents mentioned that the nature of the health care offered through CHPS was very basic and noted that, depending on the severity of their or their children's sickness, they might bypass the CHPS compound and go directly to a higher-level health center or hospital to have better access to resources and available staff.

Clients also mentioned home and community visits by CHPS staff. A common theme was the infrequent nature of the visits, with examples such as health workers tending to come locally for about four to five days but then being gone for about a month before the next visit, or health workers who drove around in a van to provide services, but now just stay in one location, and not for very long; they also mentioned that when CHPS staff come to their areas, they pick a single location for clients to visit to receive services. The most common examples of services received were routine child wellness services, such as weighing children, and treatment for children or adults who are sick.

2. Health Centers

Nationally, health centers served a median of 1,230 clients and a mean of 1,624 clients in the two-month period before the survey (Table 5). However, similar to CHPS zone, facilities varied significantly in the number of clients served. Health centers had a mean of more than 13 CHVs working with them, with a median of 7.[13]

13 The role of CHVs is somewhat different in health centers and CHPS zones. The roles of CHVs in health centers are typically program specific and facility-based, whilst the roles of CHVs in CHPS zones tend to be more multi-purpose and include more engagement in home and community outreach.

Slightly more than half of the clients with whom we conducted key informant interviews reported receiving services at a health center in the last year. Only a third reported going for their own illness and the other two-thirds for a check-up, prenatal information, or with a child who was ill or in need of a wellness check. This could suggest that clients are taking advantage of both preventative and curative services health centers have to offer. Of the portion who went to a health center for their own illness, the most common illness was malaria. Only one client mentioned that he was not served on his first visit to the health center, as the health center was too crowded on his first attempt to receive the HIV test he sought.

TABLE 5. SCALE OF FACILITIES (PERCENTAGE OF FACILITIES, UNLESS OTHERWISE INDICATED)

Client Numbers	CHPS			Health centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Number of clients facility has seen in previous two months:						
Fewer than 100	13.4	26.5	20.5	1.7	0.0	0.8
100–249	29.1	32.9	31.2	9.4	7.1	8.2
250–499	29.0	19.4	25.3	13.3	7.1	10.0
500–749	16.4	12.5	14.3	8.5	5.1	6.7
750–999	3.8	2.3	3.0	9.4	21.6	15.9
1,000 or more	8.3	3.5	5.7	57.7	59.1	58.4
Average number of clients (mean)	400	301	346	1,519	1,716	1,624
Average number of clients (median)	300	200	235	1,186	1,296	1,230
Number of CHVs working with facility:						
Average number of CHVs (mean)	7.0	4.6	5.7	12.9	13.2	13.1
Average number of CHVs (median)	4	3	4	6	10	7
Sample size	279	172	451	88–90	55	143–145

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.

III. QUALITY OF CARE AND SERVICES

Quality of health care services in rural settings is a major determinant of health outcomes and can influence the extent to which community members use or seek health care services. In this chapter, we describe the quality of care and services provided in community-based health and planning services (CHPS) zones and health centers. First, we examine the integration of care, measured by the existence and functionality of a referral system between health facilities. Second, we describe the availability of key health services in these facilities. Third, we look at the quality of health care staff, measured by receipt of training in key areas. Fourth, we examine standards of care, measured by the availability and use of treatment protocols and sanitation measures in the facilities. Fifth, we look at the availability of supplies and equipment. Finally, we explore clients' satisfaction with care received at these facilities.

KEY FINDINGS FROM THIS CHAPTER

- The system for referring clients from CHPS zones and health centers to other health facilities is standardized and well understood by health staff, although clients can face considerable obstacles in following through on referrals.
- Facilities typically provide most of the services they are expected to deliver. However, there are some important gaps in service provision, such as appropriate malaria testing and treatment, maintenance of child health and nutrition data, and provision of antenatal care in CHPS zones.
- High quality training conducted in conjunction with supportive supervision or outreach lags behind more traditional training.
- Many facilities, especially CHPS zones, do not have written treatment protocols or follow standard guidelines for sanitation and infection control.
- Maintaining adequate stocks of medicines and supplies is one of the most significant obstacles facing CHPS zones and health centers. Key challenges include tracking supplies, financial constraints, stock-outs at the regional level, and the complexity of supply chain logistics.
- CHPS zones lag behind health centers in many measures of quality, including service provision, training, supplies and equipment.
- Clients and community leaders overall had a positive opinion of CHPS zones, although they do recognize challenges in terms of supplies, equipment, facilities, and staff. Clients' satisfaction with health centers was more mixed but, on the whole, positive.

A. Integration of Care: Referrals and Follow-Up Care

An effective referral system ensures close relationships among various levels of the health system and makes sure that people are able to get the best possible care close to home, while making effective use of hospitals and primary health care services. CHPS zones and health centers are expected to follow standardized procedures for providing referrals and follow-up care to clients. In particular, these facilities are supposed to refer clients to other health facilities depending on the condition of the client, proximity to the referral destination, and type of care the client requires. Interviews with community health committee (CHC) members indicated that the referral process at CHPS zones is indeed fairly standardized and well-understood by health staff. CHC members reported that health workers in CHPS zones are expected to assess a client to determine whether they can provide sufficient care or whether a referral is needed. If the CHPS staff determine that a client needs a referral, the CHPS staff first provide any necessary first aid and then give the client a referral note to another facility—usually a health center, the next level in the health system hierarchy.

The overall share of clients who were referred out of CHPS zones and health centers, however, was very small (2 percent of clients in CHPS zones and 1 percent in health centers nationwide), as was the share of

clients referred *into* health centers (less than 1 percent of clients) (Table 6).[14] Further, for referrals to be effective, clients must follow through and seek care at the facility to which they are referred. Most CHC members that we interviewed said that the majority of clients who receive referrals from the CHPS zone do indeed follow through. However, some mentioned considerable obstacles to doing so. Most CHC members interviewed cited lack of money for treatment and transportation as a significant barrier for many clients. Financial concerns regarding the cost of treatment are especially severe for those without health insurance.

CHPS zones also try to follow up on clients after they have been referred, to verify that they received follow-up care and to ensure continuity of care. To ensure this, the referral note from the CHPS zone includes a portion that the health facility referred to must fill out and the client is asked to return. CHC members reported that clients who do follow through on their referrals are typically asked by the referring facility to report back to the community health officer (CHO) after their treatments. However, our data from CHPS zones suggest that only 26 percent of clients referred to another health facility returned their completed referral feedback notes to the original CHPS zones (Table 6).[15]

We also examined whether facilities were maintaining appropriate records of referrals, and found that record keeping was more prevalent at the health centers than the CHPS zones.[16] For example, 91 percent of surveyed health centers reported that referral records were available (86 percent were able to show these records to the interviewers). In contrast, only 59 percent of CHPS zones reported that referral records were available (51 percent were able to show these records to the interviewers). Similarly, 91 percent of health centers and 53 percent of CHPS zones reported having records for their most recent referrals (Table 6).[17]

TABLE 6. REFERRALS OUT OF AND INTO THE FACILITY (PERCENTAGE OF FACILITIES, UNLESS OTHERWISE INDICATED)

Referral Status	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Percentage of facilities with referral records:						
Records exist and seen	49.2	53.2	51.4	77.1	93.7	85.9
Records exist, but not seen	11.2	5.1	7.9	11.3	0.0	5.3
No records	39.6	41.7	40.7	11.6	6.3	8.8
Percentage of facilities with referral record for the most recent referral:						
Record exists and seen	45.0	47.2	46.2	75.2	92.2	84.3
Record exists, but not seen	8.3	4.7	6.4	12.1	1.4	6.4
No record	46.7	48.1	47.5	12.7	6.3	9.3
Referrals in previous two months:						
Average percentage of all clients seen	2.2	1.6	1.9	1.0	1.1	1.0

[14] The facility survey only captured the number (and hence percentage) of clients referred, and did not assess the extent to which these referrals were appropriate.
[15] We cannot tell from the available data the extent to which this was due to referral forms not being available or filled out correctly, relative to clients not following through on referrals or returning the completed forms.
[16] We asked respondents to the facility survey whether they had referral records and whether the most recent referral was recorded. We did not ask about specific types of referral records such as referral booklets.
[17] For these and other similar indicators, we report separate percentages for *seen* (the survey team saw the record) and *available, not seen* (the facility reported that the record was available but the survey team did not see it) in the tables. However, we consider both of these categories as available in our description in the text, to obtain an upper bound on availability.

Referral Status	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
who were referred *out of* the facility						
Average percentage of clients who were referred out who returned with feedback notes, among facilities that referred clients out	20.5	31.7	26.2	n.a.	n.a.	n.a.
Average percentage of all clients seen who were referred *into* the facility	n.a.	n.a.	n.a.	0.3	0.2	0.2
Sample size	168–278	90–171	258–444	87–90	55	142–145

Source: Health, Population, and Nutrition Office Portfolio Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because some variables are conditional and because of item nonresponse.
n.a. = not applicable (question was not asked for CHPS zones or health centers, as shown).

CHPS zones and health centers that refer clients to other facilities report referrals related to a wide variety of health issues (Table 7). In both CHPS zones and health centers that provided any referrals in the past two months, the most commonly specified health issue for referrals was malaria or severe malaria (44 percent of CHPS zones and 54 percent of health centers conducting referrals). Other common conditions for referrals included pregnancy-related complications, anemia, accidents, diarrhea, and hypertension. Consistent with these reports, health centers reported receiving referrals from CHPS zones for many of these same conditions.

TABLE 7. COMMON REASONS FOR REFERRALS (PERCENTAGE, AMONG FACILITIES CONDUCTING REFERRALS)

Reason for Referral	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Common reasons for referrals *out of* the facility in the previous two months, among facilities conducting referrals:[a]						
Malaria or severe malaria	43.0	45.0	44.0	52.6	54.9	53.8
Pregnancy-related complications	35.2	46.5	41.0	42.1	62.4	52.7
Cholera	4.4	1.7	3.0	3.0	0.0	1.4
Accidents and injuries, such as snake bites, burns, and cuts	14.3	14.0	14.2	26.0	39.9	33.3
Typhoid	0.6	2.1	1.3	1.8	9.2	5.7
Diarrhea	14.1	10.5	12.3	7.9	9.8	8.9
Upper respiratory tract infection	4.0	1.6	2.8	10.3	12.7	11.6
Skin diseases and ulcers	7.9	14.5	11.3	2.7	19.7	11.6
Hypertension	14.6	19.9	17.3	20.2	37.1	29.0
Pneumonia	3.8	4.9	4.4	7.6	16.4	12.2
Anemia	26.5	21.9	24.2	55.9	44.8	50.1
Intestinal worms	0.0	0.9	0.5	0.0	0.0	0.0
Rheumatism	0.0	0.0	0.0	0.0	4.7	2.5
Ear infection	1.6	2.3	1.9	4.4	7.2	5.9
Stroke	0.8	2.6	1.7	0.0	11.1	5.8

Reason for Referral	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Something else	49.2	43.2	46.1	54.9	45.9	50.2
Common reasons for referrals *into* the facility in the previous two months, among facilities receiving referrals:[a]						
Malaria or severe malaria	n.a.	n.a.	n.a.	37.6	52.7	45.9
Pregnancy-related complications	n.a.	n.a.	n.a.	19.5	41.3	31.5
Cholera	n.a.	n.a.	n.a.	4.4	8.4	6.6
Accidents and injuries, such as snake bites, burns, and cuts	n.a.	n.a.	n.a.	20.0	28.1	24.4
Typhoid	n.a.	n.a.	n.a.	2.5	14.1	8.9
Diarrhea	n.a.	n.a.	n.a.	10.0	17.5	14.2
Upper respiratory tract infection	n.a.	n.a.	n.a.	0.0	14.9	8.2
Skin diseases and ulcers	n.a.	n.a.	n.a.	2.5	19.9	12.1
Hypertension	n.a.	n.a.	n.a.	12.4	31.4	22.8
Pneumonia	n.a.	n.a.	n.a.	0.0	23.8	13.1
Anemia	n.a.	n.a.	n.a.	23.7	11.5	17.0
Intestinal worms	n.a.	n.a.	n.a.	0.0	8.1	4.4
Rheumatism	n.a.	n.a.	n.a.	0.0	8.1	4.4
Ear infection	n.a.	n.a.	n.a.	3.1	8.1	5.8
Something else	n.a.	n.a.	NA	42.9	40.6	41.6
Sample size	168	91	259	41–81	25–48	66–129

Source: Health, Population, and Nutrition Office Portfolio Health Systems Baseline Survey Data

Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because some variables are conditional and because of item nonresponse.

[a] Because multiple responses were possible, percentages sum to more than 100.

n.a. = not applicable (question was not asked for CHPS zones).

B. Availability of Services

CHPS zones and health centers are expected to offer a range of basic health services to their clients. The CHPS package of services should include basic maternal and reproductive health (including family planning, antenatal care, and prevention of mother-to-child transmission of HIV); child health (including vaccinations, nutrition education, growth monitoring, and treatment and support for illnesses); treatment of minor ailments (including first aid); health education; community-based care; and appropriate referrals and follow-up care (CHPS Implementation Guidelines 2014). Health centers are meant to provide more extensive care, including minor surgical services, treatment and management of more complex diseases, and deliveries (Ghana Health Service, Regional and District Administration 2015). Next, we describe the availability of key services in CHPS zones and health centers in the following areas, which are most relevant to the USAID interventions: (1) malaria, (2) family planning, (3) maternal health, (4) nutrition, and (5) community-based services.

1. Malaria

In accordance with World Health Organization guidelines, the Ghana Health Service (GHS) promotes the Test, Treat, and Track (T3) Initiative for malaria care (PMI FY 2015 Ghana Malaria Operational Plan). The T3 initiative states that every suspected case of malaria should be tested, every confirmed case should

be treated, and malaria should be regularly tracked through a reliable surveillance system. Diagnosis of malaria is an important function of both CHPS zones and health centers, and most such facilities are providing these services (Table 8). About two-thirds of CHPS zones and health centers reported that all or almost all of the clients who arrived with a fever in the past two months received either a rapid diagnostic test (RDT) or microscopy test for malaria. Among the facilities that did not test all clients arriving with fever for malaria, the most common reasons for not testing all of these clients in CHPS zones was insufficient supply of RDTs (51 percent) and a lack of availability of an RDT or lab at certain times of the day or night (19 percent). These same two reasons were the most common in health centers as well (69 and 21 percent, respectively). Very few facilities reported that they did not test all clients arriving with fever for malaria because of a lack of trained personnel, time, or client interest or finances.

TABLE 8. AVAILABILITY OF MALARIA SERVICES (PERCENTAGE OF FACILITIES)

Service	CHPS			Health Centers		
	Focal regions	Non-focal regions	All regions	Focal regions	Non-focal regions	All regions
Malaria testing						
Proportion of clients arriving with fever in previous two months who received a RDT or microscopy test for malaria:						
None	21.7	12.1	16.9	14.1	2.9	8.1
Less than half	4.7	3.7	4.2	4.4	6.6	5.6
About half	3.0	4.4	3.7	3.5	1.8	2.6
More than half	9.7	10.2	9.9	15.5	18.3	17.0
Almost all	17.1	20.4	18.7	26.5	27.6	27.1
All	43.8	49.3	46.6	35.9	42.8	39.6
Reasons that not all clients presenting with fever were tested for malaria, among facilities that did not test all clients presenting with fever:[a]						
Insufficient supply of RDT	48.8	53.5	51.0	78.3	59.7	69.0
RDT/lab is not available at all times of the day and night	19.8	18.4	19.2	19.7	22.9	21.3
Thought there was another reason for the fever so not necessary to test	13.9	22.8	18.1	10.6	15.4	13.0
Lack of skill in conducting RDT/microscopy	2.4	0.0	1.3	0.0	7.0	3.5
No one has been trained in test, treat, and track (T3)	1.8	1.2	1.5	0.0	3.3	1.6
There is a delay in receiving results from RDT/lab	1.1	0.0	0.6	0.0	0.0	0.0
Do not want to waste client's time or delay client further	4.1	2.8	3.5	8.4	0.0	4.2
Client is vulnerable/at risk of severe disease	0.0	2.8	1.3	6.3	0.0	3.1
Clients do not have money to pay for tests	2.1	0.0	1.1	1.3	0.0	0.6
Client refuses to conduct test	2.6	1.2	2.0	0.0	2.1	1.1
No specific reason	13.7	9.5	11.7	6.4	6.1	6.3
Other reason[b]	21.6	19.1	20.4	10.8	28.7	19.9

Service	CHPS			Health Centers		
	Focal regions	Non-focal regions	All regions	Focal regions	Non-focal regions	All regions
Malaria treatment						
Facility has at least one staff member providing treatment for malaria	86.0	75.6	80.3	100.0	100.0	100.0
Frequency of treating clients presenting with a fever for malaria without a test in the previous two months, among facilities that did not test all clients:						
Always	15.8	10.9	13.4	15.2	2.5	8.8
Almost always	3.5	7.2	5.3	9.4	7.8	8.6
Sometimes	43.8	34.9	39.4	56.2	56.9	56.5
Almost never	4.9	6.0	5.4	6.1	8.6	7.3
Never	32.0	41.0	36.4	13.2	24.2	18.8
Facility had any negative malaria test results in previous two months, among facilities that conducted tests	92.0	89.4	90.6	98.4	97.8	98.0
Sample size	150–280	70–172	223–452	57–90	31–55	88–145

Source: Health, Population, and Nutrition Office Portfolio Health Systems Baseline Survey Data

Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because some variables are conditional and because of item nonresponse.

