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# A Rapid Assessment of Oral Rehydration Therapy Corners in Bondo, Igembe North, and Igembe Central Subcounties, Kenya

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The Maternal and Child Survival Program (MCSP) is a global, United States Agency for International Development (USAID) Cooperative Agreement to introduce and support high-impact health interventions with a focus on 24 high-priority countries with the ultimate goal of ending preventable child and maternal deaths within a generation. The Program is focused on ensuring that all women, newborns and children most in need have equitable access to quality health care services to save lives. MCSP supports programming in maternal, newborn and child health, immunization, family planning and reproductive health, nutrition, health systems strengthening, water/sanitation/hygiene, malaria, prevention of mother-to-child transmission of HIV, and pediatric HIV care and treatment. Visit [www.mcsprogram.org](http://www.mcsprogram.org) to learn more.

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# Abbreviations

BCC	behavior change communication
CHEW	community health extension worker
CHV	community health volunteer
CU	community unit
DHS	Demographic and Health Survey
EPCMD	ending preventable child and maternal death
IEC	information, education, and communication
IMCI	Integrated Management of Childhood Illness
IYCF	infant and young child feeding
KDHS	Kenya Demographic and Health Survey
MCH	maternal and child health
MCHIP	Maternal and Child Health Integrated Program
MCSP	Maternal and Child Survival Program
MOH	Ministry of Health
MOPHS	Ministry of Public Health and Sanitation
MUAC	Mid-Upper Arm Circumference
OPD	outpatient department
ORS	oral rehydration solution
ORT	oral rehydration therapy
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
WASH	water, sanitation, and hygiene
WHO	World Health Organization

# Executive Summary

Diarrhea is responsible for an estimated 10% of deaths of children under the age of five in Kenya.<sup>1</sup> Oral rehydration therapy (ORT) Corners are a well-developed, low-resource method to provide rehydration on an outpatient basis to children with diarrhea and dehydration. Generally, these Corners are designated areas in health facilities (dispensaries,<sup>\*</sup> health centers,<sup>†</sup> and hospitals<sup>‡</sup>) staffed by health workers who have been specially trained in diarrhea management. From 2011 to 2014, the Maternal and Child Health Integrated Program in Kenya (MCHIP/Kenya) worked at the national level and in Bondo Subcounty of Siaya County and Igembe North and Central subcounties of Meru County (collectively referred to as Igembe) on revitalizing ORT Corners, improving case management tools, and health facility data collection on diarrheal disease.<sup>§</sup> MCHIP provided both technical support (training/mentoring staff on case management of diarrhea, data collection, and reporting) and equipment for ORT Corners in Igembe and provided only technical support to health facilities in Bondo where equipment for ORT Corners was supplied by the United Nations Children’s Fund (UNICEF).

Alongside this work, the Ministry of Health (MOH), formerly known as the Ministry of Public Health and Sanitation (MOPHS), published ORT operational guidelines in early 2013. These guidelines mandated the establishment of ORT Corners in every facility that treats sick children on an outpatient basis. According to the WHO Integrated Management of Childhood Illness (IMCI) guidelines adapted by the Kenya MOH, children classified as having “some dehydration” and “severe dehydration who are able to drink and not vomiting everything” are treated at the ORT Corners. Therefore, out of all children brought to the health facility for diarrhea, only children who fit this classification are managed at the ORT Corners.

In July–August 2015, the Maternal and Child Survival Program (MCSP) conducted a rapid assessment of 16 health facilities (10 in Bondo and six in Igembe) with the following objectives:

1. Assess the degree of implementation of Kenya’s Oral Rehydration Therapy Corner Operational Guidelines;
2. Use the findings to identify potential sites for a Phase II study on the quality of case management and counseling and impact of ORT Corners on WASH and nutrition behaviors relevant to prevention and treatment of diarrheal disease in the community and health center.

The goal of the rapid assessment was to provide MCSP with the information to develop research questions related to the effectiveness and quality of ORT Corners in Bondo and Igembe. The rapid assessment reviewed five areas: designation of space for ORT, allocation of trained staff, availability of counseling and behavior change communication (BCC) materials, equipment, and registers.

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\* Dispensaries are the lowest level of public health facility. Dispensaries are run and managed by nurses who are supervised by the nursing officer at the respective health center. They provide outpatient services for simple ailments. Patients who cannot be managed by the nurse are referred to a health center.

† Health centers are public, medium-sized units which serve a population of about 80,000 people. A health center is managed by a clinical officer and provides comprehensive primary care with a focus on preventative services.

‡ Hospitals could be subdistrict, district, county, or national facilities. Hospitals have a surgery unit and serve as coordination and referral centers for lower-level facilities. In addition to clinical officers, a good number have a medical officer and a wider range of surgical services.

§ Case management tools refer to operational guidelines, reporting, surveillance, and supervision tools for diarrhea case management at ORT Corners.

# Overview of Findings

## Existence of Functional ORT Corners as Defined by the MOH Guidelines

While ORT Corners were present in all 16 facilities, the level of implementation, staffing, communication materials, supplies, and equipment varied among the facilities. These are the main findings from the rapid assessment:

- All 16 facilities had a dedicated space for the treatment of children with diarrhea and dehydration.
- All 16 facilities reported having a dedicated staff member at the ORT Corner.
- Only the subcounty hospital had training materials in the ORT Corner.
- All six facilities in Igembe had oral rehydration solution (ORS) supplies at ORT Corners, while only three of 10 of the Bondo facilities had ORS supplies at ORT Corners.
- Only five of the 16 assessed facilities had zinc available at ORT Corners.
- Only four of the 16 assessed facilities had both ORS and zinc available at ORT Corners. These four facilities consistently scored high in the five categories assessed.
- Counseling materials were present at the ORT Corners in 12 of the 16 facilities.
- Fourteen facilities reported conducting health talks on diarrhea.
- BCC posters were present in eight facilities.
- Demonstration materials for ORS preparation were available in four facilities, while demonstration materials on giving zinc were absent in all facilities.

## Utilization of ORT Corners

The team took pictures of registers with the intention of extracting utilization data. The assessment could only analyze use for the Igembe facilities. Data demonstrated a low average patient volume in Igembe dispensary ORT Corners (7/month), while health center and hospital ORT Corners had high monthly patient volumes (31/month and 129/month, respectively).

## Proposed Next Steps

MCSP proposes to the USAID/Kenya Mission a follow-on study with four objectives:

1. Conduct an in-depth quality-of-care baseline assessment to:
  - Determine the extent to which patients are referred to ORT Corners based on the classification of dehydration;
  - Examine the quality of case management (i.e., administering ORS and zinc and counseling on feeding); and
2. Assess usability, quality, and consistency of ORT Corners.
3. Investigate the elements of the Kenya ORT guidelines that have been institutionalized and those that have not been institutionalized, and why/why not (to inform scale-up).
4. Investigate the degree to which water, sanitation, and hygiene (WASH) and nutrition counseling messages delivered at ORT Corners influence caregiver knowledge and practices in managing subsequent episodes of diarrheal disease in children and WASH practices at the household level.

