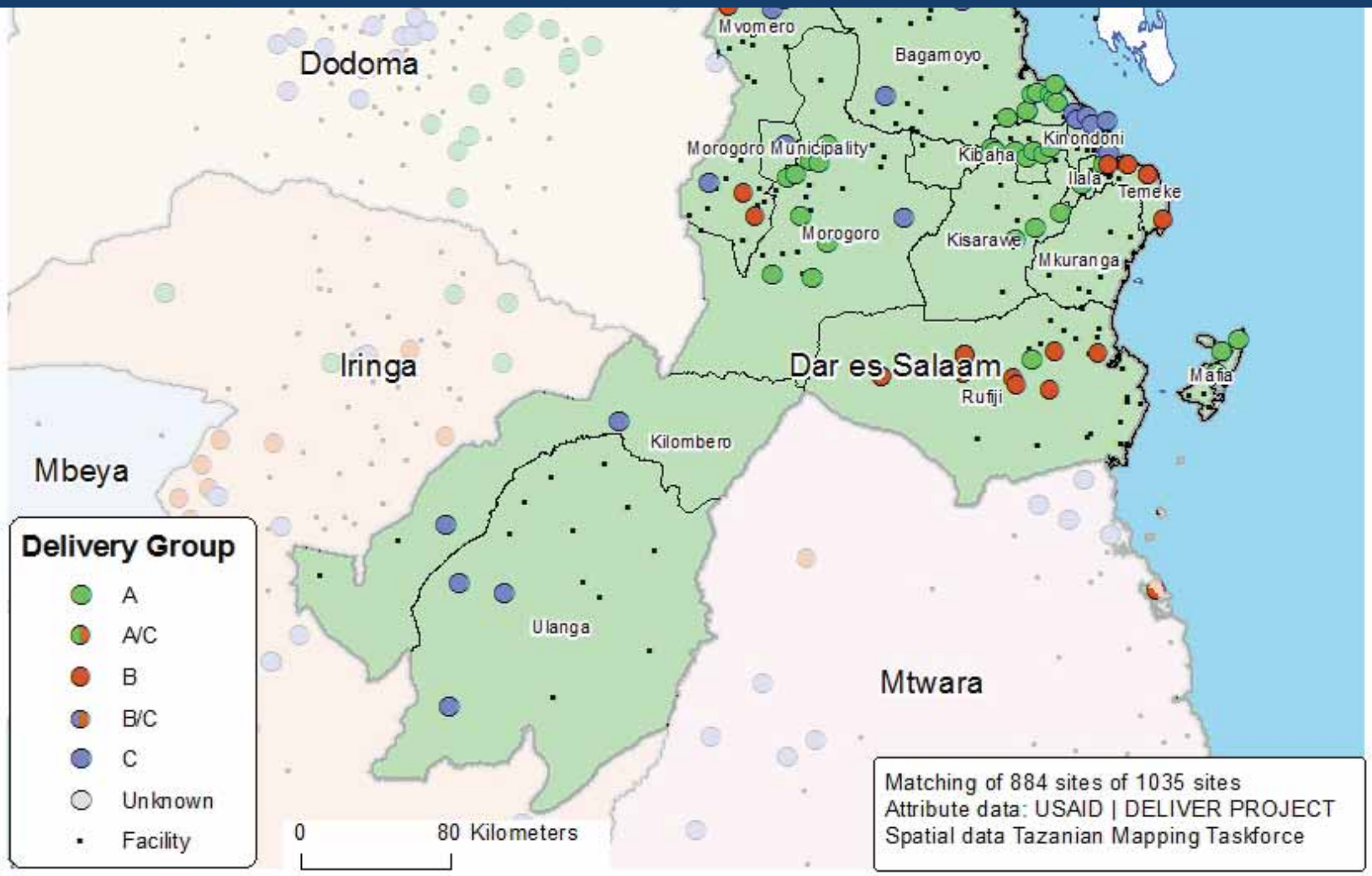
USAID | DELIVER PROJECT

Tanzania: Review of the Health Facility Report and Request Forms at MSD Zonal Stores



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PRESIDENT'S MALARIA INITIATIVE

Tanzania: Review of the Health Facility Report and Request Forms at MSD Zonal Stores

USAID | DELIVER PROJECT, Task Order 1
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Abstract
In June and July, 2010, USAID | DELIVER PROJECT, Tanzania, Task Order 1, conducted a data collection exercise at all nine Zonal Medical Stores Departments (MSD) to determine availability of select commodities and assess overall functioning of the Integrated Logistics System (ILS) in Tanzania.

Health facility Report and Request Forms (R&R) submitted to zonal MSDs were reviewed to determine the most recent product availability from a representative sample of health facilities. This report, presented to the MoHSW and PSU, includes the findings of the assessment, as well as next steps to improve commodity availability and strengthen the ILS.

Cover photo: Map of sampled facilities by delivery group in Dar es Salaam.

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Acronyms

ACT	Artemisinin Combination Therapy
ALu	Artemether/Lumefantrine
EDP	Essential Drugs Program
EPI	Expanded Program of Immunization
HIV	Human Immuno-deficiency Virus
ILS	Integrated Logistics System
IUCD	Intrauterine Contraceptive Device
JSI	John Snow, Inc.
MOHSW	Ministry of Health and Social Welfare
MSD	Medical Stores Department
PSU	Pharmaceutical Services Unit
RCHS	Reproductive and Child Health Section
R&R	Report and Request Form
SDP	Service Delivery Point
SP	Sulphadoxine/Pyrimethamine
STI	Sexually Transmitted Infection
USAID	United States Agency for International Development

Acknowledgments

The authors of the report would like to acknowledge the Ministry of Health and Social Welfare (MOHSW) of Tanzania, Pharmaceutical Services Unit (PSU)/ MOHSW, Medical Stores Department (MSD), and the United States Agency for International Development (USAID) | Tanzania, without whose support this activity could have not been completed. Many individuals in these organizations deserve special thanks, including Mr. Muhume, Chief Pharmacist, PSU and Mr. Michael Mushi of USAID | Tanzania. Their assistance and support was instrumental in this assessment.

Special thanks is also extended to all MSD Zonal Managers and MSD staff who gave the assessment team their time, all necessary documentation and R&R forms, and space to conduct this data collection exercise. The findings and analysis in this report are based on the review of the R&R forms at MSD zonal warehouses.

The authors would also like to extend special acknowledgement to the PSU staff, Winna Shango, Hanif Nazareli, Dedan Jonas and Siana Mapunjo, who participated in the data collection efforts and carried out the field work with dedication. An assessment of this magnitude requires inputs from too many individuals than can be acknowledged by name here, but their contributions have not gone unnoticed and their assistance is greatly appreciated.

Executive Summary

By the end of 2009, all regions in Tanzania had transitioned to the Integrated Logistics System (ILS). To assess product availability and overall functioning of the ILS, the USAID | DELIVER PROJECT and the Pharmaceutical Services Unit (PSU) conducted a data collection exercise to review facility-level Report and Request (R&R) forms submitted to the Medical Stores Department (MSD) zonal warehouses via the districts. Specifically, the exercise focused on evaluating recent facility-level product availability in all nine MSD zones and on identifying high-performing districts, as well districts requiring focused supervision.

Over the course of three weeks, R&R forms from a total of 1035 health facilities, representing 123 districts from all nine zones, were sampled. Only R&R forms submitted between the months of February and April were considered part of the sampling frame. R&R forms submitted from the appropriate delivery group for April were selected first. If the sample size was insufficient, R&R forms from other delivery groups that submitted in April were selected. If the sample size was still not met, R&R forms from March and then February were sampled using the same methodology.

The performance of districts varied greatly, even within the same zone, reinforcing the hypothesis that ILS performance has less to do with zonal factors than it does with individual district factors. There were high-performing and low-performing districts in all zones. Performance also did not depend upon distance from the district to the MSD zonal store; some low-performing districts were adjacent to the MSD, while there were high-performing districts that were located significant distances away.

In many of the zones, districts did not submit R&R forms on time or within the appropriate delivery group, per ILS submission guidelines. Some districts submitted R&R forms from all delivery groups within the same month. A large number of the forms submitted were incomplete and missing critical information such as facility name, facility code, and date of submission. Districts were also not consistently verifying R&R forms for completeness or accuracy. Lastly, there appeared to be long delays between the completion of forms at the facility and their arrival at the MSD.

Overall, stock-on-hand data collected showed significant stockouts of malaria commodities, essential medicines, and reproductive health commodities across the country. For family planning commodities, approximately half of the health facilities sampled were stocked out of combined oral contraceptives, injectables (DMPA) and male condoms. A national-level stockout of progestin-only pills affected availability across all zones, with 86 percent of the facilities stocked out. Significant variability could be seen in the availability of combined oral contraceptives and injectables nationally; with some districts, such as Kinondoni and Ileje, having both combined oral contraceptives and injectables in stock at 100 percent of sampled facilities, while others such as Maswa and Tandahimba had no stock of either of the two commodities in any of their facilities.

Similarly, Artemether/Lumefantrine (ALu) stockouts were prevalent across all zones. Only five out of the 123 districts had all four presentations of ALu in stock. Although a large number of facilities had at least one presentation available which could be still be used to treat patients, 25 percent of facilities sampled were stocked out of all four ALu presentations. There were only 34 districts where all facilities in the sample had at least one presentation in stock. Other malaria commodities such as

Sulphadoxine/Pyrimethamine (SP) and quinine tablets and injections also experienced stockouts across zones, though not as severe. In comparison to quinine tablets, quinine injections were more widely available.

For essential medicines, assessment results showed significant disparity in the availability of select essential drugs and their corresponding suspensions. Overall, the availability of amoxicillin, co-trimoxazole and paracetamol capsules and tablets was much better than for their corresponding suspensions, possibily due to the reimbursement process for the costs associated with purchasing suspensions.

In summary, product availability seems to be influenced more by individual district factors than by zonal factors. Similarly, stock availability of one product at the facility level did not necessarily translate into similar levels of availability for other products, and proximity to the MSD zonal warehouse did not necessarily impact product availability. Districts were not adequately fulfilling their role in implementing and monitoring the ILS at the facility level, resulting in both incorrectly filled and/or incomplete R&R forms and poor on-time reporting rates by delivery group.

Some of the next steps identified to improve product availability and efficiency of the ILS include identifying well-performing districts with high product availability to develop best practices, and at the same time, identifying low-performing districts that require more focused attention and supervision. Interventions targeting District Medical Officers (DMOs) and District Pharmacists to clarify their position in the ILS and their associated job responsibilities should also be developed. Lastly, it is critical for stakeholders to follow up on all the interventions mentioned above to determine the frequency, data points and product list for any similar activities in the future.

Background

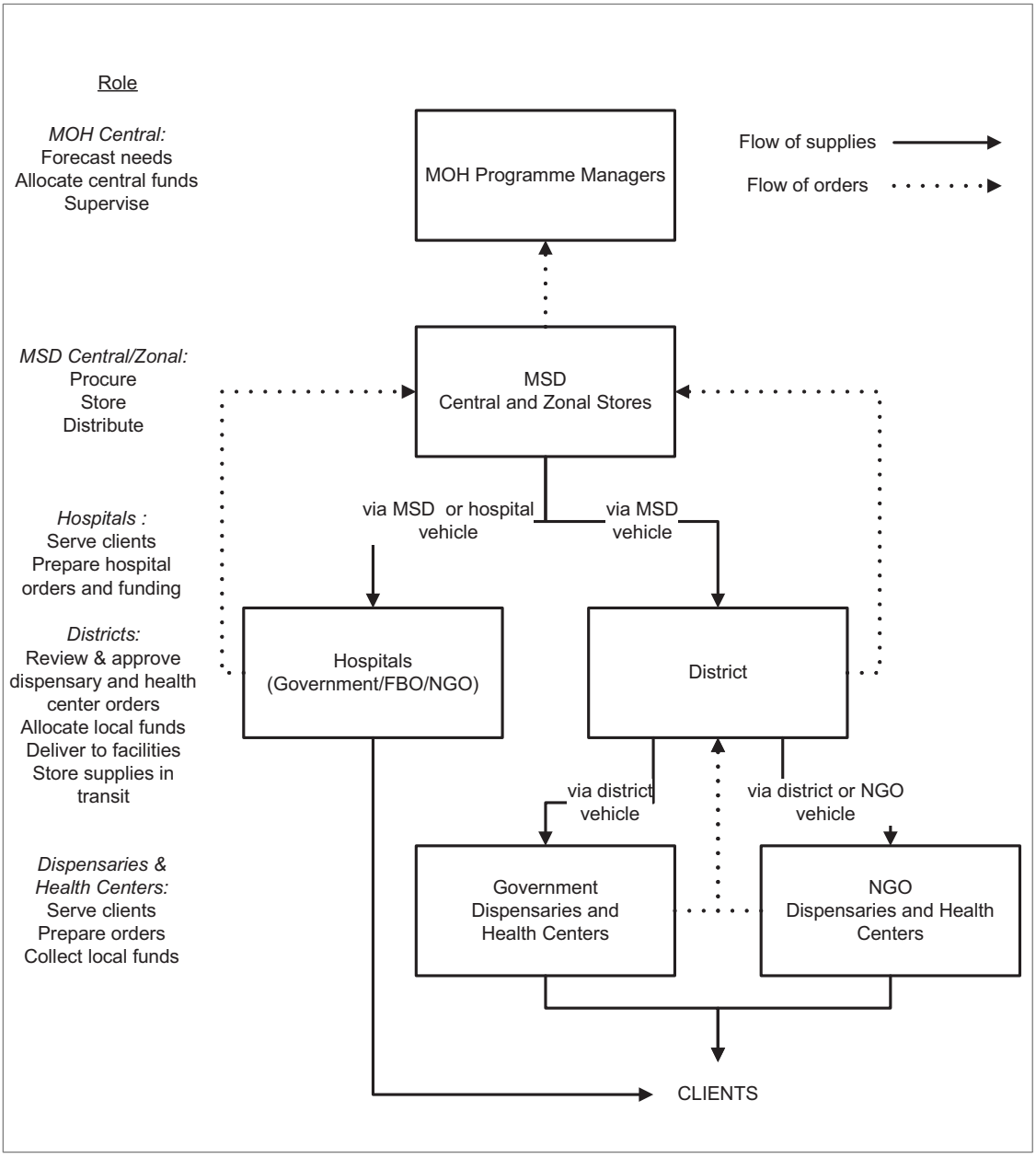
The nationwide transition in Tanzania from an Essential Drug Program (EDP) Kit System and Indent System to an Integrated Logistics System (ILS) has been in an incremental roll-out phase since 2005, with training for the last region to transition completed at the end of 2009. The purpose for the transition to an ILS is to integrate management of commodities for the EDP, the Reproductive and Child Health Section (RCHS), syndromic management of sexually transmitted infections (STIs), condoms for family planning and HIV prevention, and other related items into a single ordering and reporting system. By the end of 2009, all regions completed their transition to the ILS, and all zones with the exception of Mbeya had begun packing orders for health facilities (as of July 2010, orders for Mbeya were being packed at the Dar es Salaam zonal warehouse).

With the finalization of the ILS roll out, the USAID | DELIVER PROJECT is focusing on improving product availability by strengthening the ILS. To assess product availability and the current functioning of the ILS, the project and the Ministry of Health and Social Welfare Pharmaceutical Services Unit (PSU) conducted a data collection exercise to review a sampling of Report and Request forms (R&R) completed by the health facilities and submitted to the Medical Stores Department (MSD) zonal warehouses via the districts. Facility-level data collection is usually limited to a very small sample of facilities due to the time required and costs associated with travel to remote areas. In order to collect a representative sample of facilities from as many districts and zones as possible, and provide more visibility into the overall functioning of the ILS, teams collected facility-level data that was available at MSD zonal stores. This increased the number of facilities for which data could be collected.

Design of the ILS

The design of the ILS requires health facilities to request resupplies on a quarterly basis using R&R forms through the district pharmacist, who then reviews and submits the forms to MSD. Upon receipt of the R&R form, MSD prepares a custom package for each facility based on the amount requested in the R&R form as well as funds available for each facility. These packages are delivered to the district by MSD. The district is then responsible for delivering the pre-packaged commodities to the health facilities. The figure below illustrates the flow of supplies and information from the MSD to health facilities.

Figure 1. Flow of Commodities and Information in the ILS



The flow of commodities and information is staggered so that each facility reports, requests and receives resupplies from MSD once each quarter. Facilities within each district are divided into three delivery groups: A, B, and C. Each month, only facilities within one specific delivery group are expected to submit their R&R forms to provide districts with ample time to review and compile R&R forms from relevant facilities. This also prevents the district and MSD from being overwhelmed with requests and orders at the same time for the entire district and reduces the strain on the district's transportation resources to distribute the products to the facilities. Table 1 below shows the ordering and delivery cycle for the ILS.

Table 1. Ordering and Delivery Cycle for the Integrated Logistics System

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
R&R Submitted to MSD	A	B	C	A	B	C	A	B	C	A	B	C
R&R Processed by MSD	C	A	B	C	A	B	C	A	B	C	A	B
Orders Received at District	B	C	A	B	C	A	B	C	A	B	C	A

Overview of the MSD and PSU

Medical Stores Department

The Tanzanian public health care system depends to a great extent on MSD for the supply and distribution of drugs and medical supplies. Established as a parastatal organization by an act of Parliament in 1993, MSD serves as a national distribution system whose responsibilities include procuring and clearing, storing, and distributing drugs and related medical supplies. The ILS relies on all nine MSD zonal stores to complete orders for health facilities. Upon receipt of an order, MSD provides custom-kit packing and ships completed orders to the district warehouses. At present, all nine zones, with the exception of Mbeya MSD, are fully functional and packing for districts within their zones. Due to space limitations, districts in Mbeya zone are currently being packed at the Dar es Salaam MSD zonal warehouse.

Pharmaceutical Services Unit

The Pharmaceutical Services Unit (PSU) serves primarily as a policy, oversight and coordination unit within the MOHSW. Some of their key responsibilities include: ensuring adequate funds to procure drugs and medical supplies are provided to MSD; assisting health facilities and districts to quantify drugs/medical supplies; reducing drug wastage and pilferage through regular monitoring and supervision; establishing effective drug management systems at health facility level; and ensuring the allocation of drugs on an allocation formula that takes into account equity, patient turnover, morbidity patterns and associated drug needs.

Purpose and Objectives

This data collection exercise is the second in a series of activities to address data availability and its use for the proper functioning of the ILS. The findings and analysis from the preliminary R&R data collection activity in February 2010 informed the design of this larger scale data collection exercise at the MSD zones. After completing data collection and analysis in the first round from three pre-chosen zones, appropriate adjustments were made in the design of this activity to ensure both that the data collection methodology was feasible and that the data gathered can be, and is, constructively used for future decision making. The initial methodology, which involved extensive review of various logistics indicators from the two most recent R&R forms submitted by a health facility, was adapted to allow for data collection from all zones and districts in Tanzania, with emphasis on reported stock-on-hand data in the most recent health facility R&R.

The specific objectives for this exercise include the following:

- To evaluate recent product availability at the facility level in all nine MSD zones
- To identify high-performing districts in order to identify best practices
- To determine which districts require additional attention and focused supervision
- To assess overall functioning of the ILS
- To develop additional next steps for strengthening the ILS

Methodology

Site Selection

All districts in all nine MSD zones were selected for the R&R activity. The target sample was 25 percent of facilities from each district. The data collection teams first selected R&R forms submitted in April for the appropriate delivery group (A). If the forms available from the delivery group A submission were not sufficient to meet the target sample size, the data collection teams selected R&R forms submitted in April from group C followed by group B. If still unable to meet the sample size, R&R forms from March and then February were sampled using the same methodology. R&R forms submitted between February and April were not available from seven of the districts (out of a total of 130), resulting in these districts being excluded from the sample. A total of 1035 health facilities were sampled from all nine zones, representing 123 districts.

Table 2. Breakdown of Health Facilities Sampled by Zone

Zone: Sample Size	Zone: Sample Size
Dar es Salaam: 132	Mtwara: 105
Dodoma: 105	Mwanza: 229
Iringa: 106	Tabora: 94
Mbeya: 94	Tanga: 52
Moshi: 118	**TOTAL: 1035**

Zonal, district and facility data was collected during the R&R review exercise. Zonal and district-level information included the following:

- Date districts submitted R&R forms to the MSD zones
- Number of districts submitting R&R forms to the MSD zones
- Number of districts submitting R&R forms in the appropriate delivery group to the MSD zones

Facility-level information collected included the following:

- Health facility delivery group
- Number of health facilities submitting to the district
- Number of health facilities submitting to the district in the appropriate delivery group
- Date R&R form was completed by the facility
- Availability of select commodities at the time of R&R form completion

Data Collection

Three teams of two to four people traveled to eight of the nine zones for data collection. Data for Mbeya Zone was collected at the Dar es Salaam zonal MSD. Three weeks were allocated for data collection. Since this was the first time a data collection activity of this magnitude had been conducted, extra time was allocated to ensure that each team had enough time to complete review of the R&R forms. On average, each team spent two to three days at each zone. Upon completion, each team returned to Dar es Salaam to debrief and conduct preliminary data analysis.

Three weeks of data collection at the zonal MSDs were broken down as follows:

- Week 1: Dar es Salaam, Mtwara, and Tanga
- Week 2: Iringa, Mwanza, and Mbeya (data collected at MSD-Dar es Salaam)
- Week 3: Dodoma, Moshi and Tabora

Data Collection and Analysis

A database was developed in Microsoft Access and was used for data entry. Each team traveled to the zones with at least one laptop and data were directly entered into the database. The data collection tool included questions specific to the zone, district and the facility. Data were analyzed using Microsoft Excel, and mapping of product availability data by district was done using Diva-GIS.

Commodities Assessed

The stock status of the following 21 commodities, including select anti-malarials, family planning and essential drugs, was assessed. Selection of commodities from different product categories was intended to bring to attention any issues that might be impacting a specific product category.

Family planning products and Artemether/Lumefantrine (ALu) rely on vertical funding streams. National stock levels, therefore, are often beyond MSD's control, but data collected reflect districts' comparative ability to stay supplied even if national level stocks are low. Other essential drugs, including quinine and Sulphadoxine/Pyrimethamine (SP), are procured with the revolving drug fund and are therefore more directly under MSD's responsibility for the entire continuum of quantification, procurement, distribution and pipeline monitoring.

Table 3. List of Commodities Assessed

Family Planning	Antimalarials	Essential Drugs
Lo-Femenal	ALu 1 x 6	Paracetamol tablets
Microgynon	ALu 2 x 6	Amoxicillin capsules
Depo-Provera	ALu 3 x 6	Co-trimoxazole tablets
Condoms	ALu 4 x 6	Paracetamol syrup
Implants	Quinine tablets	Amoxicillin suspension
Copper T-IUD	Quinine injection	Co-trimoxazole suspension
	Sulphadoxine/Pyrimethamine (SP)	Ferrous Sulphate + Folic Acid tablets
		Diazepam injection

Limitations

During the exercise, the teams encountered some limitations that impacted data collection efforts. The data collection teams were unable to find R&R forms submitted between February and April for seven districts. As a result, these districts were not included in the assessment results. Because many of the facilities and districts did not correctly label their R&R forms or submission packets with dates, there was sometimes no way of verifying the exact date of submission. This limited the analysis possible on timeliness of R&R submission and adherence to delivery group schedules.

There were also some limitations that could affect the stock-on-hand data quality. The assessment did not consider national stock levels or zonal stock levels so there is a possibility that national-level stockouts of certain commodities may have confounded the analysis of stock availability. Due to staggered reporting by facilities and long delays between when the facilities submitted the R&R forms and when they arrived at the zone, the data should not be used to extrapolate national stock-on-hand information at any point in time. The teams had no way of knowing if individual facilities managed implants or IUCDs, so some facilities may have reported stock-outs of these two commodities when they should have instead reported no data. Some facilities used old R&R forms which did not include the ALu commodities and as a result no data were available on ALu availability at those facilities. In addition, a few districts photocopied completed R&R forms and submitted them for multiple facilities, which brings into question the accuracy of the stockout data.

Observations

The observations outlined below were not an explicit component of the assessment methodology, but they do provide important information for ILS strengthening at the zonal, district and facility level and so have been included as relevant to this activity. Many of these observations are discussed in further detail within the Findings section of the report.

Zonal-level Observations

There do not appear to be Standard Operating Procedures (SOPs) in place across all zones, resulting in very different procedures for managing and storing data at the MSD zonal offices. Some zones organize R&R forms by district, while others organize them by the month received or by delivery cycle. There is also no standard register documenting receipt of R&R forms from districts for all the zones. Some registers are organized by delivery group and cycle while others by the date R&R packets are received at MSD. MSD–Tanga has its own ILS ordering and delivery cycle and MSD–Tabora has not yet begun using the ordering and delivery cycle.

The current ILS ordering and delivery schedule provides less than one month for an R&R form to move from the health facility to the MSD zone. The health facility submits its form to the district by the 9th of the month, and the district is then supposed to submit all R&R forms from the appropriate delivery group to the zone by the 25th of the month. From the review of the R&R forms, the data collection team found that very few districts were able to receive R&R forms and deliver them to the zone in the allotted time period. Because this was not part of the assessment methodology, insufficient data are available to determine the cause(s) of the delay. In some cases the delay may be at the health facility, and in other cases at the district. This may be an area of further study for future ILS strengthening activities.

District-level Observations

Overall, the data collection teams observed that districts are often not fulfilling their designated ILS roles. Districts did not seem to be consistently ensuring that facilities order on time and follow the delivery group schedule. They also did not seem to be consistently reviewing R&R forms from the facilities for completeness and accuracy. In addition, districts are charged with ensuring that the amount of supplies requested from MSD does not exceed a facility's budget, yet this does not appear to be happening consistently.

As mentioned above in the zonal observations, districts are also not always submitting R&R forms to MSD on a regular and timely basis, nor are they regularly following ILS guidelines for submissions. For example, some districts submitted forms for all delivery groups in the same month. Others seemed to be reporting and ordering on behalf of health facilities, as evidenced by photocopied R&R forms and/or R&R forms completed with identical information on opening balance and consumption for multiple facilities. Lastly, there were a small number of districts that did not submit any R&R forms for the three months covered by the assessment methodology which indicates significant problems with the reporting and ordering process in these districts, either

caused by inadequate supervision of facilities (to ensure that they are submitting forms) or by delays in submitting forms to the zonal level.

Facility-level Observations

Some facilities continue to have difficulty fully completing their R&R forms according to ILS guidelines. Although not systematically assessed in this study, the data collection teams noticed many systematic issues with the R&R forms from the facility level. The information on the reporting period covered by the form was often incorrect, and the date the R&R was submitted was missing on more than half (56 percent) of the R&R forms in the sample. Only 20 percent of all facilities in the sample submitted R&R forms with dates that indicated the R&R form had been delivered to the district on time and in the correct delivery group. Where complete information was available, there appeared to be long delays between when the facility completed the form and when it arrived at the district. Many facilities did not put their MSD facility code on the R&R form, or instead filled in a separate, district-level facility code.

The teams also observed some challenges with requested stock and consumption data on the forms themselves. Some facilities were not ordering commodities even though their stock levels were recorded as zero. This was most often seen with quinine tablets, but also with some of the family planning commodities. This could be because of a lack of understanding about the products that each facility is supposed to be managing, or it could be because the facility ordered that commodity in a previous order and is still waiting for that order to be filled. In addition, the teams observed that some facilities were still using old R&R forms that had incomplete product lists, while others were missing pages in their R&R forms.

Finally, many facilities did not fill in the forms completely or correctly. Some facilities filled in only the "amount requested" column but left the rest of the R&R form blank. Others had difficulties completing the math required to calculate consumption and there was often little relation between the "consumption" column and the "amount requested" column, which should (theoretically) be related. Instead, it appears as though facilities were ordering based on estimates of how much they would need, instead of calculations based on past use.

Findings

The first set of results, presented below, provides a national-level overview of product availability by each product category. Maps to further illustrate national-level stock situation for select commodities are also included. The second section provides a more in-depth analysis by zone of the key findings. Each zonal summary includes information on the overall organization of the zone, district-level findings, results summaries for each product category by district, and recommendations. In addition to tables and graphs, maps showing locations of health facilities and delivery groups by each zone are also included in this section. Additional maps for select products by zone can be found in the annexes.

Commodity Availability at the National Level

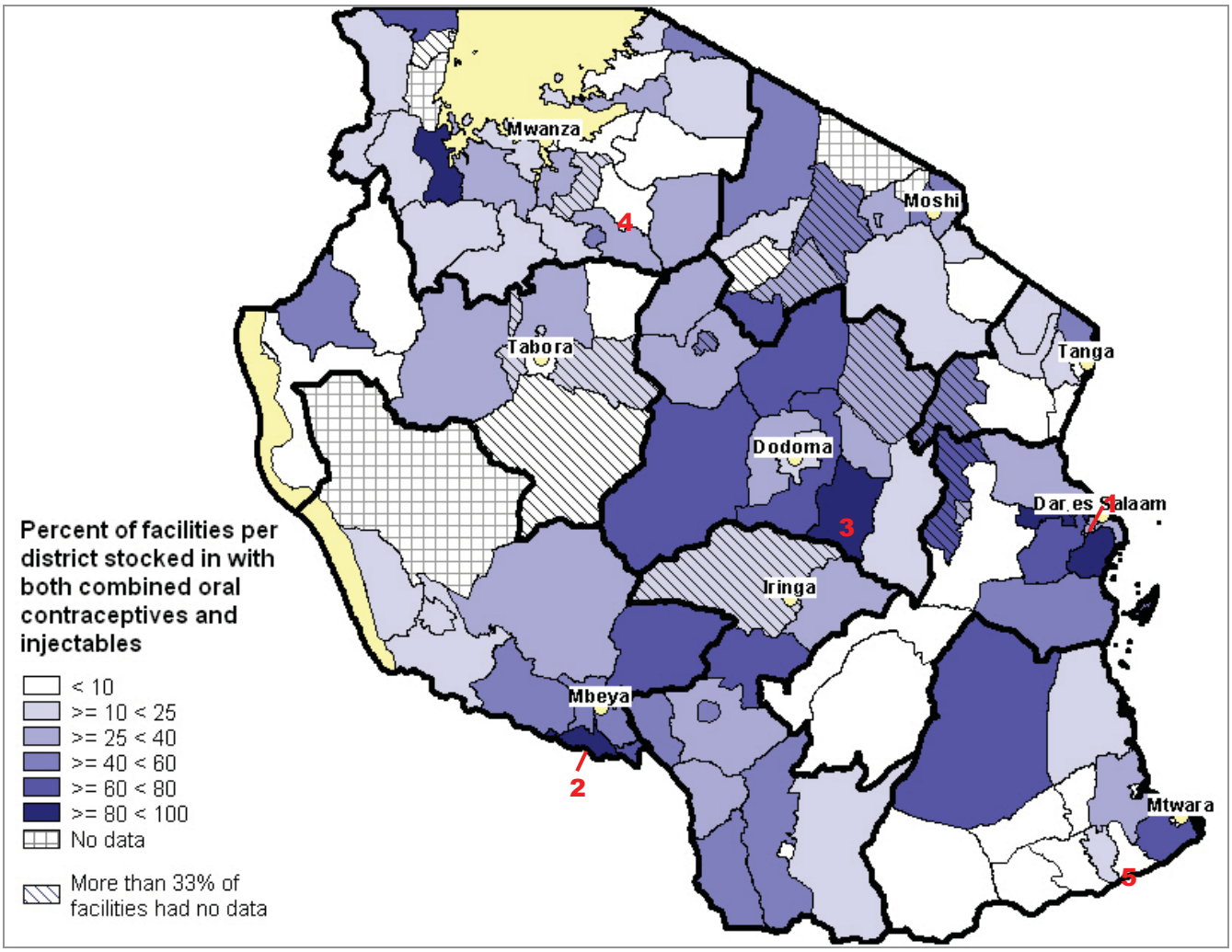
The stock-on-hand data collected showed significant stockouts of malaria commodities, essential medicines, and reproductive health commodities across the country. The performance of districts varied greatly, even within the same zone, reinforcing the hypothesis that ILS performance has less to do with zonal factors than it does with individual district factors. There were high-performing and low-performing districts in all zones. Performance also did not depend upon distance from the district to the MSD zonal store; some low-performing districts were adjacent to the MSD, while there were high-performing districts that were located significant distances away.

Family Planning

On the national level, family planning commodities did not fare well. Approximately half of the health facilities sampled were stocked out of combined oral contraceptives, injectables (DMPA) and male condoms, at 52 percent, 56 percent and 52 percent respectively. There was a national-level stockout of progestin-only pills, with 86 percent of the facilities stocked out.

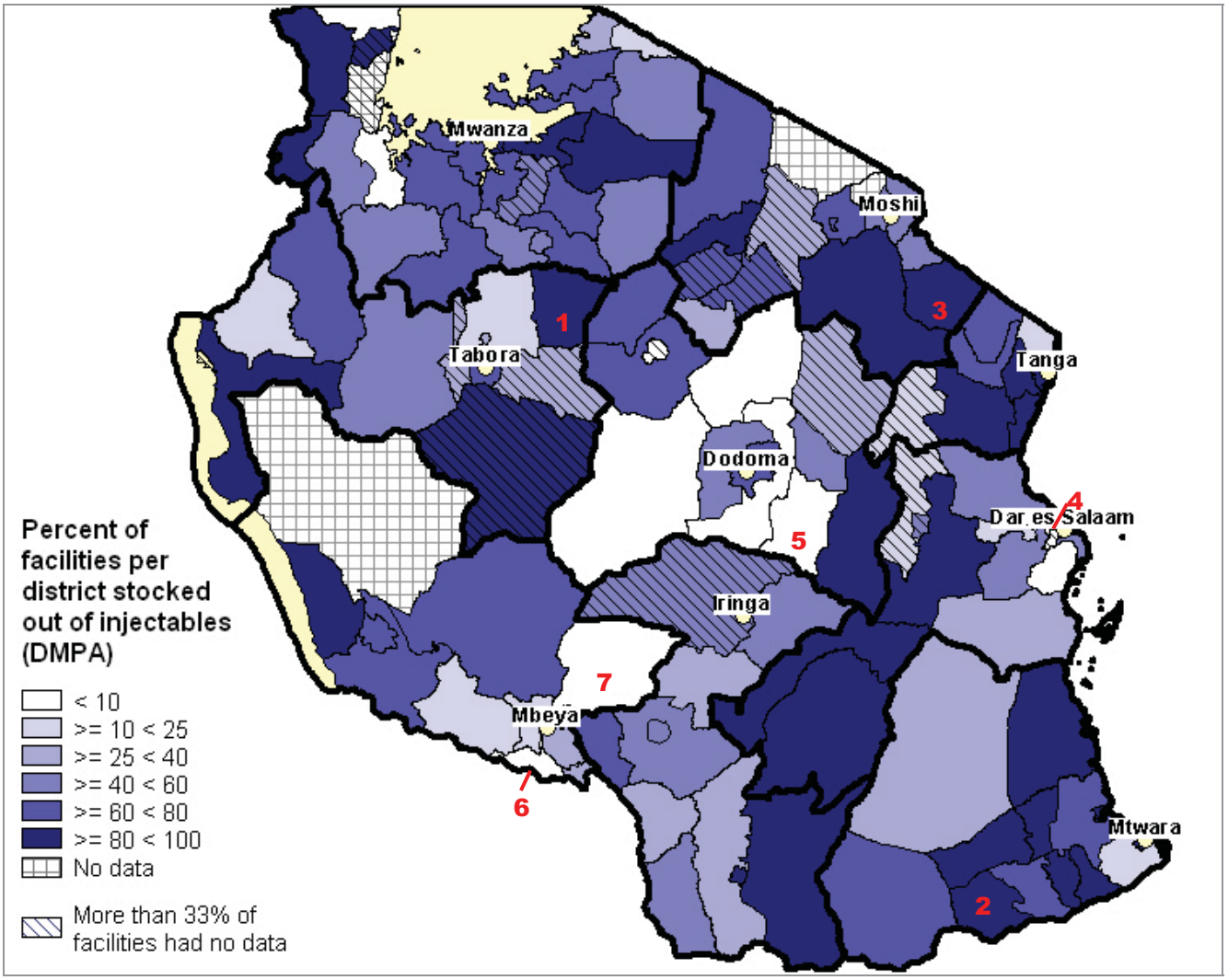
In order to manage a family planning program, it is essential to maintain stock of basic contraceptives such as oral contraceptives and injectables. The map below illustrates availability of combined oral contraceptives and injectables across the country and shows significant variability in their availability. For example, Kinondoni (1 on the map) and Ileje (2) districts had both combined oral contraceptives and injectables in stock at 100 percent of sampled facilities, while Mpwapwa (3) also showed a high level of availability, with 88 percent of the facilities having both in stock. In strong contrast, Maswa (4) and Tandahimba (5) had no facilities with both commodities in stock.

Figure 2. Percent Availability of Combined Oral Contraceptives and Injectables by District



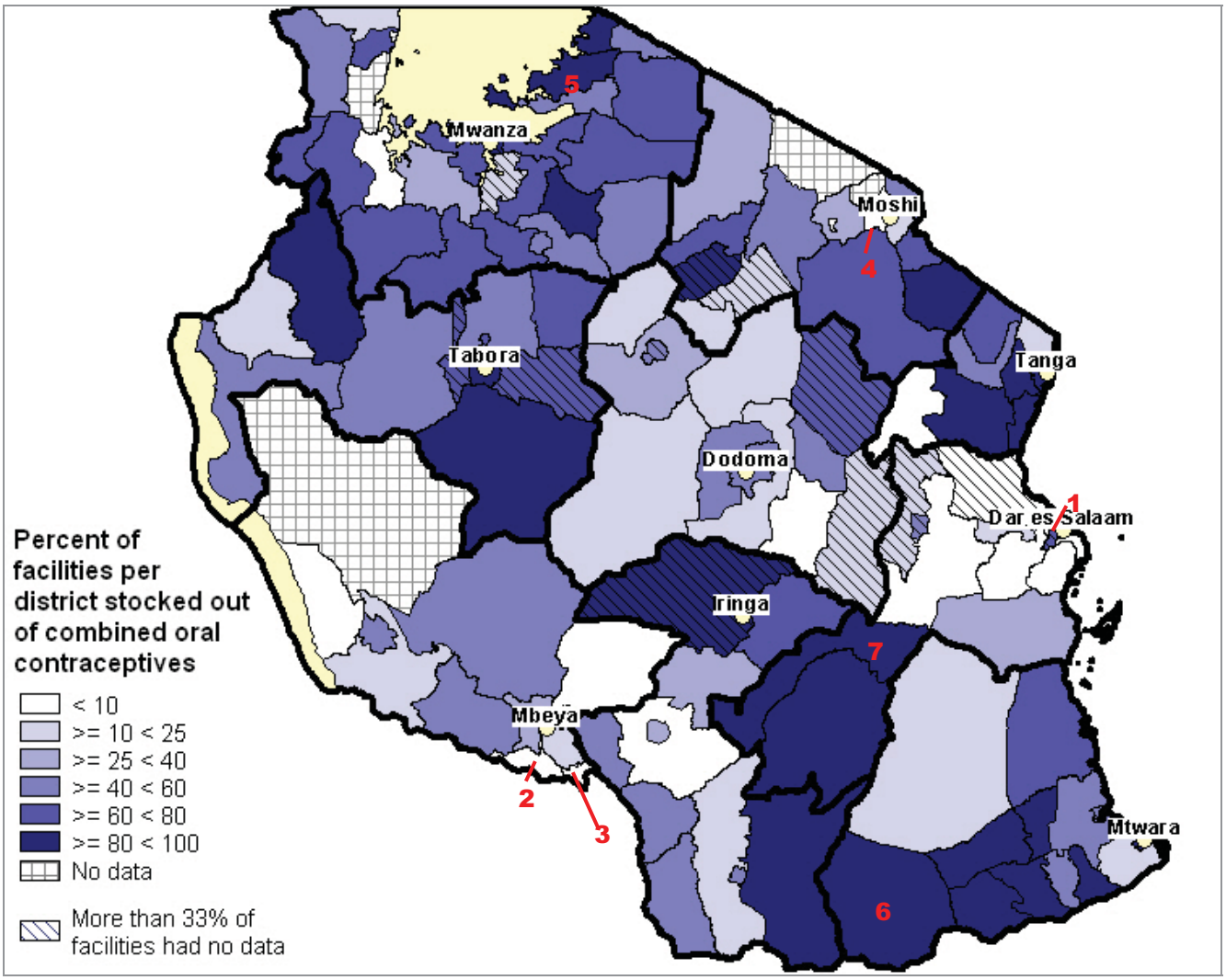
The map below demonstrates the availability of injectables nationwide. In Igunga (1), Masasi (2), and Same (3), all facilities in the sample were completely stocked out of injectables. However, facilities in Kinondoni (4), Mpwapwa (5), Ileje (6), and Mbarali (7) had no stockouts.

Figure 3. Stockout of Injectables by District



Similar to injectables, all facilities in both Kinondoni (1) and Ileje (2) had combined oral contraceptives available. Other districts with 100 percent availability include Kyela (3) and Hai (4). Low-performing districts include Musoma DC (5), Tunduru (6), and Kilombero (7) with stockouts of 91 percent, 92 percent and 100 percent respectively. The map below shows the availability of combined oral contraceptives across the country.

Figure 4. Stockout of Combined Oral Contraceptives by District

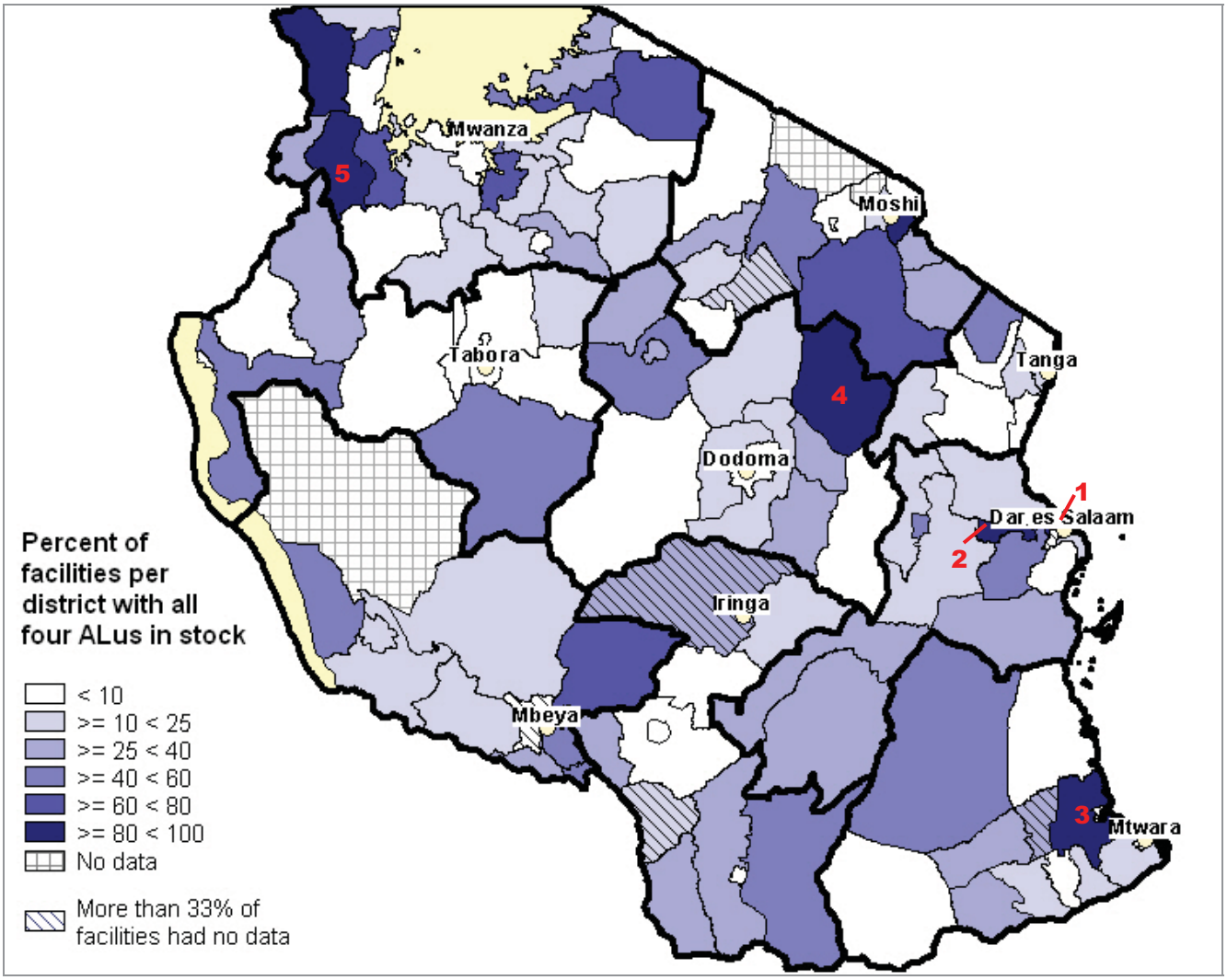


Malaria

Arthemeter Lumafantrine (ALu)

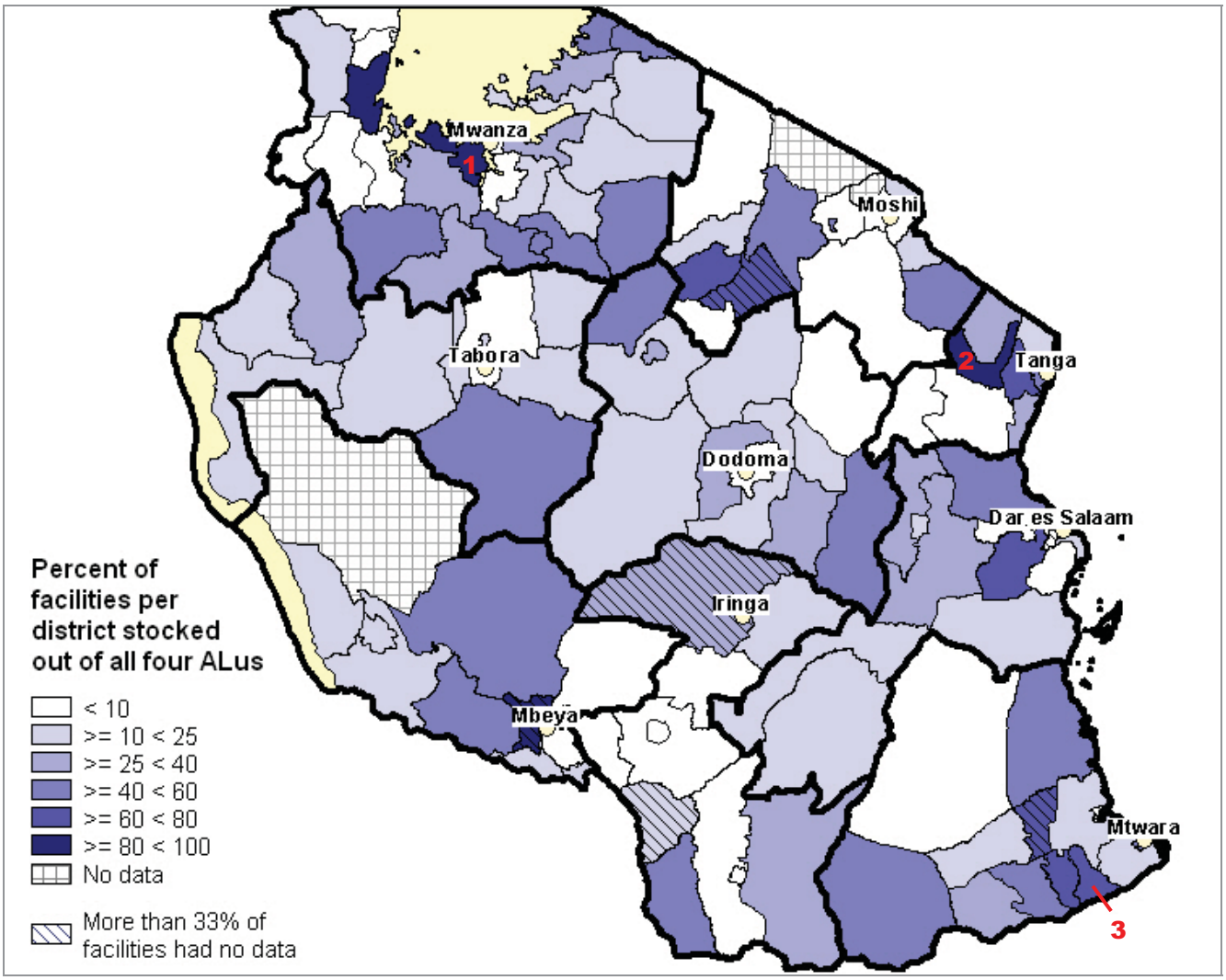
Nationally, availability of all four ALu presentations was dismally low. Out of 123 districts from which data was collected, only five districts, namely, Kinondoni (1), Kibaha DC (2), Lindi DC (3), Kiteto (4), and Biharamulo (5) had all four ALu presentations in stock in 80 percent or more of the sampled facilities. Another nine districts had between 60 to 80 percent of facilities with all four ALu presentations in stock. However, these results do not reflect health facilities that had between one to three presentations of ALu in stock. Facilities that have at least one presentation of ALu available may resort to cutting pills, but are still able to serve their clients.