[a] Because multiple responses were possible, percentages sum to more than 100.

[b] Includes cases in which the facility does not treat for malaria (often because it does not have a physical facility), cases in which the staff used other symptoms to diagnose malaria, and other reasons.

Treatment for malaria is also common both in CHPS zones and health centers. Overall, 80 percent of CHPS zones and all health centers reported having at least one staff member providing treatment for malaria (Table 8).[18] We also observed that more than 90 percent of facilities that tested clients for malaria in the previous two months reported at least one negative test, suggesting that the facilities are testing a wide variety of clients. However, although GHS guidelines state that health workers are to provide malaria treatment only after receiving a positive RDT or microscopy test, many facilities did not follow these guidelines. Specifically, of facilities that did not test all clients with fever for malaria, about 64 percent of CHPS zones and 81 percent of health centers reported treating at least some clients without a positive test result in the previous two months.

2. Family Planning

The provision of family planning counseling and contraceptives is another essential service both for CHPS zones and health centers, and the facility survey suggests that this service is common. Most CHPS zones provide both family planning counseling and contraceptives (84 percent), although some provide only one or the other (Table 9). Among health centers, 91 percent offer both counseling and contraceptives. Only 4 percent of both CHPS zones and health centers reported offering no family planning services. CHPS zones reported providing contraceptives to an average of 21 clients in the previous two months, whereas health centers provided them to an average of 59 clients (for health centers, this average was substantially higher in focal than nonfocal regions).

[18] These numbers are based on responses to the facility survey question "how many staff members here typically provide treatment for malaria."

TABLE 9. AVAILABILITY OF FAMILY PLANNING SERVICES (PERCENTAGE OF FACILITIES, UNLESS OTHERWISE INDICATED)

Status	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Family planning services offered:						
Family planning counseling only	15.0	5.7	9.9	8.3	3.7	5.9
Contraceptives only	2.6	1.2	1.9	0.0	0.0	0.0
Both	79.3	87.7	83.9	89.0	91.8	90.5
Neither	3.1	5.3	4.3	2.7	4.5	3.7
Average number of clients receiving contraceptives from facility in previous two months (mean)	21.3	21.4	21.4	74.1	45.7	58.6
Average number of clients receiving contraceptives from facility in previous two months (median)	10	10	10	42	28	34
Sample size	279-280	172	451–452	85–90	55	140–145

Source: Health, Population, and Nutrition Office Portfolio Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.

3. Maternal Health

Health centers are expected to provide basic delivery services (Ghana Health Service, Regional and District Administration 2015), whereas CHPS zones that do not have qualified personnel to conduct deliveries are instructed to refer all deliveries to higher-level health facilities (CHPS Implementation Guidelines 2014). In some cases, however, a qualified midwife can be posted to a CHPS zone, and deliveries can be undertaken under the midwife's care (CHPS Implementation Guidelines 2014). Health workers in CHPS zones can also conduct emergency deliveries in circumstances in which a woman is unable to reach a higher-level health facility in time for her delivery (usually when presenting with the baby's head already in the birth canal).

Our survey data confirm that deliveries are more common in health centers than CHPS zones, and that deliveries in CHPS zones are more likely to be emergency deliveries. Specifically, about 25 percent of CHPS facilities conduct deliveries and about 37 percent of the deliveries in these facilities in the previous two months were emergency deliveries; in contrast, 88 percent of health centers conduct deliveries and only 17 percent of these deliveries in the previous two months were emergency deliveries (Table 10). Consistent with the larger population served and a stronger focus on conducting non-emergency deliveries, health centers conducting deliveries had a higher average number of deliveries in the previous two months (26 deliveries) than CHPS zones (6 deliveries). Based on facilities' projections of the number of births expected in their catchment areas, an average of 49 percent of all expected births in health centers' catchment areas occurred in health centers, and an average of 35 percent of expected births in the CHPS zones occurred in CHPS compounds. Both CHPS zones and health centers conducting deliveries reported that most delivering women received at least two doses of sulfadoxine-pyrimethamine, the recommended number of doses for intermittent preventive treatment of malaria in pregnant women at the time of the study (81 percent of CHPS zones and 79 percent of health centers).

TABLE 10. AVAILABILITY OF DELIVERY AND ANTENATAL CARE SERVICES (PERCENTAGE OF FACILITIES, UNLESS OTHERWISE INDICATED)

Status	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Delivery care						
Facility conducts deliveries	26.4	22.8	24.5	84.6	91.1	88.1
Delivery care in the previous two months, among facilities conducting deliveries:						
Average number of deliveries in the facility	6.2	6.6	6.4	28.5	23.7	25.8
Average percentage of projected births in catchment area that were delivered in the facility	32.2	38.0	35.1	42.5	54.4	49.3
Average percentage of deliveries in which mother received at least two doses of sulfadoxine-pyrimethamine	84.7	77.5	81.0	79.1	78.4	78.7
Average percentage of births in the facility that were emergency deliveries	44.9	29.7	37.2	14.8	19.1	17.2
Antenatal care (ANC)						
Facility provides ANC	66.3	57.6	61.5	91.5	94.4	93.0
Availability of ANC registers, among facilities providing ANC:						
Register exists and seen	92.8	92.2	92.5	88.3	95.8	92.3
Register exists, but not seen	5.4	2.6	4.0	10.8	2.7	6.4
No register	1.8	5.2	3.5	0.9	1.5	1.2
Sample size	59-280	33-172	92-452	74-90	48-55	116-145

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because some variables are conditional and because of item nonresponse.

In addition to providing delivery services, both CHPS zones and health centers are also expected to provide antenatal care services to pregnant women (CHPS Implementation Guidelines 2014). Nearly all health centers (93 percent) report offering these services, but there seems to be a service provision gap for CHPS, as only 62 percent offer antenatal care services (Table 10). Nearly all facilities providing antenatal care report having an antenatal care register, with only 4 percent of these CHPS zones and 1 percent of these health centers reporting that they did not have one.

4. Nutrition

Both CHPS zones and health centers are expected to offer nutrition counseling and services for young children and are expected to monitor children's growth using nutrition registers or record books. We found that 90 percent of CHPS zones and 92 percent of health centers reported having a nutrition register or record book (for example a growth monitoring register, nutrition education counseling register, child health record book or child health register), and 82 percent of CHPS zones and 90 percent of health centers had registers or record books with data that had been entered within the previous two months (Table 11). However, certain types of data were more common than others: for example, 80 percent of CHPS zones and 90 percent of health centers had recorded children's age data in the previous two

months, but only 16 percent of CHPS zones and 29 percent of health centers had recorded children's height data. Although child height data are not routinely collected in Ghana at present, such measures could assist in identifying children who are stunted (low height for age). Fewer facilities had nutrition registers or record books with an entry that had been made within the previous 30 days (61 percent of CHPS zones and 69 percent of health centers).

Facilities in the Northern, Upper East, and Upper West regions are receiving additional guidance and training on providing nutrition-related counseling materials through USAID investments. In these regions, a large percentage of both CHPS zones and health centers had nutrition materials (including nutrition counseling cards, key nutrition messages leaflets, nutrition pamphlets, or other materials), though they were more commonly available in health centers than in CHPS zones (98 percent of health centers and 77 percent of CHPS zones) (Table 11).

TABLE 11. AVAILABILITY OF NUTRITION SERVICES (PERCENTAGE OF FACILITIES)

Status	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Availability of nutrition register:						
Register exists and seen	85.3	86.2	85.8	90.6	83.7	86.9
Register exists, but not seen	5.5	2.4	3.8	6.7	4.4	5.5
No register	9.2	11.4	10.4	2.7	11.9	7.6
Availability of nutrition register with data entered in the past two months:						
Data exist and seen	67.4	72.2	70.0	69.2	79.9	75.0
Data exist, but not seen	10.6	11.6	11.2	23.8	8.2	15.4
No data entered	22.0	16.2	18.8	7.0	11.9	9.6
Availability of nutrition register with specific types of data entered in the past two months:						
Child's weight data	76.5	83.3	80.2	91.3	88.1	89.6
Child's age data	76.7	83.3	80.3	92.1	88.1	90.0
Child's height data	14.6	17.9	16.4	31.6	27.2	29.2
Underweight, or weight-for-age data	60.7	72.2	67.0	74.3	76.9	75.8
Facilities with nutrition register with entry within previous 30 days	57.3	64.7	61.3	70.0	67.3	68.6
Availability of nutritional counseling materials:[a]						
Materials exist and seen	59.9	67.5	65.2	71.6	91.3	84.3
Materials exist but not seen	20.9	7.9	11.8	22.4	8.7	13.6
No materials	19.2	24.5	22.9	6.0	0.0	2.1
Sample size	47-279	45-171	92-450	17-89	14-55	31-144

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data

Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because some variables are conditional and because of item nonresponse.

[a] Asked only for facilities in the Northern, Upper East, and Upper West regions.

5. Community-Based Services

One of the main reasons CHPS zones were established and one of the goals of health centers is to provide community-based health services. This includes home visits to clients for both routine care and specific health needs. Almost all CHPS and health centers conducted at least one home visit in the two months before the survey (Table 12). For CHPS zones, the mean number of routine visits in the previous two months was 27 and the mean number of follow-up visits was 10. (The median numbers of 11 routine visits and 4 follow-up visits in the previous two months is much lower than the mean, due to a small number of CHPS zones conducting large numbers of home visits.) A similar pattern was observed for health centers: these facilities conducted a mean of 50 routine visits and 13 follow-up visits (a median of 16 routine visits and 8 follow-up visits). The means for other types of visits (including special, postnatal, and periodic school visits) were lower than for routine and follow-up visits, and generally higher in health centers compared with CHPS zones.

Both CHPS zones and health centers are designed to be supported by community health volunteers (CHVs), who help to provide community-based care. These volunteers are approved by the communities they serve and receive specialized training to support the basic services provided by the health facilities with which they work (CHPS Revised Implementation Guidelines 2014). The key functions of CHVs can include conducting and supporting home visits, supporting CHOs in delivering basic care, conducting disease surveillance, supporting outreach and communication activities including community meetings, and providing some basic community-based care including first aid and family planning.

We examined the prevalence and roles of CHVs in the sampled facilities. Almost all CHPS zones (95 percent) and health centers (92 percent) reported having CHVs attached to them (Table 12). In CHPS zones with CHVs, the volunteers were most commonly used to conduct home visits (in 50 percent of CHPS zones with CHVs), conduct disease surveillance (48 percent), and mobilize and sensitize the community for health management action (45 percent), as well as a wide variety of other functions. In health centers, the most common functions of CHVs included conducting disease surveillance (reported by 65 percent of health centers with CHVs); providing first aid (54 percent); and conducting home visits to assess, advise, and educate on health (53 percent), among other functions.

Another aspect of community-based care in CHPS zones in particular consists of regular meetings held by the CHPS staff in their communities to discuss important health topics. These meetings, also known as *durbars*, are typically organized by the community health officer (CHO), with assistance from the community health committee (CHC) and community health volunteers (CHVs), and are meant to be held on a regular basis (Revised CHPS Implementation Plan 2014). Overall, 44 percent of CHPS zones reported holding a *durbar* in the previous two months (Table 12). Among CHPS zones that had conducted a *durbar* in the previous two months, 60 percent reported that the CHO was involved in the planning and CHVs, CHCs, and other community leaders were reported to be involved to a lesser extent.

Durbars are meant to cover a range of high-priority community health topics. Among CHPS zones that had conducted *durbars* in the previous two months, the most common topics covered were family planning and malaria (both covered by 27 percent of CHPS zones), and cholera (covered by 24 percent of CHPS zones). Additionally, 72 percent of CHPS zones that conducted *durbars* in the previous two months held *durbars* that covered a wide range of topics other than those we specifically asked about in the survey. About 30 percent of the *durbars* on other topics were related to Ebola, suggesting a response to the outbreak in West Africa at the time (data not shown).

TABLE 12. AVAILABILITY OF COMMUNITY-BASED SERVICES (PERCENTAGE OF FACILITIES)

Service	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Home visits						
Community health officer (CHO) conducted at least one home visit in the previous two months	97.1	98.4	97.8	95.5	93.9	94.6
Home visits by CHO in the previous two months:						
Average number of routine home visits conducted (mean)	26.2	27.7	27.0	63.9	38.8	50.3
Average number of routine home visits conducted (median)	10	14	11	12	16	16
Average number of follow-up home visits (mean)	10.1	9.7	9.9	12.1	14.4	13.4
Average number of follow-up home visits (median)	4	5	4	10	8	8
Average number of clients needing special visits (mean)	5.0	4.3	4.6	7.6	5.7	6.6
Average number of clients needing special visits (median)	2	2	2	2	2	2
Average number of postnatal home visits conducted (mean)	6.8	4.2	5.4	15.8	11.8	13.6
Average number of postnatal home visits conducted (median)	4	3	3	5	6	5
Average number of school visits conducted (mean)	7.2	2.8	4.8	4.0	30.5	18.3
Average number of school visits conducted (median)	2	2	2	2	4	3
Community health volunteers (CHVs)						
Facility has CHVs	90.4	97.7	94.4	86.2	96.3	91.6
Key community-based services offered in previous year, among facilities with CHVs:[a]						
Home visits—assess, advise, and educate on health	47.7	51.1	49.6	42.3	60.6	52.6
Conduct disease surveillance, identify cases, and report	39.5	55.0	48.2	55.9	72.1	65.0
Mobilize and sensitize community for health management action	32.2	54.1	44.6	40.5	53.9	48.0
Provide first aid and treatment of minor ailments in hard-to-reach places	30.1	47.9	40.1	43.3	61.7	53.6
Disseminate health information, including nutrition	27.9	43.9	36.9	37.9	60.7	50.7
Communicate between CHO and community on health status of community	23.4	47.0	36.8	26.5	57.2	43.7
Assist CHO with home visits, outreach, and work at the CHPS	30.1	32.9	31.7	34.1	45.8	40.6
Support the organization of community durbars	19.4	40.3	31.2	25.9	55.6	42.5
Home visits—follow-up on defaulters	22.7	35.8	30.1	28.2	34.6	31.8
Refer clients to CHO for disease treatment, family planning, or nutrition	25.4	28.1	26.9	21.2	45.4	34.8

Service	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Support antenatal, postnatal, and infant care	19.8	28.2	24.5	30.4	40.9	36.3
Collaborate with CHO, support CHPS service delivery	15.7	22.1	19.3	20.3	33.2	27.5
Assist in compiling and updating community register and profile	7.3	15.7	12.0	14.3	36.0	26.5
Provide condoms and family planning information	8.7	12.1	10.7	12.1	14.3	13.3
Something else	39.9	24.0	31.0	37.5	25.9	31.0
Community health meetings						
Any community health meetings (durbars) held in previous two months	39.8	47.8	44.1	n.a.	n.a.	n.a.
Average number of durbars held in the previous two months	0.8	0.8	0.8	n.a.	n.a.	n.a.
Key persons planning and organizing the last durbar, among facilities holding a durbar in the previous two months:						
Community health officer (CHO)	55.6	63.7	60.3	n.a.	n.a.	n.a.
Community health volunteers (CHVs)	21.4	11.7	15.7	n.a.	n.a.	n.a.
Community leaders not part of Community health committee (CHC)	24.6	7.2	14.4	n.a.	n.a.	n.a.
CHC	19.2	10.5	14.1	n.a.	n.a.	n.a.
Someone else [a]	41.6	46.6	44.5	n.a.	n.a.	n.a.
Key topics of discussion during last durbar, among facilities holding a durbar in the previous two months: [b]						
Family planning	19.7	32.7	27.3	n.a.	n.a.	n.a.
Malaria control/use of long-lasting insecticide-treated nets	27.9	25.8	26.7	n.a.	n.a.	n.a.
Cholera	25.2	22.3	23.5	n.a.	n.a.	n.a.
Maternal and child health	14.9	23.3	19.8	n.a.	n.a.	n.a.
Antenatal care attendance	22.0	15.7	18.3	n.a.	n.a.	n.a.
Newborn health	12.6	14.1	13.5	n.a.	n.a.	n.a.
WASH (water and sanitation hygiene)	17.7	9.5	12.9	n.a.	n.a.	n.a.
Expanded Programme on Immunizations	9.9	13.1	11.8	n.a.	n.a.	n.a.
Postnatal Care Attendance	8.2	13.9	11.5	n.a.	n.a.	n.a.
Administration of the health facility	10.2	11.4	10.9	n.a.	n.a.	n.a.
Health Insurance	8.8	9.6	9.3	n.a.	n.a.	n.a.
Injuries such as snake bites, burns, and so on	3.9	8.5	6.6	n.a.	n.a.	n.a.
HIV/AIDS	0.6	3.0	2.0	n.a.	n.a.	n.a.
Something else	72.0	71.6	71.8	n.a.	n.a.	n.a.
Sample size	112–279	75–172	187–451	77–88	52–55	129–143

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data

Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because some variables are conditional and because of item nonresponse.

[a] Includes other members of the CHPS staff, district level health staff, District Assembly members, nongovernmental organizations, other community groups and members, and others.

[b] Because multiple responses were possible, percentages sum to more than 100.

n.a. = not applicable.

C. Staff Training

Another important aspect of quality at facilities is the quality of the staff. Because we do not have direct measures on quality of services provided, we examine training received by staff as a proxy. We examine both staff training related to caregiving and training in other areas, such as data tracking, management, and logistics. Because training accompanied by supportive supervision is likely to be more effective than training alone, we also examine the receipt of training with supportive supervision (or related outreach activities), referring to this as quality training.