## Study Limitations

As a rapid assessment, this study relied upon health facility records, staff reporting, and spot observations to assess ORT Corners. The study was not able to assess the quality or effectiveness of services provided, nor was the sample size sufficient for generalization to the study area. While register pictures were captured with the intention of extracting monthly utilization data, picture quality only allowed analysis of the six Igembe facilities.

The data collection team set out to examine one ORT register entry per month for 10 months at each facility to assess completeness (a total of 160 entries). The data collection team was then instructed to collect the total monthly ORT Corner admission numbers for 18 months at each facility to assess seasonal trends. The data collectors reported that 18 months of data were not available at the facilities and instead collected 10 months to assess completeness *and* to assess monthly patient volumes.

## Background

Globally, an estimated 1.73 billion episodes of diarrhea take place in children under the age of five each year, resulting in approximately 700,000 preventable deaths.<sup>2</sup> An estimated 61% of child deaths from diarrhea are attributable to undernutrition, which is the underlying cause for most deaths associated with severe infections. Moreover, frequent and/or recurrent illness, including diarrhea, contributes to the cycle of malnutrition and inadequate child growth and development. In Kenya, diarrhea is responsible for an estimated 10% of preventable deaths among children under the age of five, which equates to approximately 10,600 child deaths annually.<sup>1</sup>

Oral rehydration therapy (ORT) Corners are a well-developed, low-resource method to provide rehydration (on an outpatient basis) to children with diarrhea and dehydration, while also providing an opportunity to counsel caregivers. Generally, these Corners are designated areas in health centers staffed by health workers who have been trained in dehydration management. ORT Corners were common in low-income countries in the 1990s but have more recently fallen out of favor.

Table 1 compares care-seeking and diarrhea treatment indicators from the 2014 Kenya Demographic and Health Survey (KDHS) for Siaya County and Meru County with the national average. While care-seeking from (public) health facilities or skilled providers is higher than the national average in both counties, all of Meru County ORT-related and zinc statistics are below the national average.\*<sup>3</sup> Siaya County outperformed the national average on zinc-related indicators, including percentage of children with diarrhea given ORS and zinc.

**Table 1. 2014 KDHS Results for ORT Indicators Among Children Under Age Five Who Had Diarrhea During the Two Weeks Preceding the Survey**

DHS Survey Indicator <sup>3</sup>	Siaya County (including Bondo subcounty)	Meru County (including Igembe North and Central subcounties)	National Average
Percentage of children with diarrhea for whom treatment was sought from a health facility/provider	65.6%	69.8%	58.0%
Percentage given oral rehydration therapy <sup>a</sup>	68.1%	65.3%	73.8%
Percentage given fluid from ORS packet	51.3%	52.2%	64.6%

\* DHS defines a skilled provider as a doctor, nurse, or midwife.

DHS Survey Indicator <sup>3</sup>	Siaya County (including Bondo subcounty)	Meru County (including Igembe North and Central subcounties)	National Average
Percentage given zinc	17.0%	1.6%	8.1%
Percentage given ORS and zinc	17.0%	0%	7.5%

<sup>a</sup> ORT includes solution prepared from oral rehydration salt (ORS) and other home-made fluids.

In addition to oral rehydration solution (ORS) and zinc, counseling on infant and young child feeding (IYCF) practices during and after illness is critical to ensuring optimal nutrition outcomes, as food and/or liquids are often withheld or reduced in quantity during illness. KDHS data from the 2008–2009 survey on IYCF practices report the number of diarrheal episodes experienced by children in the two weeks prior to the survey and showed that only 8.3% of these children under five years of age were given increased fluids and continued feeding in Siaya County, in comparison with 28.4% of children in Meru County (KDHS 2008–2009).<sup>4</sup> Less than half of the children received ORT, increased fluids, or both in Meru and Siaya counties.<sup>4</sup>

## ORT Corners in Kenya

ORT Corners are designated areas in health centers staffed by health workers who have been trained in diarrhea/dehydration management. The World Health Organization (WHO) Integrated Management of Childhood Illness (IMCI) guidelines classify two typologies of at-risk children to be admitted to ORT Corners, those having “some dehydration” or those having “severe dehydration who are able to drink and not vomiting everything.” It follows that, out of all children brought to the health facility for diarrhea, only children who fit this classification are managed at the ORT Corners. As part of the initial treatment for dehydration, caregivers remain at the clinic for several hours while providing oral rehydration under the supervision of the ORT specialist. This extended time at the ORT Corner provides an opportunity for caregivers to receive targeted health education on topics including IYCF counseling and on appropriate practices to ensure proper water and sanitation practices that can limit diarrheal episodes.

The MCHIP/Kenya project worked in Bondo Subcounty of Siaya County and Igembe North and Central subcounties of Meru County (collectively referred to as “Igembe”) on revitalizing ORT Corners, targeting high-volume or referral centers for ORT revitalization. MCHIP worked to train/coach staff in case management; improve health facility data collection on diarrheal disease and provide case management tools; introduce provision of zinc at the ORT Corners; and enhance counseling on water, sanitation, and hygiene (WASH) and IYCF practices for children during and after illness.\* These efforts helped inform the Kenyan Ministry of Public Health and Sanitation's (MOPHS) — now the Ministry of Health (MOH) — adaptation of WHO's IMCI guidelines, and resulted in the national “Oral Rehydration Therapy Corner Operational Guidelines.”<sup>5</sup> The guidelines serve as a standards document to facilitate rapid scale-up of ORT Corners, while enhancing the quality of treatment of sick children with diarrhea in Kenya. MCHIP-supported revitalization of ORT Corners between 2011 and 2014 had the goal of developing a scalable model for other counties in Kenya and in other sub-Saharan African countries. In Igembe, MCHIP provided staff training in case management, ORT Corner supplies (equipment; commodities; and information, education, and communication [IEC] materials), and mentored facility health workers on case management. In Bondo, the

### The Kenya ORT Corner operational guidelines are divided into seven sections:

1. Pathways to the ORT Corner
2. Classification and treatment of children with diarrhea
3. Requirements for a standard ORT Corner
4. Human resource requirements for ORT Corner operations
5. Advocacy, communication, and social mobilization for ORT Corners
6. Monitoring and evaluation
7. Sustainability of functions and services at ORT Corners

\* Case management tools refer to operational guidelines, reporting, surveillance, and supervision tools for diarrhea case management at ORT Corners.



United Nations Children’s Fund (UNICEF) provided ORT equipment, and MCHIP provided technical assistance to the development of the national strategy. Since these interventions and the publishing of the ORT Corner national guidelines in 2013, no assessment had been conducted to determine if, and to what extent, health facilities are implementing the guidelines.

