



# TAMANI

## Tabora Maternal Newborn Health Initiative

### TAMANI Public Health Facility Assessment Endline Report

#### Regional Summary

September 2021



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## List of Acronyms and Abbreviations

AMSTL – Active Management of the Third Stage of Labour

ANC – Antenatal Care

AFSRH – Adolescent Friendly Sexual and Reproductive Health

BEmONC – Basic Emergency Obstetric and Newborn Care

CCHPs – Comprehensive Council Health Plan

CEmONC – Comprehensive Emergency Obstetric and Newborn Care

CHMT – Council Health Management Teams

CHW – Community Health Worker

DHIS-2 – Digital Health Information System 2

DMO – District Medical Officer

EmONC – Emergency Obstetric and Newborn Care

FP – Family Planning

HCW – Health Care Worker

HF – Health Facility

HMIS – Health Management Information Systems

MDR – Maternal Death Review

MoHCDGEC – Ministry of Health, Community Development, Gender, Elderly and Children

PMTCT – Prevention of Mother to Child Transmission

PNC – Postnatal Care

PO-RALG – President’s Office – Regional Administration and Local Government

RHMT – Regional Health Management Team

SS – Supportive Supervision

## Summary of Findings

This report of changes between baseline and endline surveys of health facilities in Tabora Province, Tanzania shows significant improvement in almost all indicators. Although the number of facilities remained roughly the same, the number of ambulances available increased in many districts and staff training has improved across all categories of health care workers. The provision of Adolescent Friendly Sexual and Reproductive Health (AFSRH) improved according to some indicators, although availability of services and confidential spaces was still uneven and, in some cases, declined.

Indicators relating to antenatal care and maternal and neonatal mortality and morbidity improved significantly between the baseline and endline surveys. Among other improvements, the share of pregnant women receiving antenatal care before 16 weeks of gestation rose from 5% to 42% across Tabora, and the most common number of ANC visits on average across facilities rose from three to four or more.

Maternal mortality between the baseline and endline surveys seems to have improved markedly from 95 total deaths to 41, especially given that the total number of deliveries in the year prior to the endline survey was 40% higher than in the year prior to baseline. Cases of maternal morbidity directly due to pregnancy and delivery fell between surveys, although cases due to indirect causes rose, mostly because of a higher incidence of malaria and anemia. Poor neonatal outcomes fell across all indicators, particularly low and very low birthweight. Although there was a small increase in the number of facilities reporting that they had a maternal death review system in place, there is still significant room for improvement, with only 57% of facilities reporting a MDR process at endline and many facilities not providing full information for this question.

In the area of training and management, the number of facilities reporting a supportive supervision visit in the previous three months fell slightly from 52% to 47%, and at endline between 40% and 100% of facilities in each district had received a visit in the previous six months. The number of facilities who had received new guidelines on developing Annual Health Centre and Dispensary Plans was significantly higher at endline at 74% vs. 24%, as was the number of facilities with at least some staff training in planning and budgeting, which rose from 13% to 69%.

Facilities using a brick incinerator for medical waste rose from 70% to 95% across Tabora, and those having latrines with running water from 29% to 73%.

## Background

The TAMANI health facility assessment was completed by project staff twice, at the beginning and end of the project, and collected data about all public health facilities in Tabora with the goal of informing TAMANI project activities. The baseline survey was administered between July and August of 2017 and subsequently repeated between November of 2020 and January 2021. Each time, the project staff met with the officer in charge of the health facility to help with interpretation when completing the questionnaire. Another component of the survey involved project staff observing waste management facilities.

The survey was developed based on input from project partners and was approved by the Regional Health Management Team (RHMT).

Specifically, the survey aimed to identify the following key information:

- What essential EmONC equipment was present and to identify equipment gaps at each health facility
- Potential water rehabilitation projects
- Which facilities had staff trained in EmONC & family planning in the last 5 years
- Service levels (i.e. # of births, provision of family planning etc.)
- Maternal Death documentation processes

The information from the original survey completed in 2017 was used to make project decisions, in partnership with the Regional Health Management Team, related to equipment distribution, training of health care workers and health facility rehabilitation projects.

The survey completed at the end of the project allows for the comparison of the situation at health facilities before and after implementation of the TAMANI project. This report outlines the changes in selected indicators between the baseline and endline surveys.

## Regional Summary of Findings

The following tables present data from the baseline and endline surveys on the number and type of health facilities, availability of ambulances by district and number and type of healthcare workers and their training.

At baseline the survey assessed 265 facilities across eight<sup>1</sup> districts, representing 245 dispensaries, 13 health centers, and 7 hospitals. At endline the number of health facilities was approximately the same, although with a drop in the number of dispensaries and hospitals, and an increase in health centres.

**Table 1: Breakdown of health facilities in Tabora by type and district (as per Health Facility survey)**

	Total		Dispensary		Health Center		Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Igunga	56	56	51	52	4	3	1	1
Kaliua	36	36	33	33	3	3	0	0
Nzega DC	45	40	42	36	2	4	1	0
Nzega TC	4	7	3	5	1	1	0	1
Sikonge	28	26	24	23	2	3	2	0
Tabora MC	28	25	26	23	0	1	2	1
Urambo	24	24	22	22	1	1	1	1
Uyui	44	47	44	44	0	2	0	1
<b>Total</b>	<b>265</b>	<b>261</b>	<b>245</b>	<b>238</b>	<b>13</b>	<b>18</b>	<b>7</b>	<b>5</b>

In Tabora at baseline, 34 health facilities (12.8%) had access to ambulances. The biggest proportion of facilities with access to ambulances was in Tabora Municipal (32%) while the health facilities in Nzega TC, the smallest district, did not have any ambulances serving their catchment areas. At endline, the number of facilities with access to ambulances had doubled to 69 (26.4%) and all of the districts had ambulances serving at least some of their facilities. Uyui reported the biggest increase with 68% of facilities having access to ambulances at the end of the project vs 6.8% at the start.

**Table 2: Health Facilities with access to ambulances**

	Health Facilities with access to ambulances	
	Baseline	Endline
Igunga	14.3% (8/56)	12.5% (7/56)
Kaliua	5.6% (2/36)	13.9% (5/36)
Nzega DC	13.3% (6/45)	17.5% (7/40)
Nzega TC	0% (0/4)	28.6% (2/7)

<sup>1</sup> Note that Nzega DC and Nzega TC have been split due to logistical purposes of the TAMANI project, reflecting the two councils governing the district of Nzega.