Figure 5. Availability of all four ALu presentations by District



Although a large number of facilities had access to at least one ALu presentation, there were still 25 percent of facilities in the sample with no ALu presentations in stock. Because ALu is a first-line malaria treatment and free to public health facilities, very few facilities should be experiencing complete stockouts of all presentations. The facilities with stockouts were spread across districts which may indicate facility-level challenges with ordering and managing ALu. Only three districts experienced stockouts of all four presentations in 75 percent or more of their sampled facilities: Sengerema (1, 88 percent), Korogwe (2, 80 percent) and Tandahimba (3, 75 percent). There were only 34 districts where all facilities in the sample had at least one presentation in stock.

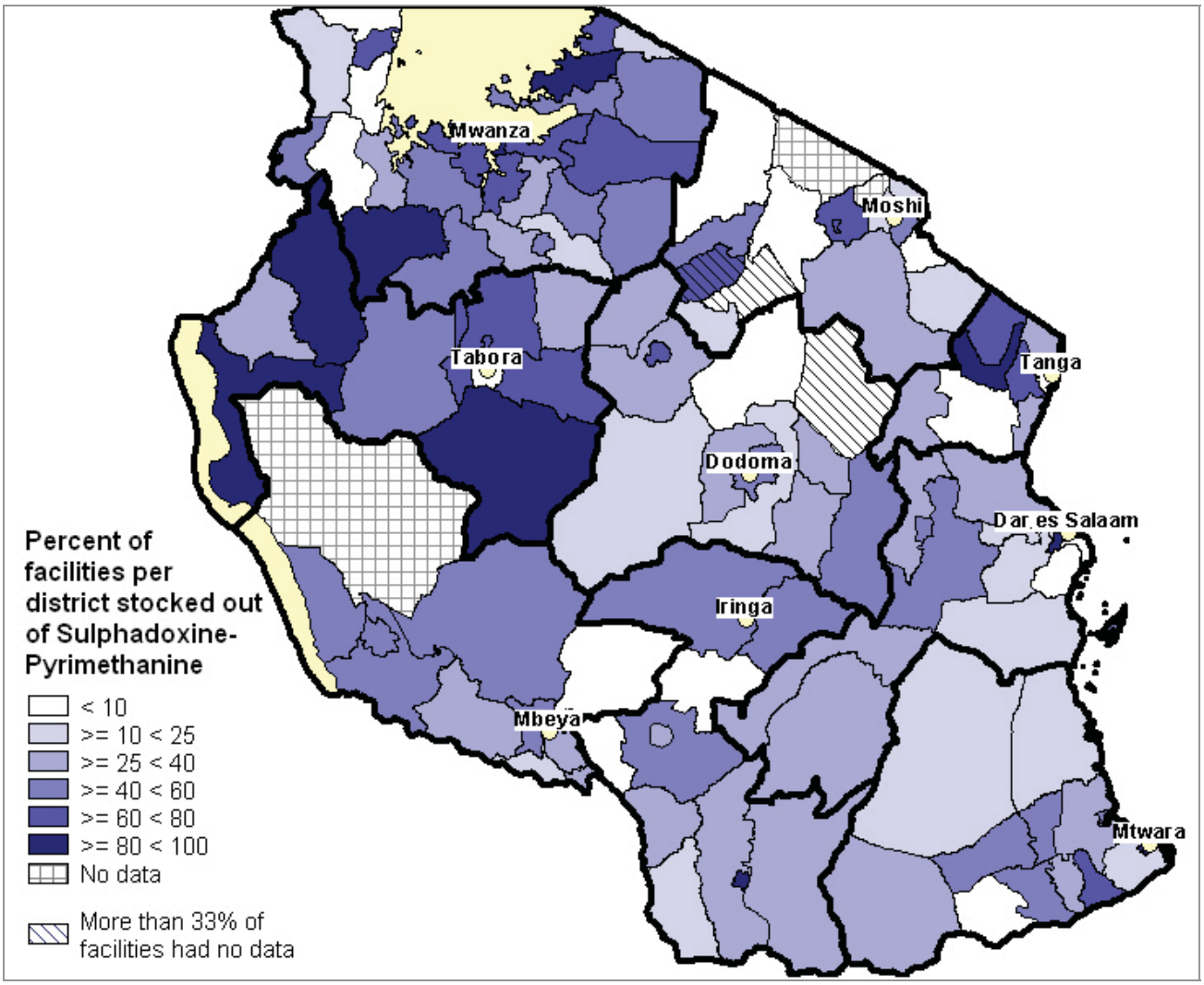
Figure 6. Stockout of all four ALu Presentations by District



Other Malaria Commodities

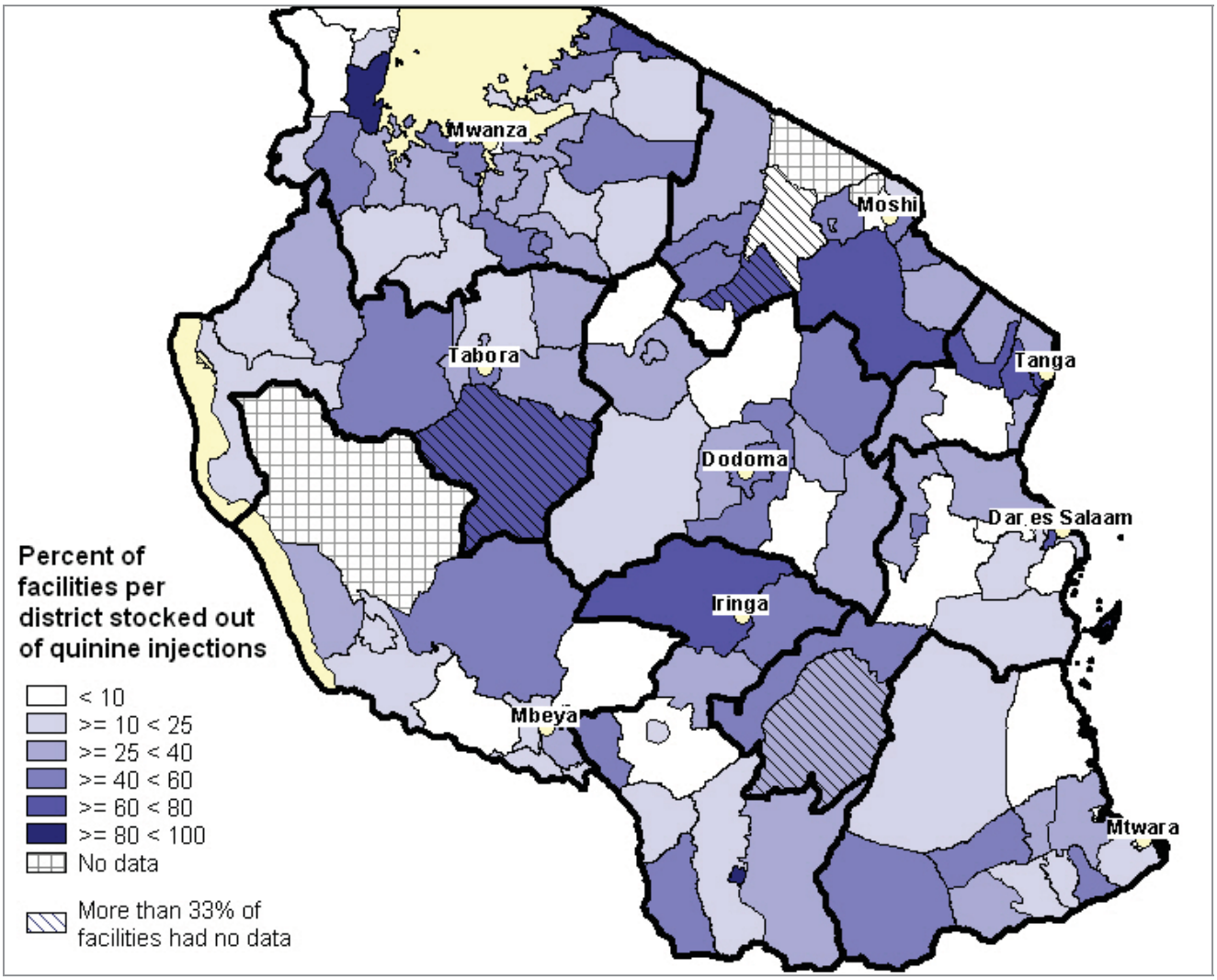
Availability of Sulphadoxine/Pyrimethamine (SP) is essential for the prevention of malaria during pregnancy. Results from the assessment showed that 39 percent of facilities were completely stocked out of SP. Seventeen districts, or approximately 14 percent of districts, had SP in stock at all sampled facilities.

Figure 7. Stockout of SP by District



Availability of quinine injection is necessary for the immediate treatment of severe malaria. The results from the assessment show a stockout rate of 29 percent at all facilities sampled. Only 14 districts had quinine injection in stock at all sampled facilities. In comparison to quinine injection, quinine tablets showed lower levels of availability nationally: little over half of the facilities (52 percent) were stocked out of quinine tablets. There were also a large number of facilities in the sample that provided no data for quinine tablets.

Figure 8. Stockout of Quinine Injection by District

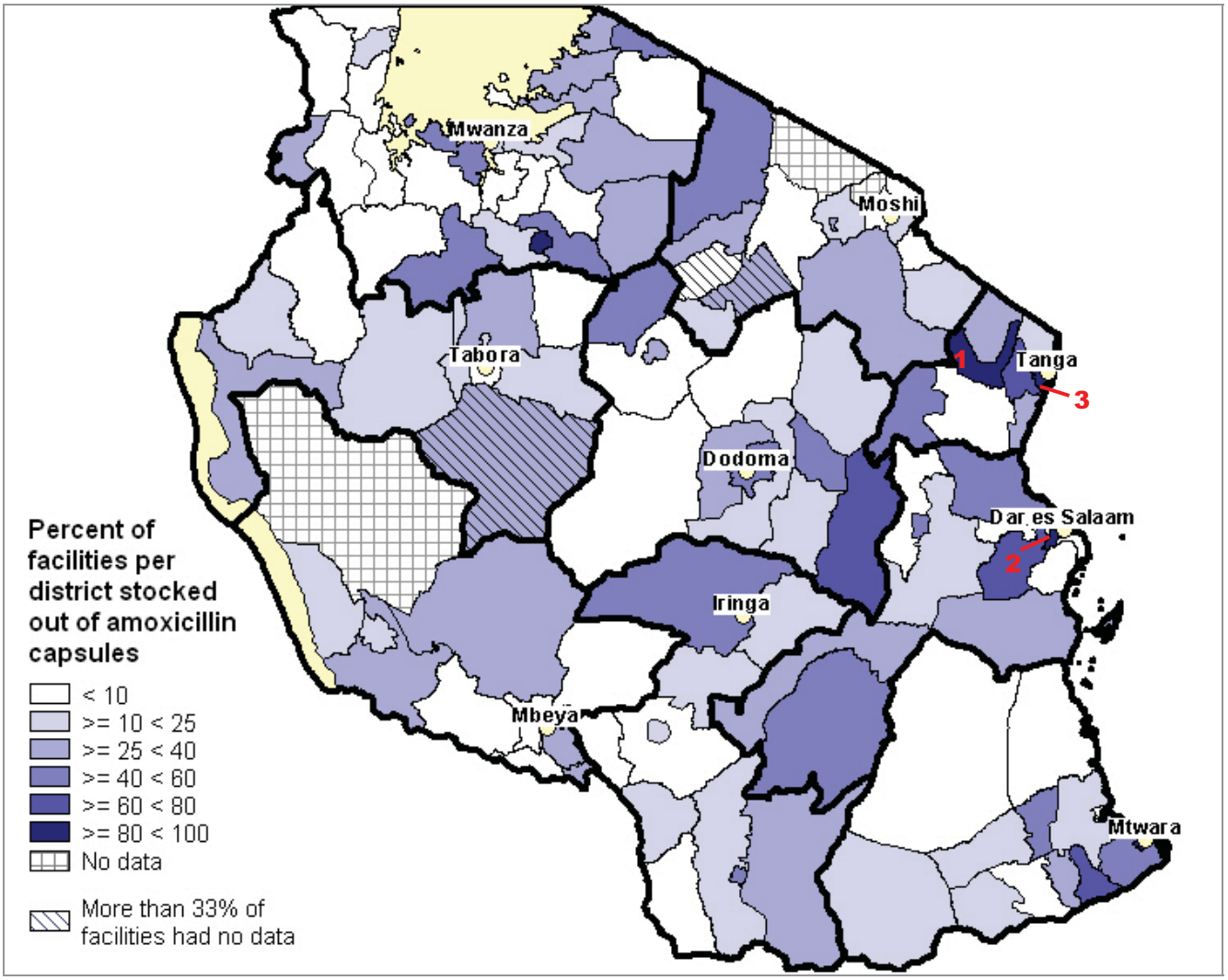


Essential Drugs

Assessment results showed significant disparity in the availability of select essential drugs and their corresponding suspensions. For example, paracetamol tablets were stocked out in 19 percent of facilities nationwide while 54 percent of facilities were stocked out of paracetamol syrup. Similarly, 27 percent of facilities were stocked out of co-trimoxazole tablets while 45 percent of facilities were stocked out of the corresponding suspension. This disparity may be a result of facility attitudes towards management of these commodities. Because syrups and suspensions are prescribed to children, the reimbursement process for these medicines is through the national health insurance scheme. Facilities may be ordering and stocking less of these products due to concerns about reimbursement for costs.

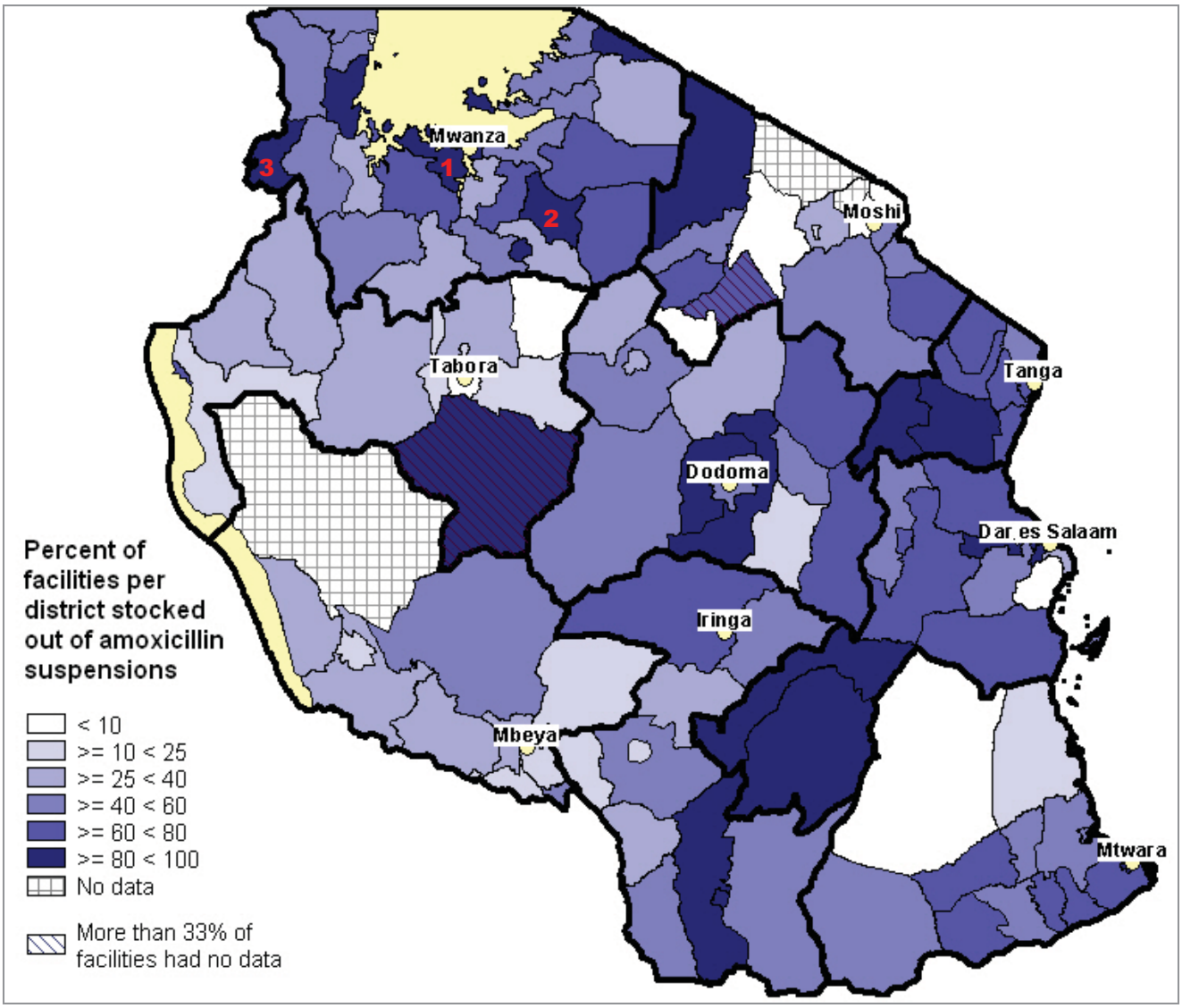
The map below shows stockout of amoxicillin capsules. Nationally, 23 percent of facilities were stocked out; six districts had 80 percent or more stocked out facilities. For example, 89 percent of facilities in Korogwe (1) and 80 percent of facilities in Ilala (2) and Tanga MC (3) did not have any stock of amoxicillin capsules. However, there were 34 districts where all facilities sampled had stock.

Figure 9. Stockout of Amoxicillin Capsules by District



Comparing the map above for amoxicillin capsules with the corresponding map below for amoxicillin suspension highlights the disparity in availability between the two commodities. Almost half (49 percent) of the facilities in the sample were stocked out of amoxicillin suspension. Facilities in 11 districts were completely stocked out of amoxicillin suspension, including Sengerema (1), Maswa (2) and Ngara (3). In only eight districts facilities had stock of the suspension.

Figure 10. Stockout of Amoxicillin Suspensions by District



Commodity Availability at the Zones

Explanation of the Zonal Reports

The bulk of the data analysis was done at the district level, organized by region and zone. The individual zonal reports below describe these district level commodity availability findings, as well as data on timeliness of R&R submissions to the zone. The reports also include information about the location of the health facilities sampled in each zone, observations on the quality and organization of data available at the zone, and an explanation of the methodology used to select the sample in each zone. Each report concludes with general recommendations for the MOH and the MSD to consider as they continue to provide technical assistance to the districts and MSD zonal stores.

Explanation of Maps

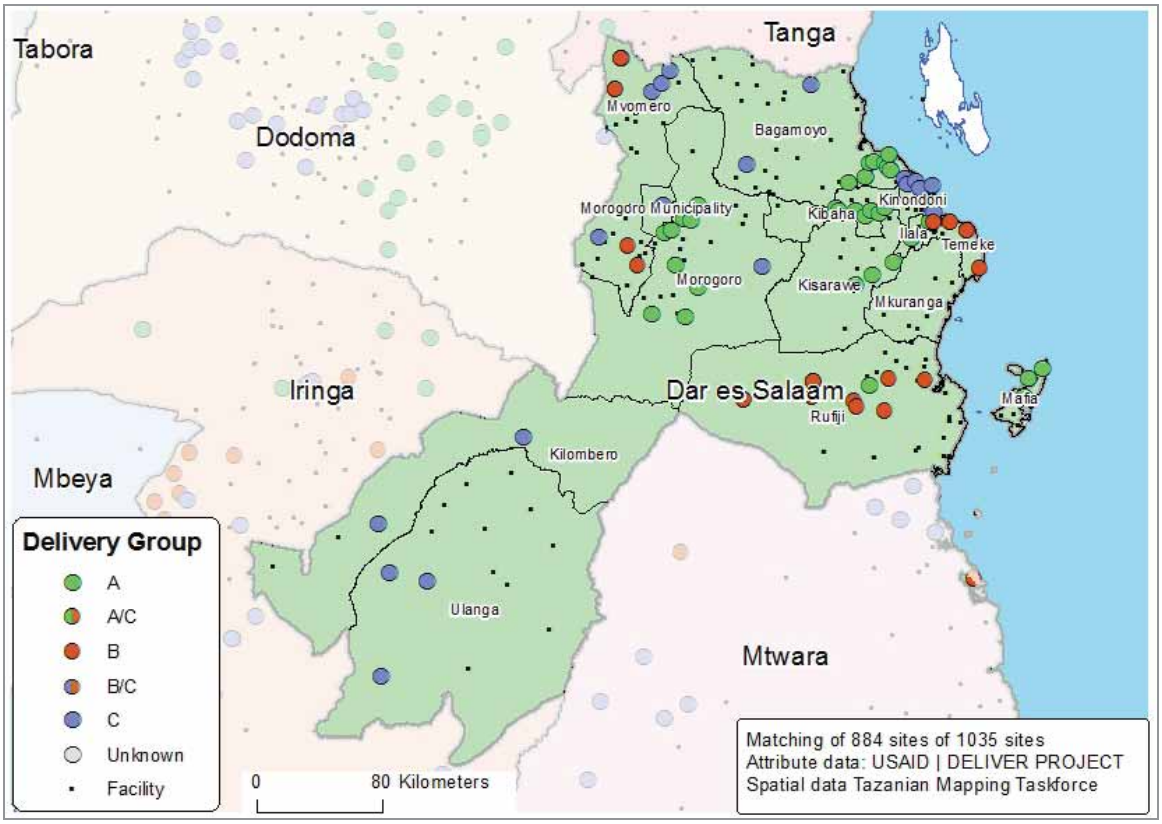
The maps at the beginning of each zonal report show the locations of facilities sampled in each zone. Only those sampled facilities for which GPS coordinates were available were mapped. Therefore some facilities, although sampled, are not shown on the maps which may make some districts appear over- or under-represented. For facilities that are marked as belonging to more than one delivery group, e.g., "A/B", this means that the data collection team was unable to determine the appropriate delivery group for the facility.

Dar es Salaam Zone

Number of Districts: 16

Sample Size: 133 facilities.

Figure 11. Map of Sampled Facilities by Delivery Group



Organization of Data at the MSD Zone

The MSD zonal office at Dar es Salaam kept track of submissions of R&R forms from districts in a chronologically-ordered register. Submitted R&R forms were organized by district and delivery group. When a packet of R&R forms arrived from a district, the name of the district, the delivery group and cycle of the packet were entered in the register, along with the date of receipt at MSD and the number of forms in the packet. If one district submitted forms from more than one delivery group at the same time, each delivery group was entered in the register as a separate entry.

The register did not match up completely with the physical forms found at the zonal office. There were some cases where packets entered as received in a certain month were not found, and two cases where packets of forms were found that had not been entered in the register. The majority of entries, however, matched the physical inventory of R&R forms submitted between February and April.

Zonal Level Data Collection Process

The first step for the data collection team was to verify the number and size of districts served by Dar es Salaam zone, as well as the delivery groups of the facilities in each district. To this end, the team obtained a facility and delivery group list from the zonal office, and compared it to the list compiled by local project staff. Where inconsistencies between the two lists were found, the MSD list was considered the master.

The data collection team then reviewed the register for all packets of R&R forms received at the MSD zonal office between February and April. These were compared to physical packets of R&R forms held at the MSD for this period of time. Once any inconsistencies between the register and the physical inventory were noted, the team started with looking at R&R forms received in April, and then working backward as necessary for each district.

Overall Findings

Of the 16 districts that should have submitted R&R forms in April, only seven submitted. Of these, five districts submitted forms from the A group, which was the appropriate delivery group for that month. The team also found an extra district that had not been included in the list created by local project staff. In this case, Kibaha District had been split up into two districts: Kibaha TC (Urban) and Kibaha DC (Rural).

Timeliness of Submissions to MSD

As shown in Table 4, many districts did not submit R&R forms in their appropriate delivery groups. Between February and April 2010, nine out of 16 districts submitted R&R packets where over 50 percent of the R&R forms belonged to the appropriate delivery group for that month. Of these nine districts, only four (Ulanga, Kibaha DC, Kibaha TC and Mkuranga) submitted all R&R forms in the correct delivery group. The rest of the districts either submitted incomplete numbers of R&R forms for the appropriate delivery group (Ilala, Morogoro MC, Kisarawe and Mafia), or submitted forms for facilities that were not in the appropriate delivery group for that month, instead of appropriate forms (Kinondoni), or in addition to them (Temeke, Kilombero, Kilosa, Morogoro DC, Mvomero, Bagamoyo and Rufiji).

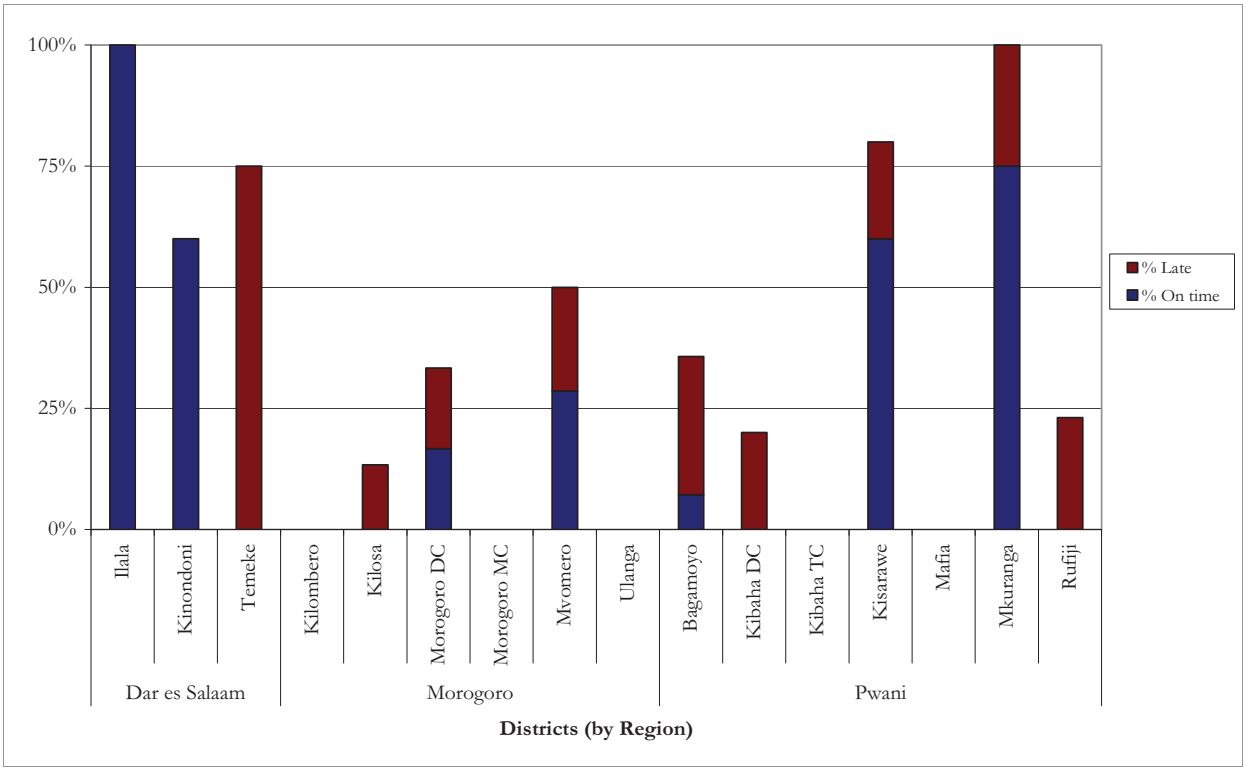
Table 4. Number of R&Rs Submitted by District

District Name	Number of forms that should have been submitted	Number of forms that were actually submitted	Number of submitted forms that were in appropriate delivery group
Ilala	21	20	20
Bagamoyo	17	25	11
Kibaha DC	14	14	14
Kibaha TC	9	9	9
Kilombero	8	20	5
Kilosa	19	42	14
Kinondoni	13	11	0
Kisarawe	19	18	18

District Name	Number of forms that should have been submitted	Number of forms that were actually submitted	Number of submitted forms that were in appropriate delivery group
Mafia	16	14	14
Mkuranga	4	4	4
Morogoro DC	13	33	11
Morogoro MC	21	20	20
Mvomero	23	37	23
Rufiji	20	13	1
Temeke	9	8	1
Ulanga	8	8	8
Dar es Salaam Zone Total	**234**	**296**	**173**

Many facilities did not put a date on their R&R forms, making it difficult to determine the timeliness of the facility submission to the district. Figure 12 below shows the percentage of facilities per district that submitted their R&R forms to the district on time (defined as by the 10th of the month) and those that did not submit on time (after the 10th of the month). If there was no date on the R&R form, the data collection team could not determine if the facility reported on time or late. As a result, facilities that did not provide a date are not included in the figure below.

Figure 12. Percentage Timely Reporting by District



Quality of Data Available at District Level

- The data collection team was unable to collect a full sample from Mkuranga District. Only four facilities submitted R&R forms from this district between February and April.
- A large number of facilities in Mvomero District submitted forms from the old Indent system instead of the current R&R forms for the ILS. As a result, there was no stock-on-hand data for these facilities.

Stock Levels of Key Products

ACTs and Other Malaria Commodities

Twenty-two percent of the health facilities in Dar es Salaam Zone were completely stocked out of all presentations of Artemether/Lumefantrine Tablets (ALu), and 27 percent of facilities had all four ALu presentations in stock during the sample period. Kisarawe and Kilosa were the lowest-performing districts with 60 percent and 47 percent of facilities in the sample completely stocked out of all forms of ALu respectively. The highest performing districts were Kibaha DC and Kinondoni with 100 percent and 80 percent of facilities in the sample with all four presentations of ALu in stock during the sample period.

Table 5. Stock of ACTs by Region and District

Region	District	No ALu in Stock % (n)	All 4 ALu in Stock % (n)	Facilities with No Data for ALu
Dar es Salaam	Ilala	0% (6)	0% (6)	2
	Kinondoni	0% (10)	80% (10)	0
	Temeke	13% (8)	13% (8)	0
Dar es Salaam Total		**4% (24)**	**38% (24)**	**2**
Morogoro	Kilosa	47% (15)	7% (15)	0
	Kilombero	14% (7)	29% (7)	0
	Morogoro DC	33% (12)	17% (12)	0
	Morogoro MC	17% (6)	50% (6)	0
	Mvomero	21% (14)	14% (14)	3
	Ulanga	17% (6)	33% (6)	0
Morogoro Total		**28% (60)**	**20% (60)**	**3**
Pwani	Kisarawe	60% (5)	40% (5)	0
	Bagamoyo	43% (14)	14% (14)	0
	Kibaha DC	0% (5)	100% (5)	0
	Kibaha TC	0% (3)	33% (3)	0
	Mafia	0% (4)	0% (4)	0
	Mkuranga	0% (4)	0% (4)	0
	Rufiji	15% (13)	31% (13)	0
Pwani Total		**23% (48)**	**29% (48)**	**0**
Dar es Salaam Zone Total		**22% (132)**	**27% (132)**	**5**

Other malaria commodities such as Sulphadoxine/Pyrimethamine tablets, diazepam injections, quinine tablets, and quinine injections were also stocked out of facilities in several districts in Dar es Salaam zone. Ilala was the lowest performing district, with high percentages of stocked out facilities for all four of these commodities. Morogoro MC, Ulanga, Bagamoyo and Mafia were also low performing, with stockouts of at least two of the four commodities in over 50 percent of facilities. Kisarawe was the best performing district, with stockout rates of 20 percent or less in all four commodities. On average, all four of these malaria commodities were stocked out in less than 50 percent of the facilities in Dar es Salaam Zone.

Table 6. Percent of Facilities Stocked Out of Malaria Commodities

Region	District	SP Tabs % (n)	Diazepam Injection % (n)	Quinine Tabs % (n)	Quinine Injection % (n)
Dar es Salaam	Ilala	100% (5)	60% (5)	80% (5)	60% (5)
	Kinondoni	14% (7)	44% (9)	33% (9)	20% (10)
	Temeke	0% (7)	29% (7)	63% (8)	13% (8)
Dar es Salaam Total		**32% (19)**	**43% (21)**	**55% (22)**	**26% (23)**
Morogoro	Kilombero	29% (7)	0% (6)	60% (5)	43% (7)
	Kilosa	47% (15)	0% (9)	46% (13)	29% (14)
	Morogoro DC	42% (12)	0% (9)	38% (8)	0% (11)
	Morogoro MC	50% (6)	50% (2)	40% (5)	40% (5)
	Mvomero	36% (14)	9% (11)	27% (11)	29% (14)
	Ulanga	33% (6)	100% (5)	100% (3)	25% (4)
Morogoro Total		**40% (60)**	**17% (42)**	**44% (45)**	**25% (55)**
Pwani	Bagamoyo	30% (10)	55% (11)	75% (4)	36% (11)
	Kibaha DC	20% (5)	40% (5)	0% (5)	0% (5)
	Kibaha TC	33% (3)	0% (3)	0% (3)	0% (3)
	Kisarawe	20% (5)	20% (5)	0% (2)	20% (5)
	Mafia	50% (2)	50% (2)	33% (3)	67% (3)
	Mkuranga	0% (3)	0% (3)	75% (4)	0% (4)
	Rufiji	17% (12)	0% (8)	42% (12)	17% (12)
Pwani Total		**23% (40)**	**27% (37)**	**36% (33)**	**21% (43)**
Dar es Salaam Zone Total		**33% (119)**	**26% (100)**	**44% (100)**	**24% (121)**

Family Planning Commodities

Several districts in Dar es Salaam had very high stock outs of all family planning commodities. All of the facilities sampled in Kilombero District were completely stocked out of combined oral contraceptives, injectables, and progestin-only pills. Ulanga was also low performing, with stockouts of all four family planning commodities in 80 percent or more of their facilities. Kibaha TC showed the best performance, with no stockouts of family planning commodities in any of the sampled facilities. On average, Dar es Salaam Zone showed stockouts of combined oral contraceptives, injectables and male condoms in less than 50 percent of facilities. Progestin-only pills showed the highest stockouts, with 72 percent of facilities in the zone stocked out.

Table 7. Percent of Facilities Stocked Out of Family Planning Commodities

Region	District	Combined Oral Contraceptives % (n)	Injectables % (n)	Progestin-Only Pills % (n)	Male Condoms % (n)
Dar es Salaam	Ilala	67% (3)	0% (2)	100% (3)	50% (4)
	Kinondoni	0% (8)	0% (9)	57% (7)	22% (9)
	Temeke	17% (6)	50% (8)	50% (4)	67% (3)
Dar es Salaam Total		**18% (17)**	**21% (19)**	**64% (14)**	**38% (16)**
Morogoro	Kilombero	100% (5)	100% (6)	100% (4)	83% (6)
	Kilosa	20% (10)	85% (13)	100% (1)	40% (15)
	Morogoro DC	17% (12)	92% (12)	80% (5)	13% (8)
	Morogoro MC	50% (2)	50% (4)	100% (1)	100% (2)
	Mvomero	22% (9)	11% (9)	57% (7)	50% (6)
	Ulanga	83% (6)	80% (5)	100% (5)	83% (6)
Morogoro Total		**39% (44)**	**71% (49)**	**83% (23)**	**51% (43)**
Pwani	Bagamoyo	11% (9)	42% (12)	67% (3)	50% (8)
	Kibaha DC	20% (5)	20% (5)	100% (1)	25% (4)
	Kibaha TC	0% (3)	0% (3)	0% (2)	0% (3)
	Kisarawe	0% (4)	40% (5)	No data	100% (4)
	Mafia	0% (1)	0% (2)	No data	0% (1)
	Mkuranga	0% (3)	0% (3)	100% (1)	50% (2)
	Rufiji	40% (10)	27% (11)	67% (6)	30% (10)
Pwani Total		**17% (35)**	**27% (41)**	**62% (13)**	**41% (32)**
Dar es Salaam Zone Total		**27% (96)**	**46% (109)**	**72% (50)**	**45% (91)**

As shown in Table 8 below, very few facilities had both combined oral contraceptives and injectable contraceptives in stock. Kibaha TC showed the strongest performance, with 100 percent of facilities in the sample having both combined oral contraceptives and injectables in stock. Ulanga and Kilombero both had no facilities that had both these commodities in stock. On average, only 34 percent of facilities in Dar es Salaam Zone had stock of both combined oral pills and injectables.

Table 8. Availability of Combined Oral Contraceptives and Injectables by Region and District (% in stock)

Region	District	Combined Oral and Injectables Both In Stock % (n)	Facilities with No Data on COC and Injectables
Dar es Salaam	Ilala	17% (6)	3
	Kinondoni	80% (10)	1
	Temeke	25% (8)	0
Dar es Salaam Total		**46% (24)**	**4**
Morogoro	Kilosa	13% (15)	2
	Kilombero	0% (7)	1
	Morogoro DC	8% (12)	0
	Morogoro MC	17% (6)	2
	Mvomero	50% (14)	5
	Ulanga	0% (6)	0
Morogoro Total		**18% (60)**	**10**
Pwani	Bagamoyo	29% (14)	2
	Kibaha DC	80% (5)	0
	Kibaha TC	100% (3)	0
	Kisarawe	60% (5)	0
	Mafia	25% (4)	2
	Mkuranga	75% (4)	1
	Rufiji	38% (13)	1
Pwani Total		**48% (48)**	**6**
Dar es Salaam Zone Total		**34% (132)**	**20**

Essential Medicines

Ilala was the lowest performing district in essential medicines, with stock out rates of over 50 percent for all essential medicines. Temeke District was the highest performer, with each essential medicine being stocked out in less than 40 percent of facilities. As shown in the table below, on average, a higher percentage of facilities were stocked out of suspensions and syrups than of the corresponding capsules and tablets.

Table 9. Percent of Facilities Stocked Out of Essential Drugs

Region	District	Amox. Capsules % (n)	Amox. Suspension % (n)	Para. Tabs % (n)	Para. Syrup % (n)	Cotri. Tabs % (n)	Cotri. Suspension % (n)
Dar es Salaam	Ilala	80% (5)	100% (5)	80% (5)	80% (5)	60% (5)	80% (5)
	Kinondoni	0% (10)	90% (10)	20% (10)	83% (6)	10% (10)	78% (9)
	Temeke	0% (8)	38% (8)	14% (7)	25% (8)	0% (8)	13% (8)
Dar es Salaam Total		**17% (23)**	**74% (23)**	**32% (22)**	**58% (19)**	**17% (23)**	**55% (22)**
Morogoro	Kilombero	29% (7)	83% (6)	43% (7)	100% (5)	29% (7)	57% (7)
	Kilosa	60% (15)	64% (11)	33% (15)	46% (13)	53% (15)	64% (14)
	Morogoro DC	17% (12)	67% (12)	25% (12)	91% (11)	0% (12)	42% (12)
	Morogoro MC	50% (6)	60% (5)	60% (5)	50% (4)	33% (6)	25% (4)
	Mvomero	7% (14)	50% (10)	21% (14)	100% (8)	7% (14)	0% (12)
	Ulanga	40% (5)	83% (6)	20% (5)	100% (6)	0% (4)	50% (6)
Morogoro Total		**32% (59)**	**66% (50)**	**31% (58)**	**79% (47)**	**22% (58)**	**40% (55)**
Pwani	Bagamoyo	54% (13)	64% (14)	43% (14)	50% (14)	46% (13)	62% (13)
	Kibaha DC	0% (5)	80% (5)	0% (5)	80% (5)	0% (5)	60% (5)
	Kibaha TC	33% (3)	33% (3)	0% (3)	67% (3)	0% (3)	67% (3)
	Kisarawe	60% (5)	40% (5)	60% (5)	50% (4)	40% (5)	40% (5)
	Mafia	25% (4)	50% (4)	25% (4)	75% (4)	25% (4)	75% (4)
	Mkuranga	0% (4)	0% (4)	25% (4)	25% (4)	0% (4)	0% (4)
	Rufiji	38% (13)	62% (13)	38% (13)	64% (11)	23% (13)	23% (13)
Pwani Total		**36% (47)**	**54% (48)**	**33% (48)**	**58% (45)**	**26% (47)**	**45% (47)**
Dar es Salaam Zone Total		**31% (129)**	**63% (121)**	**32% (128)**	**67% (111)**	**23% (128)**	**44% (124)**

Zonal Recommendations

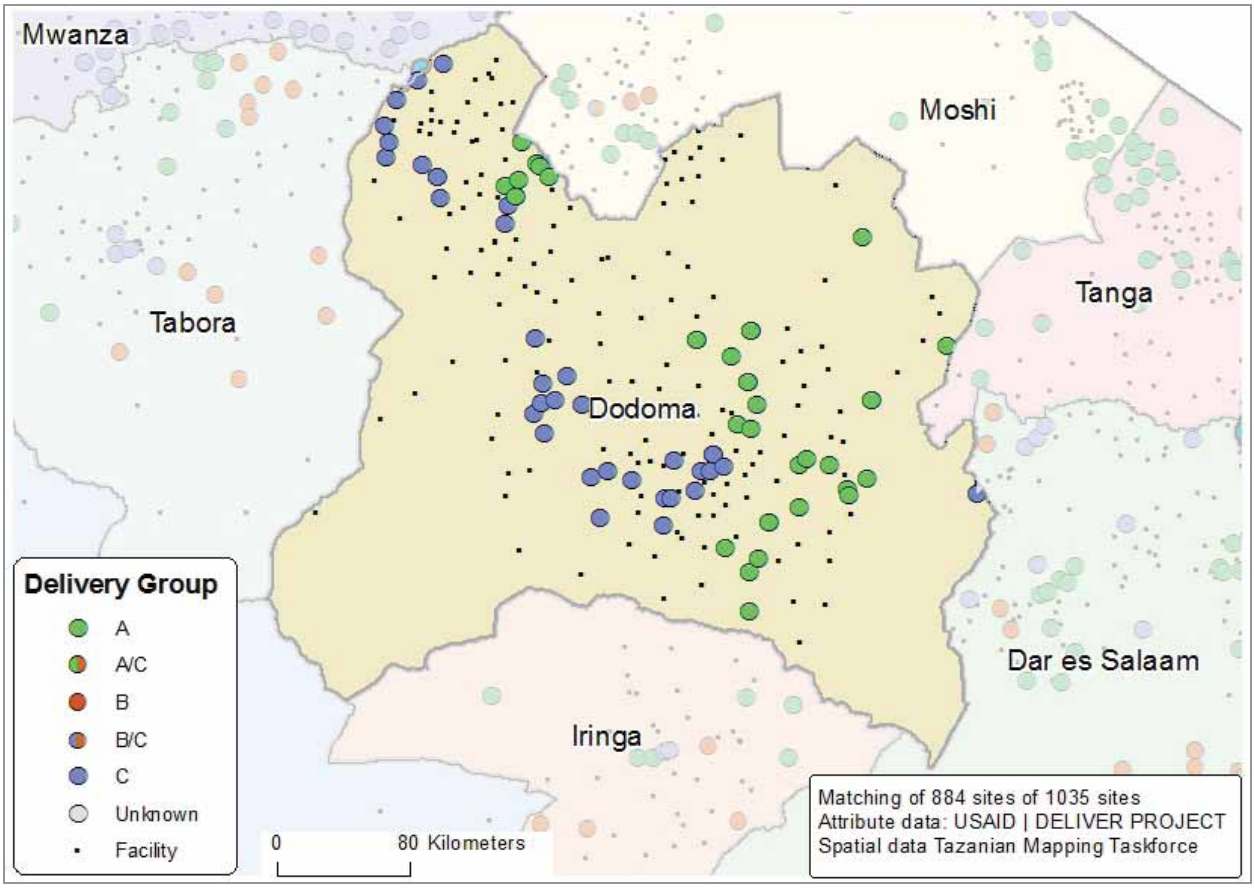
- Identify high-performing districts and follow up with them to learn more about the ILS process to determine potential best practices that could be shared with other districts.
- Identify low-performing districts (e.g., Ilala, Kilombero) and follow up with targeted supportive supervision to improve practices that may be affecting functioning of the ILS in those districts.
- Work with the district ILS supervisor to improve the consistency and quality of the information included on the R&R forms including the reporting period and the date submitted to the district.
- Train MSD staff on the ILS system, including how to correctly fill out the R&R forms and the timing for ordering and processing orders.
- Ensure the register at the MSD zonal office is fully updated in order to track the date R&R forms are received

Dodoma Zone

Total Districts: 11

Sample size: 105 facilities

Figure 13. Map of Sampled Facilities by Delivery Group



Organization of Data at the MSD Zone

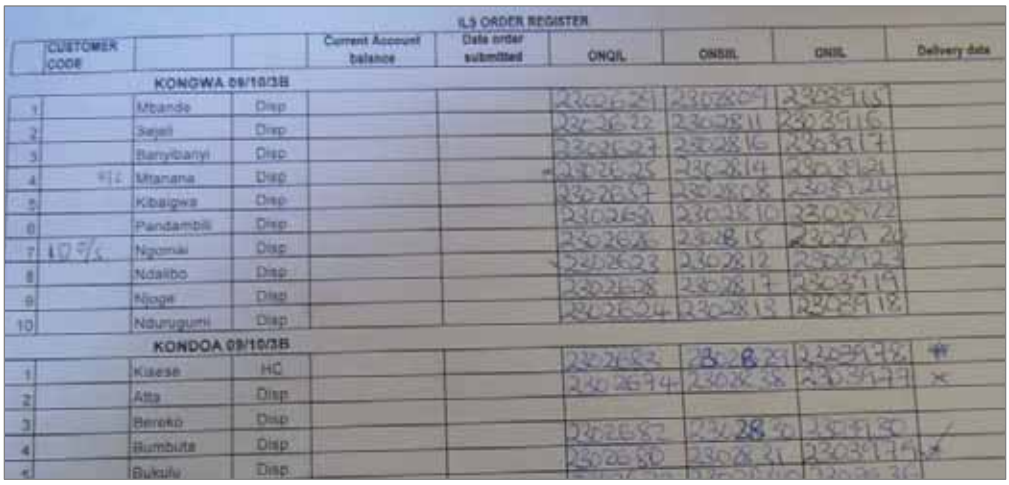
The MSD zonal office at Dodoma was not using a register to consistently log orders received. There was a register book, but it was not being used regularly by staff and had almost no data for the dates on which orders were received at the zone. The quotation number and sales invoice numbers were often included in the register, but there were no dates for any orders received after mid-2009.