## Study Purpose

USAID’s Maternal and Child Survival Program (MCSP) designed a two-step process for studying the functionality of ORT Corners. To assess the level of functionality of ORT Corners in Kenya, MCSP’s Child Health, Nutrition, and WASH technical teams collaborated to conduct a Phase I rapid assessment with the following learning objectives:

1. Assess the degree of implementation of Kenya’s Oral Rehydration Therapy Corner Operational Guidelines;
2. Use the findings to identify potential sites for a Phase II study on the quality of case management and counseling and impact of ORT Corners on WASH and nutrition behaviors relevant to prevention and treatment of diarrheal disease in the community and health center.

The results from this Phase I rapid assessment will help determine whether a Phase II study is warranted to investigate the impact and effectiveness of ORT Corners. Lessons learned from a Phase II study would then be used to adapt effective strategies to other counties in Kenya and other countries with similar contexts. This report describes the findings from the initial rapid assessment and provides suggested next steps.

## Methods

In July 2015, MCSP conducted a rapid assessment of ORT Corners in 16 health facilities in Bondo (10 facilities) and Igembe (six facilities) subcounties. A rapid survey questionnaire ([Appendix A](#)) was adapted from the “supervision checklists for service providers” from the MOH ORT Corner guidelines published in 2013.<sup>5</sup> This checklist tool was used to assess health center compliance with the national ORT Corner guidelines, including human resources, training, dedicated space, supplies and equipment, communications (IEC, behavior change communication [BCC], etc.) and recordkeeping. Data were collected through observation of ORT spaces, an inspection of records, when possible, and interviews with staff about services, where necessary. Observation of actual case management at the ORT Corners was not part of this assessment due to time and resource constraints.

MCSP staff and a consultant comprised the assessment team. The team visited a sample of facilities in Igembe Central, Igembe North subcounties (collectively referred to as Igembe), and Bondo Subcounty to determine the existence and functionality of the ORT Corners. To select facilities for the assessment, the list of all applicable government health facilities in each geographic area was stratified by facility level (dispensaries, health centers, and hospitals). Convenience sampling methods were applied to hospitals and health centers. Dispensaries, which are more numerous, were divided into well-performing and low-performing facilities as determined by the district health management teams.\* From that list, MCSP randomly sampled well-performing and low-performing dispensaries for participation in the assessment. The 16 assessed sites included one hospital, four health centers, and 11 dispensaries.

In order to assess registers and recordkeeping, the team obtained permission from the county health office to extract detailed data from the ORT or outpatient registers at each of the sampled facilities. To assess the existence and quality of documentation at the ORT Corners, ORT and/or outpatient department (OPD) registers were reviewed, depending on the type of register used to capture ORT data from the MCHIP intervention clinics in Igembe and Bondo subcounties.† In each facility, the team gathered data from

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\* The team relied on county health officials to subjectively divide health facilities into well-performing and low-performing facilities.

† Health facility staff can decide to use either or both ORT or OPD registers.

September 2014 to June 2015. For each month, the first diarrheal case for a child under five was selected from the register for analysis. Ten cases from each register were reviewed (one per month) for completeness and treatment provided. One entry was removed from the analysis because the patient was over 60 months of age, leaving 159 entries for analysis. No unique identifiers connected to patients' information were collected during the assessment. The MOH's ORT register template can be found in [Appendix A](#). The team also took pictures of registers with the intention of extracting monthly utilization data. While monthly patient volume data were collected and analyzed for the six Igembe facilities, picture quality did not allow for analysis of the Bondo facilities.

## Results and Discussion

### Physical Space Standards for ORT Corners

According to the national ORT guidelines, "ORT Corners should be accessible to attending staff and caregivers. The Corner should also have a water source and be comfortable with adequate lighting and ventilation. In an ideal setting, the ORT Corner should be located at the maternal and child health (MCH) clinic or adjacent to it, and at entry points for the child into care, e.g., OPD and even wards."<sup>5</sup> To assess accessibility, the team considered the distance from the ORT space to the area where sick children with diarrhea were being received and examined. If the ORT Corner was in the same room or adjacent to the examination area, it was considered accessible; if it was located in a different section of the health facility from where sick children were received and examined, accessibility was rated as poor.

Table 2 shows the number of facilities in Bondo and Igembe subcounties that met the standards outlined in the national ORT guidelines. All 16 facilities surveyed had dedicated spaces for rehydration of children under the age of five with classification of "diarrheal disease with dehydration." Seven facilities had dedicated ORT spaces in the MCH unit, two facilities had ORT space in the outpatient area, two had the space next to the child health clinic, one facility had the space next to the maternal clinic, one had the space at the entry point for child care, and three facilities had other (unspecified) spaces. All but one facility had an ORT Corner that was accessible to attending staff and caregivers as described above.

**Table 2. Facility Survey Results Compared With National ORT Guidelines Standards**

National ORT Guidelines Standard <sup>5</sup>	Bondo Facilities Meeting Standard (n=10)	Igembe Facilities Meeting Standard (n=6)	Facilities Meeting Standard (n=16)
Designated space exists for rehydration of children under the age of five with diarrheal disease and dehydration	10	6	16
ORT Corner is located at the MCH clinic or adjacent to it, and at entry points for the child into care, e.g., OPD and even wards	9	3	12
ORT Corner space is accessible to attending staff and caregivers	10	5	15
ORT Corner provides a comfortable setting with adequate lighting	9	5	14

National ORT Guidelines Standard <sup>5</sup>	Bondo Facilities Meeting Standard (n=10)	Igembe Facilities Meeting Standard (n=6)	Facilities Meeting Standard (n=16)
ORT Corner has adequate ventilation	9	6	15
Water is present at the ORT Corner (observed) <sup>a</sup>	5	6	11

<sup>a</sup> The assessment did not ask about a facility water source, but instead the team observed whether or not water was present at the ORT Corner. Water quality was not tested. Water data should be interpreted with caution due to discrepancies in data collection. While some facilities with water present in ORT Corners were observed, other facilities with water present elsewhere in the facility were marked as having water present within the ORT Corner.

Facilities provided a reasonable level of comfort. All but one facility had a window, while 14 of 16 facilities had a room or shaded area, chairs or benches, and adequate lighting. Eleven facilities had good visual separation from other areas, and three had good sound separation from other areas. None of the facilities had a fan in the ORT Corner.

