

Tanzania District Health Assessment 2008–2009

Summary Report



National Institute for Medical Research
(NIMR) Tanzania

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2011

Preface and acknowledgements

This summary report presents the results of a survey of 15 districts conducted during March 2008 to October 2009, and referred to as the District Comprehensive Assessment (DCA). The study included 13 districts on the Mainland and two on Zanzibar. The study was part of a larger multi-country study involving 18 countries, aiming to evaluate progress made in the context of scaling up against AIDS, TB and malaria. The exercise was supported by the Global Fund and its in-country partners.

The 15 districts were carefully selected to represent a broad spectrum of health interventions, environmental, epidemiological and socio-economic conditions in Tanzania. Field work included a household survey, a facility census, and record reviews for all districts. For the two Zanzibar districts, the work was implemented in close collaboration with the Zanzibar Malaria Control Programme (ZMCP).

A national steering committee was established to oversee the design, contents and implementation of the survey: the Global Fund five year Impact Evaluation Task Force under its Chairman and Vice Chairman, Donan Mmbando and Meshack Massi, respectively, and its core sub-committee, namely Godfrey Somi of National AIDS Control Programme (NACP), Peter McElroy of US President's Malaria Initiative, Dar-es-Salaam and Mandike of the National Malaria Control Programme (NMCP), Tanzania.

The study was made possible by many people, both international and national, but mostly local people throughout the study districts. In one way or another, many with different experiences and expertise were brought together, to play various important roles to make such a complex data collection exercise a success.

This study was executed by the National Institute for Medical Research (NIMR), coordinated by Bertha T.A. Maegga, assisted by Edith O. Lyimo, and the seven team leaders, namely: Mark Urassa (Mwanza), Godwin N. Nkya (Tabora), Andrew M. Kilale (Muhimbili), Akili K. Kalinga (Tukuyu), Filemoni Tenu (Amani), Stella P. Kilima (NIMR Headquarters), and Mwinyi A. Khamis from the Zanzibar Malaria Control Programme. The data management team, headed by Kesheni P. Senkoro, was comprised of Raphael Isingo, Calvin Sindato, Twaha Mlwilo, Benjamin Mayala, Elias Emanuel, John Mduda, Gharib S. Gharib and Bilali I. Kabula. The facility census was facilitated by the local government authorities, through their respective health offices, for which the District Medical Officers (DMOs) and District Health Officers (DHOs) were extremely crucial. The District Executive Directors and their colleagues in the sub-district local government administration, right to the village level gave invaluable support, without which the extensive household surveys could not have been done. The complex data processing and analysis was done with technical assistance from WHO, for which we are very thankful. NIMR, in collaboration with WHO and SERPRO, conducted the training of the study teams prior to field data collection.

Tool review and adaptation was done by Elizabeth H. Shayo, Kesheni Senkoro, Edith Lyimo, and Geoffrey Ndayongeje; also thanks are due to those who contributed to the earlier versions of the detailed report from which this summary was extracted, namely: Leonard E.G. Mboera, Nyagosya H. Range, Julius J. Massaga, Mark Urassa, Fabian Mashauri, Togolai Mbilu, Bahati Kaluwa, Amani Shao, John J. Tesha, Basiliana Emidi and Stella P. Kilima. Background information on the three diseases of HIV/AIDS, Tuberculosis and Malaria and respective interventions were obtained from the respective programme managers and for Zanzibar, from the Chief Medical Officer. Complimentary information

on HIV/AIDS interventions was also provided by African Medical and Research Foundation and US Centers for Disease Control (CDC), in addition to the NMCP, for which we are very grateful.

Technical support was provided by the World Health Organization (WHO) (design, training, analysis and report writing), Macro International Inc., Maryland, USA (design, logistics), and SERPRO (Santiago, Chile) (training, data processing, analysis). We also extend our gratitude to NIMR centres conducting the study and the National Bureau of Statistics, especially Ahmed Makbel for cluster (Enumeration Area) sample determination and training of listing and household randomization.

The financial support of the Global Fund and in-country partners is sincerely appreciated. Part of the funding was provided by the Global Fund secretariat in Geneva, as stipulated by its Board and the Technical Evaluation Reference Group (TERG). In addition, significant funding was made available from in-country Global Fund resources, coordinated the Tanzania Commission for AIDS (TACAIDS), including the Zanzibar Malaria Control Programme (ZMCP), National AIDS Control Programme (Mainland), National Tuberculosis and Leprosy Programme , NMCP (Mainland), AMREF, PACT and Population Service International.

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Abbreviations

ACT	Artemisin combination therapy
AFB	Acid fast bacillus
AIDS	Acquired immune deficiency syndrome
AMREF	African Medical and Research Foundation
ANC	Antenatal care
ART	Antiretroviral therapy
ARV	Antiretroviral drug
AZT	Zidovudine
BCG	Bacille Clamette-Guérin immunization
CDC	US Centers for Disease Control and Prevention (CDC)
CT	Computed Tomography
CTC	Community Treatment Center
DCA	District comprehensive assessment
DHS	Demographic and Health Surveys
DOTS	Directly observed treatment, short-course
DHO	District Health Officer
DMO	District Medical Officer
DTP3	Diphtheria-tetanus-pertussis immunization
EA	Enumeration Areas
FBO	Faith-based organization
HIV	Human immunodeficiency virus
HTC	HIV testing and counseling
INH	isoniazid
ITN	Insecticide treated nets
IPT	Intermittent preventive therapy
MCH	Maternal and child health
MDG	Millennium Development Goal
MDR-TB	Multi-drug resistant tuberculosis
MOHSW	Ministry of Health and Social Welfare
MRI	Magnetic Resonance Imaging
NACP	National AIDS Control Programme
NGO	Nongovernmental organization
NHA	National Health Accounts
NIMR	National Institute for Medical Research
NMCP	National Malaria Control Programme
NTLP	National TB and Leprosy Control Programme
ORT	Oral rehydration therapy
PDA	Personal Digital Assistant
PMTCT	Preventing Mother-To-Child Transmission
SAM	Service Availability Mapping
STI	Sexually transmitted infection
TACAIDS	Tanzania Commission for AIDS
TERG	Technical Evaluation Reference Group
TB	Tuberculosis
VCT	Voluntary counseling and HIV testing
VIP	Ventilated Improved Pit
WHO	World Health Organization
ZMCP	Zanzibar malaria control programme

Introduction

Tanzania is scaling up its response to meet the Millenium Development Goals (MDG)s. These efforts should translate into better access to and readiness of services and higher levels of coverage of key interventions.

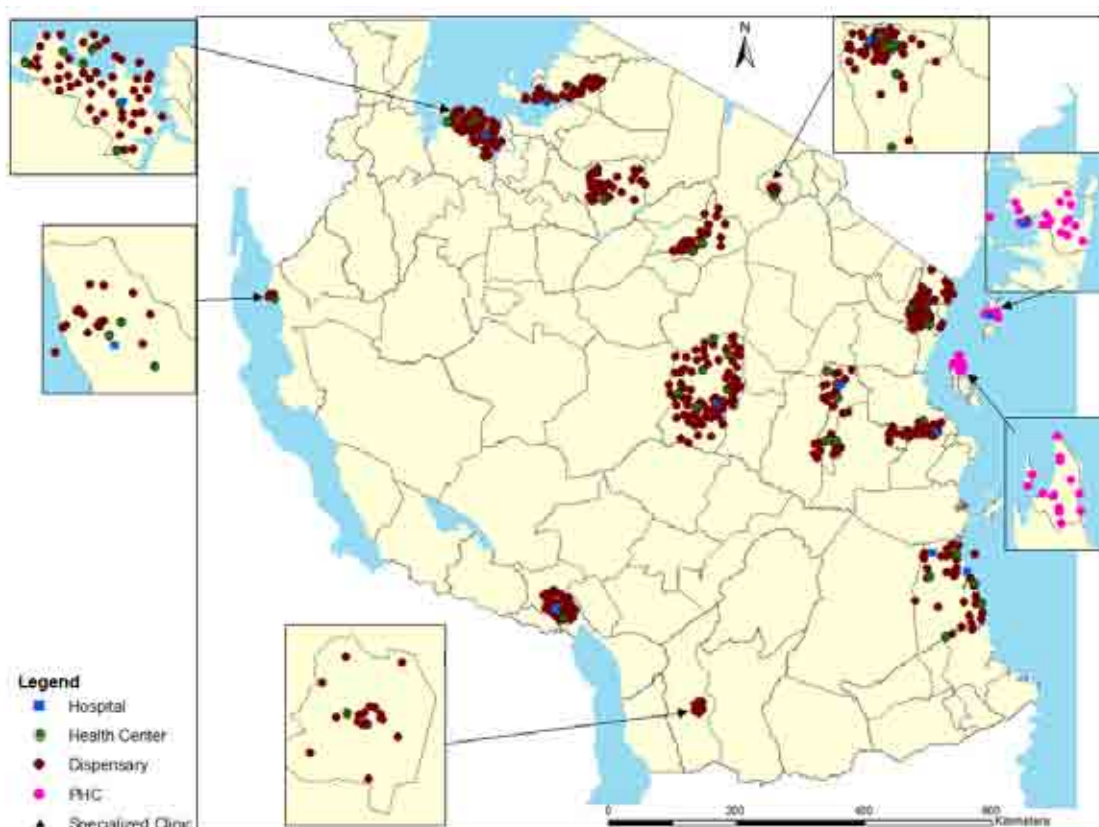
During 2007–09 the Global Fund to Fight AIDS, Tuberculosis and Malaria supported a global assessment of countries towards the MDGs with special emphasis on MDG6.

Tanzania was one of the eight countries with additional resources for primary data collection in selected districts. In addition to the study presented here, two other studies were conducted in Tanzania during 2008–09 as part of the review study: a National Health Accounts exercise, led by the Ministry of Health and Social Welfare (MOHSW) in collaboration with the World Health Organization (WHO); and a secondary analysis, led by Muhimbili University of Health and Allied Sciences in collaboration with WHO.

The field work in 15 districts spread throughout Tanzania was partly supported by the Global Fund, and in 2008, TACAIDS interest and funding enabled a completion of the field work and analysis in these districts.

The study was implemented by the National Institute for Medical Research (NIMR), with technical assistance from WHO and from SERPRO (a private software engineering company) for data processing.

This report summarizes the main findings and is supported by a full report with a more extensive description of the methods results, and survey instruments.



1. Methods

The 2008–2009 Tanzania District Comprehensive Assessment (DCA) included a total of 15 districts. The eight regional zones used by the Ministry of Health were the first level of geographical groupings for district selection. The rural/urban break-down of the Tanzanian mainland population is 77% rural and 23% urban. In order to reflect similar distribution in the selection of the 13 mainland districts, three mostly urban and 10 mostly rural districts were selected. The remaining two districts were selected to represent the islands, Kaskazini A in north Zanzibar and Wete in North Pemba.

The 15 districts covered a population of about 4.5 million people, about 10% of Tanzania's total population.

Training for data collection activities was carried out in February 2008 in Morogoro. Data collection was carried out from March to October 2008 and June to November 2009. The extended duration of data collection reflects an interruption in the flow of funding, with funds mobilized from TACAIDS to complete the remaining districts in the later period.

The following analysis categorizes districts into three groups in order to present the findings: three urban districts plus Kibaha (the latter, whose administrative classification is rural, has urban characteristics with 44% of its population urbanized); nine rural districts from the mainland; and two districts in Zanzibar.

Ethical clearance for the study was obtained from the National Health Research Ethics Committee for Tanzania Mainland and the Zanzibar Ministry of Health and Social Welfare. Permission to carry out the survey was sought and provided by the respective District Executive Directors and District Medical Officers.

1.1 Facility census

As part of the DCA, a facility census was conducted in the 15 districts to capture basic information on the availability and readiness of health services. This included an inventory of basic infrastructure and amenities, basic equipment, human resources and training, guidelines, infection control, medicines and commodities, and laboratory diagnostic capacity.

The facility assessment methodology was a census of all health facilities in the selected districts, including hospitals, health centres, dispensaries, and specialized clinics such as dental and eye clinics not attached to a particular general facility unit. All health facilities, including public, private for-profit and private not for profit, were involved. In addition to hospitals, health centres and dispensaries, it was also agreed that, since many community members buy medicines from drug outlets without medical prescription, all stand-alone pharmacies and drug shops should be included.

As far as possible, data were collected electronically using Personal Digital Assistants (PDAs) but some information was collected on paper when necessary. A listing of all health facilities and their type was obtained from the office of the District Medical Officer (DMO). The list was used to ensure data were obtained from all listed facilities, and was further updated by the team during the data collection exercise.

1.2 Household survey

The household survey, also part of the DCA, was designed to provide information in the 15 districts on intervention coverage and risk factors, as well as health expenditures to inform the National Health Accounts (NHA) exercise. The survey involved interviewing a randomly selected sample of 625 households in 25 clusters or enumeration areas (EA) per district. The individual interview was conducted with women aged between 15 and 49 years. Data were collected using pre-programmed PDAs.

The household response rate was 99.3% and the individual response rate among 9630 women aged 15–49 was 97.1%, resulting in 9355 interviews. On average, there were 624 individual interviews per district.

There were two outliers. In Meatu, multiple eligible women were identified in 625 households, resulting in 1041 interviews. In Rungwe, only 428 women were found to be eligible in 582 households and the response rate was lower than elsewhere (82%), resulting in 350 interviews. All results are weighted according to district population size.

1.3 Records review

In each of the 15 districts a records review was conducted to collect information related to the burden of HIV/AIDS, tuberculosis (TB), and malaria as reflected in in-patient diagnoses (hospital admissions), frequency of blood transfusion (malaria), and birth weight (malaria).

It also aimed to document trends in services and to validate national reported information on HIV- including antiretroviral therapy (ART), preventing mother-to-child transmission (PMTCT), and voluntary counseling and HIV testing (VCT)- and tuberculosis that was reported to the national level through routine reporting systems.

The facility records review was carried out in the selected health facilities based on services provided at the facility and availability of data which fulfilled the requirement of protocols and data collection tools.

The facility records review was conducted in 2–3 health facilities which had data for at least three years. In addition, a follow-up study was conducted to assess treatment outcomes and adherence for TB patients and people on antiretroviral (ARV) therapy.

The results of the facility records review can be found in the full report.

2. Main findings

2.1 Socio-economic characteristics of the districts

Households in urban districts and Kibaha are wealthier than rural and the Zanzibar districts, with large variation among rural mainland districts

Based on the household assets, structure of the house and type of sources for water and sanitation, a wealth score was computed, using the standard Demographic and Health Surveys (DHS) approach.

Respondents in Arusha and Songea urban districts, and to a lesser extent Kigoma urban and Kibaha, (referred to as Kigoma (U), Arusha (U) and Songea (U) in the figures hereafter) live in wealthier households.

Among the rural districts, Bunda and Rungwe have the highest wealth scores, while Dodoma, Kilwa, and Meatu have the lowest wealth scores.

Out of five respondents, one woman has at least some secondary education, three have primary education as highest level, and 1 has not received any education

The main exceptions to the overall patterns are those with more than one-third of women with no education: Meatu (51%), followed by Kilwa (43%) and Dodoma (38%) (Figure 1).

On the other hand, three districts have more than one-third of respondents with at least secondary education: Arusha (36%) and the two districts in Zanzibar.

85% of households have access to improved water sources, but only one in three households have improved sanitary facilities

In most districts, over 80% of households have access to an improved water source (i.e., piped, protected spring or well, rainwater catchment), especially in urban areas and Zanzibar. Rungwe (67%) and especially Meatu (44%) have lower access than the average of 85% for all districts (Figure 2).

Improved sanitary facilities (i.e., flush toilet, ventilated improved pit (VIP) latrine, latrine with slab) are much less common: 37% of households overall use such facilities. In the three urban districts at least 60% of households use an improved sanitary facility. At least 40% of households in the two Zanzibar districts, Kibaha and Bunda, have improved facilities, but in several districts fewer than one-quarter of households have improved facilities (Dodoma, Kilwa, Meatu, Muheza).

Figure 1. Women's education by district
By 15 districts, United Republic of Tanzania, 2008–2009

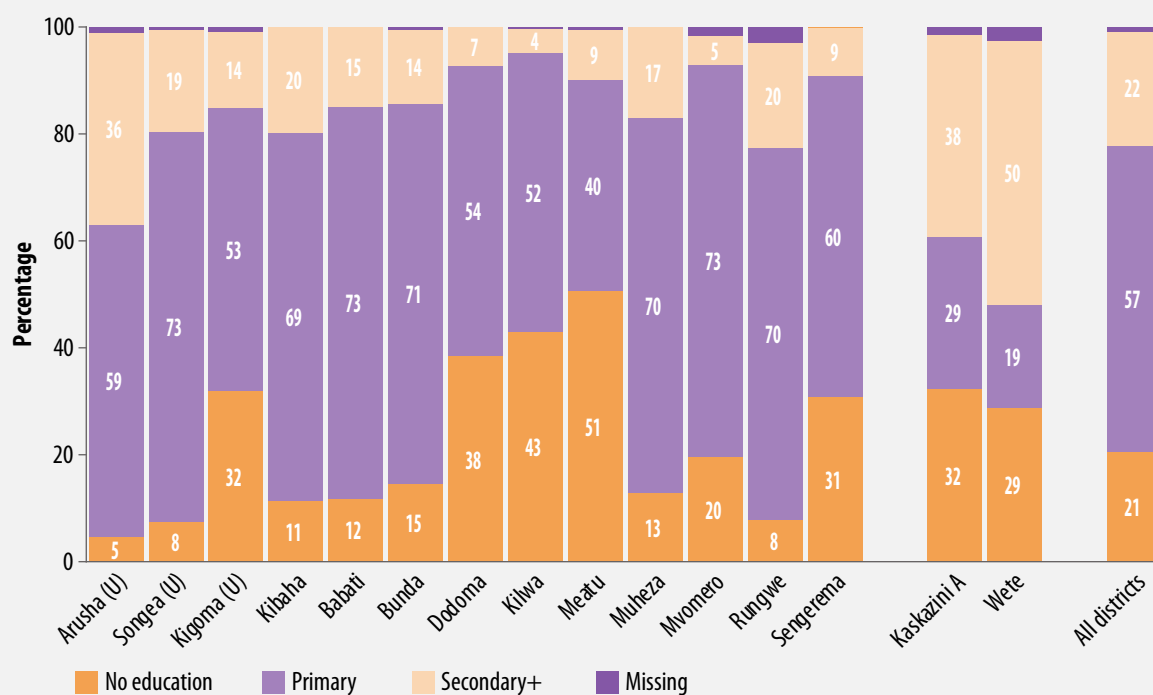
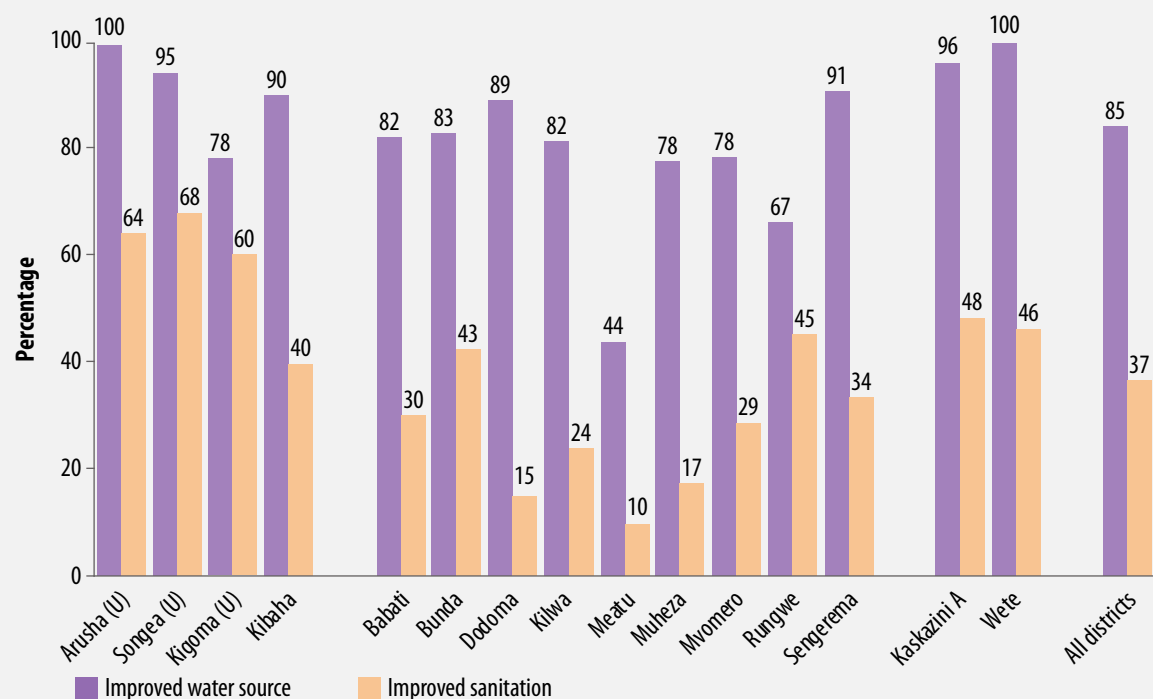


Figure 2. Percent of households with an improved water source and improved sanitation facilities
By 15 districts, United Republic of Tanzania, 2008–2009



2.2 General health infrastructure

On average, there are 1.5 health facilities for 10 000 people

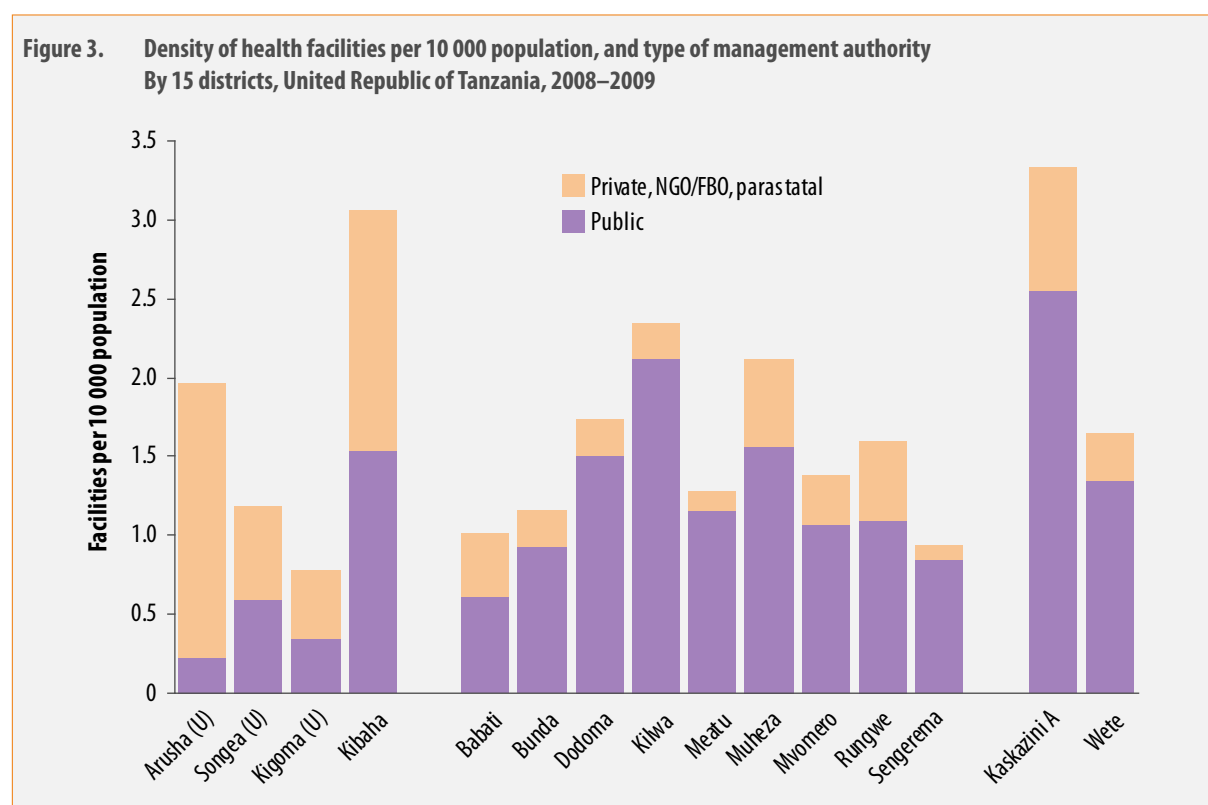
In the 15 districts, 691 health facilities were visited, including 26 hospitals, 70 health centres and 595 dispensaries. These constitute 12% of Tanzania's 5782 health facilities as reported in the 2006 Tanzania Service Availability Mapping (SAM) report, with the same distribution by type of facility (Tanzania Ministry of Health and Social Welfare 2007).¹

Overall, facility density is 1.5 facilities per 10 000 population. Density ranges from less than one per 10 000 in Sengerema and Kigoma (U) to 3.1 per 10 000 in Kibaha (Figure 3). The facility density in these districts is the same as in the 2006 SAM for the country.

Privately owned facilities are more common than public facilities in urban districts

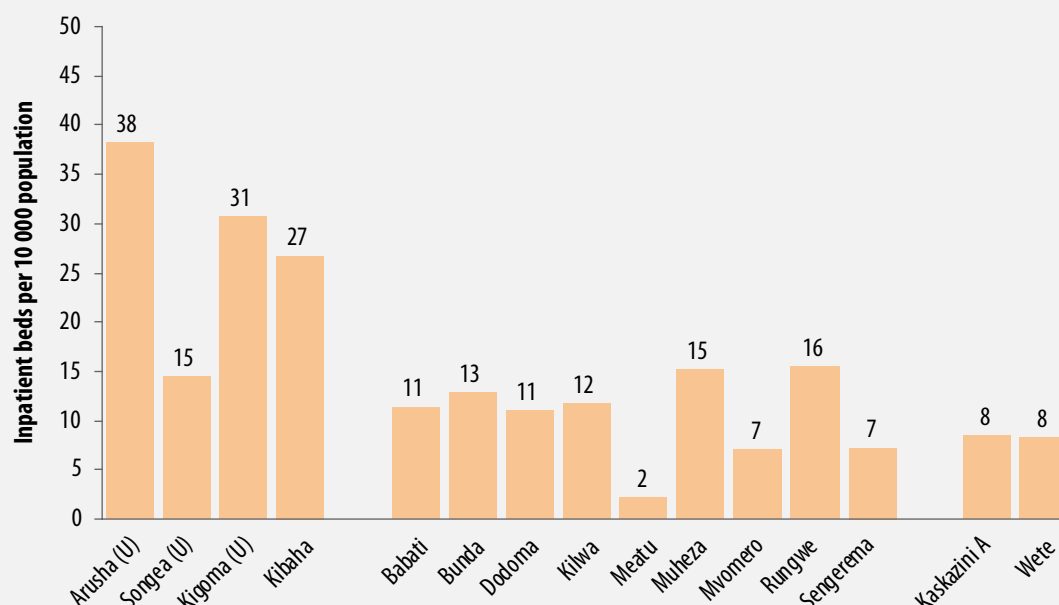
Overall, 69% of all facilities are government-owned, 8% are owned by a civil society organization (i.e., NGO, FBO), and 6% are parastatals. One in six facilities (17%) is privately owned.

Ownership varies substantially between districts. In Arusha, 77% of all health facilities are privately owned. In urban districts of Kigoma and Songea, about a quarter of the facilities are privately owned. In most rural districts, private ownership is uncommon, representing less than 10% of all facilities except in Kibaha and Kaskazini A, where it has a more important share.



¹ Ministry of Health and Social Welfare, Tanzania Mainland and Ministry of Health and Social Welfare, Zanzibar, In collaboration with the World Health Organization. 2007. Tanzania Service Availability Mapping 2005-2006. http://www.who.int/healthinfo/systems/SAM_CountryReport_Tanzania.pdf.

**Figure 4. Density of inpatient beds per 10 000 population
By 15 districts, United Republic of Tanzania, 2008–2009**



Density of inpatient beds varies at least four-fold between districts

There is no global target number of hospital beds. The range of hospital beds per 10 000 population, according to the 2010 World Health Statistics, ranges from nine in the African Region to 63 in the European Region (WHO 2010).² Overall in the 15 districts there are 14 inpatient beds per 10 000 population.³ This is higher than the national density in 2006, which was 8 per 10 000 in the 2006 SAM.

Two of the urban districts and Kibaha have much higher inpatient bed density than the rural districts (Figure 4). Rural districts that are further below average include Meatu (2.1), and to a lesser extent but still below 10 beds per 10 000 population, Mvomero, Sengerema, and the two Zanzibar districts.

There are 3–4 delivery beds per 1000 pregnant women. This is roughly equivalent to one delivery per bed, per day, per year. However, there are large differences between districts, ranging from 0.7 to 12 beds per 1000 pregnant women in Meatu and Kibaha, respectively (data not shown).

There are 13.9 maternity beds per 1000 pregnant women, ranging from five in Wete to 25 per 1000 or more in Dodoma and Kibaha. There are about four maternity beds for each delivery bed.

² World Health Organization. 2010. World Health Statistics 2010. Geneva, World Health Organization. http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf.