Sikonge	14.3% (4/28)	15.4% (4/26)
Tabora MC	32.1% (9/28)	32% (8/25)
Urambo	8.3% (2/24)	16.7% (4/24)
Uyui	6.8% (3/44)	68.1% (32/47)
<b>Total</b>	<b>12.8% (34/265)</b>	<b>26.4% (69/261)</b>

The baseline survey showed nurses and midwives were the most commonly reported health care worker (HCW) cadre aside from Community Health Workers and had also received the most training in the last two years prior to the survey. Between the baseline and endline surveys, the number of Clinical Officers and Assistant Clinical Officers increased significantly, while the number of Enrolled Nurses and Medical Attendants decreased. Very few HCWs had received training in CEmONC, permanent family planning, or adolescent friendly services at baseline. Training levels across all topics generally increased between baseline and endline.

**Table 3: Number of health care workers by cadre and type of training received**

Cadre	Total # of workers		BEmONC		CEmONC		Short-Term FP		Long-Term FP		Permanent FP		Adolescent Friendly	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
<b>Medical Officer (MD)</b>	36	53	4	5	1	12	0	4	0	6	3	15	0	0
<b>Assistant Medical Officer (AMO)</b>	47	34	4	2	1	3	6	5	5	4	5	7	2	1
<b>Clinical Officer (CO)</b>	108	172	12	40	0	5	22	25	22	25	2	6	3	12
<b>Assistant Clinical Officer (ACO)</b>	55	86	6	19	0	1	7	17	8	14	0	2	0	5
<b>Nursing Officer/ Midwife</b>	24	26	5	6	0	0	9	2	9	3	0	2	5	0
<b>Registered Nurse/ Midwife</b>	253	266	47	86	4	20	89	84	76	85	1	13	17	28
<b>Enrolled Nurse/ Midwife</b>	530	480	96	128	2	29	111	160	95	140	2	18	20	48
<b>Medical Attendant</b>	465	289	5	0	0	0	44	29	2	14	0	1	7	12
<b>Community Health Workers</b>	1047	909	2	0	0	0	0	17	0	0	0	0	1	12

## Adolescent Friendly Sexual and Reproductive Health Services

The capacity of health facilities to respond to adolescent health needs is measured here through availability of equipment and materials and the number of girls and boys receiving family planning services by district.

Regarding the provision of adolescent-friendly sexual and reproductive health services (AFSRH), some indicators improved over the course of the project while those related to private spaces lost ground. At baseline 37% of facilities reported having a private area for providing AFSRH, while at endline this had dropped to half (18%). The rate of providing a separate waiting area for adolescents remained low and essentially unchanged with only 11% of facilities having separate waiting space for adolescents. However, the availability of confidential AFSRH services improved significantly from 58% at baseline to 71% at the end of the project. More facilities reported having specific AFSRH job aids and protocols at endline compared to the baseline (26% vs 5%). The baseline survey did not ask about whether staff are trained in ASHR, but at endline 25% of staff reported being trained.

**Table 4: Equipment and materials to support adolescent friendly health services in the region**

Equipment and materials available to support provision of AFSRH services	Baseline	Endline
Private space for providing AFSRH Services?	36.2% (96/265)	18.4% (48/261)
Is it possible for adolescents to receive confidential AFSRH services?	57.7% (153/265)	70.9% (185/261)
Is there a separate waiting space for adolescents?	10.9% (29/265)	11.5% (30/261)
AFSRH Job Aids/Protocols	5.3% (14/265)	26.1% (68/261)

Space availability for the provision of AFSRH remains an issue for most of the districts, with facilities reporting that adolescents are being received in the same room as other patients. One of the most frequent comments reported by the interviewees is “adolescents are served just like any other clients”.

**Table 5: Equipment and materials to support AFSRH by District -Endline survey**

Equipment and materials available to support provision of AFSRH services	Igunga	Kaliua	Nzega DC	Nzega TC	Sikonge	Tabora MC	Urambo	Uyui
Private space for providing AFSRH Services?	14.3% (8/56)	11.1% (4/36)	40% (16/40)	71.4% (5/7)	3.8% (1/26)	16% (4/25)	12.5% (3/24)	14.9% (7/47)
Is it possible for adolescents to receive confidential AFSRH services?	92.9% (52/56)	58.3% (21/36)	87.5% (35/40)	100% (7/7)	42.3% (11/26)	40% (10/25)	95.8% (23/24)	55.3% (26/47)
Is there a separate waiting space for adolescents?	7.1% (4/56)	2.8% (1/36)	27.5% (11/40)	42.9% (3/7)	7.7% (2/26)	12% (3/25)	0% (0/24)	12.8% (6/47)
AFSRH Job Aids/Protocols	16.1% (9/56)	13.9% (5/36)	35% (14/40)	85.7% (6/7)	38.5% (10/26)	40% (10/25)	29.2% (7/24)	14.9% (7/47)

According to the endline survey of health facilities very few adolescents received family planning services in the year before the survey. Most districts did not report any numbers, or the numbers reported were negligible (ex. Kaliua reported 22 girls and 9 boys received family planning services between November 2019 and October 2020). Only the district of Urambo reported over 3,800 adolescents receiving family planning services during this time, a notable difference from 3 years prior when just over 1,500 adolescents were reported to receive the services in Urambo. It is possible that this stoppage in service provision was due to COVID-19 pandemic although no comments from the interviews reflected this hypothesis.

**Table 6: Number of girls and boys receiving family planning services by district in 2016 (Baseline) and between November 2019 and October 2020 (Endline)**

	GIRLS		BOYS	
	Baseline	Endline	Baseline	Endline
Igunga	925	0	160	0
Kaliua	1,232	22	338	9
Nzega DC	5,179	0	58	0
Nzega TC	1,121	0	0	0
Sikonge	1,174	170	96	2
Tabora Municipal	1,222	0	273	0
Urambo	1,543	3,392	397	475
Uyui	6,337	0	1,861	0
<b>Total</b>	<b>18,733</b>	<b>3,584</b>	<b>3,183</b>	<b>486</b>

## Antenatal Care Services

The availability of antenatal care services, an important intermediate outcome for maternal and neonatal mortality, is measured here in terms of average time for first ANC visit and average number of ANC visits.