1. Training for Caregiving

Staff in CHPS zones and health centers receive training for the provision of key caregiving services, including caregiving related to malaria, nutrition, and maternal and child health. Training for malaria-related caregiving is described in Table 13. As mentioned earlier, in accordance with World Health Organization guidelines, the GHS promotes the T3 Initiative for malaria care (PMI FY 2015 Ghana Malaria Operational Plan). More than two-thirds (71 percent) of CHPS zones and 78 percent of health centers that we surveyed reported that at least one staff member at their facility was trained in the T3 method.

CHPS zones and health centers are also supposed to have staff members trained in other key aspects of malaria beside T3. Most CHPS zones and health centers reported that at least one staff member had been trained in the previous 12 months in any of five critically important malaria-related topics (denoted with an asterisk (*) in Table 13). More than a third (39 percent) of CHPS zones and 48 percent of health centers reported having at least one staff member trained in *all* five critical aspects of malaria care in the previous 12 months (the same staff member was not necessarily trained in all topics). Trainings on other malaria-related topics was less common: for example, only 8 percent of CHPS zones and 30 percent of health centers had a staff member trained in malaria microscopy.

TABLE 13. STAFF TRAINING FOR MALARIA CAREGIVING (PERCENTAGE OF FACILITIES, UNLESS OTHERWISE INDICATED)

Status/Type of Training	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Facility has at least one staff member trained in test, treat, and track (T3) method	79.8	64.2	71.3	82.2	75.2	78.4
Facility had at least one staff member trained in the following aspects of malaria care in the previous 12 months:						
Treatment guidelines for malaria (*)	78.1	62.4	69.5	78.3	73.3	75.6
Recognizing a suspect malaria case (*)	72.4	61.1	66.2	76.4	65.9	70.7
Refresher training on malaria RDTs (*)	72.1	56.5	63.6	71.8	64.1	67.7
Differential diagnoses for malaria (*)	62.6	50.7	56.1	63.3	64.2	63.8
Malaria in pregnancy (MIP) (*)	62.2	42.4	51.3	70.5	63.2	66.6
Malaria microscopy	11.6	4.3	7.7	27.7	31.5	29.7
Other trainings spontaneously named:						
Coexistence of malaria with other diseases	9.8	3.2	6.2	10.8	7.7	9.1
Bed nets and preventative measures	1.7	2.3	2.0	1.7	6.6	4.4
Any other topic related to malaria[a]	7.3	5.6	6.4	7.4	14.6	11.3

Status/Type of Training	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Facility had at least one staff member trained in each of the key aspects of malaria care (*) in the previous 12 months	45.8	32.8	38.7	49.1	47.5	48.3
Facility had at least one staff member trained in *any* of the key aspects of malaria care (*) in the previous 12 months	85.6	68.6	76.3	86.8	84.4	85.5
Facility had at least one staff member trained in any of the aspects of malaria care (*) *and* received supportive supervision in the previous 12 months	58.7	56.7	57.6	65.5	66.7	66.2
Facility had at least one CHV trained in malaria-related topics in the previous 12 months[b]	44.2	61.3	53.6	n.a.	n.a.	n.a.
Facility had at least one CHV trained in malaria-related topics *and* received coaching by supervisors to address documented errors in the previous 12 months[b]	26.7	45.0	36.9	n.a.	n.a.	n.a.
Facility received at least 2 outreach training and supportive supervision visits on malaria in previous 12 months[c]	39.4	45.9	43.0	58.4	71.1	65.3
Sample size	264–278	169–172	433–450	86–89	54–55	141–144

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.

[a] Includes complicated/severe cases, home care, treatment guidelines, treatment of children, and other topics.
[b] Includes malaria-related topics in general, and not specific topics.
[c] Includes visits related to caregiving (for example, malaria case management and RDTs) and data tracking and management (for example, data capture and supply management).
(*) Key aspects of malaria care used in combined training analysis.
n.a. = not applicable.

We asked the facilities whether any of the staff trained in the five key aspects of malaria care also received supportive supervision. Although 76 percent of CHPS zones had at least one staff member trained in any of the five key aspects listed in the previous 12 months, only 59 percent of CHPS zones had at least one staff member who was trained and received supportive supervision. Among health centers, 86 percent had at least one staff member trained in the previous 12 months in any of the five key aspects of malaria listed, and 68 percent had at least one staff member trained with supportive supervision.

We also examined training provided to CHVs for malaria-related caregiving. More than half (54 percent) of CHPS zones provided CHVs with training on some aspect of malaria in the previous 12 months, and 37 percent provided what we have defined as quality training, which included coaching by supervisors to address documented errors through added support such as outreach training and supportive supervision (OTSS) visits. OTSS is designed to provide long-term, ongoing support to strengthen services in health facilities by identifying areas that require improvement and providing support to staff (President's Malaria Initiative 2010). Across all regions, 43 percent of CHPS zones and 65 percent of health centers had at least two OTSS visits on malaria in the previous 12 months, the minimum number of OTSS visits expected in these facilities.

Training on caregiving services other than malaria, including those related to nutrition and maternal and child health, is described in Table 14. Of these key services, CHPS zones most commonly reported having at least one staff member trained in the following services in the previous 12 months: infant and young child feeding (47 percent), community management of acute malnutrition or other under nutrition management practices (34 percent), and management of acute malnutrition (29 percent). Among health centers, the most common training topics were infant and young child feeding (55 percent), essential newborn care (50 percent), and active management of the third stage of labor (45 percent). A large proportion of CHPS zones and health centers spontaneously reported having at least one staff member trained in Ebola (22 percent of CHPS zones and 19 percent of health centers), again likely reflecting the Ebola outbreak that occurred in the region before and during data collection.

Similar to malaria training, gaps in training for nonmalaria topics become more severe when we examine quality training, as measured by supportive supervision. Fewer than one-third of CHPS zones reported that any staff received training with supportive supervision in the previous 12 months in any of the specific topics that we asked about. Receipt of training with supportive supervision was more common in health centers, but still amounted to fewer than half of health centers for any given topic. Finally, we asked facilities in three regions where USAID is investing most heavily in nutrition the number of supportive supervision visits they had received in the previous 12 months that had focused on nutrition.[19] For CHPS zones, the average number of supportive supervision visits that focused on nutrition in the previous 12 months was about two, and for health centers it was three.

TABLE 14. STAFF TRAINING FOR NUTRITION AND OTHER KEY CAREGIVING SERVICES (PERCENTAGE OF FACILITIES, UNLESS OTHERWISE INDICATED)

Status/Type of Training	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Facility had at least one staff member trained in the following in the previous 12 months:						
Infant and young child feeding	41.2	52.6	47.4	55.4	53.9	54.6
Community management of acute malnutrition or other undernutrition management practices	28.9	37.7	33.7	39.9	39.5	39.7
Management of acute malnutrition	30.4	28.5	29.3	37.6	39.3	38.5
Essential newborn care	23.9	21.0	22.3	60.3	40.8	49.7
Active management of third stage of labor	13.2	19.0	16.4	44.6	45.6	45.1
Other trainings spontaneously named:						
Ebola, usually with other infectious disease topics	25.0	19.7	22.1	18.5	18.8	18.7
Specific diseases	6.4	5.7	6.0	2.2	8.6	5.6
Maternal and child health	5.7	4.5	5.0	9.7	0.0	4.5
Family planning	3.4	5.3	4.4	0.8	7.9	4.6
Abortion	0.3	0.0	0.1	0.0	8.2	4.4
Facility had at least one staff member trained and received supportive supervision in the following in the previous 12 months:						
Infant and young child feeding	27.6	38.0	33.3	40.5	48.6	44.9
Community management of acute malnutrition or other under nutrition	19.0	29.4	24.7	32.8	32.5	32.7

[19] This question was asked in the Northern, Upper East and Upper West regions.

Status/Type of Training	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
management practices						
Management of acute malnutrition	18.2	21.9	20.2	33.1	35.8	34.5
Essential newborn care	13.1	14.1	13.7	40.6	28.4	34.0
Active management of third stage of labor	6.9	11.6	9.5	24.3	31.7	28.3
Other trainings spontaneously named:						
Ebola, usually with other infectious disease topics	9.7	13.0	11.5	5.8	17.6	12.1
Maternal and child health	2.2	2.7	2.5	3.6	0.0	1.7
Specific diseases	2.3	2.3	2.3	0.0	6.7	3.6
Family planning	0.5	3.1	2.0	0.8	6.4	3.8
Abortion	0.0	0.0	0.0	0.0	4.5	2.4
Average number of supportive supervision visits focused on nutrition in previous 12 months[a]	1.8	1.8	1.8	3.5	2.6	3.0
Sample size	46–278	44–172	90–450	18–90	13–55	31–145

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.
[a] Includes nutrition-related topics in general, and not specific topics. Asked only for facilities in the Northern, Upper East, and Upper West regions.

2. Training for Data Tracking, Management, and Logistics

In addition to providing health services, CHPS and health center staff are expected to track and manage data and perform key logistical and managerial tasks. The capture and reporting of data related to malaria is a main focus for GHS and USAID-funded projects, and training is important to facilitate this. For CHPS zones, mainly nurses or CHOs receive this training, and in the previous 12 months, 69 percent of CHPS zones had at least one nurse or CHO trained in malaria data capture and reporting (Table 15). At health centers, other staff could be trained; however, nurses or CHOs were still the most common staff members trained in health centers in the previous 12 months (76 percent). Overall, 75 percent of CHPS zones and 86 percent of health centers had at least one staff member trained in malaria data capture and reporting in the previous 12 months.

Training is also conducted in collation and reporting of malaria indicators. More than half (59 percent) of CHPS zones and 69 percent of health centers reported having at least one staff member trained in the collation and reporting of malaria indicators in the previous 12 months (Table 15). Further, 50 percent of health centers reported having a record-keeping head who received malaria reporting training in the previous 12 months.

TABLE 15. STAFF TRAINING FOR DATA TRACKING AND MANAGEMENT (PERCENTAGE OF FACILITIES)

Status	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Training in malaria data tracking						
Facility had at least one of the following key staff trained in malaria data capture and reporting in the previous 12 months:						
Nurses or CHOs	70.8	67.4	69.0	78.1	73.3	75.5
Outpatient department in-charges	n.a.	n.a.	n.a.	53.1	38.1	44.9
Records staff members	n.a.	n.a.	n.a.	34.5	31.1	32.6
Lab staff members	n.a.	n.a.	n.a.	23.9	24.3	24.1
Other staff members	14.6	7.9	10.7	15.3	35.7	27.0
Facility had at least one staff member trained in malaria data capture and reporting in the previous 12 months	79.3	71.6	75.1	82.8	88.8	86.0
Facility had at least one staff member trained in collation and reporting of malaria indicators in the previous 12 months	62.1	55.5	58.5	64.1	73.0	68.9
Facility has a record-keeping head who was trained in malaria reporting in the previous 12 months	n.a.	n.a.	n.a.	53.9	47.1	50.2
Training in other tracking and management topics						
Facility had at least one staff member trained in the following in the previous 12 months:						
Supply chain and logistics management	33.0	27.6	30.0	47.8	43.1	45.2
Supervision skills	21.7	17.7	19.5	26.3	31.6	29.1
Other training spontaneously named: Disease surveillance	11.3	9.5	10.3	8.8	4.5	6.5
Facility had at least one staff member who was trained and received supportive supervision in any of the following in the previous 12 months:						
Supply chain and logistics management	23.2	21.9	22.5	30.5	34.1	32.4
Supervision skills	12.2	13.4	12.8	18.9	26.0	22.7
Other training spontaneously named: Disease surveillance	4.9	5.1	5.0	5.0	4.5	4.7
Sample size	208–278	147–172	355–450	74–90	49–55	124–145

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.
n.a. = not applicable (question was not asked for CHPS zones).

Key staff members at CHPS zones and health centers are also expected to receive training in other management topics (CHPS Revised Implementation Guidelines 2014). Almost a third (30 percent) of CHPS zones and 45 percent of health centers reported having at least one staff person trained in supply

chain and logistics management in the previous 12 months, and 20 percent of CHPS zones and 29 percent of health centers reported having at least one staff member trained in supervision skills (Table 15). As with other areas of training, the percentage of health facilities that received quality training—as measured by training with supportive supervision—is substantially lower than the percentage that received any training at all.

D. Treatment Protocols and Sanitation and Infection Prevention

In this section, we examine the availability to facilities of guidelines for treatment of clients and the extent to which facilities follow prescribed guidelines for sanitation, sterilization, disposal, and infection control. The availability of guidelines is an important measure of the quality of care, because without these protocols, the provision of appropriate care is less likely. The use of widely accepted measures related to sanitation, sterilization, disposal, and infection control at these facilities is also important, to ensure that they offer a healthy environment for their clients.

1. Availability of Treatment Protocols

Staff in CHPS zones and health centers are expected to follow basic protocols and guidelines in treatment and service provision. Most of the SDHT leaders and DDHSs interviewed thought that most health centers and CHPS zones in their districts had guidelines and written protocols available for maternal and newborn care, reproductive health, and infection prevention and control. Most of these stakeholders agreed that data about the use of these guidelines and protocols are not collected in a systematic way, although a handful mentioned that some monitoring by GHS officials occurs to determine whether these guidelines and protocols are available. Most of the SDHT leaders and DDHSs interviewed thought that the protocols are used mainly as a refresher and reference by staff when treating clients. One SDHT leader provided an example:

> "Let's say when someone who is on family planning comes with bleeding. In the protocol book [the provider] will check what method that person does, and when a person comes with such a problem, what is supposed to be done for that person. [This information] is in the protocol book."

The results from the quantitative survey suggest that treatment protocols for certain key services might not be as commonly available as SDHT leaders and DDHSs believe, and are more likely to be available in health centers than in CHPS zones (Table 16). For example, 30 percent of CHPS zones and 82 percent of health centers reported having written protocols for managing maternal and newborn care, and 39 percent of CHPS zones and 56 percent of health centers reported having written protocols for managing acute undernutrition. The percentage of CHPS zones and health centers with protocols that were seen by the interviewer was lower: 23 percent and 66 percent for maternal and newborn care, and 31 percent and 38 percent for acute undernutrition, respectively.

TABLE 16. AVAILABILITY OF TREATMENT PROTOCOLS (PERCENTAGE OF FACILITIES)

Status	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Availability of written protocols for managing maternal and newborn care:						
Protocols exist and seen	19.3	26.8	23.4	60.4	71.3	66.2
Protocols exist, but not seen	8.0	4.5	6.1	19.1	12.4	15.5

Status	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
No protocols	72.8	68.7	70.6	20.5	16.3	18.2
Availability of written protocols for managing acute undernutrition:						
Protocols exist and seen	27.6	33.3	30.7	44.0	33.0	38.1
Protocols exist, but not seen	9.4	8.0	8.7	25.4	12.1	18.3
No protocols	63.0	58.7	60.7	30.6	54.9	43.6
Sample size	278–279	169–171	446–450	88	55	143

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.

2. Sanitation and Infection Prevention Measures

Most facilities reported that they followed at least some basic guidelines related to sanitation.[20] For example, 71 percent of CHPS zones and 99 percent of health centers reported having a hand-washing station or Veronica bucket (a hand-washing station created using a bucket with a spigot at the bottom set on a stand) available (Table 17).[21] Other commonly reported sanitation measures in CHPS zones included wearing gloves (reported by 63 percent of CHPS zones), using hand sanitizer (25 percent), and cleaning the facility (16 percent). In health centers, commonly reported measures were also wearing gloves (93 percent of health centers), using hand sanitizer (16 percent), and cleaning the facility (10 percent). About 6 percent of CHPS zones reported not having any sanitation measures in place for prevention and control of infections, but no health centers reported this.

TABLE 17. SANITATION AND INFECTION PREVENTION (PERCENTAGE OF FACILITIES)

Type of Measure	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
Key sanitation measures in place for prevention and control of infections:[a]						
Hand-washing station/Veronica bucket	73.5	69.4	71.3	97.5	100.0	98.8
Wear gloves	68.1	58.0	62.6	85.7	98.8	92.7
Use hand sanitizer	24.3	26.1	25.3	16.9	15.0	15.8
Clean facility	19.9	13.2	16.3	13.8	6.7	10.0
Safety box	12.4	12.4	12.4	11.3	9.7	10.4
Burn refuse	12.1	14.1	13.2	10.2	5.2	7.5
Dust bin	5.1	5.2	5.2	3.8	6.2	5.1
Protective gear	2.7	0.5	1.5	8.0	4.0	5.9
Other[b]	1.6	0.9	1.2	5.1	7.5	6.4

[20] Our analysis of the use of sanitation and other infection prevention measures (related to sterilization, disposal, and infection control) is based on facility self-reports in response to open-ended questions on the types of measures used; use of these measures was not verified by interviewers.
[21] However, as we show in Table 22, only 23 percent of CHPS zones and 65 percent of health centers have running water, which could limit the regular use of hand-washing stations and Veronica buckets.