The R&R forms were stored in binders which were loosely organized by region and cycle. It was very difficult to find R&R forms from all the districts within the time frame of the data collection exercise. Although the staff stated that all R&R forms were put into the appropriate binders after processing, the small number of R&R forms available during the data collection period indicated that some R&R forms may have been missing or filed in incorrectly labeled binders. Since there were no receipt dates available in the register, it was difficult to determine the completeness of the R&R forms available in the binders.

Zonal Level Data Collection Process

The team started by comparing the list of health facilities and delivery groups prepared by local project staff with the MSD list and the list in the register. When there were discrepancies between lists, the facilities on the MSD list were used. The total count of facilities in Dodoma Zone was 400 after comparing the lists, although there were some facilities that seemed to be listed more than once on the MSD list, making it difficult to get a fully accurate count of facilities.

Figure 14. Register at Dodoma MSD Zone



Because of the lack of a register indicating dates that orders were received, it was impossible to know exactly when the R&R forms arrived at the zone. In a few cases, the districts included a summary sheet with the date of submission to the zone. When these forms existed and were completed with dates, the data collection team used these dates to determine if the forms arrived during the data collection period. Only four of the 11 districts had completed summary forms with the date included. For the remaining seven districts, the data collection team had to infer from the dates on the R&R forms as to when the forms were submitted to the zone.

Overall Findings

The data collection team was unable to find a large number of R&R forms while at the zone. The team identified about 126 R&R forms that seemed to have been submitted to the zone in April, although there is a chance that some of these forms arrived in May due to delays at the district. Without the register there was no way of knowing the arrival dates. Far fewer R&R forms were identified as submitted in February and March (41 and 46 respectively). Of those forms that seemed to be submitted in April, the majority (65 percent) were from the appropriate delivery group. Despite the challenges of finding R&R forms with submission dates, the data collection team was able to find R&R forms that appeared to have been submitted sometime between February and April for all districts in the sample.

Kilosa District in Morogoro Region is supposed to be packed in Dodoma under the ILS as of mid-2009, but there were no R&R forms for Kilosa at MSD-Dodoma. Instead the R&R forms for Kilosa were found with the other districts in Morogoro Region at the MSD zonal office in Dar es Salaam.

Timeliness of Submissions to MSD

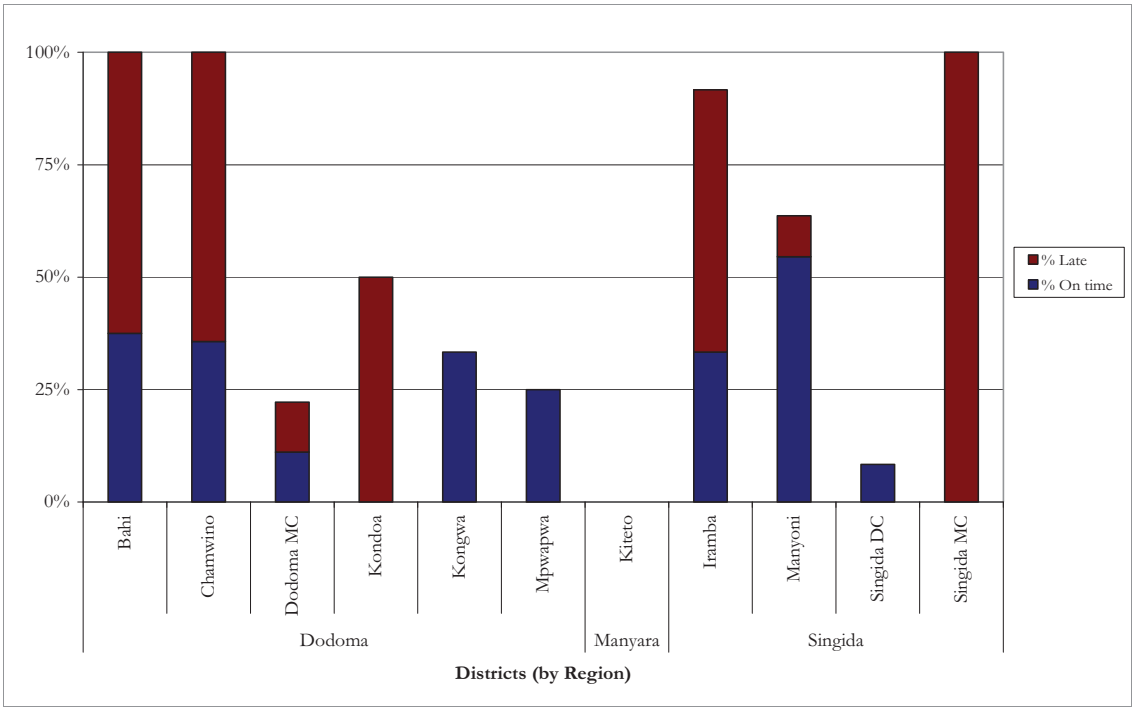
Based on the data available, the majority of the facilities seemed to have submitted their R&R forms using the ILS schedule. Seven of the 11 districts submitted all of the forms from the appropriate delivery group and three others submitted forms from almost all of the facilities in the appropriate delivery group. Only one district, Manyoni, was completely off cycle. Manyoni District submitted 15 facilities from the C delivery group in April.

Table 10. Number of R&Rs Submitted by District

District Name	Number of forms that should have been submitted	Number of forms that were actually submitted	Number of submitted forms that were in appropriate delivery group
Bahi	12	12	12
Chamwino	16	36	16
Dodoma MC	12	11	11
Iramba	17	18	17
Kiteto	19	18	18
Kondoa	17	21	17
Kongwa	15	12	12
Manyoni	13	15	0
Mpwapwa	13	17	13
Singida DC	15	15	15
Singida MC	7	7	7
Dodoma Zone Total	**156**	**182**	**138**

Although many of the districts were submitting forms to the zone in the correct cycle, the facilities themselves were often late in submitting their forms to the district for review. On-time forms were considered those that were received by the 10th of the month, and late forms were those received after the 10th. If there was no date on the form, the facility was not included in the graph below. Manyoni had the highest number of facilities that reported to the district on time, at just above 50 percent.

Figure 15. Percentage Timely Reporting by District



Quality of Data Available at District Level

Although most of the packets from the districts had order compilation sheets (Form 3), a very small percentage of them included the date the packet arrived at the zone. There is a space for this information on the form, but the majority of districts were not including the date with the DMO signature.

Lack of dates in the register and on the district order compilation sheets made it difficult to determine the amount of time between when facilities complete the forms and when the forms arrive at the MSD zonal store.

Stock Levels of Key Products

ACTs and Other Malaria Commodities

Dodoma Zone had relatively low stock-outs of all four ALu products at the health facility level compared to the other zones, but the zone also had a relatively small percentage of facilities with all four ALu presentations in stock, indicating that the majority of facilities had stockouts of between one and three ALu products. Bahi, Mpwapwa, and Iramba had the largest number of facilities that were completely stocked out of all ALu products, and Kiteto had the largest number of facilities with all four ALu presentations in stock.

Table 11. Stock of ACTs by Region and District

Region	District	No ALu in Stock % (n)	All 4 ALu in Stock % (n)	Facilities with No Data for ALu
Dodoma	Bahi	38% (8)	13% (8)	0
	Chamwino	14% (14)	14% (14)	0
	Dodoma MC	0% (9)	0% (9)	2
	Kondoa	14% (14)	14% (14)	0
	Kongwa	22% (9)	33% (9)	0
	Mpwapwa	38% (8)	38% (8)	0
Dodoma Total		**19% (62)**	**18% (62)**	**2**
Manyara	Kiteto	0% (5)	80% (5)	0
Manyara Total		**0% (5)**	**80% (5)**	**0**
Singida	Iramba	50% (12)	33% (12)	0
	Manyoni	9% (11)	0% (11)	1
	Singida DC	17% (12)	42% (12)	1
	Singida MC	33% (3)	33% (3)	0
Singida Total		**26% (38)**	**26% (38)**	**2**
Dodoma Zone Total		**21% (105)**	**24% (105)**	**4**

The stockout rates of other malaria commodities such as Sulphadoxine/Pyrimethamine tablets, diazepam injections, quinine tablets, and quinine injection in Dodoma Zone are shown in Table 12 below. About one quarter of the facilities in Dodoma Zone were stocked out of SP, diazepam injections, and quinine injections. Quinine tablets had a much higher stockout rate than the other commodities, but that could be due to confusion about ordering quinine tablets at the dispensary level. Very few districts stand out as having consistently lower stockout rates of these four products, with the exception of Kondoa.

Table 12. Percent of Facilities Stocked Out of Malaria Commodities

Region	District	SP Tabs % (n)	Diazepam Injection % (n)	Quinine Tabs % (n)	Quinine Injection % (n)
Manyara	Kiteto	0% (3)	75% (4)	40% (5)	40% (5)
Manyara Total		**0% (3)**	**75% (4)**	**40% (5)**	**40% (5)**
Singida	Iramba	25% (12)	8% (12)	55% (11)	8% (12)
	Manyoni	10% (10)	0% (10)	45% (11)	20% (10)
	Singida MC	67% (3)	33% (3)	0% (3)	33% (3)
	Singida DC	33% (12)	17% (12)	50% (12)	33% (12)
Singida Total		**27% (37)**	**11% (37)**	**46% (37)**	**22% (37)**
Dodoma	Bahi	25% (8)	38% (8)	75% (8)	25% (8)
	Chamwino	21% (14)	29% (14)	43% (14)	54% (13)

Region	District	SP Tabs % (n)	Diazepam Injection % (n)	Quinine Tabs % (n)	Quinine Injection % (n)
	Dodoma MC	56% (9)	33% (9)	44% (9)	44% (9)
	Kondoa	7% (14)	15% (13)	25% (12)	7% (14)
	Kongwa	33% (9)	33% (9)	44% (9)	33% (9)
	Mpwapwa	25% (8)	0% (8)	100% (8)	0% (8)
Dodoma Total		**26% (62)**	**25% (61)**	**52% (60)**	**28% (61)**
Dodoma Zone Total		**25% (102)**	**22% (102)**	**49% (102)**	**26% (103)**

Family Planning Commodities

Dodoma Zone had lower stockouts of family planning commodities compared to other zones. Only about one-third of facilities were stocked out of combined oral contraceptives and injectables which was considerably lower than the majority of the other zones. Dodoma MC, Kiteto, and Singida DC all had relatively high levels of stockouts in all four product categories. Mpwapwa had low levels of stockouts in combined oral contraceptives, injectables, and male condoms but very high levels of stockouts in progestin-only pills (likely due to national-level stockouts).

Table 13. Percent of Facilities Stocked Out of Family Planning Commodities

Region	District	Combined Oral Contraceptives % (n)	Injectables % (n)	Progestin-Only Pills % (n)	Male Condoms % (n)
Manyara	Kiteto	67% (3)	33% (3)	67% (3)	100% (3)
Manyara Total		**67% (3)**	**33% (3)**	**67% (3)**	**100% (3)**
Singida	Iramba	25% (12)	64% (11)	82% (11)	50% (12)
	Manyoni	20% (10)	9% (11)	90% (10)	36% (11)
	Singida MC	50% (2)	0% (2)	100% (2)	100% (3)
	Singida DC	42% (12)	64% (11)	67% (12)	67% (12)
Singida Total		**31% (36)**	**43% (35)**	**80% (35)**	**55% (38)**
Dodoma	Bahi	50% (8)	50% (8)	88% (8)	29% (7)
	Chamwino	29% (14)	8% (13)	86% (14)	31% (13)
	Dodoma MC	56% (9)	78% (9)	89% (9)	67% (9)
	Kondoa	21% (14)	7% (14)	91% (11)	50% (14)
	Kongwa	50% (8)	44% (9)	88% (8)	44% (9)
	Mpwapwa	13% (8)	0% (8)	75% (8)	0% (5)
Dodoma Total		**35% (60)**	**28% (60)**	**86% (57)**	**41% (56)**
Dodoma Zone Total		**34% (100)**	**33% (99)**	**83% (96)**	**48% (98)**

As shown in Table 14 below, 56 percent of the facilities in Dodoma Zone had both combined oral contraceptives and injectables in stock. Mpwapwa, Kondoa, Manyoni, and Chamwino districts had the highest availability rates.

Table 14. Availability of Combined Oral Contraceptives and Injectables by Region and District

Region	District	Combined Oral and Injectables Both In Stock % (n)	Facilities with No Data on COC and Injectables
Dodoma	Bahi	38% (8)	0
	Chamwino	64% (14)	0
	Dodoma MC	22% (9)	0
	Kondoa	79% (14)	0
	Kongwa	33% (9)	0
	Mpwapwa	88% (8)	0
Dodoma Total		**56% (62)**	**0**
Manyara	Kiteto	20% (5)	2
Manyara Total		**20% (5)**	**2**
Singida	Iramba	25% (12)	0
	Manyoni	64% (11)	0
	Singida DC	33% (12)	0
	Singida MC	33% (3)	1
Singida Total		**39% (38)**	**1**
Dodoma Zone Total		**49% (105)**	**3**

Essential Medicines

Levels of stockouts of essential medicines varied greatly, although the number of stockouts of the syrups and suspensions were higher on average than the stockouts of the corresponding tablets. Kondoa, Manyoni, and Mpwapwa Districts had low stockouts of essential drug capsules and tablets. Dodoma MC and Bahi had high levels of stockouts of all products in this category.

Table 15. Percent of Facilities Stocked Out of Essential Drugs

Region	District	Amox. Capsules % (n)	Amox. Suspension % (n)	Para. Tablets % (n)	Para. Syrup % (n)	Cotri. Tablets % (n)	Cotri. Suspension % (n)
Manyara	Kiteto	20% (5)	60% (5)	0% (5)	67% (3)	20% (5)	50% (4)
Manyara Total		**20% (5)**	**60% (5)**	**0% (5)**	**67% (3)**	**20% (5)**	**50% (4)**
Singida	Iramba	50% (12)	33% (12)	8% (12)	42% (12)	58% (12)	58% (12)
	Manyoni	0% (10)	45% (11)	10% (10)	40% (10)	10% (10)	36% (11)
	Singida MC	33% (3)	33% (3)	33% (3)	0% (3)	33% (3)	0% (3)
	Singida DC	8% (12)	42% (12)	25% (12)	42% (12)	50% (12)	42% (12)
Singida Total		**22% (37)**	**39% (38)**	**16% (37)**	**38% (37)**	**41% (37)**	**42% (38)**
Dodoma	Bahi	38% (8)	88% (8)	38% (8)	75% (8)	50% (8)	88% (8)
	Chamwino	15% (13)	92% (13)	46% (13)	62% (13)	31% (13)	85% (13)

Region	District	Amox. Capsules % (n)	Amox. Suspension % (n)	Para. Tablets % (n)	Para. Syrup % (n)	Cotri. Tablets % (n)	Cotri. Suspension % (n)
	Dodoma MC	56% (9)	56% (9)	56% (9)	78% (9)	44% (9)	56% (9)
	Kondoa	7% (14)	29% (14)	0% (13)	29% (14)	7% (14)	36% (14)
	Kongwa	44% (9)	56% (9)	33% (9)	56% (9)	56% (9)	44% (9)
	Mpwapwa	13% (8)	13% (8)	0% (8)	63% (8)	13% (8)	0% (8)
Dodoma Total		**26% (61)**	**56% (61)**	**28% (60)**	**57% (61)**	**31% (61)**	**52% (61)**
Dodoma Zone Total		**24% (103)**	**50% (104)**	**23% (102)**	**50% (101)**	**34% (103)**	**49% (103)**

Zonal Recommendations

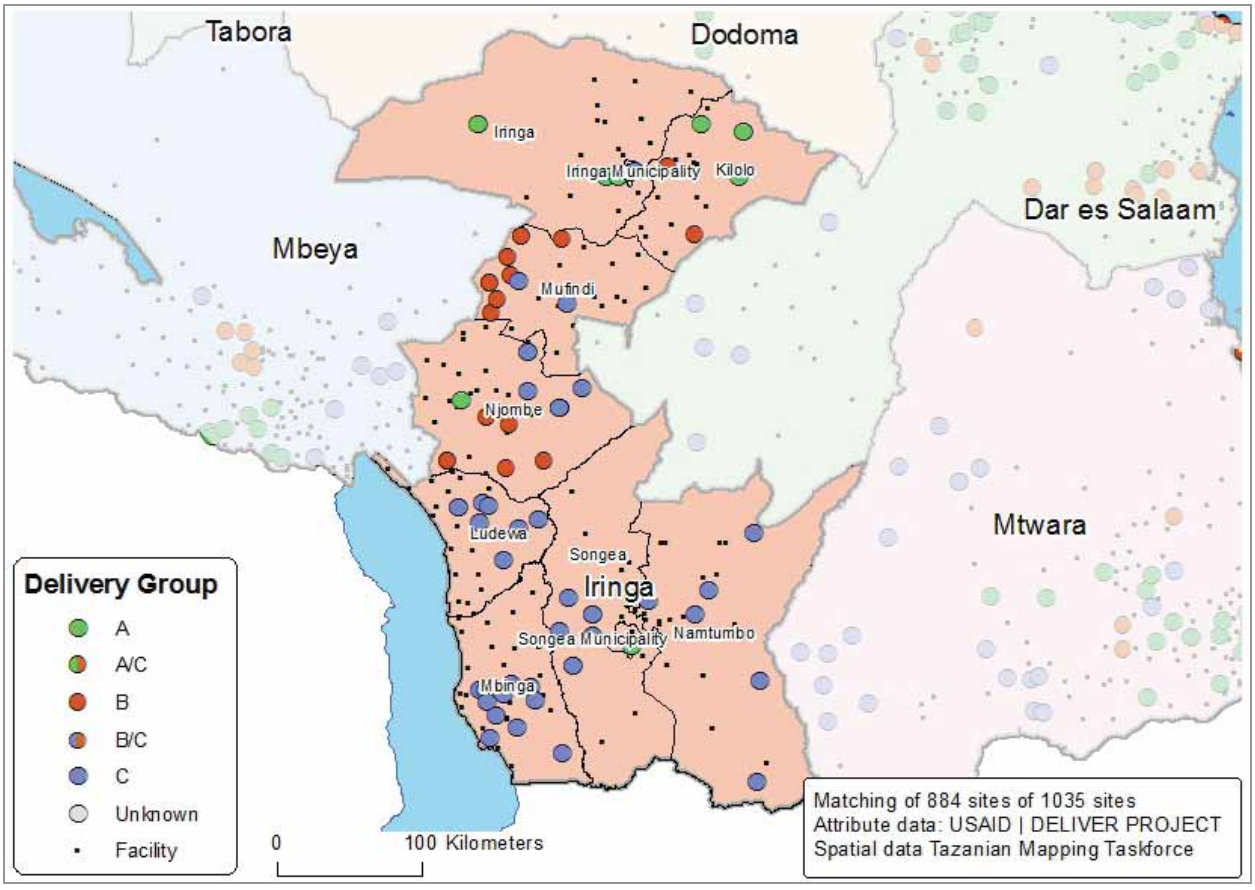
- Where possible, identify high-performing districts and regions (e.g., Mpwapwa, Kondoa, and Manyoni) and follow up with them to learn more about the ILS process to determine potential best practices that could be shared with other districts.
- Identify low-performing districts and regions (e.g., Dodoma MC, Kiteto, and Singida DC) and follow up with targeted supportive supervision to improve practices that may be affecting functioning of the ILS in those districts.
- Work with the zonal MSD office to improve organization and recording of orders received at the zone. This includes having a complete register and improving the organization of the individual R&R forms once processed.
- Work with the district ILS supervisor to improve the consistency and quality of the information included on the R&R forms including the reporting period and the date submitted to the district.

Iringa Zone

Number of Districts: 12

Sample Size: 106 facilities

Figure 16. Map of Sampled Facilities by Delivery Group



Organization of Data at the MSD Zone

The MSD zonal office at Iringa used a pre-printed ILS order register, organized by district, delivery group, and cycle (A1, B1, C1, etc.) to track ILS orders received, but the information in the register was not complete. The date districts submitted the forms to MSD-Iringa and the date orders were shipped out from MSD were not always recorded in the register. As a result, there were several cases where paper R&R forms existed at MSD but facility information, including MSD code and facility name could not be found in the register. The physical R&R forms were stored in packets; each packet was labeled by district and the date received, but not by the delivery cycle. MSD staff provided packets from each district to the team for their review. The data collection team did not have the opportunity to see how the packets were physically stored.

Zonal Level Data Collection Process

The data collection team verified the total number of facilities per district served by Iringa zone, as well as the delivery groups of the facilities in each district. This was done by comparing the facility and delivery group list from MSD-Iringa to the list compiled by the local project staff. Where

inconsistencies between the two lists were found, the MSD list was considered the master. Since each district packet was organized by month and date received, the team was able to easily track R&R forms for the corresponding month and meet the required sample size from all the districts within the time frame of the data collection exercise. Some districts included a summary sheet that included the delivery group and date of delivery at the zone, which was used as an additional verification.

At the end of the data collection process, the MSD manager provided an electronic copy of the latest version of the MSD-Iringa list. This list is organized alphabetically by facility name and its corresponding MSD code, region and district. Delivery groups are not included in the list.

Overall Findings

Of the 12 districts, only Iringa DC, Mbinga and Kilolo submitted R&R forms for April; none were for the appropriate delivery group. The majority (eight) of the districts submitted R&R forms in March. During the review, the team discovered that a new district - Njombe TC, which was not originally part of the sample - had recently been created. Many of the health facilities from Njombe District that were part of delivery group B were moved over to Njombe TC. Subsequently, the team added facilities from the Njombe TC to the sample size. According to the Zonal Manager, there are 41 health facilities in Njombe TC, all of which are under delivery group B. The team found R&R forms from 39 of those 41 health facilities, all of which were submitted in March (facilities in the B delivery group should have submitted in February). Information on 18 of these facilities could not be found in either the MSD list or the list compiled by the local project staff. Similarly, the team was unable to verify 15 facilities from Iringa DC. Additionally, R&R forms from these facilities in Iringa DC had identical information in them: all were completed with "0" in all of the columns, with the exception of quantities needed.

Timeliness of Submissions to MSD

As shown in Table 16 below, all districts submitted their R&R forms, but not always for the appropriate delivery group. For example, Iringa DC submitted a total of 55 R&R forms in April; only five were from the appropriate delivery group. None of the R&R forms from the facilities in Kilolo, Iringa MC, and Songea MC districts were for the appropriate delivery group. Makete was the only district where all the R&R forms submitted were from the appropriate group. Ludewa and Namtumbo districts submitted all of the required R&R forms from the appropriate delivery group, plus one additional facility each from a different delivery group. In total, 64 percent of the facilities submitted the forms in accordance to their delivery group schedule.

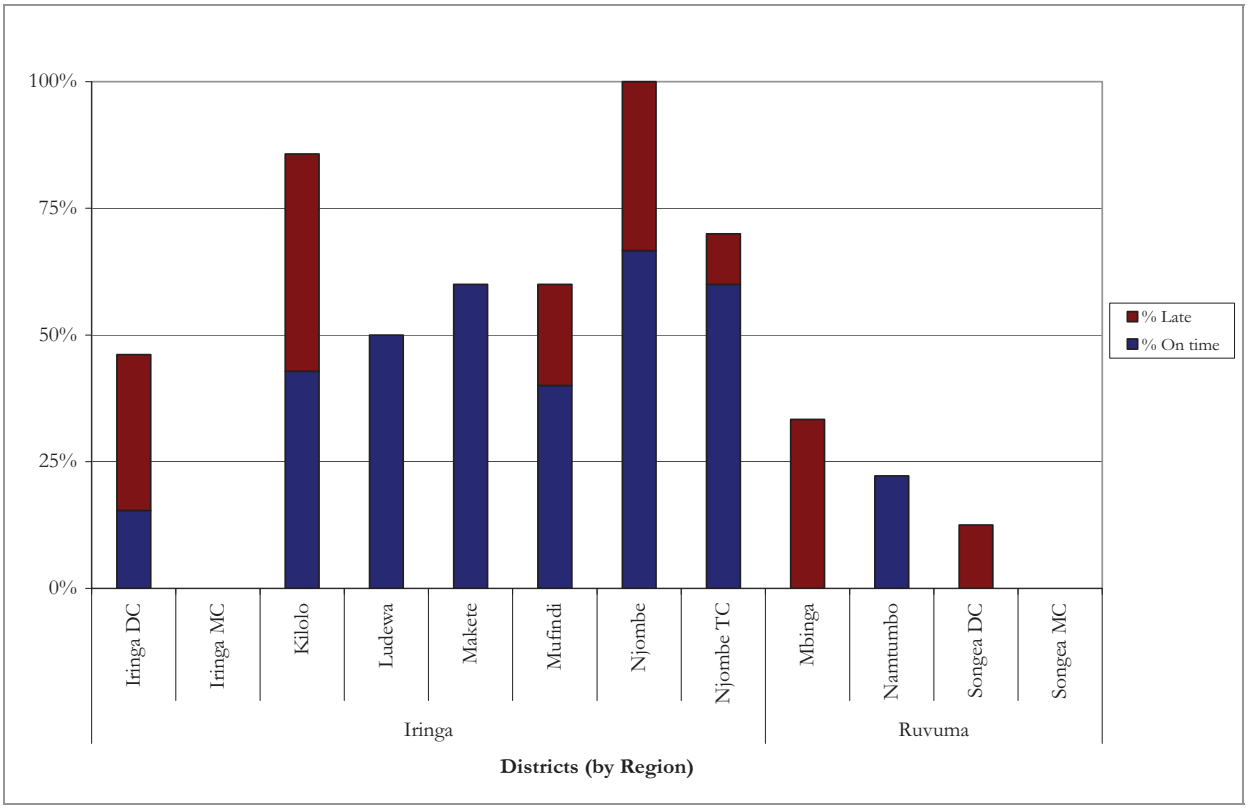
Table 16. Number of R&Rs Submitted by District

District Name	Number of forms that should have been submitted	Number of forms that were actually submitted	Number of submitted forms that were in appropriate delivery group
Iringa DC	17	55	5
Iringa MC	9	5	0
Kilolo	12	2	0
Ludewa	11	12	11
Makete	4	4	4
Mbinga	20	20	1
Mufindi	13	16	12
Namtumbo	14	15	14
Njombe	20	21	20
Njombe TC	41	39	39
Songea DC	8	25	8
Songea MC	9	9	0
Iringa Zone Total	**178**	**223**	**114**

Timeliness of Submission to the District

As shown in Figure 17 below, the facilities themselves were often late in submitting their forms to the district for review. This impacts the ability of the district to submit to the zone on time. On-time forms were considered those that were received before the 10th of the month, and late forms were those received after the 10th If there was no date on the form, the facility was not included in the graph below. Njombe, Makete, and Njombe TC had the highest percentage of facilities that submitted on time, with between 60 and 70 percent of facilities submitting before the tenth of the month. Njombe was the only district where all facilities put dates on their R&R forms. None of the facilities in Iringa MC and Songea MC included dates on their R&R forms so the data collection team was unable to determine if the facilities were reporting on time.

Figure 17. Percent Timely Reporting for Iringa



Quality of Data Available at District Level

- Although some of the packets from the districts had order compilation sheets (Form 3), not all of them included the date the packet arrived at the zone. There is a space for this information on the form, but the majority of districts were not including the date with the DMO signature. The only way to tell the date that forms arrived at the MSD was based on the date received marked on top of each of the district packets in which R&R forms were kept.
- The R&R forms are not always complete. Although 65 percent of the facilities in the sample included dates on their R&R forms, many had incorrect reporting periods or no reporting periods entered on their forms.
- There seems to be a long delay between the dates on the R&R forms and the date that the forms arrive at the zone. It is difficult to know the cause of this delay.
- Iringa Rual submitted photocopies of R&R forms on behalf of facilities so stock availability data submitted on behalf of those facilities should be considered inaccurate.

Stock Levels of Key Products

ACTs and Other Malaria Commodities

Iringa Zone had relatively low stockouts of all four ALu presentations at the health facility level, but it also had a relatively small percentage of facilities with all four ALu presentations in stock indicating that the majority of facilities had stockouts of between one and three ALu presentations. None of the facilities in Njombe TC, Mufindi, Makete, Iringa MC, Songea DC and Songea MC were completely stocked out of ALu presentations. Ruvuma region had a higher percentage of facilities with stockouts in comparison to Iringa region. For example, half of the facilities in Mbinga and a third of the facilities in Namtumbo districts were completely stocked out of all four ALu presentations.

Table 17. Stock of ACTs by Region and District

Region	District	No ALu in Stock % (n)	All 4 ALu in Stock % (n)	Facilities with No Data for ALu
Iringa	Iringa DC	23% (13)	15% (13)	5
	Iringa MC	0% (2)	50% (2)	0
	Kilolo	14% (7)	14% (7)	2
	Ludewa	10% (10)	10% (10)	4
	Makete	0% (5)	20% (5)	1
	Mufindi	0% (10)	0% (10)	2
	Njombe	6% (18)	6% (18)	1
	Njombe TC	0% (10)	0% (10)	1
Iringa Total		**8% (75)**	**9% (75)**	**16**
Ruvuma	Mbinga	50% (12)	25% (12)	0
	Namtumbo	33% (9)	44% (9)	0
	Songea DC	0% (8)	25% (8)	0
	Songea MC	0% (2)	0% (2)	0
Ruvuma Total		**29% (31)**	**29% (31)**	**0**
Iringa Zone Total		**14% (106)**	**15% (106)**	**16**

Stockout rates of other malaria commodities such as Sulphadoxine/Pyrimethamine (SP) tablets, diazepam injections, quinine tablets, and quinine injections in Iringa Zone are shown in Table 18 below. About one third of the facilities in Iringa Zone were stocked out of all four malaria commodities. Approximately half of the facilities in Ruvuma Region were stocked out of diazepam injections in comparison to a quarter of the facilities in Iringa region. Kilolo and Iringa DC stand out as having consistently high stockout rates of these four products.

Table 18. Percent of Facilities Stocked Out of Malaria Commodities

Region	District	SP Tablets % (n)	Diazepam Injection % (n)	Quinine Tablets % (n)	Quinine Injection % (n)
Iringa	Iringa DC	50% (10)	64% (11)	63% (8)	67% (9)
	Iringa MC	0% (2)	0% (2)	0% (2)	50% (2)
	Kilolo	43% (7)	57% (7)	57% (7)	57% (7)
	Ludewa	30% (10)	11% (9)	30% (10)	22% (9)
	Makete	0% (5)	20% (5)	20% (5)	40% (5)
	Mufindi	0% (10)	30% (10)	50% (10)	30% (10)
	Njombe	44% (18)	6% (18)	11% (18)	6% (18)
	Njombe TC	30% (10)	0% (10)	40% (10)	10% (10)
Iringa Total		**31% (72)**	**24% (72)**	**34% (70)**	**29% (70)**
Ruvuma	Mbinga	17% (12)	42% (12)	58% (12)	50% (12)
	Namtumbo	33% (9)	67% (9)	22% (9)	33% (9)
	Songea DC	25% (8)	38% (8)	25% (8)	13% (8)
	Songea MC	100% (2)	100% (2)	50% (2)	100% (2)
Ruvuma Total		**29% (31)**	**52% (31)**	**39% (31)**	**39% (31)**
Iringa Zone Total		**30% (103)**	**32% (103)**	**36% (101)**	**32% (101)**

Family Planning Commodities

Iringa Zone had high stockout rates of family planning commodities compared to other zones. Half of the facilities were stocked out of combined oral contraceptives and injectables, two commodities which are considered essential for managing any reproductive health program. Iringa DC, Kilolo, and Namtumbo had some of the highest stockout rates for combined oral contraceptives. Songea DC was one of the few exceptions, with only a quarter of the facilities stocked out of combined oral contraceptives and injectables. Condoms, however, had considerably lower stockout rates. At the zonal level, there were pervasive stockouts of progestin-only pills, most likely due to national-level stock availability.

Table 19. Percent of Facilities Stocked Out of Family Planning Commodities

Region	District	Combined Oral % (n)	Injectables % (n)	Progestin-Only Pills % (n)	Male Condoms % (n)
Iringa	Iringa DC	86% (7)	43% (7)	86% (7)	38% (8)
	Iringa MC	0% (2)	0% (2)	100% (2)	0% (2)
	Kilolo	71% (7)	43% (7)	100% (7)	60% (5)
	Ludewa	56% (9)	33% (9)	100% (9)	30% (10)
	Makete	60% (5)	60% (5)	80% (5)	60% (5)
	Mufindi	40% (10)	30% (10)	80% (10)	10% (10)
	Njombe	17% (18)	56% (18)	89% (18)	11% (18)

Region	District	Combined Oral % (n)	Injectables % (n)	Progestin-Only Pills % (n)	Male Condoms % (n)
	Njombe TC	40% (10)	50% (10)	90% (10)	20% (10)
Iringa Total		**44% (68)**	**44% (68)**	**90% (68)**	**25% (68)**
Ruvuma	Mbinga	58% (12)	50% (12)	92% (12)	33% (12)
	Namtumbo	89% (9)	89% (9)	100% (9)	13% (8)
	Songea DC	25% (8)	29% (7)	86% (7)	75% (4)
	Songea MC	50% (2)	100% (2)	100% (2)	100% (2)
Ruvuma Total		**58% (31)**	**60% (30)**	**93% (30)**	**38% (26)**
Iringa Zone Total		**48% (99)**	**49% (98)**	**91% (98)**	**29% (94)**

As shown in Table 20 below, only 35 percent of the facilities in Iringa Zone had both combined oral contraceptives and injectables in stock; lower than most other zones. Iringa MC, Mufindi, and Songea DC had the highest availability rate.

Table 20. Availability of Combined Oral Contraceptives and Injectables by Region and District

Region	District	Combined Oral and Injectables Both In Stock % (n)	Facilities with No Data on COC and Injectables
Iringa	Iringa DC	8% (13)	4
	Iringa MC	100% (2)	0
	Kilolo	29% (7)	0
	Ludewa	30% (10)	0
	Makete	40% (5)	0
	Mufindi	60% (10)	0
	Njombe	39% (18)	0
	Njombe TC	40% (10)	0
Iringa Total		**36% (75)**	**4**
Ruvuma	Mbinga	42% (12)	0
	Namtumbo	11% (9)	0
	Songea DC	50% (8)	0
	Songea MC	0% (2)	0
Ruvuma Total		**32% (31)**	**0**
Iringa Zone Total		**35% (106)**	**4**

Essential Medicines

Iringa Zone had much better availability of essential medicines in comparison to other product categories. Levels of stockouts of essential medicines varied greatly, although the number of stockouts of the syrups and suspensions were higher on average than the stockouts of the corresponding tablets. Ludewa, Mufindi, Mbinga Districts had fewer stockouts of the capsules and tablets. Iringa DC and Namtumbo had high levels of stockouts of all products in this category.

Table 21. Percent of Facilities Stocked Out of Essential Drugs

Region	District	Amox. Capsules % (n)	Amox. Suspension % (n)	Para. Tabs % (n)	Para. Syrup % (n)	Cotri. Tabs % (n)	Cotri. Suspension % (n)
Iringa	Iringa DC	46% (13)	73% (11)	31% (13)	73% (11)	31% (13)	50% (12)
	Iringa MC	0% (2)	50% (2)	0% (2)	100% (2)	0% (2)	50% (2)
	Kilolo	14% (7)	43% (7)	29% (7)	43% (7)	29% (7)	43% (7)
	Ludewa	20% (10)	30% (10)	10% (10)	40% (10)	10% (10)	30% (10)
	Makete	0% (5)	20% (5)	0% (5)	20% (5)	40% (5)	0% (5)
	Mufindi	10% (10)	30% (10)	0% (10)	30% (10)	0% (10)	20% (10)
	Njombe	0% (18)	44% (18)	6% (18)	11% (18)	6% (18)	28% (18)
	Njombe TC	20% (10)	20% (10)	0% (10)	20% (10)	0% (10)	10% (10)
Iringa Total		**16% (75)**	**40% (73)**	**11% (75)**	**34% (73)**	**13% (75)**	**28% (74)**
Ruvuma	Mbinga	0% (12)	42% (12)	8% (12)	25% (12)	8% (12)	42% (12)
	Namtumbo	33% (9)	44% (9)	33% (9)	78% (9)	22% (9)	78% (9)
	Songea DC	13% (8)	88% (8)	13% (8)	25% (8)	25% (8)	63% (8)
	Songea MC	50% (2)	100% (2)	50% (2)	50% (2)	50% (2)	100% (2)
Ruvuma Total		**16% (31)**	**58% (31)**	**19% (31)**	**42% (31)**	**19% (31)**	**61% (31)**
Iringa Zone Total		**16% (106)**	**45% (104)**	**13% (106)**	**37% (104)**	**15% (106)**	**38% (105)**

Zonal Recommendations

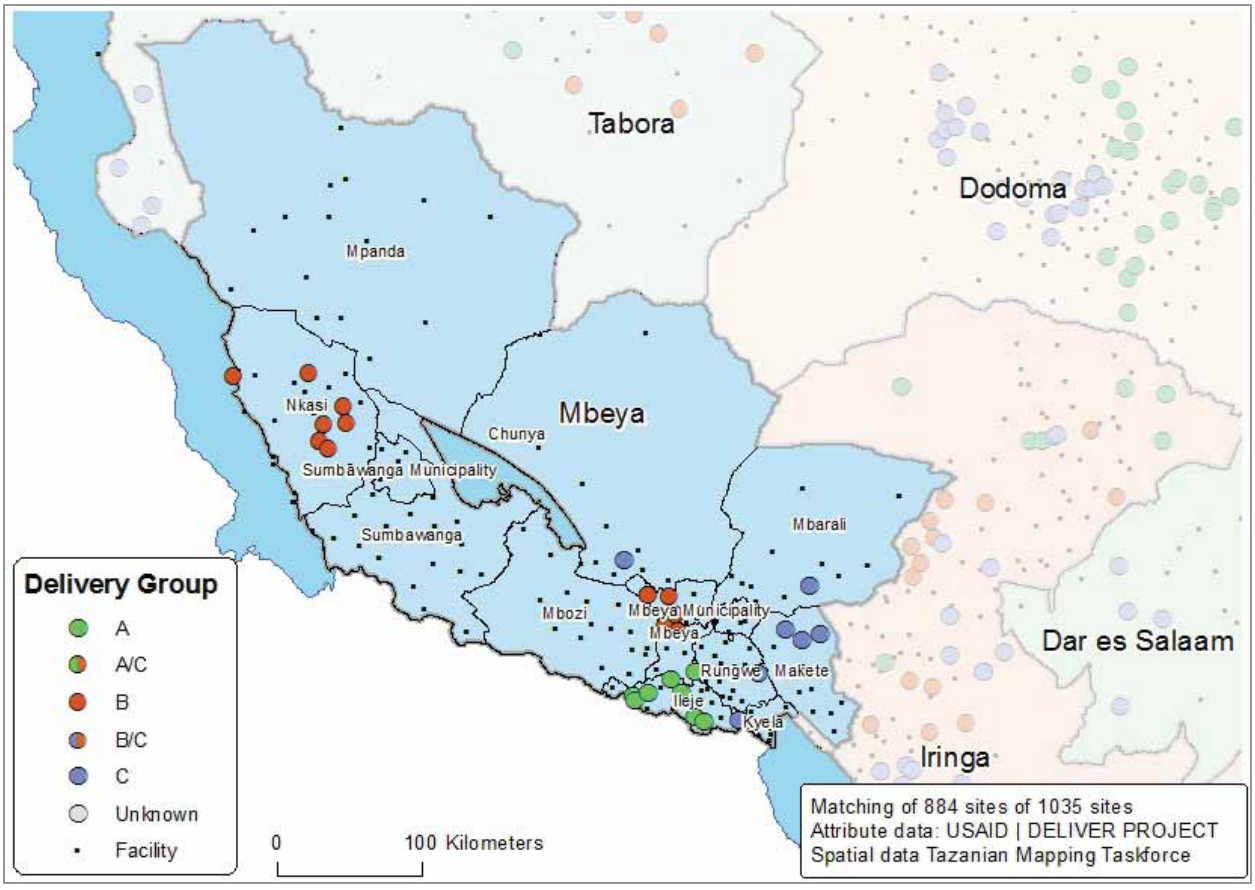
- Where possible, identify high-performing districts and regions (e.g., Ludewa, Mufindi, and Njombe) and follow up with them to learn more about the ILS process to determine potential best practices that could be shared with other districts.
- Identify low-performing districts and regions (e.g., Iringa DC, Kilolo and Namtumbo) and follow up with targeted supportive supervision to improve practices that may be affecting functioning of the ILS in those districts.
- Work with the zonal MSD office to improve organization and recording of orders received at the zone. This includes having a complete register and improving the organization of the individual R&R forms once processed. A date stamp indicating when MSD received and processed the R&R will help determine order processing time.
- Work with the DMO and/or the person responsible for ILS at the district level to improve the consistency and quality of the information included on the R&R forms including correctly completing the quantities requested, reporting period and the date submitted to the district.

Mbeya Zone

Number of Districts: 12

Sample Size: 52 facilities

Figure 18. Map of Sampled Facilities by Delivery Group



Organization of Data at the MSD Zone

Because of storage capacity at the Mbeya zonal capital (located in Mbeya), R&R forms were being sent to Dar es Salaam to be filled. There was little indication of how exactly the forms got to Dar es Salaam, or how much time it took. The R&R forms were placed in large envelopes; the date that each packet was processed at Dar es Salaam was written on the outside of each envelope, as well as the districts enclosed inside and the delivery cycle. Most envelopes contained orders from a single district from a single delivery cycle, but some contained multiple districts and orders.

Figure 19. Reviewing Mbeya Report and Request Forms at MSD-Dar es Salaam

Most R&R forms did not have a date on them or a delivery cycle, and although there were some order summary letters included in the envelopes, many appeared to be erroneously addressed and dated. Some letters were dated improbably (that is, before the packet was actually received at MSD-Dar es Salaam) and others were addressed to or from a DMO in Iringa. There was a register of incoming orders, which only captured information on orders which arrived at MSD-Dar es Salaam and not those which arrived at MSD-Mbeya. The register was organized chronologically by date when the packet was received at MSD-Dar es Salaam. There was no outward indication that the R&Rs had passed through MSD-Mbeya.

The only facility list for MSD-Mbeya was the MSD Central facility list, which appeared to be missing most C and a few B facility groups.

Zonal Level Data Collection Process

The data collection team used the dates and district names written on the envelopes to match each packet to an entry in the register, although in some cases this was difficult. In addition, since few facilities put completion dates on the R&R forms, it was difficult to determine when the forms were filled out and the order period. Ultimately, the dates in the register were used to select the sample. Unfortunately, data were unavailable from February to April for two districts: Mbeya MC and Mpanda.

Overall Findings

Dozens of facilities that submitted R&R forms were missing from the MSD Central list. These facilities included the following district delivery groups: Sumbawanga Rural (C), Chunya (B and C), Kyela (C), Mbarali (C), Mbozi (C), and Rungwe (C). These facilities do exist on another facility list, indicating that the Central MSD list is probably incomplete. It made calculating sample sizes difficult, because actual numbers of facilities in each of the delivery groups is unknown. This further confounds the data on the percentage of facilities that submitted from each delivery group or submitted correctly.

Only two districts (of 12) submitted any forms in April. There should have been 112 facilities submitting forms in April; there were only 15 forms, of which only 10 were in the correct delivery group (A).

Timeliness of Submissions to MSD

Because so many delivery groups were missing from the MSD Central list, it is unknown what the actual statistics are for facility submissions in Mbeya Zone. In the table below, the districts marked with an asterisk are those whose facilities were not on the MSD Central list – therefore, the only facilities which are known to exist for the delivery group sampled are those which submitted forms (for example, the MSD Central list only included As, but a packet of Cs was submitted). All nine facilities which were sampled from March were marked as Cs, and since they are the only known Cs in Chunya district, they are all assumed to have been submitted in the correct delivery group and also to be the only facilities which should have submitted.