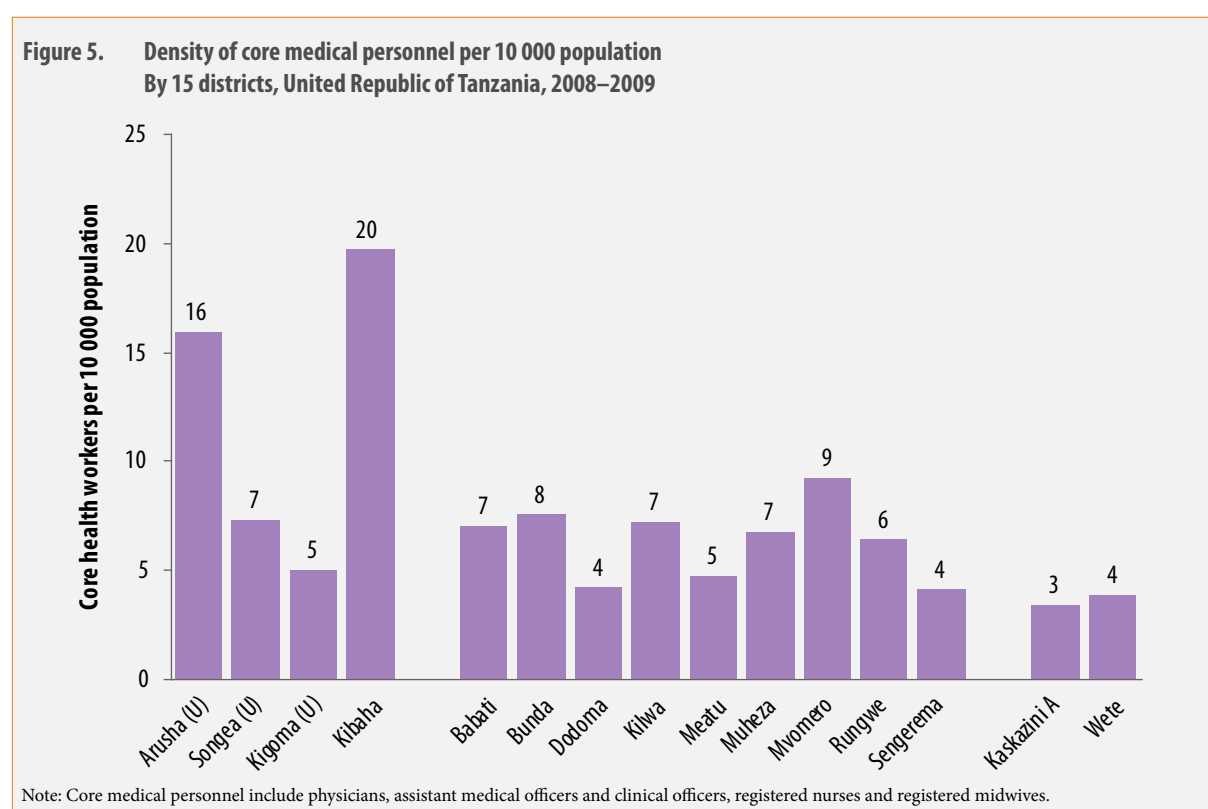
³ The WHO indicator for hospital beds per 10,000 population includes both inpatient and maternity beds, but not delivery beds. In the present analysis, inpatient and maternity beds are assessed independently.

2.3 Health workforce

Density of core medical personnel is about one-third of the WHO target of 23 per 10 000

The density of core medical professionals may be high because there are many well-staffed facilities, or because there are large hospitals where many staff are concentrated. Overall, there are 7.2 core health professionals per 10 000 population, including 0.4 physicians, 1.7 non-physician clinicians (i.e., assistant medical officers and clinical officers), 1.1 registered nurses, and 3.9 registered midwives. This is considerably below the WHO target of 23 health workers per 10 000 population. Only Kibaha and Arusha approach the target with 16–20 personnel per 10 000 (Figure 5). There are less than 5 per 10 000 in Dodoma, Meatu, Sengerema and the two districts in Zanzibar.

There is no global standard ratio of nurses to doctors. However, it is recognized that trained nurses and midwives are capable of delivering most of the minimum essential public health and clinical services, with doctors providing clinical supervision and direct care of complex issues and complications. It is suggested, therefore, that the ratio of nurses to doctors should exceed 2:1 ratio as a minimum, with 4:1 or higher ratio considered more satisfactory for cost-effective and quality care.⁴ Overall, in the 15 districts, the ratio of nurses and midwives to physicians and non-physician clinicians is 2.3:1. Using the above criteria, four of the 15 districts have an insufficiently low ratio of nurses and midwives to doctors and clinical officers.

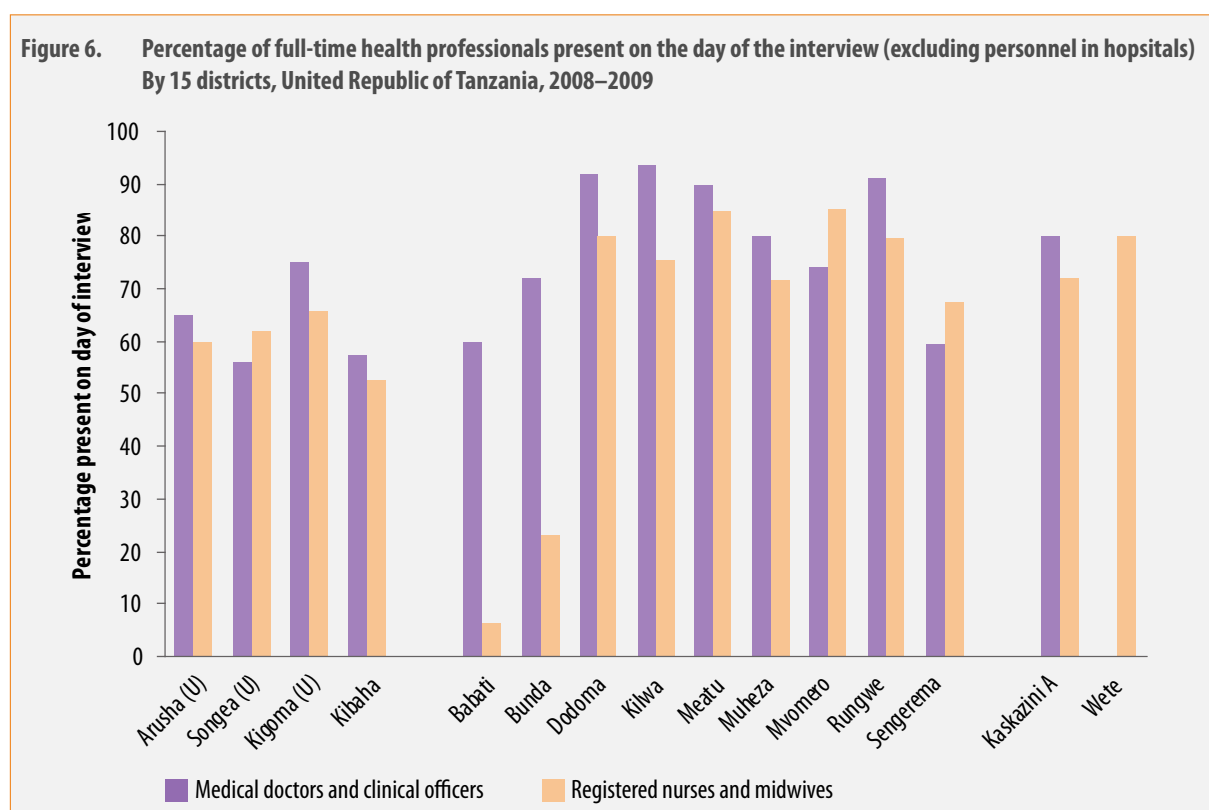


⁴ See, for example, WHO Regional Office for South-East Asia 2010 on Family Health and Research, Frequently asked questions, website accessed August 2010, <http://www.searo.who.int/en/section1243/section2167/section2173.htm#two>.

Health worker presence is low in several districts

The proportion of core health workers who are present is 71% for physicians and non-physician clinicians, and 63% for registered nurses and midwives. These figures take into account personnel in all health facilities except those in hospitals, where numerous personnel may be more difficult to count, and where personnel are more likely to be working shiftwork. Since, on any given day, the expected presence of personnel is around 75–80%, after allowing for personnel leave (e.g., vacation, sick leave) and duty travel (e.g., workshops, supervision visits), the level of overall attendance is good.

District scores, however, especially for registered nurses and midwives, show that about half or fewer are in attendance in Babati (7%), Bunda (23%) and Kibaha (53%) (Figure 6). Wete has no doctors or clinical officers outside of those employed in hospitals which, again, are not taken into account here. The level of attendance of doctors and medical officers is better than that of nurses and midwives, with most districts having at least 70% attendance, among which four have attendance of 90% or higher. It is noted, however, when hospital personnel are included in the assessment, several districts show better attendance of nurses and midwives, than by doctors and medical officers (data not shown).

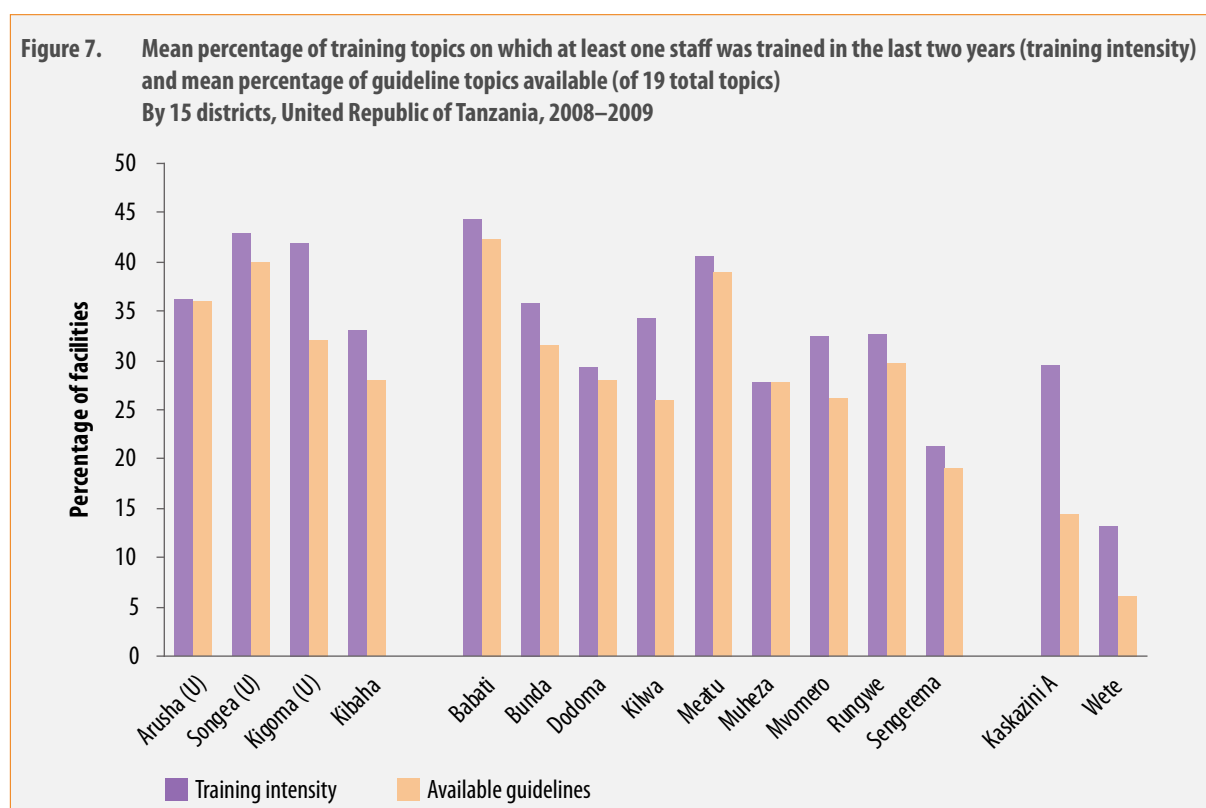


Short course training exposure and guidelines availability vary twofold between districts

The facility interview asked whether health personnel had received any short training courses in the last two years on 19 specific topics, such as PMTCT, diagnosis and treatment of malaria, and family planning. In addition, for each of these topics, facilities were asked whether the respective guidelines were available. The training intensity score is the percentage of training topics to which at least one staff member had been exposed in the last two years. A guidelines availability score was computed in a similar fashion (i.e., average number of guidelines available, by topic).

Overall, the percentage of health facilities in which at least one health worker had received training on a specific topic in the last two years is highest for malaria (64%) followed by PMTCT (51%) and HIV counseling and testing (50%).

The training intensity score in 15 districts, measured as the mean percentage of trainings received by at least one staff member out of the maximum of 19 topics in the last two years, is 33%. Average guidelines availability is slightly lower, with 28% of guidelines in facilities. Private facilities have less training exposure and guidelines development, with scores of 20% and 16%, respectively. There are considerable differences between districts, with the lowest scores for training and guidelines in Sengerema and Wete (Figure 7).



Less than one in three facilities have electricity, safe water source, and communication equipment

Health facilities in the 15 districts have the following amenities:

52% of the facilities have a source of electric power either from being connected to a national grid, or an alternate source such as a functional generator or solar power. This ranges from 12% in Kilwa to 98% in Arusha (U).

59% have a water supply from a protected source, either on-site or within 500 meters. This ranges from 2% in Meatu to over 80% in the urban districts and Zanzibar.

72% have communication means, including mostly mobile phones (65%), and less commonly, a land line telephone or shortwave radio.

13% have a functioning computer, and among those only half have internet connectivity, ranging from none in Kigoma to 24% in Arusha.

The percentage of health facilities with a source of electric power, a safe water source, and communication facilities is 30% overall and varied considerably between districts.

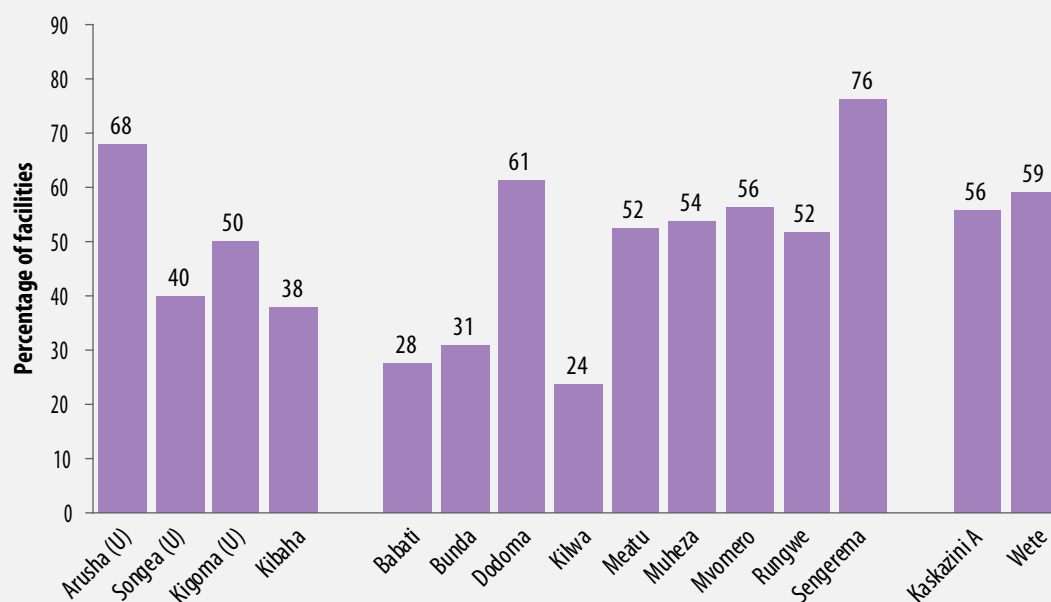
2.4 Equipment, medicines and diagnostic capacity

Basic equipment is available in about half of facilities, regardless of management type

All six items of basic equipment – blood pressure machine and cuff, stethoscope, adult weighing scale, infant weighing scale, thermometer and refrigerator – were available in 52% of facilities. This percentage is about the same in public facilities (53%) versus other facilities (50%). The variation in availability between the districts, however, is quite large with only 24% in Kilwa and 76% in Sengerema (Figure 8).

In addition, all districts have at least one ambulance, all but one district (Songea U) has an X-ray machine, and all but one (Meatu) has an oxygen machine with cylinders. Seven districts have computed tomography (CT) scan or magnetic resonance imaging (MRI) units.

**Figure 8. Percentage of facilities having all six items of basic equipment
By 15 districts, United Republic of Tanzania, 2008–2009**

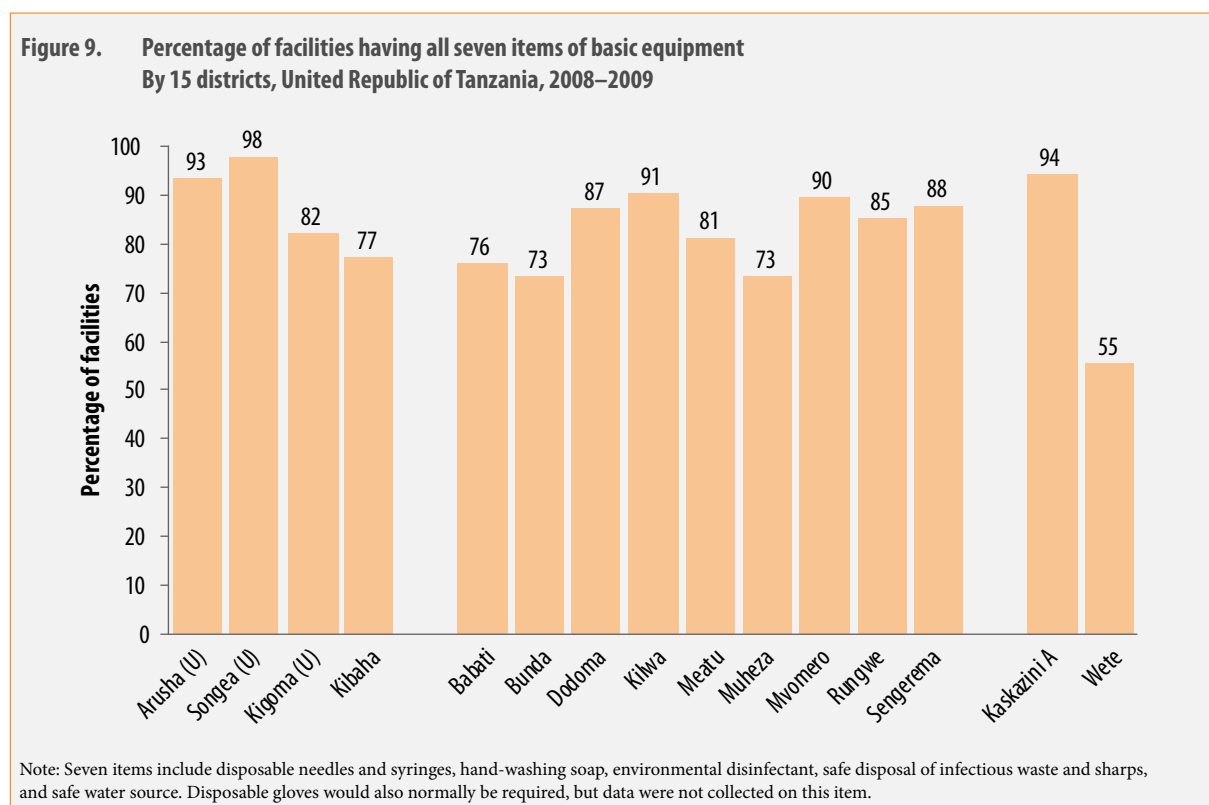


Note: Six basic items include blood pressure machine and cuff, stethoscope, adult weighing scale, infant weighing scale, thermometer, and refrigerator.

Basic items for infection control available in most facilities

The infection control score is based on seven items: stock of needles and syringes, availability of soap, disinfectant and sharps box, safe final disposal of infectious waste and of sharps, and safe water source. If all items are present then the score is 100%. Overall for the 15 districts the score is 82%, meaning roughly six out of seven items are available.

Infection control performance in rural districts is similar to that of urban districts; lower performance in rural districts is mainly due to lack of safe water source. Bunda, Muheza and Kibaha have relatively low scores, 73–77%, and Wete has the lowest score (55%) (Figure 9).



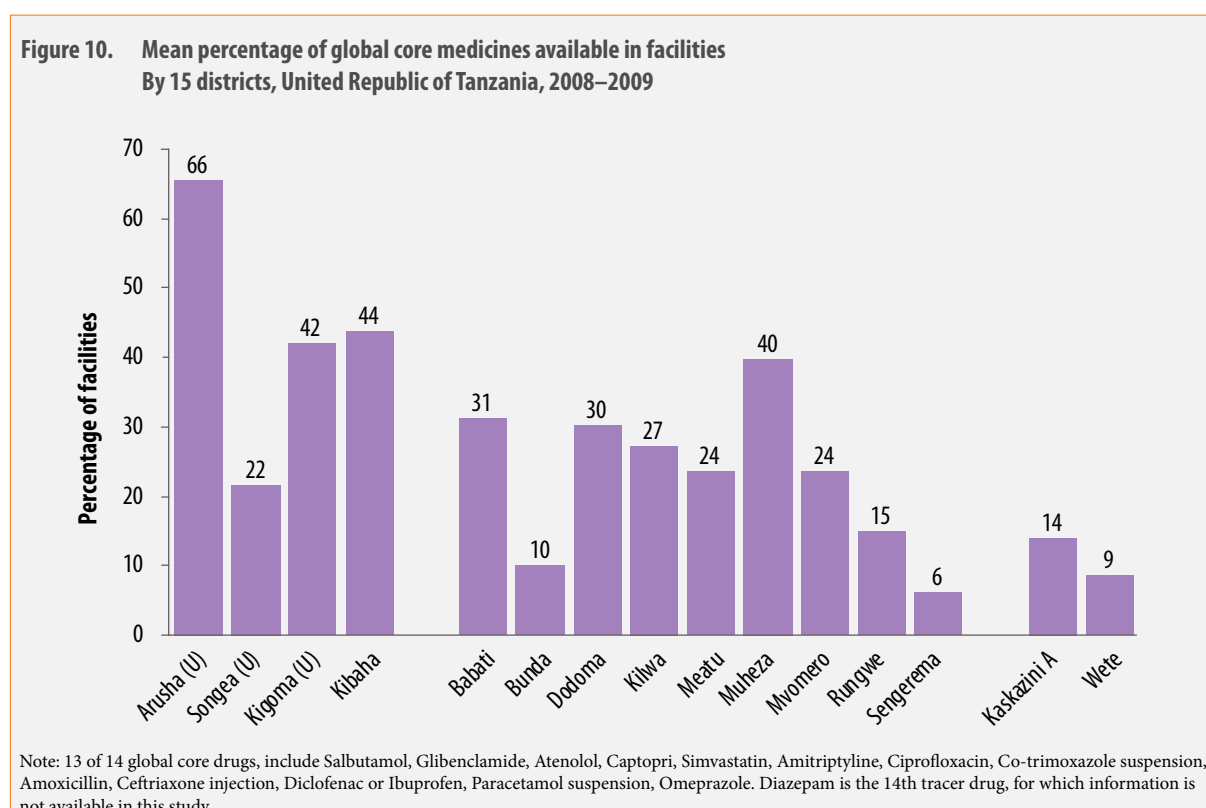
Major gaps in the availability of global core medicines, with large variations between districts

Information was collected on the availability of 13 global core medicines,⁵ including those to treat acute infectious disease, and medicines for chronic non-communicable diseases such as diabetes, cardiovascular disease, and depression.

The overall average availability of these medicines in health facilities is 29%; that is, out of the 13 medicines, a combination of only three medicines were available on the day of visit. The most common medicines available, in 50–60% of facilities, are those for treatment of infectious disease (ciprofloxacin and amoxicillin). The least commonly available drug is simvastatin for cardiovascular disease (3% of facilities), but other drugs to treat chronic illness are also rarely available, including salbutamol for asthma and glibenclamide for diabetes (10–11% of facilities), and amitriptyline for depression (12% of facilities).

On average, urban facilities have 52% of core medicines available, while rural facilities have only 23%. Similarly, private facilities, including parastatals, private-for-profit, and civil society, have 48% of drugs available, versus 21% in public facilities.

Figure 10 shows the mean percentage of 13 core drugs available in facilities in each district. Arusha is the only district where, on average, facilities have more than half of the drugs available. Kigoma, Kibaha and Muheza have 40–45% of drugs available. In three districts, Bunda and the two districts in Zanzibar, facilities have fewer than 15% of the medicines available.



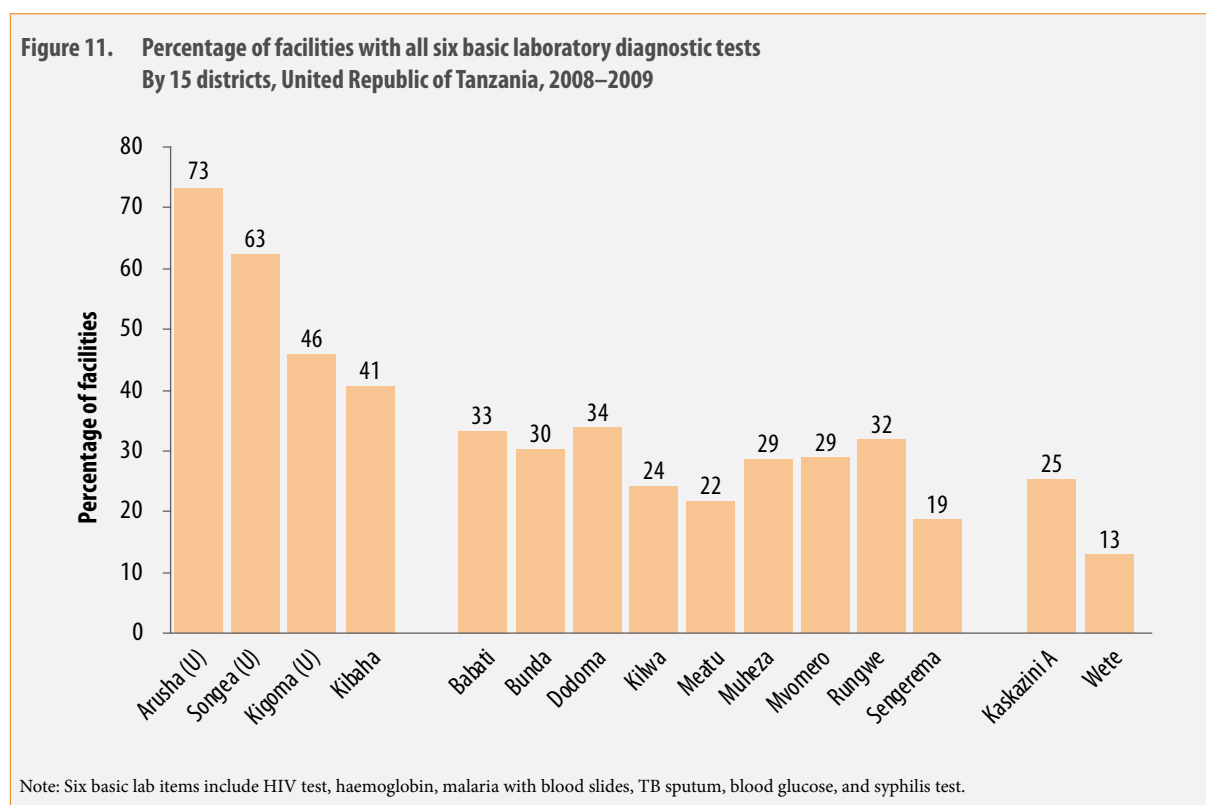
⁵ The WHO and the Health Action International defined 14 global core medicines (<http://www.haiweb.org/medicineprices/manual/documents.html>).

Basic diagnostic laboratory tests available in three out of 10 facilities

The lab diagnostic test availability score is the average number of six basic lab tests that are available in facilities. Overall, facilities in 15 districts have about two out of six tests available (35%).

The HIV test is the most commonly available test in over half of facilities (58%), followed by the syphilis test (44% of facilities). Hemoglobin and malaria with blood slides are available in about a third of facilities (35% and 36%, respectively). The least commonly available test is TB sputum (13%).

The best availability of basic labs tests is in urban districts, especially in Arusha and Songea where about four out of six tests are available. In rural districts, only one or two tests are usually available (Figure 11).



2.5 Health resources and readiness for service delivery

Districts that are more developed tend to have stronger health resource infrastructure

The following assessment determines the extent to which socioeconomic development is associated with health infrastructure, and it then plots districts in terms of their readiness to deliver services vis-à-vis the strength of health infrastructure. The units of observation are the 15 districts in the facility census and household survey.

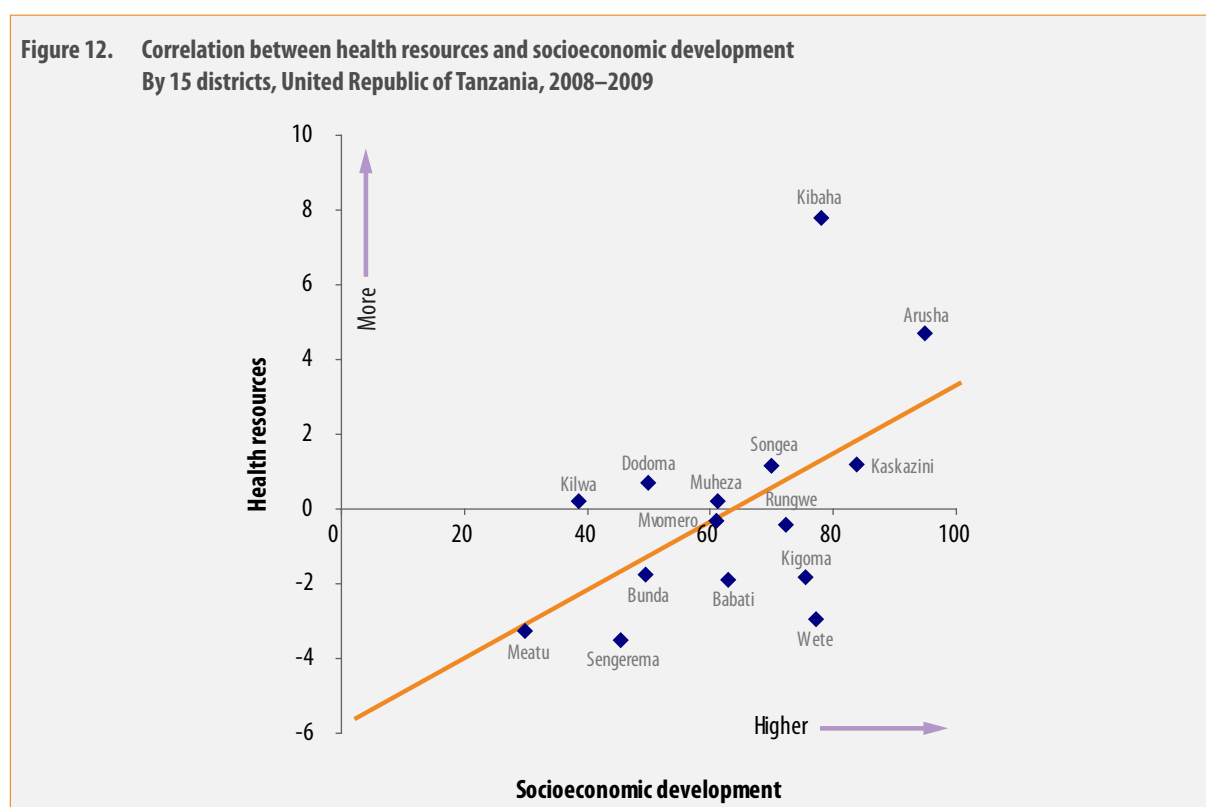
The measure of socioeconomic development is a composite variable generated from the household survey data. It averages the values for four household or individual indicators at the district level, including: average household wealth score (percent of maximum score), percent of women 15–49 with at least some education, percent of households with a safe water source, and percent of households with access to a continuous power source.⁶ The range of these composite scores between districts is 30–95%.