Type of Measure	CHPS			Health Centers		
	Focal regions	Nonfocal regions	All regions	Focal regions	Nonfocal regions	All regions
None	6.9	6.4	6.6	0.0	0.0	0.0
Key sterilization measures in place for prevention and control of infections:[a]						
Availability of disinfectants	45.8	33.1	38.9	53.1	68.8	61.5
Protocol for mixing chlorine for disinfection	34.6	29.4	31.8	52.5	68.8	61.2
Disinfect instruments	27.6	21.8	24.5	49.4	55.1	52.4
Sterilizing equipment	10.2	9.0	9.5	37.1	55.4	46.9
Availability of functioning sterilizing equipment such as boilers or autoclaves	11.9	5.1	8.2	37.1	54.6	46.4
Other	12.9	9.5	11.0	15.3	9.9	12.4
None	25.5	46.0	36.6	5.6	0.0	2.6
Key disposal measures in place for prevention and control of infections:[a]						
Use sharps container	76.1	67.8	71.6	80.0	87.3	83.9
Separation of waste disposal	44.3	42.1	43.1	57.7	64.8	61.5
Burning waste	27.6	28.8	28.3	26.1	21.9	23.9
Using waste container/pit	15.3	14.9	15.1	11.8	28.3	20.6
Availability of functioning incinerator	2.8	3.6	3.3	10.2	18.8	14.8
Other	0.7	0.6	0.6	0.0	2.5	1.3
None	5.5	9.6	7.7	0.0	0.0	0.0
Key measures in place for dealing with contagious clients for prevention and control of infections:[a]						
Separating clients with contagious diseases from healthy clients	35.2	37.9	36.6	58.5	68.8	64.0
Wearing protective gear	18.9	7.4	12.7	22.6	7.2	14.3
Separating sick newborns from healthy newborns	6.3	7.9	7.2	18.9	26.8	23.1
Referral/transfer	5.8	7.3	6.6	5.0	5.6	5.3
Prioritizing contagious cases	1.6	4.4	3.1	5.8	1.4	3.4
Other[c]	5.8	3.5	4.5	2.2	0.0	1.0
None	39.9	48.9	44.8	15.8	22.0	19.2
Sample size	278–279	169–172	447–451	89–90	55	144–145

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse

[a] Because multiple responses were possible (except for none), percentages sum to more than 100.
[b] Includes disinfectant/sterilization, additional disposal measures, and other measures.
[c] Includes client counseling/education, sanitation/sterilization, and other measures.

We also examined measures related to sterilization, disposal, and infection control. Sterilization measures such as having disinfectants available were generally more common in health centers than in CHPS

zones. Almost 37 percent of CHPS zones reported that there were no sterilization measures in place, compared with only about 3 percent of health centers. In contrast, CHPS zones and health centers reported having similar disposal measures in place for prevention and control of infections, such as a sharps container. Only 8 percent of CHPS zones and no health centers reported having no disposal measures in place. Finally, measures of infection control, such as separating clients with contagious diseases from healthy clients, were generally higher in CHPS zones than health centers. However, almost 45 percent of respondents at CHPS zones and 19 percent of health centers reported that they did not have any such measures in place.

E. Access to Supplies and Equipment

CHPS zones and health centers are expected to have essential supplies and equipment available to enable them to provide high quality care. Next, we examine the systems in place for managing the supply chains of these supplies and equipment, describe the extent to which specific supplies and equipment are available, and look at the availability of information technology equipment in these facilities.

1. Supply Chain Management

Effective management of supply chains is important to ensure that essential medicines, supplies, and equipment are available in health facilities. In qualitative interviews, DDHSs and SDHT leaders in the focal regions were asked for their impressions of supply chain management, including the systems in place to manage supplies and whether these systems function adequately in CHPS zones and health centers. Combined with data from the facility survey, we identified several major challenges to the effective operation of the supply chain. These include effectively tracking the levels of supplies and medicines in facilities, financial constraints (specifically, delays from the National Health Insurance Scheme [NHIS] in reimbursing health facilities for services and supplies), stock-outs at the regional level, and the complexity of supply chain logistics.

TRACKING THE LEVELS OF SUPPLIES AND MEDICINES

The first step to effective supply chain management is to accurately track the levels of supplies and medicines, so that they can be ordered as needed to maintain the required stock levels. CHPS zones and health centers are expected to obtain their basic medicines and supplies either on a monthly or an as-needed basis through a process of tracking and ordering. Most SDHT leaders interviewed verified that medicine and supplies are typically requested monthly, and all described similar procedures to be used for ordering when medicines and supplies run low. Specifically, if a medicine or supply is running low, the in-charge should use a Requisition Issue and Receive Voucher to request a purchase from the DDHS. If the DDHS approves and endorses the voucher, the items are purchased at the regional medical store. The in-charge varies by facility but in health centers might be the SDHT leader or a nurse; in practice, interviews with SDHT leaders suggested that a variety of health staff can be involved in tracking and ordering, including pharmacy technicians, dispensary technicians, and public health nurses. Our survey data show that 64 percent of CHPS zones and 82 percent of health centers have a person dedicated to ordering supplies (Table 18).

TABLE 18. AVAILABILITY AND USE OF TOOLS AND MECHANISMS FOR SUPPLY CHAIN MANAGEMENT (PERCENTAGE OF FACILITIES)

Status	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Facility has dedicated person responsible for ordering supplies	67.9	60.5	63.9	83.2	80.1	81.5
Standard operating procedures (SOP) manual:						
Exists and seen	28.8	7.2	16.8	45.0	25.6	34.4
Exists, but not seen	7.3	5.5	6.3	22.6	24.1	23.4
No SOP manual	63.9	87.3	76.9	32.4	50.3	42.2
Frequency with which facility cannot supply clients' needs due to a stock-out:						
Once or more per week	10.7	5.8	8.1	6.1	4.3	5.2
Once every two weeks	3.4	3.0	3.2	5.1	3.8	4.4
Once every three weeks	4.1	1.3	2.6	9.3	1.9	5.4
Once per month	32.0	34.9	33.5	27.1	34.0	30.8
Less than once per month	49.9	55.1	52.6	52.4	56.0	54.3
Key sources of information for forecasting supply needs for malaria RDTs in the previous 12 months, among facilities that treat malaria:[a]						
Number of malaria cases given a final diagnosis of malaria	33.6	26.4	29.9	34.3	40.4	37.5
Number of suspected malaria cases	64.0	65.3	64.7	63.2	56.5	59.7
Outpatient department attendance	33.0	44.7	39.0	45.9	37.1	41.3
Number of RDTs and microscopy tests performed	23.9	12.5	18.1	29.8	20.5	24.9
Some other data or method	15.3	8.8	12.0	8.7	8.5	8.6
Sample size	219–280	120–172	339–452	84–89	53–55	138–144

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data

Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because some variables are conditional and because of item nonresponse.

[a] Because multiple responses were possible, percentages sum to more than 100.

Although this general system of tracking and ordering seems to be in place, 77 percent of CHPS zones and 42 percent of health centers report they do not have a standard operating procedures manual, which outlines the procedures for supply chain management. Further, a number of SDHT leaders noted that obtaining an adequate stock of medicine and supplies through the existing system was one of the most significant obstacles facing CHPS zones and health centers. As one SDHT leader stated,

> "According to the schedule of deliveries of health commodities, we are supposed to get our supplies every month or every three months…but nowadays I think the health system is having challenges, so we are not having the supplies as it should be."

Facilities typically are expected to use control cards (which could include inventory control cards, bin cards, tally cards, or supply cards) to track the levels of medicines and supplies. The results from the quantitative survey indicate that many facilities used control cards, but there are still large gaps, especially for CHPS zones.[22] No more than 60 percent of CHPS zones had control cards for any single commodity, and for most commodities, fewer than half of CHPS zones had control cards (Table 19).[23] For health centers, which always had a higher proportion of facilities with control cards than CHPS zones, there was still not a single commodity for which 100 percent of health centers had control cards. Furthermore, many control cards had not been recently updated. For example, 85 percent of health centers had control cards for oral rehydration salts and zinc tablets, but only 47 percent had updated the control cards in the previous 30 days.[24] This suggests that tracking through control cards is not working as effectively as it could be.

TABLE 19. MANAGEMENT OF ESSENTIAL SUPPLIES (PERCENTAGE OF FACILITIES)

Type of Supplies	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Availability of control cards for specific commodities						
Facility has control card for the following nutrition commodities:						
Oral rehydration salts and zinc tablets	58.7	40.7	49.0	87.6	82.3	84.8
The deworming medicine called Albendazole	45.4	37.3	41.0	79.8	86.6	83.5
Iron and folic acid tablets	43.6	29.7	36.0	71.1	81.8	76.9
Vitamin A	20.4	24.7	22.8	43.0	37.2	39.9
Micronutrient powders	1.0	0.5	0.7	5.2	0.0	2.3
Facility has control card for the following immunization commodities:						
Polio	32.6	31.3	31.9	56.7	65.2	61.3
Yellow fever	32.8	31.3	32.0	57.8	63.4	60.8
Measles	32.5	32.2	32.3	56.7	63.8	60.5
Rotarix	33.2	30.7	31.8	57.2	61.5	59.5
Tetanus toxoid	30.8	28.9	29.8	56.1	62.1	59.4
Pentavalent	32.6	32.8	32.7	55.9	61.8	59.1
Pneumo	33.0	29.6	31.2	56.2	61.0	58.8
Bacillus Calmette-Guerin	32.7	27.0	29.7	56.7	57.8	57.3
Facility has control card for the following malaria commodities:						
Pediatric paracetamol	65.7	47.8	56.0	89.8	90.5	90.2
Adult paracetamol	66.7	49.2	57.3	90.7	86.7	88.5
Artesunate and amodiaquine	60.8	47.5	53.6	86.0	86.6	86.3
Artemether and lumenfantrine	61.4	39.8	49.7	86.2	86.2	86.2

[22] The availability of control cards (or, even better, recently updated control cards) may be an important predictor of stock-outs. However, we examine stock-outs more directly in a subsequent subsection.
[23] In terms of immunization commodities, some CHPS zones do not keep vaccines on hand but obtain them from higher-level facilities when they are needed. Therefore, not all CHPS zones are expected to track immunization commodities using control cards.
[24] This is based on the most recent update date on the control card—for this supply, interviewers did not verify the information against the stock in the facility store.

Type of Supplies	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Malaria RDTs	48.5	40.4	44.1	74.8	75.3	75.0
Facility has control card for the following family planning commodities, among facilities providing contraception:						
An injectable contraceptive	68.2	53.0	60.0	80.9	60.7	70.1
Condoms	53.5	47.3	50.1	75.7	55.5	64.9
A hormonal implant such as Implanon, Jadelle, Sino Implant II, or Norplant	34.3	18.8	25.9	66.5	57.6	61.8
Combined oral contraceptive pills	56.3	32.9	43.6	71.4	49.2	59.6
Progestogen-only pill	17.7	4.9	10.8	39.6	19.0	28.5
An intrauterine device	2.8	5.1	4.0	35.8	16.3	25.4
Availability of updated control cards for specific commodities[a]						
Facility has control card for the following nutrition commodities that was updated in the previous 30 days:						
Iron and folic acid tablets	15.6	10.1	12.7	39.8	53.0	46.8
Oral rehydration salts and zinc tablets	20.2	13.7	16.8	43.6	49.2	46.5
The deworming medicine called Albendazole	16.3	12.7	14.4	42.3	35.3	38.6
Vitamin A	11.5	13.2	12.4	23.4	16.6	19.9
Micronutrient powders	0.4	0.0	0.2	4.0	0.0	1.8
Facility has control card for the following immunization commodities that was updated in the previous 30 days:						
Bacillus Calmette-Guerin	23.6	15.3	19.2	44.1	37.9	40.8
Pentavalent	23.9	22.1	22.9	43.5	44.1	43.8
Pneumo	24.9	21.7	23.2	44.4	44.8	44.6
Polio	25.3	21.4	23.2	44.7	46.9	45.8
Rotarix	25.7	20.9	23.1	47.2	45.5	46.3
Measles	23.4	22.2	22.7	45.9	46.0	46.0
Yellow fever	24.9	20.9	22.8	44.7	42.4	43.5
Tetanus toxoid	22.7	21.2	21.9	44.1	39.6	41.8
Sample size	220–279	131–168	351–447	68–90	43–55	112–145

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.
[a] Question was not asked for malaria or family planning commodities.

Methods other than control cards are also used for tracking supplies. For example, as shown in Table 18 earlier in this section, our facility survey suggested that the key sources of information that CHPS zones and health centers that treat malaria use to forecast supply needs for malaria rapid diagnostic tests (RDTs) include the number of suspected malaria cases, outpatient department attendance, and number of diagnosed malaria cases. Our qualitative interviews with DHHSs suggested that other approaches,

including monitoring the availability of certain tracer drugs, using checklists, and relying on data such as patient records, DHIMS2 and vaccination rates can also be used to track supplies. The SDHT leaders we interviewed confirmed that there was substantial variation in how tracking is conducted in practice.

OTHER SUPPLY CHAIN CHALLENGES

According to many DDHSs and SDHT leaders, financing is a challenge that restricts the continual availability of supplies. Several SDHT leaders stated that stock-outs are most frequently caused by late or slow payments from the NHIS. One SDHT leader participant noted that, although the procedure for tracking supplies in his area worked well, late insurance payments have led to severe medicine shortages: "If you go to our dispensary now, it's very terrible, there are no drugs." Like the SDHT leaders, two of the five DDHS participants noted that slow financing from the NHIS was a contributing factor to supply shortages. One DDHS noted that, "We always have a backlog of procurement issues just because of unavailability of funds."

Another challenge in the supply chain identified by SDHT leaders and DDHSs was stock-outs at the regional-level medical stores, which filtered down to supply shortages at subdistrict- and community-level health facilities. One DDHS suggested that better overall management and forecasting of supplies would help decrease these regional stock-outs. If the regional medical store does not have the medicine or supplies requested, the director can authorize the purchase of the products on the open market. However, doing so can be prohibitively expensive.

Finally, the complexity of the supply chain was also identified as a challenge. Several DDHSs mentioned facing challenges finding transportation and appropriate storage for supplies and medicines. As one DDHS described:

> "Vaccines are supposed to be in all facilities…but because all compounds do not have vaccine fridges we have to keep them at certain vantage or central points for the community health officers to go and take. The biggest issue here is transportation, moving from one end to the other. Most of the time motor bikes are broken down and the nurses would have to go through a lot to get these vaccines to their various compounds and the delay certainly affects the coverage of their district."

2. Availability of Supplies and Equipment

Next, we examine the availability of key supplies and equipment in health facilities. We use information from the quantitative survey to assess the frequency of stock-outs of key supplies, as well as the availability of supplies and equipment on the day of the survey. We focus on the availability of a list of essential supplies and equipment from the 2014 CHPS Implementation Guidelines, slightly modified through input from program implementers. This list was used for both CHPS zones and health centers. We also discuss some findings from the qualitative data related to equipment maintenance and repairs.

STOCK-OUTS

We asked facilities that had control cards available for specific commodities whether they had experienced any stock-outs of these commodities in the previous two months. Results from the quantitative survey indicate that stock-outs of commodities for which facilities had control cards occurred in about 5 to 25 percent of CHPS zones and health centers in the previous two months (Table 20). The percentage of CHPS zones reporting stock-outs was typically slightly higher than that of health centers for most specific commodities. However, it is challenging to interpret these data, because they apply only to health facilities with control cards for each specific commodity, and might not reflect the stock-out situation in all facilities. Therefore, we asked all facilities more generally (rather than for specific

commodities) how often they were unable to provide prescribed medicines, vaccines, or other supplies clients needed due to a stock-out. As noted in Table 18, most CHPS and health centers reported that this situation occurred less frequently than once per month (53 percent of CHPS and 54 percent of health centers), or once per month (34 percent of CHPS and 31 percent of health centers). Only about 15 percent of each reported stock outs that affect clients to be more frequent than that. Nonetheless, stock-outs leave clients without critical commodities, reduce convenience for clients, and increase prices. As one SDHT leader reported, when there is a stock-out at the local level, "You have to ask clients to go out and buy because of non-supply."

TABLE 20. STOCK-OUTS FOR SPECIFIC COMMODITIES IN PREVIOUS TWO MONTHS, AMONG FACILITIES WITH RELEVANT CONTROL CARDS (PERCENTAGE OF FACILITIES)

Type of Commodity	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Facility experienced stock-out of the following nutrition commodities, among facilities with relevant control cards:						
Oral rehydration salts and zinc tablets	33.7	22.2	28.5	42.5	12.4	26.9
Iron and folic acid tablets, also known as IFA tablets	30.0	19.9	25.5	36.4	10.4	21.5
Vitamin A	17.0	31.9	25.8	27.9	13.2	20.6
The deworming medicine called Albendazole	33.0	11.3	22.3	24.6	10.2	16.5
Micronutrient powders	--[a]	--[a]	--[a]	--[a]	--[a]	--[a]
Facility experienced stock-out of the following immunization commodities, among facilities with relevant control cards:						
Bacillus Calmette-Guerin	23.0	51.5	37.1	23.3	21.2	22.1
Pentavalent	23.8	24.9	24.4	15.4	9.4	12.0
Pneumo	7.2	15.3	11.4	2.9	2.4	2.6
Polio	11.1	15.8	13.6	6.3	2.9	4.3
Rotarix	4.0	13.2	8.8	8.3	0.0	3.7
Measles	10.4	21.3	16.3	10.3	0.0	4.5
Yellow fever	12.0	21.6	17.1	7.2	0.0	3.2
Tetanus toxoid	7.8	17.5	12.9	5.4	2.0	3.5
Facility experienced stock-out of the following malaria commodities, among facilities with relevant control cards:						
Adult paracetamol	28.7	13.1	21.4	45.5	9.8	26.5
Malaria RDTs	23.5	26.1	24.8	34.3	16.5	24.8
Pediatric paracetamol	31.3	25.8	28.7	39.2	12.5	24.8
Artemether and lumenfantrine	24.9	26.2	25.4	31.5	17.6	24.0
Artesunate and amodiaquine	26.2	10.3	18.6	26.2	0.0	12.2

Type of Commodity	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Facility experienced stock-out of the following family planning commodities, among facilities with relevant control cards:						
Progestogen-only pill	8.6	--[a]	9.4	17.6	--[a]	29.5
An intrauterine device	--[a]	--[a]	20.7	35.1	--[a]	27.3
A hormonal implant such as Implanon, Jadelle, Sino Implant II, or Norplant	16.1	7.0	12.5	29.2	14.3	22.0
An injectable contraceptive	18.1	7.6	13.1	24.9	10.4	18.2
Condoms	11.7	13.7	12.7	21.6	13.7	18.0
Combined oral contraceptive pills	17.3	12.8	15.4	6.9	16.8	11.2
Sample size	39–181	24–83	11–264	23–78	19–49	30–127

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because some variables are conditional and because of item nonresponse.
[a] Not reported because of small sample sizes (fewer than 10).