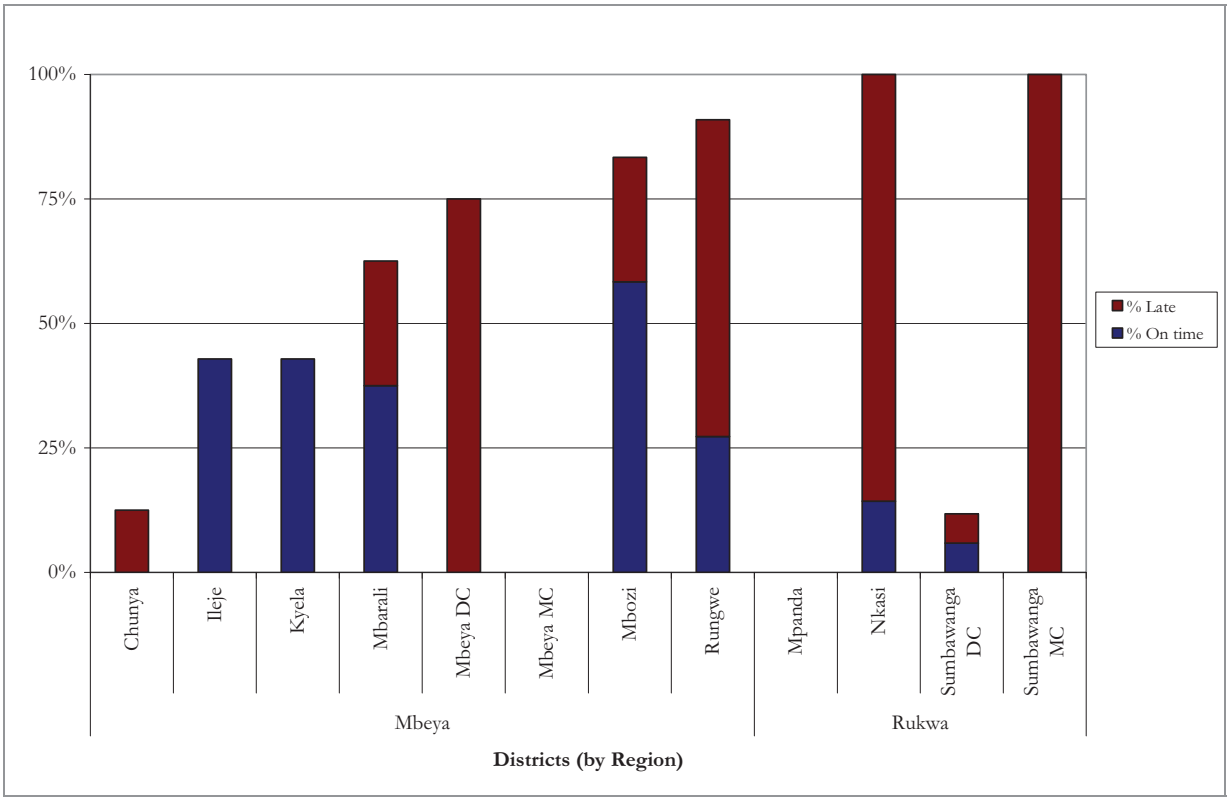
Of those districts for which facility data was available, only two included forms submitted in the appropriate delivery group and forms were missing completely for two districts. Mbeya Urban, according to the register, submitted in May 18th, 2010. Mpanda, according to the register, did submit a packet on February 5th but the packet could not be located.

Table 22. Number of R&Rs Submitted by District

District Name	Number of forms that should have been submitted	Number of forms that were actually submitted	Number of submitted forms that were in appropriate delivery group
Chunya*	9	9	9
Ileje	22	10	10
Kyela*	8	8	8
Mbarali*	10	10	10
Mbeya DC*	14	14	14
Mbeya MC	11	0	0
Mbozi*	11	11	11
Mpanda	13	0	0
Nkasi	11	9	9
Rungwe*	14	14	14
Sumbawanga DC*	33	33	33
Sumbawanga MC	9	5	0
Mbeya Zone Total	**93**	**96**	**63**

Many facilities did not put a date on their R&R forms, making it difficult to determine the timeliness of the facility submission to the district. Figure 20 below shows the percentage of facilities per district that submitted their R&R forms to the district on time (defined as by the 10th of the month) and those that did not submit on time (after the 10th of the month). If there was no date on the R&R form, the data collection team could not determine if the facility reported on time or late. As a result, facilities that did not provide a date are not included in the figure below.

Figure 20. Percentage Timely Reporting by District



Quality of Data Available at District Level

- The majority of the facility R&R forms from Sumbawanga DC district appeared to have been filled out by one person at the district level. All the forms from A and C delivery groups were photocopies. There were five seemingly unique forms; each one was photocopied 16, 10, nine, four, and three times, respectively.
- As mentioned, there were no forms available from Mbeya MC and Mpanda Districts. Data from Mbeya DC were included even though the forms reached Dar es Salaam on February 1st, which means that they were submitted to MSD-Mbeya before February. However, there were no other data for Mbeya DC.
- Because the forms were sent from Mbeya to Dar es Salaam for resupplies, it is unclear what effect that had on timeliness of the R&R forms being received and where any delay might be occurring (at the facility, district, or MSD-Mbeya level).
- All R&R forms from Nkasi District were completed properly. All were filled out in pen, with complete and correct information entered in all fields. However, facility codes were different than what MSD uses. Mbozi District also filled most of the forms correctly; all had the correct facility codes and dates, and most were on time.

Stock Levels of Key Products

ACTs and Other Malaria Commodities

Twenty percent of the health facilities in Mbeya Zone are completely stocked out of all presentations of Artemether/Lumefantrine Tablets (ALu), and only 29 percent of facilities had all

four ALu presentations in stock during the sample period. Mbozi and Chunya were the lowest-performing districts with 58 percent and 50 percent of facilities in the sample completely stocked out of all forms of ALu, respectively. Because many of the Mbeya DC R&R forms had no data for ALu, it is difficult to determine the actual stockout level for facilities within the district.

Table 23. Stock of ACTs by Region and District

Region	District	No ALu in Stock % (n)	All 4 ALu in Stock % (n)	Facilities with No Data for ALu
Mbeya	Chunya	50% (8)	13% (8)	0
	Ileje	14% (7)	29% (7)	0
	Kyela	14% (7)	57% (7)	0
	Mbarali	0% (8)	63% (8)	0
	Mbeya DC	8% (12)	0% (12)	11
	Mbeya MC	no data	no data	no data
	Mbozi	58% (12)	17% (12)	0
	Rungwe	9% (11)	45% (11)	0
Mbeya Total		**23% (65)**	**29% (65)**	**11**
Rukwa	Mpanda	no data	no data	no data
	Nkasi	14% (7)	57% (7)	0
	Sumbawanga DC	12% (17)	18% (17)	1
	Sumbawanga MC	20% (5)	20% (5)	0
Rukwa Total		**14% (29)**	**28% (29)**	**1**
Mbeya Zone Total		**20% (94)**	**29% (94)**	**12**

Other malaria commodities such as Sulphadoxine/Pyrimethamine (SP), diazepam injections, quinine tablets, and quinine injections also had stockout problems. The worst-performing commodity was quinine tablets which had a zonal-level stockout rate of 57 percent, and for which seven out of the 12 districts had at least half of their facilities stocked out.

Table 24. Percent of Facilities Stocked Out of Malaria Commodities

Region	District	SP Tabs % (n)	Diazepam Injection % (n)	Quinine Tabs % (n)	Quinine Injection % (n)
Mbeya	Chunya	50% (8)	38% (8)	88% (8)	50% (8)
	Ileje	14% (7)	14% (7)	14% (7)	14% (7)
	Kyela	29% (7)	0% (7)	100% (7)	14% (7)
	Mbarali	0% (8)	0% (8)	57% (7)	0% (8)
	Mbeya DC	50% (12)	25% (12)	67% (12)	17% (12)
	Mbeya MC	No data	No data	No data	No data
	Mbozi	33% (12)	17% (12)	60% (10)	9% (11)
	Rungwe	27% (11)	27% (11)	33% (9)	27% (11)

Mbeya Total		**31% (65)**	**18% (65)**	**60% (60)**	**19% (64)**
Rukwa	Nkasi	57% (7)	29% (7)	57% (7)	29% (7)
	Mpanda	No data	No data	No data	No data
	Sumbawanga DC	40% (15)	33% (15)	33% (15)	18% (17)
	Sumbawanga MC	50% (4)	50% (4)	100% (5)	20% (5)
Rukwa Total		**46% (26)**	**35% (26)**	**52% (27)**	**21% (29)**
Mbeya Zone Total		**35% (91)**	**23% (91)**	**57% (87)**	**19% (93)**

Family Planning Commodities

Chunya and Sumbawanga MC had the highest stockout rates for family planning commodities, with stockout rates of at least 60 percent for all commodities. Progestin-only pills had the highest stockout rate, with almost 75 percent in Mbeya Region and 85 percent in Rukwa Region.

Table 25. Percent of Facilities Stocked Out of Family Planning Commodities

Region	District	Combined Oral % (n)	Injectables % (n)	Progestin-Only Pills % (n)	Male Condoms % (n)
Mbeya	Chunya	63% (8)	63% (8)	88% (8)	63% (8)
	Ileje	0% (7)	0% (7)	43% (7)	14% (7)
	Kyela	0% (7)	29% (7)	71% (7)	50% (6)
	Mbarali	13% (8)	0% (7)	75% (8)	13% (8)
	Mbeya DC	42% (12)	17% (12)	100% (12)	55% (11)
	Mbeya MC	No data	No data	No data	No data
	Mbozi	50% (12)	18% (11)	75% (12)	45% (11)
	Rungwe	36% (11)	27% (11)	55% (11)	45% (11)
Mbeya Total		**32% (65)**	**22% (63)**	**74% (65)**	**42% (62)**
Rukwa	Nkasi	14% (7)	86% (7)	67% (6)	86% (7)
	Mpanda	No data	No data	No data	No data
	Sumbawanga DC	24% (17)	75% (16)	87% (15)	55% (11)
	Sumbawanga MC	60% (5)	60% (5)	100% (5)	60% (5)
Rukwa Total		**28% (29)**	**75% (28)**	**85% (26)**	**65% (23)**
Mbeya Zone Total		**31% (94)**	**38% (91)**	**77% (91)**	**48% (85)**

Less than a fifth of all facilities in Rukwa Region had both combined oral contraceptives and injectables in stock. Fifty-seven percent of facilities in Mbeya Region had both in stock, although the data from Mbeya MC is missing.

Table 26. Availability of Combined Oral Contraceptives and Injectables by Region and District (% in stock)

Region	District	Combined Oral and Injectables Both In Stock % (n)	Facilities with No Data on COC and Injectables
Mbeya	Chunya	25% (8)	0
	Ileje	100% (7)	0
	Kyela	71% (7)	0
	Mbarali	75% (8)	0
	Mbeya DC	50% (12)	0
	Mbeya MC	No data	--
	Mbozi	50% (12)	0
	Rungwe	45% (11)	0
Mbeya Total		**57% (65)**	**0**
Rukwa	Mpanda	No data	--
	Nkasi	14% (7)	0
	Sumbawanga DC	18% (17)	0
	Sumbawanga MC	20% (5)	0
Rukwa Total		**17% (29)**	**0**
Mbeya Zone Total		**45% (94)**	**0**

Essential Medicines

Ileje and Mbarali districts had low stockout rates of essential drugs. Overall, stockout rates of essential drugs were lower for Mbeya Region than for Rukwa Region. The data from Sumbawanga DC are of dubious accuracy, because so many sheets were photocopied. In general, stockout rates for suspensions and syrups were higher than those for tablets and capsules.

Table 27. Percent of Facilities Stocked Out of Essential Drugs

Region	District	Amox. Capsules % (n)	Amox. Suspension % (n)	Para. Tabs % (n)	Para. Syrup % (n)	Cotri. Tabs % (n)	Cotri. Suspension % (n)
Mbeya	Chunya	38% (8)	50% (8)	25% (8)	38% (8)	38% (8)	50% (8)
	Ileje	0% (7)	14% (7)	0% (7)	14% (7)	14% (7)	29% (7)
	Kyela	29% (7)	43% (7)	14% (7)	29% (7)	57% (7)	29% (7)
	Mbarali	0% (8)	13% (8)	0% (8)	0% (8)	0% (8)	0% (8)
	Mbeya DC	8% (12)	25% (12)	17% (12)	50% (12)	8% (12)	17% (12)
	Mbozi	0% (12)	33% (12)	8% (12)	17% (12)	0% (12)	25% (12)
	Rungwe	27% (11)	20% (10)	18% (11)	27% (11)	9% (11)	45% (11)
	Mbeya MC	no data	no data	no data	no data	no data	no data
Mbeya Total		**14% (65)**	**28% (64)**	**12% (65)**	**26% (65)**	**15% (65)**	**28% (65)**
Rukwa	Nkasi	14% (7)	29% (7)	29% (7)	100% (7)	14% (7)	71% (7)
	Sumbawanga DC	31% (16)	33% (15)	19% (16)	50% (16)	36% (14)	31% (16)
	Sumbawanga MC	20% (5)	20% (5)	40% (5)	20% (5)	20% (5)	20% (5)

Region	District	Amox. Capsules % (n)	Amox. Suspension % (n)	Para. Tabs % (n)	Para. Syrup % (n)	Cotri. Tabs % (n)	Cotri. Suspension % (n)
	Mpanda	no data	no data	no data	no data	no data	no data
Rukwa Total		**25% (28)**	**30% (27)**	**25% (28)**	**57% (28)**	**27% (26)**	**39% (28)**
Mbeya Zone Total		**17% (93)**	**29% (91)**	**16% (93)**	**35% (93)**	**19% (91)**	**31% (93)**

Zonal Recommendations

It is difficult to make specific recommendations, given that the data collection team did not visit MSD-Mbeya, since the orders were filled at MSD-Dar es Salaam. However, a few recommendations can be made.

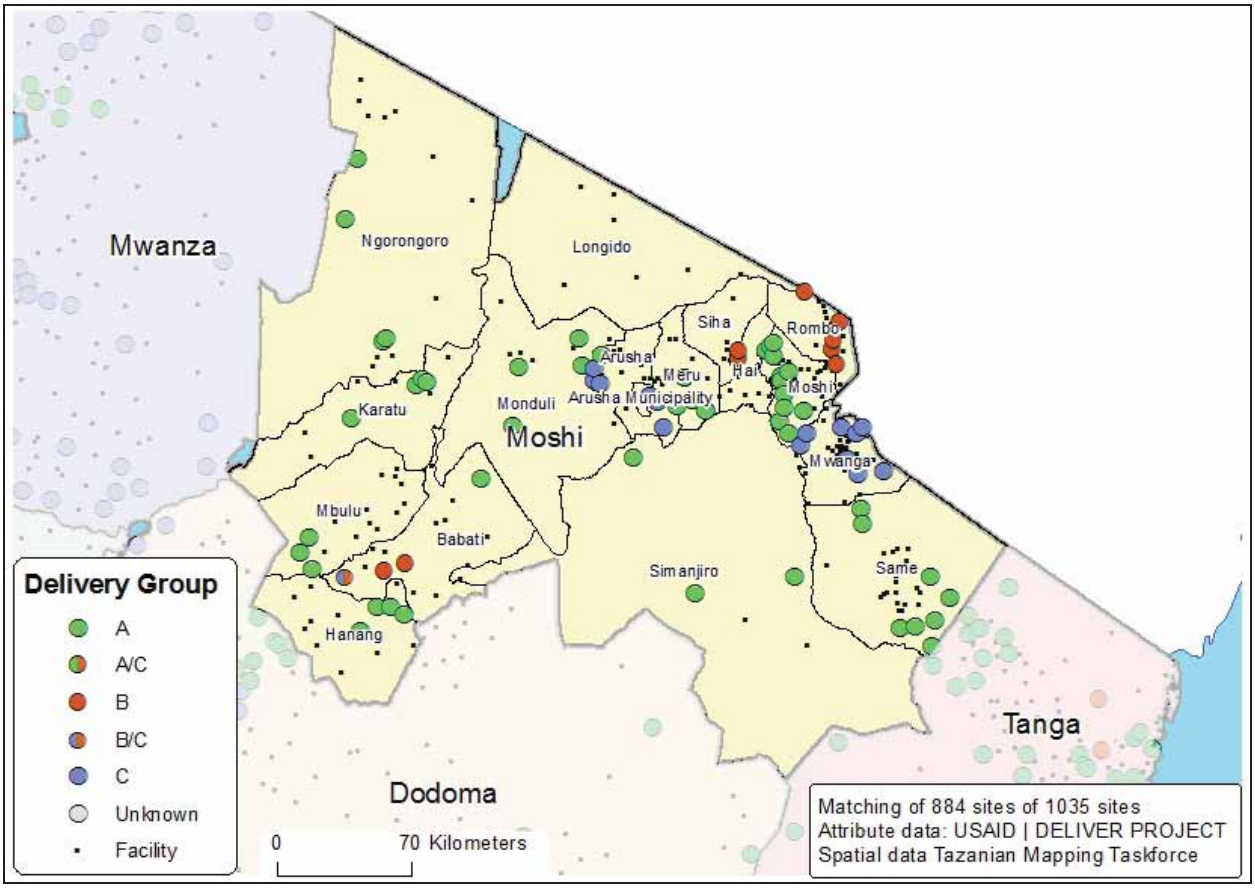
- Identify high-performing districts (e.g., Nkasi, Mbozi) and follow up with them to learn more about the ILS process to determine potential best practices that could be shared with other districts.
- Identify low-performing districts (e.g., Sumbawanga MC, Mbeya MC, and Mpanda) and follow up with targeted supportive supervision to improve practices that may be affecting functioning of the ILS in those districts.
- Work with the district ILS supervisor to improve the consistency and quality of the information included on the R&R forms including the reporting period and the date submitted to the district.
- Train MSD staff on the ILS system, including how to correctly fill out the R&R forms and the timing for ordering and processing orders.

Moshi Zone

Number of Districts: 19

Sample Size: 118 facilities

Figure 21. Map of Sampled Facilities by Delivery Group



Organization of Data at the MSD Zone

The MSD zonal office in Moshi kept track of submissions of R&R forms from districts in a chronologically-ordered register. When a packet of R&R forms from a district was received at the MSD office, the register was supposed to be updated with the date of receipt, plus the delivery group and cycle of received forms. However, the data collection team found that the register was not kept fully updated. As a result, there were several cases where paper R&R forms existed at MSD but did not have a corresponding entry in the register. In April alone, six R&R packets were not logged in the register even though they were received at the MSD zonal office. There were also some cases where packets logged as received in the register in a certain month were not found, although there were not very many of these.

Zonal Level Data Collection Process

The first step for the data collection team was to verify the number and size of districts served by Moshi Zone, as well as the delivery groups of the facilities in each district. To this end, the team asked for a facility and delivery group list from the zonal office, so that it could be compared to the

list prepared by local project staff. Unfortunately, an updated list of facilities and delivery groups was not available at the zonal office, and the team had to make do with a list from 2007. As a result, the team made the assumption that the most complete list of facilities included facilities from both lists. It was also not possible to determine the correct delivery groups of some facilities as these were not consistently indicated in the MSD list.

The data collection team then reviewed the register for all packets of R&R forms received at the MSD zonal office between February and April. These were compared to physical packets of R&R forms held at the MSD for this period of time. Once any inconsistencies between the register and the physical inventory were noted, the team started with looking at R&R forms received in April, and then worked backward as necessary, as explained in the "Site and R&R Selection" section of this report. While inventorying the packets of forms, the team found a packet that was mislabeled as Moshi Rural when in fact the forms contained in the packet were from Moshi Urban.

Overall Findings

Of the 19 districts that should have submitted R&R forms in April, 11 submitted packets. Of these, only six districts submitted forms from the A group. The team also found an extra district that had not been included in the list created by local project staff. In this case, Babati District had been split up into two districts: Babati TC (Urban) and Babati DC (Rural).

Timeliness of Submissions to MSD

As shown in Table 46 below, many districts did not submit R&R forms in their appropriate delivery groups. During the period of February to April 2010, six out of 19 districts submitted R&R packets where at least 50 percent of the R&R forms contained belonged to the appropriate delivery group for that month. No district submitted the correct R&R packet for that month, with only R&R forms for all health facilities in the appropriate delivery group for that month. All the districts either submitted incomplete numbers of R&R forms for the appropriate delivery group (Monduli, Ngorongoro, Moshi DC and Moshi MC), or submitted forms for facilities that were not in the appropriate delivery group for that month, instead of appropriate forms (Arusha DC, Arusha MC, Hai, Rombo and Hanang), or in addition to them (Karatu, Meru, Same and Mbulu). Three districts, namely Longido, Siha and Babati TC, did not submit R&R forms at all between February and April.

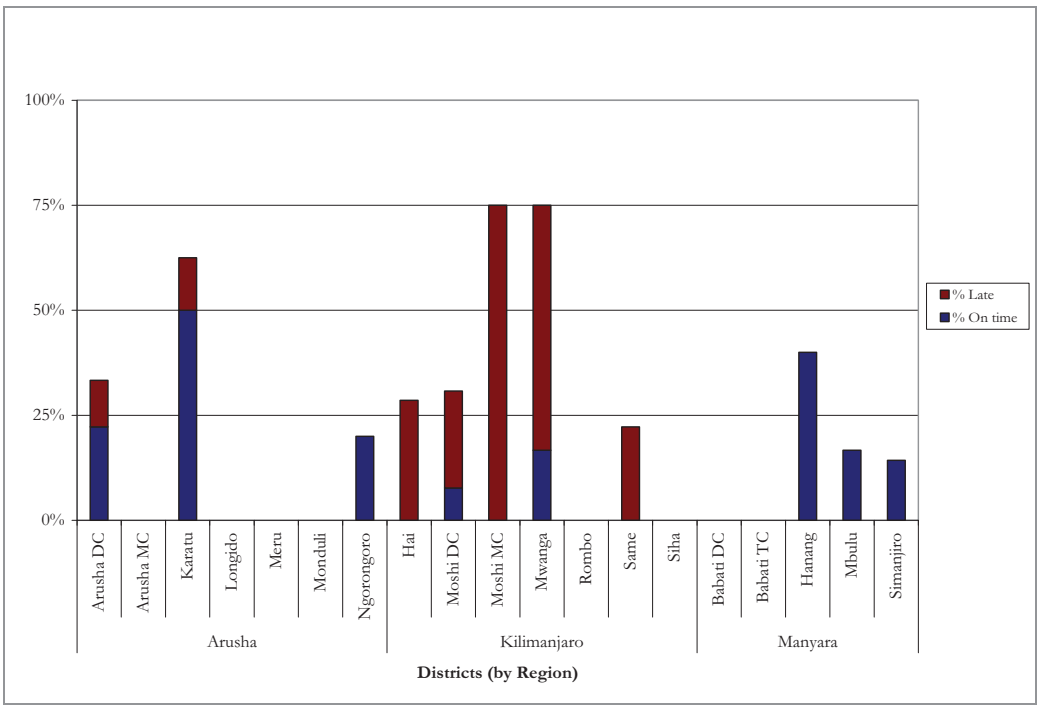
Table 28. Number of R&Rs Submitted by District

District Name	Number of forms that should have been submitted	Number of forms that were actually submitted	Number of submitted forms that were in appropriate delivery group
Arusha DC	12	11	0
Arusha MC	0	5	0
Babati DC	6	24	0
Babati TC	2	0	0
Hai	2	18	0
Hanang	8	9	0
Karatu	13	19	13
Longido	17	0	0

District Name	Number of forms that should have been submitted	Number of forms that were actually submitted	Number of submitted forms that were in appropriate delivery group
Mbulu	10	23	10
Meru	10	25	7
Monduli	18	16	16
Moshi DC	14	13	13
Moshi MC	13	10	10
Mwanga	15	1	1
Ngorongoro	19	16	16
Rombo	12	12	0
Same	12	34	11
Siha	7	0	0
Simanjiro	13	26	13
Moshi Zone Total	**203**	**262**	**110**

Many facilities did not put a date on their R&R forms, making it difficult to determine the timeliness of the facility submission to the district. Figure 32 below shows the percentage of facilities per district that submitted their R&R forms to the district on time (defined as by the 10th of the month) and those that did not submit on time (after the 10th of the month). If there was no date on the R&R form, the data collection team could not determine if the facility reported on time or late. As a result, facilities that did not provide a date are not included in the figure below.

Figure 22. Percentage Timely Reporting by District



Quality of Data Available at District Level

- The data collection team was unable to collect samples from Longido, Siha and Babati TC. While the register contained an entry for a packet of forms from Longido received at MSD-Moshi in February, the team was unable to find it. Siha and Babati TC did not submit any forms to MSD-Moshi between the months of February and April.
- The data collection team came across a couple of facilities that had submitted R&R forms to two districts, due to confusion about which district they belonged to.

Stock Levels of Key Products

ACTs and Other Malaria Commodities

Nineteen percent of the health facilities in Moshi Zone were completely stocked out of all presentations of Artemether/Lumefantrine Tablets (ALu), and 25 percent of facilities had all four ALu presentations in stock during the sample period. Arusha DC and Mbulu were the lowest performing districts with 56 percent and 50 percent of facilities in the sample completely stocked out of all forms of ALu respectively. The highest-performing district was Moshi DC with 69 percent of facilities in the sample with all four presentations of ALu in stock during the sample period.

Table 29. Stock of ACTs by Region and District

Region	District	No ALu in Stock % (n)	All 4 ALu in Stock % (n)	Facilities with No Data for ALu
Arusha	Arusha DC	56% (9)	0% (9)	0
	Arusha MC	20% (5)	60% (5)	0
	Karatu	13% (8)	38% (8)	1
	Longido	no data	no data	no data
	Meru	0% (8)	0% (8)	0
	Monduli	40% (5)	40% (5)	0
	Ngorongoro	0% (5)	0% (5)	0
Arusha		**23% (40)**	**20% (40)**	**1**
Kilimanjaro	Hai	0% (7)	14% (7)	0
	Moshi DC	0% (13)	69% (13)	2
	Moshi MC	0% (4)	0% (4)	3
	Mwanga	17% (12)	33% (12)	1
	Rombo	14% (7)	0% (7)	0
	Same	44% (9)	22% (9)	1
	Siha	no data	no data	no data
Kilimanjaro		**13% (52)**	**31% (52)**	**7**
Manyara	Babati DC	38% (8)	13% (8)	3
	Babati TC	no data	no data	no data
	Hanang	0% (5)	0% (5)	1
	Mbulu	50% (6)	17% (6)	1
	Simanjiro	0% (7)	43% (7)	2
Manyara		**23% (26)**	**19% (26)**	**7**

Region	District	No ALu in Stock % (n)	All 4 ALu in Stock % (n)	Facilities with No Data for ALu
Moshi Zone Total		**19% (118)**	**25% (118)**	**15**

Other malaria commodities such as Sulphadoxine/Pyrimethamine (SP) tablets, diazepam injections, quinine tablets, and quinine injections were also stocked out of facilities in several districts in Moshi zone. Moshi MC was the lowest performing district, with 100 percent of facilities stocked out of SP tablets, and no data for the other three commodities. Monduli was the best performing district, with stockout rates of zero percent in three of the four commodities. On average, three of these four malaria commodities were stocked out in less than 50 percent of the facilities in Moshi Zone. Quinine tablets showed high stockout rates across the zone, with 58 percent of facilities stocked out.

Table 30. Percent of Facilities Stocked Out of Malaria Commodities

Region	District	SP Tabs % (n)	Diazepam Injection % (n)	Quinine Tabs % (n)	Quinine Injection % (n)
Arusha	Arusha MC	40% (5)	20% (5)	20% (5)	20% (5)
	Arusha DC	63% (8)	44% (9)	63% (8)	33% (9)
	Karatu	57% (7)	29% (7)	43% (7)	43% (7)
	Longido	No data	No data	No data	No data
	Meru	63% (8)	14% (7)	75% (8)	43% (7)
	Monduli	0% (4)	0% (3)	50% (2)	0% (3)
	Ngorongoro	0% (5)	40% (5)	0% (2)	25% (4)
Arusha Total		**43% (37)**	**28% (36)**	**50% (32)**	**31% (35)**
Kilimanjaro	Hai	14% (7)	29% (7)	33% (6)	0% (7)
	Moshi DC	54% (13)	55% (11)	67% (9)	40% (10)
	Moshi MC	100% (2)	No data	No data	No data
	Mwanga	9% (11)	40% (10)	82% (11)	40% (10)
	Rombo	14% (7)	0% (7)	60% (5)	14% (7)
	Same	22% (9)	25% (8)	44% (9)	25% (8)
	Siha	No data	No data	No data	No data
Kilimanjaro Total		**29% (49)**	**33% (43)**	**60% (40)**	**26% (42)**
Manyara	Babati DC	0% (3)	67% (3)	67% (3)	67% (3)
	Babati TC	No data	No data	No data	No data
	Hanang	20% (5)	0% (4)	50% (4)	0% (4)
	Mbulu	75% (4)	75% (4)	100% (4)	40% (5)
	Simanjiro	29% (7)	67% (6)	67% (6)	67% (6)
Manyara Total		**32% (19)**	**75% (4)**	**40% (5)**	**40% (5)**
Moshi Zone Total		**34% (105)**	**34% (96)**	**58% (89)**	**32% (95)**

Family Planning Commodities

Most districts in Moshi zone had very high stockouts of all family planning commodities. All of the facilities sampled in Arusha MC were completely stocked out of all four family planning commodities. On average, Moshi Zone showed stockouts of all four family planning commodities in over 50 percent of sampled facilities.

Table 31. Percent of Facilities Stocked Out of Family Planning Commodities

Region	District	Combined Oral % (n)	Injectables % (n)	Progestin-Only Pills % (n)	Male Condoms % (n)
Arusha	Arusha MC	100% (5)	100% (5)	100% (5)	100% (5)
	Arusha DC	13% (8)	63% (8)	25% (8)	78% (9)
	Karatu	71% (7)	86% (7)	100% (6)	86% (7)
	Longido	No data	No data	No data	No data
	Meru	43% (7)	75% (8)	67% (6)	80% (5)
	Monduli	50% (4)	33% (3)	100% (2)	25% (4)
	Ngorongoro	40% (5)	60% (5)	80% (5)	20% (5)
Arusha Total		**50% (36)**	**72% (36)**	**72% (32)**	**69% (35)**
Kilimanjaro	Hai	0% (7)	57% (7)	100% (7)	86% (7)
	Moshi DC	23% (13)	58% (12)	100% (11)	70% (10)
	Moshi MC	50% (4)	100% (2)	33% (3)	No data
	Mwanga	82% (11)	55% (11)	90% (10)	70% (10)
	Rombo	50% (6)	50% (6)	100% (6)	60% (5)
	Same	89% (9)	100% (8)	100% (9)	86% (7)
	Siha	No data	No data	No data	No data
Kilimanjaro Total		**50% (50)**	**65% (46)**	**93% (46)**	**74% (39)**
Manyara	Babati DC	33% (3)	67% (3)	67% (3)	100% (3)
	Babati TC	No data	No data	No data	No data
	Hanang	25% (4)	25% (4)	75% (4)	100% (3)
	Mbulu	100% (3)	67% (3)	100% (3)	75% (4)
	Simanjiro	67% (6)	83% (6)	67% (6)	67% (6)
Manyara Total		**56% (16)**	**63% (16)**	**75% (16)**	**81% (16)**
Moshi Zone Total		**51% (102)**	**67% (98)**	**83% (94)**	**73% (90)**

As shown in Table 32 below, very few facilities had both combined oral contraceptives and injectables in stock. Hanang showed the strongest performance, with 60 percent of facilities in the sample having both combined oral contraceptives and injectables in stock. Arusha MC, Same and Mbulu all had no facilities that had both these commodities in stock. On average, only 24 percent of facilities in Moshi Zone had stock of both combined oral pills and injectables.

Table 32. Availability of Combined Oral Contraceptives and Injectables by Region and District (% in stock)

Region	District	Combined Oral and Injectables Both In Stock % (n)	Facilities with No Data on COC and Injectables
Arusha	Arusha DC	33% (9)	1
	Arusha MC	0% (5)	0
	Karatu	13% (8)	1
	Longido	No data	--
	Meru	25% (8)	0
	Monduli	40% (5)	1
	Ngorongoro	40% (5)	0
Arusha		**25% (40)**	**3**
Kilimanjaro	Hai	43% (7)	0
	Moshi DC	38% (13)	0
	Moshi MC	0% (4)	0
	Mwanga	17% (12)	1
	Rombo	43% (7)	1
	Same	0% (9)	0
	Siha	No data	--
Kilimanjaro		**25% (52)**	**2**
Manyara	Babati DC	13% (8)	5
	Babati TC	No data	--
	Hanang	60% (5)	1
	Mbulu	0% (6)	2
	Simanjiro	14% (7)	1
Manyara		**19% (26)**	**9**
Moshi Zone Total		**24% (118)**	**14**

Essential Medicines

Most districts had mixed performance where essential medicines were concerned. Ngorongoro was the lowest-performing district, with two essential medicines completely stocked out in sampled facilities. Monduli, Hai, Rombo and Hanang were the high performers, with four out of the six essential medicines in stock in all sampled facilities. As shown in the table below, on average, a higher percentage of facilities were stocked out of suspensions and syrups than of the corresponding capsules and tablets.

Table 33. Percent of Facilities Stocked Out of Essential Drugs

Region	District	Amox. Capsules % (n)	Amox. Suspension % (n)	Para. Tabs % (n)	Para. Syrup % (n)	Cotri. Tabs % (n)	Cotri. Suspension % (n)
Arusha	Arusha MC	0% (5)	20% (5)	0% (5)	60% (5)	0% (5)	60% (5)
	Arusha DC	33% (9)	11% (9)	11% (9)	63% (8)	22% (9)	88% (8)
	Karatu	38% (8)	43% (7)	38% (8)	86% (7)	38% (8)	29% (7)
	Longido	no data	no data	no data	no data	no data	no data
	Meru	13% (8)	38% (8)	25% (8)	43% (7)	25% (8)	63% (8)
	Monduli	0% (5)	0% (5)	0% (5)	20% (5)	0% (4)	20% (5)
	Ngorongoro	40% (5)	100% (5)	40% (5)	100% (5)	20% (5)	60% (5)
Arusha Total		**23% (40)**	**33% (39)**	**20% (40)**	**62% (37)**	**21% (39)**	**55% (38)**
Kilimanjaro	Hai	0% (7)	0% (7)	0% (7)	29% (7)	14% (7)	0% (7)
	Moshi DC	15% (13)	42% (12)	8% (13)	55% (11)	15% (13)	9% (11)
	Moshi MC	no data	no data	no data	no data	no data	no data
	Mwanga	8% (12)	40% (10)	9% (11)	56% (9)	25% (12)	20% (10)
	Rombo	0% (7)	0% (6)	0% (7)	33% (6)	0% (7)	14% (7)
	Same	11% (9)	67% (9)	22% (9)	88% (8)	33% (9)	50% (8)
	Siha	no data	no data	no data	no data	no data	no data
Kilimanjaro Total		**8% (48)**	**34% (44)**	**9% (47)**	**54% (41)**	**19% (48)**	**19% (43)**
Manyara	Babati DC	33% (3)	67% (3)	0% (3)	33% (3)	0% (3)	0% (3)
	Babati TC	no data	no data	no data	no data	no data	no data
	Hanang	20% (5)	0% (5)	0% (5)	0% (4)	40% (5)	0% (4)
	Mbulu	0% (4)	67% (6)	60% (5)	25% (4)	33% (3)	75% (4)
	Simanjiro	29% (7)	43% (7)	0% (7)	33% (6)	14% (7)	57% (7)
Manyara Total		21% (19)	43% (21)	15% (20)	24% (17)	22% (18)	39% (18)
Moshi Zone Total		16% (107)	36% (104)	14% (107)	52% (95)	20% (105)	36% (99)

Zonal Recommendations

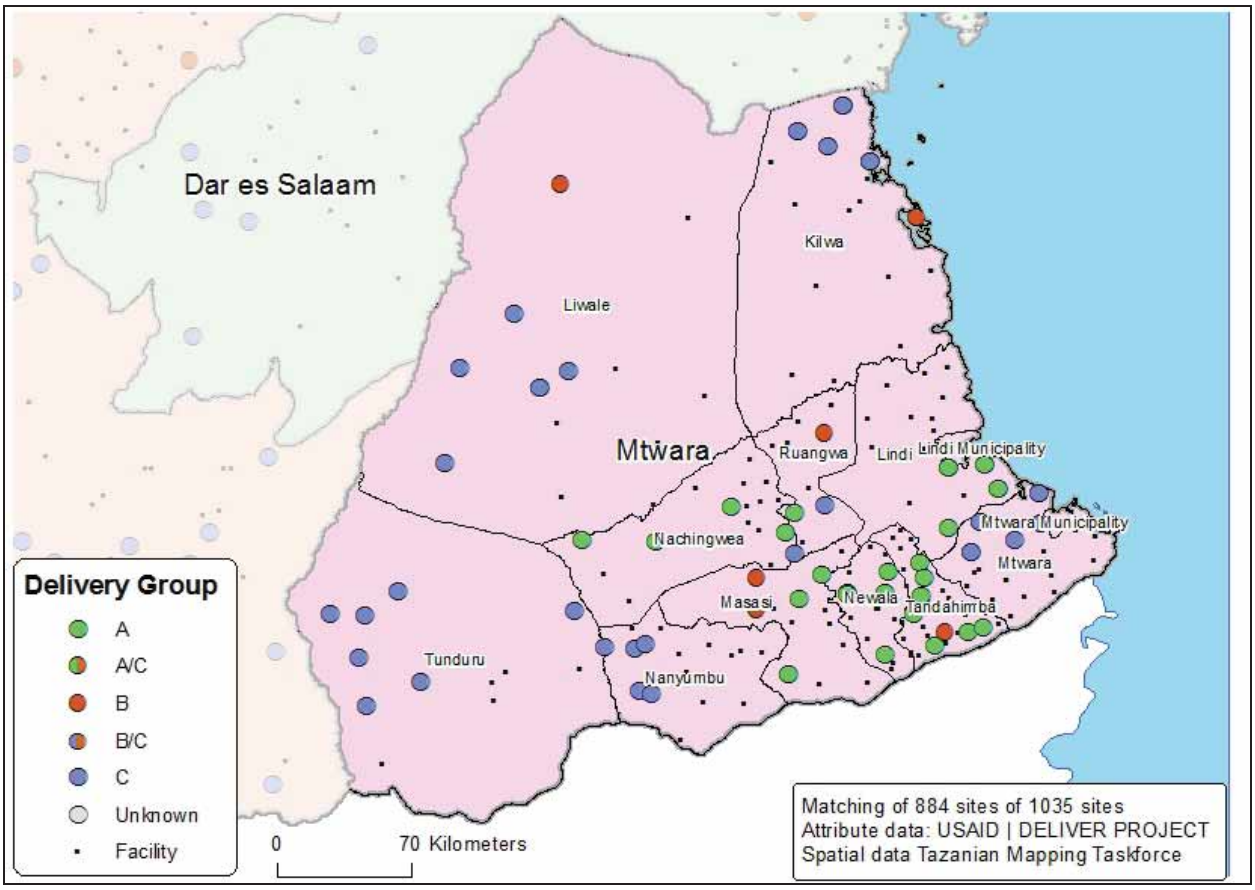
- Identify high-performing districts (e.g., Monduli, Hanang) and follow up with them to learn more about the ILS process to determine potential best practices that could be shared with other districts.
- Identify low-performing districts (e.g., Mbulu) and follow up with targeted supportive supervision to improve practices that may be affecting functioning of the ILS in those districts.
- Work with the district ILS supervisor to improve the consistency and quality of the information included on the R&R forms including the reporting period and the date submitted to the district.
- Train MSD staff on the ILS system, including how to correctly fill out the R&R forms and the timing for ordering and processing orders.
- Ensure that the register at the MSD zonal office is fully updated in order to track the date R&R forms are received.
- Ensure that packets of forms are labeled and stored correctly.

Mtwara Zone

Number of Districts: 13

Sample Size: 105 facilities

Figure 23. Map of Sampled Facilities by Delivery Group



Organization of Data at the MSD Zone

Data at MSD-Mtwara were very well organized. The forms were organized by month in binders; each binder included order summaries for groups of R&R forms, behind which were invoices for each facility along with their R&R forms. The R&R forms were placed horizontally, while the other documentation was inserted vertically, making it easy to move between facilities. It was also easy to move between orders from different districts, due to the way the binders were organized. The way that MSD-Mtwara organizes their R&R forms and other documents is very good; other zones should consider organizing their data in a similar way.

There were some inconsistencies pertaining to delivery groups. Some facilities were packed as B3s, for example, but should have been A4s; there were also some discrepancies between the register and the binders. For example, all six facilities from Nanyumbu Districts were C3s submitted late (in April), although they were marked as being A4s in the binders and labeled as Cs in the delivery register. The delivery group in which an order was packed was not in every case indicative of the actual delivery group of the facilities, nor were all orders packed on time according to the delivery schedule.

The register was arranged chronologically, but it was incomplete; there was a large gap where no incoming R&R forms had been written in, due to the absence of an employee at MSD-Mtwara.

Zonal Level Data Collection Process

Figure 24. MSD Warehouse in Mtwara Zone

The data collection team verified the number and size of districts served by Mtwara zone, as well as the delivery groups of the facilities in each district. This was done by comparing the facility and delivery group list from MSD-Mtwara to the list compiled by the local project staff. Where inconsistencies between the two lists were found, the MSD list was considered the master.

The team looked only at R&R forms which were included in the binders from February to April 2010. Nine districts had data available from April; three districts had data available from March, and Liwale district only had data from February. Whenever possible, most recent data were collected first. For example, if a single order contained data from multiple delivery cycles, data from the appropriate delivery group were taken first.

Overall Findings

At the zonal level, great improvements had been made since February 2010, including increased organization and capacity-building, but stockouts were still occurring and many districts were still lagging behind. Many of these improvements were based on the feedback MSD-Mtwara received from the USAID | DELIVER PROJECT during the exploratory phase of the project in February 2010.

Timeliness of Submissions to MSD

Some districts – most notably Lindi DC/MC and Mtwara DC/MC –submitted on time, and in the correct delivery group. Most other districts submitted late or in the incorrect delivery cycle. Since data from Nachingwea were from February, and all facilities were As, none should have submitted. Data from Tandahimba were taken from March; since Tandahimba district had only As and Bs, no facilities should have submitted in March.

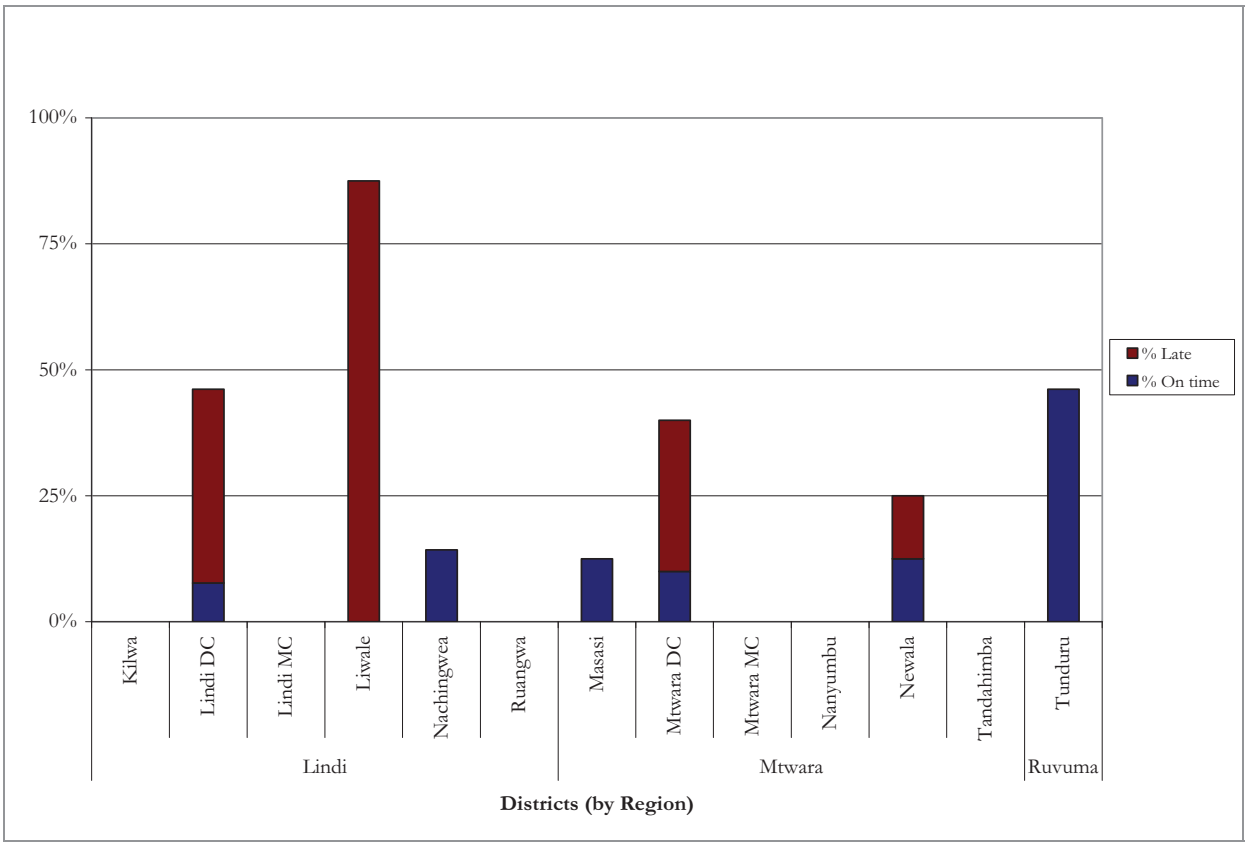
Table 34. Number of R&Rs Submitted by District

District Name	Number of forms that should have been submitted	Number of forms that were actually submitted	Number of submitted forms that were in appropriate delivery group
Kilwa	21	17	0
Lindi DC	13	13	13
Lindi MC	6	6	6
Liwale	9	15	7
Masasi	15	7	3
Mtwara DC	6	6	6
Mtwara MC	6	6	6
Nachingwea	0	29	0
Nanyumbu	3	12	0
Newala	15	27	10
Ruangwa	15	19	12
Tandahimba	0	31	0
Tunduru	18	26	1
Mtwara Zone Total	**93**	**96**	**63**

Many facilities did not put a date on their R&R forms, making it difficult to determine the timeliness of the facility submission to the district. Figure 23 below shows the percentage of facilities per district that submitted their R&R forms to the district on-time (defined as by the 10th of the month) and those that did not submit on time (after the 10th of the month). If there was no date on the R&R form, the data collection team could not determine if the facility reported on time or late. As a result, facilities that did not provide a date are not included in the figure below.

Although some R&R packets were stamped with the date the R&Rs arrived at the zone, this was not the case for all submissions from Lindi DC, Lindi MC, Mtwara DC, Mtwara MC, Kilwa, Ruangwa, or Tandahimba.

Figure 25. Percentage Timely Reporting by District



Quality of Data Available at District Level

- The majority of the facility R&R forms from Kilwa district appeared to have been filled out by one person at the district level. All forms were typed spreadsheets, many of which had identical data with the same facility code in the top-left corner (the facility code actually belonged to a health center). Someone had created a spreadsheet copy of the R&R form, digitally entered in numbers, printed copies, and written different facility names on top. The data from Kilwa district, therefore, was assumed to be inaccurate. The MSD-Mtwara officials were aware of this problem in Kilwa and mentioned that it was due to an organizational issue at the district level.
- There were significant problems in form completion, especially concerning the facility identification and date that each R&R was completed. Only 34 percent of facilities put a date of R&R completion, and many others wrote incorrect reporting periods.
- Based on the data provided in the "date submitted" field on the R&R forms, it appeared that some districts took as long as three to four months to submit the R&R forms to the zones after they were received from the health facility.