⁶ The wealth score incorporates information on households with safe water and power. By including them again as separate variable there is an added weight applied to these items.

The health resources strength is a composite index calculated from information collected in the district facility census. The four indicators include: health facilities per 10 000 population, inpatient beds per 10 000 population, maternity beds per 10 000 pregnant women, and core medical professionals per 10 000 population. These indicators are first converted to a common scale (i.e., z-scores), and then summed to obtain the health infrastructure index. The Pearson correlation shows a moderately strong positive relationship between socio-economic development and health resources strength ($r=0.61$) (Figure 12).

Arusha (U) and Kibaha have high scores on both socio-economic development and health resources, while Meatu and Sengerema have low levels on both.

Some districts, however, have strong health resources strength scores relative to their level of development, notably Kilwa and Dodoma, while Wete, Kigoma and Babati have a relatively poor health resources strength compared to their level of socio-economic development. It is noted that this analysis would be more robust with a larger number of paired observations; with the few district observation pairs in this example, then excluding extreme values such as Kibaha and Arusha may have an important influence on the strength of the coefficient.



Levels of health resources vary between districts from strong to weak, while levels of readiness to deliver services is more homogenous

The readiness of services index constitutes an average score for six indicators, all expressed in percentages: the percentage of facilities with all six basic equipment items, at least one trained staff in the last two years (average of 19 topics), availability of guidelines (also average of 19 topics), with all seven infection control measures, with all six lab tests, and mean percentage of 13 (out of 14) core medicines.

Readiness levels are not expected to vary significantly between public facilities if health resources are fairly distributed. For this reason, when the relationship is examined between the readiness index and socio-economic development it is found to be only weakly positive (0.37).

A factor such as the degree of remoteness, however, may affect both service readiness and health resources. For example, urban districts, such as Arusha and Kibaha, benefit from relatively strong health resources and a high level of readiness (quadrant I), while Wete is well below medians of both indicators (quadrant III) (Figure 13). It is plausible to hypothesize that other factors may play a role in introducing variation, such as the proportion of non-public facilities in a district. Non-public facilities conceivably increase the health resources score, by increasing the density of sites' personnel, but may also decrease the readiness score as they may not be recipients of organized training sessions. This is clearly not the case in the Tanzanian districts, as there are no districts in quadrant II.

**Figure 13. District readiness for service delivery and health resources
By 15 districts, United Republic of Tanzania, 2008–2009**



Note: quadrants defined by the medians, Readiness (42%), Health resources (-0.3).

3. HIV/AIDS

3.1 Introduction

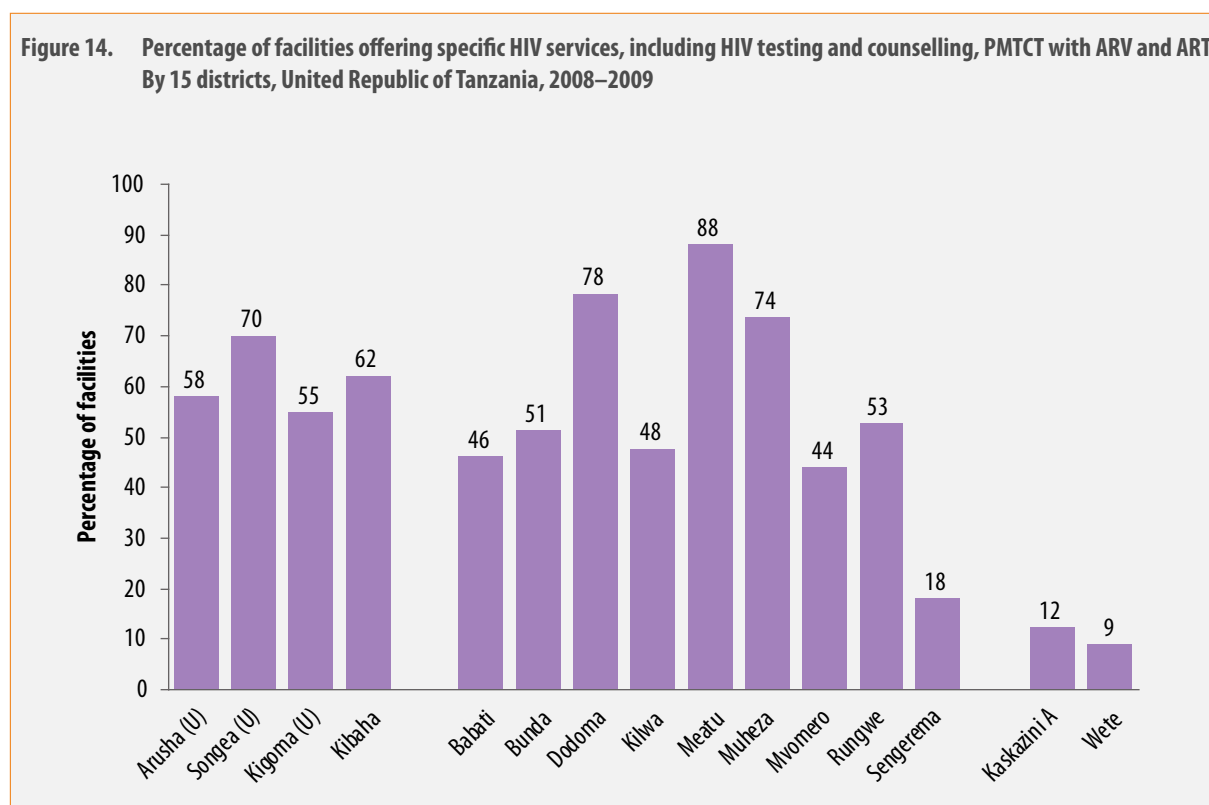
The most recent national household survey in Tanzania showed that HIV prevalence was just under 6% among men and women aged 15–49 years. In the 2007-08 Tanzania HIV/AIDS and Malaria Indicator Survey⁷ 19% of men and women had been HIV tested in the last 12 months. ARV therapy coverage was estimated at 31% for 2007. 52% of pregnant women were estimated to have been tested for HIV, and at least 53% of HIV positive women were estimated to have received antiretrovirals.

The national response has been broad-based, including a range of preventive and treatment and care activities, according to the National Health Sector HIV/AIDS Strategic Plan 2008–2012.⁸ The Plan includes a number of targets that are used to monitor progress. Such targets include 80% coverage among HIV-positive pregnant women with ARVs for PMTCT, 60% ART coverage, all community treatment centers (CTCs) screening for HIV, and all TB health facilities screening patients for HIV co-infection.

3.2 Facility assessment

In most districts, at least half of facilities offer HIV testing and counseling

Overall, about half (54%) of the 691 health facilities offer HIV testing and counseling services (HTC). In almost all districts, more than half of the facilities offer HTC services (Figure 14).



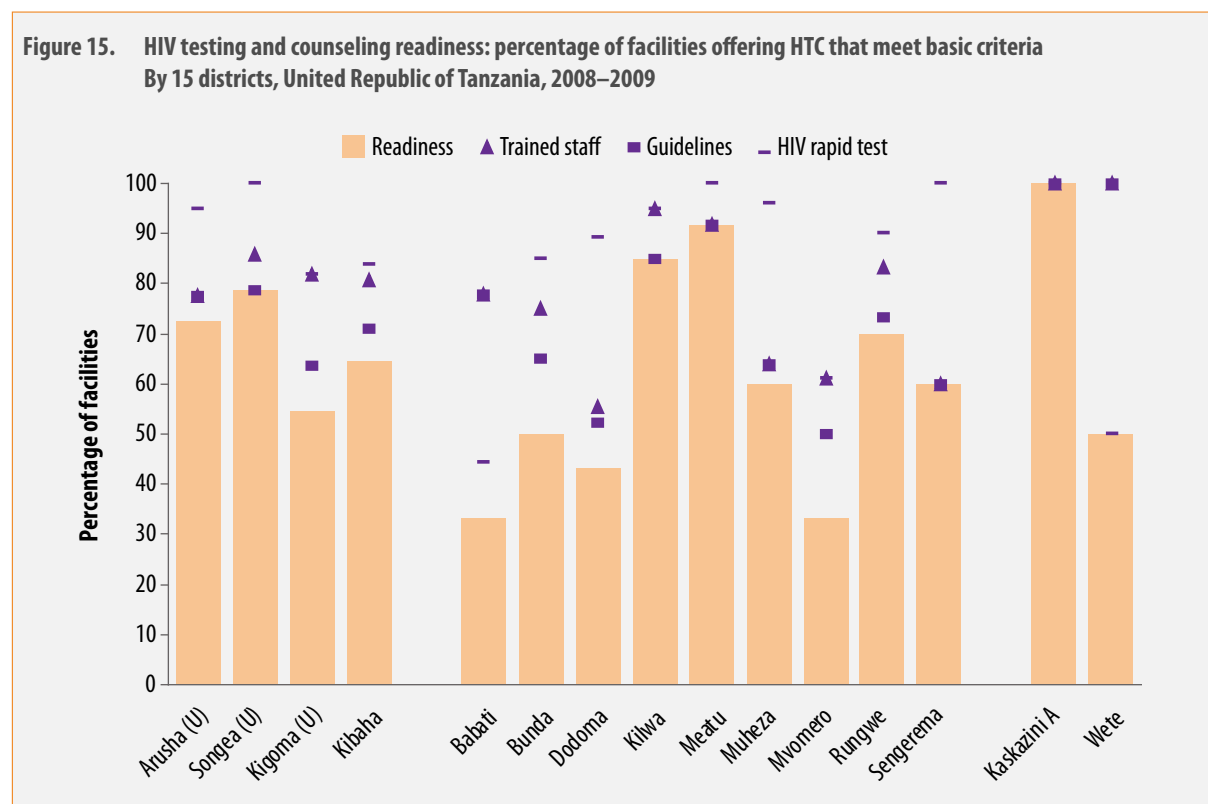
⁷ Tanzania Commission for AIDS (TACAIDS), Zanzibar AIDS Commission (ZAC), National Bureau of Statistics (NBS), Office of the Chief Government Statistician (OCGS), and Macro International Inc. 2008. Tanzania HIV/AIDS and Malaria Indicator Survey 2007-08. Dar es Salaam, Tanzania: TACAIDS, ZAC, NBS, OCGS, and Macro International Inc.

⁸ THE UNITED REPUBLIC OF TANZANIA MINISTRY OF HEALTH AND SOCIAL WELFARE–TANZANIA MAINLAND. 2007 HEALTH SECTOR HIV AND AIDS STRATEGIC PLAN HSHSP) 2008-2012

Among facilities offering HTC, readiness to provide services is above 75% in four out the 15 districts

Overall, 62% of facilities offering HTC meet the basic criteria for readiness to deliver this service. Nine out of 10 have rapid tests available and about seven out of 10 have guidelines and at least one trained staff.

Three districts, however, have a large proportion of HTC facilities that are lacking HIV rapid tests, including Mvomero (39% of facilities), Babati (66%), and Wete (50%) (Figure 15).



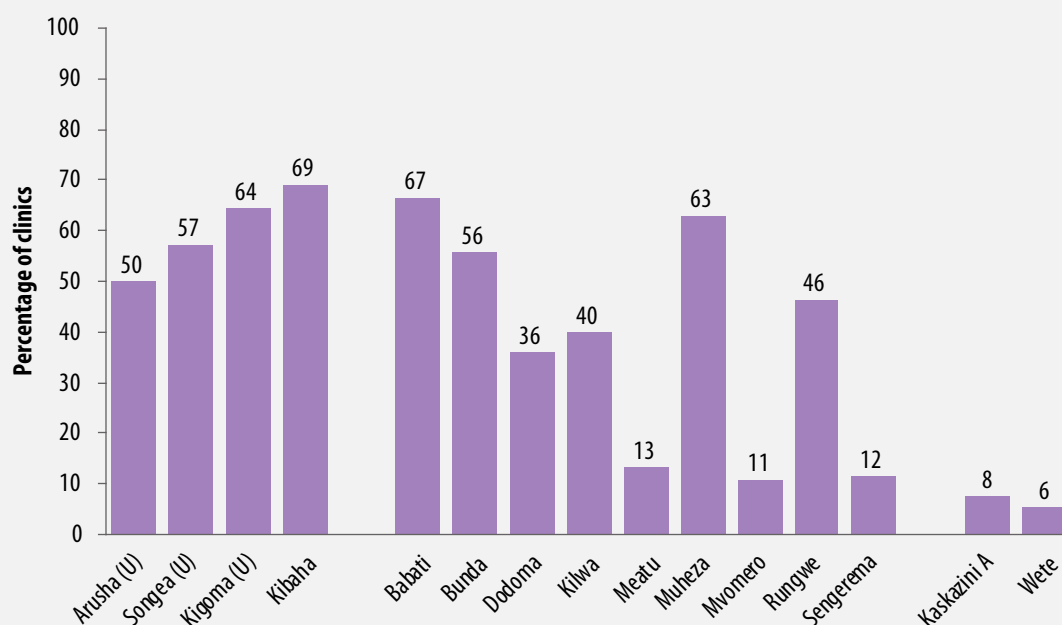
PMTCT services are offered in four out of 10 antenatal clinics, but with very large differences between districts

Eighty-three percent of all health facilities provide antenatal care services. Among those, 39% offer PMTCT with ARV prophylaxis services.

There are large differences between districts. At the high end, all urbanized districts and three rural districts (Babati, Bunda and Muheza) have at least half of all clinics that offer PMTCT services. At the lower end, five districts offer this service to less than 15%.

The extent to which antenatal clinics are offering PMTCT services is the same for public and private facilities.

**Figure 16. Percentage of antenatal clinics that offer PMTCT services
By 15 districts, United Republic of Tanzania, 2008–2009**



Compared to other HIV training topics, facilities offering PMTCT have the highest percentage of trained staff

Overall, 75% of facilities offering PMTCT meet basic criteria for readiness to deliver this service: trained staff, guidelines, HIV testing and the ARVs in stock.

91% of facilities offering PMTCT have at least one trained staff, and most of these also report having guidelines (with the exception of Mvomero). 86% have rapid tests to test pregnant women for HIV.

Babati is the only district where most facilities are lacking HIV rapid tests (68%), which also brings their readiness score down to only 32% of facilities in that district meeting the basic criteria. No facility in Wete has the PMTCT guidelines. (Figure 17).

About six out of 10 facilities offering PMTCT services have nevirapine in stock

The question about the presence of ARV drugs in stock was only asked to facilities providing ART. There are 125 health facilities that offer both PMTCT and ARV therapy services. Among those, 49 (39%) have nevirapine and zidovudine (AZT) in stock and a further 13 (10%) have nevirapine only in stock. If these figures are generalizable, then only 62% of facilities offering PMTCT services have the relevant ARV for prophylaxis in stock.

Overall, 107 out of the 691 health facilities offer ART (16%). Among the 107 facilities, 73 are public facilities, 17 are private for-profit, 15 are NGOs, and two are owned by a parastatal organization.

The number of facilities offering ART is smallest in the Zanzibar districts: one in Wete and two in Kaskazini A. Arusha has the largest number 22, and 14 of those are private for-profit facilities.

Figure 17. PMTCT readiness: percentage of facilities offering PMTCT that meet basic criteria By 15 districts, United Republic of Tanzania, 2008–2009

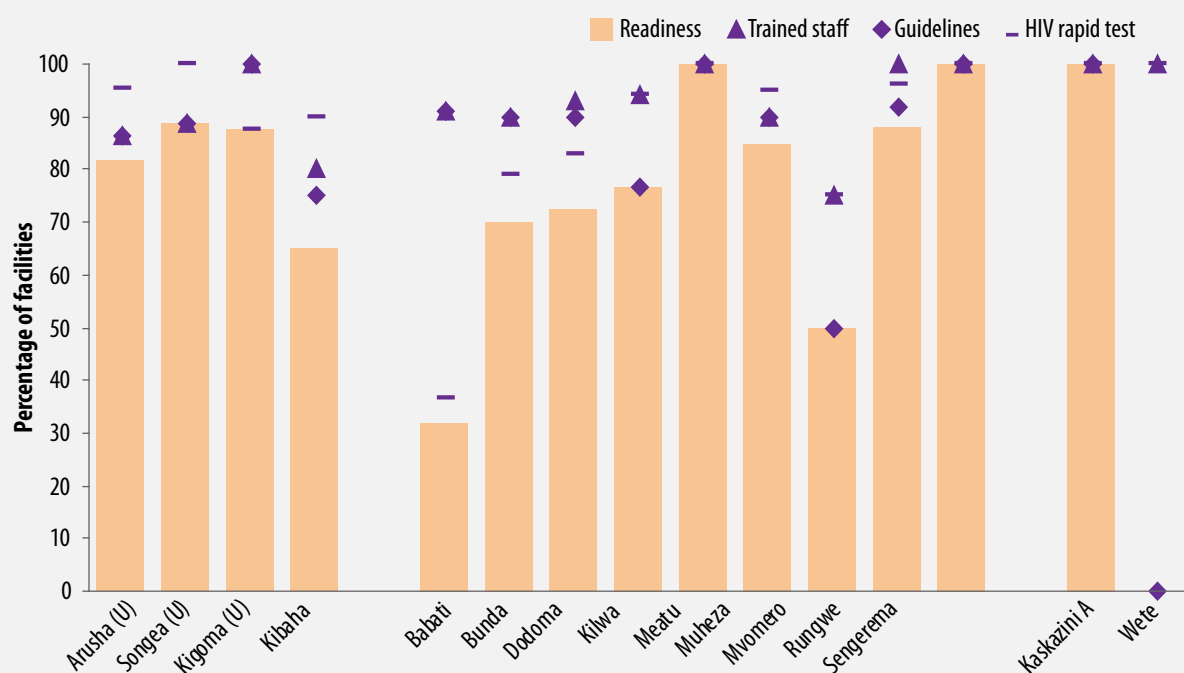
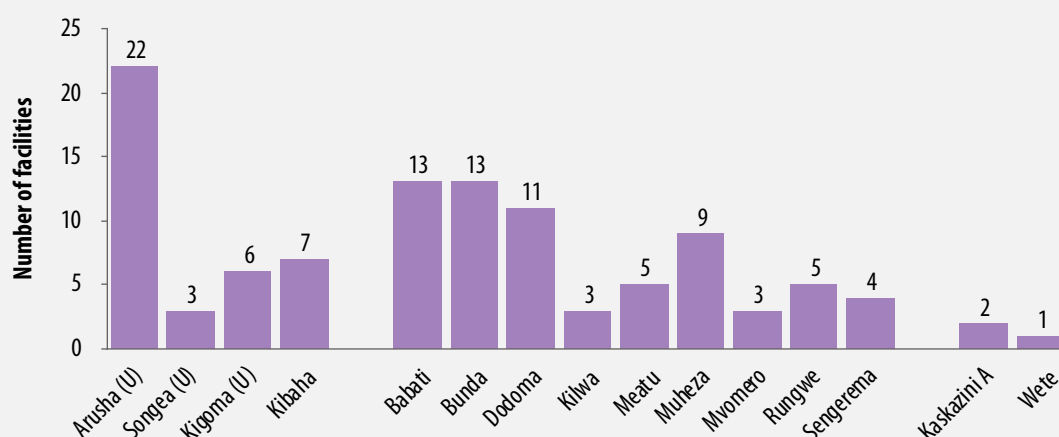


Figure 18. Number of health facilities offering ARV therapy services By 15 districts, United Republic of Tanzania, 2008–2009



Roll out of ART services by district is uneven between districts, with four fold differences among rural mainland districts

The number of facilities offering ART per 1000 HIV infected people (assuming a HIV prevalence of 5.7% among adults for mainland and 1% for Zanzibar) is 0.8 for all districts combined.

Arusha (U) and Songea (U) districts have the highest density of facilities (2.2 and 2.1 per 1000 HIV infected people), but Kigoma (U) and Kibaha do not have high density (Figure 19).

Among the rural mainland districts, Babati, Bunda and Muheza have the highest density of facilities offering ART, while Kilwa, Mvomero and Rungwe have only 0.3 facilities per 1000 HIV infected people.

The Zanzibar districts, where HIV prevalence is much lower, have higher than average densities even though there are only 1–2 facilities offering ART.

Wide variation in availability of ART first-line medicines

Overall, 44% of facilities offering ART meet basic criteria for readiness to deliver this service. Almost seven out of 10 facilities have trained staff and guidelines (in opportunistic infections), and almost six out of ten have first-line medicines available.

The urban districts do not necessarily fare better than the rural districts in terms of readiness. The facilities offering ART in Meatu and Kaskazini A, both rural districts, show high levels of readiness: 80% and 100%, respectively (Figure 20). Districts showing the lowest readiness scores, where fewer than a third of facilities are deemed adequately equipped to offer ART, include Kibaha, Babati, Dodoma and Mvomero, whereas no ART facilities in Sengerema and Wete meet minimal criteria to deliver ART services.

Figure 19. Facilities offering ART per 1000 HIV infected people (estimated)
By 15 districts, United Republic of Tanzania, 2008–2009

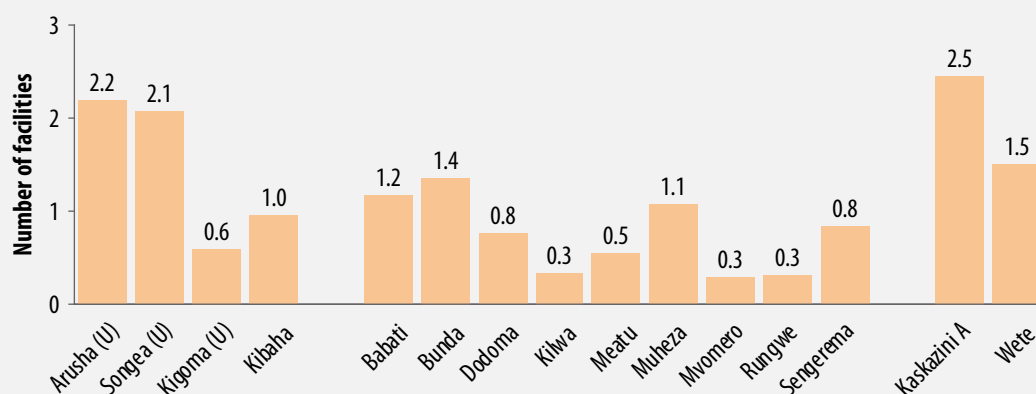
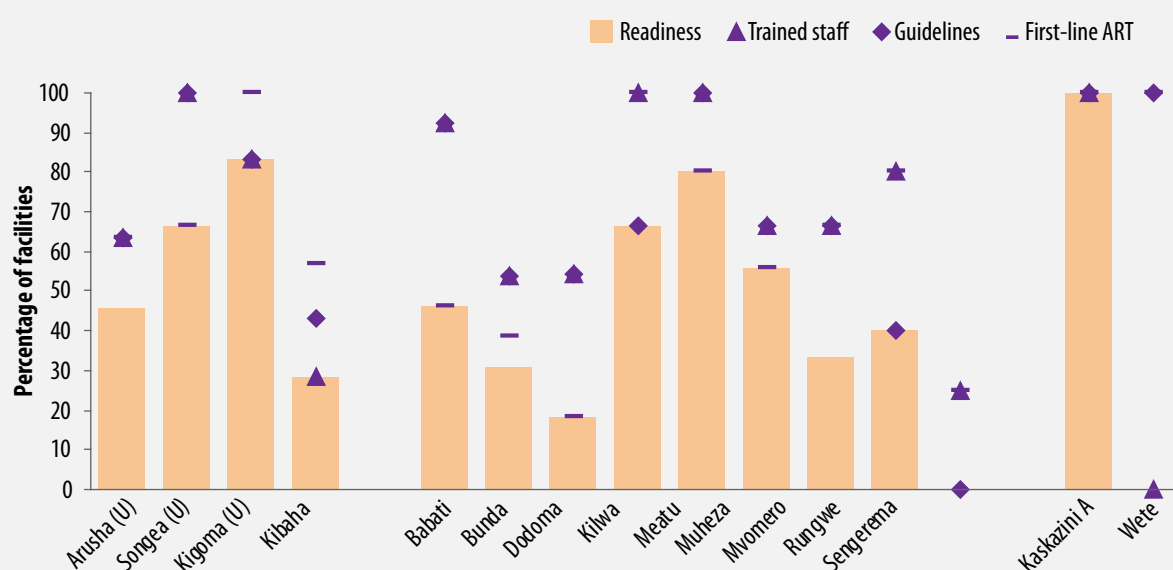


Figure 20. ART readiness: percentage of facilities offering ART that meet basic criteria
By 15 districts, United Republic of Tanzania, 2008–2009



Note: (1) d4T30+3TC+NVP=stavudine, lamuvidine and nevirapine; (2) AZT+3TC+NVP=zidovudine, lamuvidine and nevirapine (3) d4T+3TC+EFV=stavudine, lamuvidine and efavirenz (4) AZT+3TC+EFV=zidovudine, lamuvidine and efavirenz. Source: Somi et al. 2008. Surveillance of transmitted HIV drug resistance among women attending antenatal clinics in Dar es Salaam, Tanzania. Antiviral Therapy 13 Suppl 2:77–82 (note, the last regimen is also the 'default first-line treatment in Tanzania', according to 2008 National Guidelines for the Management of HIV and AIDS, p.141)

3.3 Coverage of interventions

Overall, there is good knowledge about HIV/AIDS and about where to get tested, but voluntary counseling and HIV testing (VCT) coverage is low in rural districts

Across districts, 93% of survey participants have heard about HIV/AIDS and 81% agree that a healthy-looking person can have HIV. The latter indicator statistic ranges from just 54% in Meatu and 58% in Sengerema to 92% in Arusha (U).

The majority of women know where to get an HIV test (85%), 51% have ever been tested; and 29% have been tested in the last 12 months.

There are more than two-fold differences in HIV testing uptake between districts with more than one-third of women who were HIV tested in the last year (Arusha, Songea, Kibaha, Babati and Muheza) and several rural districts with less than 20% coverage (Meatu, Rungwe, Sengerema). Also in the two districts in Zanzibar, coverage is below 20%.

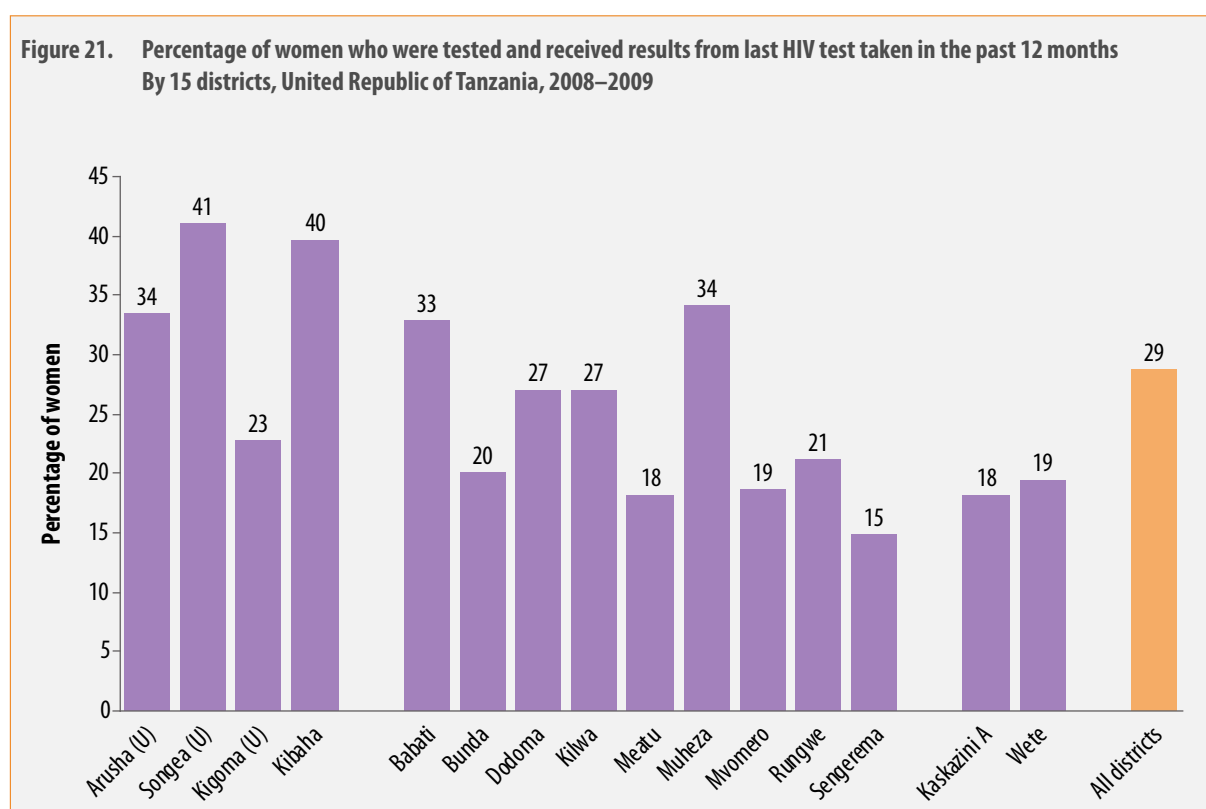
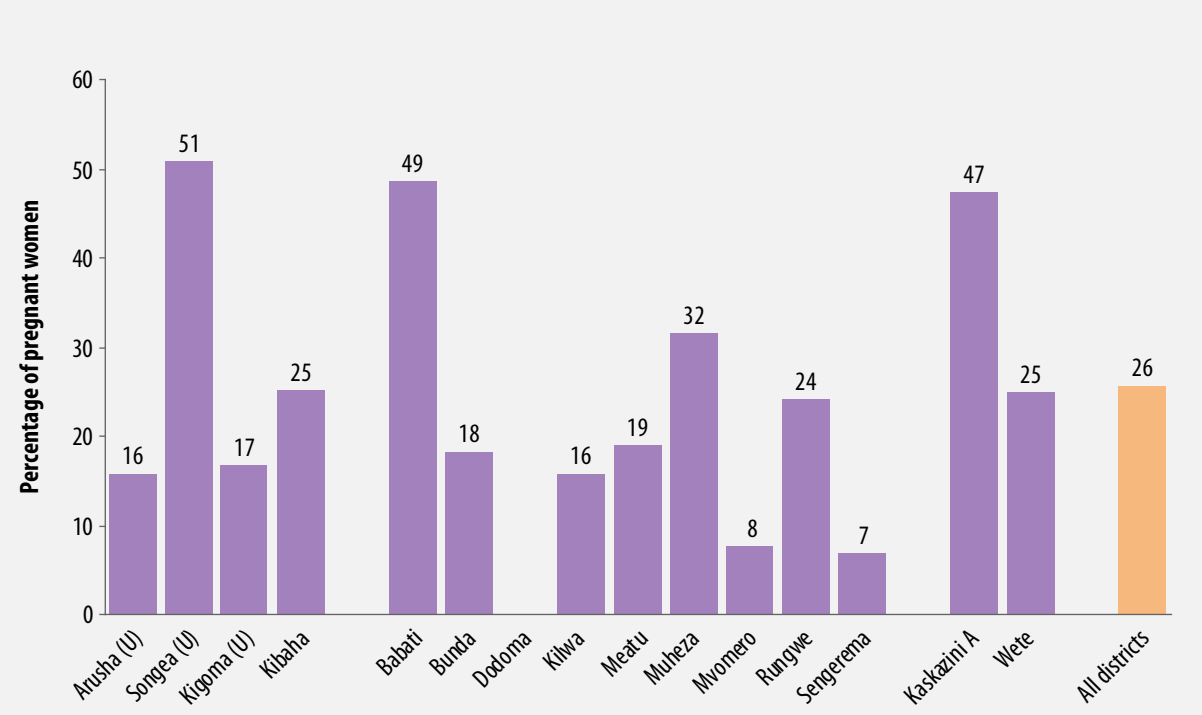


Figure 22. Percentage of pregnant women who were tested and received results from the HIV test taken in the last two years By 15 districts, United Republic of Tanzania, 2008–2009



Among pregnant women two-thirds receive counseling but only one-fourth are tested and receive results

Among pregnant women, 65% receive HIV counseling during antenatal care, and 26% are counselled, tested and receive results.