Water was present in ORT Corners at 11 of 16 facilities. All of the Igembe facilities had water, while five of 10 Bondo facilities lacked water at the ORT Corner on the day of the visit; water was present elsewhere in the other Bondo facilities. Water was provided through various methods: via small tanks with a tap (nine facilities) or jerry cans (four facilities), or water was drawn in a bucket (three facilities). All but one facility reported that water used for ORT is made safe through some means. Nine facilities (all in Bondo) reported using chlorination, five used boiling (all in Igembe), and one facility reported using an unspecified method of water treatment.\*

Overall, participating facilities had ORT Corners that met most of the space standards listed in the national guidelines. All 16 facilities had a dedicated ORT Corner where mothers/caregivers can sit and start treatment for their child. In most facilities, ORT Corners were located in or near MCH wards, while in a few cases the ORT Corners were in separate buildings. While all Igembe facilities had water in the ORT Corners, the majority of Bondo facilities lacked water in the ORT Corners. The method of water treatment differed between the two subcounties (chlorination in Bondo and boiling in Igembe). No other consistent differences were identified between facilities in the two subcounties or between facility levels (dispensary, health center, hospital). No individual facilities were identified as being consistently more or less compliant with national standards than other facilities.

## Health Staff Allocation for ORT Activities

The national ORT guidelines dictate that ORT Corners be staffed by clinicians (nurses, clinical officers, nutritionists) or community health extension workers (CHEWs) oriented in diarrhea case management and working in MCH.<sup>5</sup> They should supervise the Corner's services and be responsible for keeping records and data generated at the Corners.<sup>5</sup>

Table 3 shows the health facility staff reportedly participating in ORT activities, compared with national ORT guideline standards. Fourteen facilities reported having a dedicated clinical officer or nurse at the ORT Corner. Nurses were the most involved staff members when it came to administering ORS/zinc, patient observation, and counseling mothers on administering ORS at home. This is consistent with the staffing patterns (majority being nurses) in these health facilities. Only five facilities (one in Bondo and four in Igembe) had nurses who reported receiving an orientation on ORT Corner training, on-the-job training, or clinical mentorship. It was reported that doctors, clinical officers, and CHEWs did not widely participate in ORT Corners in any of the facilities, although a small proportion had received ORT on-the-job training and mentorship.

\*The assessment did not verify that water was safe to drink, but relied on reporting from health facility staff.

**Table 3. Health Facility Staff Participating in ORT Activities, Compared With National ORT Guidelines**

Staff Listed in ORT Guidelines <sup>5</sup>	Bondo Facilities Meeting Standards (n=10)	Igembe Facilities Meeting Standards (n=6)	Total Facilities Meeting Standards (n=16)
Nurses staff the ORT Corner in some capacity	8	5	13
Nurses at the ORT Corner report refresher training in ORT (between 2010 and 2014)	1	4	5
Clinical officers staff the ORT Corner in some capacity	0	1	1
Clinical officers at the ORT Corner report refresher training in ORT (between 2010 and 2014)	0	1	1
CHEWs staff the ORT Corner in some capacity	1	0	1
CHEWs report refresher training in ORT (between 2010 and 2014)	0	0	0
Community health volunteers (CHVs) participate in ORT in some capacity (either in the facility or during home visits)	7	0	7
CHVs report being trained in ORT (between 2010 and 2014)	2	0	2

While no individual facilities were identified as being consistently better- or worse-staffed than others, one difference was identified between the two subcounties. A larger proportion of ORT Corners in Igembe were staffed by nurses who were trained in ORT compared with facilities in Bondo. On the other hand, the majority of Bondo facilities reported that affiliated CHVs were participating in ORT in some capacity, while none of the Igembe facilities reported CHV participation. Bondo has functional community units (CUs) with recognized CHVs, while Igembe CUs are not functional. No other significant staffing or training differences were identified between individual facilities or between levels of facilities.

The only facility that had training materials for ORT Corners available on site was the district hospital in Igembe. The materials included written materials and job aids but no pictures/illustrations.

## Counseling and Behavior Change Communication

The national ORT guidelines list a variety of BCC materials that should be present in the ORT Corners and waiting bays, including demonstration and counseling materials. [Appendix B](#) contains a complete list of the required materials, along with the number of facilities in each subcounty that had those materials present on the day of the visit.<sup>5</sup> Overall, BCC, demonstration, and counseling materials were present in only a small proportion of facilities. [Appendix C](#) contains a facility comparison of key aspects of the ORT Corner on BCC, according to the checklist categories.\* Only seven facilities (one in Igembe, six in Bondo) had BCC posters in both the ORT Corners and in the waiting bays. One Igembe facility had posters in the ORT Corner only, while another Igembe facility had posters in the waiting bay only. Very few facilities had demonstration materials for ORS (four) and no facility had demonstration materials for zinc. Counseling materials were present in all six of the Igembe facilities and six of the 10 Bondo facilities. All 16 facilities reported giving health talks on diarrheal disease prevention and control themes. No consistent differences emerged among facility levels.

\* [Appendix C](#) is a summary facility comparison of 15 important components of an ORT Corner.

## Equipment and Operations

The team assessed the presence of equipment, commodities, and supplies listed in the national ORT guidelines as the *minimum* requirements for a functional ORT Corner.<sup>5</sup> The full checklist and results are available in [Appendix D](#). The survey noted the presence or absence of each item on the day of the survey, and the quantity of each. Despite the presence of many of the required materials, ORT Corners often lacked important supplies for treatment. [Appendix C](#) shows that nine facilities had ORS available at the ORT Corner, while five facilities had zinc available at the ORT Corner. Only four facilities (two in Igembe, two in Bondo) had both zinc and ORS in the ORT Corner. In both subcounties, zinc was more likely to be absent than ORS. These same four facilities consistently performed well in each of the checklist categories. Only two facilities (both located in Bondo) had all of the equipment and operations checklist items listed in [Appendix D](#), with the exception of the diarrhea wall chart.

## Registers and Records

The team used the MOH's ORT register template (located in [Appendix A](#)) to record each register entry and assess for completeness. Register entries in Bondo were generally complete, with the exception of the patient's weight (only 10% of entries included the patient's weight). Ten of 59 register entries in Igembe were almost entirely incomplete (three of 10 or fewer columns completed), while remaining entries were generally complete (at least eight of 10 columns completed). [Appendix E](#) contains descriptive statistics results from the 159 register entries that were evaluated for completeness.

While monthly patient volume data were collected and analyzed for the six Igembe facilities, picture quality did not allow for analysis of the Bondo facilities. Table 4 shows the monthly volume of patients seen in the ORT Corner for all six Igembe facilities. Over the 10-month period reviewed, Igembe dispensaries saw a monthly average of 7 patients/month, with a low of 4 patients/month (September 2014) and a high of 15 patients/month (December 2014). The health center and subcounty hospital included in the assessment saw many more ORT Corner visits during the same time period as expected (i.e., high-volume facilities).