Stock Levels of Key Products

ACTs and Other Malaria Commodities

Mtwara Region and Tunduru district had high levels of ALu stockouts – over 44 percent of all facilities in Mtwara Region reported no ALu in stock at the time data were collected. Results from Kilwa District should be interpreted cautiously, as most forms were identical copies of a single computer spreadsheet. Neither facility from Lindi MC had ALu data. However, 85 percent of the facilities in Lindi DC had all four ALu available. Furthermore, Lindi DC also had the second highest availability rate for all ALu presentations in stock. At the time, SMS for Life, a mobile phone messaging system that monitors stock levels of antimalarials, was being piloted in Lindi DC, which may also have had a positive impact on ALu availability.

Table 35. Stock of ACTs by Region and District

Region	District	No ALu in Stock % (n)	All 4 ALu in Stock % (n)	Facilities with No Data for ALu
Lindi	Kilwa	43% (14)	0% (14)	0
	Lindi DC	15% (13)	85% (13)	0
	Lindi MC	0% (2)	0% (2)	2
	Liwale	0% (8)	50% (8)	0
	Nachingwea	14% (7)	29% (7)	0
	Ruangwa	29% (7)	14% (7)	4
Lindi Total		**22% (51)**	**35% (51)**	**6**
Mtwara	Masasi	25% (8)	25% (8)	1
	Mtwara DC	20% (10)	10% (10)	0
	Mtwara MC	50% (2)	0% (2)	0
	Nanyumbu	40% (5)	20% (5)	0
	Newala	63% (8)	0% (8)	0
	Tandahimba	75% (8)	13% (8)	0
Mtwara Total		**44% (41)**	**12% (41)**	**1**
Ruvuma	Tunduru	38% (13)	8% (13)	2
Ruvuma Total		**38% (13)**	**8% (13)**	**2**
Mtwara Zone Total		**32% (105)**	**23% (105)**	**9**

Approximately 30 percent of facilities in Mtwara zone were stocked out of other malaria commodities including Sulphadoxine/Pyrimethamine (SP), diazepam injections, and quinine injections. The worst-performing commodity was quinine tablets, of which 41 percent of the facilities were stocked out. Again, Kilwa District's rates should be interpreted cautiously. Data for Liwale was from February, which may be one reason why its stockout rates were lower than for other districts in Lindi Region.

Table 36. Percent of Facilities Stocked Out of Malaria Commodities

Region	District	SP Tabs % (n)	Diazepam Injection % (n)	Quinine Tabs % (n)	Quinine Injection % (n)
Lindi	Kilwa	14% (14)	29% (14)	29% (14)	7% (14)
	Lindi DC	25% (12)	31% (13)	46% (13)	38% (13)
	Lindi MC	50% (2)	0% (2)	50% (2)	0% (2)
	Liwale	13% (8)	0% (8)	13% (8)	13% (8)
	Nachingwea	43% (7)	57% (7)	43% (7)	43% (7)
	Ruangwa	43% (7)	57% (7)	29% (7)	29% (7)
Lindi Total		**26% (50)**	**31% (51)**	**33% (51)**	**24% (51)**
Mtwara	Masasi	0% (8)	25% (8)	50% (8)	38% (8)
	Mtwara DC	22% (9)	0% (9)	38% (8)	22% (9)
	Mtwara MC	100% (2)	50% (2)	50% (2)	0% (2)
	Nanyumbu	40% (5)	40% (5)	0% (5)	20% (5)
	Newala	25% (8)	0% (8)	25% (8)	13% (8)
	Tandahimba	75% (8)	63% (8)	100% (8)	57% (7)
Mtwara Total		**35% (40)**	**25% (40)**	**46% (39)**	**28% (39)**
Ruvuma	Tunduru	31% (13)	31% (13)	54% (13)	54% (13)
Ruvuma Total		**29% (31)**	**52% (31)**	**39% (31)**	**39% (31)**
Mtwara Zone Total		**30% (103)**	**29% (104)**	**41% (103)**	**29% (103)**

Family Planning Commodities

Stockout rates for family planning commodities were very high, especially in Mtwara Region and especially for progestin-only pills. Again, national level stockout of progestin-only pills contributed to widespread stockouts at the health facility level. Liwale and Mtwara DC seemed to have the lowest stockout rates. Data from Liwale District was the oldest, having been received at the zonal level in February and filled out by some facilities in 2009. Since there were no orders in March and April, it should be assumed that by the end of April, the stock situation for contraceptives in Liwale was much worse. Almost 75 percent of the facilities in Mtwara Zone were stocked out of combined oral contraceptives and injectables.

Table 37. Percent of Facilities Stocked Out of Family Planning Commodities

Region	District	Combined Oral % (n)	Injectables % (n)	Progestin-Only Pills % (n)	Male Condoms % (n)
Lindi	Kilwa	79% (14)	86% (14)	100% (14)	36% (14)
	Lindi DC	58% (12)	67% (12)	83% (12)	60% (10)
	Lindi MC	50% (2)	100% (2)	50% (2)	No data
	Liwale	25% (8)	25% (8)	88% (8)	25% (8)
	Nachingwea	86% (7)	86% (7)	100% (7)	33% (3)
	Ruangwa	86% (7)	100% (7)	100% (7)	57% (7)

Region	District	Combined Oral % (n)	Injectables % (n)	Progestin-Only Pills % (n)	Male Condoms % (n)
Lindi Total		**66% (50)**	**74% (50)**	**92% (50)**	**43% (42)**
Mtwara	Masasi	88% (8)	100% (8)	100% (8)	33% (6)
	Mtwara DC	25% (8)	22% (9)	100% (8)	70% (10)
	Mtwara MC	100% (2)	100% (2)	100% (2)	100% (2)
	Nanyumbu	100% (5)	60% (5)	100% (5)	100% (5)
	Newala	63% (8)	88% (8)	75% (8)	50% (8)
	Tandahimba	88% (8)	86% (7)	100% (7)	50% (8)
Mtwara Total		**72% (39)**	**72% (39)**	**95% (38)**	**62% (39)**
Ruvuma	Tunduru	92% (13)	77% (13)	100% (13)	69% (13)
Ruvuma Total		**92% (13)**	**77% (13)**	**100% (13)**	**69% (13)**
Mtwara Zone Total		**72% (102)**	**74% (102)**	**94% (101)**	**54% (94)**

Less than 20 percent of the facilities in Mtwara Zone had both combined oral contraceptives and injectables in stock, with the exception of Liwale District and Mtwara DC. As mentioned before, the data from Liwale district is the most dated, which may reflect a better national stock situation.

Table 38. Availability of Combined Oral Contraceptives and Injectables by Region and District (% in stock)

Region	District	Combined Oral and Injectables Both In Stock % (n)	Facilities with No Data on COC and Injectables
Lindi	Kilwa	14% (14)	0
	Lindi DC	23% (13)	1
	Lindi MC	0% (2)	0
	Liwale	63% (8)	0
	Nachingwea	0% (7)	0
	Ruangwa	0% (7)	0
Lindi Total		**20% (51)**	**1**
Mtwara	Masasi	0% (8)	0
	Mtwara DC	60% (10)	1
	Mtwara MC	0% (2)	0
	Nanyumbu	0% (5)	0
	Newala	13% (8)	0
	Tandahimba	0% (8)	0
Mtwara Total		**17% (41)**	**1**
Ruvuma	Tunduru	8% (13)	0
Ruvuma Total		**8% (13)**	**0**
Mtwara Zone Total		**17% (105)**	**2**

Essential Medicines

There was large variation in stockout rates of essential drugs by district. In general, stockout rates were higher for suspensions and syrups than for tablets.

Table 39. Percent of Facilities Stocked Out of Essential Drugs

Region	District	Amox. Capsules % (n)	Amox. Suspension % (n)	Para. Tabs % (n)	Para. Syrup % (n)	Cotri. Tabs % (n)	Cotri. Suspension % (n)
Lindi	Kilwa	7% (14)	21% (14)	14% (14)	7% (14)	14% (14)	36% (14)
	Lindi DC	15% (13)	42% (12)	0% (13)	38% (13)	38% (13)	23% (13)
	Lindi MC	0% (2)	50% (2)	0% (2)	50% (2)	0% (2)	50% (2)
	Liwale	0% (8)	0% (8)	0% (8)	0% (8)	13% (8)	0% (8)
	Nachingwea	14% (7)	71% (7)	43% (7)	43% (7)	29% (7)	57% (7)
	Ruangwa	43% (7)	43% (7)	29% (7)	71% (7)	29% (7)	57% (7)
Lindi Total		**14% (51)**	**34% (50)**	**14% (51)**	**29% (51)**	**24% (51)**	**33% (51)**
Mtwara	Masasi	13% (8)	63% (8)	13% (8)	63% (8)	13% (8)	75% (8)
	Mtwara DC	40% (10)	67% (9)	22% (9)	56% (9)	30% (10)	67% (9)
	Mtwara MC	100% (2)	100% (2)	50% (2)	100% (2)	100% (2)	100% (2)
	Nanyumbu	0% (5)	40% (5)	20% (5)	40% (5)	40% (5)	60% (5)
	Newala	25% (8)	63% (8)	13% (8)	88% (8)	13% (8)	75% (8)
	Tandahimba	75% (8)	75% (8)	63% (8)	100% (8)	63% (8)	100% (8)
Mtwara Total		**37% (41)**	**65% (40)**	**28% (40)**	**73% (40)**	**34% (41)**	**78% (40)**
Ruvuma	Tunduru	23% (13)	54% (13)	38% (13)	85% (13)	8% (13)	77% (13)
Ruvuma Total		**16% (31)**	**58% (31)**	**19% (31)**	**42% (31)**	**19% (31)**	**61% (31)**
Mtwara Zone Total		**24% (105)**	**49% (103)**	**22% (104)**	**53% (104)**	**26% (105)**	**56% (104)**

Zonal Recommendations

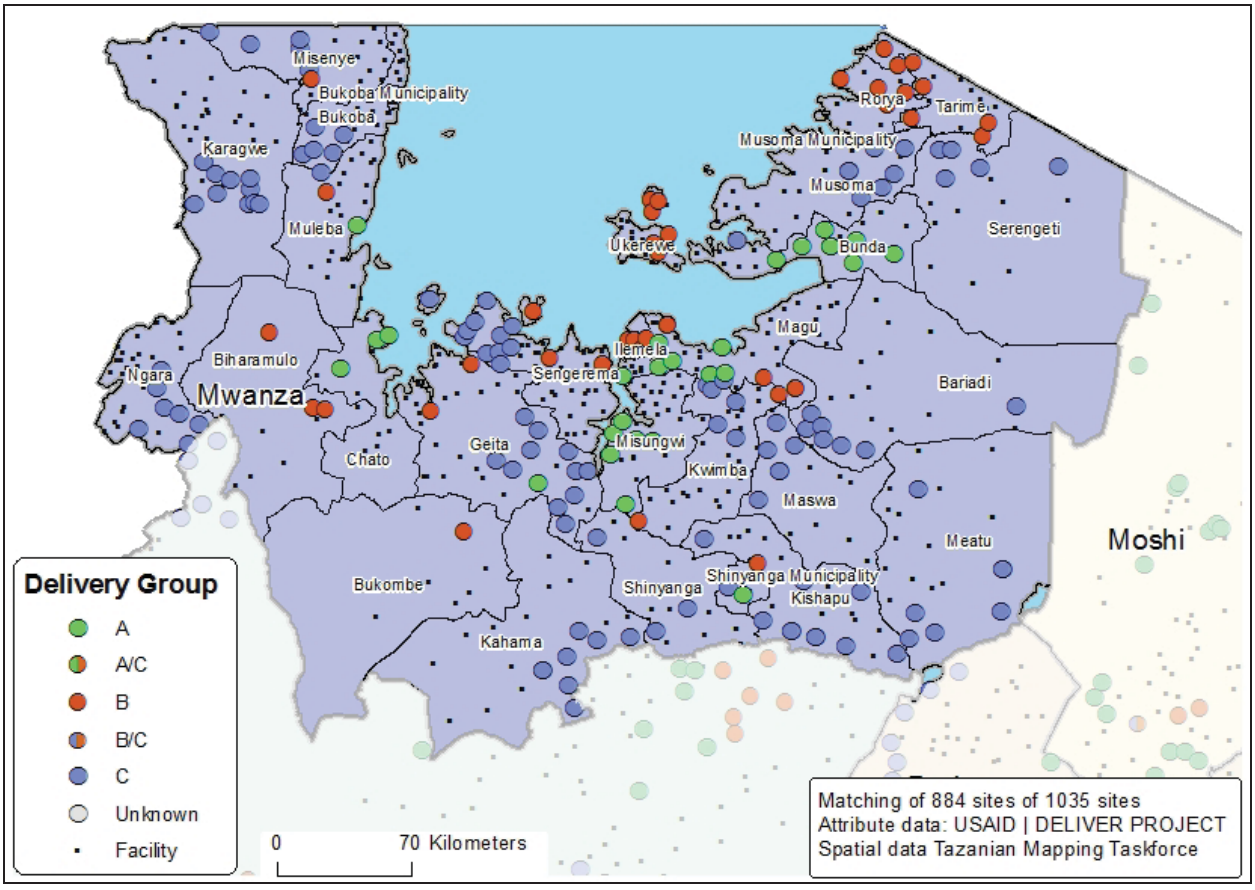
- Identify high-performing districts (e.g., Lindi DC) and follow up with them to learn more about the ILS process to determine potential best practices that could be shared with other districts.
- Identify low-performing districts (e.g., Kilwa) and follow up with targeted supportive supervision to improve practices that may be affecting functioning of the ILS in those districts.
- Work with the district ILS supervisor to improve the consistency and quality of the information included on the R&R forms including the reporting period and the date submitted to the district.
- Train MSD staff on the ILS system, including how to correctly fill out the R&R forms and the timing for ordering and processing orders.

Mwanza Zone

Number of Districts: 29

Sample Size: 229 facilities

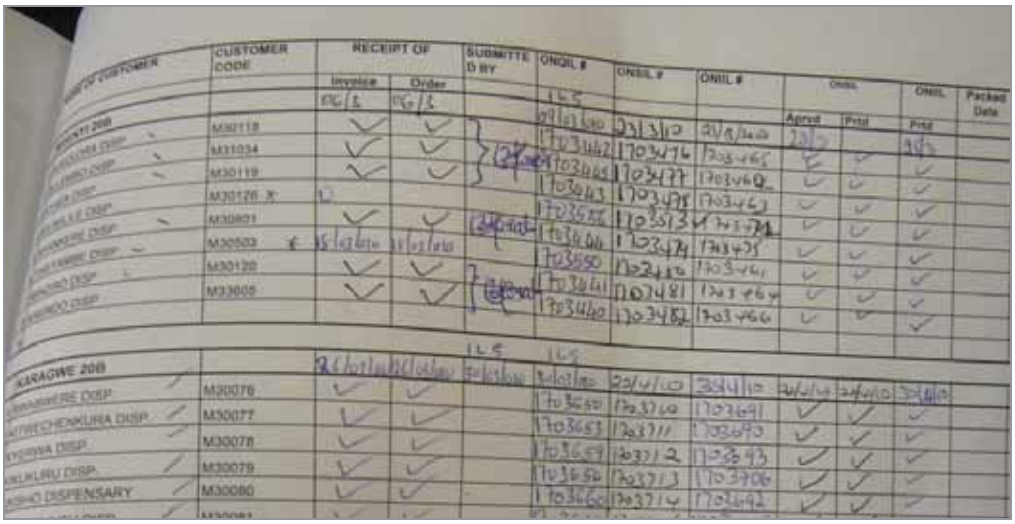
Figure 26. Map of Sampled Facilities by Delivery Group



Organization of Data at the MSD Zone

Mwanza Zone MSD had a very complete ILS register which was organized by district and delivery cycle. When orders were received, the staff at the MSD entered the date the packet was received and checked off the facilities whose R&R forms are included in the packet. There was a space for the signature of the person delivering the packet of R&R forms. Because the districts did not always submit in cycle or include all facilities in the appropriate delivery group, the dates in the register were not in chronological order, making it difficult to identify orders received within a certain time period. But, despite this challenge, the data in the register were complete, and the zonal staff were making an effort to keep accurate records on the date R&R forms were received at the zone.

Figure 27. The Register at Mwanza MSD Zone



R&R forms were generally organized in envelopes and boxes in the MSD office. The zonal office was in a separate building than the actual warehouse due to construction of a new zonal warehouse. As a result, the R&R forms were separated in two different locations. The more recently received R&R forms were in boxes at the MSD office, while the older R&R forms were kept at the zonal store. At the MSD office, all envelopes of R&R forms were in two boxes and not organized by district. Once the forms reached the MSD store they were put into boxes by district.

The packets of R&R forms were in envelopes labeled with the ILS cycle and the district name. There were no dates on the envelopes. If districts did not submit at the correct time or included other delivery groups in their order, it was very difficult to find the R&R forms or even the dates in the register when things were received. The register information did not match the R&R forms that the team was able to find. The register would indicate that from one district, A, B, and C group facility forms were all delivered in a certain month, but often the data collection team would only be able to find envelopes for one or two of the delivery groups. If one or two R&R forms were submitted by themselves or grouped with the wrong delivery group, they would show in the register but it would be very difficult to find the actual forms in the boxes of envelopes.

Zonal Level Data Collection Process

The team started by comparing the list of health facilities and delivery groups prepared by local project staff with the list MSD list and the list in the register. When there were discrepancies between lists, the facilities on the MSD list were used. The total count of facilities in Mwanza zone was 912.

Because of the organization of the forms at the zone, it was difficult at times to find all the R&R forms recorded in the register in the boxes and folders of R&R forms at the MSD office or store. For example, there were R&R forms from five districts that were recorded in the register as arriving in April that the data collection team was unable to find at either the MSD office or at the zonal store. As a result, the team was unable to include these R&R forms in the sample and had to instead depend on older R&R forms from March and April. The data collection team was unable to find any February, March, or April R&R forms from Bukoba MC and Musoma MC districts, so these districts were left out of the sample even though the register showed that R&R forms were received.

Figure 28. R&R Forms in Boxes Organized by District at Mwanza MSD

Overall Findings

The majority of districts (62 percent) submitted some R&R forms in April. However, only 31 percent of the total number of R&R forms submitted were from facilities within the appropriate delivery group. In general, there were far more forms from facilities submitted in March than in April. According to a review of the register, 199 facilities submitted R&R forms in April, while 462 facilities submitted R&R forms in March. Figure 26 further illustrates this point: an overwhelming number of facilities from delivery group C (which should submit their R&R forms in March) were part of the sampled facilities.

Timeliness of Submissions to MSD

As shown in Table 40 below, many districts are still not submitting their orders using the ILS delivery groups. Eleven of the 29 districts submitted R&R forms for all of the facilities in the appropriate delivery group for that month, but seven of these districts also submitted R&R forms from other delivery groups in the same month. Only Musoma DC, Musoma MC, Tarime, and Misungwi districts submitted all of the facilities in the appropriate delivery group and no additional facilities from other delivery groups. A number of districts, like Biharamulo, Ngara, Geita, Kwimba, Ukerewe, Bariadi, Bukombe, Kishapu, Maswa, and Shinyanga MC did not submit any R&R forms for facilities in the appropriate delivery group, indicating that they may not be following the ILS reporting and delivery cycle schedule.

Table 40. Number of R&Rs Submitted by District

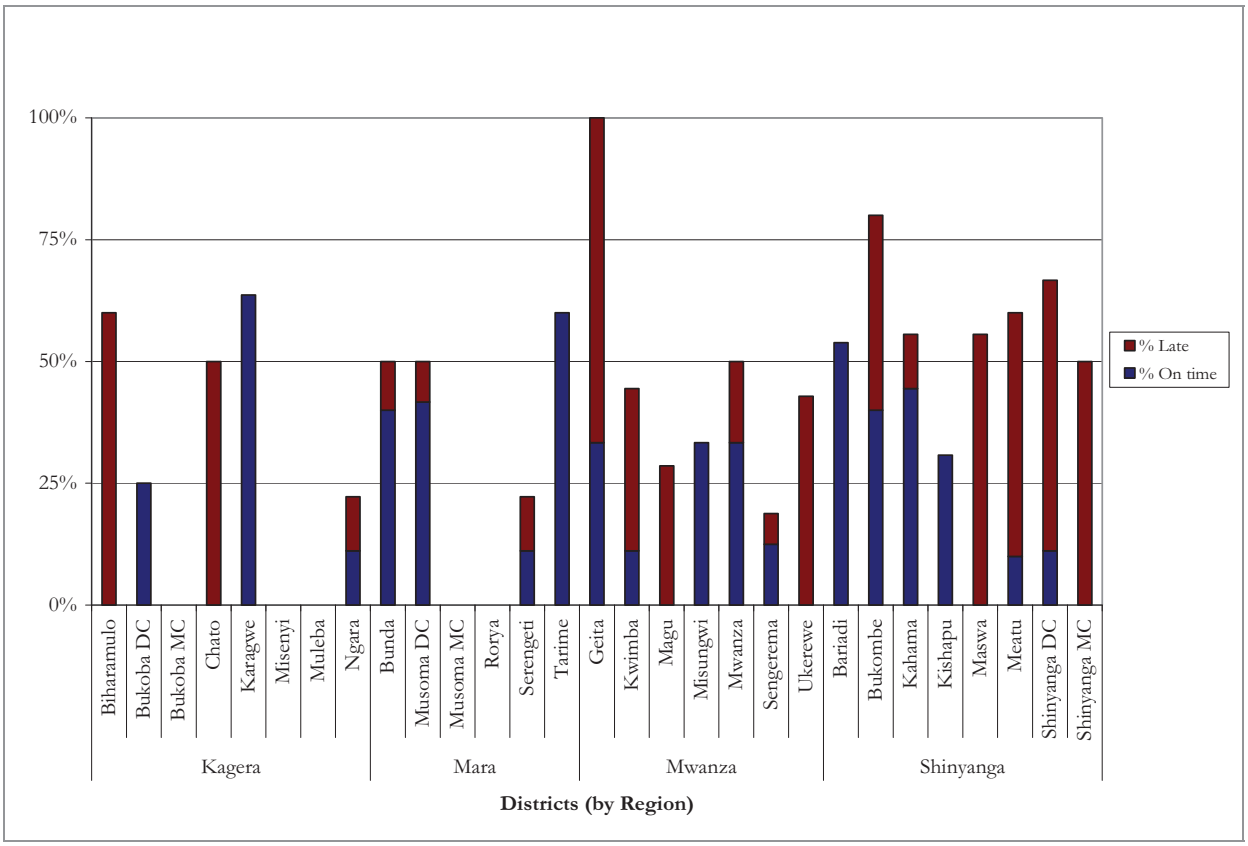
District Name	Number of forms that should have been submitted	Number of forms that were actually submitted	Number of submitted forms that were in appropriate delivery group
Bariadi	18	2	0
Biharamulo	0	14	0
Bukoba DC	8	30	8
Bukoba MC	8	1	1
Bukombe	0	9	0
Bunda	13	31	13

District Name	Number of forms that should have been submitted	Number of forms that were actually submitted	Number of submitted forms that were in appropriate delivery group
Chato	7	14	7
Geita	17	16	0
Kahama	16	39	16
Karagwe	13	30	13
Kishapu	16	29	0
Kwimba	12	7	0
Magu	15	6	1
Maswa	11	21	0
Meatu	13	23	11
Misenyi	5	20	5
Misungwi	14	14	14
Muleba	8	14	7
Musoma DC	18	18	18
Musoma MC	9	9	9
Mwanza	11	2	1
Ngara	11	12	0
Rorya	12	21	11
Sengerema	19	46	11
Serengeti	10	24	10
Shinyanga DC	12	11	1
Shinyanga MC	0	7	0
Tarime	9	9	9
Ukerewe	0	22	0
Mwanza Zone Total	**305**	**501**	**166**

Many facilities did not put a date on their R&R forms, making it difficult to determine the timeliness of the facility submission to the district. Figure 29 below shows the percentage of facilities per district that submitted their R&R forms to the district on-time (defined as by the 10th of the month) and those that did not submit on time (after the 10th of the month). If there was no date on the R&R form, the data collection team could not determine if the facility reported on time or late. As a result, facilities that did not provide a date are not included in the figure below.

Only three districts had more than 50 percent of the facilities submitting their R&R forms on time. Geita District was the only district to put complete dates on all the R&R forms in the sample.

Figure 29. Percentage Timely Reporting by District



Quality of Data Available at District Level

- A number of the packets arrived without a cover sheet from the district and without any signature or indication that the District Pharmacist or DMO had reviewed the forms and approved them.
- Many of the dispensaries in Mwanza zone did not order quinine tablets. The R&R forms indicated that stock on hand was zero, but there was no quantity ordered.
- Some facilities were still using the old R&R forms, and there was some confusion at the zonal MSD office as to who was responsible for providing R&R forms to the districts and the health facilities. Because of the lack of R&R forms, some districts were photocopying old forms and providing them to the health facilities.
- Sengerema district had very little stock at any of the facilities included in the sample which may indicate a problem that requires additional follow-up.
- The R&R forms were generally incomplete. Only 50 percent of the facilities in the sample included dates on their R&R forms, and many had incorrect reporting periods on their forms.
- As with other zones, there seemed to be a long delay between the dates on the R&R forms and the date that the forms arrived at the zone. It was difficult to know the cause of this delay.

Stock Levels of Key Products

ACTs and Other Malaria Commodities

Districts in Kagera Region performed extremely well with only five percent of the 44 facilities in the sample stocked out of all ALu products and 55 percent of all facilities having all four presentations of ALu in stock. Districts in Mwanza and Shinyanga Regions had the worst stock levels of ALu with more than one-third of their facilities stocked out of all ALu products. Sengerema District stood out as a very low-performing district with 88 percent of the 16 facilities in the sample completely stocked out of all ALu products.

Table 41. Stock of ACTs by Region and District

Region	District	No ALu in Stock % (n)	All 4 ALu in Stock % (n)	Facilities with No Data for ALu
Kagera	Biharamulo	0% (5)	80% (5)	0
	Bukoba DC	0% (8)	63% (8)	0
	Bukoba MC	no data	no data	no data
	Chato	0% (4)	75% (4)	0
	Karagwe	9% (11)	73% (11)	1
	Misenyi	0% (6)	17% (6)	0
	Muleba	100% (1)	0% (1)	0
	Ngara	0% (9)	33% (9)	0
Kagera Total		**5% (44)**	**55% (44)**	**1**
Mara	Bunda	20% (10)	70% (10)	0
	Musoma DC	33% (12)	25% (12)	0
	Musoma MC	no data	no data	no data
	Rorya	50% (6)	33% (6)	0
	Serengeti	11% (9)	67% (9)	0
	Tarime	40% (5)	0% (5)	0
Mara Total		**29% (42)**	**43% (42)**	**0**
Mwanza	Geita	33% (12)	17% (12)	0
	Kwimba	22% (9)	22% (9)	0
	Magu	36% (14)	21% (14)	0
	Misungwi	0% (9)	78% (9)	0
	Mwanza	29% (229)	31% (229)	1
	Sengerema	88% (16)	0% (16)	0
	Ukerewe	14% (7)	43% (7)	0
Mwanza Total		**36% (73)**	**27% (73)**	**0**
Shinyanga	Bariadi	23% (13)	8% (13)	0
	Bukombe	40% (5)	0% (5)	0
	Kahama	33% (9)	11% (9)	0
	Kishapu	54% (13)	31% (13)	0
	Maswa	22% (9)	11% (9)	0

Region	District	No ALu in Stock % (n)	All 4 ALu in Stock % (n)	Facilities with No Data for ALu
	Meatu	50% (10)	20% (10)	0
	Shinyanga DC	44% (9)	11% (9)	0
	Shinyanga MC	50% (2)	0% (2)	0
Shinyanga Total		**39% (70)**	**14% (70)**	**0**
Mwanza Zone Total		**29% (229)**	**31% (229)**	**1**

The stockout rates of other malaria commodities such as Sulphadoxine/Pyrimethamine (SP), diazepam injections, quinine tablets, and quinine injections in Mwanza Zone are shown in the Table 42 below. Districts in Kagera Region continued to be higher performing on average than districts in the other regions, but the levels of stockouts of these products were all considerably higher than the stockouts for ALu products. The high number of stockouts of quinine tablets seems to be related to the fact that many dispensaries are still not ordering quinine tablets and may not be aware that quinine tablets can now be managed at the dispensary level. A number of districts also had high levels of stockouts of SP.

Table 42. Percent of Facilities Stocked Out of Malaria Commodities

Region	District	SP Tabs % (n)	Diazepam Injection % (n)	Quinine Tabs % (n)	Quinine Injection % (n)
Kagera	Biharamulo	0% (5)	40% (5)	25% (4)	40% (5)
	Bukoba DC	75% (8)	38% (8)	86% (7)	13% (8)
	Bukoba MC	No data	No data	No data	No data
	Chato	25% (4)	0% (3)	50% (4)	25% (4)
	Karagwe	18% (11)	9% (11)	56% (9)	9% (11)
	Misenyi	0% (6)	33% (6)	60% (5)	0% (6)
	Muleba	0% (1)	0% (1)	100% (1)	100% (1)
	Ngara	44% (9)	43% (7)	83% (6)	14% (7)
Kagera Total		**30% (44)**	**27% (41)**	**64% (36)**	**17% (42)**
Mara	Bunda	40% (10)	38% (8)	11% (9)	11% (9)
	Musoma DC	83% (12)	33% (12)	80% (10)	50% (12)
	Musoma MC	No data	No data	No data	No data
	Rorya	67% (6)	50% (6)	60% (5)	50% (6)
	Serengeti	44% (9)	33% (9)	11% (9)	11% (9)
	Tarime	20% (5)	20% (5)	80% (5)	60% (5)
Mara Total		**55% (42)**	**35% (40)**	**45% (38)**	**34% (41)**
Mwanza	Geita	50% (12)	33% (12)	67% (6)	25% (12)
	Kwimba	33% (9)	33% (9)	75% (8)	25% (8)
	Magu	64% (14)	54% (13)	69% (13)	31% (13)
	Misungwi	67% (9)	14% (7)	100% (4)	33% (9)

	Mwanza	80% (5)	0% (5)	50% (4)	0% (6)
	Sengerema	63% (16)	40% (15)	71% (14)	50% (16)
	Ukerewe	43% (7)	29% (7)	50% (6)	14% (7)
Mwanza Total		**57% (72)**	**34% (68)**	**69% (55)**	**30% (71)**
Shinyanga	Bariadi	62% (13)	33% (12)	67% (12)	42% (12)
	Bukombe	100% (5)	40% (5)	40% (5)	20% (5)
	Kahama	44% (9)	0% (9)	67% (9)	11% (9)
	Kishapu	17% (12)	23% (13)	73% (11)	38% (13)
	Maswa	50% (8)	44% (9)	43% (7)	22% (9)
	Meatu	50% (10)	40% (10)	89% (9)	20% (10)
	Shinyanga DC	33% (9)	22% (9)	25% (8)	44% (9)
	Shinyanga MC	50% (2)	0% (2)	100% (2)	50% (2)
Shinyanga Total		**47% (68)**	**28% (69)**	**62% (63)**	**30% (69)**
Mwanza Zone Total		**48% (226)**	**31% (218)**	**61% (192)**	**28% (223)**

Family Planning Commodities

There were high stockouts of family planning commodities in all districts. Kagera Region still showed lower levels of stockouts for combined oral contraceptives than other regions, but the rates were still extremely high. Only Chato District had no stockouts of combined oral contraceptives, injectables, and male condoms. The major shortage of progestin-only pills at the national level is reflected in the high level of stockouts of this commodity at the district level.

Table 43. Percent of Facilities Stocked Out of Family Planning Commodities

Region	District	Combined Oral % (n)	Injectables % (n)	Progestin-Only Pills % (n)	Male Condoms % (n)
Kagera	Biharamulo	75% (4)	50% (4)	80% (5)	50% (4)
	Bukoba DC	67% (6)	100% (4)	100% (6)	57% (7)
	Bukoba MC	No data	No data	No data	No data
	Chato	0% (4)	0% (4)	50% (4)	0% (3)
	Karagwe	55% (11)	82% (11)	100% (10)	36% (11)
	Misenyi	33% (6)	0% (6)	100% (6)	67% (6)
	Muleba	No data	No data	No data	No data
	Ngara	67% (9)	89% (9)	100% (8)	67% (6)
Kagera Total		**53% (40)**	**61% (38)**	**92% (39)**	**49% (37)**
Mara	Bunda	63% (8)	63% (8)	63% (8)	75% (8)
	Musoma DC	91% (11)	73% (11)	91% (11)	70% (10)
	Musoma MC	No data	No data	No data	No data
	Rorya	83% (6)	33% (6)	67% (6)	33% (6)
	Serengeti	78% (9)	44% (9)	100% (9)	67% (9)
	Tarime	60% (5)	20% (5)	80% (5)	80% (5)

Region	District	Combined Oral % (n)	Injectables % (n)	Progestin-Only Pills % (n)	Male Condoms % (n)
Mara Total		**77% (39)**	**51% (39)**	**82% (39)**	**66% (38)**
Mwanza	Geita	42% (12)	67% (12)	75% (12)	25% (8)
	Kwimba	75% (8)	50% (6)	100% (8)	25% (4)
	Magu	69% (13)	93% (14)	69% (13)	38% (13)
	Misungwi	20% (5)	63% (8)	80% (5)	25% (8)
	Mwanza	100% (4)	100% (3)	75% (4)	67% (3)
	Sengerema	77% (13)	71% (14)	77% (13)	85% (13)
	Ukerewe	86% (7)	71% (7)	100% (7)	57% (7)
Mwanza Total		**66% (62)**	**73% (64)**	**81% (62)**	**48% (56)**
Shinyanga	Bariadi	73% (11)	82% (11)	82% (11)	62% (13)
	Bukombe	80% (5)	40% (5)	100% (5)	80% (5)
	Kahama	75% (8)	78% (9)	88% (8)	22% (9)
	Kishapu	50% (12)	69% (13)	67% (12)	46% (13)
	Maswa	86% (7)	71% (7)	86% (7)	71% (7)
	Meatu	60% (10)	50% (10)	90% (10)	40% (10)
	Shinyanga DC	67% (9)	56% (9)	88% (8)	29% (7)
	Shinyanga MC	50% (2)	50% (2)	100% (2)	50% (2)
Shinyanga Total		**67% (64)**	**65% (66)**	**84% (63)**	**48% (66)**
Mwanza Zone Total		**66% (205)**	**64% (207)**	**84% (203)**	**52% (197)**

As shown in Table 44 below, on average only one in five (20 percent) of the facilities in Mwanza Zone had both combined oral contraceptives and injectables in stock. Having both of these products in stock is crucial to a functioning family planning program. Chato District again had the highest percentage of facilities with both products in stock (100 percent), followed by Misenyi District with two-thirds of facilities having both products in stock.

Table 44. Availability of Combined Oral Contraceptives and Injectables by Region and District

Region	District	Combined Oral and Injectables Both In Stock % (n)	Facilities with No Data on COC and Injectables
Kagera	Biharamulo	20% (5)	0
	Bukoba DC	0% (8)	2
	Bukoba MC	No data	--
	Chato	100% (4)	0
	Karagwe	18% (11)	0
	Misenyi	67% (6)	0
	Muleba	0% (1)	1
	Ngara	11% (9)	1
Kagera Total		**27% (44)**	**3**

Region	District	Combined Oral and Injectables Both In Stock % (n)	Facilities with No Data on COC and Injectables
Mara	Bunda	30% (10)	1
	Musoma DC	8% (12)	1
	Musoma MC	No data	--
	Rorya	17% (6)	**0**
	Serengeti	11% (9)	0
	Tarime	40% (5)	0
Mara Total		**19% (42)**	**2**
Mwanza	Geita	33% (12)	0
	Kwimba	11% (9)	1
	Magu	7% (14)	0
	Misungwi	22% (9)	1
	Mwanza	0% (6%)	1
	Sengerema	13% (16)	1
	Ukerewe	14% (7)	0
Mwanza Total		**15% (73)**	**4**
Shinyanga	Bariadi	8% (13)	2
	Bukombe	20% (5)	0
	Kahama	11% (9)	0
	Kishapu	31% (13)	0
	Maswa	0% (9)	1
	Meatu	30% (10)	0
	Shinyanga DC	11% (9)	0
	Shinyanga MC	50% (2)	0
Shinyanga Total		**17% (70)**	**3**
Mwanza Zone Total		**19% (229)**	**12**

Essential Medicines

Levels of stockouts of essential medicines varied greatly, although the number of stockouts of the syrups and suspensions was much higher in almost all districts with a few exceptions. For example in Kagera, stockouts of co-trimoxazole tablets were higher than stockouts of co-trimoxazole suspensions. Facilities in Sengerema District were completely stocked out of amoxicillin suspensions and generally had high levels of stockouts in the other five essential medicine commodities. Districts in Shinyanga Region had the highest level of stockouts of amoxicillin capsules, but had lower levels of stockouts of the other commodities compared to other regions.

Table 45. Percent of Facilities Stocked Out of Essential Drugs

Region	District	Amox. Capsules % (n)	Amox. Suspension % (n)	Para. Tabs % (n)	Para. Syrup % (n)	Cotri. Tabs % (n)	Cotri. Suspension % (n)
Kagera	Biharamulo	0% (5)	40% (5)	20% (5)	20% (5)	60% (5)	20% (5)
	Bukoba DC	13% (8)	50% (8)	0% (8)	75% (8)	25% (8)	13% (8)
	Bukoba MC	no data	no data	no data	no data	no data	no data
	Chato	0% (4)	25% (4)	25% (4)	0% (4)	100% (4)	100% (4)
	Karagwe	9% (11)	55% (11)	0% (11)	9% (11)	27% (11)	9% (11)
	Misenyi	0% (6)	50% (6)	0% (6)	67% (6)	33% (6)	17% (6)
	Muleba	0% (1)	100% (1)	0% (1)	100% (1)	0% (1)	0% (1)
	Ngara	33% (9)	100% (9)	11% (9)	44% (9)	33% (9)	25% (8)
Kagera Total		**11% (44)**	**59% (44)**	**7% (44)**	**39% (44)**	**39% (44)**	**23% (43)**
Mara	Bunda	30% (10)	50% (10)	0% (10)	50% (10)	10% (10)	60% (10)
	Musoma DC	25% (12)	58% (12)	17% (12)	83% (12)	42% (12)	33% (12)
	Musoma MC	no data	no data	no data	no data	no data	no data
	Rorya	33% (6)	50% (6)	33% (6)	50% (6)	33% (6)	67% (6)
	Serengeti	0% (9)	33% (9)	0% (9)	56% (9)	0% (9)	22% (9)
	Tarime	40% (5)	100% (5)	20% (5)	100% (4)	60% (5)	60% (5)
Mara Total		**24% (42)**	**55% (42)**	**12% (42)**	**66% (41)**	**26% (42)**	**45% (42)**
Mwanza	Geita	0% (12)	75% (12)	8% (12)	50% (12)	17% (12)	33% (12)
	Kwimba	0% (9)	67% (9)	11% (9)	56% (9)	11% (9)	33% (9)
	Magu	21% (14)	57% (14)	7% (14)	46% (13)	29% (14)	64% (14)
	Misungwi	0% (9)	25% (8)	44% (9)	67% (9)	67% (9)	100% (9)
	Mwanza	17% (6)	80% (5)	0% (5)	40% (5)	83% (6)	100% (6)
	Sengerema	44% (16)	100% (16)	56% (16)	50% (16)	88% (16)	63% (16)
	Ukerewe	0% (7)	86% (7)	0% (7)	71% (7)	29% (7)	71% (7)
Mwanza Total		**15% (73)**	**72% (71)**	**22% (72)**	**54% (71)**	**47% (73)**	**63% (73)**
Shinyanga	Bariadi	38% (13)	62% (13)	23% (13)	92% (12)	54% (13)	31% (13)
	Bukombe	0% (5)	40% (5)	0% (5)	75% (4)	0% (5)	60% (5)
	Kahama	44% (9)	33% (9)	0% (9)	56% (9)	44% (9)	67% (9)
	Kishapu	46% (13)	33% (12)	8% (12)	77% (13)	54% (13)	62% (13)
	Maswa	0% (9)	100% (8)	13% (8)	75% (8)	11% (9)	44% (9)
	Meatu	30% (10)	60% (10)	30% (10)	50% (10)	20% (10)	50% (10)
	Shinyanga DC	11% (9)	44% (9)	0% (9)	100% (9)	22% (9)	56% (9)
	Shinyanga MC	100% (2)	100% (2)	0% (2)	50% (2)	100% (2)	50% (2)
Shinyanga Total		**30% (70)**	**54% (68)**	**12% (68)**	**75% (67)**	**36% (70)**	**51% (70)**
Mwanza Zone Total		**21% (229)**	**61% (225)**	**14% (226)**	**59% (223)**	**38% (229)**	**49% (228)**

Zonal Recommendations

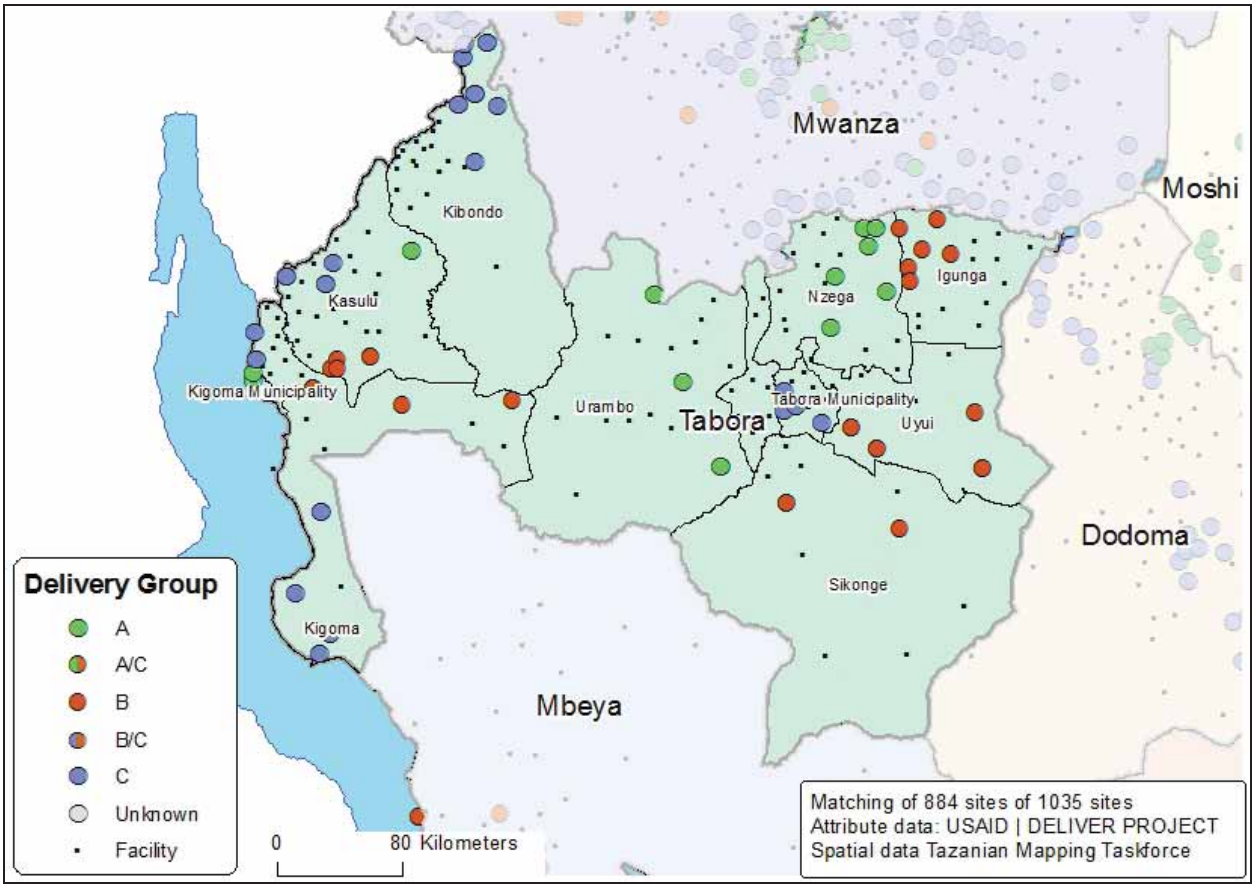
- Where possible, identify high-performing districts and regions (e.g., districts in Kagera Region) and follow up with them to learn more about the ILS process to determine potential best practices that could be shared with other districts.
- Identify low-performing districts and regions (e.g., Sengerema, districts in Mwanza and Shinyanga Regions) and follow up with targeted supportive supervision to improve practices that may be affecting functioning of the ILS in those districts.
- Work with the district ILS supervisor to improve the consistency and quality of the information included on the R&R forms including the reporting period and the date submitted to the district.
- Work with the districts to communicate that dispensaries should be ordering quinine tablets to improve stockouts of this commodity. Request that MSD reprint the R&R forms without the asterisk on quinine tablets to reduce confusion among dispensary staff

Tabora Zone

Number of Districts: 10

Sample Size: 94 facilities

Figure 30. Map of Sampled Facilities by Delivery Group



Organization of Data at the MSD Zone

Data at MSD-Tabora were organized in binders by district; within each binder, forms were arranged generally chronologically, with the newest forms received on top. Some districts' forms were included in the binders of other districts; for example, Uyui R&Rs were in the Kasulu binder at the time of the visit. When a binder was completely filled, the zonal officials started a new one.

There were almost no packing slips, order summary, invoices, or other documentation along with the R&R forms. However, each form did have written on it, in marker, the delivery group and delivery cycle with which the form was sent (e.g. C2, A4, B3, etc). This made it easier to match forms to the register, although the forms from each group were not necessarily all grouped together and were spread throughout each binder as well as across binders. In many cases it was difficult to tell the date a form was completed or the delivery cycle it actually referenced due to incomplete or inaccurate data entry.

The register was organized chronologically and listed the date of receipt at the zonal level, the district name, the number of forms received as well as the delivery cycle. If a district submitted R&R forms from more than one delivery group, each delivery group was listed separately. The register

appeared to be complete, although in some cases the number of forms that were listed as being received at the zonal level did not match the number of forms that the data collection team could find (that is, there were more forms listed as being received than could be found).