However, among pregnant women who are tested, 97% receive results.

Some districts have high coverage of counseling and HIV testing of pregnant women in antenatal clinics, such as Songea (U), Babati, and Kaskazini A in Zanzibar. It has to be kept in mind that numbers by district are small and therefore sampling errors are large (Dodoma, for example, is not shown because the number of women is less than 25).

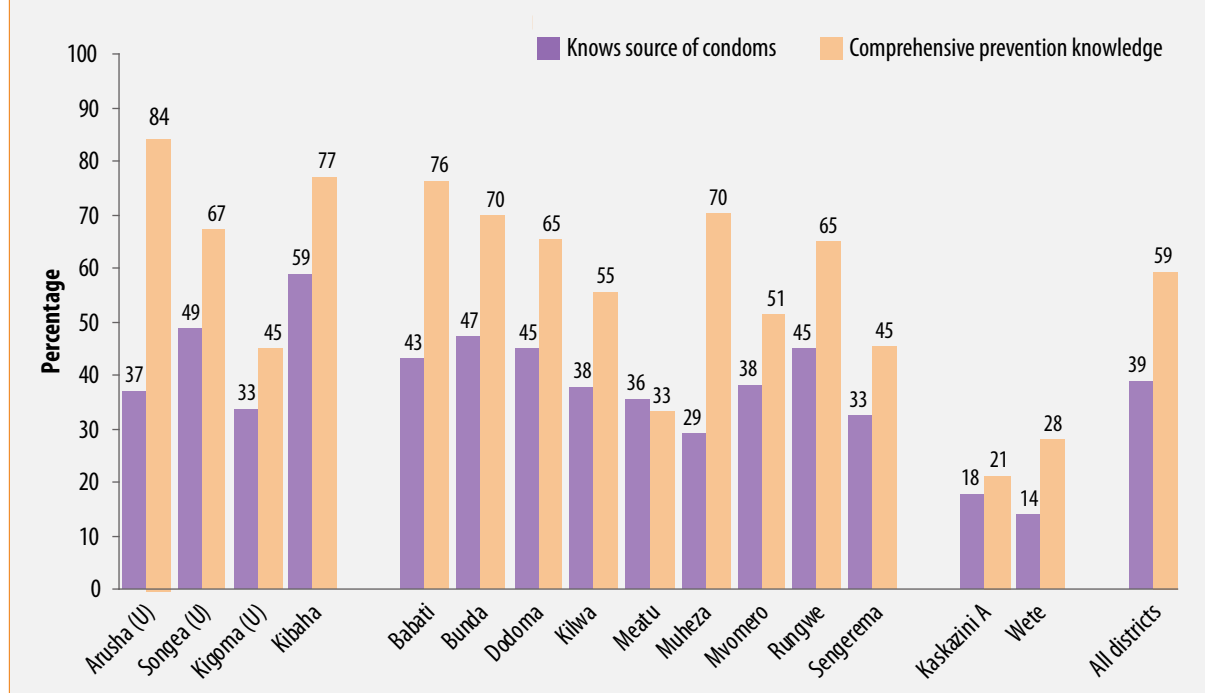
Four out of 10 young women know a source of condoms and six out of 10 have comprehensive prevention knowledge

Women in Kibaha have the highest knowledge of a source of condoms (59%). Women aged 15–24 years in urban districts however do not have better knowledge of where to get condoms.

The Zanzibar districts have much lower knowledge levels for both indicators than all mainland districts.

Comprehensive prevention knowledge is highest in Arusha (U) and Kibaha for women aged 15–24, but several rural districts (Babati, Bunda and Rungwe) also score over 70%.

Figure 23. Knowledge of a source of condoms and comprehensive prevention knowledge among women aged 15–24 years (%) By 15 districts, United Republic of Tanzania, 2008–2009



Higher risk sexual behaviour among women is rarely reported and about 30% uses a condom during higher risk sex

4% of women reported to have had more than one partner in the last year, and among those, only 3% said they used a condom during the last sexual intercourse (numbers are small, therefore only aggregated data are presented).

5% of women aged 15–49, 9% aged 15–24 years, have higher risk intercourse – that is with a non-marital non-cohabiting partner – among those, 30% had used a condom. There is considerable variation between districts, with eight districts reporting very low levels of higher risk sex (1% or less) and five districts high levels (15–25%) – Kigoma, Kilwa, Mvomero, Rungwe and Sengerema. It is not clear if this is related to an interviewer team bias, a reporting bias, or genuine differences.

A minority of households with a death in the last 24 months receive external assistance

Questions were asked in all households about deaths in the last 24 months. Overall, 696 deaths were reported, of which 60% involved a household member aged 15 years and over and the remaining 40% were children under 15.

Respondents were asked about the cause of death. Among children under one and those aged 1–4 years, malaria was reported as the leading cause of death (31% and 47% of all deaths in each age category respectively). Among deaths of 25–44 year olds, AIDS was most commonly reported as the cause of death (19%); at ages over 45 years non-communicable diseases were the leading cause (32%).

The most commonly received external assistance that is free of charge is medical care, supplies, and medicines: still only 15% of households receive such care. The second most common assistance is emotional and psychological care (8%).

3.4 Overall progress assessment

In general, the facility data indicate that the health facility based HIV/AIDS interventions have expanded greatly in recent years and that many people are using the services.

HTC is offered in more than half of health facilities in nine out of the 15 districts. Almost all facilities offering testing and counseling have rapid tests in stock and three-quarters have trained staff and guidelines. Some districts however are clearly falling behind in terms of access to (e.g., Sengerema) and readiness of services (e.g., Babati and Mvomero). Most women know about HIV testing and the uptake of testing is high: 29% were tested in the last 12 months, which is higher than the 19% in the 2007–08 THMIS. No district has less than 15% utilization of HTC among the women aged 15–49 years. An important contribution to this figure is likely to occur through the antenatal care related services.

PMTCT services have also been scaled-up and are offered in four out of 10 antenatal clinics. In several rural districts, however, only one out of eight facilities offer PMTCT. Among the facilities that offer PMTCT, the readiness is fairly good as three-quarters have HIV testing, trained staff and guidelines in place. However, drug stockouts seem to be more common, as only six out of 10 facilities have nevirapine or AZT in stock. In spite of high antenatal care utilization (over 90%), only one-fourth of pregnant women are tested and counseled, which is lower than the WHO estimated 52% for 2008. In half of the districts less than one-fifth of women are tested and counseled. There clearly is a need to step up access and readiness of PMTCT services.

ART services have also expanded rapidly during the past years. The public and NGO owned facilities are the main providers, although the private sector plays a more important role in the larger urban areas. The roll-out in terms of service delivery points is quite uneven with some rural districts having less than 0.3 facilities per 1000 HIV infected people. There is still considerable scope for improvement of the quality of the services with four out of ten facilities that offer ART not having the first-line regimens in stock.

Higher risk sexual behaviour is rarely reported by women. But the fact that only four out of ten women aged 15–24 years know where to obtain a condom, and only 30% use a condom during intercourse with a non-marital partner, indicates that prevention efforts need to be stepped up.

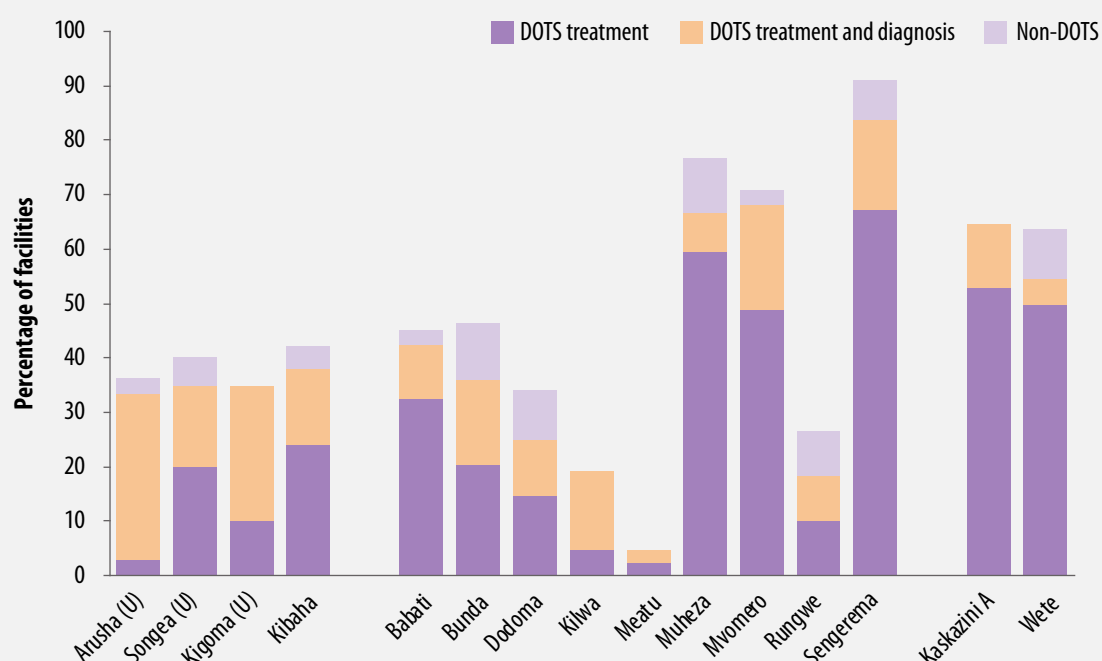
4. Tuberculosis

4.1 Introduction

Tuberculosis continues to be among the major public health problems in Tanzania. WHO estimates that Tanzania has the 14th highest TB burden in the world (WHO 2008).⁹ The national prevalence and incidence of TB in 2006 was estimated at 459 and 312 per 100 000 population, respectively. The case detection rate for new smear-positive cases under the directly observed treatment, short-course (DOTS) was 46% which is well below the 2005 global target of 70%. Tanzania's treatment success rate, however, reached the global target of 85% in 2006. TB case notification rates increased during the 1990s but has now leveled off, probably reflecting a leveling off in incidence. The HIV epidemic has spread rapidly in Tanzania since the mid 1980s. TB is one of the most common opportunistic infections for people who are HIV positive.

The National TB and Leprosy Control Programme (NTLP) is a vertical health program, launched by the MOHSW in 1977 as a single combined program responsible for the control of TB and leprosy. The Ministry collaborates with various international and local developmental partners in implementing the control of these two diseases in the country. The mission of NTLP is to provide high-quality and effective interventions to control TB and leprosy in Tanzania with a focus on gender mainstreaming, equity, accessibility, and those most at risk. The program aims to contribute significantly to country efforts in poverty reduction. More specifically, NTLP aims to achieve the WHO targets for TB control, namely detecting 70% of the infectious cases and successfully treating 85% of them based on the Stop TB Strategy of global TB control. In addition, to make available DOTS services for free, in public and private health facilities, the program has started community-based DOTS and patient-centered treatment approaches throughout the country.

Figure 24. Percentage of facilities offering basic TB diagnosis and treatment services By 15 districts, United Republic of Tanzania, 2008–2009



⁹ World Health Organization. 2008. Global Tuberculosis Control 2008: Surveillance, Planning, Financing. WHO: Geneva.

4.2 Facility assessment

Less than half of all facilities offer basic TB diagnosis and treatment services; among those facilities, more would benefit from targeted training and guidelines development

Overall, 284 out of 691 (41%) health facilities offer DOTS treatment services; among those, half also offer diagnostic services through sputum smear microscopy. There are also 37 facilities, mostly public facilities (30), which provide non-DOTS treatment.

In five districts, over half of all health facilities offer DOTS services: Muheza, Mvomero, Sengerema and the two Zanzibar districts. In others, such as Kilwa, Rungwe and especially Meatu, only a small fraction of health facilities offer DOTS services.

In the urban districts it is more common to find facilities that offer both treatment and diagnosis through microscopy.

TB training intensity is fairly high and guidelines are available in most facilities

Among facilities that offer DOTS services, two-thirds have at least one staff who received training in TB diagnosis and treatment in the last two years (67%), 39% with staff receiving training in TB/HIV, and 31% receiving training in MDR-TB.

For TB diagnosis and treatment training, public facilities have the highest exposure to this training (59%), followed by civil society facilities (i.e., NGO/FBO) (43%), and the lowest exposure is among private for-profit health facilities (25%).

Levels of staff training on TB diagnosis and treatment vary substantially between districts. In rural districts in particular, six districts have 75–100% of facilities with staff recently exposed to training, while in Muheza and Kaskazini A, only about one-quarter of these have staff exposed to training. Training exposure is high in urban districts (75–100%) except for Songea (57%). The percentage of facilities with TB guidelines lags, in most cases, several percentage points below that for training (Figure 25).

Most health facilities do not offer basic TB diagnosis with sputum smear microscopy

Fewer than one third of facilities that offer DOTS treatment also offer TB diagnosis with sputum smear microscopy.

Among facilities that offer DOTS diagnosis with sputum smear microscopy, 81% have the necessary supplies available to perform the test (i.e., AFB or ZIEHL NIELSEN tests). Kibaha and Wete, and to a lesser extent, Kilwa, are least likely to have the necessary tests in stock (Figure 26).

Figure 25. Among facilities offering DOTS TB treatment, the percentage with at least one staff trained on specific TB-related topics in the last two years, including TB diagnosis and treatment, MDR-TB and TB/HIV co-infection By 15 districts, United Republic of Tanzania, 2008–2009

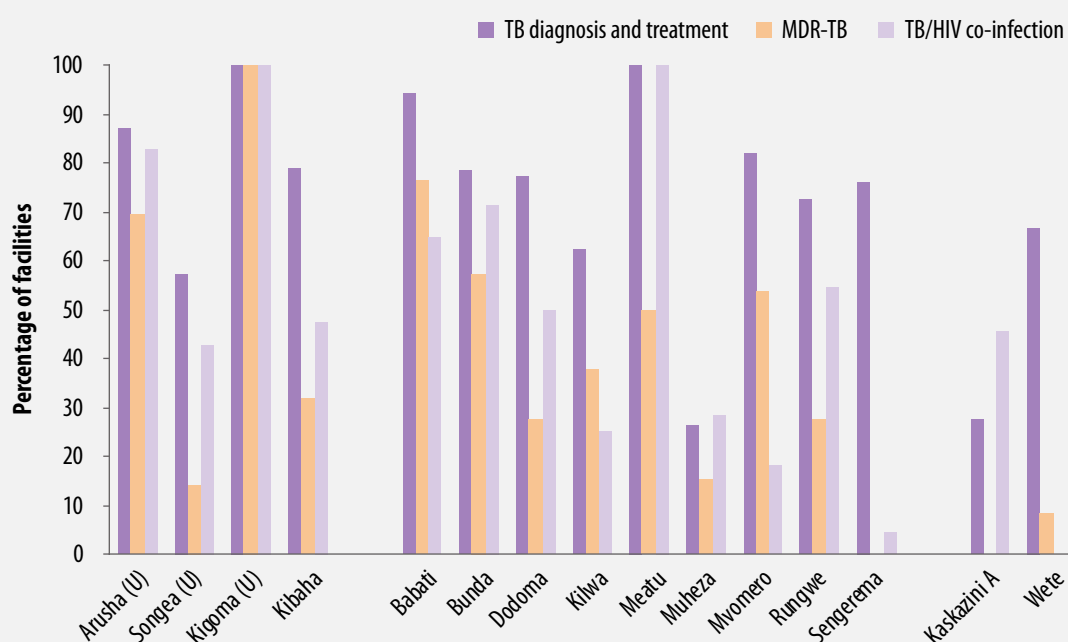
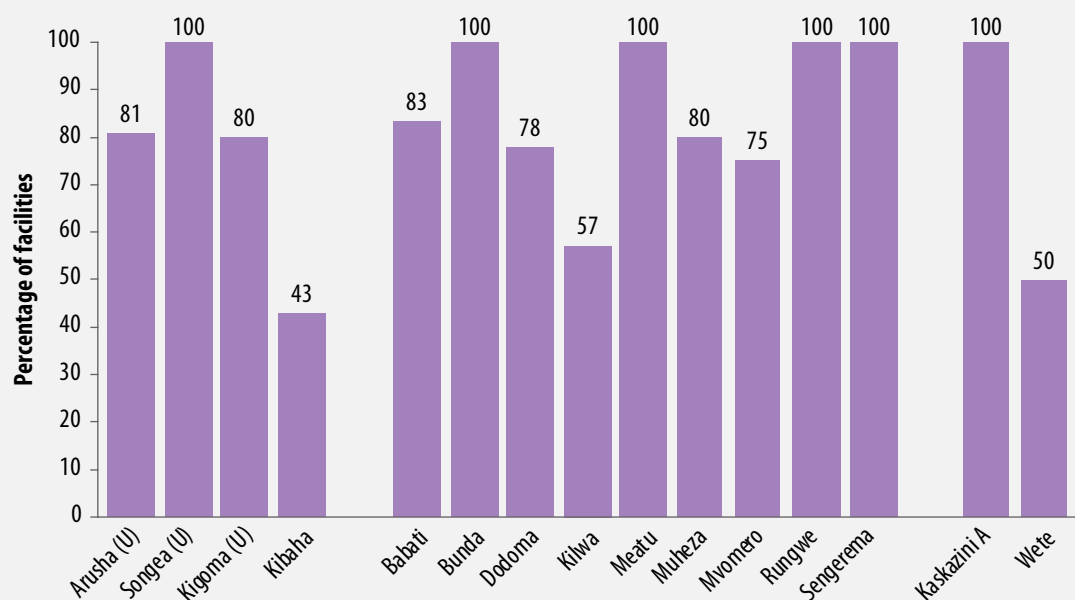


Figure 26. Percentage of facilities offering sputum smear microscopy with TB sputum tests available By 15 districts, United Republic of Tanzania, 2008–2009

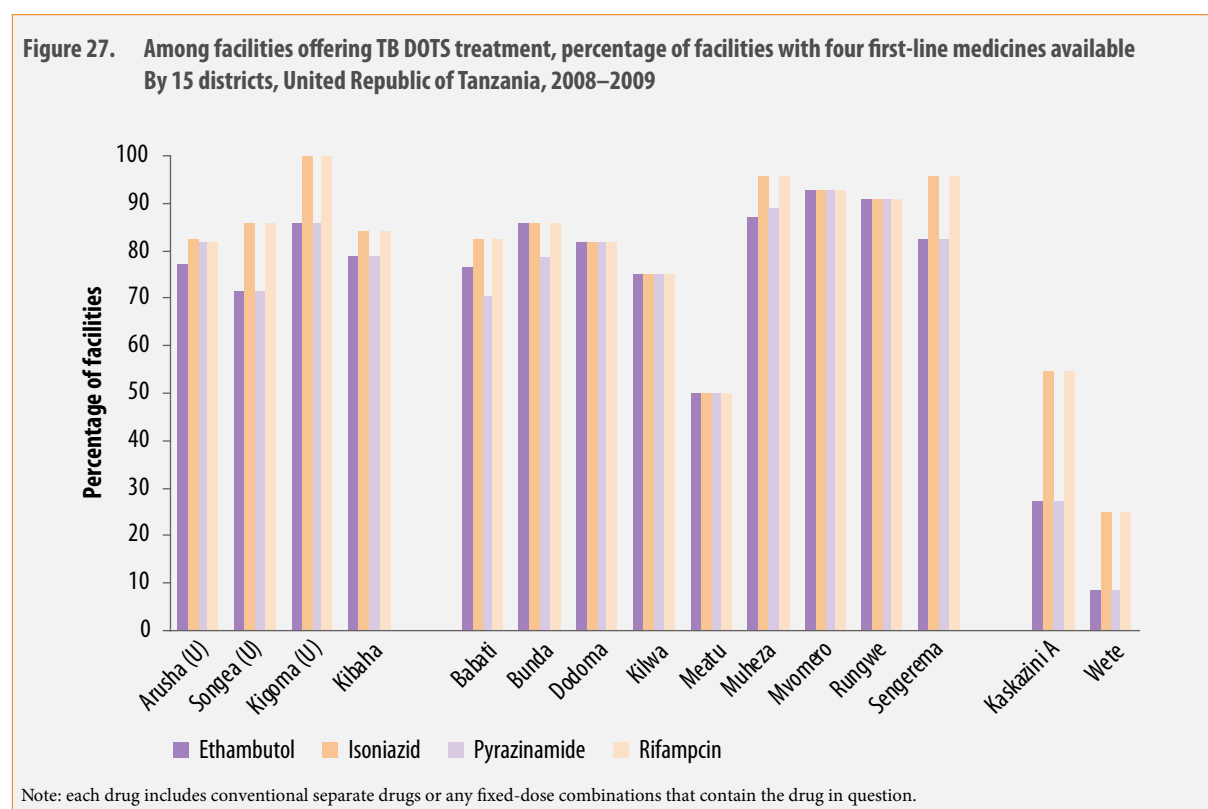


The availability of first-line medicines at DOTS treatment sites is fairly good in most districts

The standard short-course treatment for TB requires four first-line drugs: isoniazid (INH), rifampicin, pyrazinamide, and ethambutol. DOTS therapy protocol stipulates that patients be observed each time they take the medicine to ensure that a correct and timely dosage is taken.⁷ In the 15 districts, there is fairly good availability of first-line drugs for the first stage of TB treatment. Overall, 76% of DOTS facilities have ethambutol and pyrazinamide in stock, and 84% have INH and rifampicin in stock.

Three rural districts, namely Meatu (where only 2 facilities offer TB treatment) and the two Zanzibar districts, have the lowest availability of first-line drugs (Figure 27).

Fixed dose combinations are the most commonly available drugs rather than separate doses for single drugs. The most commonly found combination is all four drugs in one dose – 73% of all DOTS facilities have this available. The second most common combination is INH + rifampicin (71%), followed by INH + rifampicin + pyrazinamide (23%), and INH + ethambutol (15%).

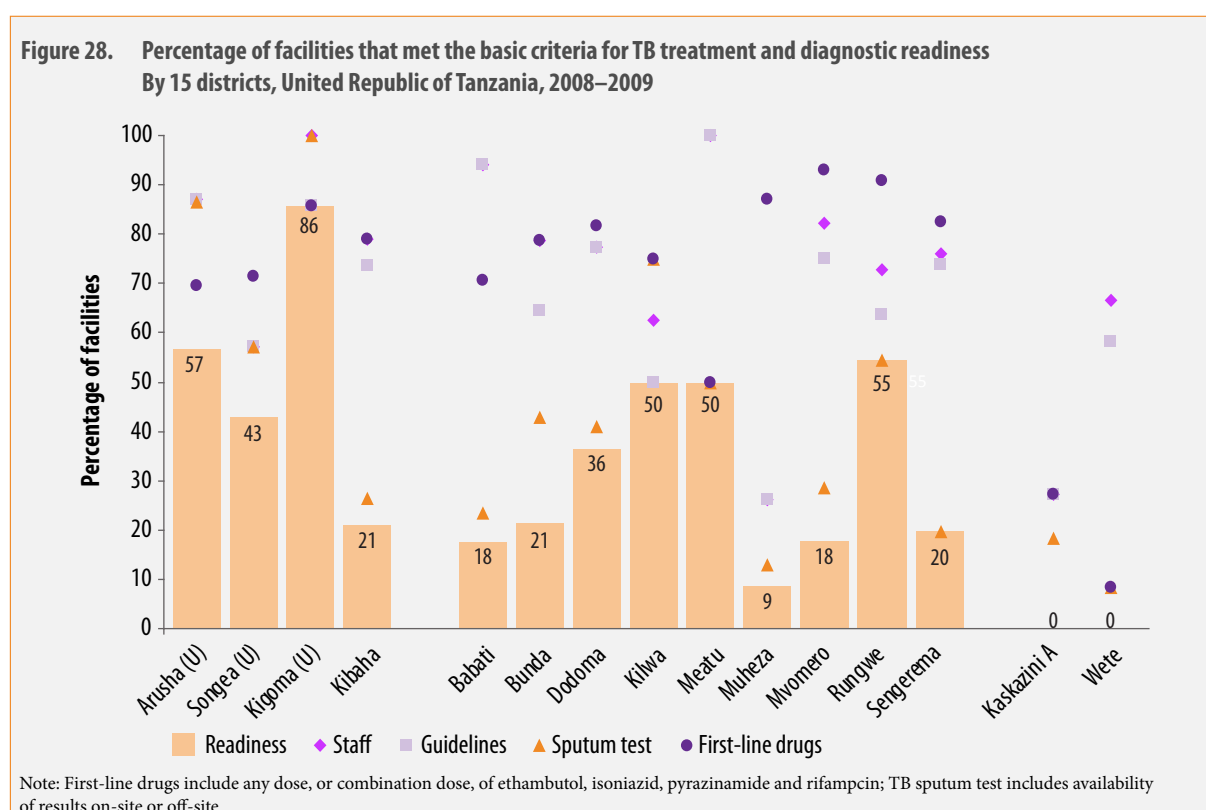


⁷ In 2006, Tanzania introduced the patient-centered tuberculosis treatment, where patients choose where to take their directly observed treatment, at home or at the facility, and the observer of their choice. Fixed dose combinations, rather than conventional separate drugs, in both treatment phases served to simplify the number of drugs taken. Egwaga S. et al. 2009. Patient-centered tuberculosis treatment delivery under programmatic conditions in Tanzania: a cohort study. BMC Medicine 7:80. <http://www.biomedcentral.com/1741-7015/7/80>

Facilities offering DOTS treatment fall short of “readiness” to deliver services, mainly due to a lack of capacity to diagnose TB in sputum smears

Only 24% of DOTS facilities meet basic “readiness” criteria to deliver TB treatment and diagnostic services.

Compared to investments in TB training and guidelines development, and in offering first-line treatment, strengthening capacity to detect TB cases with sputum smears has fallen short. Overall, only 28% of DOTS facilities either perform sputum diagnosis directly on-site or obtain results from off-site testing. Kigoma has the highest readiness score, with 86% of its DOTS facilities having trained staff, guidelines, capacity to obtain sputum diagnosis results, and first-line treatments. Four other districts have about half of DOTS facilities ready to provide services, and most of the remaining have 20% or fewer (Figure 28).



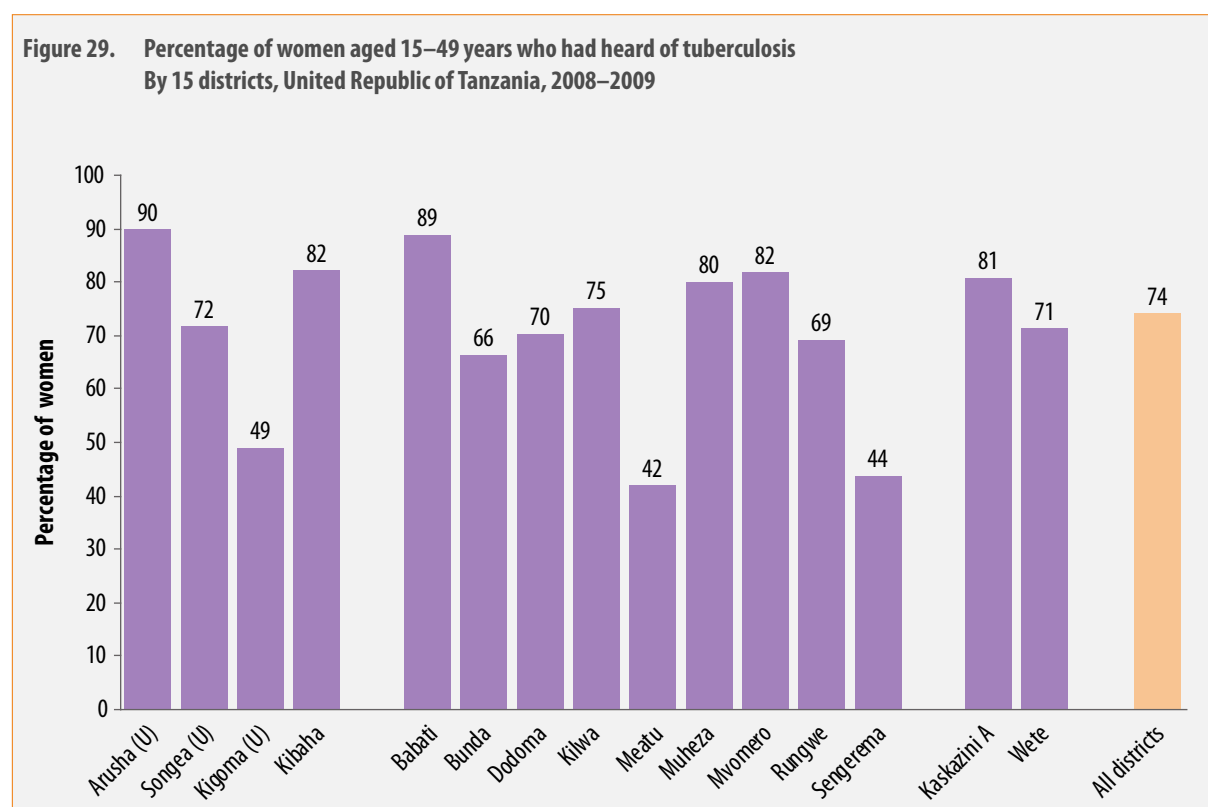
4.3 Population knowledge of TB

There are still major basic knowledge gaps about TB with one fourth of the women not having heard of the disease, and one third who have heard of it but do not know how it is spread

In the district household surveys, one in four women have never heard of TB. In three districts, Kigoma (U), Meatu and Sengerema, less than half of the women have heard of TB.