AVAILABILITY OF SUPPLIES ON DAY OF SURVEY

The facilities surveys also assessed the availability of key malaria, family planning, nutrition, and immunization commodities at the health facilities on the day of the survey (only unexpired commodities were taken into account). For nutrition and immunization commodities, we assessed the availability at all health facilities; malaria and family planning commodities were assessed only in those facilities that had control cards for these commodities. The five key nutrition commodities that we examined were again Albendazole, iron and folic acid tablets, oral rehydration salts and zinc tablets, vitamin A, and micronutrient powders. From 74 to 85 percent of health centers had the first four nutrition commodities available, but only 5 percent had micronutrient powders available; availability for each commodity was substantially lower in CHPS zones (Table 21). For immunization commodities, 77 to 86 percent of health centers had each of the eight vaccines that we asked about on hand, and 67 percent had all of them. Again, these numbers were lower for CHPS zones, with only 34 percent reporting having all vaccines available on the day of the survey.

TABLE 21. AVAILABILITY OF ESSENTIAL SUPPLIES (PERCENTAGE OF FACILITIES)

Type of Supplies	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Among all facilities						
Facility has the following nutrition commodities available:						
The deworming medicine called Albendazole	56.6	54.7	55.6	79.5	89.9	85.0
Iron and folic acid tablets, also known as IFA tablets	46.1	34.0	39.6	66.4	83.1	75.3
Oral rehydration salts and zinc tablets	55.6	52.3	53.9	70.1	91.2	81.3

Type of Supplies	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Vitamin A	68.8	56.7	62.3	69.7	77.4	73.9
Micronutrient powders	0.9	3.5	2.3	8.7	1.2	4.7
Facility has the following immunization commodities available:						
Measles	69.3	44.6	56.0	90.9	81.3	85.8
Polio	69.9	45.5	56.7	90.1	81.3	85.4
Pneumo	70.4	45.2	56.8	92.0	79.2	85.1
Rotarix	73.6	44.7	58.0	93.4	77.8	85.0
Pentavalent	67.2	45.6	55.5	86.8	81.3	83.9
Tetanus toxoid	61.2	39.2	49.3	90.3	78.2	83.9
Yellow fever	66.9	42.4	53.7	85.9	75.8	80.6
Bacillus Calmette-Guerin	61.8	33.6	46.6	87.4	68.5	77.4
All of the above immunization commodities	45.4	24.5	34.1	76.1	59.8	67.4
Sample size	266–279	160–168	426–447	86–90	54–55	140–145
Among facilities with relevant control cards[a]						
Facility has the following malaria commodities available:						
Artesunate and amodiaquine	81.6	87.6	84.5	79.3	95.4	88.0
Artemether and lumenfantrine	81.4	85.5	83.2	85.2	87.7	86.5
Pediatric paracetamol	76.2	80.0	78.0	72.3	90.0	81.9
Malaria RDTs	85.8	93.7	89.7	76.2	85.7	81.4
Adult paracetamol	75.0	90.2	82.1	57.7	96.2	78.1
Facility has the following family planning commodities available:						
A hormonal implant such as Implanon, Jadelle, Sino Implant II, or Norplant	80.3	89.2	83.8	81.0	94.3	87.9
An injectable contraceptive	95.4	94.2	94.8	82.2	92.6	87.2
Combined oral contraceptive pills	90.1	87.3	89.0	89.5	68.4	79.8
Condoms	89.3	85.8	87.5	77.7	81.2	79.4
Progestogen-only pill	88.7	--[b]	91.5	73.8	--[b]	68.5
An intrauterine device	--[b]	--[b]	70.0	61.9	--[b]	64.8
Sample size	38–181	24–83	11–264	22–77	21–49	29–126

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data

Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because some variables are conditional and because of item nonresponse.

[a] Availability of malaria and family planning commodities is based on information from the control card; for nutrition and immunization commodities, it was asked of the respondent.

[b] Not reported because of small sample sizes (fewer than 10).

Availability of malaria and family planning commodities at health centers and CHPS zones that had control cards available for these commodities was generally high. Among health centers with control

cards, 78 to 88 percent reported that key malaria commodities were available on the day of the survey; for CHPS zones, this was 78 to 90 percent. For key family planning commodities, 65 to 88 percent of health centers and 70 to 95 percent of CHPS zones with control cards reported having these commodities available. We do not know the percentage of health facilities *without* control cards that had malaria and family planning commodities available on the day of the survey. However, nutrition and immunization commodities (which we asked about in all facilities) were much more likely to be available on the day of the survey if the facility had a control card. This suggests that the availability of malaria and family planning commodities among all facilities, including those without control cards, is likely lower than the numbers reported here.

AVAILABILITY OF ESSENTIAL EQUIPMENT

We also looked at the availability of essential equipment needed for delivery, nutrition assessment and counseling, storage, and other basic needs in health centers and CHPS zones on the day of the survey (Table 22). Most pieces of essential equipment for delivery were available and in good working order in more than half of health centers, although there was some variation by the type of equipment. In contrast, fewer than half of all CHPS zones reported having any piece of this equipment available, although there was substantial variation by the type of equipment. The findings on delivery equipment might reflect the CHPS guidelines that state that CHPS staff should generally not perform deliveries unless a qualified nurse is staffed at the CHPS compound. If CHPS are not performing routine deliveries, this is likely to affect the equipment kept in the facilities.

TABLE 22. AVAILABILITY OF ESSENTIAL EQUIPMENT (PERCENTAGE OF FACILITIES)

Type of Equipment	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Facility has the following items for childbirth/delivery available and in working order:						
Artery forceps	43.9	36.0	39.6	89.4	94.1	91.9
Sponge-holding forceps	32.6	35.9	34.4	78.1	83.4	80.9
Cord scissors	34.5	33.3	33.8	79.8	92.3	86.5
An examination couch	33.8	32.4	33.1	83.5	79.8	81.5
Cord clamps	31.4	31.9	31.6	72.6	87.7	80.7
Cheatle forceps	30.9	28.7	29.7	83.5	89.3	86.7
A mackintosh, a plastic sheet, or an alternative	35.8	23.6	29.2	70.8	72.0	71.5
Tissue plain straight 140mm forceps	25.7	24.0	24.8	66.4	62.3	64.1
A Hegar straight 180mm needle-holder	23.5	22.5	23.0	69.6	75.8	72.9
Kocher straight 140mm forceps	25.1	19.4	22.0	64.5	60.3	62.2
Cord ligatures	20.0	17.6	18.7	59.6	62.9	61.4
A vaginal speculum	n.a.	n.a.	n.a.	75.8	77.5	76.7
Resuscitation kits for resuscitating babies	18.6	16.7	17.6	70.9	74.0	72.6
A hand-held vacuum extractor, mityvac, pump, and cup with the connecting rubber tube	11.2	8.0	9.5	37.2	41.2	39.4
An examination light	7.7	10.2	9.0	44.1	49.8	47.1

Type of Equipment	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Postpartum hemorrhage pack for postpartum management	6.7	10.7	8.9	46.9	69.5	59.0
Pre-eclampsia and eclampsia pack for management of eclampsia	3.6	6.8	5.4	37.7	67.7	53.7
A urethral metal #14F catheter	n.a.	n.a.	n.a.	49.8	49.4	49.6
A large postpartum curette	n.a.	n.a.	n.a.	17.2	27.6	22.9
Facility has the following items for nutrition assessment and counselling available and in working order:						
A hanging scale or Salter weighting scale	95.6	84.6	89.7	97.3	91.3	94.1
An adult weighing scale or bathroom scale	84.5	80.6	82.4	98.1	98.6	98.4
A tape measure	72.3	67.4	69.7	97.5	92.2	94.7
A weighing pant	68.2	63.9	65.8	73.0	78.2	75.8
A baby-weighing scale or a newborn- or infant-weighing scale	46.4	51.5	49.1	86.5	93.1	90.0
A mid-upper arm circumference - measuring tape	57.7	40.5	48.3	70.0	49.8	59.4
An Integrated Management of Neonatal and Childhood Illnesses chart booklet	48.8	24.4	35.6	71.0	57.3	63.6
An infant and young child feeding register	34.8	29.6	32.0	56.1	41.1	47.9
Ready-to-use therapeutic foods, also known as Plumpy Nuts	23.1	21.4	22.2	40.9	30.1	35.0
An infantometer	13.4	8.5	10.7	29.3	34.8	32.3
Facility has the following storage equipment and medications available for use:						
A vaccine carrier	89.2	70.0	78.7	97.3	93.6	95.4
Ice packs	70.6	47.3	58.0	95.9	91.8	93.7
Sulfadoxine-pyrimethamine	51.9	43.6	47.4	81.5	87.8	84.9
Amoxicillin	43.9	25.7	34.0	76.2	75.7	75.9
A vaccine refrigerator thermometer	41.0	24.4	32.0	86.6	85.1	85.8
A cold box	36.1	27.5	31.4	68.4	80.7	75.0
A vaccine refrigerator	34.9	25.5	29.8	91.0	74.9	82.4
An up-to-date temperature-monitoring sheet	33.8	17.5	24.9	86.3	77.5	81.6
An emergency storage plan	22.4	20.5	21.4	53.3	81.0	68.0
Facility has the following basic supplies available for use:						
A reports file	91.3	84.1	87.4	98.1	97.0	97.5
Cotton wool	90.4	77.6	83.4	89.8	98.1	94.2
A blood pressure meter or apparatus	78.0	65.2	71.0	92.8	96.5	94.8
Soap	76.7	65.5	70.6	93.1	96.9	95.1
A visitors book	70.5	66.1	68.1	92.6	94.0	93.4
Disposable gloves	73.9	59.6	66.1	84.9	87.2	86.1
A kidney dish	72.5	59.4	65.4	99.2	100.0	99.6
Gauze	67.1	58.9	62.7	87.6	91.8	89.8

Type of Equipment	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
A stethoscope	69.0	54.0	60.9	94.5	93.2	93.8
A Veronica bucket	65.3	55.7	60.1	91.5	93.9	92.7
A gallipot	63.7	54.8	58.9	96.1	100.0	98.2
An instrument tray with a cover	49.8	46.4	47.9	81.8	86.4	84.3
Bleach	50.7	40.2	45.0	80.7	96.7	89.2
Polythene bags for waste	48.4	37.1	42.2	52.2	76.7	65.3
Sterilized gloves	39.7	26.3	32.4	77.9	76.2	77.0
Sutures	36.3	21.9	28.5	72.9	93.0	83.6
A regular gas or power supply	26.9	21.9	24.2	42.9	55.4	49.6
Running water	23.0	23.4	23.2	64.9	64.6	64.8
Sterilization drums	27.0	15.2	20.6	71.8	80.8	76.6
Boilers	12.9	9.1	10.8	42.7	61.1	52.5
A catheter tray with a cover	9.7	10.9	10.3	33.9	51.1	43.1
A hemoglobin test kit	12.2	8.2	10.0	37.6	47.8	43.0
A water hydrant close by	9.7	3.4	6.3	21.2	21.3	21.2
An autoclave	5.5	3.7	4.5	33.9	44.9	39.8
A fire extinguisher	2.3	1.2	1.7	21.2	28.8	25.2
Sample size	258–279	164–171	422–450	84-90	52-55	138-145

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.
n.a. = Not applicable (question was not asked for CHPS zones).

Some of the basic equipment required for nutrition assessment and counselling is available in most health centers. Of 10 items asked about, 4 were found in 90 percent or more of health centers. However, other essential nutrition-related equipment is not as commonly available; for example, only 32 percent of health centers had an infantometer, and 35 percent had ready-to-use therapeutic foods. A lower percentage of CHPS zones reported having each piece of nutrition equipment available than health centers.

Finally, although both health centers and CHPS zones are supposed to have vaccines available, not all facilities had the storage conditions required for these vaccines. For example, 82 percent of health centers and 30 percent of CHPS zones had a vaccine refrigerator, and 86 percent of health centers and 32 percent of CHPS zones had a vaccine refrigerator thermometer. Vaccine carriers were more common: 95 percent of health centers and 79 percent of CHPS zones reported having these available. Other equipment necessary for storage was typically found in most health centers, but many items such as cold boxes were less common in CHPS zones.

EQUIPMENT MAINTENANCE AND REPAIRS

Even when equipment is available, it is important to have a system for maintenance and repairs to keep it in good working order. The DDHSs interviewed reported different systems for equipment maintenance and repairs. For example, one DDHS reported that there is a dedicated equipment officer in the district who conducts quarterly reviews of equipment at the facilities and reports any malfunctions or required replacements. However, another DDHS noted that, for his region, only one regional biomedical engineer

is responsible for repairing broken equipment; because only one person is responsible for these repairs, they are not always completed in a timely fashion. DDHSs acknowledged some challenges: as one participant said, "Our culture of maintenance is not the best. We have lots of room for improvement." Among the SDHT leaders interviewed, perceptions of the effectiveness of the system for requesting repairs or new equipment in the event of breakage or malfunction varied. Most said the system worked well, but still suggested that there was room for further improvement. One SDHT leader highlighted the constraint that some equipment repairs and replacements needed to be approved in their budget and, if they were not included, that could further delay the process.

3. Availability of Communication Technology

The availability of communication technology could contribute to health facilities operating more effectively and efficiently—for example, by enhancing record-keeping, communication, and access to online health information. The facility surveys assessed the availability of cell phones, computers, and tablets in CHPS zones and health centers. Most facilities did not have access to cell phones: only 24 percent of health centers and 17 percent of CHPS zones reported having a working cell phone available, and even fewer had phones with more advanced features such as cameras, multimedia service, or Internet access, or had a smart phone (Table 23). Computers or tablets were much more common in health centers than in CHPS zones: 74 percent of health centers reported having access to one, compared with only 7 percent of CHPS zones. About 54 percent of health centers reported that they had access to a computer or tablet with Internet access, but only 2 percent of CHPS zones did. The limited availability of communication technology could in part reflect the limited cellphone and internet connectivity available in some of the rural areas in which these facilities are located.

TABLE 23. AVAILABILITY OF COMMUNICATION TECHNOLOGY (PERCENTAGE OF FACILITIES)

Technology Status	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Facility has working cell phone	13.3	20.4	17.1	20.7	27.2	24.2
Facility has working cell phone with short message service (SMS)	12.8	19.6	16.5	18.5	27.2	23.2
Facility has working cell phone with multimedia service	7.2	7.5	7.4	12.4	16.7	14.7
Facility has working cell phone with Internet access	6.2	7.8	7.1	11.0	12.9	12.0
Facility has working cell phone with camera	9.1	9.8	9.5	13.9	18.1	16.2
Facility has a working smart phone	6.2	6.7	6.5	11.2	9.0	10.0
Facility has a working computer or tablet	8.5	6.5	7.4	67.4	79.6	73.9
Facility has a working computer or tablet with Internet access	2.6	2.2	2.4	51.1	56.9	54.2
Sample size	279	170–171	449–450	87–90	55	142–145

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.

F. Client Satisfaction

A key measure of the quality of care in facilities is the level of client satisfaction. We asked clients, as well as community leaders and District Assembly members, about their own satisfaction with the care and services of health centers and CHPS zones in their area and their perceptions of others' satisfaction. This section summarizes their views of CHPS zones, and then of health centers.

1. Perceptions of Quality at CHPS Zones

Overall, the clients interviewed had a very positive opinion of the CHPS zones, especially in terms of the dedication of the staff and promptness of the treatment they received. For instance, as one client said:

> "What I like about them is that the moment you arrive at their premises, they stop whatever they're doing and attend to you … they try to find out whatever ailment you brought, take your temperature and the rest is heartwarming. By the time you leave the place, you feel okay."

Many clients also noted that the health care staff were willing to make themselves available to the community 24 hours a day. As one client noted:

> "What I like most about them [the staff] is that they are always at your service even if they are sleeping. They avail themselves always and anytime. I remember an incident where a woman was ill at 12:30 a.m. and they took care of her until the next morning."

Most clients also indicated that they felt that the health care staff really listened to and understood their concerns.

The community leaders interviewed also spoke very highly of the services provided by the CHPS zones. The most frequently cited positive attribute of CHPS zones by community leaders was the accessibility of health care to the community. As one community leader explained,

> "I really like their presence here because when we initially didn't have a clinic we had to cross a river with our patients before they could receive health care, but since they came they have made things easy for us."

Most community leaders also reported that the staff in their CHPS zone make themselves available to the community as frequently as possible and treated everyone with respect and kindness.