**Table 4. Number of Recorded Patients (Under Five) Treated in the Igembe ORT Corners (Sep 2014–June 2015)**

Month	Igembe Health Facilities*					
	D1	D2	D3	D4	HC1	HOS
<b>2014</b>						
Sep	-	-	-	4	2	33
Oct	12	-	-	3	5	65
Nov	13	2	1	6	27	29
Dec	14	15	-	15	46	91
<b>2015</b>						
Jan	18	12	2	8	56	130
Feb	12	2	1	6	34	177
Mar	11	8	1	12	58	254
Apr	10	4	4	7	24	300
May	4	2	-	12	8	159
Jun	6	3	-	7	50	82

\*Note: HOS = subcounty or district hospital; HC = health center; D = dispensary

# Conclusion

All 16 facilities assessed were implementing the national ORT Corner operational guidelines to some degree. The 16 facilities consistently performed well in some areas of the assessment (e.g., dedicated space, existing dedicated staff, counseling materials), while lacking in others (e.g., lack of staff training/refresher training, stocked with vital supplies, BCC and demonstration materials). One interesting observation: Though health centers and hospitals (referred to as high volume) saw more children with dehydration, they did not appear to have better ORT spaces, staffing, or available supplies and equipment when compared with dispensaries. The low availability of ORS, zinc, and other basic ORT supplies highlights the need to strengthen health facility supply stocks to improve quality of care.

While ORT Corners were functioning, it appears that the extent to which ORT Corners are used and are effective varies widely. Similarly, it is likely that the quality of ORT Corner care and counseling varies among health facilities. While the assessment provided a window on the successes in the initiative to revitalize ORT Corners in Kenya, additional research is needed to provide finer detail on the use of ORT Corners, the quality of care provided, and the effectiveness of the Corners to achieve various health outcomes, for example, increased use of ORS and zinc for diarrhea management, increased frequency of caregiver handwashing, and improved IYCF practices.

## Proposed Next Steps

MCSP proposes to proceed to a Phase II study, an in-depth analysis of the quality of case management, the reasons for good or poor quality care, and the potential impact of the care on nutrition/WASH outcomes for diarrheal disease reduction. Recommended objectives for a Phase II study include:

1. Assessing the quality and consistency of case management: the number of cases correctly assessed, classified, and treated according to the guidelines, including counseling on feeding during and after illness; the content and distribution of BCC messages (including WASH and nutrition); and proper delivery of counseling messages;
2. Determining the challenges faced and solutions applied by subcounty management teams and health workers in implementing the national ORT guidelines;
3. Investigating the degree to which WASH and nutrition counseling messages delivered at ORT Corners influence caregiver knowledge and practices in managing subsequent episodes of diarrheal disease in children and WASH practices at the household level;
4. Proposing key elements of a comprehensive and effective model for diarrheal disease case management, including WASH and nutrition elements, that can be adapted in similar contexts in other areas of Kenya and in other sub-Saharan African countries.

# References

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# Appendix A: MCSP Data Collection Survey Tool

## Kenya ORT Corner Evaluation – Phase I: Data Collection Tool MCSP

### Arrival at clinic

Identify the head of the clinic (or available person who can answer questions and show you around the clinic) and arrange a time that they can meet you to provide answers to the questionnaire and also show you the clinic.

### Introduction

Hello. My name is (say name). I work with the USAID’s Maternal and Child Survival Program. We are conducting an evaluation of the ORT Corners established in your facility a few years ago through the support of the MCHIP program, UNICEF and other child health partners in collaboration with the Ministry of Health. I am here with the permission of the county and sub county health management teams (SHOW THE APPROVAL FROM THE COUNTY). The purpose of the ORT Corners is to provide correct and timely treatment for dehydration for children presenting with diarrhea at the facility. The ORT Corners also integrate other child survival strategies including growth monitoring and appropriate nutrition messages. I would like to ask you a few questions in relation to the ORT Corners in your facility and also visit the clinic. [NOTE: Data collection: Follow the tool, (1) Ask or (2) Observe and record answers in the spaces provided.]

### Section 1: Facility Information

Question #	Question	Record Responses
1.1	What is the name of this health facility?	
1.2	Health Facility Code	
1.3	What type/level* of health facility is it?	
1.4	Name of data collector	
1.5	Date of data collection	

### Section 2: Designated Spaces for Oral Rehydration

*Instructions:* Ask the following questions to your interviewee. Enter the coded answer in the response column.

Question #	Question	Answer	Response
2.1	Does the facility have a dedicated place, sometimes called an ORT Corner, where mothers/caregivers can sit and start treatment for their child with diarrhea? [if no, answer Q2.2. if yes, skip to Q2.3]	Yes = 1 No = 2	
2.2	Where do caregivers sit to give oral rehydration while in the facility	Name area: please specify.	

\* The MOH lists health facilities as Dispensary, Health center or Hospital



*Instructions:* Ask to see the Designated Spaces for Oral Rehydration and then answer the following questions through observation.

Question #	Question	Answer	Response
2.3	<i>A dedicated space is present for rehydration of children under five years of age who have diarrheal disease</i>	Yes =1 No =2	
2.4	<i>The space is accessible to attending staff and caregivers</i>	Yes =1 No =2	To assess accessibility, the team considered how close the ORT space was to where sick children with diarrhea were being received and examined. If the ORT Corner was in the same room or adjacent to the examination area, it was considered accessible; if it was located in a different section of the hospital from where sick children were received and examined, it was rated as poor accessibility.
2.5	<i>Where in the facility is the dedicated space located?</i>	In Outpatient = 1 In Emergency Room: = 2 In Maternal/Child Health unit =3 Next to the maternal Clinic =4 Next to the child health Clinic =5 At entry point for the child care, e.g. OPD and even Wards =6 Other: please specify:	
2.6	<i>How far is the ORT Corner from the consultation room where sick children are first seen?</i>	Within same room =1 In the next room =2 In a separate building=3	
2.7	<i>Is there water provided at the ORT Corner?</i>	Yes =1 No =2	
2.8	<i>How is water provided at the ORT Corner?</i>	Running from a tap =1 Drawn in a bucket =2 Jerry Can =3 Other: please specify:	
2.7	<i>How is the water used for ORT made safe? (Tick all that applies)</i>	Filter =1 Chlorination =2 Boiling Water= 3 No treatment =4 Other: Please specify	

Question #	Question	Answer	Response
2.9	Is the ORT Corner comfortable for care givers?	[Check all that apply] a. In a room or shaded area b. Available chair, bench or mat c. Adequate Lighting d. Window present e. Fan present f. Good visual separation from others (e.g. by a wall or curtain) g. Good sound separation from others – i.e. Only people in the ORT Corner can hear conversations.	a. _____ b. _____ c. _____ d. _____ e. _____ f. _____ g. _____

### Section 3: Assess Staffing

*Instructions:* Ask for the following information:

Question #	Question	Answer	Response		
3.1	Who in this facility is /are primarily responsible/assigned to run the services at the ORT Corner? (Tick the most appropriate. Question applies to the person(s) doing this on the day of the assessment )	RESPONSE Yes=1 or No=2	Briefly state their role/function at ORT Corner	Received ORT Corner training Y/N (State Month & Year)	Received ORT Corner OJT or Mentorship Y/N (State Month & Year)
	Doctor				
	Clinical Officer				
	Nurse				
	Community health Extension Worker (CHEW)				
	Community Health Volunteer (CHV)				
	Other				
3.3	Ask to see a copy of the training materials used for ORT training. For each set of materials, list the following:				
Material 1:	Title of material Organization supporting the material (if obvious) Date when produced Basic content: Text [yes=1, no=2] pictures[yes=1, no=2] Are their job aids?: [yes=1, no=2]		1. _____ 2. _____ 3. _____ 4a. _____ 4b. _____ 5. _____		

Question #	Question	Answer	Response
Material 2:	Title of material Organization supporting the material (if obvious) Date when produced Basic content: Text [yes=1, no=2] pictures[yes=1, no=2] Are their job aids?: [yes=1, no=2]		1. _____ 2. _____ 3. _____ 4a. _____ 4b. _____ 5. _____

### Observation of Proxy Indicators for Performed Procedures

We want to determine whether or not facility staff actually perform each function without committing to long, in depth observations. Therefore, please answer the following questions to help determine whether each function is being performed at the facility.

*[Verify the presence of the following attributes at ORT Corners during/ after the qualitative questioning]*

Question #	Question [check the response that applies after verification]	
3.8	In which register, tool or patient document is the assessment, classification and treatment of children with diarrhea recorded at the ORT Corner?	For Yes , enter 1 For No, enter 2 Not applicable enter 3
	ORT Corner Register	
	Mother Child Booklet	
	MOH 704A	
	Other (specify)_____	
	Which commodities are available in the ORT Corner and in what Quantities? Answer for each commodity listed below.	
3.9	ORS Sachets (500mgs)	
3.10	ZINC Tablets (20MG) in Doses of 10 Tabs	
3.11	ORS/zinc Co pack	
3.12	Other e.g. ReSomal, Chlorine, Soap Bars (Specify)_____	

### Section 4: Communications

The concept of the ORT Corner is that presentation of the clinical condition at the facility offers a unique opportunity (i.e. a teachable moment) to convey information and practices to the patient and patient’s caregiver. These communications are delivered via four pathways: Direct counseling at the ORT Corner itself, BCC at the waiting bays or weekly visit areas, Regular ICE, and Job Aid/BCC materials at the clinic. Through discussion and observation, verify whether each of these techniques is implemented at the clinic. For each question, the response **present** means you have visually verified the item. The response **not present** means you were unable to verify the item, even after asking to see it.

Question #	IEC Materials	Coded Response For Yes , enter 1 For No, enter 2 Not applicable enter 3
4.1 BCC Posters on the following subjects are present <b>At ORT Corner:</b>	a. Diarrheal disease treatment:	
	b. Key preventative messages:	
	c. Integrated WASH Messages	
4.2 BCC Posters on the following subjects are present <b>At Waiting Bays:</b>	a. Diarrheal disease treatment:	
	b. Key preventative messages:	
	c. Integrated WASH Messages	
4.3 Demonstration materials are available, including materials on the following subjects:	a. Tippy tap	
	b. Handwashing pictures	
	c. Soap	
	d. ORS	
	e. Zinc	
	f. Local food demonstration points	
4.4	Print material on other child services available at the ORT Corner	
4.5 Counseling materials on continued care (treatment, nutrition) of convalescing care of the child at home are present within the ORT Corner	Mother – Child Booklet	
	IMCI chart or booklet	
	Other (Specify) _____	
4.6a BCC Messaging through Health talks	Does this facility Conduct Health Education Talks?	
	Does the schedule of health talks contain diarrhoea disease prevention & control themes/Topics? (If yes, verify with the health talks schedule/record.)	
4.6b BCC Messaging through Health talks	Doctor	
	Clinical Officer	
	Nurse	
	Community health Extension Worker (CHEW)	
	Community Health Volunteer (CHV)	
	Other (Specify) _____	
<b>Job Aid/BCC materials at the clinic</b>		
4.7	Are Job Aids for health workers available at the ORT Corners? Specify _____	

Standard ORT Corner Equipment		Coded Response Enter 1 Yes if at ORT Corner Enter 2 if item at MCH or HF but NOT at the ORT Corner; Enter 3 if item not at ORT or MCH/HF
1	Buckets for storing cups and spoons	
2	Clear plastic jugs – calibrated	
3	Comfortable chairs/seats	
4	Height boards – for measuring height	
5	Length boards – for measuring length of kids under the age of 2	
6	Locally-available measuring materials, e.g., Kimbo tin	
7	MUAC tape for nutrition assessments	
8	Spoons – teaspoons and stirring spoons	
9	Sufurias with lid (14 inch)	
10	Timing device or wall clock	
11	Waste bucket	
12	Weighing scale	
13	Buckets (3) with lids for infection prevention	
14	Cups, 50,100ml,200ml and 500 ml – calibrated	
15	Hand washing facility with tap	
16	Jug (1)	
17	Measuring jug – calibrated	
18	Safe water source and storage containers	
19	Storage facility/Area	
20	Table, bench/chairs for mixing ORS	
21	Wash basin	
22	Water heating equipment	
<b>Commodities and supplies</b>		
23	Chlorine for disinfection	
24	ORS in sachets	
25	Soap for handwashing	
26	Vitamin A	
27	Ciprofloxacin, Metronidazole, Erythromycin and Chloramphenicol for dysentery and cholera	

Standard ORT Corner Equipment		Coded Response Enter 1 Yes if at ORT Corner Enter 2 if item at MCH or HF but NOT at the ORT Corner; Enter 3 if item not at ORT or MCH/HF
28	Safe, clean water	
29	Thermometers	
30	Zinc tablets	
31	Are drugs and commodities stored properly in a cool dry place?	
<b>Tools</b>		
31	Diarrhea wall charts	
32	Mother Child Health Booklets	
33	IEC posters	
34	ORT registers	

## Section 5: Equipment and Operations

The health facility must maintain proper stock control and have an updated inventory for ORT equipment, supplies & commodities. The checklist below provides the minimum standard set of equipment, commodities and supplies required for a functional ORT Corner. Using the checklist, verify the presence or absence of each item in the list.