Among those who have heard of TB, 68% know that TB is spread through the air by coughing and 83% know that TB can be cured.

Stigma is not common. Among those who had heard of TB, 9% said that they would want a family member's TB to be kept a secret. This is highest in Dodoma (14%) and lowest in Rungwe (4%).



4.4 Overall progress assessment

The TB control programme has been using the DOTS strategy for more than a decade and the reported success of 85% treatment success rates is a result of a strong programme. The facility assessment shows that training intensity continues to be high, that guidelines are commonly available and that TB medicines are available, mostly in convenient multi-drug pills. All these factors are likely to contribute to the high ability to retain patients and complete treatment.

Case detection rates, however, are estimated to be relatively low. The study highlights several areas that could be used to address this issue. First, of women's knowledge about the causes and treatment potential is low with scope for improvement. Second, the facility assessment shows that access to services, measured by the percentage of facilities offering TB diagnostic and treatment services, has scope for improvement and is very low in several districts.

5. Malaria

5.1 Introduction

Malaria is another leading public health problem in Tanzania, often appearing as the lead cause of outpatient visits and inpatient admissions. The second National Malaria Medium Term Strategic Plan 2008–2013 has a number of specific indicators for the coverage of key interventions, including appropriate treatment of children with fever, intermittent preventive therapy for pregnant women (IPTp2), and household ownership of insecticide treated nets (ITN) and their use by children and pregnant women. All targets aim for 80% coverage by 2013. Several household surveys were conducted in 2007–08 showing, roughly, low national coverage of artemisinin combination therapy (ACT) for treatment of children with fever (13%), IPTp2 coverage (about 30%), and coverage of ITN indicators (around 40%).

5.2 Facility readiness

Almost all facilities offer malaria treatment services, and training intensity is high

Overall, 656 out of 691 (95%) health facilities offer malaria treatment services. Most also report that they offer diagnostic services, including clinical and/or laboratory diagnosis.

Two-thirds of facilities that offer malaria services have at least one staff with recent training in malaria diagnosis and treatment. This is the highest training coverage of all 19 topics in the 15 districts. Private for-profit health facilities have the lowest training exposure (49%), compared with public facilities (64%), NGO facilities (75%), and parastatal facilities (75%).

Training opportunities manage to reach almost every facility in several rural districts, especially those with poorer health infrastructure and lower levels of development, in particular, Meatu, Babati, and Sengerema score more than 80%. On the other hand, Muheza has low recent training exposure, while facilities in urban districts also have less training. Almost all facilities with recent training have the guidelines available (Figure 30).

Most facilities have ACT and at least one other anti-malarial in stock

The availability of anti-malarials is high. Among facilities that offer malaria treatment services, artemisin combination therapy (ACT, the first-line drug), sulphadoxine-pyrimethamine (SP) and quinine are available in 76%, 79% and 88% of health facilities, respectively. ACT is most common in the rural districts with the exception of Bunda. In the Zanzibar districts, ACT is less commonly stocked in the health facilities, especially in Wete.

Almost all facilities with ACT in stock also have another antimalarial in stock: 75% have two or more anti-malarial drugs, one of which is ACT. Public facilities are better stocked than private facilities, 84% and 44%, respectively. The ACT availability in NGO facilities is 72%.

Artemisinin-only tablets are not recommended but are still available in 9% of facilities, most commonly in urban districts – 35% in Kigoma (U) and 29% in Arusha (U). Most of these tablets are found in private facilities (26%) and NGO facilities (21%) (Figure 31).

Figure 30. Percentage of facilities with at least one staff trained on malaria diagnosis and treatment in the last 2 years, with respective guidelines available, by 15 districts, United Republic of Tanzania, 2008–2009

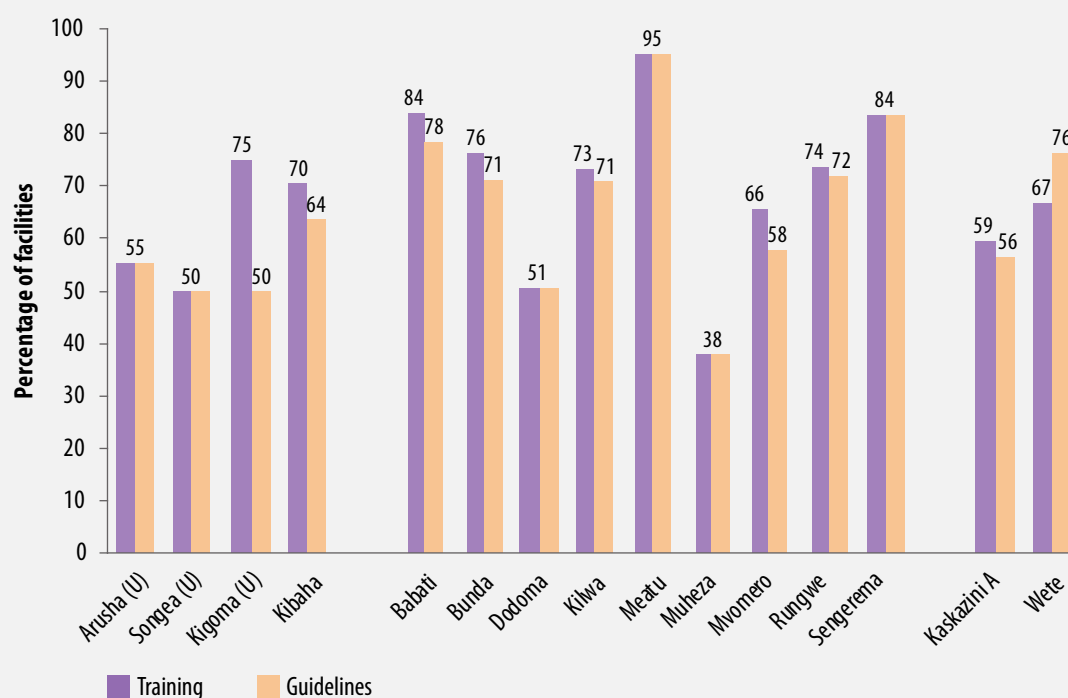
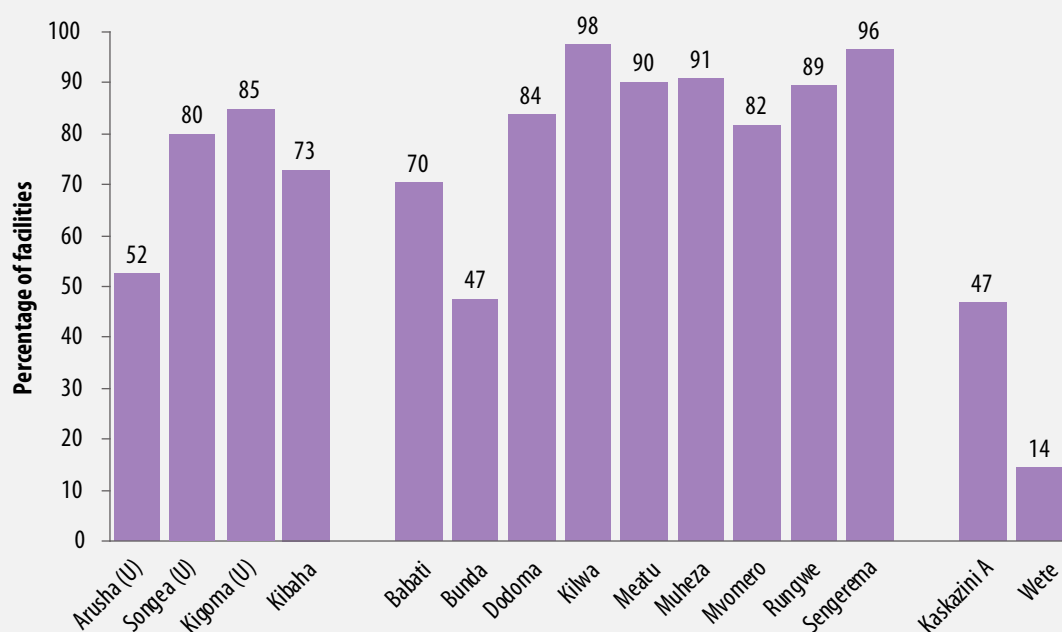


Figure 31. Percentage of health facilities with ACT in stock on the day of the visit By 15 districts, United Republic of Tanzania, 2008–2009

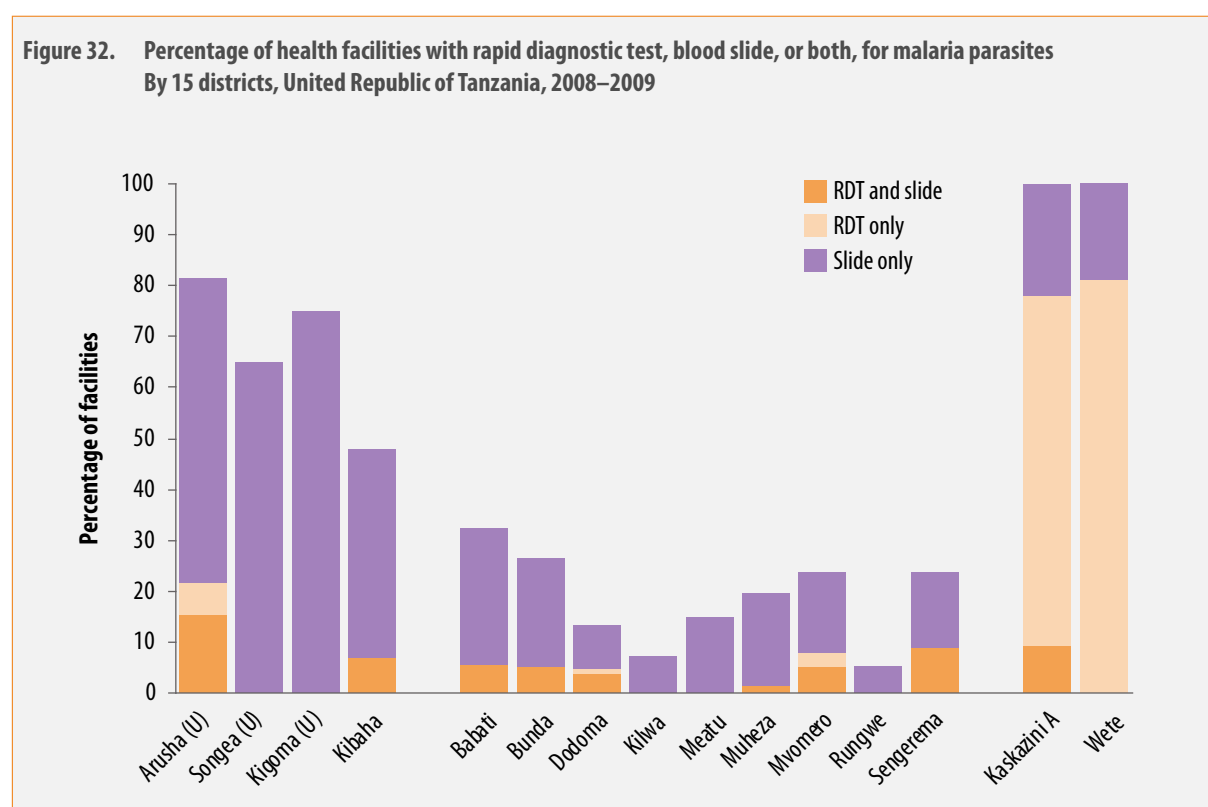


About one-third of facilities offer a malaria laboratory test, mostly blood slides

Among the 656 facilities offering malaria treatment services, 36% have the lab materials to perform a malaria blood test with results on the same day, including 5% of facilities with both rapid test and blood slide (thick or thin film), 7% rapid test only, and 24% slide only. To perform a test using a blood slide, the facility has to have a microscope, slides with covers, and Giemsa or field stain in stock. Almost all that have the necessary testing supplies are able to do a malaria test on-site the same day.

The urban districts have much better lab diagnosis capacity than rural districts, mostly using blood slides. This is for the most part due to the private sector. Only 22% of public facilities have the ability to perform a malaria test, while 74% of private facilities and 78% of NGO facilities have such capacity.

Rapid tests are far more common in Zanzibar than on the mainland where several districts have virtually none available (Kigoma U, Songea U, Kilwa, Meatu and Rungwe). In Zanzibar, about 80% of the facilities have rapid tests in stock (Figure 32).

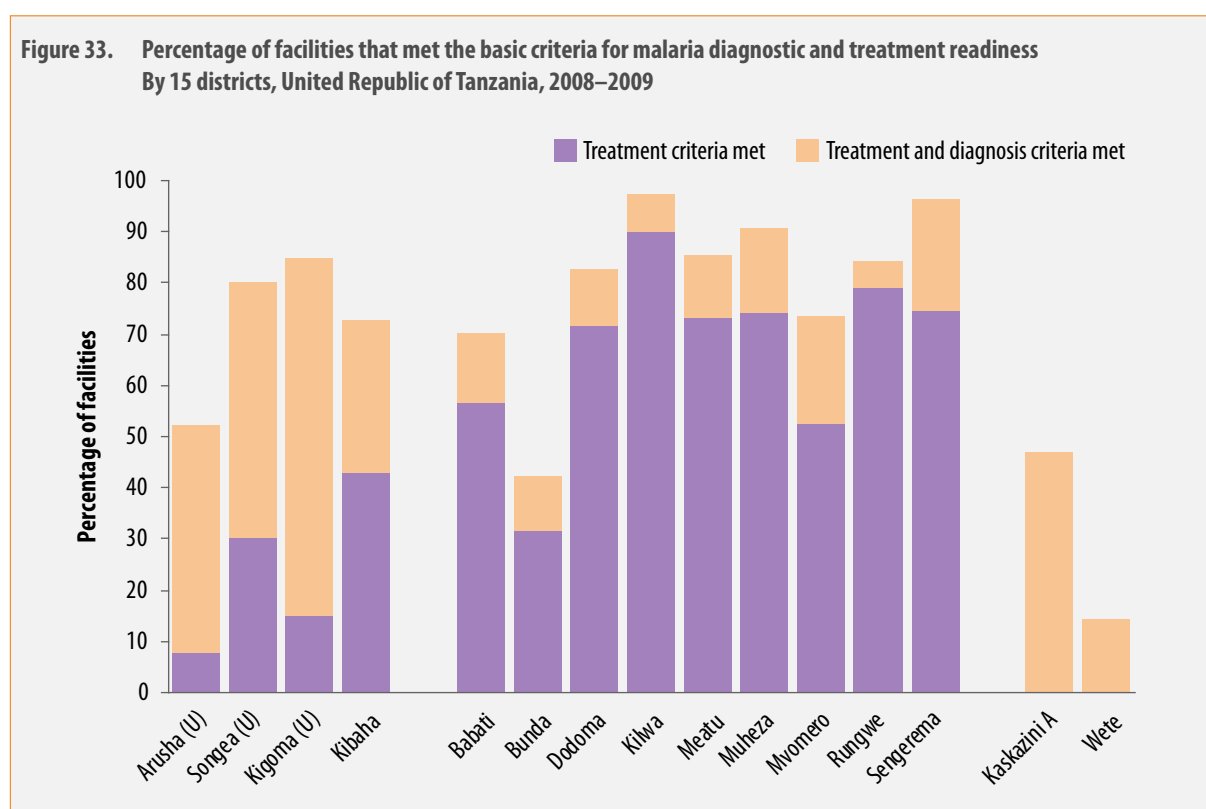


75% of facilities meet the minimum criteria for offering malaria treatment services

Out of the 656 facilities that offer malaria services, 22% of facilities meet the minimum criteria for diagnosis and treatment, that is, having two drugs (ACT and another anti-malarial) and diagnosis supplies (slide or rapid test). 53% are able to offer treatment only i.e., having two medicines (ACT and another anti-malarial). Therefore, 25% offering services do not have the medicines in stock, most notably ACT.

In terms of readiness, there is considerable variation between districts. The urban districts have more facilities ready to offer both diagnosis and treatment. Some rural districts, notably Bunda, has only 42% of facilities meeting the criteria, while other districts such as Kilwa and Sengerema have over 95% (Figure 34).

If the presence of the guidelines for diagnosis and treatment is added to the minimum readiness criteria, then only 15% meet the criteria for diagnosis and treatment, 33% for treatment only, and 52% do not meet either diagnosis or treatment criteria.



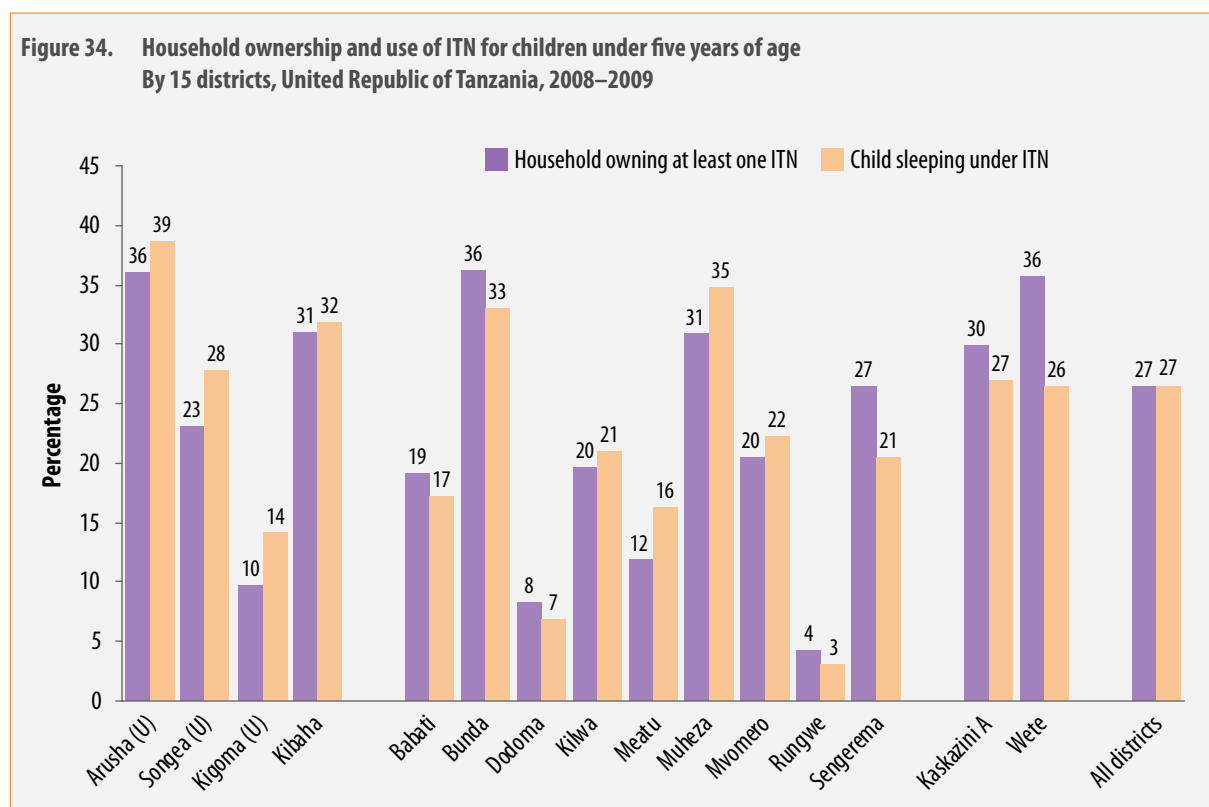
5.3 Coverage of interventions

One in four households own and use insecticide treated nets (ITN), ranging from 3% to 39% coverage by district

Even though 58% of households own at least one mosquito net, only 27% own a ITN. A similar proportion of children under five years sleep under an ITN. Among the 946 pregnant women who were interviewed, 24% sleep under ITNs.

There are major differences between the districts: the lowest ownership and use rates are in Rungwe, Dodoma, Kigoma (U) and Meatu. Use in the Zanzibar districts is similar to the average of the mainland districts. Three districts have ownership rates of 10% or less (Kigoma U, Dodoma and Rungwe).

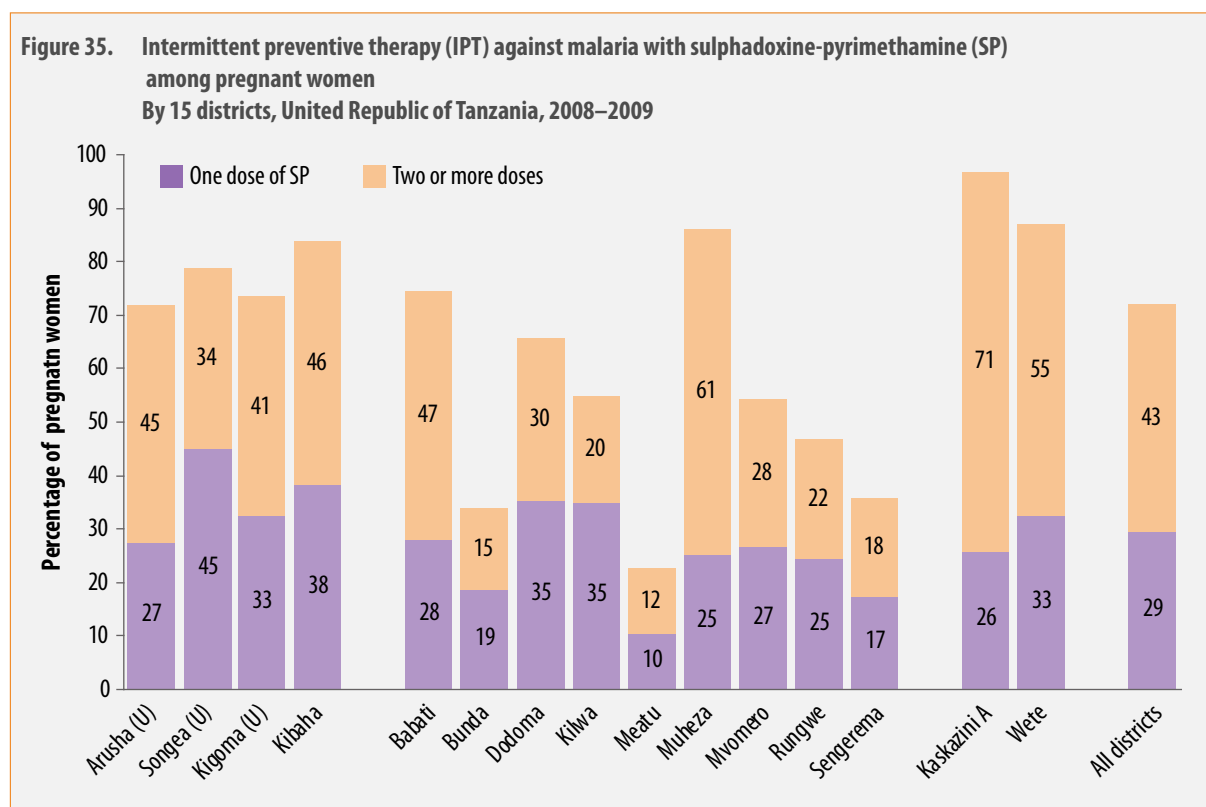
The highest ITN use of children under 5 years are in Arusha U (39%), with the lowest in Dodoma (7%) and Rungwe (3%).



IPT coverage with two doses is over 50% in three districts and below 25% in five districts

The proportion of women who receive at least two doses of SP during pregnancy, as part of intermittent preventive therapy (IPT) against malaria, is 43%, while 72% receive at least one dose.

The highest coverage rates are reported in Zanzibar districts (71% and 55%) and Muheza in the mainland with 61% of pregnant women receiving two doses. Meatu, Bunda and Sengerema have the lowest two-dose coverage rates, all below 20%.



45% of children with a fever receive antimalarials

14% of children (612 out of 4246) under the age of 5 years had a fever in the last two weeks. Overall, among those with fever, 45% received an antimalarial, and 23% an antibiotic. (District data are not presented in detail, as five districts had less than 25 malaria cases, making the coverage estimates more uncertain.)

According to the mother's recall of the type of drug, only 5% of children received ACT (the approved first line treatment), but it is likely that the mother's recall was not correct. Most ACT users are in Kaskazini A and Wete in Zanzibar, and Kilwa.

Indoor residual spraying is common practice in Zanzibar districts but rare on the mainland

In Wete and Kaskazini A, 93% and 84% of these households, respectively, have had the interior of their houses sprayed as part of the Zanzibar government malaria control program. In most of the mainland districts, however, less than 2% of the households have been sprayed.

Overall, 24% of households have metal or plastic screens on windows, ranging from 2% in Rungwe to 40% in Kibaha.

The coverage of the home-based management of malaria kit is low (2% of households overall), with only Mvomero (13%) and Kilwa (10% and Muheza (7%) exceeding 2% coverage.

5.4 Overall assessment

In general, the facility data indicate that the malaria programme is very active in terms of training in almost all districts. ACT is widely available in public facilities. In the private sector, ACT is much less commonly available. Furthermore, one fourth of private clinics have single dose artemisinin tablets in stock which are no longer part of the recommended treatment regimen.

About one-third of facilities that offer malaria services can do a blood test, mostly by blood slide. Urban districts are much better equipped than rural districts to carry out diagnostic testing through blood slides. Rapid diagnostic tests are rarely available (5%), except in the Zanzibar districts.

In the 15 districts, one-fourth of households own and use an ITN, but several districts still have very low coverage. IPTp2 coverage rates are more than halfway to the 2013 targets in several districts, but are below 25% in several others. Nearly half of the children with fever received an antimalarial, but the mother's recall of the type of drug is poor.

The best performing districts – better than average malaria service readiness and coverage – are Kibaha, Arusha (U) and Kaskazini A. The poorest performing districts – lower than average malaria service readiness and coverage – are Babati, Bunda, Dodoma, Kilwa, Meatu and Rungwe.

6. Maternal and child health

6.1 Introduction

Tanzania has made considerable progress in reducing child mortality during the past decade. Maternal mortality estimates are less certain but also appear to indicate some progress. One of the concerns that has been raised during the scaling up of activities against AIDS, TB and malaria is that maternal and child health services would suffer. To be able to assess this, one would need longitudinal data that show the trends in health expenditure and service provision for maternal and child health (MCH) and compare those with similar indicators for the three diseases. Unfortunately, data on service access and readiness are not available, but coverage rates can be assessed. Using the Tanzania DHS 2007–08 survey as a baseline reference, there is no clear evidence of a negative change in the national trend for key MCH indicators. This section summarizes the findings for the 15 districts in terms of MCH services and coverage of interventions.

6.2 Facility assessment

Most MCH services are offered in at least three out of four health facilities

Most MCH services are common. Overall, more than 80% of facilities offer antenatal services, vitamin A supplementation, treatment of sexually transmitted infections (STIs), immunization and parenteral administration of antibiotics. Family planning services are offered in 78% of facilities. Delivery care and postnatal care are offered for 67% and 60% of facilities, respectively. Cervical cancer screening is the least common service, available in only 8% of facilities.

Except for treatment of STI, most other MCH services are offered more commonly in rural facilities than urban facilities, which is partly due to the higher proportion private facilities in urban areas.

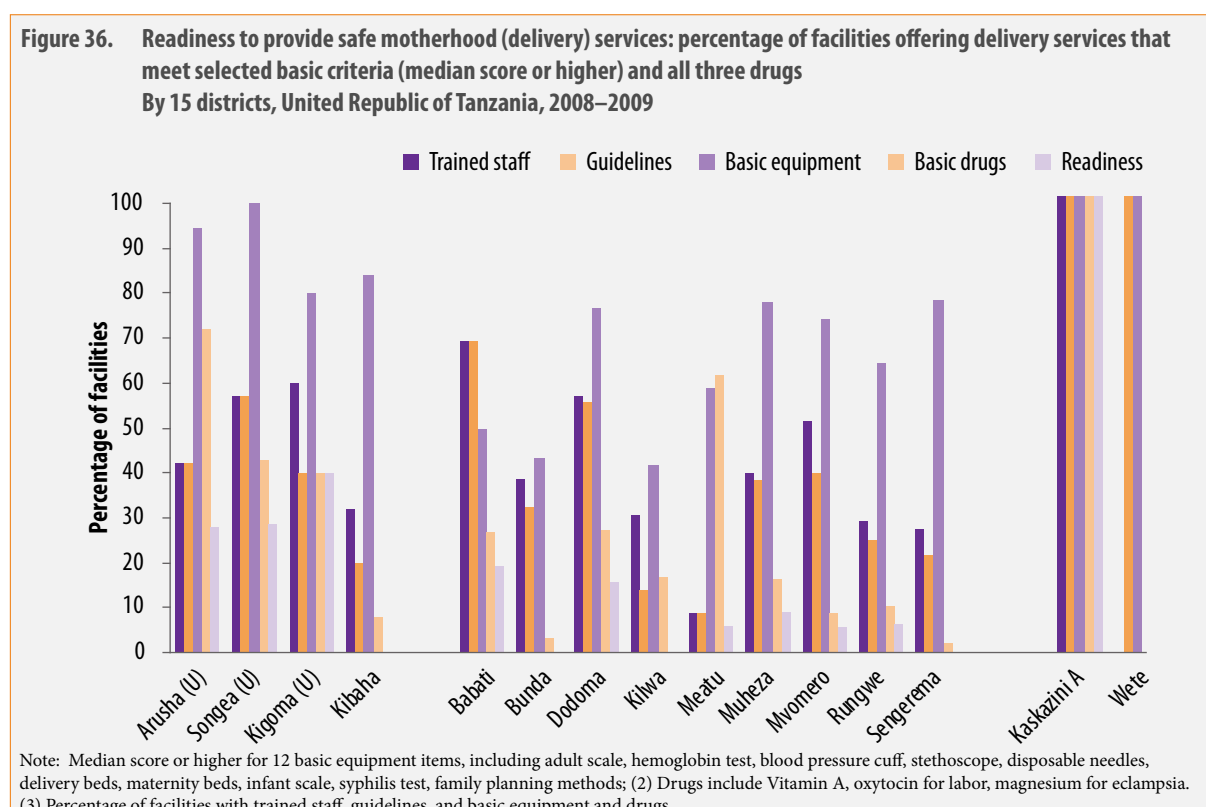
Training in the different MCH services is common

45% of facilities have at least one staff recently trained in IMCI; 18% in adolescent sexual and reproductive health; 34% in safe motherhood; 37% in family planning; and 41% in STI control. It is noted, however, that these training intensities are somewhat lower than for HIV and malaria, where there have been more recent interventions.