Some clients and community leaders noted that, despite their overall satisfaction with the CHPS zone, certain aspects could be improved upon. Both sets of stakeholders expressed the need for a more reliable supply of medications and additional health care workers. Clients from CHPS zones without compounds often stressed that their accessibility to quality care was still limited because of the distance to the nearest health facility and, as mentioned earlier, some clients mentioned that they would like home and community visits by CHPS staff to be conducted more frequently. Clients and community leaders from zones with compounds expressed the hope that their facilities would expand and receive additional equipment. Several community leaders expressed the desire to provide nurses and other health care workers with housing accommodations within the compound to ensure that someone is always available to provide medical care to community members if needed. Expanding the compound's delivery services and building a laboratory for on-site blood tests were also frequent suggestions for improvement. Similarly, District Assembly members expressed a need for more resources, including a reliable supply of medications and more advanced equipment to improve health care services.

2. Perceptions of Quality at Health Care Centers

About half of the clients interviewed had contact with a health center within the previous 12 months. These clients were asked about their perceptions of various aspects of the quality of care delivered by health centers. Most of the clients interviewed were satisfied with the wait time at the health center and with the amount of time the health providers spent with them during their visits. However, some complained that waiting for the results from lab tests could take an entire day and many reported being dissatisfied with the wait times at the dispensary. Most clients provided at least some positive feedback about their interactions with health center staff. However, overall satisfaction regarding these interactions was variable: some clients offered high praise for the nurses, but others felt they were disrespectful and inattentive at times. Some clients also reported being dissatisfied with the quality of the facility itself and the availability of medicines and other supplies. For example, one woman reported that although she was satisfied with the treatment and attention she received from the doctor, the health center itself was run out of a rented apartment and was short of both staff and medical supplies.

IV. CULTURE OF QUALITY ASSURANCE AND QUALITY IMPROVEMENT

To help improve the quality of care at all service delivery points, the Ministry of Health (MOH) and the Ghana Health Service (GHS) have worked with facility-based health staff to provide them with the essential knowledge and skills to plan and implement QA in their facilities, especially at the subdistrict-level health centers (Healthcare Quality Assurance Manual for Subdistricts July 2004). QA is a set of activities that seeks to improve quality of care by setting standards and monitoring to see whether these standards are being met; quality improvement (QI) involves addressing gaps identified by QA. One particularly important dimension of effective QA/QI at the facility level is the collection and use of high quality health data, a particular focus of both the Systems and MalariCare projects, which can be used both to identify gaps (QA) and assess progress toward closing them.

In this chapter, we examine the extent to which a culture of QA/QI exists in CHPS zones and health centers in Ghana, with a particular focus on the collection and use of data. We begin by describing the existence and implementation of QA/QI activities at facilities, broadly defined. Then we examine the health data collected by these facilities, including how these data are collected, how data quality is assured, and the extent to which these data are used in practice.

KEY FINDINGS FROM THIS CHAPTER

- About half of health centers and CHPS zones have a QA/QI plan in place, although these plans are not always active.
- Facilities—even those without formal plans—conduct a range of QA and QI activities, including those related to infrastructure, supplies, staff, client satisfaction and community outreach.
- Data collection and validation is occurring in most facilities; although only about 60 to 70 percent of facilities have formal data validation teams.
- Locally collected data are used by facilities for a variety of planning and operating purposes, although they typically do not monitor specific health indicators over time or display current data in facilities.

A. Existence and Implementation of QA and QI Programs at Facilities

Health centers are expected to have a team of staff focused on QA/QI activities; these teams meet on a regular basis to discuss quality improvements that could be made and how current QI efforts are working.[25] In contrast, CHPS zones are not expected to have QA/QI teams, because they are typically too small to support them (CHPS zones are typically part of the subdistrict QA/QI team). According to the facility survey, about 43 percent of health centers reported having active QA/QI teams (Table 24). About 35 percent of health centers had a QA/QI team that met at least once in the three months before the survey, suggesting that most active QA/QI teams were meeting regularly.

In addition to having a QA/QI team, it is important that both types of facilities have QA/QI plans in place and are taking steps to act on those plans. Nearly half of health centers and CHPS zones reported that they had a QA/QI plan in place. About 36 percent of health centers and 38 percent of CHPS zones had a QA/QI plan in place and had taken some active steps to implement elements of the plan within the two months before the survey that our interviewers could observe (for example, seeing new equipment that was purchased or observing progress on construction). Only about one-quarter of the health centers had an *active* QA/QI plan, defined as having both a QA/QI plan in place and a QA/QI team that met at least once in the three months before the survey interview. However, the findings described here suggest that at least some QA and QI activities occur in facilities that do not meet both of these criteria.

25 Although QA teams may be more common in hospitals than health centers, we did ask about QI/QA teams at health centers in the survey.

TABLE 24. EXISTENCE OF QA/QI TEAMS AND PLANS (PERCENTAGE OF FACILITIES)

Status	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Facility has an active QA/QI team	n.a.	n.a.	n.a.	42.4	43.1	42.8
Facility has an active QA/QI team that met at least once in the previous three months	n.a.	n.a.	n.a.	29.4	39.1	34.6
Facility has a QA/QI plan in place:						
Plan exists and seen	30.5	37.3	34.1	24.3	28.4	26.5
Plan exists, but not seen	17.2	13.1	15.0	22.2	24.0	23.2
No plan	52.4	49.6	50.9	53.5	47.6	50.3
Facility has a QA/QI plan with interviewer-verified steps to implement it in the previous two months	34.6	39.9	37.5	30.0	40.2	35.6
Facility has an active QA/QI plan[a]	n.a.	n.a.	n.a.	21.9	31.7	27.1
Facility has nutrition QI plan in place:						
Separate nutrition QI plan, seen	5.9	5.6	5.7	3.8	9.5	6.9
Separate nutrition QI plan, not seen	5.7	2.7	4.0	5.3	5.2	5.3
QI plan has nutrition elements, seen	5.6	11.5	8.8	9.6	7.0	8.2
QI plan has nutrition elements, not seen	6.9	6.4	6.6	8.4	4.1	6.1
No nutrition QI plan or elements	76.0	73.8	74.8	72.9	74.1	73.6
Facility has a nutrition QI plan or nutritional elements of QI plan with interviewer-verified steps taken to implement it in the previous two months	17.8	22.5	20.3	13.4	21.8	18.0
Sample size	272–276	163–169	435–445	85–89	54–55	139–144

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.
[a] Defined as having an active QA/QI team that met at least once in the previous three months and a QA/QI action plan in place.
n.a. = not applicable (question was not asked for CHPS zones).

All SDHT leaders whom we interviewed noted that their work plans included steps related to QA/QI, even if they did not have a specific QA/QI team or plan in place. The SDHT leaders described some specific examples of QA/QI efforts that had been implemented within the past year, including the following:

- Monitoring using client surveys to identify areas for improvement or assess the extent of improvement over time (QA)
- Physical infrastructure improvements—such as building a labor ward, a conference room, a washroom, and a "placenta base" where placentas can be disposed of properly and hygienically—as well as purchasing a generator (QI)
- Steps to improve the overall cleanliness in facilities and setting up cleaning schedules for staff (QI)

- Ensuring reliable stocks of medications and other supplies, including Veronica buckets in strategic areas of the facility (QI)
- Community education and outreach, which involved traveling into communities, schools, and homes to talk with people about their needs and provide health-related education (QI)
- Providing staff training, by sending staff to workshops and refresher trainings to keep them up to date on current best practices (QI)

B. Data Collection and Tracking

Data collection and tracking is important for QA/QI purposes, as well as to inform daily decisions regarding priorities, monitor progress on goals, and plan and budget for local needs. In addition, GHS's updated District Health Information Management System (DHIMS2), which collects and provides routine health data, is populated through data aggregated from local facilities, including CHPS zones and health centers. This health information is analyzed and used for management and policy decisions at each level of the health hierarchy, offering a comprehensive look at health needs and resources. For the DHIMS2 to be useful, health information—including administrative, demographic, and clinical data—must be routinely and accurately transmitted and aggregated upward through the health system from CHPS zones to the subdistrict, district, regional, and national levels. Collecting data at the local level is therefore essential for both local health care and tracking the health system's performance in the country as a whole (Monitoring and Evaluation Plan GHS 2010–2013).

In qualitative interviews with SDHT leaders, many noted the need to collect and track data from health facilities on a regular basis, both to feed into the DHIMS2 and to enable facilities to track local issues such as current stocks of commodities, the incidence of diseases, vaccinations, and referrals. The most common types of data mentioned were related to malaria and artermisinin-based combination therapy (ACT), as well as maternal health, such as data on deliveries, abortions, and family planning services. The SDHT leaders also noted that data from health facilities feed into a variety of reports used to track prior performance and to inform potential areas for improvement. One SDHT leader mentioned the community-based surveillance report as an example, saying he uses it to determine "the number of diseases … happening in that community. So when we see that … then we also draw our action plan, we follow up to the community to look at what is happening."

C. Data Quality

For data to be useful, it is important for health facilities to collect and report complete, accurate, and timely data. To that end, nearly all SDHT leaders indicated that the health facilities in their subdistricts follow data collection guidelines for DHIMS2. SDHT leaders described the data collection and aggregation process as starting with data collected in the CHPS zones and health centers. At these levels, most data are kept on paper, and in most cases data are aggregated in hard-copy reports. Many SDHT leaders noted the need for local facilities to carefully check their data before submitting them to the DHIMS2 each month to catch errors or discrepancies. Specifically, the data are expected to be validated by a data validation team at the facility before they are sent monthly to the subdistrict or district level. Our survey data suggest that about 58 percent of CHPS zones and 73 percent of health centers had active data validation teams to validate data before sending it to the subdistrict or district level for entry into DHIMS2 (Table 25). Despite the fact that not all health facilities have active data validation teams, most SDHT leaders interviewed reported that they felt the overall quality of the data collected at CHPS zones and health centers was good.

TABLE 25. DATA VALIDATION (PERCENTAGE OF FACILITIES)

Status	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Facility has an active data validation team	62.9	54.4	58.3	77.9	67.9	72.5
Sample size	278	171	449	88	54	142

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions.

Once data are validated at the local facilities and are sent to the subdistrict or district level, they are checked for errors and aggregated into the DHIMS2, typically using a computer or tablet. SDHT leaders emphasized the importance of verifying and checking the data as they are entered into the DHIMS2, to ensure that no data entry errors are introduced in the process.

The SDHT leaders mentioned two main challenges in the process of trying to collect high quality data. The challenge cited most often was technology, which included lack of access to computers and lack of reliable Internet connectivity. Such technology would enable facilities at various levels to collect and keep their data on computers and send the data to the subdistrict or district level via the Internet, which would speed the process both for their work and in the time to physically get their reports to the health center each month. It also would reduce time and errors in data entry at the subdistrict or district level. One SDHT leader noted that staff would like to be able to use mobile phones to collect and submit data in the future (as is already being done in some districts in Ghana), because mobile phones are portable and phone service is often better than Internet service.

A handful of SDHT leaders noted another challenge: transportation issues, which can make it difficult to keep to data collection schedules. For example, one SDHT leader noted that when vehicles break down, it delays getting needed information from hard-to-reach CHPS zones. If access to reliable transportation and technology could be improved, this might enable facilities to better reach their data collection goals.

Despite these challenges, SDHT leaders reported that finding and correcting mistakes in data is an area in which QI is already occurring. Reflecting a culture of quality, more than half of the SDHT leaders noted that data collection staff in their facilities were implementing systematic checks of data for accuracy and are eager to learn from past mistakes to ensure that accuracy improves with each collection cycle. One SDHT leader suggested that more training would help avoid some of the data entry errors. By devoting more resources into up-front training about guidelines and procedures, the SDHT leader noted that less data cleaning would be needed at a later stage.

D. Use of Data

Our qualitative interviews suggested that data are being used for decision-making at several levels. At the district level, the District Assembly is responsible for making decisions to provide support, including financial and logistical support, to the health system. District Assembly members noted that data inform the decision-making process at this level. Specifically, data are collected from communities and used to devise medium-term development plans, which are outlines of goals for each four-year cycle. Within each cycle, action plans address issues on a more frequent basis. These action plans are typically informed by population data and maps that show relationships between communities and health services, as well as data on the number of clients served by specific health facilities. One District Assembly member explained,

> "… for instance, if we are to site [set up] a health project in a community, we consider the number of people that are in the community and the number of people that will benefit from it so that we ensure that we are not throwing money away or the facility will be underutilized."

The DDHSs interviewed also shared information on their use of data for decision-making. Most DDHSs agreed that the DHIMS2 data are important for tracking performance of CHPS zones and health centers. **DDHSs review DHIMS2 data quarterly with CHPS and health center staff to assess performance as shown by the data.** However, one DDHS admitted that "we still have a lot of room for improvement in terms of utilization of the DHIMS."

All SDHT leaders agreed that having facility-level data is useful, and that the process of collecting and using these data has brought many positive changes for facilities. SDHT leaders who elaborated agreed that the facility-level data enable them to assess whether their health facility offers quality services, provides feedback on the success of QI changes, and guides their decisions on areas of focus for further improvements. Some specific examples of the use of facility-level data cited by SDHT leaders included the following:

- Comparing indicators from previous months to the most recent month to assess performance; for example, one SDHT leader mentioned that priority indicators such as the number of antenatal clients are displayed on a board to visually display performance over time

- Rapidly identifying disease outbreaks in a district based on cases reported by facilities in the district, enabling staff to address these outbreaks quickly

- Using annual data to identify seasonal patterns in diseases to target disease prevention efforts effectively, as in the case of malaria:

  > From the reports, you will know that malaria is common in June, July, and August. In December, January, and February malaria is not that common…. If we are informed we will find counter measures to control pending ailments. For example, if we know that by August, September, and October we'll record the largest number of malaria cases, we make sure we purchase more drugs or other treatments for malaria.

- Using clients' visitation data to track the number of clients visiting the facility daily, to identify unusual fluctuations and enable SDHT leaders to follow up with clients to learn more about why these changes are taking place

- Closely tracking immunizations and vaccine deliveries to avoid having clients—especially children—drop out of a required vaccination or immunization cycle; for example, one SDHT leader noted that the facility sets a target number of clients to ensure the complete delivery of all vaccination cycles

Our survey data support SDHT leaders' reports that facility-level data are useful. For example, more than half of CHPS zones had used data they collected to plan community outreach, improve supply chain logistics, allocate resources, and develop action plans within the 12 months before the survey (Table 26). Health centers used data CHPS zones collected to an even greater extent. However, DHIMS2 data were

less frequently used, with only 10 percent of CHPS zones and 36 percent of health centers using these data for planning or decision-making in the two months before the survey.[26]

TABLE 26. DATA USE (PERCENTAGE OF FACILITIES)

Type of Use	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Facility used data generated by the CHPS zone/s for the following specific purposes in the previous 12 months:[a]						
Plan community outreach	65.7	59.4	62.3	77.1	70.9	73.8
Help allocate resources	62.2	58.5	60.2	79.8	76.4	78.0
Improve supply chain and logistics	56.8	49.9	53.0	76.7	67.4	71.7
Help develop action plans	52.2	53.5	52.9	67.0	64.0	65.4
Identify training needs	43.3	47.6	45.6	68.2	63.7	65.8
Plan or decide anything else	18.1	14.9	16.3	27.0	17.8	22.0
Facility used DHIMS2 data for planning or decision-making in previous two months	10.5	9.1	9.7	38.9	33.5	36.0
Sample size	261–280	167–172	428–452	83–88	52–55	135–142

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.

[a] Because multiple responses were possible, percentages sum to more than 100.

Despite the usefulness of data and the importance of comparing indicators over time to assess performance reported by SDHT leaders, our survey data show very few CHPS zones and health centers displayed locally collected data or used such data in a performance monitoring plan. Fewer than 50 percent of CHPS zones had a chart or table displayed in their facilities with data on the Expanded Program on Immunizations; only 15 percent had a chart or table displayed on maternal, child, or reproductive health; and only 15 percent had a chart or table displayed on any other topic (Table 27). Overall, fewer than 25 percent of CHPS zones had charts or tables displayed that contained data from the past month. Displays of locally collected data were more prevalent in health centers; still, only 40 percent of health centers displayed charts or tables with data from the past month. In addition, although data are expected to be used at the local level to inform performance monitoring, 72 percent of CHPS zones and 57 percent of health centers did not have a data monitoring plan. Further, only 16 percent of CHPS zones and 30 percent of health centers had charts to monitor progress on indicators (including charts that were reported but not seen by the survey team).

[26] This could be because of problems accessing DHIMS2 (for example, because of connectivity issues), or simply because it is easier for facilities to use their own data directly.

TABLE 27. DATA COLLECTION AND TRACKING (PERCENTAGE OF FACILITIES)

Status	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Facility has the following charts or tables displayed:[a]						
Maternal and child health or reproductive and child health	15.3	14.8	15.0	39.8	34.4	37.0
Expanded Program on Immunization	47.8	48.3	48.0	79.6	80.2	79.9
Other topics	20.8	10.5	15.4	14.3	12.7	13.5
Facility has at least one chart, graph, or table with data from past month	21.5	25.4	23.6	41.0	39.5	40.2
Facility has a data monitoring plan:						
Plan exists and seen	15.7	17.7	16.8	22.3	20.6	21.4
Plan exists, but not seen	13.0	10.4	11.6	22.6	21.0	21.7
No plan	71.3	71.9	71.6	55.1	58.3	56.8
Facility has current indicator monitoring charts:						
Charts exist and seen	12.5	10.9	11.6	17.9	20.5	19.3
Charts exist, but not seen	6.5	5.1	5.7	13.3	9.9	11.5
No charts	81.0	84.0	82.6	68.8	69.6	69.2
Sample size	277–278	157–169	434–447	82–88	54–55	136–142

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data

Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because of item nonresponse.