### 1. Average time for first ANC visit

At baseline approximately 91% of facilities saw women for their first ANC visit at 20-24 weeks of gestation on average. Very few women accessed ANC before 16 weeks of gestation at baseline, but this improved significantly by the endline survey, when almost 42% of facilities reported seeing women for their first ANC visit before 16 weeks on average and another 54% of facilities saw their average pregnant patient for the first ANC visit at between 20-24-weeks gestation.

**Table 7: Percent of facilities reporting average time for first ANC visit**

	Baseline	Endline
Before 16 weeks of gestation	14 (5.3%)	109 (41.8%)
From 20 to 24 weeks of gestation	242 (91.3%)	140 (53.6%)
From 28 to 32 weeks of gestation	8 (3.0%)	8 (3.0%)
From 36 to 40 weeks of gestation	1 (0.4%)	0

## 2. Average number of ANC visits

At the end of the project, 67% of facilities reported providing women with an average of 4 or more antenatal care visits during their pregnancies. This represents a significant improvement in ANC from the baseline, when most facilities (85.9%) reported an average of 3 or fewer visits.

**Table 8: Percent of facilities reporting average number of ANC visits provided**

# of ANC visits on average	Baseline	Endline
0	2 (0.7%)	4 (1.5%)
1	8 (3.0%)	0
2	52 (19.6%)	6 (2.3%)
3	166 (62.6%)	76 (29.1%)
4	30 (11.3%)	112 (42.9%)
4+	7 (2.6%)	63 (24.1%)

Although at the beginning of the project the majority of facilities in all of the districts reported providing on average at least 3 ANC visits, few of districts were meeting the WHO recommended model of antenatal care which includes at least 4 ANC visits. However, the endline survey shows important improvements for almost all the districts. Over 80% of facilities in four districts (Nzega DC, Nzega TC, Tabora MC and Uyui) reported providing on average 4 or more ANC visits. In Kaliua and Igunga the improvements might seem less striking, with just half of the facilities meeting WHO recommendations, but in reality, it is an important advancement when compared to the baseline survey results of these two districts. At baseline only one facility in Igunga and 5 in Kaliua were reporting providing women with at least 4 ANC visits on average. Sikonge is the only district where most facilities still report the average number of ANC visits as 3 or less. Only 15% of facilities in Sikonge (n=4) reported providing women with an average of 4 or more visits at the end of the project, which is unchanged when compared to the baseline.

**Table 9: Percent of facilities reporting average number of ANC visits provided, by district**

	No ANC visits		3 or less ANC visits		4 or more ANC visits	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
<b>Igunga</b>	1.8% (1/56)	0% (0/56)	96.4% (54/56)	46.4% (26/56)	1.8% (1/56)	53.6% (30/56)
<b>Kaliua</b>	0% (0/36)	0% (0/36)	86.1% (31/36)	47.2% (17/36)	13.9% (5/36)	52.8% (19/36)
<b>Nzega DC</b>	0% (0/45)	0% (0/40)	77.8% (35/45)	7.5% (3/40)	22.2% (10/45)	92.5% (37/40)
<b>Nzega TC</b>	0% (0/4)	0% (0/7)	75% (3/4)	0% (0/7)	25% (1/4)	100% (7/7)

<b>Sikonge</b>	0% (0/28)	0% (0/26)	85.7% (24/28)	84.6% (22/26)	14.3% (4/28)	15.4% (4/26)
<b>Tabora MC</b>	0% (0/28)	8% (2/25)	57.1% (16/28)	8% (2/25)	42.9% (12/28)	84% (21/25)
<b>Urambo</b>	0% (0/24)	0% (0/24)	83.3% (20/24)	29.2% (7/24)	16.7% (4/24)	70.8% (17/24)
<b>Uyui</b>	2.3% (1/44)	4.3% (2/47)	97.7% (43/44)	10.6% (5/47)	0% (0/44)	85.1% (40/47)

## Maternal Status

### 1. Maternal and Neonatal Mortality and Morbidity

As part of the Health Facility survey, facilities were asked to report their total number of deliveries as well as total number of maternal deaths in the last 12 months before the survey.

**At the baseline survey, for the period between August 2016 and September 2017 across all 265 facilities there were 65,042 recorded deliveries and 95 recorded maternal deaths.**

**At endline survey, for the period between November 2019 and October 2020 across all 261 facilities there were 107,741 recorded deliveries and 41 recorded maternal deaths.**

Overall, there were more deliveries and fewer maternal deaths reported in the last year of the project versus the first year. In 2016-17 facilities were recording 146 maternal deaths per 100,000 deliveries<sup>2</sup>. This proportion decreased to 38 in 2019-20. Although this represents the number of deaths as reported by each health facility, it is possible that in some cases it also includes maternal deaths that occurred in the community. When asked about the maternal death review process, some facilities commented on the fact that CHW are responsible for identifying and reporting maternal deaths that occur in the community.

**Table 10: Total number of recorded deliveries and deaths**

	Maternal Deliveries		Maternal Deaths		Maternal deaths per 100,000 deliveries	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
<b>Igunga</b>	11,231	20,922	21	4	187	19
<b>Kaliua</b>	8,546	22,443	6	5	70	22
<b>Nzega DC</b>	13,970	19,084	21	0	150	-
<b>Nzega TC</b>	486	7,547	0	4	-	53
<b>Sikonge</b>	6,091	9,003	0	5	-	56

<sup>2</sup> Please note that this statistic differs from the commonly reported MMR (Maternal Mortality Rate) which calculates number of maternal deaths per 100,000 **LIVE** births. The Health Facility survey used in this report did not distinguish between live births vs stillbirth.

<b>Tabora MC</b>	9,129	8,279	30	9	329	109
<b>Urambo</b>	8,578	2,726	14	3	163	110
<b>Uyui</b>	7,011	17,737	3	11	43	62
<b>Total</b>	<b>65,042</b>	<b>107,741</b>	<b>95</b>	<b>41</b>	<b>146</b>	<b>38</b>

The most common *direct causes* of poor maternal outcomes reported at baseline were obstructed/prolonged labour, abortion, pre-eclampsia/eclampsia and hemorrhage. These were still the most common causes of poor outcomes at endline.

The most common *indirect causes* of poor maternal outcomes at baseline were malaria, anemia, and HIV/AIDS. Of note, the number of reported cases of malaria and anemia doubled between 2016-17 and 2019-20. Overall, many more indirect negative outcomes were recorded in the endline year: over 11,000 cases vs. just under 5,900 cases in the baseline year. By comparison, complications directly caused by pregnancy and delivery fell from 4,575 to 3,291 recorded cases.