## Section 6: Registers / Records

Ask to see the ORT register prescribed by the Government of Kenya (see example in Annex 2) and any other register for recording diarrhea morbidity and answer the following questions. Then gather the following information:

Question #	Question	Code	Response
6.1	Does the facility have an ORT Corner Register and other OPD registers for recording diarrhea data? <i>[tick the option that applies]</i>		
	a. ORT	Yes = 1 No = 2	
	b. OPD Register	Yes = 1 No = 2	
	c. Other, specify (_____)	Yes = 1 No = 2	
6.2a	Which register has documentation of diarrheal disease incidence?		
	a. ORT register	Yes = 1 No = 2	

Question #	Question	Code	Response
	b. OPD register	Yes = 1 No = 2	
	c. Other, specify (_____)	Yes = 1 No = 2	
6.2b	Which register has documentation of diarrhea treatment with ORS & zinc?		
	a. ORT register	Yes = 1 No = 2	
	b. OPD register	Yes = 1 No = 2	
	c. Other, specify (_____)	Yes = 1 No = 2	
6.2c	Which register has documentation of nutritional counselling after diarrheal disease as per diarrhea management guidelines?		
	a. ORT register	Yes = 1 No = 2	
	b. OPD register	Yes = 1 No = 2	
	c. Other, specify (_____)	Yes = 1 No = 2	
6.3	Apart from the register, the data on monthly diarrheal disease has been summarized and displayed graphically or using charts (e.g. on paper, on the wall). [If YES, specify how..... and take photos]		Yes = 1 No = 2
	HOW: _____		

## Section 7: Assessment of OPD Register MOH 204A and/or ORT Corner Register Data Completeness and Accuracy

- Identify ORT Corner register and/or MOH 204A Register, retrospectively commencing June 2015, for every month select the first sick child under 5 with diarrhea until you have 10 cases from the ORT Corner register and/or MOH 204A;
- For each child selected assess the various elements and document their completeness and /or accuracy in the table 1 below;
- *Take Clear, visible photos of the registry data (or pages) for further, off site analysis]* (**Note: Photos should be taken with patient names covered**)
- **Section 7 concludes the visit.** Thank the staff for their time. Preview to them that there will be a follow up visit in the coming months so we look forward to seeing them again.

**Table 1. Assessment of OPD register MOH 204A and/or ORT Corner register data completeness and accuracy**

Source Document : ORT Register = 1; OPD register = 2; Other Document (Specify) =3 AND month of assessment	Patient Age (wks/ months)	Patient Sex (F/M)	Patient weight (kg)	Q1. Was Duration (days) of diarrhoea assessed? If Yes enter 1, if no enter 2	Q2. Was Dehydration status assessed? If Yes enter 1, if no enter 2	Q3. Was correct treatment given based on duration & dehydration status as per guidelines? If Yes enter 1, if no enter 2	Q4. Was correct treatment* given based on signs & symptoms? If yes = 1, if no = 2	Q5. Was Patient counselled as indicated in the register? If yes = 1, No=2	Q6. Was the outcome of the sick child indicated? If yes = 1, if no =2
Example: 1, June '15	18M	F	11kg	1	1	2	2	1	2
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
10.									



# Annex 1: ORT REGISTER

Month:		INITIAL ASSESSMENT											TREATMENT GIVEN (YES/NO)				OUTCOME, Yes=1, No=2, N/A=3		Remarks/Comments															
Date	S.No.	OP No	Name	Age- wks/months	Immunization Status	1* 2*	3*	Wgt (Kg)	Sex M/F	Residence	Duration of diarrhoea		Blood in stool, Yes/No.	Dehydration status			Home	Health facility				Admitted	Referred	Discharged Home	Died of diarrhoea									
											<14days	≥14days		NONE	SOME	SEVERE		OTHER ILLNESS	ORS	ZINC	NG/IV					VITA	Antibiotic given for diarrhoea	Counselled						
TOTALS*																																		

\*Totals and summaries captured in the ORT Data summary sheet in ANNEX II.

Vitamin A: If Yes, indicate 1=if 100,000IU, 2=if 200,000IU and 3=if No, and 4=if N/A.

Antibiotics: Indicate the name of the antibiotic if Yes, and No if none given.

**Key**

RHF - Recommended Home Fluids

Wgt (Kg) - Weigh in Kilograms

Immunization Status - 1\* - Fully Vaccinated for age

- 2\* - Defaulter

- 3\* - Not Vaccinated

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# Appendix B: Facilities With Communication Materials Compared With National ORT Corner Guidelines Standards

Communication Materials	Bondo Facilities with Materials in ORT Corner (n= 10)	Igembe Facilities with Materials in ORT Corner (n= 6)	Total Facilities with Materials Present in ORT Corner (n=16)
<b>BCC materials present in ORT Corners</b>			
Posters on diarrheal disease treatment	5	5	10
Posters on key diarrheal disease preventative health messages	6	2	8
Posters on integrated WASH messages	5	0	5
<b>BCC materials present in waiting bays</b>			
Posters on diarrheal disease treatment	5	1	6
Posters on key preventative health messages	5	2	7
Posters on integrated WASH messages	4	0	4
<b>Demonstration materials available for</b>			
Tippy taps*	0	0	0
Handwashing pictures	2	3	5
Soap	4	1	5
ORS	2	2	4
Zinc	0	0	0
Local food demonstration points	0	0	0
Print material on other child services available at the ORT Corner	1	3	4
<b>Counseling materials on continued care (treatment, nutrition) of the convalescing child at home are present within the ORT Corner</b>			
Mother–child booklet	3	6	9
IMCI booklet	4	1	5
Other: counseling cards for health care workers on diarrhea management/poster on continued home care	0	1	1
Facility conducts BCC through health talks	10	6	16
By clinical officers	2	1	3

\* A tippy tap is a simple handwashing device constructed out of local, inexpensive or recycled materials. Tippy taps can be constructed with minimal skill and aid in water conservation. Tippy taps can be constructed from various locally available materials and containers of different sizes.

<b>Communication Materials</b>	<b>Bondo Facilities with Materials in ORT Corner (n= 10)</b>	<b>Igembe Facilities with Materials in ORT Corner (n= 6)</b>	<b>Total Facilities with Materials Present in ORT Corner (n=16)</b>
By nurses	6	6	12
By CHEWs	4	2	6
By CHVs	9	4	13
By peer educators talks	6	0	6
Job aids for health workers are available at the ORT Corners?	5	2	7

# Appendix C: Facility Comparison of 15 Important Characteristics of a Functional ORT Corner

Facility Code	Igembe Facilities										Bondo Facilities					
	HOS	HC1	DI	D2	D3	D4	HC2	HC3	HC4	D5	D6	D7	D8	D9	D10	D11
<b>Physical Space</b>																
Facility has a dedicated space where caregivers can sit and start treatment for diarrhea for their children	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Staffing</b>																
A clinical officer or nurse is dedicated to the ORT Corner	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes
A community health extension worker or health volunteer is dedicated to the ORT Corner	No	No	No	No	No	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Training materials present in the ORT Corner	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
<b>Supplies &amp; Equipment</b>																
ORS sachets (500 mg) in the ORT Corner	Yes	Yes	Yes	Yes	Yes	Yes	No	Else-where in facility	Yes	No	Yes	No	No	Else-where in facility	Yes	No
Zinc tablets (20 mg) doses of 10 tabs in the ORT Corner	No	No	No	No	Yes	Yes	No	Else-where in facility	Yes	Yes	Yes	No	No	Else-where in facility	Else-where in facility	No