[a] Because multiple responses were possible, percentages sum to more than 100.

V. COMMUNITY AND GOVERNMENTAL SUPPORT FOR CHPS

The primary health care system, especially at the community level, depends on community and volunteer support, governmental backing, and linkages that ensure communities and the government know and recognize the needs of CHPS zones. In this chapter, we examine the nature and scope of community- and district-level government support for CHPS zones. We begin by describing one of the main community-to-health-care linkages—the community health committees (CHCs)—and examining community engagement in and support of CHPS zones. We then examine the nature of support for CHPS zones from District Assemblies, and collaboration between USAID and district entities.

KEY FINDINGS FROM THIS CHAPTER

- CHCs generally play the role envisioned by government policy in providing support to CHPS zones, but the roles and responsibilities they take on vary between CHPS zones, and almost a third of CHPS zones do not have one.
- CHCs face several challenges: the volunteer nature of the position makes it difficult to staff them, many CHCs are not viewed as effective by CHPS zones, and engagement of CHCs with community members is limited.
- Community leaders and CHCs are involved with community health action plans, but the community in general is unaware of their specific health rights and is not engaged in strategic efforts to help its health system.
- District Assembly members are informed and interested in supporting CHPS zones and health centers in their districts. However, the lack of funds is an important challenge to providing support.
- District Directors of Health Services (DDHSs) and District Assembly members have strong working relationships with USAID and look forward to further improving them.

A. Community to Health Sector Linkages

The CHPS system decentralizes Ghana's health system by locating more resources directly into communities and involving communities in important health decisions. This aligns with the local government act of 1993, which emphasizes the important role of local communities in community decision-making. CHCs have been set up to play a key role in promoting the linkages between the communities and the health sector. Next, we describe the role that CHCs play, followed by community engagement with CHPS zones and the extent of awareness of patients' rights in communities.

1. Existence and function of CHCs

CHCs, largely composed of volunteers selected from the communities within each CHPS zone, are designed to form a link between the formal health sector and communities. Their main role is to oversee the health system at the community level and supervise community health volunteers (CHVs), who are another part of the health sector to community link (CHPS Revised Operational Policy 2013). More specifically, according to the CHPS Operational Policy, CHCs are expected to perform six main functions: (1) carry out community advocacy and diplomacy for CHPS, (2) develop community health action plans and mobilize the community for health action, (3) collaborate with the community health officer (CHO) and support CHPS service delivery, (4) monitor and support CHVs in their work, (5) mobilize resources for CHPS compound and service delivery, and (6) organize community health durbars (meetings) and provide feedback to communities on health issues together with the CHO.

Our qualitative interviews with CHC members and CHPS zone clients in the five focal regions suggest that the formation and operation of CHCs varies greatly by community. The formation of CHCs can be challenging—about 30 percent of the communities in which we conducted qualitative interviews did not have a CHC. This is consistent with the findings from our facility surveys, which indicate that about one-

third of CHPS zones do not have CHCs (Table 28). Most of the CHC members whom we interviewed as part of the qualitative data collection effort had not been elected through a formal process. Rather, the majority indicated that they had either volunteered for the position or were selected by community leaders. Many CHC members noted that it was difficult to find people in the community willing to take a position on the CHC because it is uncompensated. Most of the CHC members reported that the formation and operation of their CHCs, as well as the roles and responsibilities of their members, developed over time to fit the needs and resources of their communities. Some CHC members reported having formal orientations and trainings to prepare them for their duties, whereas others had not received such training and began working in whatever capacity they could.

TABLE 28. COMMUNITY SUPPORT FOR CHPS (PERCENTAGE OF FACILITIES)

Status	CHPS		
	Focal regions	Nonfocal regions	Total
CHPS has CHC	54.3	69.4	62.5
CHC played a leading role in the previous 12 months in developing a community health action plan, among CHPSs with a CHC	49.6	48.3	48.8
Rating of CHC's effectiveness at mobilizing resources for the CHPS to provide services to the community, among CHPSs with a CHC			
Excellent	4.7	5.4	5.1
Very good	7.3	8.6	8.1
Good	34.5	28.7	31.0
Fair	25.6	23.8	24.5
Poor	26.8	30.9	29.3
CHC does not do this at all	1.1	2.6	2.0
Rating of CHC's effectiveness at sensitizing and mobilizing the community for health action, among CHPSs with a CHC			
Excellent	2.8	3.2	3.0
Very good	12.6	14.2	13.5
Good	39.3	43.4	41.8
Fair	24.3	19.1	21.1
Poor	18.0	17.5	17.7
CHC does not do this at all	3.0	2.6	2.8
Sample size	154–272	115–166	269–438

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because some variables are conditional and because of item nonresponse.

The roles and responsibilities described by the CHC members we interviewed generally aligned with the goal set forth by the Ghana Health Service (GHS) for the CHCs—to assist health workers in caring for the community. Some of the main roles and responsibilities noted by CHC members included acting as a liaison between community members and health workers, performing health care tasks such as assisting with weighing children and administering vaccines, and educating communities to help prevent the spread of disease. Many CHC members mentioned they were responsible for the essential task of sharing information, including disseminating information about disease outbreaks, upcoming weighings, proper

hygiene and nutrition, and other critical health topics. Several CHC members also indicated that they took on tasks including keeping the area around the health facility clean and safe. For instance, a few reported weeding the area surrounding the facility and clearing brush to help prevent mosquito infestation. One CHC member reported that he provided security for the CHPS compound at night. The variety of tasks that CHCs perform illustrates the roles and the responsibilities of the position developing to meet the needs of the community and perhaps being shaped by the skills and interests of CHC members, within the broad parameters of the work they are supposed to perform.

Although nearly all CHC members thought they had made strides toward improving health in their communities, most noted there was much room for improvement. As mentioned, several CHCs reported having difficulty recruiting members because the position is uncompensated. In addition, current CHC members stated that they were not able to devote themselves fully to their CHC responsibilities because they had additional responsibilities, including providing for their families. CHC members also mentioned the need for increased logistical and transportation support to more effectively carry out their duties. Although most CHC members whom we interviewed expressed passion for their position and communities, several noted that clearer training guidelines and a system for monitoring CHC activities would make them more effective. None of the CHC members interviewed noted that there was a system in place for monitoring their performance. One CHC member suggested, "We should have a document where we sign after discharging our responsibilities and a supervisor to also sign to attest that we've done the work."

Our facility survey of CHPS zones supports the view that there is room for improvement in the operation of CHCs (Table 28). Fewer than half of CHPS facility respondents who have a CHC reported that their CHC's effectiveness at mobilizing resources for the CHPS to provide services to the community was good, very good, or excellent (the other possible response options were fair, poor, or not at all). In terms of their CHCs' effectiveness at sensitizing and mobilizing the community for health action, only 60 percent of CHPS zones with a CHC reported that their CHC was good, very good, or excellent (with very few reporting very good or excellent).

Most of the clients we interviewed were unaware of the existence of the CHCs, suggesting gaps in the community advocacy activities of these groups and engagement of the community. Of those who were aware of the CHCs, most were unsure of the roles and responsibilities of this body—suggesting that the CHCs might not be operating effectively. However, a few clients did correctly note that CHCs were supposed to work with health care workers in the community to address health needs and inform people about their health rights.

2. Community Engagement with CHPS Zones

For CHPS zones to be successful, they require the support and engagement of the communities they serve. All CHC members who participated in qualitative interviews were asked about the relationship between community members and the CHPS zone. When asked about the impact community members have on their CHPS zone, most mentioned the practical assistance community members provide to the nurses and staff providing the health services, as well as to facility maintenance. For example, many CHC members said community members contributed to the CHPS compound by providing the health workers with food from their farms. Several CHC members mentioned that the community assisted the CHPS compound by helping to weed and keep the surrounding area clean. And one CHC member said that by community members helping clinic workers find living accommodations and assisting them with tasks such a grocery shopping, the health care workers can dedicate themselves more fully to treating the sick. However, no CHC member we interviewed mentioned that community members felt empowered to create change at a more strategic level.

According to the CHPS Operational Policy, one way in which community leaders, CHC members, and community members can support CHPS and health centers is through developing and enacting community health action plans. In particular, the CHCs can play a key role in leading the development of a community's health action plan. According to the facility survey, among the CHPS zones with a CHC, about half of the CHCs played a leading role in the previous 12 months in developing such a plan (Table 28). About three-quarters of the community leaders interviewed as part of the qualitative work mentioned having a formal community health action plan, which generally was created through collaboration among community members and community leaders, such as elders and church leaders. One community leader explained how he brought representatives of different parts of the community to the discussions related to the community health action plan, including community members who spoke on behalf of youth, women, and elders.

The process for designing the action plans typically tends to be informal. For instance, community leaders reported gathering information from the community or from their experiences and discussed both the weaknesses in their CHPS zones (including lack of services, staff, infrastructure, or medical stocks) and possible solutions. The use of data to inform the plans was infrequently mentioned, with a few exceptions. One community leader noted that nurses brought in specific data about the quantities of drugs that should be available, and two others noted the use of disease-prevalence figures and population counts in their action plans. Some community leaders noted how data were used *after* development of the community health action plans to gauge the success of the plans. One community leader said that their local action plan included annual targets for measures such as immunization, so data were used to determine if annual targets were met. Similarly, two members noted that data were used to request assistance from the district health services or other government bodies, specifically with regard to disease outbreaks.

Community leaders and CHC members noted that the community health action plans covered a range of topics, which varied by community. Typical topics mentioned included pregnancy and deliveries (for example, ensuring resources to handle premature births or to provide deliveries in general); family planning education; child health (for example, offering child weighings); maternal health (for example, new mother education on feeding practices); disease prevention and management (especially educating community members about prevention measures); sanitation and hygiene (for example, maintaining clean environments and hand washing); staff issues (for example, providing housing for medical staff or ensuring a sufficient number of staff); medicine stock-outs; and availability of needed infrastructure. One community leader noted that a lack of technical knowledge might hamper the coverage of certain health topics, such as nutrition, in the plans:

> "As I said earlier, the whole thing [the community health action plan] was done by ourselves [church and community leaders] and because we didn't have any expert to help, we used our own discretion. We haven't yet included that nutritional part to it because we don't have any experience in that respect and we also don't have any teachings in that area. I think that bit by bit we'll include all those."

Even if a community does not have a community health action plan, their broader community action plans can also have goals that align with the goals of CHPS zones. The community action plan project most commonly referenced by community leaders in this regard was the building of health facilities to increase the accessibility of care.

3. Awareness of Patients' Rights

To be able to support and affect community-level health services, it is important for community members to understand their rights and responsibilities as health clients. The GHS has developed a patients' charter that outlines the rights of all health clients in the country. These include the right to accessible, equitable, and comprehensive care; the right of the patient to determine his or her own health care plan; and the right to freedom from discrimination (Ghana Health Services: The Patient's Charter 2015). In qualitative interviews, clients and community leaders were both asked what rights they believed patients had. Among clients, the vast majority interviewed stated that everyone in the community has the right to seek health care provided by the CHPS zones, which aligns with the right to accessible, equitable, and comprehensive care. However, most respondents were not aware of the more specific health rights developed in the charter. With prompting, many recognized that having accessible, equitable, and comprehensive health care is a right for all Ghanaians, and most clients also felt that it was their right to receive health care free from discrimination. As one individual described,

> "I think we are all one people, so if a patient comes for treatment he or she should be treated the same whether the person is from the Northern part or from Ningo. We all have one blood."

Most community leaders indicated they were aware that community members had health rights, but were unable to give examples unprompted. When prompted, most agreed that community members enjoyed the right to accessible, equitable, and comprehensive health care free from discrimination based on tribe, gender, or disability status. More than half of the community leaders interviewed said that the members of their communities were aware of their health care rights, specifically the right of anyone to seek treatment. However, some community leaders added that community members' right to accessible care was challenged by the lack of resources in the CHPS zones.

CHC members were also asked about health care rights. Almost all CHC members mentioned that everyone has the right to seek treatment in the CHPS zone. None of the CHC members spontaneously stated that the right to seek treatment includes the protection against discrimination, but when prompted, members did acknowledge that patients have this right. About half of the CHCs reported that they supported the health rights of the community primarily through education. One of the CHC members who mentioned advocating for patients' rights through education said they hoped if people knew what services are available they would seek health care sooner and not wait until their condition has deteriorated.

B. District-Level Support

In addition to engagement and ownership from the communities, support from the top down is an important element to promote strong health systems at the community level. Next, we summarize the findings from district-level stakeholders, in terms of the support they provide related to community health and their engagement and collaboration with USAID.

1. Support from District Assemblies

District Assemblies are expected to support CHPS zones, health centers, and the health system as a whole within their districts. District Assembly members interviewed noted they consider CHPS zones a top priority and try to support them to the best of their ability. All of the District Assembly members interviewed indicated that their District Assembly incorporates community action plans and community health action plans into their mid-term and/or annual development plans. The process for this varies by district, but typically involves asking communities to rank their health projects in order of importance so that the District Assembly can determine the top priority initiatives to include in their development plan

and budget. Most District Assembly members mentioned that their assembly plays a role in constructing new health facilities, finding accommodations for health workers, assisting with utilities payments, and ensuring that health facilities have the equipment they need. The District Assembly also supports a variety of health activities, such as providing education on the spread of infectious disease and supporting immunization campaigns. Almost all the District Assembly members we interviewed noted that important health issues and projects were discussed at quarterly District Assembly meetings. The topics discussed most frequently related to infrastructure projects, such as increasing office space, improving the water supply, and upgrading health facilities.

The District Director of Health Services (DDHSs) whom we interviewed supported the opinions of the District Assembly members and mentioned both financial and nonfinancial support District Assemblies provide to CHPS zones and health centers. All DDHSs noted that District Assemblies offer financial support to aid in constructing health facilities and procuring drugs and equipment to the best of their abilities, although shortages of funds can be a significant obstacle to providing this support. All DDHSs also noted that District Assemblies provide nonfinancial support in the form of technical and logistical assistance, supervisory visits, and assistance in organizing durbars.

The District Assembly members interviewed mentioned several ways in which they would like to be able to provide more support to both CHPS zones and health centers. They would like their assemblies to provide more infrastructure support, mobilize the community to volunteer at health facilities, and identify additional sources of funding. Several District Assembly members suggested strategies for attracting and keeping health workers in their communities, especially providing and improving housing for health staff. One member suggested that regular visits to CHPS zones could help ensure that the District Assembly members are kept up to date on the health issues facing their districts.

2. Collaboration between District-Level Officials and USAID

All DDHSs interviewed reported having strong working relationships with USAID. They mentioned that USAID has provided their districts with assistance that has included training opportunities, medical equipment, capacity-building workshops, logistics-management assistance, and infrastructure support. Several of the DDHSs mentioned being excited about the level of communication and joint decision-making they have seen in their interactions with USAID. The DDHSs did acknowledge, however, that steps could be taken to strengthen their collaboration with USAID. One DDHS recommended strengthening this partnership further by holding a health forum to establish regular engagement with USAID and promote the free exchange of information. Another DDHS praised the openness of the relationship between the two entities but also called for increased, "transparency, accountability, and solidarity."

Most District Assembly members reported that their districts are either currently working with USAID or have in the past. Several mentioned collaborating with USAID on the SPRING or RING projects. Many also mentioned that USAID has helped to build schools or health facilities in their districts. The District Assembly members mentioned several ways to improve their collaborations with USAID. One member suggested that USAID provide training on project management to ensure that staff can comply with the requirements of USAID funding. Another member stressed the importance of complying with USAID conditions, saying that he felt funding for additional projects depended on past successes, whereas another suggested creating a monitoring process so that any concerns can be quickly shared with USAID.

VI. HEALTH INSURANCE

In 2003, the Government of Ghana passed the National Health Insurance Act, which abolished the existing cash-and-carry system of health delivery and replaced it with the National Health Insurance Scheme (NHIS). The goal of the NHIS is to provide equitable access and financial coverage for basic health care services to Ghanaian citizens (NHIS 2015). Because the NHIS represents a substantial change in the public health care environment in Ghana, understanding the nature of health insurance could be important for the implementation of USAID's health projects in Ghana. In this chapter, we describe the nature of health insurance in Ghana; the level of membership in health insurance; and perceptions of the association between health insurance and the location, quality, and type of care.

KEY FINDINGS FROM THIS CHAPTER

- Membership in health insurance schemes appears to be widespread and increasing.
- Health insurance membership does not seem to affect where clients can receive care nor greatly affect the quality of care received.
- The NHIS does not cover all health care services, but appears to cover most services offered at both CHPS zones and health centers.

A. Health Insurance in Ghana

There are three main categories of health insurance in Ghana under the NHIS. The first and most prevalent is the district mutual health insurance scheme, which operates in every district in Ghana. Any resident of Ghana can register for this public scheme. It is funded by premiums paid by members, as well as direct funding from the central government's National Health Insurance Fund. The other two categories of health insurance in Ghana are private commercial health insurance schemes and private mutual health insurance schemes. Neither receives subsidies from the National Health Insurance Fund.

With membership in an insurance scheme, health insurance members are entitled to seek treatment in any public health facility in the country, where approved services are provided free of charge. Without insurance, clients typically are required to pay at every point of service delivery before services are rendered. Accredited pharmacies and licensed chemical shops are also supposed to provide approved prescribed drugs without charge to members. However, the NHIS currently faces challenges paying claims from health facilities—the NHIS acknowledges this issue, and reports on its website that "the government is working out a strategy for a bailout of the NHIS" (NHIS 2015).