**Table 11: Maternal outcomes (direct and indirect causes)**

Maternal Outcome	Cases per year		Deaths per year	
	Baseline	Endline	Baseline	Endline
<b><i>Direct Causes</i></b>				
Hemorrhage	517	566	25	11
Obstructed/prolonged labor	1,320	1,094	10	4
Postpartum sepsis	164	174	9	4
Pre-eclampsia/eclampsia	869	364	11	5
Abortion	1,359	1,078	13	0
Ectopic pregnancy	198	13	0	0
Embolism	69	1	2	1
Complications from anesthesia	79	1	7	1
<b>Total</b>	<b>4,575</b>	<b>3,291</b>	<b>77</b>	<b>26</b>
<b><i>Indirect Causes</i></b>				
Malaria	3,321	7,601	3	8
HIV/AIDS	1,011	1,130	10	0
Anemia	1,388	2,235	4	3
TB	15	25	0	0
Other	53	103	1	4

<b>Total</b>	<b>5,788</b>	<b>11,094</b>	<b>18</b>	<b>15</b>
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At baseline the most common poor neonatal outcomes were newborns with low or very low birth weight and newborns requiring intubation for suctioning. At endline these were still the most reported complications for newborns, but cases of poor outcomes fell across all indicators, with low birth weight falling from 7,000 to 1,350 cases and very low birth weight from 1,615 to 64 cases.

**Table 12: Neonatal outcomes (cases/year)**

Neonatal Outcomes	Total cases /year		Igunga		Kaliua		Nzega DC		Nzega TC		Skonge		Tabora MC		Urambo		Uyui	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Newborns who required intubation for suctioning	2431	669	488	79	167	361	182	23	13	94	368	0	1046	1	106	85	61	26
Newborn with low birth weight (1500-2500 grams)	7000	1350	180	167	377	220	428	238	29	64	5383	185	189	62	153	351	261	63
Newborn with very low birth weight ( less than 1500 grams)	1615	64	22	3	0	6	31	6	2	0	537	6	1002	34	0	5	21	4
Newborns who had respiratory distress	811	46	32	7	9	25	10	0	0	0	26	1	612	0	121	0	1	13
Birth asphyxia	1154	222	371	5	5	35	16	7	0	0	2	1	607	5	147	163	6	6
Still births	780	432	120	8	46	213	28	25	2	30	44	2	405	26	109	121	26	7
Newborns who were referred for advanced newborn care	360	108	26	2	16	43	79	20	5	1	9	0	215	9	4	17	6	16
Newborn who died after delivery (within 24 hours)	306	37	29	4	3	13	54	1	0	1	13	0	205	0	0	12	2	6

## 2. Maternal Death Review

In Tanzania, when a maternal (or newborn) death occurs within a health facility, the facility is expected to convene a team to meet within 24 hours to review the case management, develop a timeline of events, and identify an action plan to prevent similar deaths in the future.

The health facility survey determined that 6% of health facilities experienced *one or more* maternal deaths in 2016 as well as in 2020. However, more deaths in total were recorded in 2016 compared to 2020 (95 vs 41 deaths respectively in the calendar years surveyed).

Out of 41 deaths in 2020, 27 occurred in dispensaries while 9 occurred in hospitals and 5 in health centres respectively. However, it is important to keep in mind that while most maternal deaths occurred in dispensaries, they account for 91% of surveyed facilities and an overwhelming majority of reported deliveries (80%).

The proportion of maternal deaths per 100,000 maternal deliveries reported in the facilities fell in dispensaries and in the hospitals but increased slightly in the health centers. As presented in Table 13, in 2019-20 dispensaries were recording 32 maternal deaths per 100,000 maternal deliveries<sup>3</sup> which is down from 111 deaths recorded in 2016. Hospitals still recorded the highest proportions of deaths per 100,000

<sup>3</sup> Please note that this statistic differs from the commonly reported MMR (Maternal Mortality Rate) which calculates number of maternal deaths per 100,000 **LIVE** births. The Health Facility survey used in this report did not distinguish between live births vs stillbirth.

deliveries, 239 cases at baseline and 99 at the endline survey. This could hypothetically be the result of a selection bias caused by high-risk pregnancies frequently being transferred to hospitals.

**Table 13: Maternal outcome by type of facility**

Type of facility	Maternal Deliveries		Maternal Deaths		Maternal deaths per 100,000 deliveries	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
Dispensary	36,898	84,609	41	27	111	32
Health Center	6,347	14,011	2	5	32	36
Hospital	21,797	9,121	52	9	239	99

Among the health facilities asked about the MDR process at the endline survey, 149 of them (57%) responded having a process in place to conduct a Maternal Death Review. The remaining 43% of the facilities either did not have an MDR process or simply indicated that no maternal deaths occurred in 2019-20. This represents a positive change over the baseline results where 48% of facilities indicated conducting a review of maternal deaths. The improvement comes mainly from number of dispensaries with an MDR process in place which increased from 46% at baseline to 56% at the end of the project.

**Table 14: Health facilities with a process in place to conduct an MDR by facility type**

Health Facility Type	
Hospital	4/5 (80%)
Health Center	11/18 (61%)
Dispensary	134/238 (56%)
<b>Total</b>	<b>149/261 (57%)</b>

Health facilities were also asked how a maternal death is identified (Table 15). Multiple different steps and methods involved in identification and the review process of maternal deaths were mentioned by the interviewees. The most commonly used method of identification and tracking of deaths was a death register with 42% of facilities mentioning it. This was followed by the maternal death review form and labour and delivery register which were mentioned by 21% and 13% of facilities respectively.

One of the most frequent combinations of steps was utilizing the partograph in combination with involvement of community health workers. CHWs were especially important for capturing maternal deaths that occur in the community.

Out of the 112 facilities that did not provide methods of identifying maternal deaths, 29% (n=32) were not aware of any MDR process in the facility. Finally, many facilities (n=80) have failed to provide details about any MDR process or simply indicated that no maternal deaths have occurred in the facility without specifying how maternal death would be identified if it was to occur. It is therefore unclear if these facilities did in fact have an MDR process in place.