Zonal Level Data Collection Process

The data collection team verified the number and size of districts served by Tabora zone as well as the delivery groups of the facilities in each district. This was done by comparing the facility and delivery group list from MSD-Tabora to the list compiled by the local project staff. Where inconsistencies between the two lists were found, the MSD list was considered as the master.

The team then reviewed the register for R&R forms received at the MSD between February and April, and managed to locate data from every district. To ensure that data collected were from February to April, the dates used in the register were used as a reference point. Where possible, forms from April were used (for Kasulu, Nzega, and Urambo districts). For three districts (Kigoma MC, Igunga, and Sikonge), the team had to go back to February to sample R&R forms.

Overall Findings

MSD-Tabora did not start packing ILS orders until September 2009 at which time they instructed districts to submit all delivery groups together, whenever R&R forms were available, regardless of the delivery schedule in order to avoid stockouts. This means that most districts submitted R&R forms for As, Bs, and Cs together; some districts seemed to submit most groups every month, while others (like Sikonge) only submitted one packet during the three-month period in question. MSD-Tabora planned to begin using the delivery group schedule starting in July 2010; in preparation, they had been evaluating the delivery groups and had even moved some facilities from one group to another to facilitate delivery of supplies.

Timeliness of Submissions to MSD

Because of the way MSD-Tabora requested form submissions, most districts did not follow the correct delivery schedule. Only three districts (Kasulu, Nzega and Urambo) submitted any R&Rs in April; for the other districts, the "number that submitted in appropriate delivery group" column is in reference to either March or February, depending on the month for which data were collected.

Table 46. Number of R&Rs Submitted by District

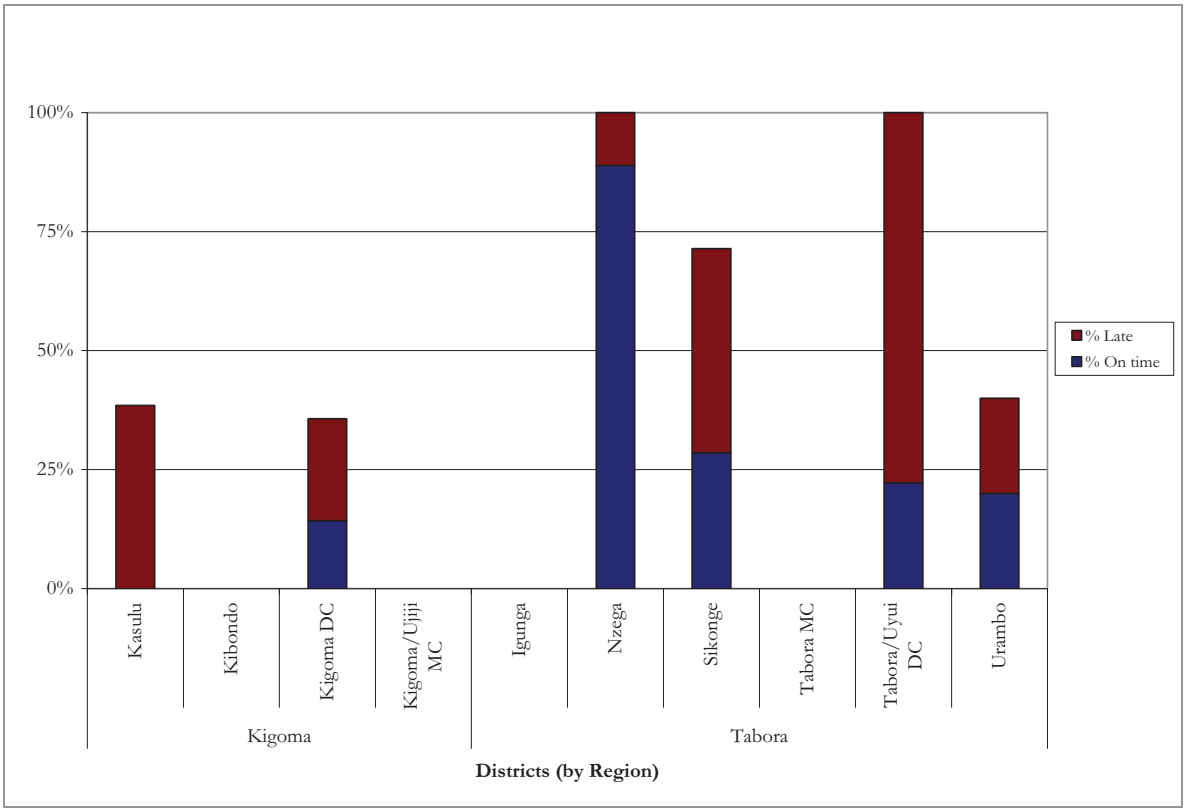
District Name	Number of forms that should have been submitted	Number of forms that were actually submitted	Number of submitted forms that were in appropriate delivery group
Igunga	10	33	10
Kasulu	17	10	1
Kibondo	16	16	16
Kigoma DC	21	12	8
Kigoma/Ujiji MC	0	2	0
Nzega	16	35	12
Sikonge	7	24	6
Tabora/Uyui DC	15	24	0

District Name	Number of forms that should have been submitted	Number of forms that were actually submitted	Number of submitted forms that were in appropriate delivery group
Tabora MC	6	7	6
Urambo	16	22	9
Tabora Zone Total	**124**	**185**	**68**

Many facilities did not put a date on their R&R forms, making it difficult to determine the timeliness of the facility submission to the district. The one exception is Nzega district, where 89 percent of facilities had timely submissions. Figure 31 below shows the percentage of facilities per district that submitted their R&R forms to the district on-time (defined as by the 10th of the month) and those that did not submit on time (after the 10th of the month). If there was no date on the R&R form, the data collection team could not determine if the facility reported on time or late. As a result, facilities that did not provide a date are not included in the figure below.

The R&Rs were not marked with the date the form or packet was received at the zonal level, although this information was included in the register.

Figure 31. Percentage Timely Reporting by District



Quality of Data Available at District Level

- Six forms from Kibondo district were photocopies of each other. In addition, the March R&R forms are written to have arrived at MSD-Tabora on March 4th. In addition, the facility-level

dates for Sikonge district imply that the forms were completed on February 12th, 2010; however, the packet was received at the zonal level on February 13th. Both of these seem improbably short amounts of time.

- Some facilities in Kasulu district submitted R&Rs twice in the same month for two different reporting periods, for the same commodities, but for different quantities.
- Data for Tabora/Uyui DC was difficult to find. The register showed 15 Cs and nine Bs submitted in March, but the Cs could not be located. All the remaining R&Rs were filed incorrectly in the wrong district binder.

Stock Levels of Key Products

ACTs and Other Malaria Commodities

Tabora Zone had one of the worst stockout rates for all four ALu presentations at the health facility level compared to the other zones. As shown in Table 47 below, only 19 percent of the facilities had all four ALu presentations in stock. There was wide variation in ALu availability by district in Tabora Region, with zero percent of facilities in Nzega and Tabora MC districts reporting no ALu in stock, while 43 percent of facilities in Sikonge district reported complete stockouts of ALu. Kigoma region had more uniform results for complete stockouts, with between 20 and 33 percent of facilities having no ALu in stock. Half of all facilities in Kigoma DC had all four ALu in stock, which is relatively good.

Table 47. Stock of ACTs by Region and District

Region	District	No ALu in Stock % (n)	All 4 ALu in Stock % (n)	Facilities with No Data for ALu
Kigoma	Kasulu	23% (13)	8% (13)	0
	Kibondo	29% (14)	36% (14)	0
	Kigoma DC	21% (14)	50% (14)	0
	Kigoma/Ujiji MC	33% (3)	0% (3)	0
Kigoma		**25% (44)**	**30% (44)**	**0**
Tabora	Igunga	20% (10)	20% (10)	0
	Nzega	0% (9)	0% (9)	0
	Sikonge	43% (7)	43% (7)	0
	Tabora MC	0% (5)	0% (5)	0
	Tabora/Uyui DC	11% (9)	0% (9)	2
	Urambo	20% (10)	0% (10)	0
Tabora		**16% (50)**	**10% (50)**	**2**
Tabora Zone Total		**20% (94)**	**19% (94)**	**2**

Other malaria commodities such as Sulphadoxine/Pyrimethamine (SP), diazepam injections, quinine tablets, and quinine injections also had stockout problems. The worst-performing commodity was quinine tablets, of which 71 percent of facilities were stocked out. Many dispensaries seemed unaware that they should order quinine tablets, which is a probable cause for higher stockout rates.

Sikonge District had high stockout rates of all malaria commodities but was also missing data for most facilities for diazepam injections.

Table 48. Percent of Facilities Stocked Out of Malaria Commodities

Region	District	SP Tabs % (n)	Diazepam Injection % (n)	Quinine Tabs % (n)	Quinine Injection % (n)
Tabora	Igunga	38% (8)	11% (9)	78% (9)	30% (10)
	Nzega	78% (9)	22% (9)	75% (8)	22% (9)
	Sikonge	80% (5)	100% (2)	100% (4)	75% (4)
	Tabora MC	0% (5)	60% (5)	20% (5)	40% (5)
	Tabora/Uyui DC	71% (7)	0% (6)	67% (3)	29% (7)
	Urambo	44% (9)	44% (9)	63% (8)	44% (9)
Tabora Total		**53% (43)**	**30% (40)**	**68% (37)**	**36% (44)**
Kigoma	Kasulu	31% (13)	38% (13)	91% (11)	23% (13)
	Kibondo	86% (14)	36% (14)	46% (13)	36% (14)
	Kigoma/Ujiji MC	67% (3)	50% (2)	100% (3)	50% (2)
	Kigoma DC	86% (14)	21% (14)	88% (8)	21% (14)
Kigoma Total		**68% (44)**	**33% (43)**	**74% (35)**	**28% (43)**
Tabora Zone Total		**61% (87)**	**31% (83)**	**71% (72)**	**32% (87)**

Family Planning Commodities

Stockout rates for all family planning commodities were very high, especially for progestin-only pills. Kasulu, Nzega, and Tabora DC districts had relatively low stockout rates for injectables. Of the three facilities sampled in Kigoma/Ujiji MC, only one had data for male condoms.

Table 49. Percent of Facilities Stocked Out of Family Planning Commodities

Region	District	Combined Oral % (n)	Injectables % (n)	Progestin-Only Pills % (n)	Male Condoms % (n)
Tabora	Igunga	67% (9)	100% (10)	100% (9)	50% (8)
	Nzega	57% (7)	11% (9)	100% (8)	44% (9)
	Sikonge	100% (6)	100% (4)	100% (6)	86% (7)
	Tabora MC	100% (5)	75% (4)	100% (5)	75% (4)
	Tabora/Uyui DC	80% (5)	25% (4)	100% (4)	20% (5)
	Urambo	57% (7)	57% (7)	86% (7)	88% (8)
Tabora Total		**74% (39)**	**61% (38)**	**97% (39)**	**61% (41)**
Kigoma	Kasulu	38% (13)	23% (13)	92% (12)	42% (12)
	Kibondo	83% (12)	73% (11)	92% (12)	100% (10)
	Kigoma/Ujiji MC	100% (3)	100% (2)	100% (3)	0% (1)
	Kigoma DC	54% (13)	93% (14)	100% (12)	45% (11)
Kigoma Total		**61% (41)**	**65% (40)**	**95% (39)**	**59% (34)**

Region	District	Combined Oral % (n)	Injectables % (n)	Progestin-Only Pills % (n)	Male Condoms % (n)
Tabora Zone Total		**68% (80)**	**63% (78)**	**96% (78)**	**60% (75)**

Only 15 percent of the facilities in Tabora zone had combined oral contraceptives and injectables in stock, with the exception of Kasulu district, in which over half of all facilities had both in stock.

Table 50. Availability of Combined Oral Contraceptives and Injectables by Region and District (% in stock)

Region	District	Combined Oral and Injectables Both In Stock % (n)	Facilities with No Data on COC and Injectables
Kigoma	Kibondo	7% (14)	2
	Kasulu	54% (13)	0
	Kigoma DC	0% (14)	0
	Kigoma/Ujiji MC	0% (3)	0
Kigoma		**18% (44)**	**2**
Tabora	Igunga	0% (10)	0
	Nzega	33% (9)	0
	Sikonge	0% (7)	1
	Tabora MC	0% (5)	0
	Tabora/Uyui DC	11% (9)	3
	Urambo	20% (10)	2
Tabora		**12% (50)**	**6**
Tabora Zone Total		**15% (94)**	**8**

Essential Medicines

Overall, stockout rates for essential drugs were much lower in comparison to other product categories. However, there was large variation in the stockout rates of essential drugs by district, ranging from zero to 100 percent. In general, stockout rates were higher for suspensions and syrups than for tablets, especially for paracetamol syrup versus paracetamol tablets. With the exception of Co-trimoxazole syrup, Tabora MC did not experience stockouts of any of the essential drugs.

Table 51. Percent of Facilities Stocked Out of Essential Drugs

Region	District	Amox. Capsules % (n)	Amox. Suspension % (n)	Para. Tabs % (n)	Para. Syrup % (n)	Cotri. Tabs % (n)	Cotri. Suspension % (n)
Tabora	Igunga	0% (10)	0% (9)	11% (9)	100% (10)	40% (10)	56% (9)
	Nzega	33% (9)	33% (9)	0% (9)	78% (9)	22% (9)	44% (9)
	Sikonge	25% (4)	100% (3)	0% (3)	100% (4)	33% (3)	100% (3)
	Tabora MC	0% (5)	0% (5)	0% (5)	0% (5)	0% (5)	20% (5)
	Tabora/ Uyui DC	14% (7)	14% (7)	14% (7)	100% (6)	14% (7)	14% (7)
	Urambo	10% (10)	33% (9)	0% (9)	40% (10)	11% (9)	50% (10)
Tabora Total		**13% (45)**	**24% (42)**	**5% (42)**	**70% (44)**	**21% (43)**	**44% (43)**
Kigoma	Kasulu	15% (13)	31% (13)	15% (13)	77% (13)	23% (13)	15% (13)
	Kibondo	7% (14)	38% (13)	7% (14)	62% (13)	7% (14)	21% (14)
	Kigoma/Ujiji MC	100% (3)	67% (3)	67% (3)	100% (2)	67% (3)	100% (3)
	Kigoma DC	29% (14)	14% (14)	21% (14)	57% (14)	14% (14)	71% (14)
Kigoma Total		**23% (44)**	**30% (43)**	**18% (44)**	**67% (42)**	**18% (44)**	**41% (44)**
Tabora Zone Total		**18% (89)**	**27% (85)**	**12% (86)**	**69% (86)**	**20% (87)**	**43% (87)**

Zonal Recommendations

Tabora Zone did not begin packing for the ILS until September 2009. As a result, delivery group schedule had not been followed. Starting in July 2010, facilities would request commodities based on their delivery group.

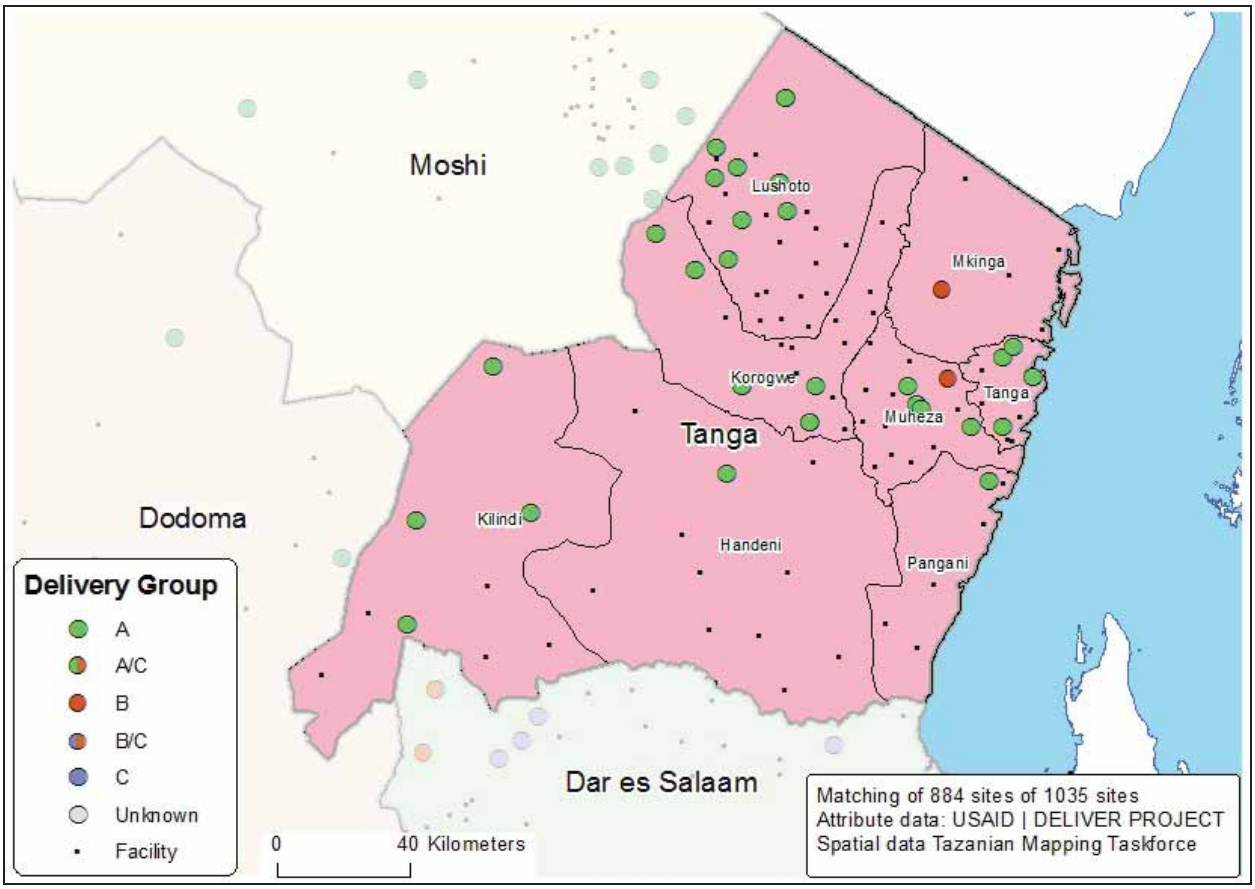
- Identify high-performing districts (e.g., Nzega, Kasulu) and follow up with them to learn more about the ILS process to determine potential best practices that could be shared with other districts.
- Identify low-performing districts (e.g., Tabora MC, Kigoma/Ujiji MC) and follow up with targeted supportive supervision to improve practices that may be affecting functioning of the ILS in those districts.
- Work with the district ILS supervisor to improve the consistency and quality of the information included on the R&R forms including the reporting period and the date submitted to the district.
- Train MSD staff on the ILS system, including how to correctly fill out the R&R forms and the timing for ordering and processing orders.
- Evaluate the timeliness of R&R forms to determine how well facilities and districts are complying with the delivery group schedule.

Tanga Zone

Number of Districts: 8

Sample Size: 52 facilities

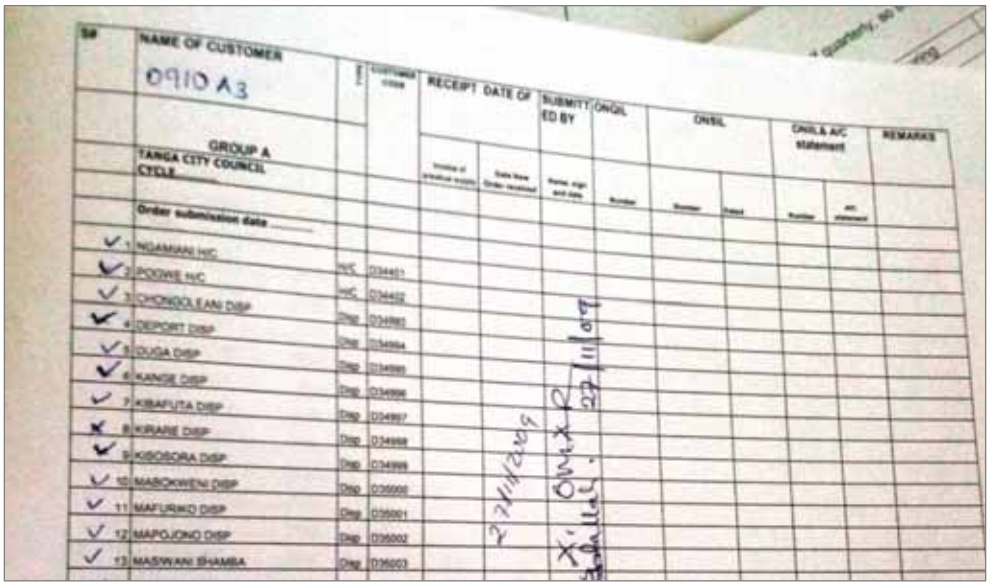
Figure 32. Map of Sampled Facilities by Delivery Group



Organization of Data at the MSD Zone

The registrar at the zonal MSD office created a register to track ILS orders, organized by district, delivery group, and cycle (A1, B1, C1, etc). This register was not complete and often did not include the date that the order was delivered to the district. According to the registrar, the zone was no longer using the register once they started delivering directly to health facilities. Instead they had a list of health facilities that they carried with them on deliveries; however, this list did not include the date that orders are received. Processed R&R forms with copies of sales invoices were kept in binders organized by district.

Figure 33. Register at Tanga MSD Zone



Tanga Zone was also running on a different ILS cycle than other districts. According to the staff, this was because of a smart push done to all districts in 2009. After this push, MSD started the regular cycle again but shifted the ordering cycle for Tanga districts by one month. As a result, in April 2010 the submissions to MSD should have come from B groups instead of A groups. The table below shows the adjusted ordering cycle in Tanga.

Table 52. Adjusted Ordering Cycle in Tanga

Date	January 2010 (usually A3)	February 2010 (usually B3)	March 2010 (usually C3)	April 2010 (usually A4)
Prepared and submitted to MSD	B	C	A	B
Processed by MSD	A	B	C	A

Zonal Level Data Collection Process

The data collection team started by looking at the list of facilities and delivery groups at MSD and comparing that list to a facility list compiled by the DELIVER office in Dar es Salaam. When

discrepancies in the two lists were found, the list from MSD was used to determine the total number of health facilities in the zone (231 health facilities).

Since the register did not contain complete dates for orders received, the data collection team used the quotation date (ONQIL) as the closest proxy for date received when selecting the sample of facilities. The ONQIL number and date were recorded on most R&R forms, although in a few cases the data collection team had trouble determining the exact quotation date and therefore the date received. Due to the shifted ILS schedule, the team also considered "B" as the appropriate delivery group for April R&R forms.

Overall Findings

Very few districts submitted any data in April. Eight of the nine districts should have submitted in April, but only three (38 percent) submitted. All submissions were from the A group instead of the B group.

Timeliness of Submissions to MSD

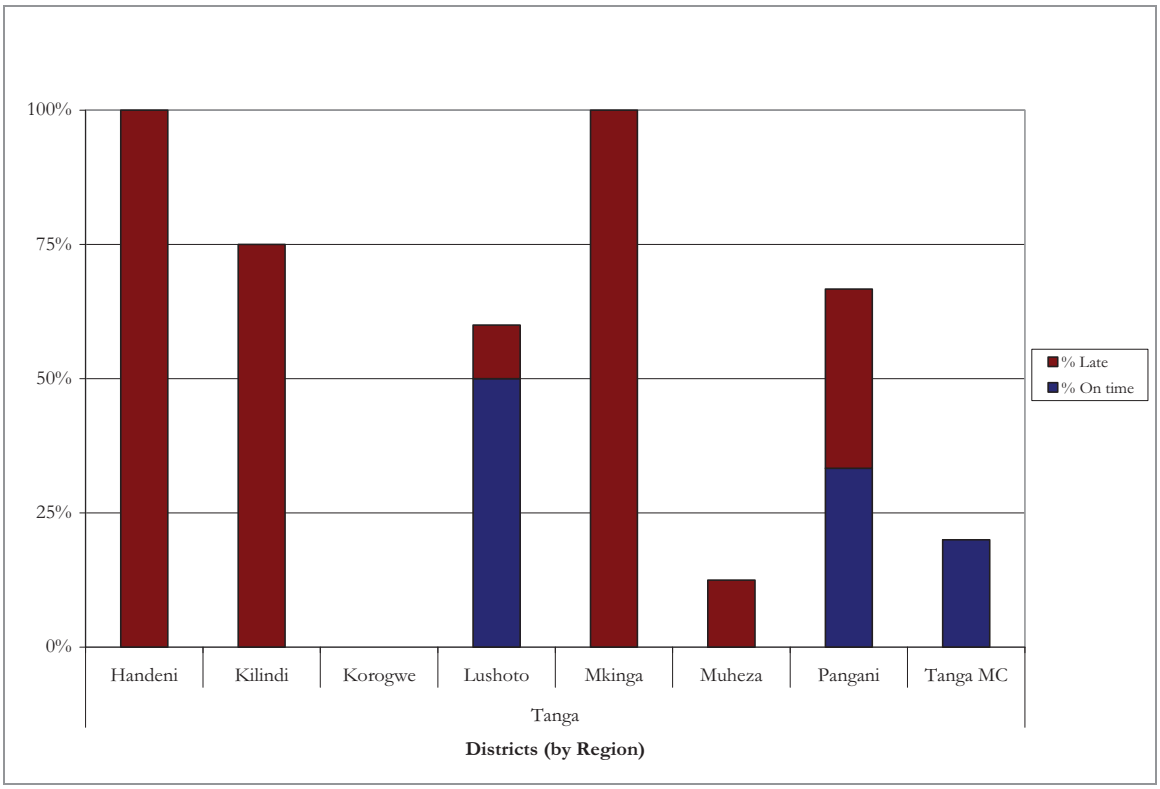
As shown in Table 17 below, many districts were still not submitting in their appropriate delivery groups. Korogwe and Tanga MC were the only two districts that submitted all the R&R forms for all health facilities in the appropriate delivery group during the month chosen for the sample. Other districts either submitted an incomplete number of R&R forms within the appropriate delivery group (Kilindi) or they submitted forms from health facilities that were not in the appropriate delivery group (Lushoto, Mkinga, Muheza, Pangani, and Handeni).

Table 53. Number of R&Rs Submitted by District

District Name	Number of forms that should have been submitted	Number of forms that were actually submitted	Number of submitted forms that were in appropriate delivery group
Handeni	12	1	0
Kilindi	17	13	13
Korogwe	17	17	17
Lushoto	13	20	13
Mkinga	0	10	0
Muheza	14	14	0
Pangani	0	1	0
Tanga MC	20	20	20
Tanga Zone Total	**93**	**96**	**63**

Many facilities did not put a date on their R&R forms, making it difficult to determine the timeliness of the facility submission to the district. Figure 34 below shows the percentage of facilities per district that submitted their R&R forms to the district on time (defined as by the 10th of the month) and those that did not submit on time (after the 10th of the month). If there was no date on the R&R form, the data collection team could not determine if the facility reported on time or late. As a result, facilities that did not provide a date are not included in the figure below.

Figure 34. Percentage Timely Reporting by District



Quality of Data Available at District Level

- The majority of the facility R&R forms from Muheza district appear to have been filled out by one person at the district level. There was no information about prior usage or current stock on hand on the R&R forms for any of the facilities in this district.
- The data collection team was unable to collect a full sample from Handeni District. There was only one health facility that submitted an R&R form between February and April. There were two large orders in January (23 health facilities) and May (13 health facilities), but these fell outside of the data collection period.
- The data collection team noted that there was often a delay of a month or more between the date on the R&R form and the date received at MSD. It is unclear if the delays are happening between the time the facility fills out the form and the district receives it, or between the time the district receives the R&R form from the facility and the time it is submitted to MSD.

Stock Levels of Key Products

ACTs and Other Malaria Commodities

Forty percent of the health facilities in Tanga Zone were completely stocked out of all presentations of Artemether/Lumefantrine (ALu), and only 13 percent of facilities had all four ALu presentations in stock during the sample period. Korogwe and Muheza were the lowest-performing districts with 80 and 75 percent of facilities in the sample completely stocked out of all forms of ALu respectively. Because many of the Muheza R&R forms had only zeros for usage and stock-level data, it is difficult to know if the high level of stockouts in that district is accurate.

Table 54. Stock of ACTs by Region and District

Region	District	No ALu in Stock % (n)	All 4 ALu in Stock % (n)	Facilities with No Data for ALu
Tanga	Handeni	0% (1)	0% (1)	0
	Kilindi	0% (8)	13% (8)	1
	Korogwe	80% (10)	0% (10)	1
	Lushoto	30% (10)	40% (10)	0
	Mkinga	14% (7)	0% (7)	0
	Muheza	75% (8)	13% (8)	0
	Pangani	33% (3)	0% (3)	0
	Tanga MC	40% (5)	20% (5)	0
Tanga Zone Total		**40% (52)**	**13% (52)**	**2**

Other malaria-related commodities such as Sulphadoxine/Pyrimethamine (SP), diazepam injections, quinine tablets, and quinine injections were also stocked out at approximately 50 percent of the facilities in Tanga Zone. Korogwe and Muheza were again low-performing districts with high percentages of stockouts of all four of these commodities.

Table 55. Percent of Facilities Stocked Out of Malaria Related Commodities

Region	District	SP Tabs % (n)	Diazepam Injection % (n)	Quinine Tabs % (n)	Quinine Injection % (n)
Tanga	Handeni	0% (1)	0% (1)	0% (1)	0% (1)
	Kilindi	29% (7)	33% (6)	29% (7)	33% (6)
	Korogwe	89% (9)	50% (8)	89% (9)	78% (9)
	Lushoto	60% (10)	60% (10)	40% (10)	30% (10)
	Mkinga	29% (7)	17% (6)	29% (7)	33% (6)
	Muheza	75% (8)	88% (8)	75% (8)	75% (8)
	Pangani	33% (3)	33% (3)	33% (3)	33% (3)
	Tanga MC	0% (5)	75% (4)	75% (4)	60% (5)
Tanga Zone Total		**50% (50)**	**52% (46)**	**53% (49)**	**50% (48)**

Family Planning Commodities

The majority of districts in Tanga had very high stockouts of all family planning commodities. All of the Tanga MC facilities that reported data on family planning commodities were stocked out of all four key family planning commodities, while Pangani facilities were stocked out of all family planning commodities other than condoms. In comparison, Kilindi district had much lower stockout rate for all family commodities.

Table 56. Percent of Facilities Stocked Out of Family Planning Commodities

Region	District	Combined Oral % (n)	Injectables % (n)	Progestin-Only Pills % (n)	Male Condoms % (n)
Tanga	Handeni	100% (1)	100% (1)	100% (1)	0% (1)
	Kilindi	17% (6)	20% (5)	67% (6)	17% (6)
	Korogwe	50% (8)	75% (8)	75% (8)	57% (7)
	Lushoto	80% (10)	60% (10)	100% (10)	89% (9)
	Mkinga	29% (7)	17% (6)	86% (7)	57% (7)
	Muheza	88% (8)	86% (7)	100% (8)	88% (8)
	Pangani	100% (3)	100% (3)	100% (3)	50% (2)
	Tanga MC	100% (4)	100% (4)	100% (4)	100% (4)
Tanga Zone Total		**64% (47)**	**64% (44)**	**89% (47)**	**66% (44)**

As shown in Table 57 below, very few facilities had both combined oral contraceptives and injectable contraceptives in stock. Mkinga District had the highest percentage of facilities with both combined oral contraceptives and injectables in stock, whereas Tanga MC, Pangani, and Handeni had no facilities in the sample that had both contraceptives available during the assessment period.

Table 57. Availability of Combined Oral Contraceptives and Injectables by Region and District (% in stock)

Region	District	Combined Oral and Injectables Both In Stock % (n)	Facilities with No Data on COC and Injectables
Tanga	Handeni	0% (1)	0
	Kilindi	38% (8)	2
	Korogwe	10% (10)	2
	Lushoto	20% (10)	0
	Mkinga	57% (7)	0
	Muheza	13% (8)	0
	Pangani	0% (3)	0
	Tanga MC	0% (5)	1
Tanga Zone Total		**21% (52)**	

Essential Medicines

Almost half of the facilities were stocked out of the basic antibiotics: amoxicillin and co-trimoxazole tablets. More than 40 percent were stocked out of paracetamol tablets. As shown in Table 58 below, a higher percentage of facilities were stocked out of suspensions and syrups than of the corresponding tablets.

Table 58. Percent of Facilities Stocked Out of Essential Drugs

Region	District	Amox. Capsules % (n)	Amox. Suspension % (n)	Para. Tabs % (n)	Para. Syrup % (n)	Cotri. Tabs % (n)	Cotri. Suspension % (n)
Tanga	Handeni	0% (1)	100% (1)	0% (1)	0% (1)	0% (1)	100% (1)
	Kilindi	43% (7)	86% (7)	14% (7)	57% (7)	29% (7)	57% (7)
	Korogwe	89% (9)	75% (8)	67% (9)	100% (9)	78% (9)	78% (9)
	Lushoto	30% (10)	60% (10)	30% (10)	63% (8)	40% (10)	56% (9)
	Mkinga	14% (7)	43% (7)	29% (7)	29% (7)	14% (7)	43% (7)
	Muheza	75% (8)	75% (8)	75% (8)	100% (8)	75% (8)	75% (8)
	Pangani	33% (3)	67% (3)	33% (3)	33% (3)	33% (3)	33% (3)
	Tanga MC	80% (5)	60% (5)	40% (5)	80% (5)	60% (5)	20% (5)
Tanga Zone Total		**52% (50)**	**67% (49)**	**42% (50)**	**69% (48)**	**48% (50)**	**57% (49)**

Zonal Recommendations

- Identify high-performing districts (e.g., Kilindi, Mkinda) and follow up with them to learn more about the ILS process to determine potential best practices that could be shared with other districts.
- Identify low-performing districts (e.g., Korogwe, Muheza) and follow up with targeted supportive supervision to improve practices that may be affecting functioning of the ILS in those districts.
- Work with the district ILS supervisor to improve the consistency and quality of the information included on the R&R forms including the reporting period and the date submitted to the district.
- Train MSD staff on the ILS system, including how to correctly fill out the R&R forms and the timing for ordering and processing orders. Because the registrar from MSD is visiting health facilities as part of the direct delivery pilot, she has an opportunity to provide assistance to health facilities that are having trouble filling out their R&R forms.
- Reinstitute the register at the MSD zonal office in order to track the date R&R forms are received.

Conclusions

As a result of the observations and findings discussed in this report, the following conclusions can be drawn.

- Product availability seems to be determined more by individual district factors than zonal factors. This is evidenced by the fact that two districts in the same zone can have varied levels of availability, regardless of a common ordering practice through the same MSD zone. However, national stock status can influence product availability; national-level stockouts of progestin-only oral contraceptives, for example, resulted in very high stockout rates at the facility level.
- Districts are not adequately fulfilling their role in implementing and monitoring the ILS at the facility level resulting in both incorrectly filled and/or incomplete R&R forms and poor on-time reporting rates by delivery group. The findings of this assessment seem to support the hypothesis that management at the district level has considerable influence over the ability of the ILS to provide consistent product availability at the facility level.
- Proximity to the MSD zonal warehouse does not necessarily impact product availability. For example, Lindi DC had excellent availability for ALu although it is located a significant distance away from the zonal warehouse, whereas Mwanza MC showed poor availability for family planning commodities although the MSD zonal store is a close distance from the District Medical Officer's office. There are similar examples in almost every zone.
- Availability of one product at the facility level does not necessarily signify the same availability for other products. Similarly, poor availability for one product does not preclude the district from having consistent stock levels for other products.
- It appears that facility staff are not adequately trained in completing the R&R forms, resulting in missing or incorrect information in many of the required fields such as reporting period, date form submitted, and quantity requested. Continual monitoring and supervision of facility staff is needed to reinforce logistics concepts taught in classroom-based trainings and to ensure staff have the skills, knowledge, and ability to provide accurate data during the reporting and ordering process.
- Availability of family planning and malaria commodities is poor country-wide. While the availability of essential drugs is spotty, in general, they were more widely available at the health facilities.

Next Steps

The next steps outlined below provide MSD, PSU, USAID and the USAID | DELIVER PROJECT with suggested a course of action. It is recommended that these aforementioned stakeholders work in concert to address the issues highlighted in this report.

- Identify high-performing districts to identify the practices and behaviors that are leading to high stock availability in order to develop best practices that can be shared with other districts.
- Identify low-performing districts to provide immediate support and targeted supportive supervision and trainings in order to improve practices that may be affecting the functioning of the ILS in those districts.
- Consider new strategies to strengthen routine supervision of the ILS at the district- and health-facility levels, especially as new delivery models such as the direct delivery pilot in Tanga are tested throughout the country.
- Develop focused interventions targeting District Medical Officers (DMOs) and District Pharmacists to clarify their position in the ILS and their associated job responsibilities.
- Define roles and responsibilities of the MSD in order for them to better understand the critical role they play in the overall functioning of the ILS. This can include encouraging MSD to develop standard operating procedures (SOP) for handling and storing R&R forms at the MSD zonal stores.

In addition, stakeholders should:

- Follow up on the interventions mentioned above to determine the frequency, data points and product list for any similar activities in the future. For example, for future data collection activities, consider including more MSD zonal level data points such as order filling rate, minimum and maximum stock levels, and data storage
- Review the time it takes for R&R forms to move from the facility level to the MSD to identify the cause of delays and determine ways to streamline the process.

References

Chimnani, Jaya, Ali Karim, Tim Rosché, and Peace Nyankojo, 2007. *Tanzania: Comparative Assessment of the Product Availability in the Integrated Logistics System and Indent Regions.* Arlington, Va.: USAID | DELIVER PROJECT, Task Order 1.

Appendix A

Team Composition

1st week (June 16 – 18)	Tanga	Emily Bancroft Noela Kisoka
	Mtwara	Natalia Nazarewicz Jaya Chimnani Dedan Jonas
	Dar es Salaam	Joy Kamunyori Josephine Mahamba Hanif Nazareli
2nd week (June 20 – June 25)	Iringa	Jaya Chimnani Noela Kisoka
	Mbeya	Natalia Nazarewicz Josephine Mahamba Hanif Nazareli
	Mwanza	Emily Bancroft Joy Kamunyuri Siana Mapujo Winna Shango
3rd week (June 27 – July 2)	Tabora	Natalia Nazarewicz Jaya Chimnani
	Dodoma	Emily Bancroft Siana Mapujo
	Moshi	Noela Kisoka Joy Kamunyori

Appendix B

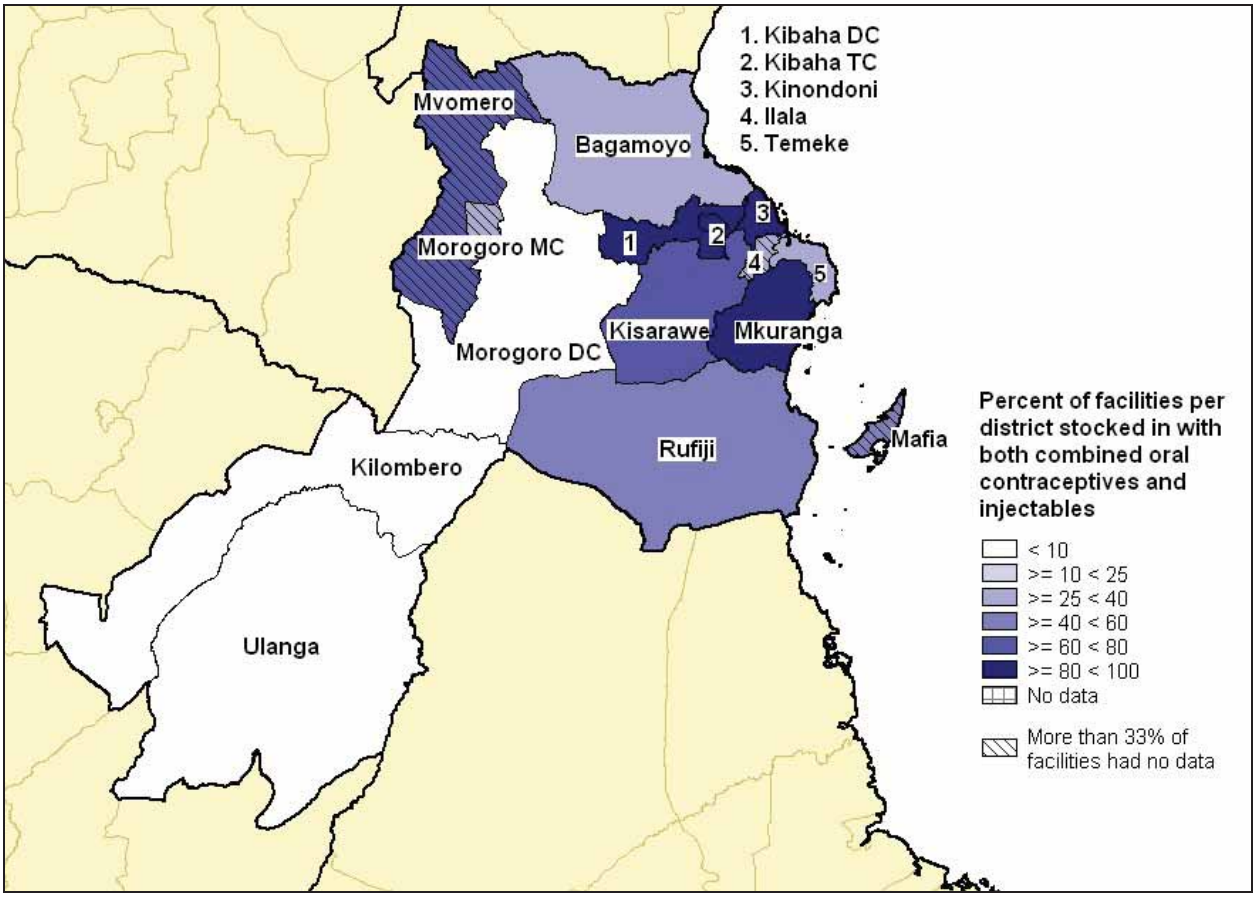
Assessment Timeline

Date	Day	Activity
Week		
12- June	Saturday	☐ Arrive in Dar
Week 1		
14-Jun	Monday	☐ Meet with TZ team ☐ Finalize methodology, data collection plans, teams, travel logistics. ☐ Finalize database
15-Jun	Tuesday	☐ Train staff on use of database for data entry. ☐ Meet with Mission (if requested) ☐ Travel to zones (if needed)
16-Jun	Wednesday	☐ Travel to zones (3 teams of 3 persons, each team will visit one zone) ☐ Visit MSDs for data collection: Tanga, Mtwara and Dar zones
17-Jun	Thursday	☐ Data Collection Contd.
18-Jun	Friday	☐ Complete data collection ☐ Teams return to Dar
19-Jun	Saturday	☐ Make changes to the DB if needed
20-Jun	Sunday	☐ Travel to zones
Week 2		
21-Jun	Monday	☐ Data Collection: Iringa, Mwanza and Mbeya (collected in Dar) zones
22-Jun	Tuesday	☐ Data Collection Contd.
23-Jun	Wednesday	☐ Data Collection Contd.
24-Jun	Thursday	☐ Visit MSD for data collection/ Travel back to Dar
25-Jun	Friday	☐ Debrief in Dar
27-Jun	Sunday	☐ Travel to zones
Week 3		
28-Jun	Monday	☐ Visit MSDs for data collection: Dodoma, Moshi and Tabora zones
29-Jun	Wednesday	☐ Data Collection Contd.
30-Jun	Wednesday	☐ Data Collection Contd.
1July	Thursday	☐ Return to Dar
2-July	Friday	☐ Data Cleaning
Week 4		
5-July	Monday	☐ Data Cleaning/Analysis
6-July	Tuesday	☐ Analysis/Presentation Preparation
7-July	Wednesday	☐ Analysis/Presentation Preparation
8-July	Thursday	☐ Presentation Preparation
9-July	Friday	☐ Stakeholder Presentation ☐ TA providers depart