B. Membership in Health Insurance

The overwhelming majority of clients we interviewed reported they were members of the NHIS, although a few noted that they had been registered for NHIS in the past but their memberships had expired and had to be renewed. Most of the clients we interviewed also thought that the number of people with health insurance in their communities had increased over the past year. Consistent with this, most of the community health committee (CHC) members we interviewed also thought that the number of people with insurance in their communities had increased over the past year, and most community leaders interviewed reported that they thought the majority of people in their communities were part of the NHIS.

According to our survey data, CHPS zones and health centers are indeed receiving clients who are members of the NHIS. Almost 75 percent of CHPS zones and 96 percent of health centers submitted at least one NHIS claim in the two months before the survey (Table 29). Further, nearly two-thirds of all CHPS zones and health centers reported an increase in the number of clients who were part of the NHIS in the two months before the survey; however, about one-quarter of centers mentioned a reduction in the number of NHIS clients.

TABLE 29. HEALTH INSURANCE (PERCENTAGE OF FACILITIES)

	CHPS			Health Centers		
	Focal regions	Nonfocal regions	Total	Focal regions	Nonfocal regions	Total
Facility submitted at least one National Health Insurance Scheme (NHIS) claim in previous two months	76.0	73.3	74.5	96.2	96.6	96.4
Change in number of clients who are part of NHIS in previous two months						
Increase	60.4	70.2	65.6	72.2	64.4	68.0
Decrease	26.5	23.8	25.1	20.0	32.4	26.7
No change	13.1	5.9	9.3	7.8	3.2	5.3
Any referral decisions in previous two months influenced by whether client had insurance coverage, among facilities referring clients out	5.2	8.3	6.8	3.9	5.8	4.9
Quality of health services received by clients with insurance coverage relative to those without coverage						
Better	14.5	9.0	11.6	14.3	1.5	7.5
The same	80.3	83.5	82.0	84.8	95.2	90.4
Worse	5.3	7.5	6.4	0.8	3.3	2.2
Respondent is aware of at least some health services not covered by NHIS	51.2	57.3	54.5	66.4	71.7	69.2
Sample size	167–279	91–172	258–451	81–89	48–54	129–143

Source: Health, Population, and Nutrition Office Health Systems Baseline Survey Data
Note: Percentages are weighted using weights that adjust for sampling probabilities. Focal regions include the Central, Greater Accra, Northern, Volta, and Western regions. Nonfocal regions include the Upper East, Upper West, Ashanti, Brong Ahafo, and Eastern regions. Sample size varies across rows because some variables are conditional and because of item nonresponse.

C. Health Insurance and the Location, Quality, and Type of Care

Most clients and community leaders we interviewed reported that they did not think that insurance status affected where individuals received health care, although clients stated that some private hospitals do not accept insurance. Many community leaders noted that most facilities will accept those with insurance and those willing to pay cash for their treatment. Our survey data also suggest that facilities are not factoring clients' insurance status into their referral decisions. Only 7 percent of CHPS zones and 5 percent of health centers that referred clients made referral decisions in the previous two months that were influenced by whether the client had insurance coverage (Table 29).

We also explored whether health insurance was associated with the quality of health services received by clients. In our facility surveys, 82 percent of CHPS zones and 90 percent of health centers reported that, from their perspectives, the quality of services is the same for those with and without insurance (Table 29). However, opinions were more varied among clients. Some clients stated that there was no difference in the quality of treatment between those with and without health insurance; others thought that those with insurance received better care. As one client representative of the second perspective put it:

> "When you attend the hospital with your health insurance they attend to you early and treat you nicer than when you have money. When you get

> there [the hospital], they will ask you if you have health insurance. If you do they will take it and key it into a computer, but when you have money they will ask you to sit so they attend to all those with insurance before those that don't have [insurance]."

Many community leaders, on the other hand, thought that those *without* insurance received better care. One community leader stated that NHIS card holders received worse services than others because health workers were not always reimbursed by the insurance for the services they provided. Members of CHCs generally agreed with this view. As one CHC noted:

> "The people with cash are given more attention than those with health insurance. … People without health insurance are given all the necessary drugs, but if you are using health insurance you would be asked to buy from a drug store."

Qualitative interview participants were also asked about the range of services covered by the NHIS and whether any services that clients might need were not covered. One CHC member stated that initially health insurance worked well to provide more people with access to health care, but that as time has gone by the number of services not covered by the NHIS has increased. At CHPS zones and health centers, which mainly provide basic services, about 55 percent of CHPS zone respondents and 69 percent of health center respondents in the quantitative survey reported being aware of at least some health services not covered by the NHIS (Table 29). Among CHC members, clients, and community leaders interviewed, the types of services mentioned that were not covered included certain drugs, drips, labs and scans, blood transfusions, abortions, and snake bites. They also noted that the full cost of operations were not usually covered.

VII. COMPLEMENTARITY WITH GHANA DEMOGRAPHIC AND HEALTH SURVEY

The primary purpose of the GDHS was to generate recent and reliable information on fertility; family planning; infant and child mortality; maternal and child health and nutrition; malaria treatment, prevention, and prevalence among children age 6-59 months; blood pressure among adults; anemia among women and children; and HIV prevalence among adults. The MOH and the GHS use this information to inform policy decisions for planning, monitoring, and evaluating health programs in Ghana.[27]

The HSBS, on the other hand is a health systems survey, focused on process and contextual issues at the community and peripheral levels, specifically targeting health centers and CHPS, which service nearly 50% of the population. The HSBS addresses:

- Quality of Care – (process – supply side)
- Culture of QA and QI – (process – supply side)
- Community & Local Government Support – (contextual)
- Health Insurance - (process – demand side)

The HSBS complements the GDHS by providing insights into how process and contextual factors at the health center and CHPS levels might contribute to certain of the population-level outcomes in the GDHS report. Health systems are the pillars that support the effective delivery of health services. By comparing related data from HSBS and GDHS, we hope that more effective and targeted responses within the District Health Systems will be possible, notably as concerns malaria, maternal and child health, and nutrition, which are areas of continuing low performance in Ghana.

The chart below compares certain findings from the GDHS to those of the HSBS and highlights key observations on the data.

TABLE 30. KEY OBSERVATIONS ACROSS GDHS AND HSBS

GDHS	HSBS	OBSERVATIONS
Nutrition of Children and Women		
Stunting in children under age 5: • Lowest in Greater Accra 10.4% • Highest in NR 33.1% UER 22.2%, CR 22.2%, VR 19.3% • Decline in national average from 35% in 2003 to 19% in 2014[28] • Highest amongst: Low birth weight (LBW), poor and rural populations	• Dissemination of health information, including nutrition, by CHPS through CHVs -36.9% (Table 12) • Only 47.4% of CHPS have staff trained on infant and young child feeding (Table14) • Only 33.7% of CHPS have staff trained in Community management of acute malnutrition or other undernutrition (Table14)	• HSBS findings flag system deficiencies that may contribute to the level of stunting in children under five, notably dissemination of information on health and nutrition and training of health workers on infant and child feeding and community management of acute malnutrition and other undernutrition.
Malaria Treatment, Prevention, and Prevalence		
• Only 34% of children under 5 years who had fever within the past two weeks had blood taken from the finger	• 51% of CHPS that did not test all clients with fever had insufficient RDT supplies (Table 8)	• HSBS findings flag critical malaria-related issues that align with GDHS findings, e.g. inadequate

[27] Ghana Demographic and Health Survey 2014

[28] According to Holistic Assessment of the Health Sector Programme of Work 2014, Ministry of Health, Ghana. Page 11: http://www.moh-ghana.org/UploadFiles/Publications/Holistic%20Assessment%20%202015150706082855.pdf, Stunting target is below 16% for 2014

GDHS	HSBS	OBSERVATIONS
or heel for testing for malaria. (Testing before treating) • Only 26% with fever took ACT same or next day (prompt treatment)	• 19.2% of CHPS that did not test all clients with fever did not have 24/7 RDT/lab services available (Table 8) • 18.1% of CHPS that did not test all clients with fever had staff that believed there were other reasons for fever and thought it was not necessary to test for malaria (Table 8)	supply of RDTs for testing blood for malaria parasites, lack of 24/7 availability of lab or RDT testing services and insufficient training of health workers on TTT or test, treat, track approach
Maternal Health		
• ANC coverage is 97.3% on average, and the trend is positive. • Coverage in rural area is less than the national average • 15% attendants not informed about signs of pregnancy complication • Delivery at Health Facility is 73.1% and Home delivery 26.6% • CHO deliveries 2.9% • No one providing assistance at delivery 18% and 17% in Volta and Northern regions	• Only 62% of CHPS interviewed indicate they provide ANC services; 93% of health centers provide ANC services (Table 10) • Referral systems are weak- only 2% of CHPS clients are referred out; 41% of CHPS that referred clients named pregnancy related complications as a common referral reason (Table 7) • Only 30% of CHPS have maternal and new born treatment protocols (Table 16)	• HSBS findings point to more serious systems deficiencies than GDHS findings would imply, notably in terms of limited provision of CHPS ANC services, low rates of referrals for pregnancy-related complications and limited availability of maternal and newborn treatment protocols. • This points to a clear need for more investigation by GHS and USAID IPs related to ANC services and referrals.
Family Planning		
• Modern contraceptive prevalence rate among married women is 22%; 5% use a traditional method. • 30% of married women have an unmet need for family planning. • The most commonly used modern method among married women is injectables (8%); sexually active, unmarried women are most likely to use the male condom and the pill (8% each).	• 84% of CHPS zones provide both family planning counseling and contraceptives; an additional 12% provide one or the other. (Table 9) • Among health centers, 91% offer both counseling and contraceptives. (Table 9)	• HSBS findings indicate a high level of provision of family planning counseling and contraceptives, while GDHS data indicate a very low level of contraception use. • This points to a need to study further how to increase contraceptive use and fill the gap of unmet need.
Health Insurance		
• More than 6 in 10 women and half of men are covered by health insurance. • National/District Health Insurance (N/DHIS) is the most common type of health insurance (62 % of women and 48 % of men age 15-49). • Overall, 8 in 10 women and men (79% and 82%, respectively) who are covered by N/DHIS were satisfied with the services the last time they were treated at a health facility.	• Membership in health insurance schemes is widespread and increasing. • CHPS zones and health centers are receiving clients who are members of the NHIS, with almost 75% of CHPS zones and 96% of health centers submitting at least one NHIS claim in the two months before the survey. • 2/3 of all CHPS zones and health centers reported an increase in the number of clients who were part of the NHIS in the two months before the survey.	• HSBS findings align with GDHS findings that: Membership in National/District Health Insurance is pervasive.

VIII. SUMMARY AND CONCLUSIONS

In this chapter, we briefly summarize the key findings from the baseline study in each of the four thematic areas into which the research questions were organized. We use these findings to highlight specific successes and challenges in each area, which can help inform programming strategies focused on system improvement. Finally, we outline the time line for future evaluation activities under the E4H project, which will draw on the baseline study.

A. Quality of Care and Services

Overall, we found that the quality of care and services in facilities across Ghana was better in health centers (subdistrict-level facilities) than in CHPS zones (community-level facilities), but variable in both. On the positive side, we found that the systems that link facilities within the health hierarchy to form the continuum of care are standardized. Although only a small percentage of clients at CHPS and health centers are referred, the structure for referrals is well understood. However, clients who are referred face obstacles in following through on referrals, especially in finding and paying for transportation and financing treatment if they lack health insurance. There is also a weakness in the system of sharing records back to the referring facility, because that is a client responsibility. The lack of records makes the continuum of care harder to maintain upon the client's return.

Both types of facilities provide most of the services they are expected to deliver. Services related to reproductive health, especially family planning counseling and contraceptive provision, were particularly common. However, there are some important gaps in service provision, such as in appropriate malaria testing and treatment, maintenance of child health and nutrition data, and provision of antenatal care in CHPS zones. Many facilities, especially CHPS zones, also do not follow standard guidelines for sanitation and infection control and do not have written treatment protocols, which could adversely affect the quality of care. In addition, there are important gaps in staff training—especially in terms of high quality training involving supportive supervision or outreach.

Maintaining adequate stocks of medicines and supplies is one of the most significant obstacles facing CHPS zones and health centers. Key challenges include tracking supplies; financial constraints, especially in being reimbursed from the NHIS; stock-outs at the regional level; and the complexity of supply chain logistics. Facilities, especially CHPS zones, lack essential equipment, and systems of maintenance and repair could be improved. Very few of either type of facility have communication technology available, including cell phones, tablets, computers, or Internet connections. In addition, at least 10 percent of CHPS zones do not have a CHPS compound, a dedicated facility in which to provide treatment. Lack of electricity and reliable transportation are also challenges to fully functioning CHPS zones. Improving these infrastructure issues is not only seen as important to the effective functioning of CHPS zones, but also as a way to attract and keep higher quality staff in the CHPS zones.

We found that clients, community leaders, and district-level decision makers support and appreciate the CHPS system and health centers and would like to see them flourish. Clients and community leaders generally have positive opinions of their CHPS zones, including their accessibility, the dedication of the staff, and the promptness of treatment and services provided. CHPS zones elicit higher satisfaction than health centers, but clients and community leaders recognize that both could improve in regard to supply chain issues, lack of infrastructure, and limited staff. This appreciation of communities for CHPS zones

and health centers is a strength and an opportunity that could potentially be leveraged for continued improvements.

B. Culture of Quality Assurance and Quality Improvement

Quality assurance (QA) and quality improvement (QI) activities are occurring in the CHPS zones and health centers, even if formal QA and QI plans and QA teams are not in place. Where QA and QI plans are in place—in about half of all facilities—some are not active. However, facilities are conducting a range of QA and QI activities, including those related to infrastructure, supplies, staff, client satisfaction, data quality, and community outreach, even in the absence of formal plans. Nevertheless, on the whole there is not yet a strong culture of setting standards or monitoring and addressing gaps systematically.

The facilities do have a strong culture of data collection. Data collection is occurring in nearly all facilities to inform local needs and to feed into the DHIMS2 data, and data validation teams are operating in about two-thirds of the facilities. However, collecting, storing, compiling, and transferring data on paper takes time and significant effort. Health facility staff seem to understand the value of data and the importance of quality, and the quality is generally perceived as good, although a significant minority of facilities do not have formal data validation teams in place. Data are used at the CHPS, subdistrict, and district levels to inform decision-making and planning; however, the rich data to which facilities have access could be put to more use. Very few facilities display up-to-date data to track specific indicators, and data are not universally and systematically used in planning and decision-making.

C. Community and Governmental Support for CHPS

CHPS zones depend on community and volunteer support, governmental backing, and linkages that ensure communities and the government know and recognize their needs. One of the main sources of volunteer support and community-to-care linkages is the community health committee (CHC) in CHPS zones. CHCs generally play the role envisioned by government policy in providing support to CHPS zones, but the roles and responsibilities they take on vary between CHPS zones, and almost a third of CHPS zones do not have a CHC. CHCs face several challenges. These include the volunteer nature of the position—which makes it difficult to staff CHCs and for volunteers to devote themselves fully to their CHC responsibilities—and limited engagement of CHCs with community members. These challenges could help explain why many CHCs are not viewed as effective by CHPS zone staff in strategic roles such as mobilizing resources for the CHPS and mobilizing the community for health action. Overall, CHC members are often enthusiastic, committed, and hardworking, but not universally trained, guided, or provided with resources. Harnessing their commitment is a potential opportunity to make CHCs more effective.

Community members in general are unaware of their specific health rights, and are either unaware of the existence or role of the CHCs or do not engage with them. Community members are also generally not engaged in strategic efforts to help their CHPS zones, although they do provide some practical support to CHPS zones, such as keeping the areas surrounding CHPS compounds clean and providing food to CHPS zone staff. It appears that the enthusiasm and appreciation of clients could be tapped more effectively for strategic support of their CHPS zones.

District Assembly members are informed and interested in supporting CHPS zones and health centers in their districts. They provide both financial support (for example, the construction of health facilities, infrastructure improvements, and the procurement of drugs and equipment) and nonfinancial support (for example, technical and logistical assistance, supervisory visits and assistance in organizing community health meetings). However, the lack of funds is an important challenge to providing financial support.

District Directors of Health Services (DDHSs) and District Assembly members also have working relationships with USAID and are enthusiastic about further improving them.

D. Health Insurance

The National Health Insurance Scheme (NHIS) was introduced about 10 years ago and seeks to provide equitable access and financial coverage for basic health care services to Ghanaian citizens; the current state of health insurance provides important context for the implementation of USAID's health projects in Ghana. Health facilities and community members perceive that insurance coverage is growing, but it does not appear to affect the location or quality of services accessible to clients. However, slow payments from NHIS are affecting the supply chain for medicines and supplies at CHPS and health centers. The NHIS acknowledges this and reports that the government is working to find a solution. USAID's health projects in Ghana will likely be implemented in a health system in which national health insurance plays a large—and possibly growing—role.

E. Evaluation Time Line

The planned USAID health sector performance evaluation will assess changes over time in indicators relevant to USAID's investments. The baseline findings in this report provide pre-intervention values of key indicators against which changes will be measured at the midline and endline. The development of the midline and endline surveys will also take into account the many useful suggestions made by reviewers of this report, to provide more refined estimates of certain indicators of particular interest to stakeholders. The midline evaluation is currently planned for 2017 and the endline evaluation for 2019. Although the evaluation will not be able to fully attribute these changes to the impact of the USAID interventions, complementary qualitative data will help to assess the possible contribution of USAID interventions.

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