Table 15: Methods of identifying maternal deaths per the endline survey

	N (%)
Through the staff involved	6 (4%)
Labour and delivery register	20 (13%)
Maternal Death Review form	31 (21%)
Partograph	26 (17%)
Death register	62 (42%)
Notification forms	4 (3%)
<b>Total</b>	<b>149 (57%)</b>
No maternal deaths have occurred at the facility	80 (71%)
Not aware of MDR process	32 (29%)
<b>Total</b>	<b>112 (43%)</b>

## Supportive Supervision

One of the core functions of Council Health Management Teams (CHMT) in Tanzania is the supportive supervision of health services (including outreach and mobile clinic services). Supportive supervision (SS) is a management function planned and carried out in order to guide, support and assist Health Service Providers in carrying out their assigned tasks. Supportive supervision emphasizes a paradigm shift from a culture of “inspection and blame” to one of “support, shared responsibility and problem solving”. Duration and frequency of SS visits is dependent on the type of facility: hospital (1-2 days), health centre (1/2 day) and dispensaries (1/2 day). At minimum, the CHMT should visit district hospitals, health centers and all dispensaries **once per quarter**. However, facilities with more problems should be visited more frequently.

At baseline, 52% of health facilities in Tabora Region received a SS visit by their CHMT within the past quarter, while at endline this had fallen slightly to 47%. However, the number of facilities receiving visits was highly variable across districts in both surveys.

Table 16: Percent of HFs that received SS visit by CHMT in the three months before the survey was taken

	% of Health Facilities			
	Baseline		Endline	
Igunga	30.4%	(17/56)	48.2%	(27/56)
Kaliua	33.3%	(12/36)	50%	(18/36)
Nzega DC	75.6%	(34/45)	42.5%	(17/40)
Nzega TC	100%	(4/4)	0%	(0/7)
Sikonge	78.6%	(22/28)	23.1%	(6/26)
Tabora MC	82.1%	(23/28)	48%	(12/25)
Urambo	4.2%	(1/24)	100%	(24/24)

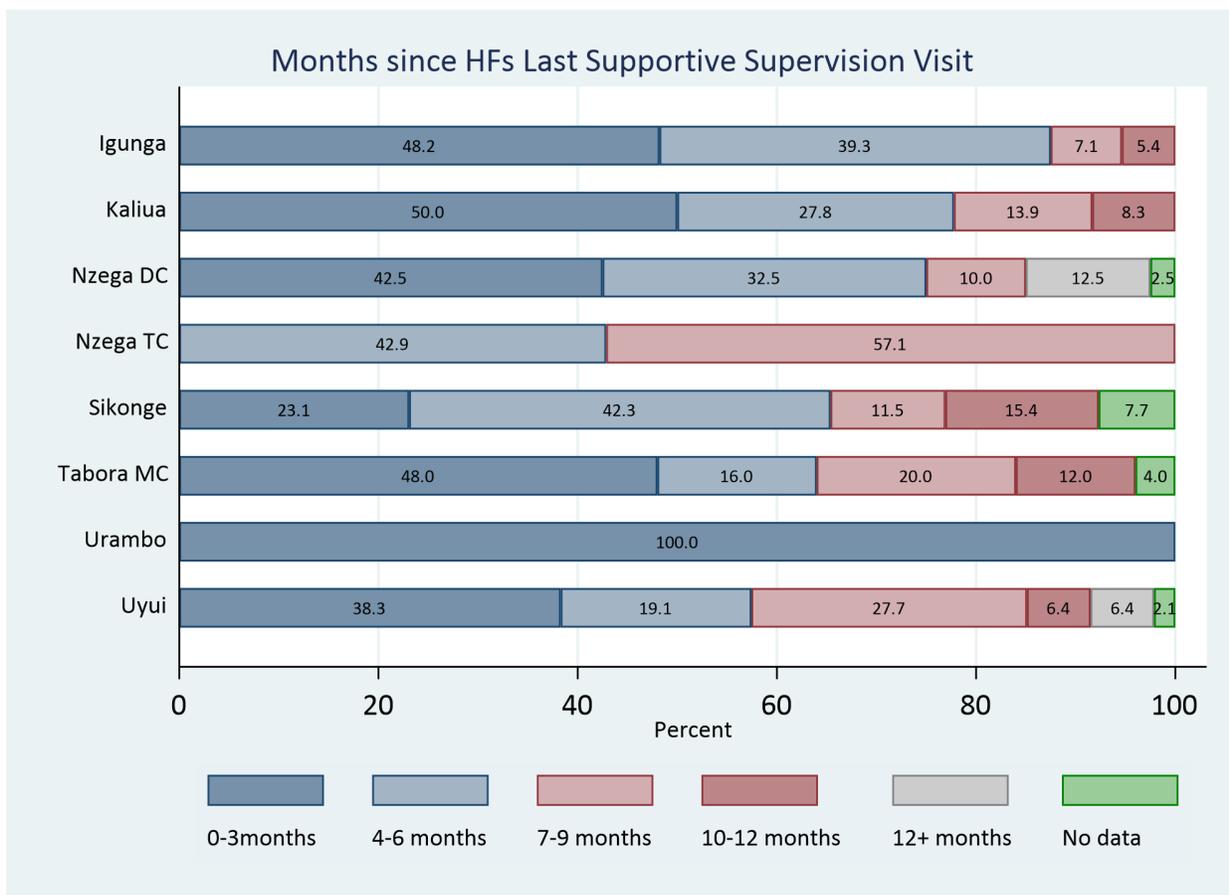
Uyui	56.8%	(25/44)	38.3%	(18/47)
<b>Total</b>	<b>52.1%</b>	<b>(138/265)</b>	<b>46.7%</b>	<b>(122/261)</b>

As part of the Health Facility Assessment, health facilities were asked to identify not only when the most recent SS visit by a CHMT occurred, but also whether a few key procedures were observed. The specific questions asked were:

1. What was the date of the last Supportive Supervision visit by CHMT?
2. Was written feedback provided following the last SS visit?
3. Have you been notified about the date of the next SS visit?
4. Does the CHMT member provide mentoring/coaching during SS visits?

Timing since the last Supportive Supervision visit health facilities received by CHMT at the endline survey is presented in Figure 1. The longest reported time since the last visit was 25 months, but over 50% of the facilities in almost every district received a SS visit within the previous 6 months. Nzega TC is the only exception: out of the 7 facilities in this district 5 reported visits in the last 7-9 months and the other 2 in the last 4-6 months.