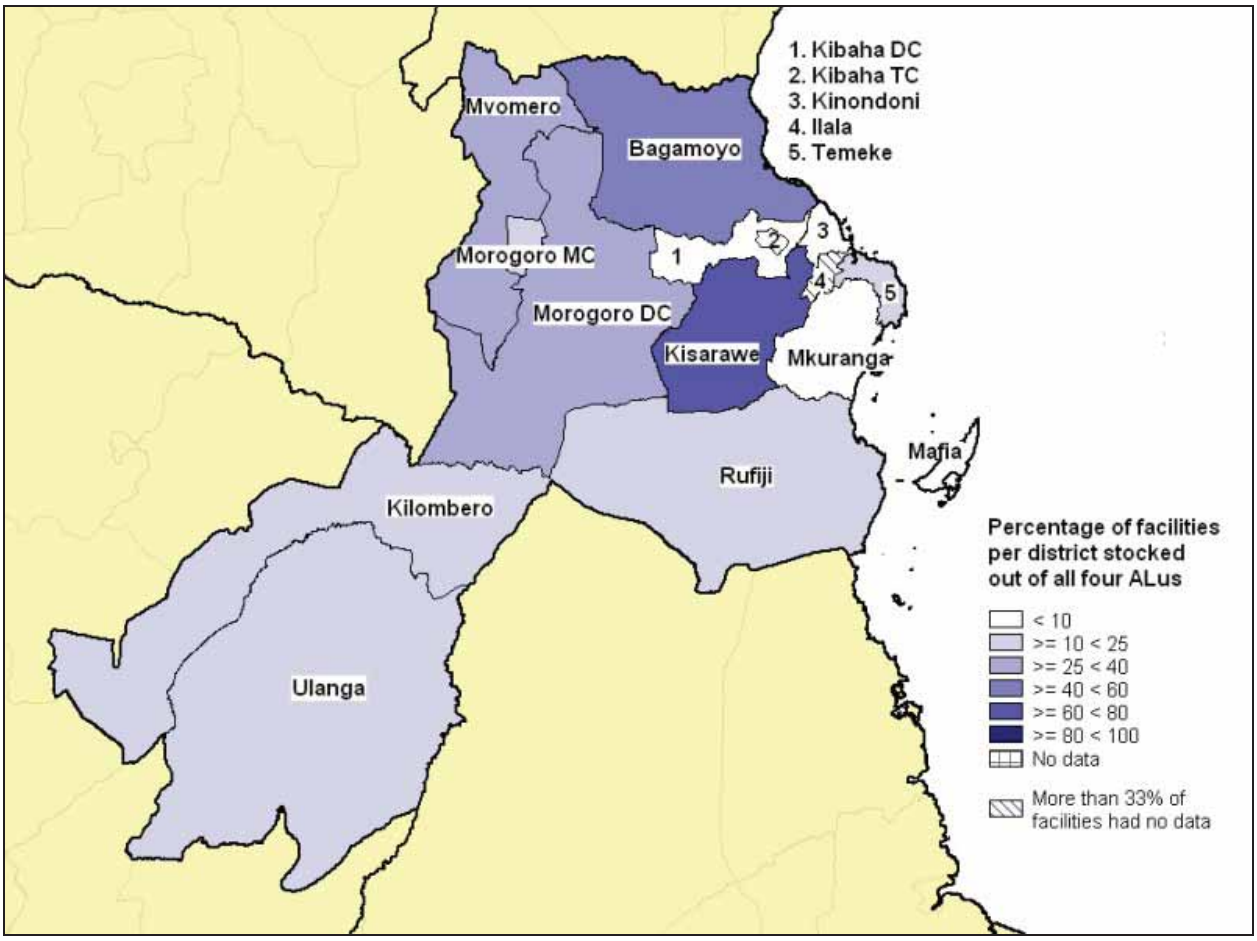
Appendix C

Commodity Availability in Dar Zone

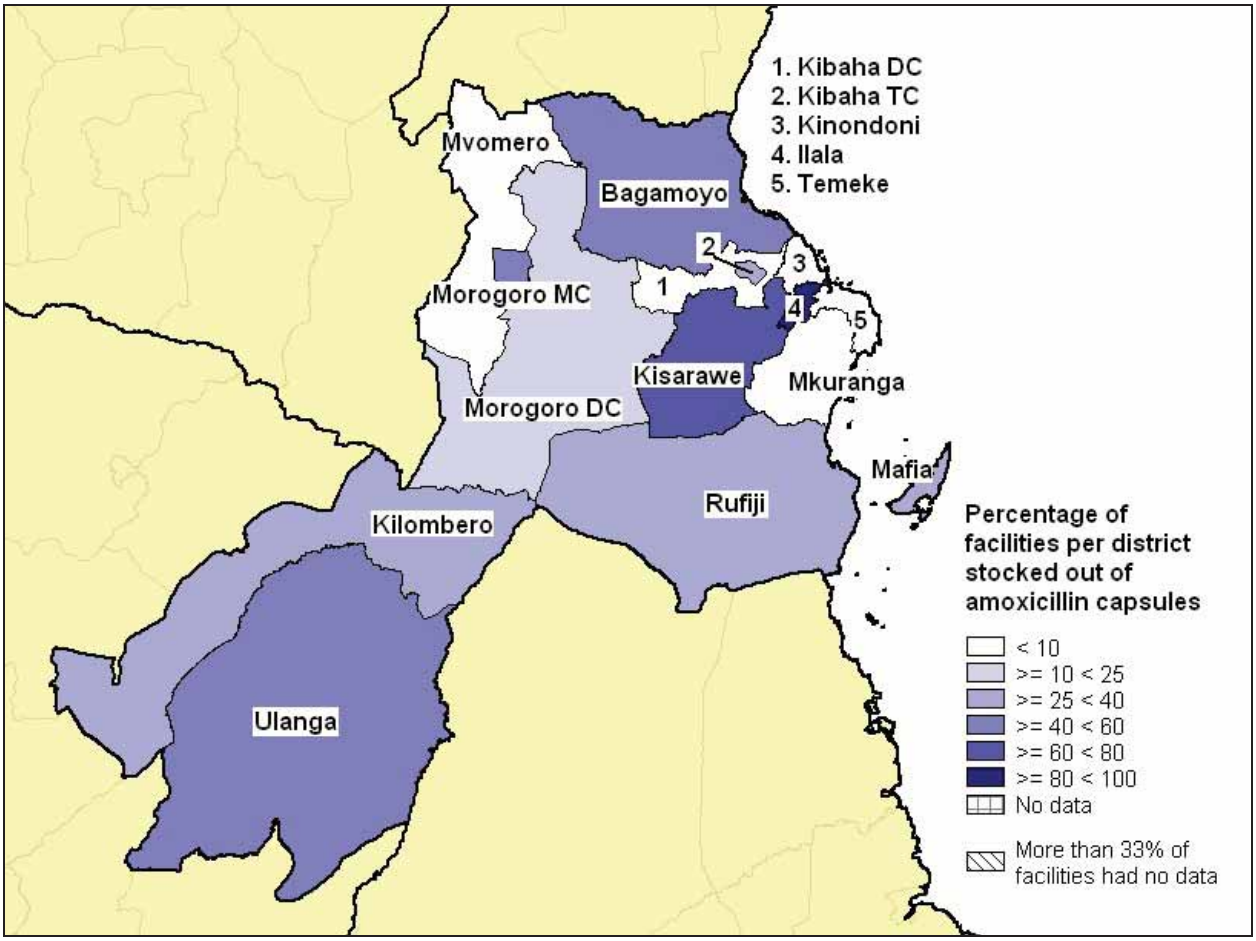
Percent Availability of Combined Oral Contraceptives and Injectables by District



Stockout of all Four ALu Presentations by District



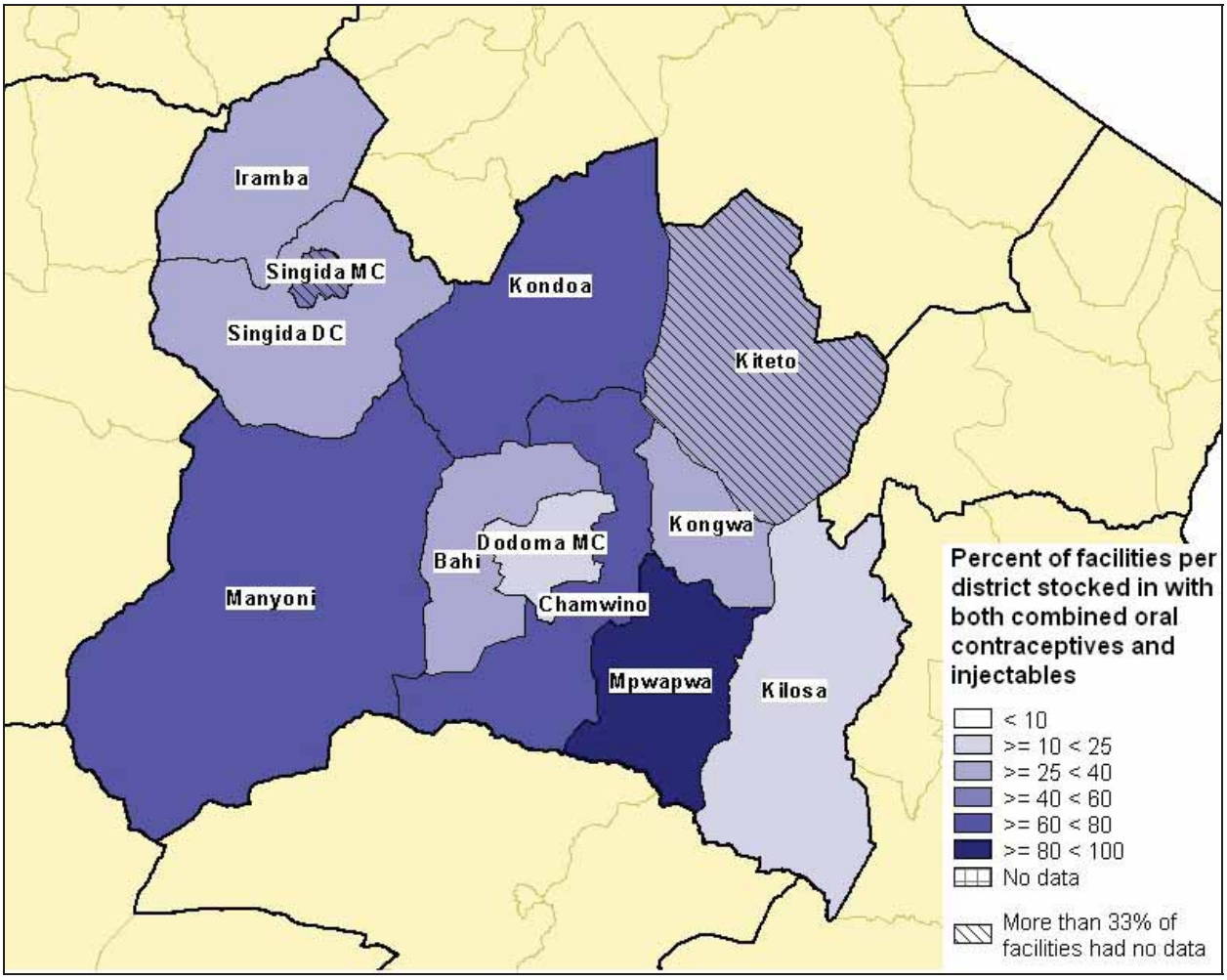
Stockout of Amoxicillin Capsules by District



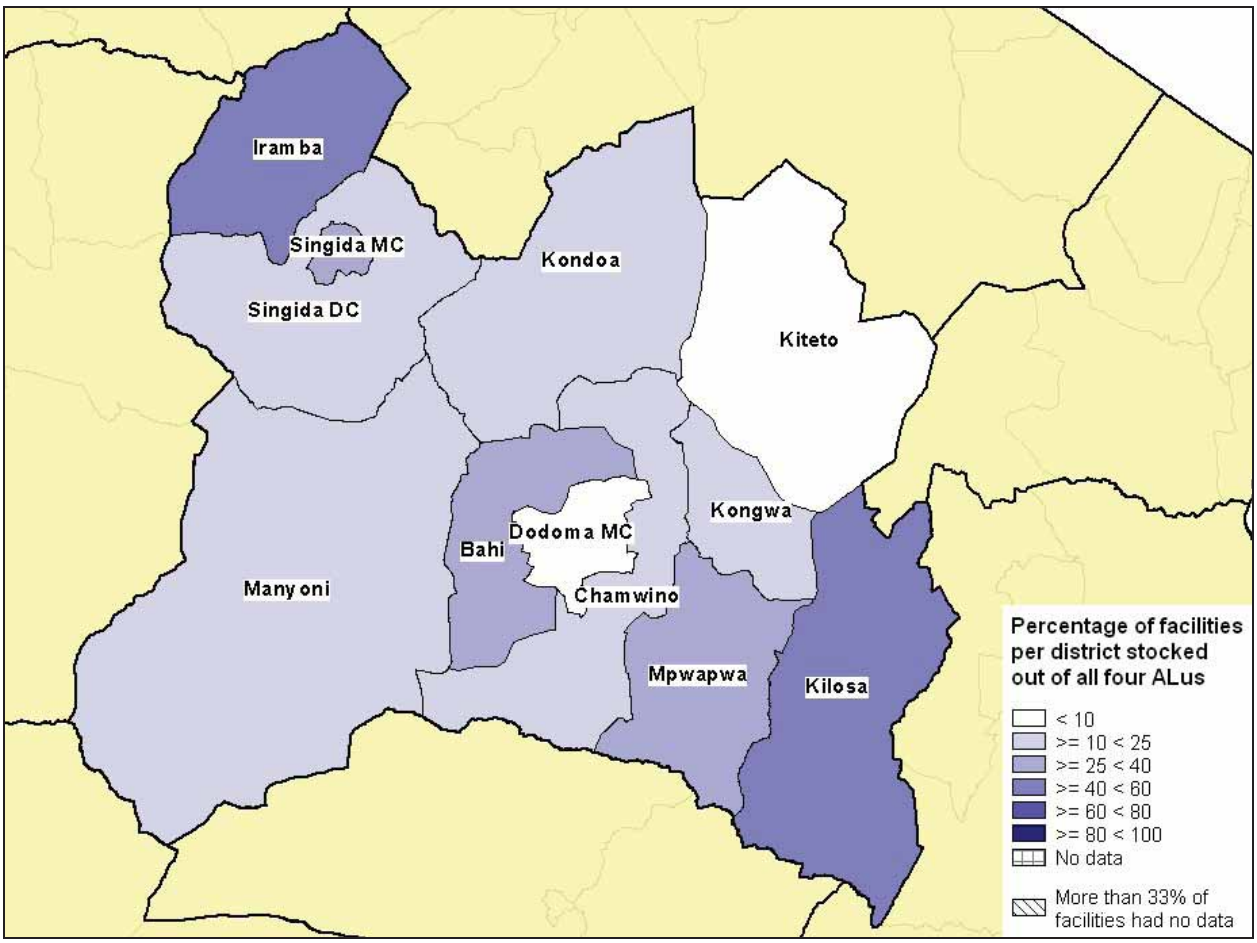
Appendix D

Commodity Availability in Dodoma Zone

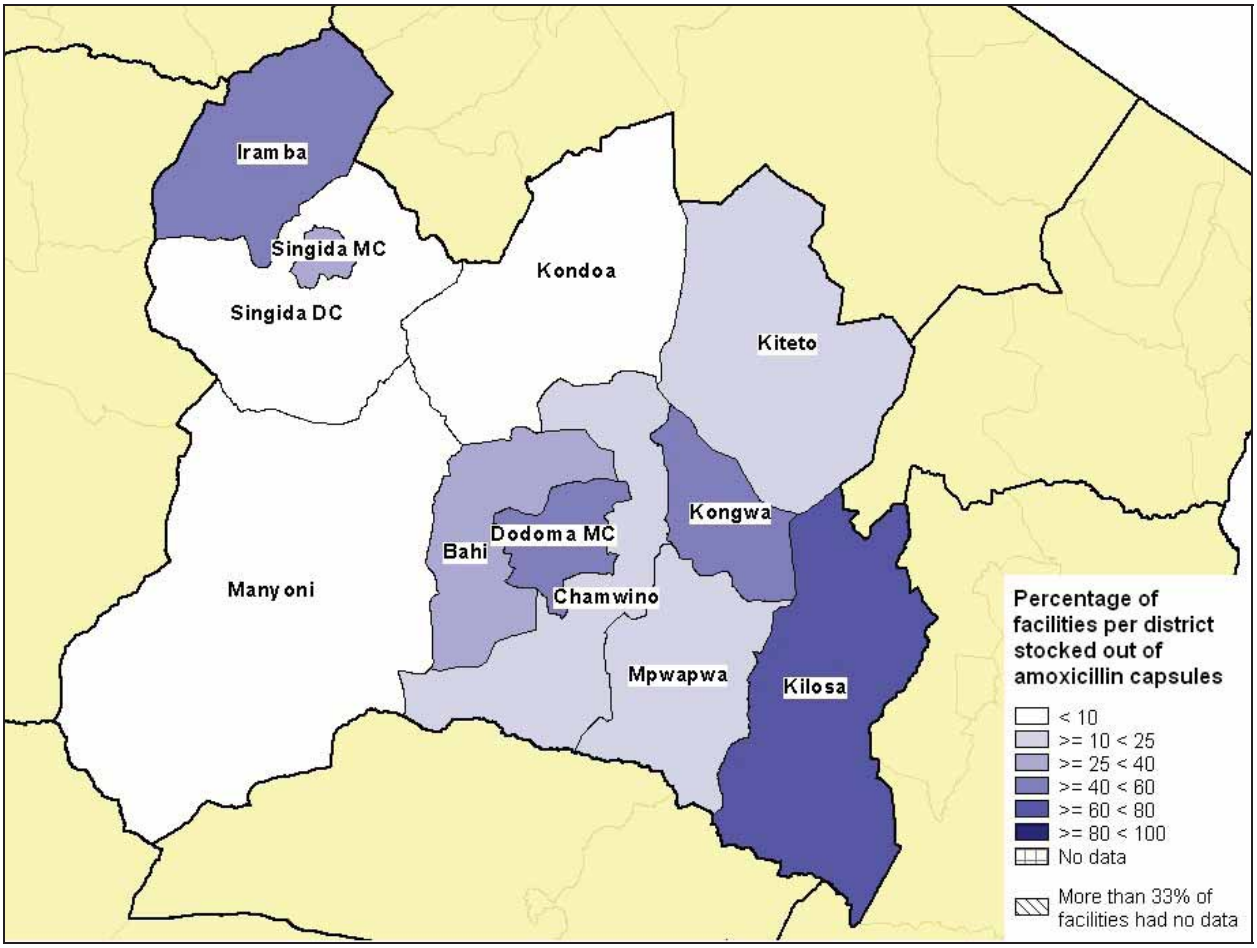
Percent Availability of Combined Oral Contraceptives and Injectables by District



Stockout of all Four ALu Presentations by District



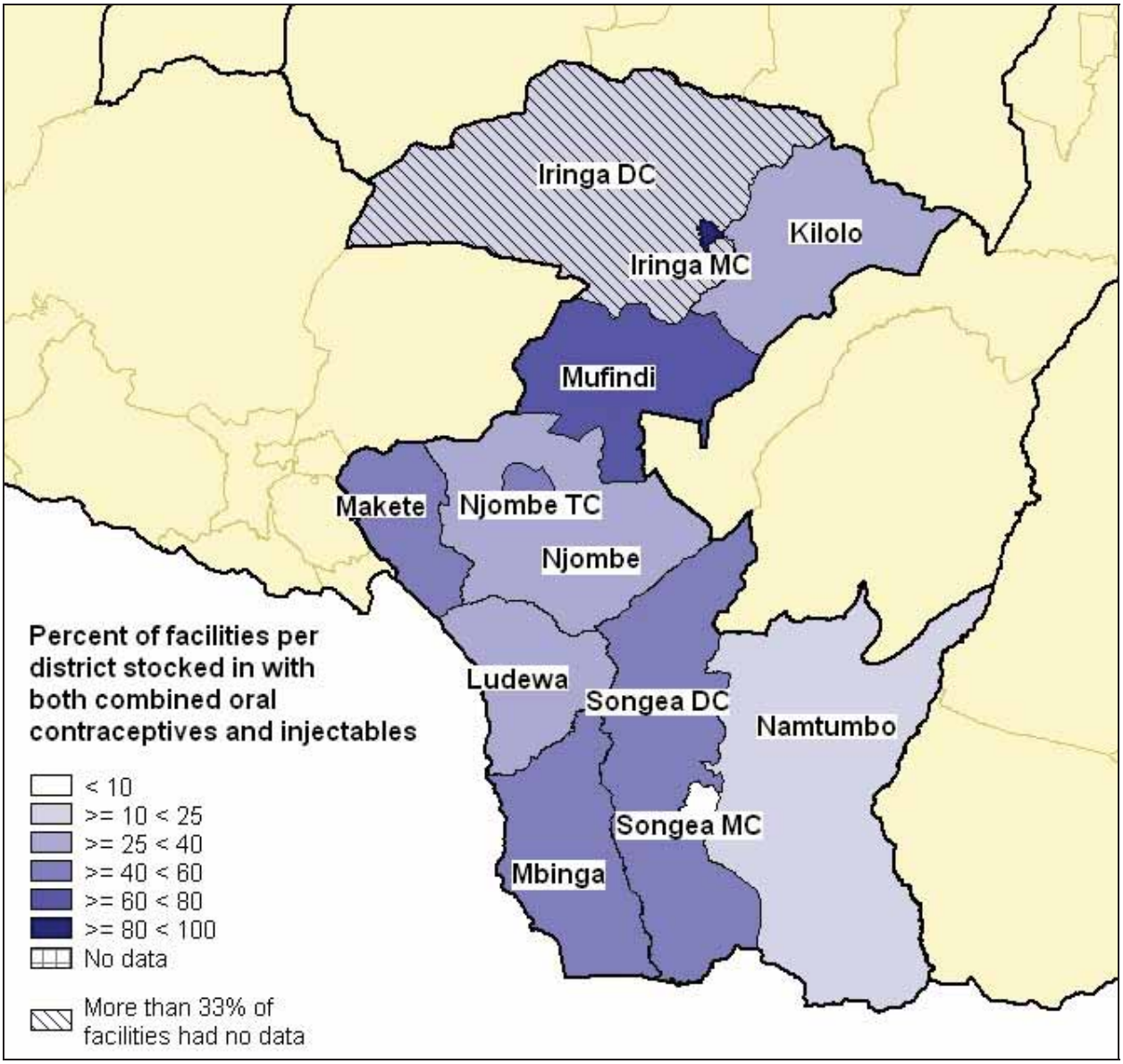
Stockout of Amoxicillin Capsules by District



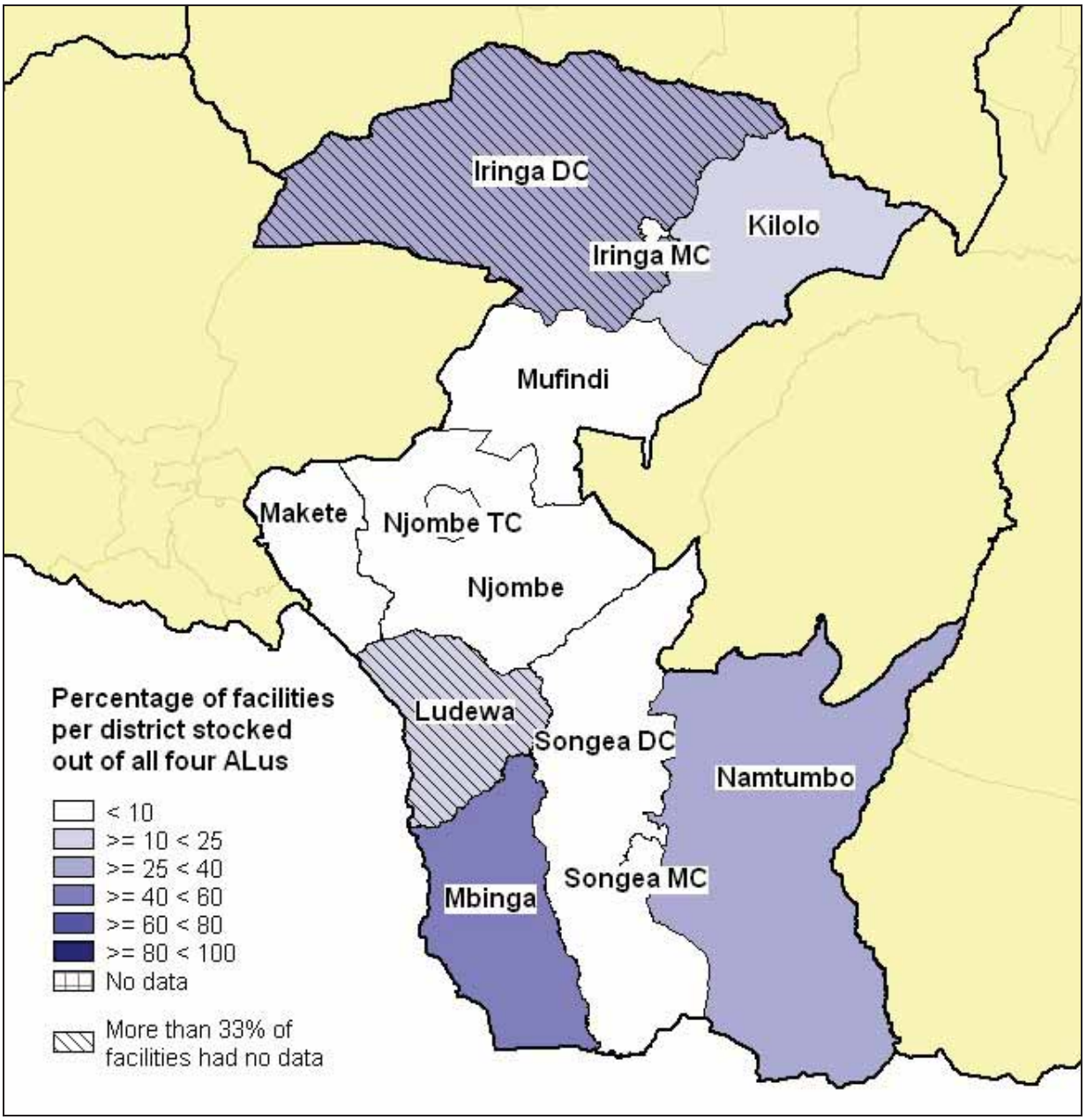
Appendix E

Commodity Availability in Iringa Zone

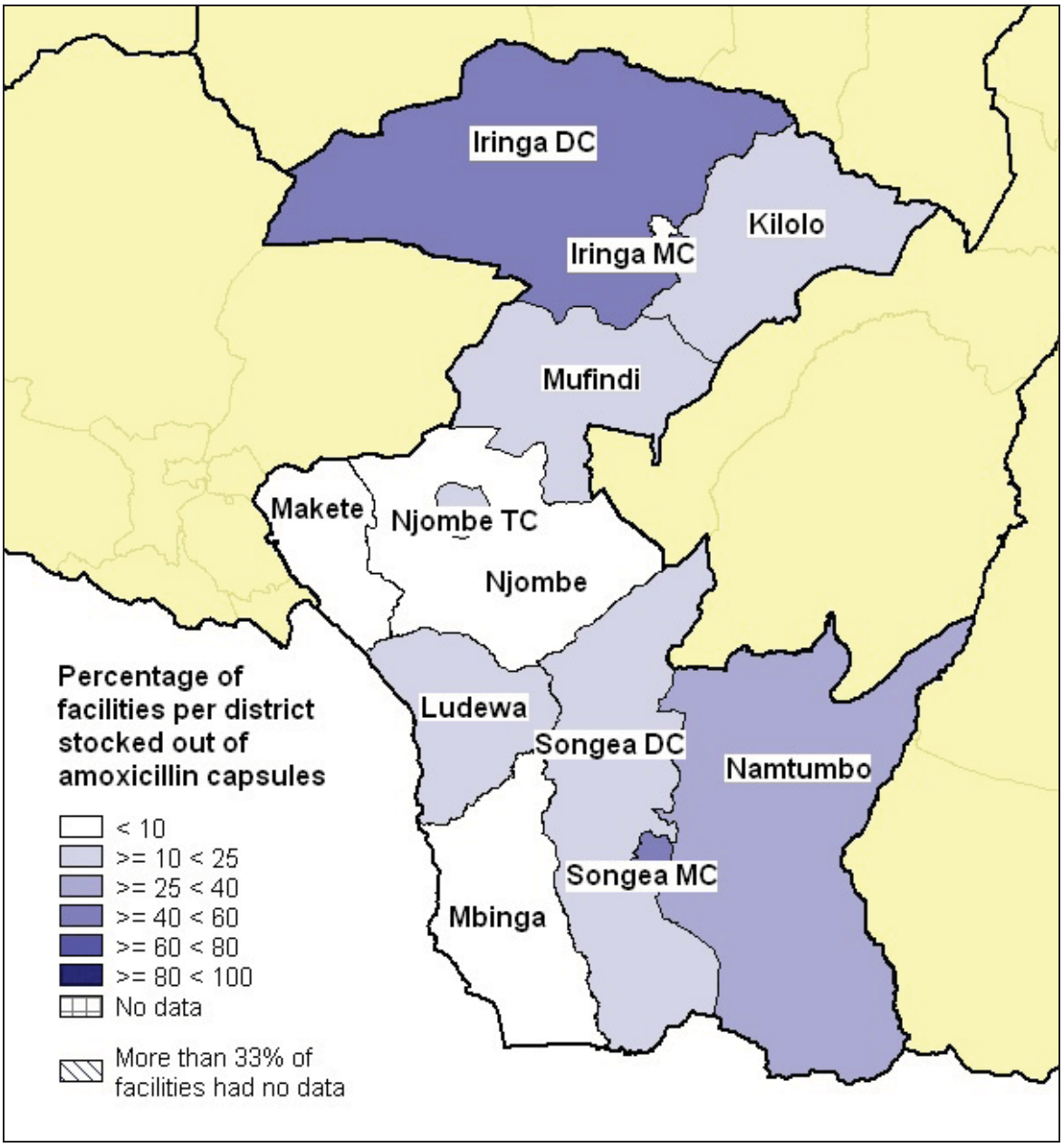
Percent Availability of Combined Oral Contraceptives and Injectables by District



Stockout of all Four ALu Presentations by District



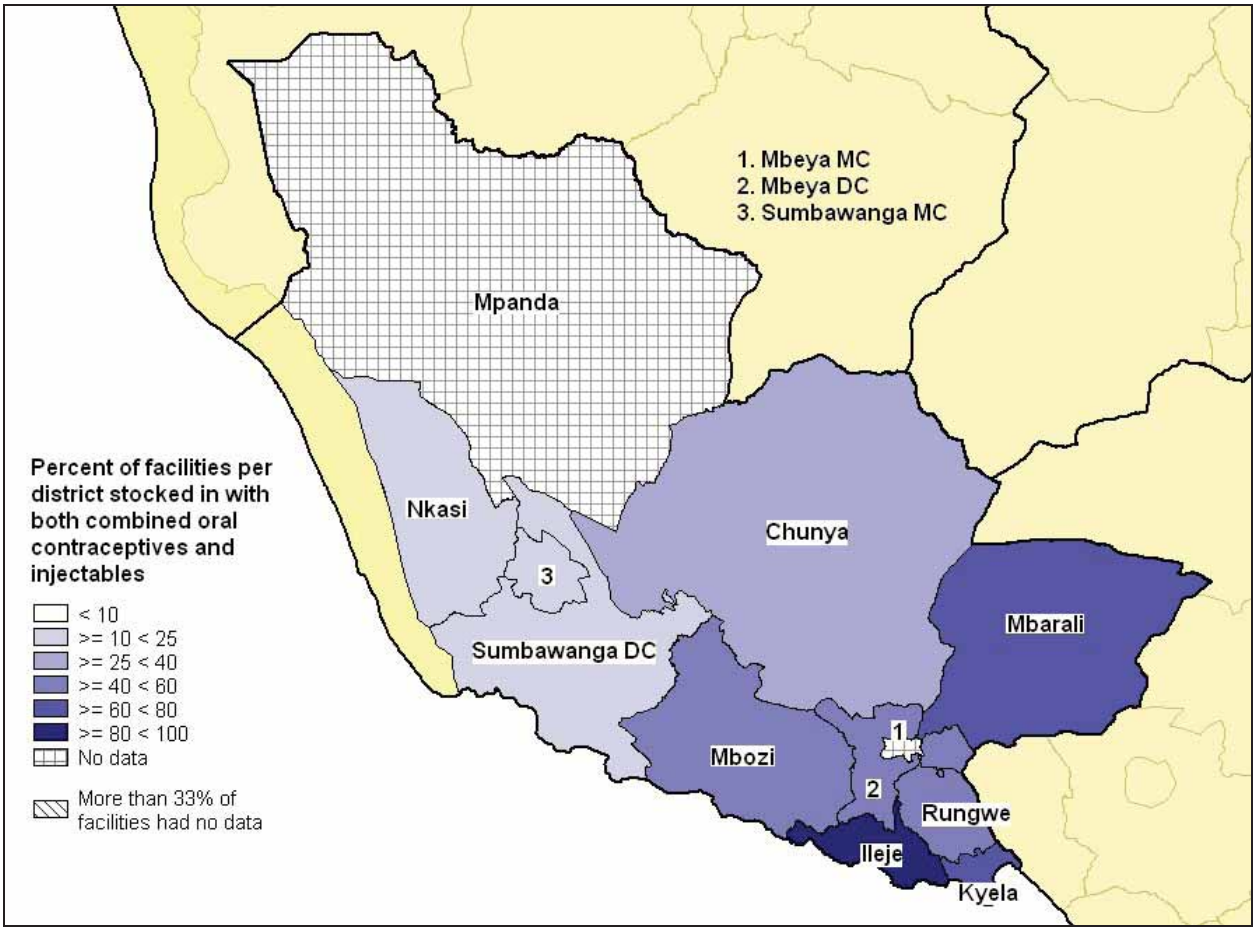
Stockout of Amoxicillin Capsules by District



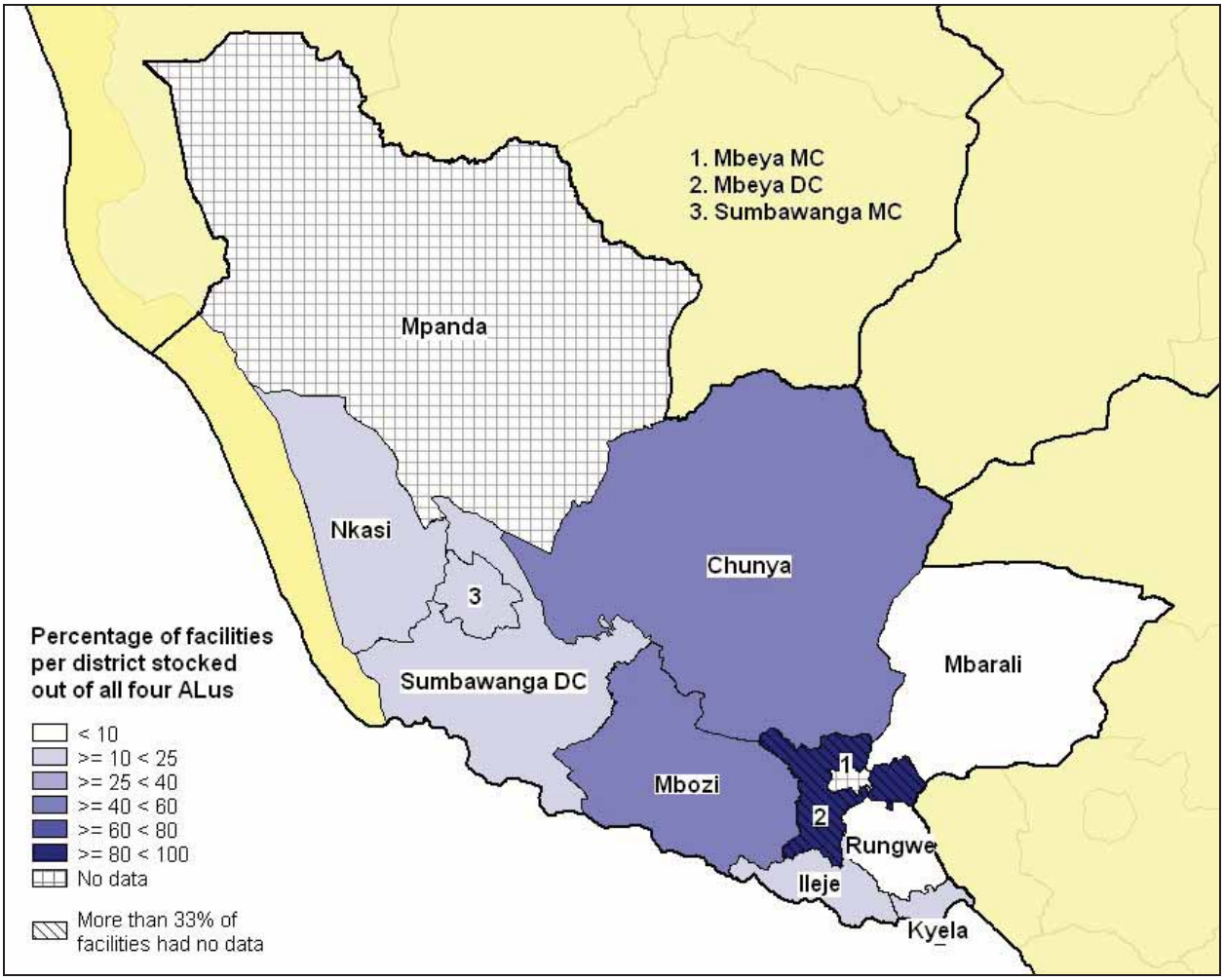
Appendix F

Commodity Availability in Mbeya Zone

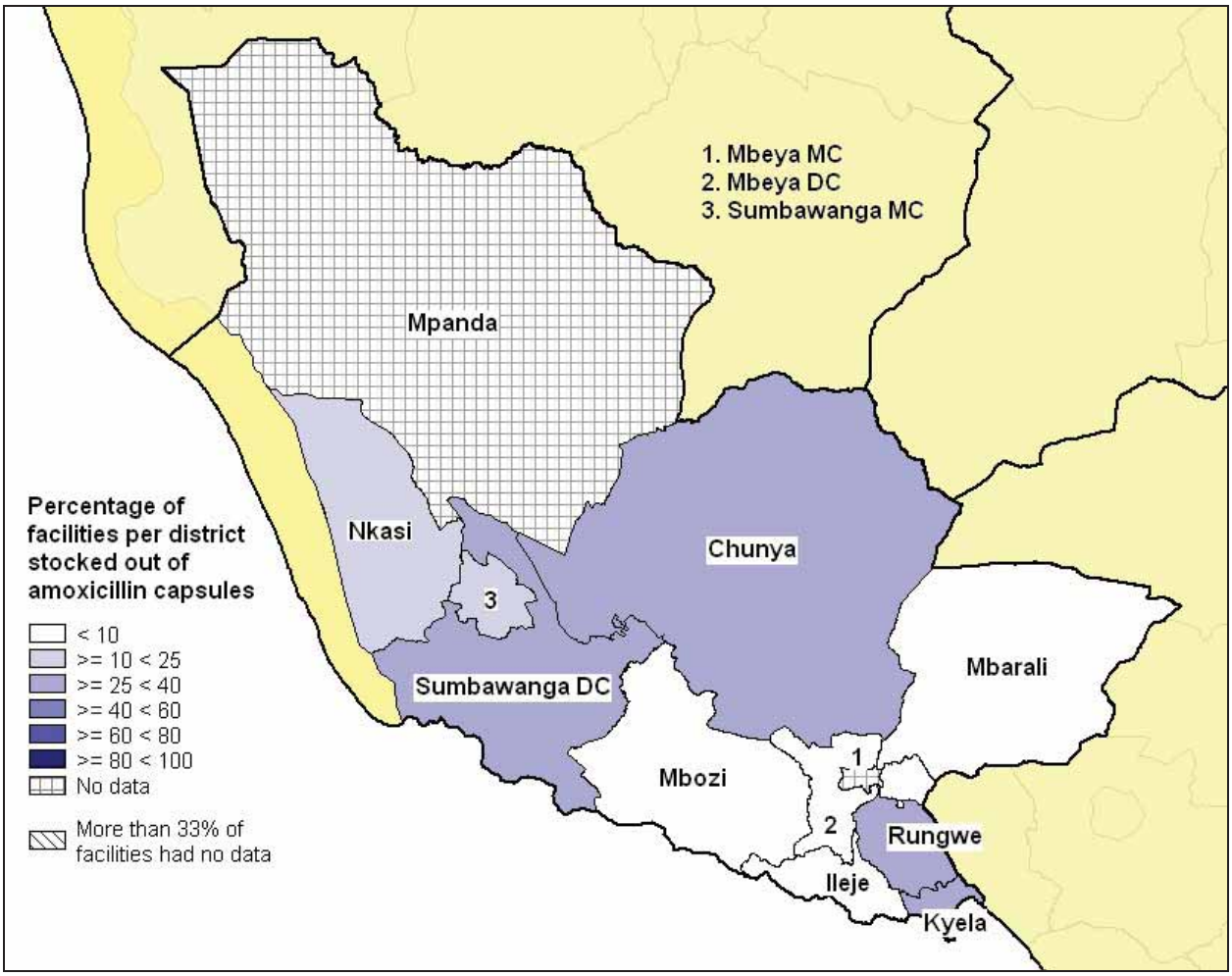
Percent Availability of Combined Oral Contraceptives and Injectables by District



Stockout of all Four ALu Presentations by District



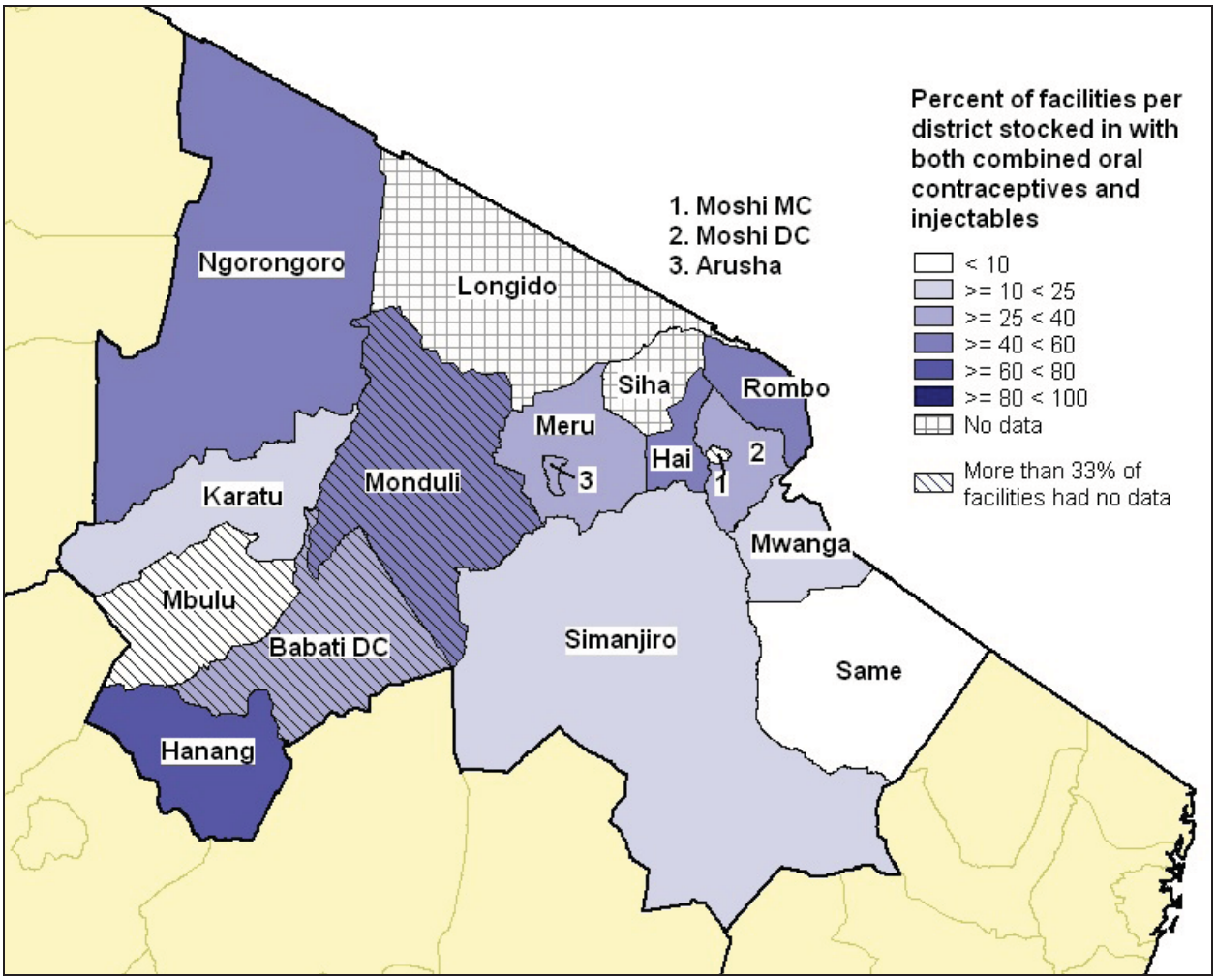
Stockout of Amoxicillin Capsules by District



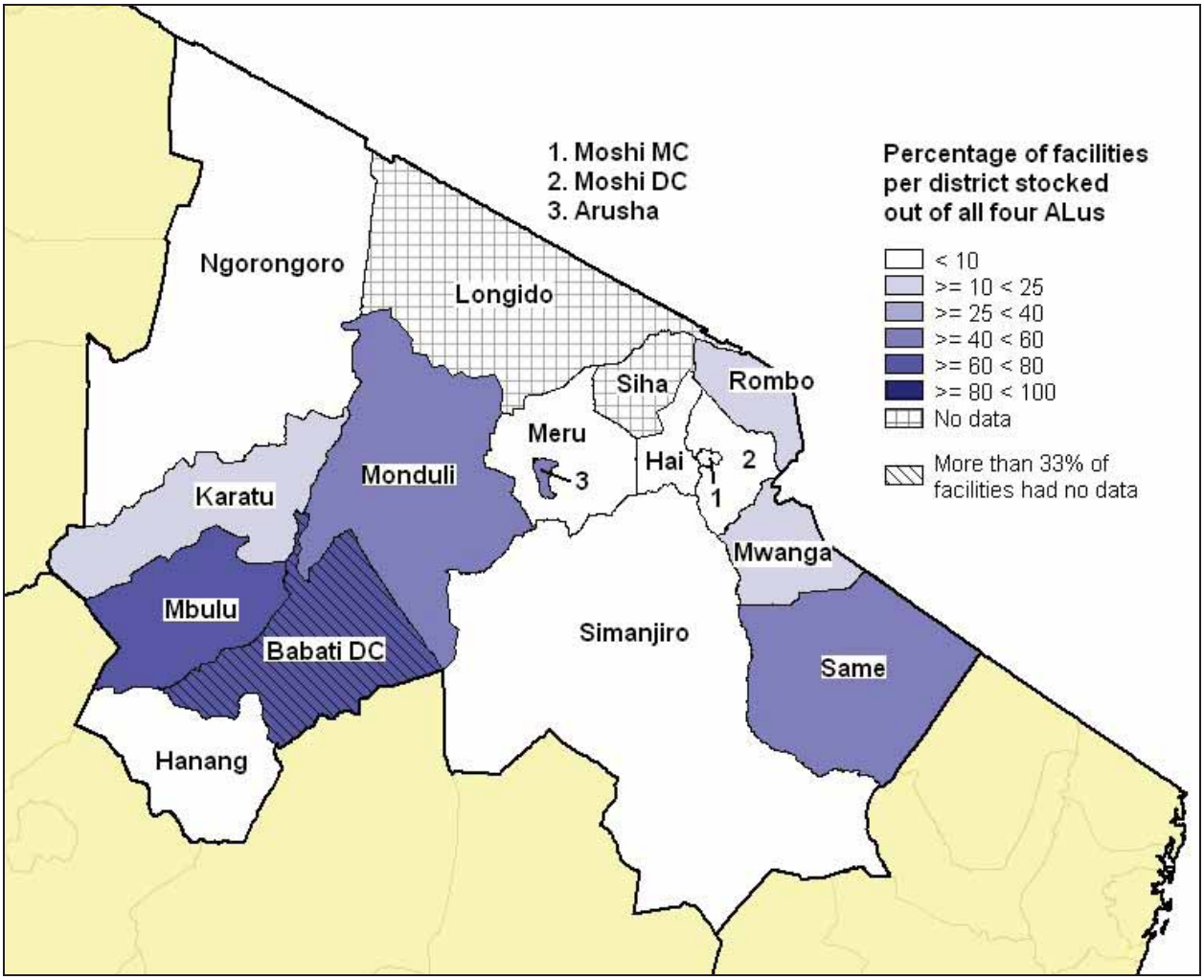
Appendix G

Commodity Availability in Moshi Zone

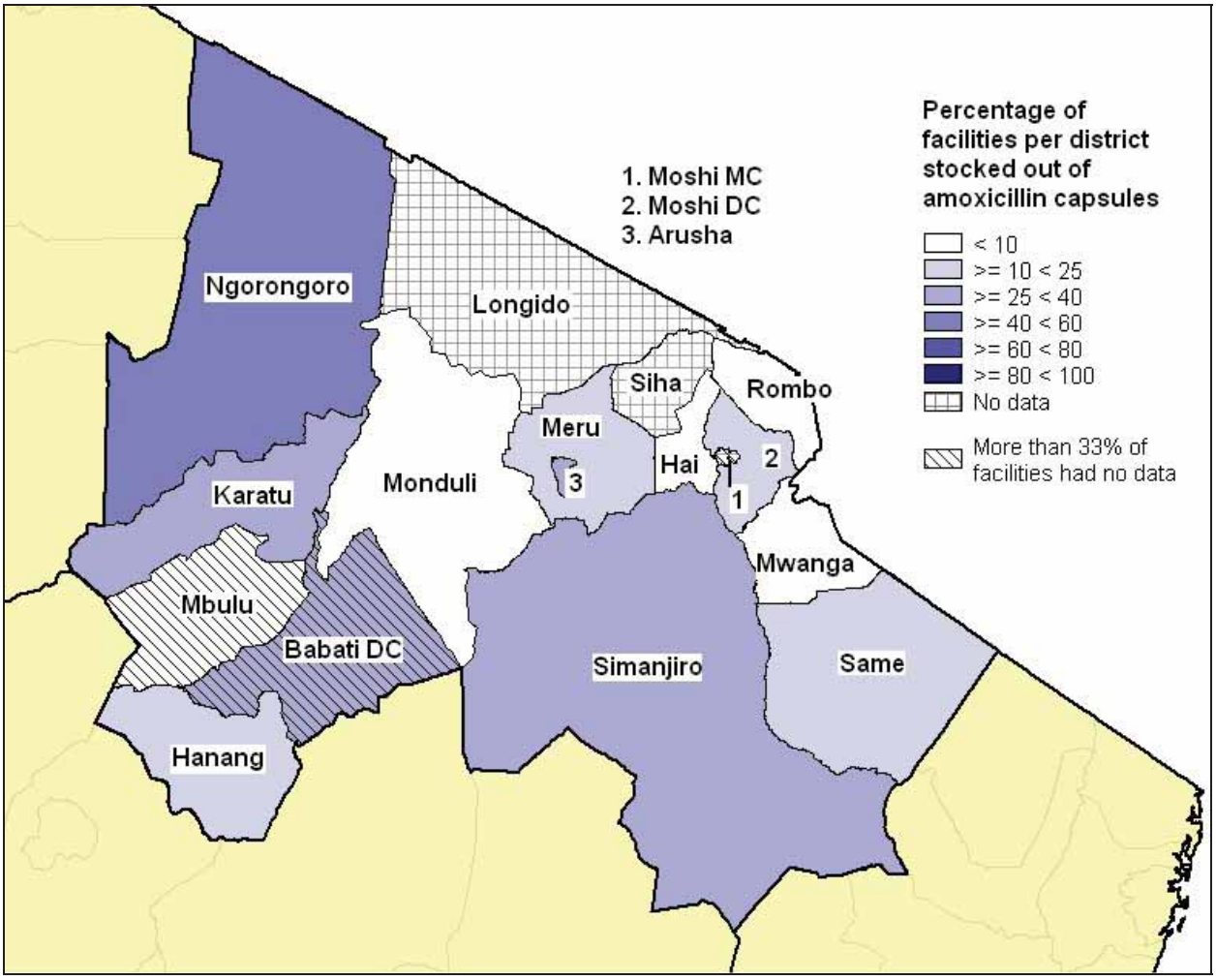
Percent Availability of Combined Oral Contraceptives and Injectables by District