Delivery services are generally not satisfactorily supported by basic equipment and medicines

Overall, less than 10% of facilities meet the basic criteria for safe delivery services. Furthermore, although a larger proportion of rural facilities report offering delivery services, they are less “ready” to deliver these services than urban facilities (Figure 36).

Only Kaskazini A facilities meet all basic criteria for safe delivery services, including trained staff, guidelines, basic supplies/equipment and medicines. Nine of 15 districts have fewer than 10% of facilities that meet these criteria.



6.3 Household survey

Almost all women make at least one antenatal visit, but only in some districts do more than half of the women make at least four visits

Over 97% of women who are pregnant make at least one antenatal visit in all districts, with the exception of Meatu where 12% of women do not use any antenatal services at all.

Fifty-five percent of pregnant women make at least four antenatal visits. Arusha and Mvomero have the highest coverage rates (71% and 76%, respectively).

In the urban districts more than three-quarters of women deliver in institutions, compared to 40–50% in rural mainland districts and just over one third in Zanzibar districts

Most urban women deliver in health facilities, especially in Songea (U) (95%), Arusha (U) (86%) and also in Kibaha.

There is surprisingly little variation in the proportion of women delivering in health facilities in the rural mainland districts, which all have rates between 40% and 52%.

Zanzibar districts have markedly lower institutional delivery rates, just over one third.

One in ten children under five recently had diarrhoea, and among them, two thirds were given oral rehydration therapy (ORT) or increased fluids

Overall, 10% of children having had diarrhoea recently, ranging from 6% in Rungwe and Kibaha to 17% in Kaskazini A.

The number of children with diarrhoea in each district is too small to reliably assess the treatment. Most children with diarrhoea (69%) are taken to a health facility, more than two-thirds receive oral rehydration therapy or increased fluids, but only 14% also continue feeding.

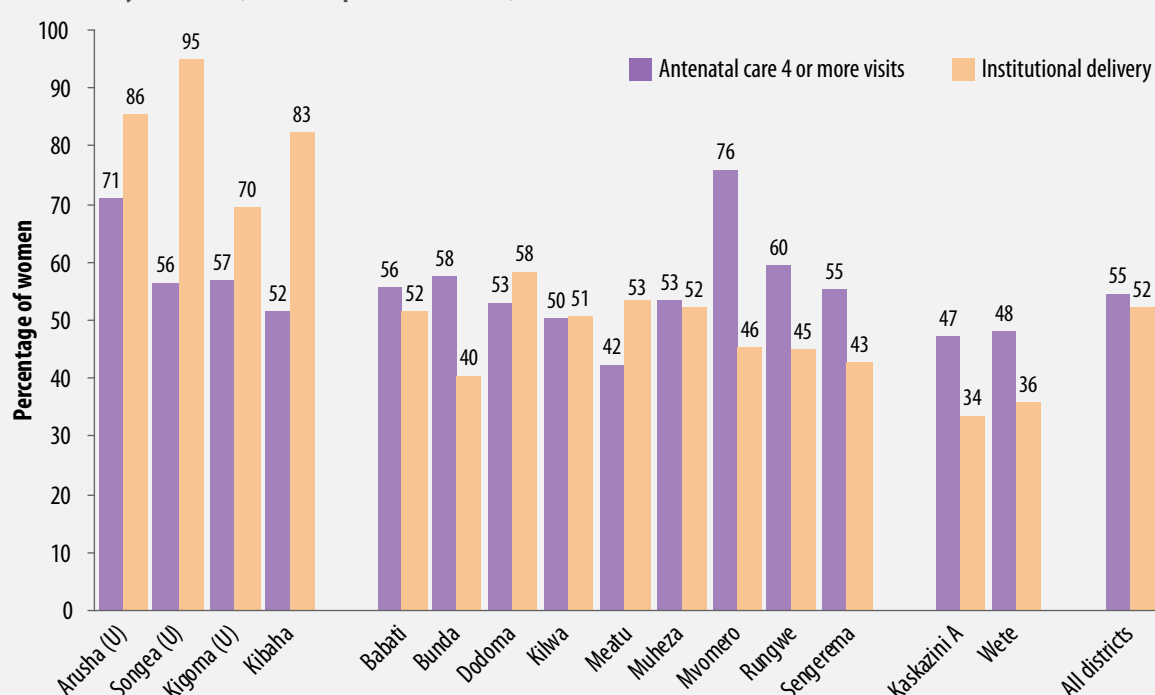
Child immunization coverage rates are fairly high

There are too few children aged 12–23 months in each district to be able to assess the coverage in each.

A health card was shown for 75% of the 923 children 12–23 months in all districts combined.

Coverage rates are 96%, 87%, 77% and 81% for BCG, DTP3, polio3 and measles vaccinations respectively. Full immunization coverage is 64%.

Figure 37. Percentage of women who had 4 or more antenatal (ANC) care visits and percentage of institutional deliveries By 15 districts, United Republic of Tanzania, 2008–2009



7. Stand-alone pharmacies and drug shops

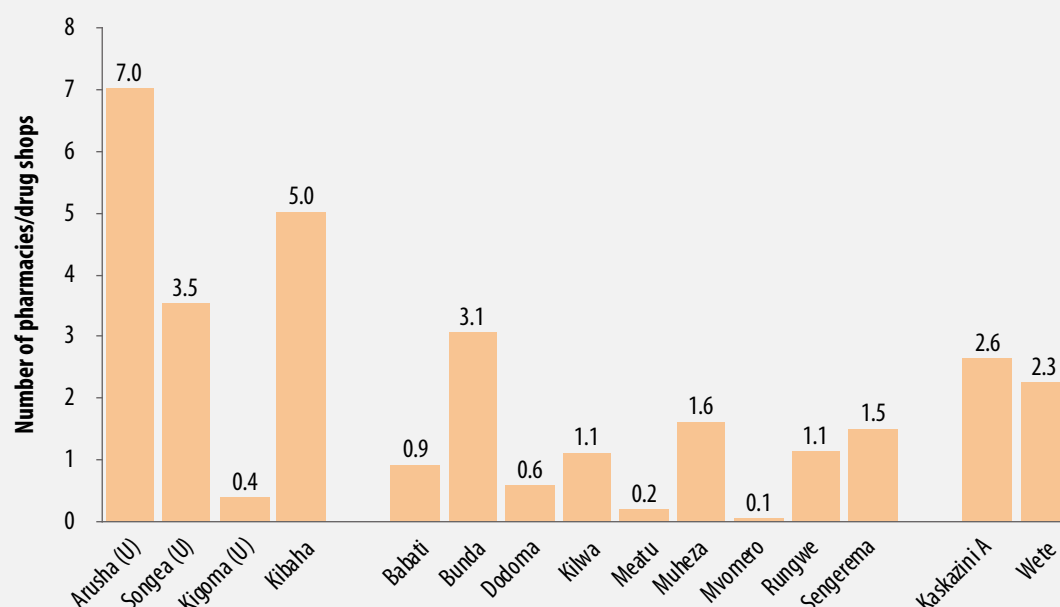
Stand-alone pharmacies and drug shops are more common than health facilities, almost always privately owned, and most common in urban districts

In total, 837 stand-alone pharmacies and drug shops were visited in the 15 districts. This means that there are more outlets that sell medicines than health facilities.

The highest density of pharmacies and drug shops is in Arusha (U): 7 for 10 000 population, followed by Kibaha and Songea (U). Most rural districts have less than two outlets per 10 000 population.

86 of outlets are private for-profit, with the exception of 14% which are government-owned.

**Figure 38. Stand-alone pharmacies and drug shops per 10 000 population
By 15 districts, United Republic of Tanzania, 2008–2009**



A significant proportion of pharmacies and drug stores did not have qualified staff on the day of visit

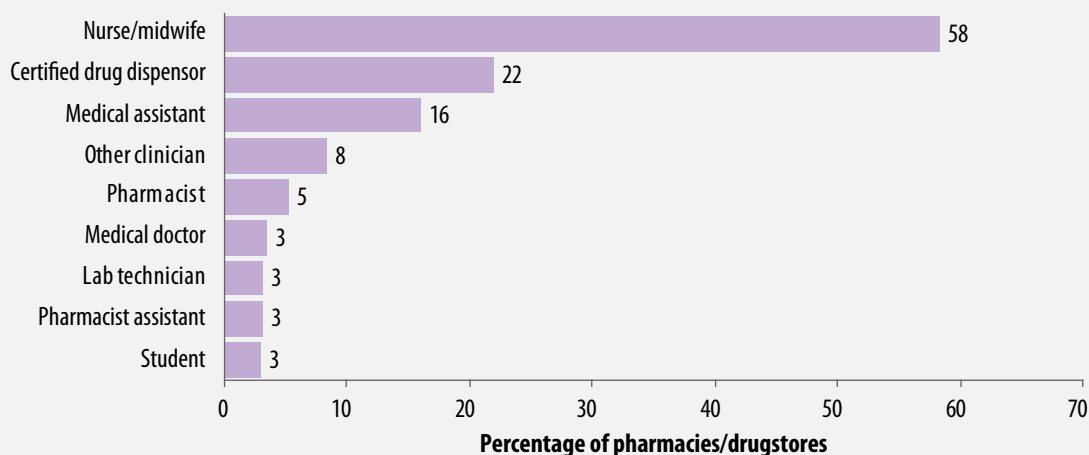
Nurses and midwives are the most common staff in outlets (58%), followed by certified drug dispensers (22%). Pharmacists are working in 5% of the outlets, medical doctors in 3%.

38% of all outlets have at least one qualified staff (pharmacist or pharmacist assistant, certified drug dispenser, physician or other clinician), 53% have a nurse, midwife or medical assistant as the main staff, and 10% have none of these. The latter are all private for-profit outlets.

78% (out of 642 outlets) also provide other services beyond dispensing drugs and filling medical prescriptions. Almost all provide counseling about how to take medicines and side effects. The most common disease-specific counseling is provided for malaria (94%), followed by far by HIV/AIDS (19%) and TB (15%). In addition, 93% provide counseling for other diseases.

Few outlets offer HIV testing (4%), malaria testing (2%) or TB testing (2%).

Figure 41. Staffing of stand-alone pharmacies and drug stores by cadres
By 15 districts, United Republic of Tanzania, 2008–2009



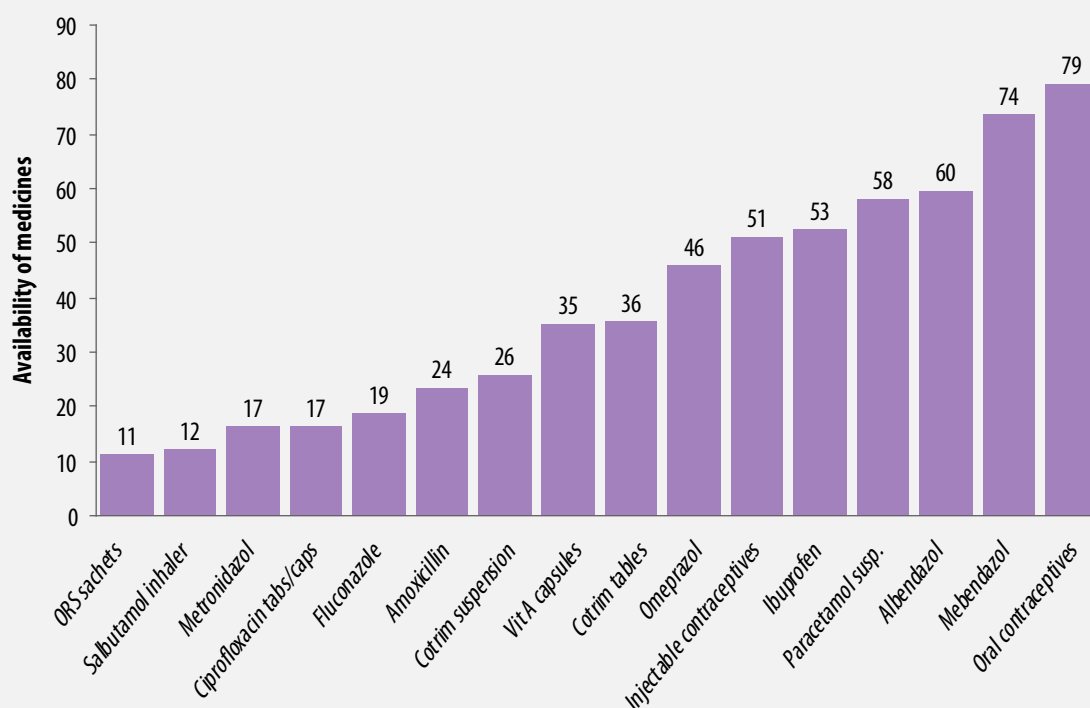
The availability of medicines in pharmacies and drug shops is generally poor, and poorer than in health facilities

The most commonly available medicines and commodities are oral contraceptives, mebendazol, albendazol, paracetamol suspension for children, injectable contraceptives, and ibuprofen. All are in stock in more than 50% of pharmacies and drug shops.

Most generic medicines for chronic conditions are rarely available. For instance, less than 5% of outlets have glibenclamide for diabetes management, and only one out of four generic drugs for cardiovascular disease (hypertension), and simvastatin or amitriptiline for depression.

The availability of the 13 global core medicines is lower for the outlets than for health facilities in the 15 districts. The average number of medicines available in the outlets is 19% (2.5 drugs), ranging from a low of 3% in Wete and Rungwe to about 35% in Kibaha. On average, 40% of these medicines are available in facilities.

Figure 39. Availability of the most common 15 medicines among 27 medicines that were included in the assessment

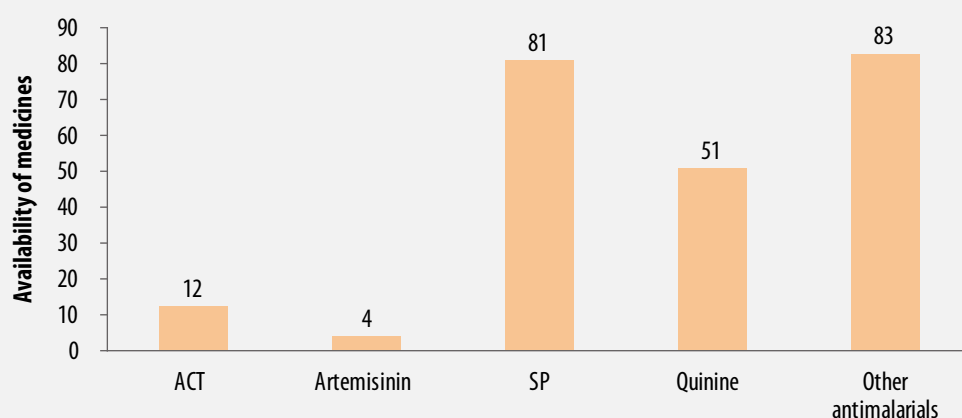


Pharmacies and drug shops generally lack ACT for malaria and play no role in TB or ARV therapy

Most outlets have sulphadoxine-pyrimethamine (SP) in stock and have other antimalarials as well. ACT is available in only one out of eight outlets, while 4% still sell single dose artemisinin.

No outlet sells TB drugs, and no outlet has any of the anti-retroviral drugs at all.

**Figure 40. Availability of anti-malarial medicines
All districts combined, United Republic of Tanzania, 2008–2009**



Annex tables

Table 1. District categorization for the five year Global Fund district comprehensive assessment

Zones	Urban (3 districts)			Rural (10 districts)			Comments
	High burden High scale	High burden Medium scale	High burden Low scale	High burden High scale	High burden Medium scale	High burden Low scale	
Northern		Arusha Popn. 282,712			Muheza Popn. 279,423		Disease burden and scaleup TB med, Mal-med, HIV-hi TB-med, MAL-med, HIV-me
Central					Babati Popn. 303,013	DodomaR Popn. 438,866	TB-low, Mal-hi, HIV-hi TB-low, Mal-low, HIV-ND
Coastal					Kibaha Popn. 132,045	Mvomero Popn. 259,347	TB –med, Mal – hi, HIV-nd TB-med, Mal-med, HIV-high
Lake					Sengerema Popn. 501,915	Meatu Popn. 248,949 Bunda Popn. 260,000	TB-low, Mal-med, HIV-high TB-low, Mal-high, HIV-hi TB-low, Mal-med, HIV-high
West Lake		Kigoma Urb Popn. 144,852					TB-low, Mal-hi, HIV-med
Southern				Kilwa Popn. 17105			TB-low, Mal-med, HIV-high
South Highland			Songea U Popn. 131,336				TB-low, Mal-hi, HIV-hi
South West				Rungwe Popn. 307,270			TB-low, Mal-low, HIV-high
Pemba	Wete Popn (mixed) 102,060						
Zanzibar				Kaskazini A (Mostly rural) Popn 84,147			

District facility census tables

Table 2. Percentage of facilities with functioning basic equipment, by district

District	Blood pressure machine & cuff	Stethoscope	Adult weighing scale	Infant weighing scale	Thermometer	Refrigerator	All 6 basic equipment items	Number of facilities
Dodoma	85.2	77.3	88.6	89.8	80.7	87.5	61.4	88
Arusha (U)	97.1	91.3	88.4	75.4	97.1	92.8	68.1	69
Muheza	91.3	92.8	75.4	82.6	94.2	91.3	53.6	69
Mvomero	80.5	95.1	75.6	87.8	90.2	90.2	56.1	41
Kibaha	78.0	76.0	74.0	62.0	78.0	66.0	38.0	50
Kilwa	61.9	81.0	52.4	100.0	97.6	83.3	23.8	42
Songea (U)	90.0	100.0	85.0	65.0	100.0	80.0	40.0	20
Rungwe	71.7	88.3	85.0	93.3	90.0	76.7	51.7	60
Kigoma (U)	100.0	95.0	85.0	75.0	100.0	65.0	50.0	20
Meatu	92.9	85.7	88.1	97.6	66.7	95.2	52.4	42
Sengerema	92.7	100.0	89.1	94.5	100.0	83.6	76.4	55
Bunda	56.4	89.7	64.1	79.5	89.7	71.8	30.8	39
Babati	75.0	90.0	60.0	77.5	92.5	67.5	27.5	40
Kaskazini A (Zanzibar)	85.3	91.2	91.2	76.5	97.1	79.4	55.9	34
Wete (Zanzibar)	90.9	100.0	95.5	86.4	86.4	86.4	59.1	22
Total	83.2	88.7	80.0	84.1	89.9	82.6	51.8	691

Table 3. Percentage of facilities with availability of guidelines, by topic

Guideline topic	Guidelines available (1)	Number of facilities with guidelines (15 districts)
Integrated management of childhood illness (IMCI)	42.3	292
Adolescent sexual and reproductive health (ASRH)	13.5	93
Delivery care	29.1	201
Integrated management of adult illness (IMAI)	8.8	61
Family planning guidelines	32.3	223
STI diagnosis and treatment	39.5	273
HIV/AIDS counseling and testing	45.3	313
HIV/AIDS counseling (only)	20.0	138
HIV rapid testing	37.8	261
PMTCT	44.1	305
Post-exposure prophylaxis (PEP)	11.1	77
HIV/AIDS opportunistic infections	28.7	198
TB/HIV co-infection	22.0	152
TB diagnosis and treatment	38.4	265
MDR-TB	16.2	112
Malaria diagnosis and treatment	61.9	428
Drug supply	26.8	185
Health management information system (HMIS)	18.4	127
Infection control	17.8	123
Number of facilities		691

(1) Guidelines reported available, either observed or not observed during visit.

Table 4. Average availability of 27 general medicines in health facilities, by district

District	Average drug availability in facilities (among 27 general medicines) (1)
Arusha (U)	72.1
Babati	32.1
Bunda	10.5
Dodoma	45.8
Kaskazini A (Zanzibar)	22.7
Kibaha	54.0
Kigoma (U)	57.5
Kilwa	33.3
Meatu	10.7
Muheza	66.9
Mvomero	34.1
Rungwe	9.6
Sengerema	4.5
Songea (U)	32.5
Wete (Zanzibar)	9.1

(1) Among facilities, the median percentage of 27 general medicines available, by district. 27 General medicines include:

Salbutamol inhaler for asthma, Glibenclamide capsules or tabs for diabetes, Atenolol capsules or tabs for cardiovascular disease, Captopril capsules or tabs for cardiovascular disease, Enalapril for cardiovascular disease, Simvastatin capsules or tabs for cardiovascular disease, Amitriptyline capsules or tabs for depression, Ciprofloxacin capsules or tabs for infectious disease, Co-trimoxazole suspension for pediatric infectious disease, Co-trimoxazole tablets for adult infectious diseases, Co-trimoxazole tablets for adult infectious diseases, Amoxicillin capsules or tabs for infectious disease, Ceftriaxone injection for infectious disease, Fluconazole capsules or tabs for infectious disease, Didofenac or Ibuprofen capsules or tabs for pain relief, Paracetamol suspension for paediatric pain relief, Omeprazole capsules or tabs for peptic ulcers and reflux, Albendazole chewable tablets for the treatment of parasitic infestations, Mebendazole tablets for the treatment of parasitic infestations, Mebendazole tablets, Metrodinazole for the treatment of vaginal infections, Vitamin A capsules, Oxytocin injection for use during second and third stage of labor and for treatment of postpartum hemorrhage, Magnesium sulphate for prevention and treatment of eclampsia-related seizures, Oral rehydration salts (ORS) sachets, Combined oral contraceptive pills, Injectable contraceptives and Male condoms.

Table 5. Percentage of facilities with lab tests available

Lab test	Percent of labs with test	Number of facilities n=691
Blood chemistry (liver function, glucose, creatinine)	5.8	40
Haemolytic analyzer/blood count machine	6.2	43
Hemoglobin	30.2	209
India Ink Test for CNS	1.3	9
Pregnancy test	33.9	234
Serology Hep B	3.9	27
Serology Hep C	1.3	9
Syphilis VDRL or RPR test	41.5	287
Urine glucose	29.4	203
Urine protein	29.2	202

Table 6. Percent distribution of the availability of specific lab results, on-site or off-site, same day or later

	Availability of lab results	Number of facilities
Hb		
Available on-site, today	33.9	230
Available on-site, not today	0.4	3
Available off-site, within 2 days	2.2	15
Not available	63.4	430
Blood glucose		
Available on-site, today	22.3	151
Available on-site, not today	0.4	3
Available off-site, within 2 days	1.2	8
Not available	76.1	516
Syphilis test		
Available on-site, today	41.9	284
Available on-site, not today	1.9	13
Available off-site, within 2 days	1.5	10
Not available	54.7	371
HIV test		
Available on-site, today	57.8	392
Available on-site, not today	0.4	3
Available off-site, within 2 days	3.8	26
Not available	37.9	257
TB sputum		
Available on-site, today	8.1	55
Available on-site, not today	4.4	30
Available off-site, within 2 days	6	41
Not available	81.4	552
Malaria blood slide		
Available on-site, today	35.7	242
Available on-site, not today	0.3	2
Available off-site, within 2 days	2.2	15
Not available	61.8	419
All	100	678
Number of facilities (including 13 with missing information)		691

HIV service readiness

Table 7. Percentage (and number) of health facilities with HIV testing and counseling services, PMTCT through ARVs, and antiretroviral therapy (ART)

District	HIV testing & counseling (HTC)				Anti-retroviral therapy (ART)				
	Any HIV services	Number with any HIV service	Number with counseling (HTC)	Number with HTC	PMTCT with ARV	Number with PMTCT	Number with therapy (ART)	Number of facilities	
Dodoma	84.3	70	78.3	65	34.9	29	13.3	11	88
Arusha (U)	63.8	44	58.0	40	31.9	22	31.9	22	69
Muheza	75.0	51	73.5	50	58.8	40	13.2	9	69
Mvomero	63.4	26	43.9	18	9.8	4	7.3	3	41
Kibaha	68.0	34	62.0	31	40.0	20	14.0	7	50
Kilwa	61.9	26	47.6	20	40.5	17	7.1	3	42
Songea (U)	70.0	14	70.0	14	45.0	9	30.0	6	20
Rungwe	73.7	42	52.6	30	43.9	25	8.8	5	60
Kigoma (U)	65.0	13	55.0	11	40.0	8	15.0	3	20
Meatu	88.1	37	88.1	37	11.9	5	11.9	5	42
Sengerema	89.1	49	18.2	10	10.9	6	7.3	4	55
Bunda	71.8	28	51.3	20	51.3	20	33.3	13	39
Babati	64.1	25	46.2	18	56.4	22	33.3	13	40
Kaskazini A (Zanzibar)	60.6	20	12.1	4	6.1	2	6.1	2	34
Wete (Zanzibar)	22.7	5	9.1	2	4.5	1	4.5	1	22
Total	71.2	484	54.4	370	33.8	230	15.7	107	691

Table 8. Percentage of health facilities with other HIV services

District	Post-exposure prophylaxis (PEP)	Youth friendly services	HIV/AIDS preventive outreach	Number of facilities
Dodoma	9.6	42.2	20.5	88
Arusha (U)	29.0	26.1	17.4	69
Muheza	8.8	2.9	4.4	69
Mvomero	9.8	17.1	19.5	41
Kibah	18.0	30.0	34.0	50
Kilwa	4.8	14.3	21.4	42
Songea (U)	30.0	55.0	60.0	20
Rungwe	3.5	3.5	52.6	60
Kigoma (U)	10.0	0.0	15.0	20
Meatu	11.9	0.0	7.1	42
Sengerema	3.6	89.1	85.5	55
Bunda	15.4	23.1	28.2	39
Babati	23.1	15.4	23.1	40
Kaskazini A (Zanzibar)	6.1	0.0	0.0	34
Wete (Zanzibar)	4.5	4.5	4.5	22
Total	12.4	23.7	26.8	691

Table 9. Among facilities offering HIV/AIDS testing and counseling (HTC), percentage with HIV testing equipment & supplies

District	HIV Rapid test	ELISA reader/scanner	Dynabeads w/vortex mixer	Western blot for HIV	Cytometer of CD4 count machine	PCR for viral load	Number of facilities with HTC
Dodoma	89.2	3.1	3.1	4.6	1.5	1.5	65
Arusha (U)	94.9	12.8	0.0	0.0	7.7	2.6	40
Muheza	96.0	0.0	0.0	0.0	0.0	0.0	50
Mvomero	61.1	5.6	0.0	0.0	11.1	0.0	18
Kibaha	83.9	0.0	0.0	0.0	3.2	0.0	31
Kilwa	95.0	0.0	0.0	0.0	5.0	0.0	20
Songea (U)	100.0	7.1	0.0	0.0	14.3	0.0	14
Rungwe	90.0	0.0	10.0	0.0	0.0	0.0	30
Kigoma (U)	81.8	0.0	0.0	0.0	9.1	0.0	11
Meatu	100.0	0.0	0.0	0.0	2.7	0.0	37
Sengerema	100.0	0.0	0.0	0.0	10.0	0.0	10
Bunda	85.0	0.0	0.0	5.0	5.0	0.0	20
Babati	44.4	0.0	5.6	0.0	11.1	5.6	18
Kaskazini A (Zanzibar)	100.0	0.0	0.0	0.0	0.0	0.0	4
Wete (Zanzibar)	50.0	0.0	0.0	0.0	0.0	0.0	2
Total	88.3	2.4	1.6	1.1	4.3	0.8	370

Table 10. Among facilities offering ART services, percentage with adult first-line treatment regimens available

District	First-line treatment of choice (1)	Alternative first-line treatment 1 (2)	Alternative first-line treatment 2 (3)	Alternative first-line treatment 3 (4)	Number of facilities with ART
Dodoma	18.2	18.2	18.2	18.2	11
Arusha (U)	59.1	63.6	59.1	59.1	22
Muheza	55.6	55.6	44.4	44.4	9
Mvomero	66.7	66.7	66.7	66.7	3
Kibaha	57.1	42.9	57.1	57.1	7
Kilwa	66.7	66.7	66.7	66.7	3
Songea (U)	100.0	100.0	83.3	100.0	6
Rungwe	20.0	80.0	40.0	40.0	5
Kigoma (U)	66.7	66.7	66.7	66.7	3
Meatu	80.0	80.0	80.0	80.0	5
Sengerema	25.0	25.0	25.0	25.0	4
Bunda	30.8	30.8	38.5	38.5	13
Babati	15.4	46.2	15.4	15.4	13
Kaskazini A (Zanzibar)	100.0	100.0	100.0	100.0	2
Wete (Zanzibar)	100.0	100.0	100.0	100.0	1
Total	47.7	54.2	47.7	48.6	107

(1) d4T30+3TC+NVP=stavudine, lamuvidine and nevirapine; (2) AZT+EFV+NVP=Zidovudine, lamuvidine and nevirapine; (3) d4T+3TC+EFV=stavudine, lamuvidine and efavirenz; (4) AZT+3TC+EFV=Zidovudine, lamuvidine and efavirenz. (note, this latter regimen is also the default first-line treatment in Tanzania, according to 2008 National Guidelines for the Management of HIV and AIDS, p.141)

Source: Sonni et al. 2008. Surveillance of transmitted HIV drug resistance among women attending antenatal clinics in Dar es Salaam, Tanzania. *Antiviral Therapy* 13 Suppl 2:77-82

**Table 11. Readiness to deliver HIV/AIDS testing and counseling (HTC) services:
Among facilities offering HTC services, percentage with trained staff,
available guidelines, and HIV testing supplies**

District	At least one trained staff in HTC	Guidelines available on HTC	HIV rapid test	Readiness to deliver HTC services	Number of facilities offering HTC
Dodoma	55.4	52.3	89.2	43.1	65
Arusha (U)	77.5	77.5	94.9	72.5	40
Muheza	64.0	64.0	96.0	60.0	50
Mvomero	61.1	50.0	61.1	33.3	18
Kibaha	80.6	71.0	83.9	64.5	31
Kilwa	95.0	85.0	95.0	85.0	20
Songea (U)	85.7	78.6	100.0	78.6	14
Rungwe	83.3	73.3	90.0	70.0	30
Kigoma (U)	81.8	63.6	81.8	54.5	11
Meatu	91.9	91.9	100.0	91.9	37
Sengerema	60.0	60.0	100.0	60.0	10
Bunda	75.0	65.0	85.0	50.0	20
Babati	77.8	77.8	44.4	33.3	18
Kaskazini A (Zanzibar)	100.0	100.0	100.0	100.0	4
Wete (Zanzibar)	100.0	100.0	50.0	50.0	2
Total	74.3	69.7	88.3	61.9	370

**Table 12. Readiness to deliver PMTCT services:
Among facilities offering PMTCT services, percentage with trained staff,
available guidelines, and HIV testing supplies**

District	At least one trained staff in PMTCT	Guidelines available PMTCT	HIV rapid tests	Readiness to deliver PMTCT (1)	Number of facilities offering PMTCT
Dodoma	93.1	89.7	82.8	72.4	29
Arusha (U)	86.4	86.4	95.2	81.8	22
Muheza	90.0	90.0	95.0	85.0	40
Mvomero	75.0	50.0	75.0	50.0	4
Kibaha	80.0	75.0	90.0	65.0	20
Kilwa	94.1	76.5	94.1	76.5	17
Songea (U)	88.9	88.9	100.0	88.9	9
Rungwe	100.0	92.0	96.0	88.0	25
Kigoma (U)	100.0	100.0	87.5	87.5	8
Meatu	100.0	100.0	100.0	100.0	5
Sengerema	100.0	100.0	100.0	100.0	6
Bunda	90.0	90.0	78.9	70.0	20
Babati	90.9	90.9	36.4	31.8	22
Kaskazini A (Zanzibar)	100.0	100.0	100.0	100.0	2
Wete (Zanzibar)	100.0	0.0	100.0	0.0	1
Total	91.3	87.4	86.0	74.8	230

(1) Incomplete data on availability of ARV medicines since this information was asked only of facilities offering ART, not PMTCT.