**Figure 1: Months since last Supportive Supervision visit by their CHMT by district**



There are four main stages in a successful SS visit (as defined by the MoHCDGEC). The first stage is 'Preparation and Planning' which involves reviewing previous reports, preparing tools and logistics, and scheduling the visit with the HF. The second stage is "Actual Supportive Supervision" which is when the team visits the facility to observe facility staff and identify areas where they are performing well as well as problem areas. The third stage is "Immediate Feedback" where the supervisor discusses findings and prepares an action plan for going forward. An immediate feedback report summarising the strengths, weaknesses and actions agreed to is developed, with a copy left at the HF. The fourth and final stage is "Final Feedback and Follow-up Action" where the supervisor extends the final report to relevant stakeholders at the national, regional, and council level.

**From the HF perspective, the key procedural issues are whether or not written feedback was left the HF for review and follow-up action, and if they were informed in advance of the next SS visit.**

One of the main goals of supportive supervision is to improve health service quality by solving problems and enhancing work processes. Coaching and mentoring skills are core competencies which supervisors must possess. Coaching is a catalytic and supportive style of supervision and mentoring and aims to challenge the trainee or encourage the trainee to stretch his or her thinking about the practice. Mentoring is a process of practical training and consultation that fosters on-going professional development to yield sustainable high-quality clinical services. Supervisors do not necessarily need to be competent in specific areas of clinical mentoring but should be able to identify where HFs require additional clinical mentoring and link the HF with an appropriate mentor.

Traditional styles of Supervision in Tanzania have been more focused on inspection and blame; therefore, it is important to identify how HF workers perceive the support CHMT are providing during SS visits. Only 64% of HFs received written feedback from their previous SS visit at the time of the baseline survey, but this improved significantly to 92% at endline. The rate of being informed of the next SS visit improved slightly from 31% to 37%, and the provision of mentoring and coaching, which was already very common, further improved to 96%. However, in four districts: Sikonge, Tabora MC, Urambo, and Uyui, the rate of coaching and mentoring fell. In Urambo and Uyui the reduction was equal to about 9% of facilities.

**Table 17: % of HFs where standard procedures were observed on previous SS visit by CHMT**

	Written feedback provided to HF		HF notified of their next SS date		Mentoring/coaching provided	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
<b>Igunga</b>	50% (28/56)	100% (56/56)	10.7% (6/56)	3.6% (2/56)	82.1% (46/56)	100% (56/56)
<b>Kaliua</b>	69.4% (25/36)	100% (36/36)	33.3% (12/36)	0% (0/36)	94.4% (34/36)	100% (36/36)
<b>Nzega DC</b>	51.1% (23/45)	97.5% (39/40)	17.8% (8/45)	100% (40/40)	86.7% (39/45)	100% (40/40)
<b>Nzega TC</b>	100% (4/4)	100% (7/7)	75% (3/4)	100% (7/7)	100% (4/4)	100% (7/7)

<b>Sikonge</b>	53.6% (15/28)	84.6% (22/26)	28.6% (8/28)	0% (0/26)	96.4% (27/28)	92.3% (24/26)
<b>Tabora MC</b>	50% (14/28)	96% (24/25)	28.6% (8/28)	72% (18/25)	100% (28/28)	96% (24/25)
<b>Urambo</b>	100% (24/24)	66.7% (16/24)	91.7% (22/24)	0% (0/24)	100% (24/24)	91.7% (22/24)
<b>Uyui</b>	77.3% (34/44)	87.2% (41/47)	31.8% (14/44)	63.8% (30/47)	97.7% (43/44)	89.4% (42/47)
<b>Total</b>	<b>63%</b> <b>(167/265)</b>	<b>92.3%</b> <b>(241/261)</b>	<b>30.6%</b> <b>(81/265)</b>	<b>37.2%</b> <b>(97/261)</b>	<b>92.5%</b> <b>(245/265)</b>	<b>96.2%</b> <b>(251/261)</b>

## Comprehensive Council Health Plans (CCHPs)

Comprehensive Council Health Plans (CCHP) are developed annually by each council (district) in Tanzania and submitted to the PO-RALG (Prime Minister's Office - Regional Administration and Local Government) for approval. CCHPs outline the activities the council, and all corresponding health centres and dispensaries, are planning for the upcoming year in order to enhance the provision of essential health services (along with a corresponding budget).

In the past, the PO-RALG and MoHCDGEC noted that CCHPs do not adequately demonstrate the specific activities of each health facility, and therefore they decided to decentralize the role of planning and implementation for health services. Starting in 2017, all health facilities were expected to produce individual plans to be incorporated into the overall CCHP. New guidelines for “Developing Annual Health Centre and Dispensary Plans” were developed in October 2016.

To understand whether or not health facilities in Tabora were adequately prepared to start developing their own plans and budgets, the following questions were asked in the health facility survey:

1. Has your facility received the new guidelines for developing your health facility plan?
2. Has anyone at your facility received training on planning and budgeting? (Please note “training on planning & budgeting” was asked in general, and not as it relates to the new guidelines)
  - a. If Yes to the above, please write how many.

**Table 18: Health Facilities with new HF Plan guidelines and/or training on Planning and Budgeting per district**

	HF with new HF Plan guidelines		HF with budget/planning training		Number of trained staff*	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
<b>Igunga</b>	0% (0/56)	39.3% (22/56)	16.1% (9/56)	41.1% (23/56)	9	27
<b>Kaliua</b>	0% (0/36)	97.2% (35/36)	0% (0/36)	83.3% (30/36)	0	28

Nzega DC	66.7% (30/45)	97.5% (39/40)	15.6% (7/45)	95% (38/40)	10	36
Nzega TC	25% (1/4)	100% (7/7)	25% (1/4)	100% (7/7)	0	11
Sikonge	64.3% (18/28)	88.5% (23/26)	17.9% (5/28)	92.3% (24/26)	6	23
Tabora MC	10.7% (3/28)	88% (22/25)	10.7% (3/28)	80% (20/25)	0	21
Urambo	45.8% (11/24)	20.8% (5/24)	37.5% (9/24)	41.7% (10/24)	2	19
Uyui	0% (0/44)	85.1% (40/47)	0% (0/44)	57.4% (27/47)	0	0
<b>Total</b>	<b>23.8%</b> <b>(63/265)</b>	<b>73.9%</b> <b>(193/261)</b>	<b>12.8%</b> <b>(34/265)</b>	<b>68.6%</b> <b>(179/261)</b>	<b>27</b>	<b>165</b>

\*Number of trained staff is a sum across all the facilities in a given district. Some facilities (16 at baseline and 11 at endline) did not provide the exact number of trained staff even though they reported that training took place.