Facility Code	Igembe Facilities										Bondo Facilities					
	HOS	HCI	DI	D2	D3	D4	HC2	HC3	HC4	D5	D6	D7	D8	D9	D10	D11
Vitamin A in the ORT Corner	Yes	Yes	Yes	Yes	Yes	Yes	No	Else-where in facility	No	No	No	Else-where in facility	Else-where in facility	Else-where in facility	Else-where in facility	No
Ciprofloxacin, metronidazole, erythromycin, and chloramphenicol in the ORT Corner	Else-where in facility	No	Else-where in facility	No	Else-where in facility	Yes	No	Else-where in facility	No	No	Else-where in facility	Else-where in facility	No	Else-where in facility	Else-where in facility	No
Safe water source and storage container in the ORT Corner	Yes	Yes	Yes	Yes	Yes	Yes	Else-where in facility	Else-where in facility	Yes	Else-where in facility	Else-where in facility	Yes	Yes	Else-where in facility	Yes	Yes
<b>Communications</b>																
BCC posters in the ORT Corner	Yes	No	Yes	No	No	No	No	Yes	Yes	Yes	No	No	No	Yes	Yes	Yes
BCC posters in the waiting bays	No	No	Yes	No	Yes	No	No	Yes	Yes	No	No	No	No	Yes	Yes	Yes
Demonstration materials on ORS in the ORT Corner	Yes	Yes	No	No	No	No	No	No	No	No	Yes	No	No	No	Yes	No
Demonstration materials on zinc in the ORT Corner	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Counseling materials in the ORT Corner	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	No
Staff conduct BCC health talks	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Codes: HOS = subcounty or district hospital; HC = health center; D = dispensary

# Appendix D: Facilities With Required Equipment/Supplies According to the National ORT Corner Guidelines

Required Equipment	Equipment/Supplies in the Facility (including the ORT Corner)			Equipment/Supplies in the ORT Corner		
	Bondo (n=10)	Igembe (n=6)	Total (n=16)	Bondo (n=10)	Igembe (n=6)	Total (n=16)
Buckets for storing cups and spoons	10	6	16	4	4	8
Clear plastic jugs – calibrated	10	5	15	7	4	11
Comfortable chairs/seats	10	6	16	5	5	10
Height boards – for measuring height of children 2 years of age and older	10	5	15	3	4	7
Length boards – for measuring length of children under the age of 2	10	5	15	2	5	7
Locally available measuring materials, e.g., Kimbo tin	7	1	8	2	0	2
Mid-upper arm circumference (MUAC) measuring tape	10	6	16	0	5	5
Spoons – teaspoons and stirring spoons	8	5	13	2	5	7
Sufurias (cooking pots) with lids (14 inch) – for boiling water	5	5	10	1	0	1
Timing device or wall clock	5	5	10	1	5	6
Waste bucket	10	6	16	5	6	11
Scale for measuring child weight	10	6	16	4	5	9
Buckets (3) with lids for infection prevention	10	5	15	4	5	9
Cups, 50, 100 ml, 200 ml, and 500 ml – calibrated	6	6	12	5	5	10
Handwashing facility with tap	10	6	16	3	6	9
Jug (1)	10	3	13	6	3	9
Measuring jug – calibrated	10	6	16	6	4	10
Safe water source and storage containers	10	6	16	7	6	13
Storage facility/area	10	6	16	6	6	12
Table, bench/chairs for mixing ORS	8	6	14	6	6	12
Wash basin	7	5	12	4	1	5
Water-heating equipment	5	5	10	0	0	0
<b>Commodities/supplies</b>						
Chlorine for disinfection	10	6	16	1	1	2

Required Equipment	Equipment/Supplies in the Facility (including the ORT Corner)			Equipment/Supplies in the ORT Corner		
	Bondo (n=10)	Igembe (n=6)	Total (n=16)	Bondo (n=10)	Igembe (n=6)	Total (n=16)
ORS sachets	5	6	11	3	6	9
Soap for handwashing	10	4	14	4	2	6
Vitamin A for children 6–59 months of age	5	6	11	0	6	6
Ciprofloxacin, metronidazole, erythromycin, and chloramphenicol for dysentery and cholera	4	4	8	0	1	1
Safe clean water	10	6	16	5	6	11
Thermometers	10	4	14	2	0	2
Zinc tablets	6	2	8	3	2	5
Drugs and commodities are stored properly in a cool dry place	10	5	15	6	5	11
<b>Tools</b>						
Diarrhea wall charts	7	0	7	4	0	4
Mother-child health booklets	9	6	15	5	2	7
IEC posters	8	5	13	5	4	9
ORT Registers	–	–	–	5	3	9
OPD Registers	9	6	15	–	–	–

# Appendix E: Descriptive Statistics and Evaluation Results From Register Entries

Category	Possible responses	Bondo	Igembe	Total
<b>Facilities visited</b>		<b>n = 10</b>	<b>n = 6</b>	<b>n = 16</b>
Type of facility	Dispensary	7	4	11
	Health center	3	1	4
	District hospital	0	1	1
<b>Patient entries reviewed</b>		<b>n = 100</b>	<b>n = 59</b>	<b>n = 159</b>
Source documents from which entries were recorded	ORT register	n= 99 12	n= 59 27	n= 158 39
	OPD register	86	20	106
	Other <sup>a</sup>	1	12	13
	Missing	1	—	1
Gender	Female	n= 100 43	n= 48 24	n= 148 67
	Male	57	24	81
	Missing	—	11	11
Age (months)	Mean	n= 100 18	n= 49 16	n= 149 7
	Median	15	12	13
	Youngest	1	2	—
	Oldest	57	48	—
	Missing	—	10	10
Weight (kg)	Mean	n= 10 10.5	n= 27 8.7	n=37 9.2
	Median	10.5	9	9
	Least	7	5	5
	Most	13	13	13
	Missing	90	32	122
Dehydration duration assessed	Yes	n= 100 49	n= 49 25	n= 149 74
	No	51	24	75
	Missing	-	10	10
Dehydration status assessed	Yes	n=90 32	n=49 38	n=139 70
	No	58	11	69
	Missing	10	10	20
Correct treatment based on guidelines	Yes	n= 100 73	n= 48 37	n= 148 110
	No	27	11	38
	Missing	—	11	11
Correct treatment (ORS and zinc) based on symptoms <sup>b</sup>	Yes	—	n= 49 47	n= 49 47
	No	—	2	2
	Missing	—	10	10
Patient counseling performed	Yes	n= 87 22	n= 50 30	n= 137 52
	No	65	20	85
	Missing	13	9	22



Category	Possible responses	Bondo	Igembe	Total
Outcome of sick child Indicated		n= 99	n= 47	n=158
	Yes	9	29	38
	No	90	18	108
	Missing	1	12	13

<sup>a</sup> Includes mother-baby booklet and pharmacy records for drugs.

<sup>b</sup> Data only available in Igembe.