Stockout of all Four ALu Presentations by District



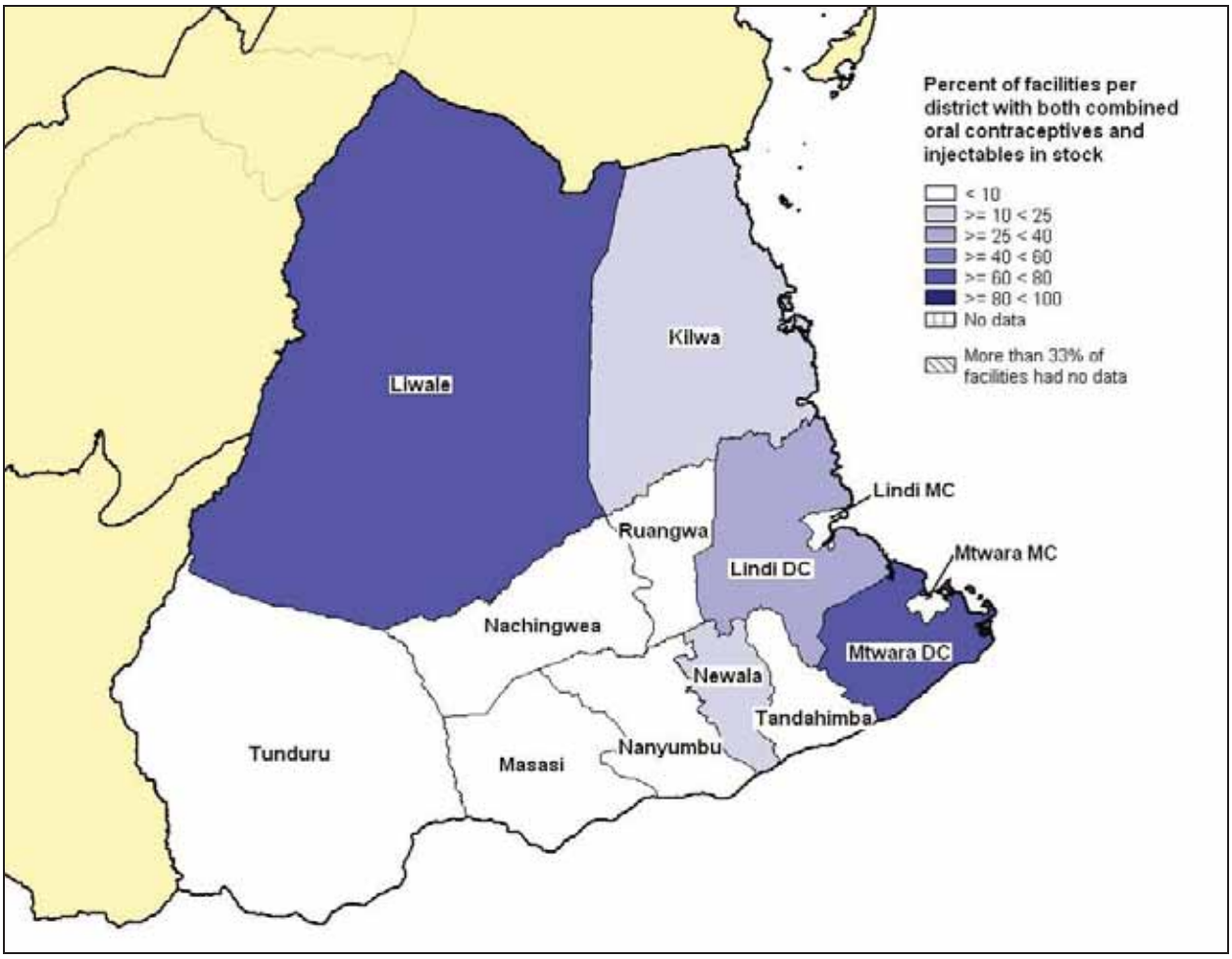
Stockout of Amoxicillin Capsules by District



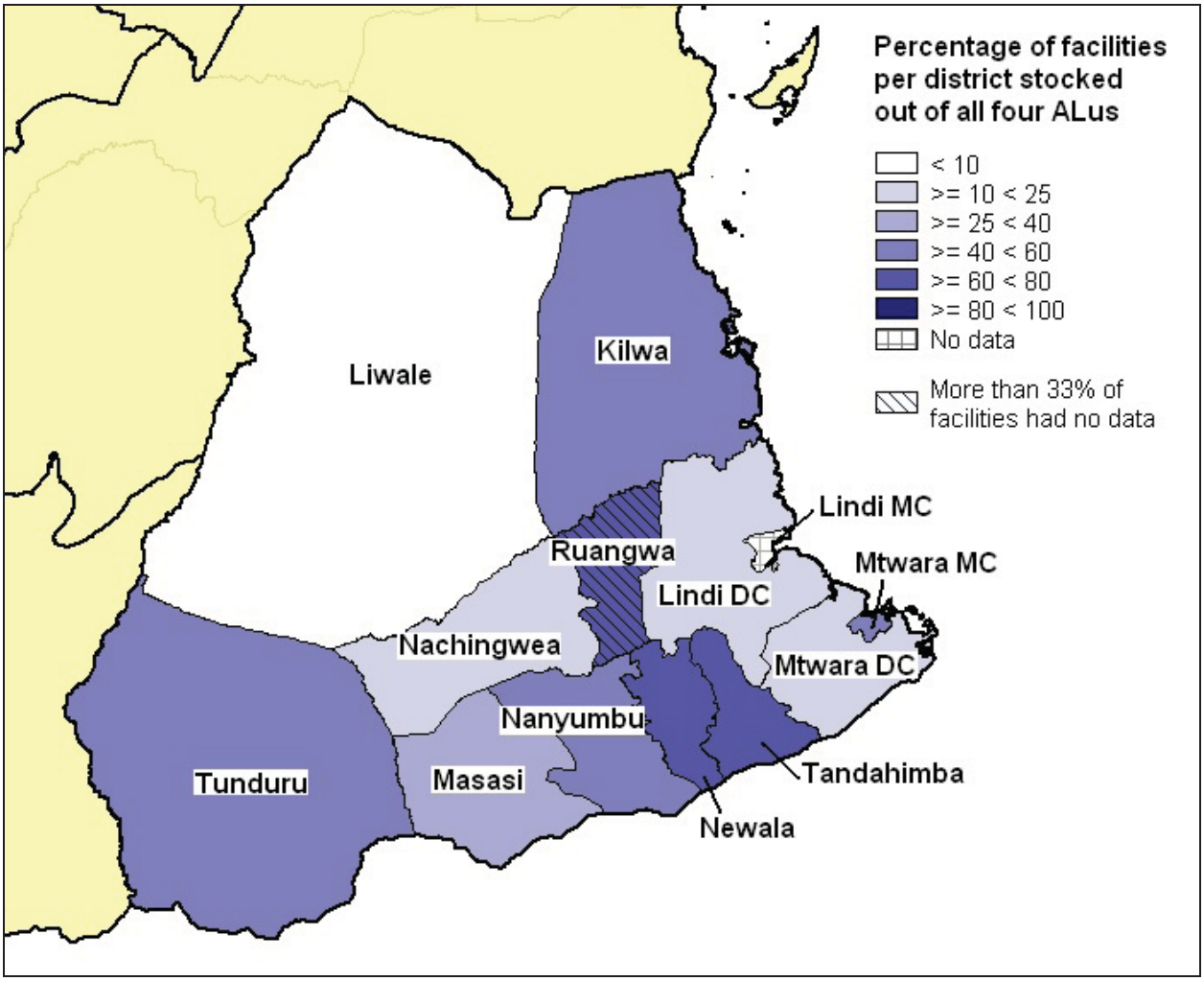
Appendix H

Commodity Availability in Mtwara Zone

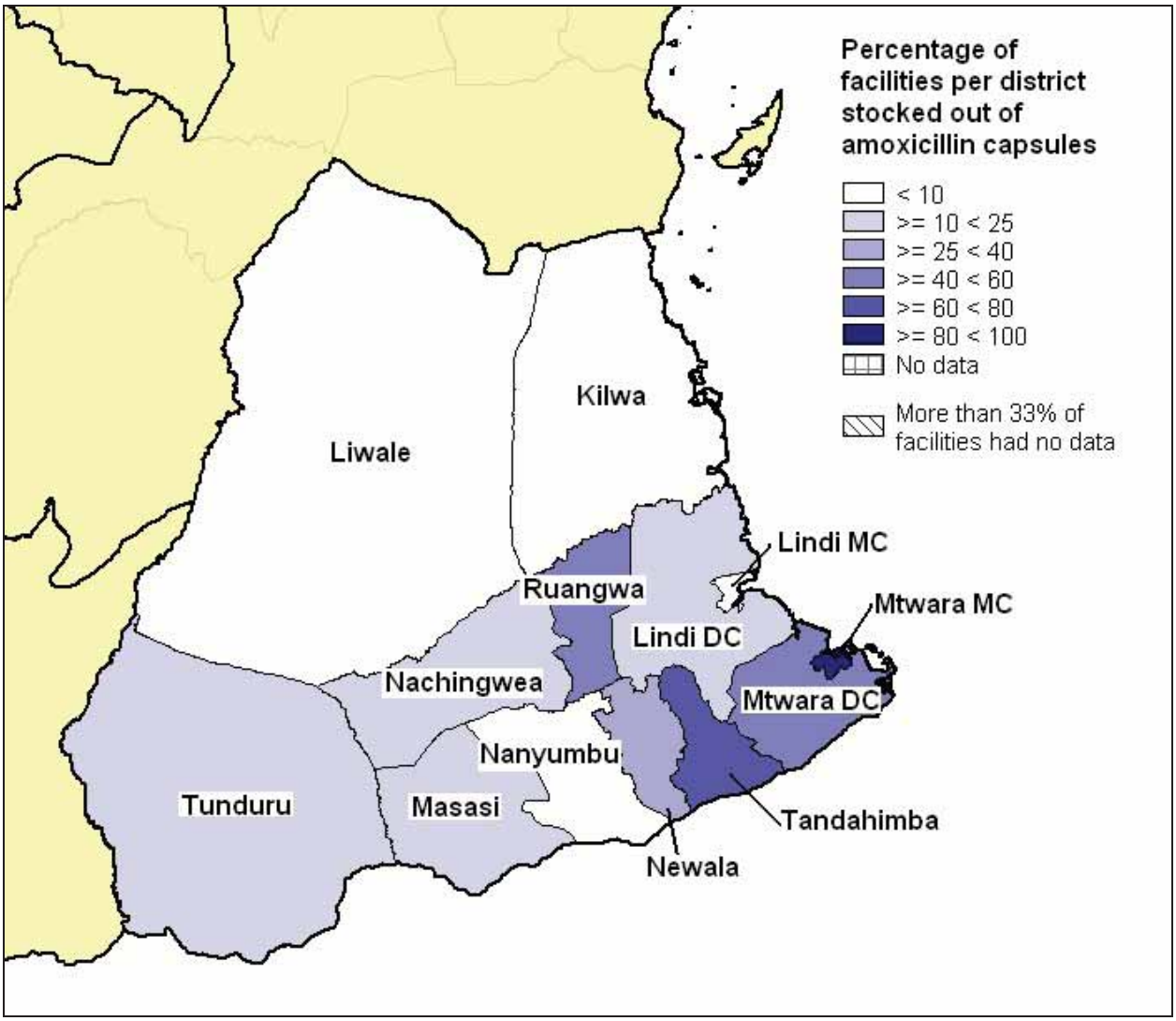
Percent Availability of Combined Oral Contraceptives and Injectables by District



Stockout of all Four ALu Presentations by District



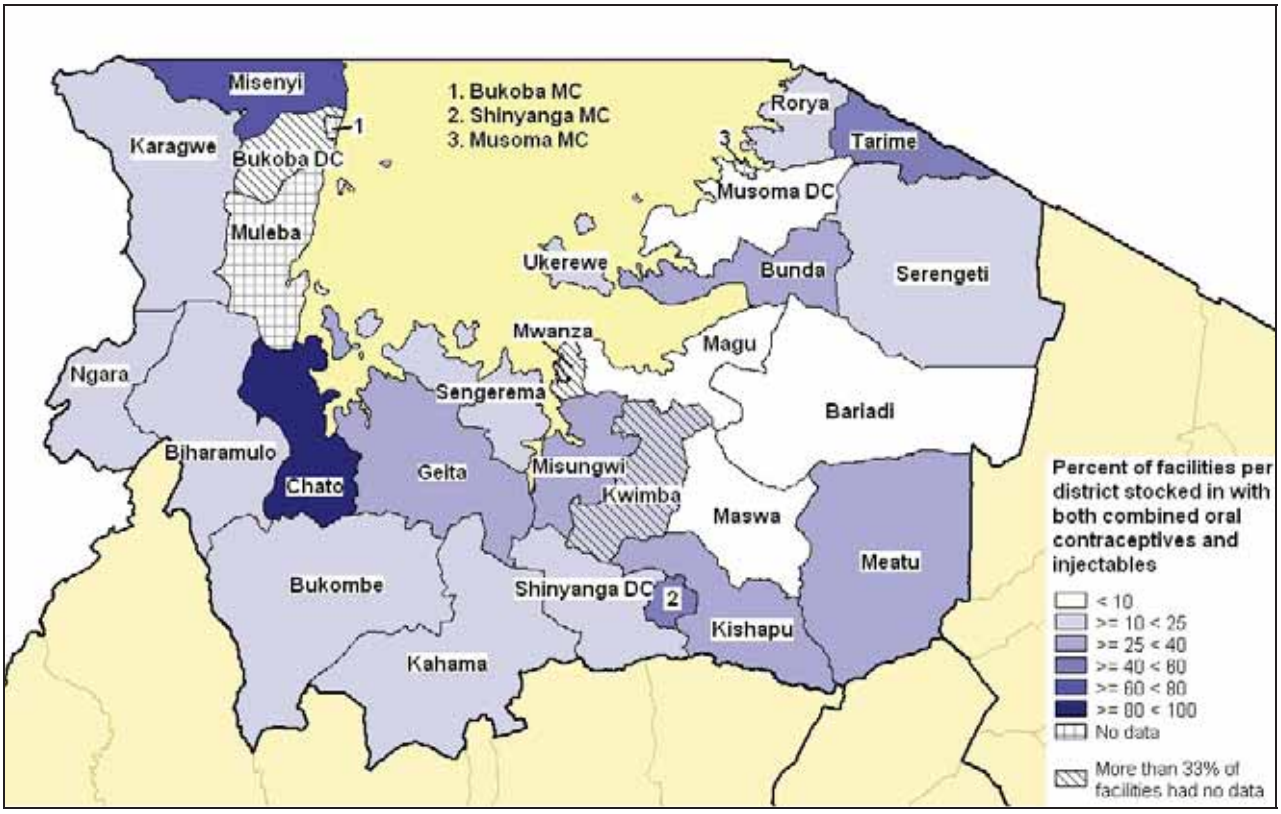
Stockout of Amoxicillin Capsules by District



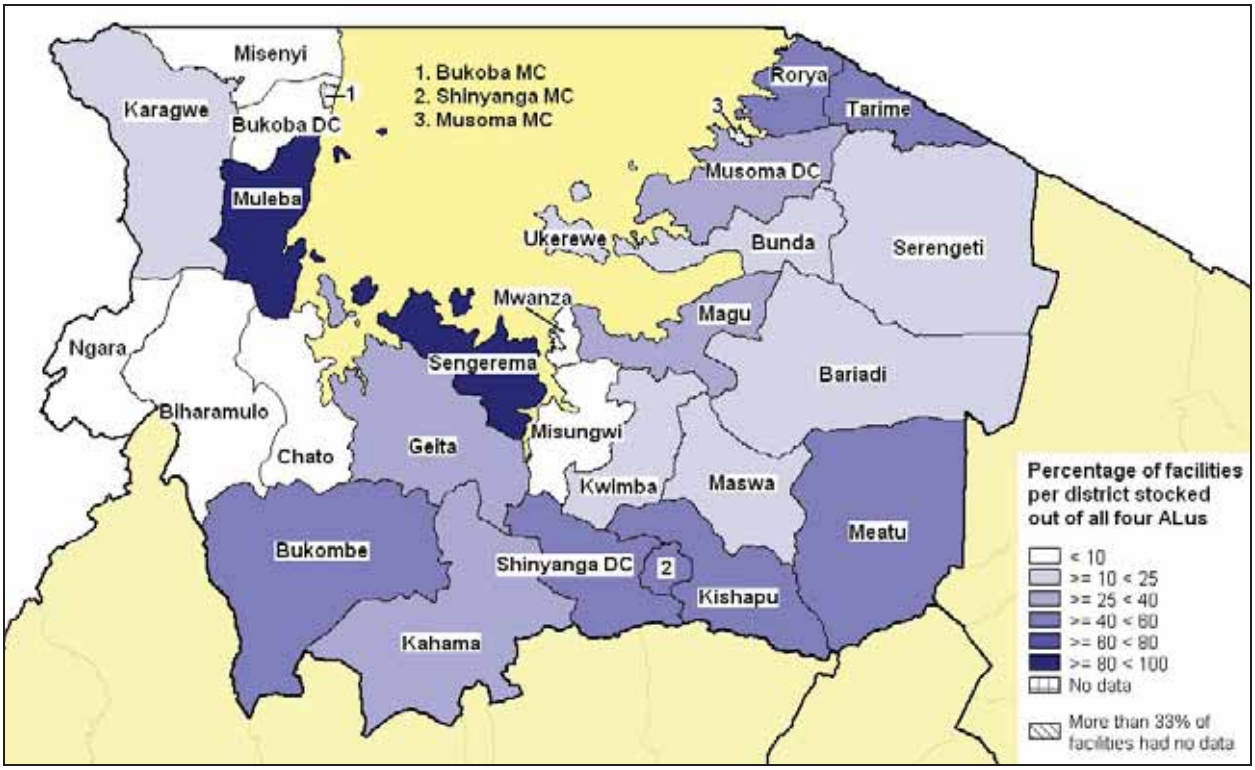
Appendix I

Commodity Availability in Mwanza Zone

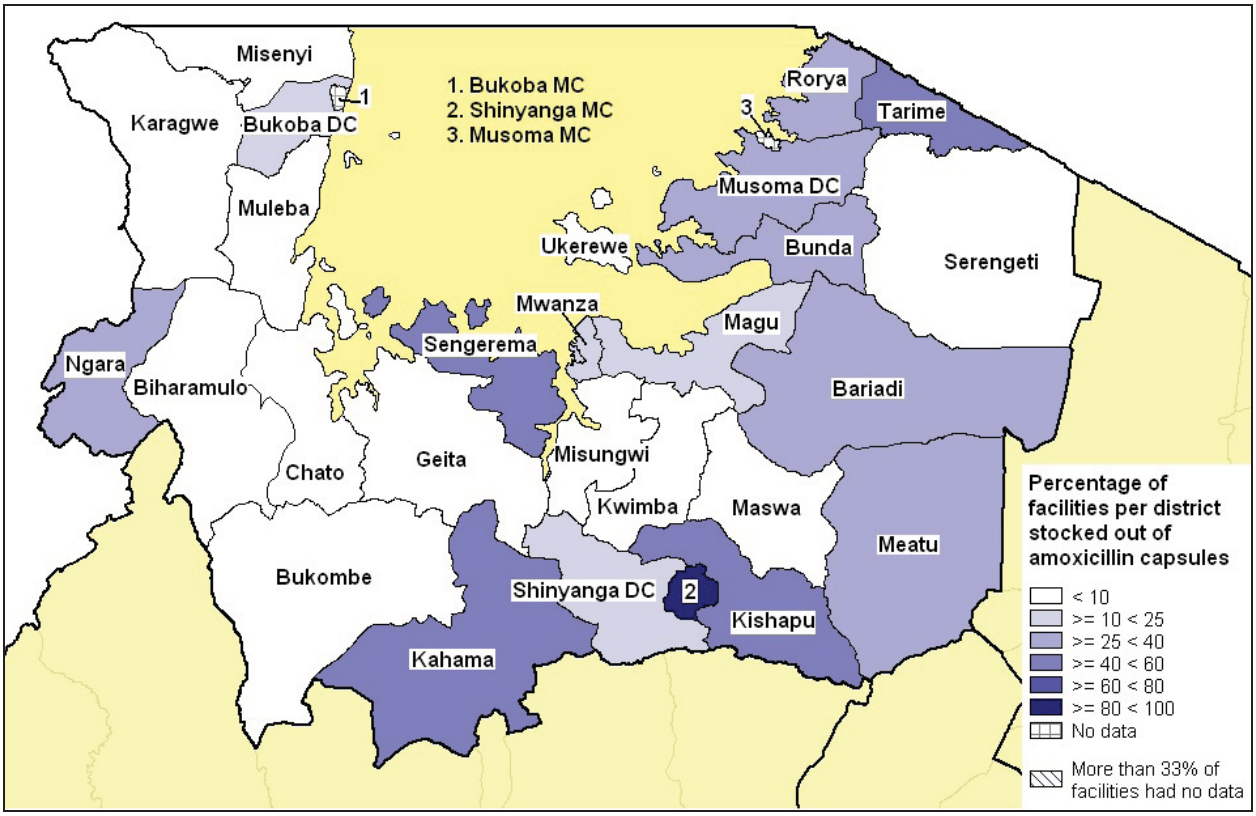
Percent Availability of Combined Oral Contraceptives and Injectables by District



Stockout of all Four ALu Presentations by District



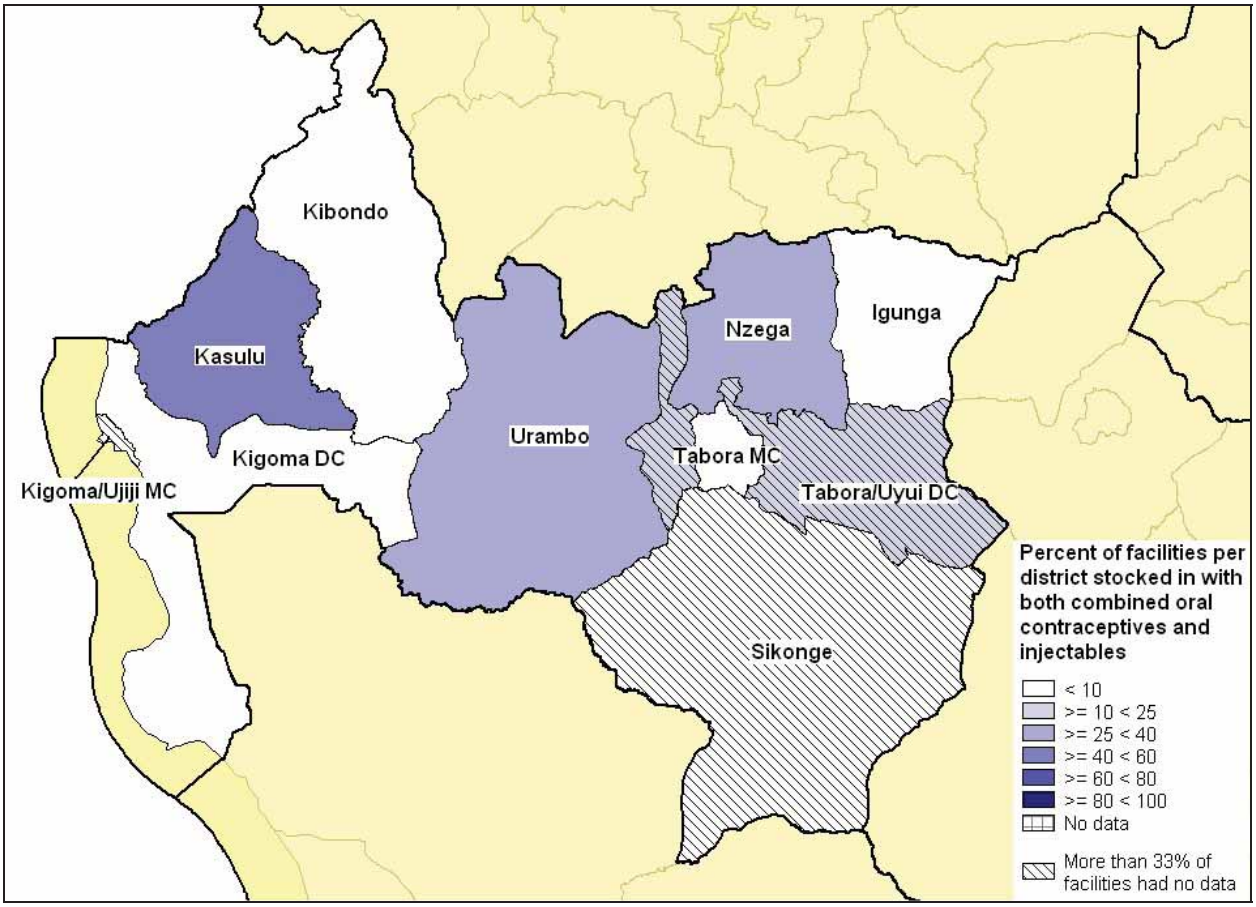
Stockout of Amoxicillin Capsules by District



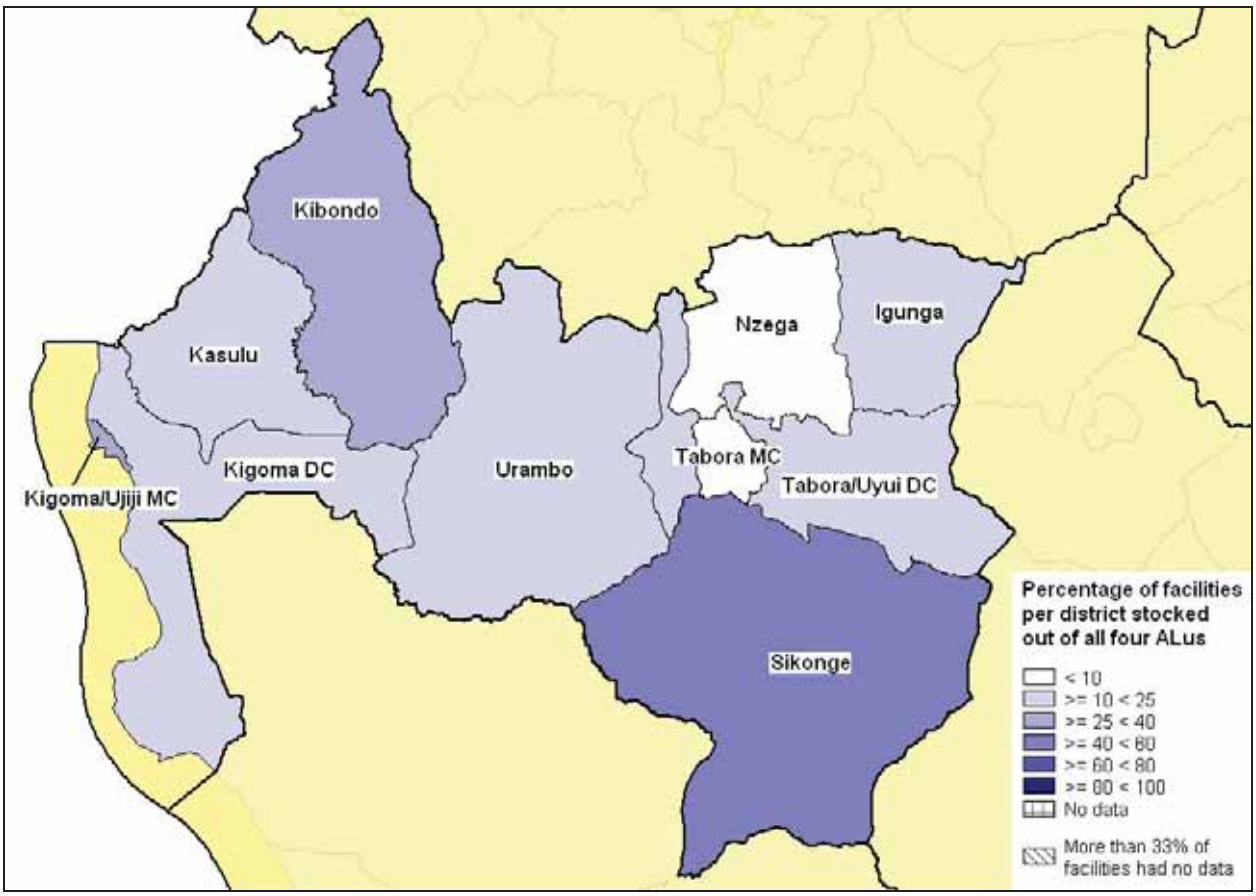
Appendix J

Commodity Availability in Tabora Zone

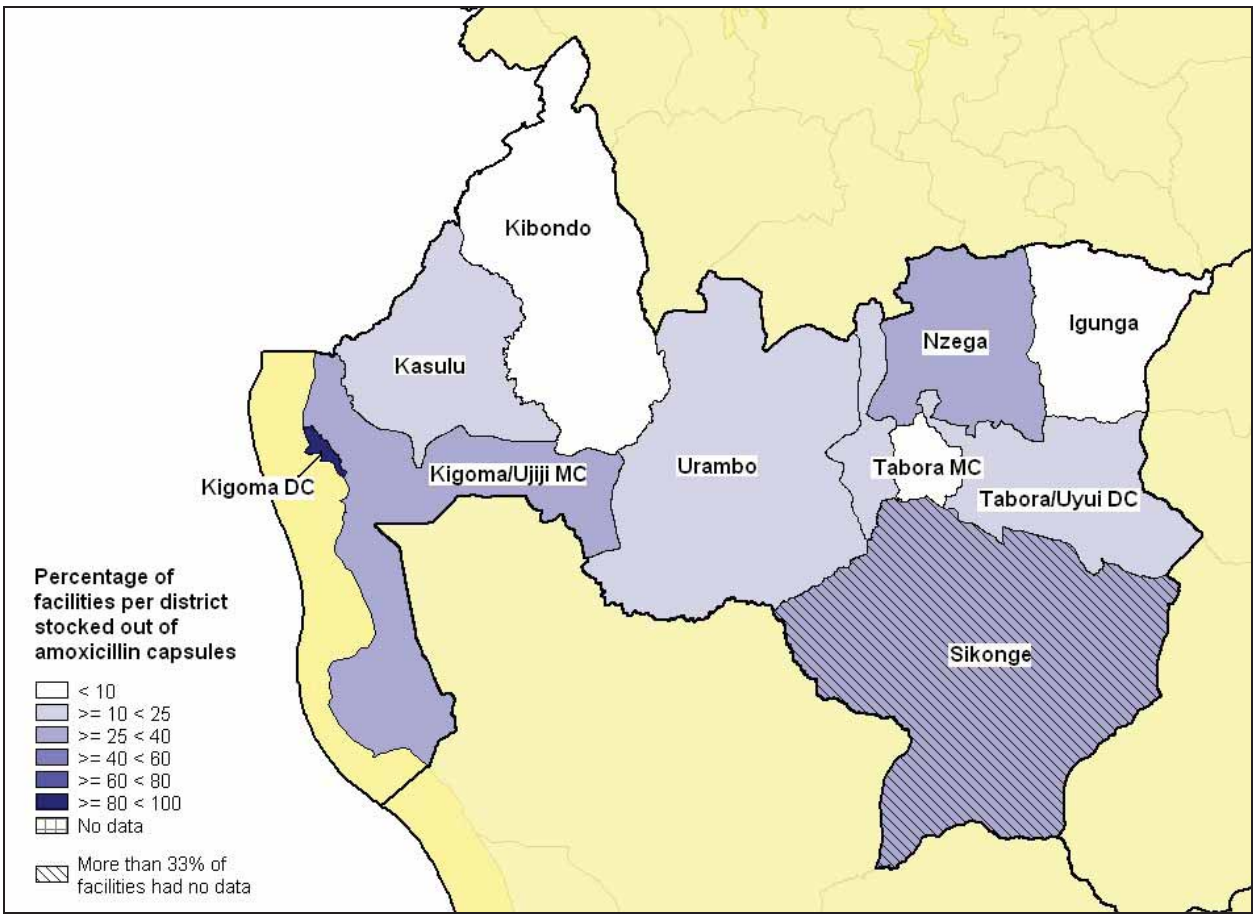
Percent Availability of Combined Oral Contraceptives and Injectables by District



Stockout of all Four ALu Presentations by District



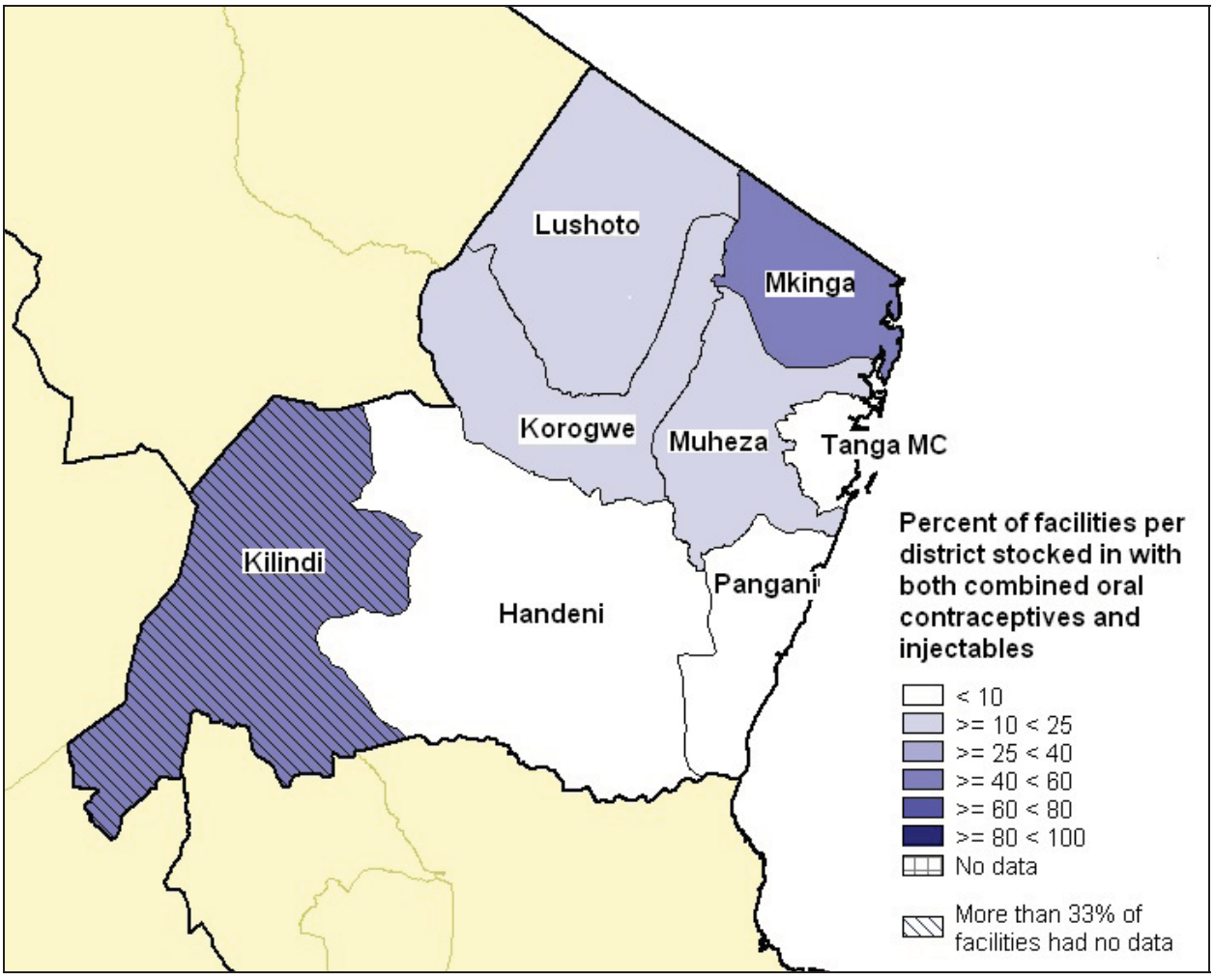
Stockout of Amoxicillin Capsules by District



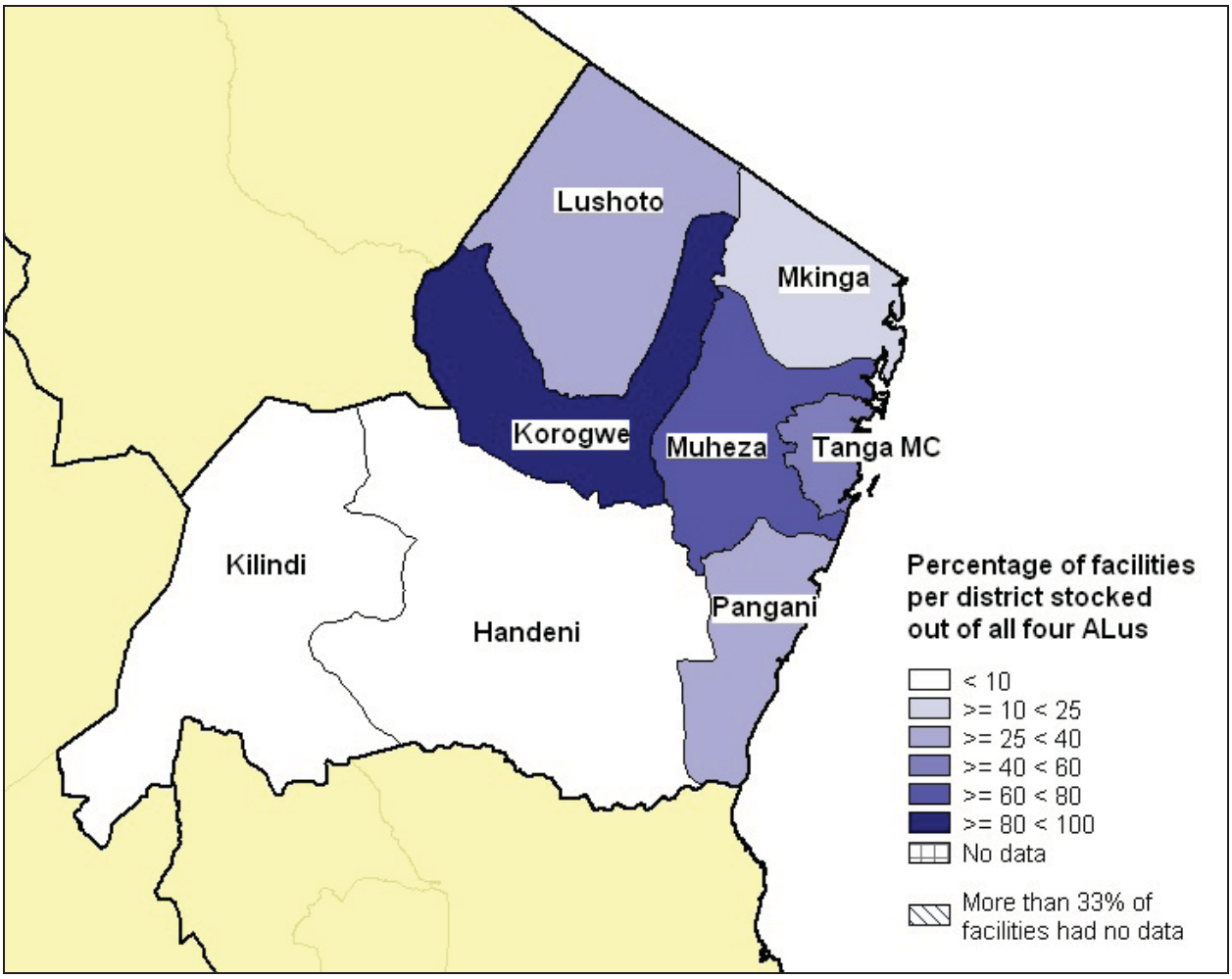
Appendix K

Commodity Availability in Tanga Zone

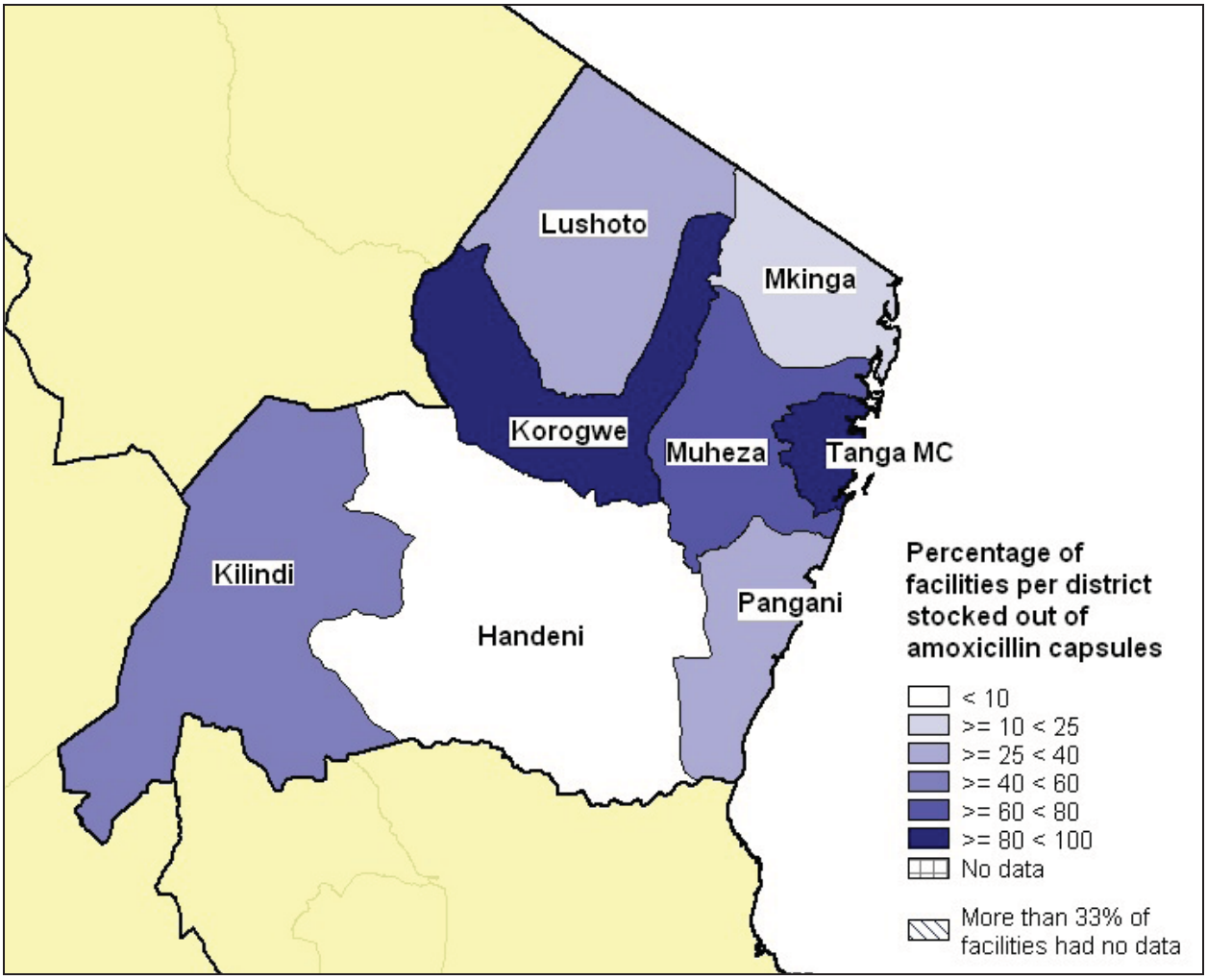
Percent Availability of Combined Oral Contraceptives and Injectables by District



Stockout of all Four ALu Presentations by District



Stockout of Amoxicillin Capsules by District



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