The proportion of facilities with new guidelines on developing Annual Plans increased dramatically between 2016-17 and 2019-20 from 24% to 74%. Similarly, the percent of facilities reporting having staff trained on budgeting and planning improved from 13% to 69%, with some of the districts such as Tabora MC and Nzega DC reporting that almost all of their facilities have some staff with this training. However, it is unclear how many staff members were actually trained across all districts as some of the facilities did not provide the numbers of trained staff even though they indicated that training was provided.

Although the majority of facilities reported having just have one staff member trained per facility, the overall number of trained staff in Tabora facilities increased from 27 to 165.

## Availability of Running Water

The proportion of health facilities with regularly available running water increased from 51% at the baseline to 84% at the end of the project. Especially notable is the increase of dispensaries with access to running water. According to the survey, almost 80 additional dispensaries had running water at the endline vs the baseline.

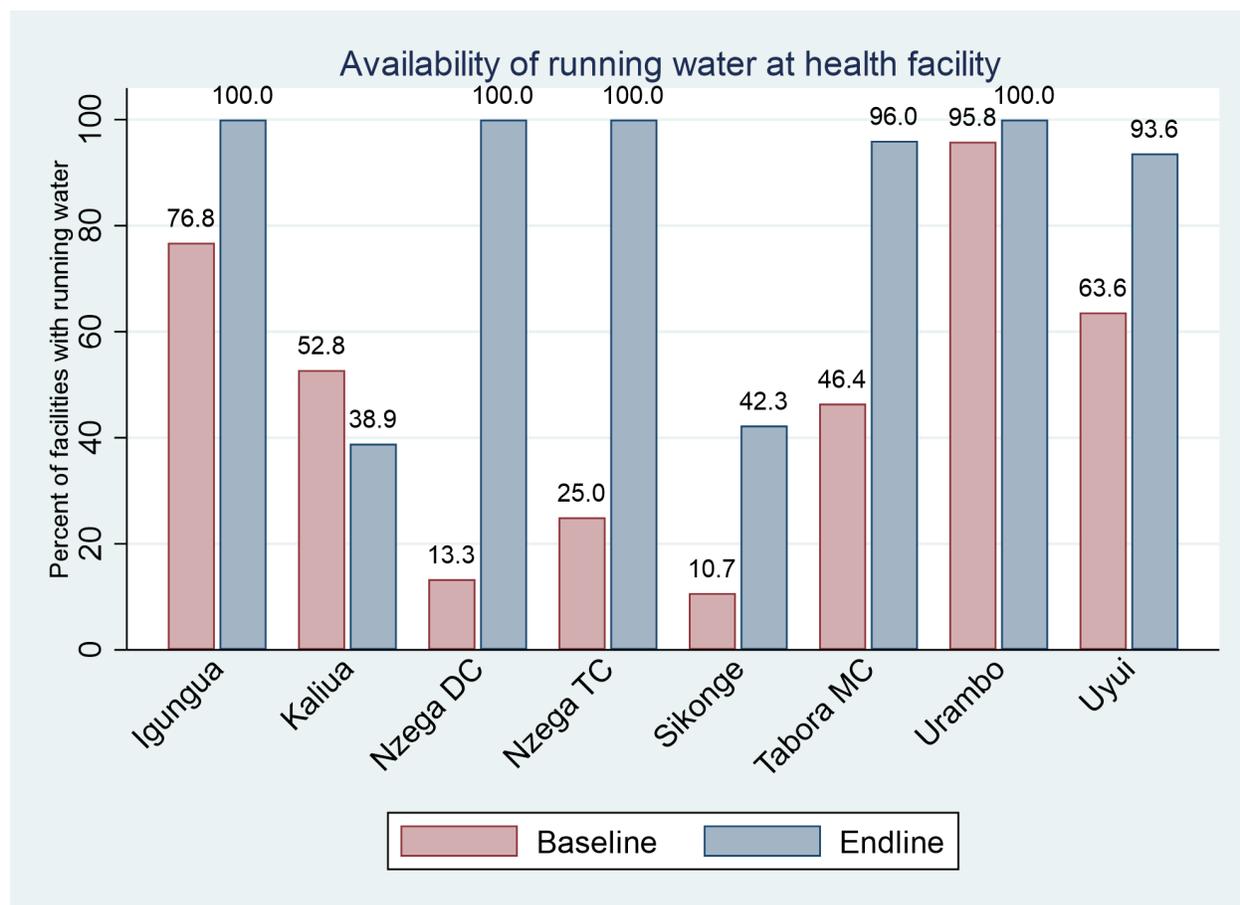
**Table 19: Availability of running water at health facility by district and type of facility**

	Total		Dispensary		Health Center		Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
<b>Igunga</b>	76.8% (43/56)	100% (56/56)	74.5% (38/51)	100% (52/52)	100% (4/4)	100% (3/3)	100% (1/1)	100% (1/1)
<b>Kaliua</b>	52.8% (19/36)	38.9% (14/36)	51.5% (17/33)	36.4% (12/33)	66.7% (2/3)	66.7% (2/3)	.% (0/0)	.% (0/0)
<b>Nzega DC</b>	13.3% (6/45)	100% (40/40)	9.5% (4/42)	100% (36/36)	50% (1/2)	100% (4/4)	100% (1/1)	.% (0/0)

Nzega TC	25% (1/4)	100% (7/7)	33.3% (1/3)	100% (5/5)	0% (0/1)	100% (1/1)	.% (0/0)	100% (1/1)
Sikonge	10.7% (3/28)	42.3% (11/26)	4.2% (1/24)	39.1% (9/23)	50% (1/2)	66.7% (2/3)	50% (1/2)	.% (0/0)
Tabora MC	46.4% (13/28)	96% (24/25)	42.3% (11/26)	95.7% (22/23)	.% (0/0)	100% (1/1)	100% (2/2)	100% (1/1)
Urambo	95.8% (23/24)	100% (24/24)	95.5% (21/22)	100% (22/22)	100% (1/1)	100% (1/1)	100% (1/1)	100% (1/1)
Uyui	63.6% (28/44)	93.6% (44/47)	63.6% (28/44)	93.2% (41/44)	.% (0/0)	100% (2/2)	.% (0/0)	100% (1/1)
<b>Total</b>	<b>51.3%</b> <b>(136/265)</b>	<b>84.3%</b> <b>(220/261)</b>	<b>49.4%</b> <b>(121/245)</b>	<b>83.6%</b> <b>(199/238)</b>	<b>69.2%</b> <b>(9/13)</b>	<b>88.9%</b> <b>(16/18)</b>	<b>85.7%</b> <b>(6/7)</b>	<b>100%</b> <b>(5/5)</b>

Nzega DC, Nzega TC and Tabora MC had the biggest gains. Less than 50% of facilities in those three districts had running water available in 2017 but almost all of them (except one, in Tabor MC) had it by 2021. Kaliua is the only district that reported smaller number of facilities with running water available at the end (39%) than at the beginning (53%).