Table 13. Readiness to deliver ART services: Among facilities offering ART services, percentage with trained staff, available guidelines, and first-line ART treatment regimens for adults

District	Guidelines				Number of facilities offering ART
	At least one trained staff HIV/AIDS opportunistic infection treatment	First-line ART medicines available (1)	Readiness to deliver ART services	First-line ART medicines available (1)	
Dodoma	54.5	54.5	18.2	18.2	11
Arusha (U)	63.6	63.6	45.5	45.5	22
Muheza	66.7	66.7	55.6	55.6	9
Mvomero	66.7	66.7	33.3	33.3	3
Kibaha	28.6	42.9	28.6	28.6	7
Kilwa	100.0	66.7	66.7	66.7	3
Songea (U)	83.3	83.3	83.3	83.3	6
Rungwe	80.0	40.0	40.0	40.0	5
Kigoma (U)	100.0	100.0	66.7	66.7	3
Meatu	100.0	100.0	80.0	80.0	5
Sengerema	25.0	0.0	0.0	0.0	4
Bunda	53.8	53.8	30.8	30.8	13
Babati	92.3	92.3	46.2	46.2	13
Kaskazini A (Zanzibar)	100.0	100.0	100.0	100.0	2
Wete (Zanzibar)	0.0	100.0	0.0	0.0	1
Total	67.3	65.4	57.0	43.9	107

(1) d4T30+3TC+NVP=stavudine, lamivudine and nevirapine ; AZT+EFV+NVP= zidovudine, lamivudine and nevirapine ; d4T+3TC+EFV=stavudine, lamivudine and efavirenz ; AZT+3TC+EFV= zidovudine, lamivudine and efavirenz

Tuberculosis service readiness

Table 14. Percentage of health facilities with core diagnostic and treatment services for tuberculosis

District	Directly Observed Treatment, Short-course (DOTS)	Number of facilities with DOTS	Sputum smear microscopy	Number of facilities with sputum smear microscopy	Number of facilities
Dodoma	68.8	22	28.1	9	88
Arusha (U)	74.2	23	87.1	27	69
Muheza	86.8	46	9.4	5	69
Mvomero	96.6	28	27.6	8	41
Kibaha	70.4	19	25.9	7	50
Kilwa	88.9	8	77.8	7	42
Songea (U)	87.5	7	37.5	3	20
Rungwe	47.8	11	30.4	7	60
Kigoma (U)	77.8	7	55.6	5	20
Meatu	100.0	2	50.0	1	42
Sengerema	88.5	46	19.2	10	55
Bunda	60.9	14	26.1	6	39
Babati	81.0	17	28.6	6	40
Kaskazini A (Zanzibar)	100.0	22	18.2	4	34
Wete (Zanzibar)	85.7	12	14.3	2	22
Total	80.0	284	30.1	107	691

Table 15. Percentage of health facilities with other specific tuberculosis diagnostic and treatment services

District	TB treatment			TB diagnosis				Number of facilities
	TB treatment (DOTS or non-DOTS)	DOTS outreach	Follow-up TB patients	Culture	X-ray	MDR-TB: Culture or rapid test		
Dodoma	84.4	46.9	78.1	0.0	3.1	3.1		88
Arusha (U)	77.4	41.9	64.5	9.7	25.8	6.5		69
Muheza	1	39.6	75.5	1.9	1.9	1.9		69
Mvomero	96.6	48.3	82.8	0.0	6.9	0.0		41
Kibaha	77.8	37.0	85.2	7.4	3.7	0.0		50
Kilwa	88.9	66.7	77.8	11.1	22.2	0.0		42
Songea (U)	1	12.5	1	12.5	12.5	0.0		20
Rungwe	69.6	4.3	69.6	0.0	8.7	0.0		60
Kigoma (U)	77.8	55.6	77.8	0.0	22.2	0.0		20
Meatu	1	50.0	1	0.0	50.0	0.0		42
Sengerema	96.2	78.8	94.2	0.0	1.9	0.0		55
Bunda	78.3	26.1	56.5	0.0	8.7	0.0		39
Babati	81.0	33.3	66.7	0.0	9.5	23.8		40
Kaskazini A (Zanzibar)	1	9.1	54.5	0.0	9.1	0.0		34
Wete (Zanzibar)	1	7.1	71.4	7.1	14.3	14.3		22
Total	88.7	40.6	76.1	2.5	8.5	3.1		691

Table 16. Among facilities offering DOTS services, percentage with at least one trained staff and guidelines available

District	TB diagnosis & treatment		MDR-TB		TB/HIV co-infection		Number of facilities with DOTS
	At least one trained staff	Guidelines available	At least one trained staff	Guidelines available	At least one trained staff	Guidelines available	
Dodoma	77.3	77.3	27.3	27.3	50.0	40.9	22
Arusha (U)	87.0	87.0	69.6	69.6	82.6	82.6	23
Muheza	26.1	26.1	15.2	15.2	28.3	28.3	46
Mvomero	82.1	75.0	53.6	46.4	17.9	10.7	28
Kibaha	78.9	73.7	31.6	36.8	47.4	36.8	19
Kilwa	62.5	50.0	37.5	25.0	25.0	12.5	8
Songea (U)	57.1	57.1	14.3	0.0	42.9	42.9	7
Rungwe	72.7	63.6	27.3	18.2	54.5	45.5	11
Kigoma (U)	100.0	85.7	100.0	100.0	100.0	71.4	7
Meatu	100.0	100.0	50.0	50.0	100.0	100.0	2
Sengerema	76.1	73.9	0.0	0.0	4.3	2.2	46
Bunda	78.6	64.3	57.1	57.1	71.4	57.1	14
Babati	94.1	94.1	76.5	76.5	64.7	64.7	17
Kaskazini A (Zanzibar)	27.3	27.3	0.0	0.0	45.5	36.4	22
Wete (Zanzibar)	66.7	58.3	8.3	0.0	0.0	0.0	12
Total	66.5	63.0	30.6	28.9	38.7	33.5	284

Table 17. Among facilities offering TB diagnosis with sputum smear microscopy, percentage with sputum tests available (AFB or ZIEHL NIELSEN tests)

District	TB sputum test available	Number of facilities offering sputum smear microscopy
Dodoma	77.8	9
Arusha (U)	80.8	27
Muheza	80.0	5
Mvomero	75.0	8
Kibaha	42.9	7
Kilwa	57.1	7
Songea (U)	100.0	3
Rungwe	100.0	7
Kigoma (U)	80.0	5
Meatu	100.0	1
Sengerema	100.0	10
Bunda	100.0	6
Babati	83.3	6
Kaskazini A (Zanzibar)	100.0	4
Wete (Zanzibar)	50.0	2
Total	81.1	107

Table 18. Among facilities offering DOTS services, percentage with first-line medicines available

District	Ethambutol oral (100 or 400mg)	Isoniazid oral (100 or 300mg)	Pyrazinamide oral (400mg)	Rifampicin oral (150 or 300mg)	Isoniazid+ Rifampicin (Rifina oral)	All 4 TB first-line medicines (1)	Number of facilities with DOTS
Dodoma	13.6	4.5	4.5	9.1	45.5	0.0	22
Arusha (U)	36.4	45.5	31.8	31.8	31.8	20.0	23
Muheza	2.2	2.2	2.2	0.0	93.5	0.0	46
Mvomero	17.9	14.3	10.7	17.9	71.4	10.0	28
Kibaha	0.0	0.0	10.5	0.0	73.7	0.0	19
Kilwa	12.5	12.5	12.5	0.0	62.5	10.0	8
Songea (U)	0.0	14.3	0.0	0.0	71.4	0.0	7
Rungwe	9.1	0.0	0.0	0.0	81.8	0.0	11
Kigoma (U)	28.6	28.6	14.3	14.3	1	10.0	7
Meatu	0.0	50.0	0.0	0.0	0.0	0.0	2
Sengerema	0.0	0.0	2.2	2.2	91.3	0.0	46
Bunda	7.1	0.0	0.0	14.3	78.6	0.0	14
Babati	17.6	11.8	5.9	5.9	82.4	10.0	17
Kaskazini A (Zanzibar)	0.0	0.0	0.0	0.0	54.5	0.0	22
Wete (Zanzibar)	0.0	0.0	0.0	0.0	16.7	0.0	12
Total	8.8	8.1	6.4	6.7	71.0	0.0	284

(1) Includes any dose, or combination dose, of Ethambutol, Isoniazid, Pyrazinamide and Rifampicin.

Table 19. Among facilities offering DOTS services, percentage that are "ready" to deliver TB treatment services

District	At least one trained staff TB diagnosis & treatment	Guidelines available TB diagnosis & treatment	TB sputum test available	TB first-line drugs (1)	Readiness to deliver TB treatment services	
					(2)	Number of facilities with DOTS
Dodoma	77.3	77.3	31.8	0.0	0.0	22
Arusha (U)	87.0	87.0	81.8	20.0	20.0	23
Muheza	26.1	26.1	10.9	0.0	0.0	46
Mvomero	82.1	75.0	25.0	10.0	0.0	28
Kibaha	78.9	73.7	15.8	0.0	0.0	19
Kilwa	62.5	50.0	50.0	10.0	10.0	8
Songea (U)	57.1	57.1	42.9	0.0	0.0	7
Rungwe	72.7	63.6	45.5	0.0	0.0	11
Kigoma (U)	1	85.7	57.1	10.0	10.0	7
Meatu	1	1	50.0	0.0	0.0	2
Sengerema	76.1	73.9	19.6	0.0	0.0	46
Bunda	78.6	64.3	42.9	0.0	0.0	14
Babati	94.1	94.1	23.5	10.0	10.0	17
Kaskazini A (Zanzibar)	27.3	27.3	18.2	0.0	0.0	22
Wete (Zanzibar)	66.7	58.3	0.0	0.0	0.0	12
Total	66.5	63.0	28.3	0.0	0.0	284

(1) Includes any dose, or combination dose, of Ethambutol, Isoniazid, Pyrazinamide and Rifampicin; (2) Readiness score is percentage of DOTS facilities with at least one trained staff, available guidelines, and first-line drugs. The sputum test availability was not included in the readiness score.

Malaria service readiness

Table 20. Percentage of health facilities with malaria diagnostic & treatment services

District	Malaria diagnosis	Malaria treatment	Both diagnosis & treatment services	Number with malaria diagnosis & treatment	Number of facilities
Dodoma	83.1	97.6	77.3	68	88
Arusha (U)	92.8	94.2	92.8	64	69
Muheza	47.1	97.1	46.4	32	69
Mvomero	73.2	92.7	73.2	30	41
Kibaha	86.0	88.0	86.0	43	50
Kilwa	23.8	97.6	23.8	10	42
Songea (U)	100.0	100.0	100.0	20	20
Rungwe	98.2	100.0	93.3	56	60
Kigoma (U)	90.0	100.0	90.0	18	20
Meatu	97.6	97.6	95.2	40	42
Sengerema	89.1	100.0	89.1	49	55
Bunda	97.4	97.4	97.4	38	39
Babati	87.2	94.9	85.0	34	40
Kaskazini A (Zanzibar)	97.0	97.0	94.1	32	34
Wete (Zanzibar)	95.5	95.5	95.5	21	22
Total	81.9	96.5	80.3	555	691

Table 21. Among facilities with malaria diagnostic and treatment services, percentage with at least one trained staff and guidelines available

District	Trained staff	Available guidelines	Trained staff and guidelines	Number of facilities with malaria diagnosis & treatment services
Dodoma	57.4	57.4	57.4	68
Arusha (U)	56.3	56.3	56.3	64
Muheza	53.1	53.1	53.1	32
Mvomero	70.0	60.0	56.7	30
Kibaha	69.8	65.1	65.1	43
Kilwa	100.0	100.0	100.0	10
Songea (U)	50.0	50.0	50.0	20
Rungwe	73.2	71.4	71.4	56
Kigoma (U)	77.8	50.0	50.0	18
Meatu	95.0	95.0	95.0	40
Sengerema	85.7	85.7	85.7	49
Bunda	76.3	71.1	71.1	38
Babati	85.3	79.4	79.4	34
Kaskazini A (Zanzibar)	59.4	56.3	50.0	32
Wete (Zanzibar)	66.7	76.2	66.7	21
Total	70.1	67.6	66.7	555

Table 22. Among facilities with malaria diagnostic and treatment services, percentage with specific diagnostic tests

District	Microscope	Slides with covers	GIEMSA stain	Field stain	Rapid diagnostic tests (RDT)	Microscope or RDT	Number of facilities with malaria diagnosis & treatment services
Dodoma	83.8	2.9	2.9	4.4	1.5	83.8	68
Arusha (U)	71.4	7.9	0.0	0.0	6.3	71.4	64
Muheza	81.3	0.0	0.0	0.0	0.0	81.3	32
Mvomero	46.7	3.3	0.0	0.0	6.7	50.0	30
Kibaha	65.1	0.0	0.0	0.0	4.7	65.1	43
Kilwa	70.0	0.0	0.0	0.0	10.0	70.0	10
Songea (U)	75.0	5.0	0.0	0.0	10.0	75.0	20
Rungwe	58.9	0.0	5.4	0.0	0.0	58.9	56
Kigoma (U)	61.1	0.0	0.0	0.0	5.6	61.1	18
Meatu	95.0	0.0	0.0	0.0	5.0	95.0	40
Sengerema	22.4	0.0	0.0	0.0	2.0	22.4	49
Bunda	51.4	0.0	0.0	2.7	2.7	51.4	38
Babati	29.4	0.0	2.9	0.0	5.9	29.4	34
Kaskazini A (Zanzibar)	9.4	0.0	0.0	0.0	0.0	9.4	32
Wete (Zanzibar)	4.8	4.8	0.0	0.0	0.0	4.8	21
Total	57.5	1.8	1.1	0.7	3.4	57.7	555

Table 23. Among facilities with diagnostic and treatment malaria services, percentage “ready” to deliver services

District	Trained staff	Available guidelines	Diagnostic equipment (1)	Medicine (ACT)	Readiness to deliver TB treatment services (2)	Number of facilities with malaria diagnosis & treatment services
Dodoma	57.4	57.4	83.8	83.8	38.2	68
Arusha (U)	56.3	56.3	71.4	54.0	31.7	64
Muheza	53.1	53.1	81.3	93.8	46.9	32
Mvomero	70.0	60.0	50.0	80.0	23.3	30
Kibaha	69.8	65.1	65.1	72.1	34.9	43
Kilwa	1	1	70.0	1	70.0	10
Songea (U)	50.0	50.0	75.0	80.0	25.0	20
Rungwe	73.2	71.4	58.9	89.3	37.5	56
Kigoma (U)	77.8	50.0	61.1	88.9	38.9	18
Meatu	95.0	95.0	95.0	92.5	87.5	40
Sengerema	85.7	85.7	22.4	98.0	18.4	49
Bunda	76.3	71.1	51.4	48.6	21.6	38
Babati	85.3	79.4	29.4	73.5	23.5	34
Kaskazini A (Zanzibar)	59.4	56.3	9.4	46.9	0.0	32
Wete (Zanzibar)	66.7	76.2	4.8	14.3	0.0	21
Total	70.1	67.6	57.7	74.9	33.1	555

(1) Includes microscope or RDT but does not include supplies for diagnosis with microscope (e.g., slide covers and stain); (2) Readiness score is percentage of facilities with malaria diagnosis and treatment services with at least one trained staff, available guidelines, and ACT.

DCA household survey tables

Table 24. Number of households, number of interviews, and response rates, according to residence/district

Residence/District	Household interviews			Individual interviews: women		
	Households selected	Households occupied	Households interviewed	Household response rate	Number of eligible women interviewed	Eligible women response rate
Residence						
Urban	1,479	1,477	1,471	99.6	1,451	98.3
Rural	7,805	7,782	7,719	99.2	8,179	96.9
District						
Arusha	647	647	644	99.5	757	95.2
Babati	624	624	624	100	602	99.2
Bunda	625	624	621	99.5	744	99.6
Dodoma	625	625	625	100	581	100
Kaskazini 'A'	613	600	584	97.3	606	91.9
Kibaha	625	625	625	100	650	99.8
Kigoma	625	624	624	100	604	100
Kilwa	624	623	619	99.4	511	98.6
Meatu	625	625	624	99.8	1,042	99.9
Muheza	625	625	624	99.8	593	99.7
Mvomero	597	596	583	97.8	505	94.3
Rungwe	582	579	566	97.8	428	81.8
Sengerema	617	616	611	99.2	699	95
Songea(U)	619	619	617	99.7	617	99.4
Wete-Kask	611	607	599	98.7	691	96.4
Total	9,284	9,259	9,190	99.3	9,630	97.1

Table 25. Distribution of the de-jure population by wealth quintiles, according to residence/district

Residence/District	Wealth quintile				Total	Number of population
	Lowest	Second	Middle	Fourth	Highest	
Residence						
Urban	9.3	10.3	20.1	26.5	33.8	10624
Rural	19.5	19.7	18.3	18.9	23.7	32021
District						
Arusha	0.0	3.4	11.9	16.4	68.3	4156
Babati	21.6	16.7	23.9	22.9	14.9	2548
Bunda	9.8	15.0	27.0	28.4	19.8	1443
Dodoma	42.7	32.2	14.5	7.7	2.9	764
Kaskazini 'A'	19.0	22.5	25.0	25.9	7.6	3943
Kibaha	10.6	9.7	18.6	23.1	37.9	9079
Kigoma	8.1	17.6	23.2	22.8	28.4	1821
Kilwa	44.3	26.8	10.2	11.0	7.8	2854
Meatu	26.7	30.3	18.5	12.7	11.8	2014
Muheza	27.9	24.1	10.5	15.9	21.6	3211
Mvomero	18.5	22.2	25.3	27.3	6.7	1726
Rungwe	10.0	16.7	30.1	22.9	20.4	1007
Sengerema	12.8	27.0	26.3	18.4	15.5	2953
Songea(U)	1.5	6.2	15.1	30.4	46.8	1470
Wete-Kask	22.7	18.8	14.9	22.4	21.2	3656
Total	16.9	17.3	18.7	20.8	26.2	42645

Table 26. Percent distribution of women 15-49 by background characteristics

Background characteristic	Weighted percent	Weighted number	Un-weighted number
Age			
15-24	40.5	3,804	3,728
25-39	44.4	4,175	4,188
40-49	15.1	1,423	1,439
Education			
No education	20.7	1,943	2,298
Primary	57.2	5,378	5,347
Secondary+	21.5	2,018	1,648
Missing	0.7	63	62
Wealth quintile			
Lowest	15.1	1,422	1,692
Second	15.6	1,463	1,775
Middle	17.8	1,670	1,838
Fourth	20.7	1,948	1,857
Highest	30.8	2,899	2,193
Residence			
Urban	25.9	2,440	1,426
Rural	74.1	6,963	7,929
District			
Arusha	11.1	1,042	721
Babati	5.9	559	597
Bunda	3.5	332	741
Dodoma	2.4	225	581
Kaskazini 'A'	8.1	761	557
Kibaha	23.4	2,202	649
Kigoma	4.8	450	604
Kilwa	5.5	513	504
Meatu	5.8	542	1,041
Muheza	6.5	610	591
Mvomero	3.6	336	476
Rungwe	1.9	177	350
Sengerema	5.6	526	664
Songea(U)	4.2	397	613
Wete-Kask	7.8	731	666
Total	100	9,402	9,355

Table 27. Percent distribution of women aged 15-49 by age, education and wealth quintile, according to district

District	Age			Education				Wealth quintile				Number of women	
	15-24	25-39	40-49	No education	Primary	Secondary+	Missing	Lowest	Second	Middle	Fourth		Highest
Arusha	43.1	43.8	13.1	4.6	58.5	35.8	1.1	0.0	3.0	11.0	15.7	70.3	1,042
Babati	36.9	49.0	14.1	11.9	73.2	15.0	0.0	19.5	15.4	23.8	23.9	17.5	559
Bunda	42.9	42.6	14.4	14.6	71.2	13.9	0.4	9.5	13.7	26.9	28.0	22.0	332
Dodoma	33.1	53.3	13.6	38.4	54.3	7.3	0.0	40.6	32.0	16.8	7.8	2.7	225
Kaskazini 'A'	43.7	38.5	17.8	32.3	28.5	37.8	1.4	18.6	20.5	25.3	27.5	8.0	761
Kibaha	40.0	44.8	15.2	11.4	68.9	19.6	0.0	7.9	8.8	16.5	22.6	44.2	2,202
Kigoma	45.6	41.1	13.3	31.9	52.9	14.2	0.9	8.9	15.2	19.3	23.7	32.9	450
Kilwa	29.7	55.3	15.0	42.9	52.4	4.4	0.3	46.4	23.3	10.4	12.0	7.9	513
Meatu	45.8	34.7	19.5	50.6	39.6	9.4	0.5	27.6	28.0	17.9	12.0	14.5	542
Muheza	40.2	43.8	16.0	12.7	70.4	16.9	0.0	24.5	24.2	10.6	14.3	26.4	610
Mvomero	34.4	49.1	16.6	19.6	73.3	5.4	1.6	18.3	21.3	25.5	28.5	6.4	336
Rungwe	32.5	50.5	17.0	7.8	69.6	19.7	2.9	5.5	14.8	24.7	22.7	32.3	177
Sengerema	39.9	46.5	13.7	30.8	60.1	9.0	0.1	14.1	27.0	25.3	17.3	16.4	526
Songea(U)	38.1	48.4	13.4	7.6	72.7	19.2	0.5	1.1	5.2	13.7	31.6	48.4	397
Wete-Kask	45.7	39.4	14.9	28.7	19.2	49.5	2.5	20.3	17.9	16.4	22.0	23.5	731
Total	40.5	44.4	15.1	20.7	57.2	21.5	0.7	15.1	15.6	17.8	20.7	30.8	9,402

Table 28. Percent distribution of de jure children under 18 years of age by living arrangements and survival status of parents, the percentage of children not living with a biological parent, and the percentage of children with one or both parents dead, by background characteristics and district

Background characteristic	Living with mother but not with father			Living with father but not with mother			Not living with either parent					Percentage not living with a biological parent	Percentage with one or both parents dead	Number of children	
	Father alive	Father dead	Mother alive	Mother dead	Both alive	Only father alive	Only mother alive	Both dead	Missing information on father/mother	Total					
Age															
0-4	75.3	14.0	1.3	0.2	1.6	0.2	6.3	0.3	0.4	0.3	0.3	100	7.6	2.5	4,828
5-9	65.0	10.1	2.8	0.6	3.4	0.6	13.3	1.0	2.2	1.3	0.5	100	18.2	7.8	6,300
10-14	56.6	10.6	5.0	1.5	4.5	1.5	14.0	1.7	2.6	2.8	0.7	100	21.7	13.9	6,558
15-17	51.9	7.9	5.7	1.9	5.3	1.9	17.5	1.3	3.5	4.3	0.8	100	27.4	16.8	2,799
Sex															
Male	65.3	11.0	3.2	1.0	3.5	1.0	11.0	1.0	1.8	1.7	0.5	100	16.0	8.8	10,119
Female	60.7	10.8	3.9	0.9	3.7	0.9	13.8	1.2	2.3	2.1	0.6	100	20.1	10.6	10,360
Wealth quintile															
Lowest	61.3	13.5	3.5	1.2	3.2	1.2	11.4	1.3	2.0	2.0	0.6	100	17.3	10.1	3,547
Second	65.3	10.2	5.2	0.9	3.6	0.9	10.3	0.8	1.1	1.8	0.7	100	14.7	10.1	3,713
Middle	63.7	10.6	3.2	0.9	3.5	0.9	12.0	1.6	2.3	1.8	0.4	100	18.0	9.9	3,971
Fourth	62.7	10.7	3.7	1.2	4.0	1.2	11.8	1.0	2.7	1.6	0.4	100	17.6	10.3	4,334
Highest	61.9	9.8	2.5	0.6	3.6	0.6	15.6	0.8	2.1	2.4	0.7	100	21.6	8.6	4,920
Residence															
Urban	56.3	13.4	3.5	0.9	3.6	0.9	14.5	1.4	3.1	2.8	0.6	100.0	22.4	12.0	4,917
Rural	65.0	10.1	3.6	1.0	3.6	1.0	11.8	1.0	1.7	1.6	0.5	100.0	16.7	9.1	15,567
District															
Arusha	64.6	9.6	3.8	0.2	4.3	0.2	13.5	0.5	2.0	0.6	1.1	100.0	17.6	7.6	1,787
Babati	71.3	8.3	3.6	0.7	3.7	0.7	7.6	0.4	1.1	2.5	0.9	100.0	12.4	8.4	1,168
Bunda	58.4	12.6	4.8	0.8	6.7	0.8	11.2	1.0	1.4	2.2	0.7	100.0	16.7	10.4	792
Dodoma	63.4	8.5	9.6	1.8	1.8	2.5	6.1	0.9	0.6	3.3	3.3	100.0	14.2	17.0	325
Kaskazini 'A'	77.2	6.6	1.9	0.8	1.5	0.8	9.9	0.9	0.9	0.1	0.2	100.0	12.0	4.6	2,025
Kibaha	54.8	12.5	3.7	1.0	3.3	1.0	16.5	1.4	3.8	2.7	0.3	100.0	24.7	12.8	4,143
Kigoma	62.7	11.6	4.7	0.4	6.5	0.4	9.0	0.8	1.3	2.5	0.5	100.0	14.1	9.9	751
Kilwa	54.7	14.7	1.7	2.6	5.9	2.6	12.9	1.0	3.1	2.0	1.2	100.0	20.3	10.6	1,440
Meatu	78.7	5.3	2.3	1.4	2.9	1.4	5.3	0.3	0.3	2.8	0.6	100.0	9.3	7.3	939
Muheza	54.4	13.3	5.6	0.1	3.4	0.1	15.6	1.8	2.1	3.6	0.2	100.0	23.2	13.2	1,554
Mvomero	63.7	15.2	3.6	0.7	3.4	0.7	8.6	1.7	1.3	1.5	0.2	100.0	13.4	8.8	846
Runwe	57.3	9.2	7.9	1.8	6.0	1.8	8.3	2.0	2.0	4.8	0.7	100.0	17.7	18.4	507
Sengerema	60.9	10.7	2.9	1.8	4.7	1.8	13.2	1.3	2.0	1.7	0.8	100.0	19.0	10.0	1,627
Songea(U)	55.7	15.2	4.0	1.2	3.3	1.2	14.5	0.9	2.6	2.4	0.2	100.0	20.5	11.2	620
Wete-Kask	71.2	9.1	2.2	0.4	1.1	0.4	13.3	1.1	1.3	0.2	0.1	100.0	16.0	5.2	1,960
Total	62.9	10.9	3.5	1.0	3.6	1.0	12.4	1.1	2.1	1.9	0.6	100.0	18.1	9.7	20,484

Table 29. Percent distribution of households by sources of water and by wealth quintiles, location and district