Figure 2: Availability of running water at the health facility by district



## Waste Management Facilities

As part of the health facility survey, the data collector was instructed to assess the facility's waste management system by personally verifying whether the contaminated waste is incinerated or disposed of in a special pit. At baseline 41% (n=109) of facilities were using special disposal pits to manage their waste while 56% (149 facilities) used an incinerator. At the end of the project almost all of the facilities (95%, n=249) were observed to use an incinerator, with only 2% (n=6) of facilities disposing of their contaminated waste in a special pit. For just over 2% of facilities at both baseline and endline the method of disposal was not observed/verified.

Out of the 248 facilities that were verified to use incinerators at the end of the project, the majority (n=206) were observed to be: 'well built', 'functioning properly' or 'in good condition'. At six facilities the incinerator was reported to be 'in poor condition', 'damaged', 'not functioning properly' or the 'facility is in need of a new one' and 15 facilities mentioned that although the incinerator is working well, it has a 'few cracks', 'is missing a door' or 'is located close to the residential area'. The remaining 21 facilities where incinerators were observed did not provide additional comments on their functioning.

Also of note, the availability of latrines with running water improved significantly between baseline and endline in most districts. In Kaliua and Sikonge districts however, the number of facilities with latrines with running water declined.

Table 20 below presents the breakdown of available waste disposal equipment by district for both baseline and endline surveys.

**Table 20: Waste Disposal Equipment by district**

WASTE DISPOSAL	Total		Igunga		Kaliua		Nzega DC		Nzega TC		Sikonge		Tabora MC		Urambo		Uyui	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
<b>Regular trash bin</b>	64.5%	95.8%	30.4%	100%	55.6%	100%	97.8%	100%	100%	100%	92.9%	100%	75%	80%	95.8%	95.8%	36.4%	89.4%
	(171/265)	(250/261)	(17/56)	(56/56)	(20/36)	(36/36)	(44/45)	(40/40)	(4/4)	(7/7)	(26/28)	(26/26)	(21/28)	(20/25)	(23/24)	(23/24)	(16/44)	(42/47)
<b>Covered contaminated waste bin</b>	86.4%	96.6%	67.9%	100%	69.4%	97.2%	93.3%	100%	100%	100%	100%	96.2%	100%	84%	95.8%	95.8%	93.2%	95.7%
	(229/265)	(252/261)	(38/56)	(56/56)	(25/36)	(35/36)	(42/45)	(40/40)	(4/4)	(7/7)	(28/28)	(25/26)	(28/28)	(21/25)	(23/24)	(23/24)	(41/44)	(45/47)
<b>Puncture-proof sharps containers</b>	95.5%	95%	100%	100%	77.8%	97.2%	95.6%	97.5%	100%	100%	96.4%	88.5%	96.4%	84%	100%	95.8%	100%	93.6%
	(253/265)	(248/261)	(56/56)	(56/56)	(28/36)	(35/36)	(43/45)	(39/40)	(4/4)	(7/7)	(27/28)	(23/26)	(27/28)	(21/25)	(24/24)	(23/24)	(44/44)	(44/47)
<b>Placenta Pit</b>	73.6%	95.4%	23.2%	96.4%	97.2%	100%	84.4%	97.5%	75%	85.7%	75%	100%	85.7%	84%	91.7%	91.7%	88.6%	95.7%
	(195/265)	(249/261)	(13/56)	(54/56)	(35/36)	(36/36)	(38/45)	(39/40)	(3/4)	(6/7)	(21/28)	(26/26)	(24/28)	(21/25)	(22/24)	(22/24)	(39/44)	(45/47)
<b>Open Pit for burning waste</b>	65.7%	83.1%	83.9%	76.8%	25%	100%	73.3%	70%	75%	85.7%	67.9%	80.8%	57.1%	72%	79.2%	95.8%	63.6%	89.4%
	(174/265)	(217/261)	(47/56)	(43/56)	(9/36)	(36/36)	(33/45)	(28/40)	(3/4)	(6/7)	(19/28)	(21/26)	(16/28)	(18/25)	(19/24)	(23/24)	(28/44)	(42/47)
<b>Burying of waste</b>	21.1%	77%	3.6%	62.5%	13.9%	88.9%	6.7%	87.5%	0%	71.4%	42.9%	73.1%	25%	68%	79.2%	87.5%	18.2%	78.7%
	(56/265)	(201/261)	(2/56)	(35/56)	(5/36)	(32/36)	(3/45)	(35/40)	(0/4)	(5/7)	(12/28)	(19/26)	(7/28)	(17/25)	(19/24)	(21/24)	(8/44)	(37/47)
<b>Brick Incinerator</b>	70.9%	95%	7.1%	92.9%	94.4%	100%	86.7%	100%	75%	85.7%	75%	100%	92.9%	88%	91.7%	91.7%	88.6%	93.6%
	(188/265)	(248/261)	(4/56)	(52/56)	(34/36)	(36/36)	(39/45)	(40/40)	(3/4)	(6/7)	(21/28)	(26/26)	(26/28)	(22/25)	(22/24)	(22/24)	(39/44)	(44/47)
<b>Latrines with Running Water</b>	29.4%	73.2%	3.6%	94.6%	47.2%	27.8%	13.3%	97.5%	0%	100%	14.3%	3.8%	39.3%	84%	45.8%	95.8%	61.4%	78.7%
	(78/265)	(191/261)	(2/56)	(53/56)	(17/36)	(10/36)	(6/45)	(39/40)	(0/4)	(7/7)	(4/28)	(1/26)	(11/28)	(21/25)	(11/24)	(23/24)	(27/44)	(37/47)