Background characteristic	Piped	Tube/ Borehole	Spring	Rain water	Tanker	Surface water	Other	Total
Wealth Quintile								
Lowest	304 (17.2)	894 (50.7)	144 (8.2)	4 (0.2)	8 (0.5)	378 (21.4)	33 (1.9)	1,765
Second	469 (28.0)	718 (42.8)	167 (10.0)	5 (0.3)	17 (1.0)	284 (16.9)	18 (1.1)	1,678
Middle	576 (35.4)	583 (35.8)	187 (11.5)	2 (0.1)	5 (0.3)	253 (15.5)	23 (1.4)	1,629
Fourth	803 (5.0)	522 (33.2)	92 (5.8)	9 (0.6)	7 (0.4)	126 (8.0)	15 (10.0)	1,574
Highest	1,163 (76.6)	214 (14.1)	37 (2.4)	12 (0.8)	62 (4.1)	26 (1.7)	4 (0.3)	1,518
Residence								
Urban	592 (48.3)	401 (32.7)	58 (4.7)	19 (1.6)	35 (2.9)	100 (8.2)	21 (1.7)	1,226
Rural	2,723 (39.3)	2,530 (36.5)	569 (8.2)	13 (0.2)	64 (0.9)	967 (13.9)	72 (1.0)	6,938
District								
Arusha U	612(95.2)	14(2.2)	15(2.3)	0(0.0)	0(0.0)	0(0.0)	2(0.3)	643
Babati	295(47.3)	140(22.4)	76(12.2)	2(0.3)	0(0.0)	101(16.2)	10(1.6)	624
Bunda	54(8.7)	395(63.5)	47(7.6)	21(3.4)	1(0.2)	88(14.2)	16(2.6)	622
Dodoma R	116(18.6)	431(69.0)	10(1.6)	0(0.0)	4(0.6)	62(9.9)	2(0.3)	625
Kibaha	458(73.3)	93(14.9)	14(2.2)	0(0.0)	10(1.6)	35(5.6)	15(2.4)	625
Kigoma U	86(28.4)	95(31.4)	56(18.5)	0(0.0)	16(5.3)	48(15.8)	2(0.7)	303
Kilwa	124(19.9)	335(53.9)	45(7.2)	3(0.5)	0(0.0)	100(16.1)	15(2.4)	622
Meatu	144(33.3)	42(9.7)	3(0.7)	1(0.2)	46(10.7)	196(45.4)	0(0.0)	432
Muheza	190(30.4)	230(36.8)	65(10.4)	2(0.3)	17(2.7)	116(18.6)	5(0.8)	625
Mvomero	264(44.7)	151(25.6)	45(7.6)	3(0.5)	0(0.0)	115(19.5)	13(2.2)	591
Rungwe	72(18.4)	40(10.2)	148(37.9)	0(0.0)	0(0.0)	130(33.3)	1(0.3)	391
Sengerema	123(20.0)	358(58.2)	78(12.7)	0(0.0)	2(0.3)	45(7.3)	9(1.5)	615
Songea U	107(41.5)	135(52.3)	2(0.8)	0(0.0)	0(0.0)	13(5.0)	1(0.4)	258
Kaskazini A	214(36.4)	337(57.3)	14(2.4)	0(0.0)	3(0.5)	18(3.1)	2(0.3)	588
Wete	456(76.0)	135(22.5)	9(1.5)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	60
Total	3,315(40.61)	2,931(35.9)	627(7.68)	32(0.39)	99(1.21)	1,067(13.07)	93(1.14)	8,164

Table 30. Percentage of distribution of households with type of toilet facility usually used according to household characteristics

Background characteristic	Flush toilet	Ventilated improved Pit Latrine (VIP)	Pit with slab	Pit without slab	No facility	Other	Total
Wealth Quintile							
Lowest	10 (0.6)	13 (0.8)	157 (9.7)	1,057 (65.1)	382 (23.5)	6 (0.4)	1,625
Second	84 (5.7)	18 (1.2)	190 (13.0)	903 (61.6)	268 (18.3)	3 (0.2)	1,466
Middle	134 (9.6)	19 (1.4)	262 (18.9)	821 (59.1)	146 (10.5)	8 (0.6)	1,390
Fourth	189 (13.1)	62 (4.3)	411 (28.4)	708 (48.9)	71 (4.9)	6 (0.4)	1,447
Highest	866 (58.0)	76 (5.1)	238 (15.9)	303 (20.3)	6 (0.4)	5 (0.3)	1,494
Residence							
Urban	251 (22.5)	77 (6.9)	197 (17.6)	576 (51.6)	15 (1.3)	1 (0.1)	1,117
Rural	1,032 (16.4)	111(1.8)	1,061 (16.8)	3,216 (51.0)	858 (13.6)	27 (0.4)	6,305
District							
Arusha U	304(47.2)	22(3.4)	88(13.7)	223(34.6)	0(0.0)	7(1.1)	644
Babati	85(13.6)	8(1.3)	94(15.1)	395(63.3)	39(6.3)	3(0.5)	624
Bunda	119(19.1)	63(10.1)	84(13.5)	285(45.8)	71(11.4)	1(0.2)	623
Dodoma R	172(2.7)	11(1.8)	65(10.4)	500(80.0)	32(5.1)	0(0.0)	625
Kibaha	124(19.9)	5(0.8)	120(19.2)	369(59.1)	3(0.5)	3(0.5)	624
Kigoma U	65(47.1)	5(3.6)	13(9.4)	54(39.1)	0(0.0)	1(0.7)	138
Kilwa	7(1.1)	10(1.6)	132(21.3)	411(66.2)	59(9.5)	2(0.3)	621
Meatu	4(3.5)	0(0.0)	7(6.1)	80(70.2)	21(18.4)	2(1.8)	114
Muheza	49(7.8)	6(1.0)	54(8.6)	428(68.5)	88(14.1)	0(0.0)	625
Mvomero	14(2.4)	6(1.0)	150(25.4)	374(63.3)	46(7.8)	1(0.2)	591
Rungwe	50(30.7)	0(0.0)	24(14.7)	86(52.8)	1(0.6)	2(1.2)	163
Sengerema	160(26.0)	15(2.4)	32(5.2)	378(61.5)	30(4.9)	0(0.0)	615
Songea U	145(62.8)	2(0.9)	10(4.3)	72(31.2)	2(0.9)	0(0.0)	231
Kaskazini A	31(5.3)	10(1.7)	241(41.3)	98(16.8)	201(34.4)	3(0.5)	584
Wete	109(18.2)	25(4.2)	144(24.0)	39(6.5)	280(46.7)	3(0.5)	600
Total	1,283(17.3)	188(2.5)	1,258(17.0)	3,792(51.1)	873(11.8)	28(0.4)	7,422

Table 31. Percentage of children who had diarrhoea in the two weeks preceding the survey, and treatment seeking behavior by background characteristics and district

Background characteristic	Diarrhoea in the two weeks preceding the survey		Treatment for children with diarrhoea			
	Percentage with diarrhoea	Number of children under five	Percentage seeking advice or treatment from any source	Percentage given ORT (1)	Percentage given increased fluids and continued feeding (2)	Number of children with diarrhoea
Age in months						
<12	16.5	907	66.7	62.8	68.2	13.6
12-23	16.8	943	74.7	64.2	68.0	10.5
24-47	6.5	1,676	65.1	60.4	62.9	18.4
48-59	1.6	720	62.4	53.0	56.4	18.3
Sex						
Male	11.4	2,171	69.8	63.7	68.9	17.7
Female	8.7	2,073	68.0	60.4	62.8	7.8
Education						
No education	11.1	1,094	68.3	55.3	61.3	14.8
Primary	9.6	2,562	68.1	61.9	64.6	11.9
Secondary+	10.7	588	74.9	78.2	83.7	19.1
Missing	0.0	2	-	-	-	0
Wealth quintile						
Lowest	10.7	750	63.5	59.6	63.4	12.9
Second	8.8	795	62.0	47.6	52.5	14.1
Middle	12.5	870	71.6	75.2	79.0	18.0
Fourth	9.6	917	68.2	64.8	69.0	14.2
Highest	8.9	915	78.5	58.5	61.7	8.4
Residence						
Urban	8.9	984.0	72.7	56.5	56.5	1.3
Rural	10.5	3262.0	68.2	64.0	69.0	17.0
District						
Arusha	13.9	322.0	67.1	48.6	51.4	11.8
Babati	8.4	205.0	65.5	71.3	71.3	5.6
Bunda	9.9	183.0	75.7	52.4	52.4	3.1
Dodoma	16.5	62.0	67.9	73.7	73.7	0.0
Kaskazini 'A'	18.6	530.0	78.4	76.4	82.5	29.9
Kibaha	6.1	770.0	66.7	62.6	62.6	0.0
Kigoma	8.5	108.0	51.5	79.6	89.0	16.0
Kilwa	6.0	334.0	93.8	86.0	86.0	0.0
Meatu	6.3	138.0	14.0	31.1	35.7	4.6
Muheza	7.7	271.0	81.5	73.8	73.8	0.0
Mvomero	12.8	225.0	64.0	49.7	53.8	26.3
Rungwe	5.9	83.0	61.8	58.2	58.2	0.0
Sengerema	8.9	337.0	80.3	42.4	43.1	0.7
Songea(U)	9.0	128.0	77.6	68.6	68.6	0.0
Wete-Kask	10.7	550.0	50.1	53.4	65.6	22.4
Total	10.1	4246.0	69.1	62.5	66.4	13.8

(1) ORT (Oral Rehydration Therapy) includes ORS (Oral Rehydration Solution) packets, prepackaged liquids, and RHF (Recommended Home Fluids). (2) Continue feeding practices includes children who were given more, same as usual, or somewhat less food during the diarrhea episode.

Table 32. Percent of children aged under age five with fever episode in the two weeks preceding the survey and treatment seeking behavior for malaria and by background characteristics

Background characteristic	Among children under age five		Percentage advice or treatment was sought from a health facility or provider (1)	Among children under age five with fever		Number of children
	Percentage with fever in the two weeks preceding the survey	Number of children		Percentage who took antimalarial drugs	Percentage who took antibiotic drugs	
Sex						
Male	15.3	2171.0	71.6	48.3	23.0	331
Female	13.6	2073.0	76.2	40.9	28.2	281
Mother's education						
No education	15.6	1094.0	68.0	40.5	19.1	171
Primary	15.0	2562.0	76.6	45.1	29.3	385
Secondary+	9.7	588.0	71.4	56.4	17.5	57
Missing	0.0	2.0	-	-	-	0
Wealth quintile						
Lowest	15.0	750.0	76.8	48.3	20.6	112
Second	16.7	795.0	69.9	40.5	16.6	133
Middle	14.6	870.0	74.3	46.2	28.7	127
Fourth	12.0	917.0	74.1	47.5	21.7	110
Highest	14.3	915.0	74.1	43.0	38.3	131
Residence						
Urban	17.5	984.0	80.8	52.0	28.0	172
Rural	13.5	3262.0	71.0	42.1	24.4	440
District						
Arusha	14.9	322.0	63.8	33.1	55.8	48
Babati	12.7	205.0	83.1	60.6	31.6	26
Bunda	21.8	183.0	59.9	49.6	22.7	40
Dodoma	8.3	62.0	57.2	50.1	0.0	5
Kaskazini 'A'	13.1	530.0	68.1	38.0	11.9	69
Kibaha	18.1	770.0	87.7	49.9	27.2	139
Kigoma	8.2	108.0	65.6	57.5	13.8	9
Kilwa	17.2	334.0	85.8	52.5	25.4	58
Meatu	2.3	138.0	8.6	50.0	0.0	3
Muheza	12.0	271.0	91.7	61.2	39.6	32
Mvomero	19.5	225.0	70.3	48.2	39.4	44
Runqwe	8.1	83.0	76.1	71.4	0.0	7
Sengerema	15.1	337.0	57.2	43.1	32.5	51
Songea(U)	9.0	128.0	82.3	58.0	3.3	11
Wete-Kask	12.7	550.0	62.2	19.7	3.4	70
Total	14.4	4246.0	73.7	44.9	25.4	612

(1) Excludes pharmacy, shop, and traditional practitioner.

Table 33. Percent of children aged under five who had fever in the two weeks and type of anti-malarial drugs taken by background characteristics and district

Background characteristic	Percentage of children who took drugs					Percentage or children who took antibiotics or other drugs							Number of children with fever
	SP	Chloroquine	Amodiaquine	Quinine	Combination with artemisinin	Other anti malarial	Injection	Syrup	Pills	Aspirin	Acetaminophen	Other	
Sex													
Male	8.2	0.4	10.5	9.6	5.2	19.6	5	14.3	3.7	17.2	0.2	11.9	331
Female	10.8	0.3	5.7	6.4	4.5	14.7	1.8	26.4	0	15.4	1.2	16.4	281
Mother's education													
No education	11.6	0.2	4.5	3.3	9.9	11.9	5	13.2	0.9	26.5	2	14	171
Primary	9.3	0.4	6.9	10	3.4	17.5	3.4	23.1	2.8	10.8	0.2	14.5	385
Secondary+	3.4	0	29.4	9.9	0	32.6	0	17.5	0	23.8	0	10.1	57
Wealth quintile													
Lowest	4	0	6.5	7.9	6	24	5.6	15	0	12.9	0	14.4	112
Second	11.6	0.5	3.7	7.4	3	14.4	3.2	13.4	0	21.6	2.6	11.1	133
Middle	15.4	0.7	7.6	7.7	5.8	12.9	1.6	18.6	8.5	13.6	0.5	15.2	127
Fourth	9.1	0.5	5.1	10.3	6.6	17.6	1.4	18.9	1.4	23.3	0	15	110
Highest	6.3	0	17.9	7.7	3.5	18.7	5.7	32.6	0	11	0	14.4	131
Residence													
Urban	16.5	0	10	9.8	2.9	20.7	1.9	19.8	6.3	4.9	0.3	5.6	172
Rural	6.6	0.4	7.6	7.5	5.7	16	4.2	19.9	0.3	20.9	0.8	17.2	440
District													
Arusha	17.9	0	7.2	0	6	9.3	6.2	49.6	0	0	0	27.5	48
Babati	9.1	0	17.5	17.7	0	17.7	3.6	28	0	13.6	0	25	26
Bunda	4.6	3.7	18.4	16.5	0	6.4	1.9	20.8	0	6.3	0	14.5	40
Dodoma	11.3	0	0	0	0	38.8	0	0	0	9	0	30.8	5
Kaskazini 'A'	4	0	0.9	4.1	18.9	12.3	0	9.7	2.2	51.4	4	14.8	69
Kibaha	16.8	0	11.9	5.3	1.5	23.4	2.4	17	7.8	10.6	0	1.3	139
Kigoma	6.4	0	4.4	46.7	0	0	6.9	6.8	0	4.4	6.8	17.3	9
Kilwa	0	0	7.4	4	9.3	31.8	15.9	9.5	0	1.8	0	9.4	58
Meatu	0	0	0	0	0	50	0	0	0	0	0	29.1	3
Muheza	4.9	0	1.4	16.4	0.8	44.2	1.4	38.2	0	1.9	0	12.8	32
Mvomero	5.6	1.1	5.4	16.3	0.9	18.9	4.8	34.6	0	0.9	1.5	15.4	44
Rungwe	37.5	0	8	7.2	2.8	20.4	0	0	0	42.8	0	39	7
Sengerema	16.6	0	18.9	6.9	0	2.8	2.4	30.1	0	4.9	0	13.8	51
Songea(U)	15.8	0	0	31.6	0	10.6	0	3.3	0	0	0	21.1	11
Wete-Kask	0.9	0	1	2.6	8.1	7.1	0	3.4	0	51.2	0	22.3	70
Total	9.4	0.3	8.3	8.1	4.9	17.3	3.5	19.8	2	16.4	0.7	14	612

Table 34. Distribution of households using metal or plastic screens, those that received kits for home-based management of malaria (HBMM) and the average cost paid for those kits, by district

District	Percentage of households that use screens on windows	Percentage of households that received kits for HBMM	Average cost paid for kits	Number of households
Arusha	19.3	0.5	13000.0	1,019
Babati	9.7	0.4	0.0	574
Bunda	31.2	0.7	11675.1	271
Dodoma	5.6	0.1	20000.0	233
Kaskazini 'A'	20.2	0.9	8036.8	803
Kibaha	40.4	0.8	0.1	2,093
Kigoma	27.8	0.1	70000.0	434
Kilwa	12.4	10.2	0.0	629
Meatu	10.6	1.3	20481.6	308
Muheza	24.9	6.9	73.0	692
Mvomero	17.9	13.2	0.0	405
Rungwe	1.9	0.0	-	230
Sengerema	24.0	0.3	0.0	473
Songea(U)	33.3	0.3	2868.5	373
Wete-Kask	18.8	0.2	5.0	665
Total	23.9	2.3	1067.1	9,198

Table 35. Percentage of households with interior wall sprayed in the last 12 months, by source of spraying, and average out-of-pocket cost paid for spraying and average number of months since spraying by district

Background characteristic	Source of spraying							Cost of spraying and average time since spraying		
	Percentage of dwellings sprayed	Number of households	Government worker program	Private company	Household member	Undefined	Average out-of-pocket cost for the spraying	Average number of months since spraying	Number of household with spraying	
Arusha	5.9	1019	44.6	6.5	42.6	6.3	7083.7	3.7	60	
Babati	0.4	574	50.0	0.0	50.0	0.0	-	6.0	2	
Bunda	1.3	271	0.0	0.0	100.0	0.0	1323.9	6.5	3	
Dodoma	0.2	233	67.2	0.0	0.0	32.8	5172.2	5.0	1	
Kaskazini 'A'	84.2	803	92.1	0.0	0.0	7.9	0.0	7.6	676	
Kibaha	0.2	2093	0.0	65.0	35.0	0.0	5401.7	5.8	5	
Kigoma	1.1	434	0.0	29.9	70.1	0.0	3294.8	4.8	5	
Kilwa	0.0	629	-	-	-	-	-	-	0	
Meatu	0.5	308	0.0	0.0	100.0	0.0	30000.0	6.0	2	
Muheza	0.6	692	51.7	15.3	17.6	15.3	1009.6	5.8	4	
Mvomero	1.1	405	67.0	12.3	20.7	0.0	942.6	6.5	5	
Rungwe	1.4	230	0.0	64.7	26.9	8.4	8203.1	7.9	3	
Sengerema	0.7	473	0.0	0.0	100.0	0.0	2707.5	4.3	3	
Songea(U)	1.5	373	0.0	0.0	100.0	0.0	2798.6	3.2	6	
Wete-Kask	92.6	665	92.0	0.3	0.0	7.8	0.0	8.8	615	
Total	15.1	9198	87.9	1.0	3.5	7.6	312.0	7.8	1,390	

Table 36. Percentage of households with at least one and more than one mosquito net (treated or untreated), by district

District	Any type of mosquito net			Ever treated mosquito net (1)			Insecticide treated mosquito nets (ITNs) (2)		
	Percentage with at least one	Percentage with more than one	Average number of nets per household	Percentage with at least one	Percentage with more than one	Average number of treated nets per household	Percentage with at least one	Percentage with more than one	Average number of ITNs per household
Arusha	70.3	38.6	1.3	56.6	27.6	1.0	36.0	15.0	0.6
Babati	42.3	21.6	0.7	31.6	14.6	0.5	19.2	9.4	0.3
Bunda	74.0	46.2	1.5	47.6	27.5	0.9	36.3	18.0	0.6
Dodoma	20.9	6.1	0.3	16.8	5.5	0.2	8.3	2.4	0.1
Kaskazini 'A'	71.9	51.7	1.8	67.4	46.6	1.6	29.9	16.1	0.6
Kibaha	64.3	32.7	1.1	46.7	19.2	0.7	31.1	11.7	0.5
Kigoma	25.5	12.5	0.4	15.0	4.7	0.2	9.7	2.6	0.1
Kilwa	50.7	29.7	1.0	36.0	19.6	0.7	19.7	10.3	0.4
Meatu	25.0	14.2	0.5	18.5	10.2	0.3	11.9	6.3	0.2
Muheza	70.7	38.0	1.2	61.0	31.8	1.1	30.8	13.2	0.5
Mvomero	47.4	24.0	0.8	35.0	16.6	0.6	20.4	7.8	0.3
Rungwe	13.4	7.8	0.2	9.9	5.2	0.2	4.3	1.8	0.1
Sengerema	64.3	39.8	1.3	37.7	23.1	0.8	26.5	15.3	0.5
Songea(U)	51.5	21.8	0.9	41.3	15.4	0.7	23.1	8.3	0.4
Wete-Kask	78.4	61.5	2.0	71.9	55.9	1.8	35.8	21.5	0.8
Total	58.3	33.7	1.1	45.5	24.4	0.9	26.5	12.0	0.5
									9,198

(1) An ever-treated net is 1) a pretreated net or 2) a non-pretreated net which has subsequently been soaked with insecticide at any time. (2) An insecticide treated net (ITN) is (1) a factory treated net that does not require any further treatment or (2) a pretreated net obtained within the past 12 months or (3) a net that has been soaked with insecticide within the past 12 months.

Table 37. Percentage of children under five years of age who slept under a mosquito net (treated or untreated), the night before the survey by background characteristics and district

Background characteristic	Percentage				Number of children
	Percentage who slept under any net last night	Percentage who slept under an ever treated net last night (1)	Percentage who slept under an ITN last night (2)		
Mother's education					
No education	52.3	42.0	18.4		1,080
Primary	60.0	49.3	30.0		2,571
Secondary+	75.5	66.6	38.6		580
Missing	47.9	38.0	17.6		789
Wealth quintile					
Lowest	43.1	36.4	16.3		880
Second	51.4	43.5	23.1		944
Middle	55.1	42.9	21.9		1,017
Fourth	64.0	52.8	28.6		1,088
Highest	73.5	60.9	40.2		1,092
Residence					
Urban	58.2	45.5	29		1,148
Rural	58.3	48.7	25.9		3,873
District					
Arusha	67.5	54	38.6		453
Babati	43.4	31.5	17.2		226
Bunda	69.7	44.2	32.9		213
Dodoma	21.3	17.1	6.8		60
Kaskazini 'A'	72.1	66.6	26.9		611
Kibaha	61.3	50.6	31.8		900
Kigoma	33.3	23.2	14.1		126
Kilwa	50.1	36.1	20.9		375
Meatu	28.1	21.8	16.2		150
Muheza	71.1	63.4	34.8		371
Mvomero	48.8	37.5	22.3		240
Runawe	11.1	10.4	3.1		113
Sengerema	46.2	27.8	20.5		418
Songea(U)	55.9	50	27.8		134
Wete-Kask	68.7	64.5	26.4		631
Total	58.2	47.9	26.6		5,020

Table 38. Percent of women (15-49) and pregnant women (15-49) who slept under a mosquito net (treated or untreated) by background characteristics and district

Background characteristic	Percentage of all women age 15-49 who				Percentage of pregnant women age 15-49 who				Number of women
	Slept under any net last night	Slept under an ever treated net last night (1)	Slept under an ITN last night (2)		Slept under any net last night	Slept under an ever treated net last night (1)	Slept under ITN last night (2)		
Age									
15-24	48.2	36.2	20.4	4814.0	53.5	40.0	22.5	455	
25-34	55.8	45.0	25.8	2731.0	55.5	45.0	22.4	396	
35-49	48.8	37.9	19.2	1764.0	58.5	55.4	39.5	94	
Education									
No education	38.2	28.6	13.7	1902.0	43.9	34.4	20.1	222	
Primary	52.2	39.9	23.1	5329.0	54.4	41.6	23.4	585	
Secondary+	57.9	47.1	25.9	2016.0	74.5	66.9	33.5	138	
Missing	48.8	37.4	19.0	62.0	-	-	-	0	
Wealth quintile									
Lowest	31.3	25.6	12.9	1396.0	30.7	22.4	12.9	174	
Second	40.7	32.2	15.4	1436.0	42.5	36.5	17.5	155	
Middle	46.0	34.9	18.1	1642.0	49.7	37.4	22.3	184	
Fourth	57.0	44.2	25.3	1922.0	64.0	51.8	31.7	222	
Highest	62.9	48.1	28.9	2913.0	78.8	63.3	31.9	210	
Residence									
Urban	53.6	38.8	22.8	2,380	65.4	52.8	26	257	
Rural	49.5	39.3	21.4	6,929	50.9	40.2	23.4	689	
District									
Arusha	62.0	48.6	28.8	1126.0	71.2	59.1	25.9	57	
Babati	35.2	26.2	17.7	557.0	40.9	30.9	18.9	54	
Bunda	60.6	36.6	24.4	311.0	66.0	36.0	28.3	37	
Dodoma	18.7	14.9	7.0	211.0	23.6	12.2	5.7	48	
Kaskazini 'A'	59.8	55.3	23.2	743.0	68.1	67.3	40.4	75	
Kibaha	57.1	41.9	26.7	2153.0	70.7	58.2	30.6	241	
Kigoma	22.0	13.4	8.7	422.0	37.8	24.1	14.6	43	
Kilwa	45.5	31.4	19.0	512.0	52.0	40.4	22.9	35	
Meatu	14.2	10.9	6.9	520.0	20.4	16.4	11.7	85	
Muheza	69.0	59.7	27.8	658.0	71.8	56.3	19.0	46	
Mvomero	46.1	34.0	18.2	321.0	42.7	31.2	16.1	40	
Runawe	15.1	9.7	4.1	166.0	35.7	35.7	28.6	6	
Sengerema	46.8	27.8	19.7	510.0	42.9	22.1	20.4	78	
Songea(U)	46.6	37.4	19.0	372.0	47.1	42.9	22.0	41	
Wete-Kask	64.5	57.8	24.5	728.0	69.7	63.6	32.6	61	
Total	50.5	39.1	21.8	9309.0	54.9	43.6	24.1	946	

(1) An ever-treated net is 1) a pretreated net or 2) a non-pretreated net which has subsequently been soaked with insecticide at any time. (2) An insecticide treated net (ITN) is (1) a factory treated net that does not require any further treatment or (2) a pretreated net obtained within the past 12 months or (3) a net that has been soaked with insecticide within the past 12 months.

Table 39. Percentage of women aged 15-49 who have knowledge of tuberculosis (TB), by background characteristics and district

Background characteristic	Among all women			Among women who have heard of TB			Number of women
	Percentage who have heard of TB	Number of women	Percentage who reported that TB is spread through the air by coughing	Percentage who believe that TB can be cured	Percentage who would want a family member's TB kept secret		
Age							
15-24	70.4	3,804	69.3	80.4	9.5		2,679
25-39	77.2	4,175	66.6	84.7	9.3		3,222
40-49	76.2	1,423	70.8	86.8	7.3		1,084
Education							
No education	55.3	1,943	45.8	69.7	10.8		1,074
Primary	76.6	5,378	68.1	84.5	10.1		4,122
Secondary+	88.6	2,018	82.4	89	5.7		1,788
Missing	2.8	63	0	0	0		2
Wealth quintile							
Lowest	62.9	1,422	49.4	73.6	12.9		894
Second	61.9	1,463	54.8	77.5	11.7		906
Middle	72.4	1,670	65.6	80.2	8.4		1,209
Fourth	78	1,948	67.5	82.4	10.3		1,520
Highest	84.7	2,899	82	91.2	6.3		2,455
Residence							
Urban	76.9	2,440	74.7	88.8	8.5		1,876
Rural	73.4	6,963	65.9	81.4	9.3		5,109
District							
Arusha	89.7	1042.0	81.9	92.6	5.9		935
Babati	88.8	559.0	74.2	84.1	14.0		497
Bunda	66.3	332.0	65.5	67.1	11.2		220
Dodoma	70.2	225.0	60.1	80.8	14.3		158
Kaskazini A'	80.6	761.0	47.9	63.2	8.4		613
Kibaha	82.2	2202.0	78.6	91.5	8.6		1,809
Kigoma	48.8	450.0	84.4	83.5	4.4		220
Kilwa	75.1	513.0	44.4	79.8	13.0		385
Meatu	41.8	542.0	76.4	79.1	8.0		227
Muheza	80.1	610.0	67.1	92.6	10.1		489
Mvomero	81.8	336.0	50.7	77.5	13.3		275
Rungwe	69.4	177.0	66.0	76.0	4.3		123
Sengerema	43.6	526.0	49.9	72.7	6.9		229
Songea(U)	71.7	397.0	78.9	81.9	12.5		284
Wete-Kask	71.2	731.0	51.0	75.1	6.8		521
Total	74.3	9402.0	68.3	83.4	9.1		6,985

Table 40. Percentage of women aged 15-49 aware about source of VCT services, take-up of VCT and whether receive results by background characteristics and district

Background characteristic	Percentage who know where to get an HIV test	Percent distribution of women/men by testing status and whether they received the results of the last test			Total	Percentage ever tested	Percentage who received results from last HIV test taken in the past 12 months	Number of women
		Ever tested and received results	Ever tested did not receive results	Never tested				
Age								
15-24	81.7	41.3	1	57.7	100	42.3	26.3	3,804
25-39	88.7	62.4	1.4	36.2	100	63.8	34.2	4,175
40-49	82.5	41.7	1	57.4	100	42.6	19.4	1,423
Education								
No education	71.1	33.4	1.6	65	100	35	18	1,943
Primary	87.4	56.7	1	42.2	100	57.8	32.2	5,378
Secondary+	94.1	52.9	1.1	46	100	54	30.8	2,018
Missing	2.8	2.4	0	97.6	100	2.4	0	63
Wealth quintile								
Lowest	75.2	35.8	1.2	62.9	100	37.1	21.7	1,422
Second	78.7	39.5	1.5	59	100	41	20.9	1,463
Middle	84.6	50.9	1.6	47.4	100	52.6	31.3	1,670
Fourth	87	56.2	1.1	42.7	100	57.3	32.1	1,948
Highest	91.7	59.9	0.8	39.3	100	60.7	32.4	2,899
Residence								
Urban	90.7	62.4	0.8	36.8	100	63.2	35.0	2,440
Rural	82.9	46.6	1.3	52.1	100	47.9	26.5	6,963
District								
Arusha	90.9	65.4	0.7	33.9	100	66.1	33.5	1,042
Babati	93.1	59.3	0.6	40	100	60	32.9	559
Bunda	82.1	41	1.4	57.7	100	42.3	20	332
Dodoma	83.1	44.2	0.8	55	100	45	27	225
Kaskazini A'	87.5	35.7	2.8	61.6	100	38.4	18.1	761
Kibaha	94.1	67.9	0.5	31.6	100	68.4	39.6	2,202
Kigoma	72.9	43.8	1	55.2	100	44.8	22.8	450
Kilwa	78.9	39.7	2.6	57.6	100	42.4	27	513
Meatu	58.8	29.1	0.7	70.2	100	29.8	18.2	542
Muheza	94.4	64.1	0.8	35.1	100	64.9	34.1	610
Mvomero	73.4	30.5	1.9	67.6	100	32.4	18.6	336
Rungwe	80.1	46.4	2	51.6	100	48.4	21.2	177
Sengerema	62	23.3	2.6	74.1	100	25.9	14.9	526
Songea(U)	87.8	64.2	0.5	35.3	100	64.7	41.1	397
Wete-Kask	86.1	33.3	1.1	65.6	100	34.4	19.4	731
Total	84.9	50.7	1.2	48.1	100.0	51.9	28.7	9,402

Table 41. Percent of women aged 15-49 who gave birth in the two years preceding the survey, access to VCT services by background characteristics and district

Background characteristic	Percentage who received HIV counseling during antenatal care (1)	Percentage who were offered and accepted an HIV test during antenatal care and who		Number of women who gave birth in the last two years (2)
		Received results	Did not receive results	
Age				
15-24	60.7	33.2	1.5	647
25-39	67.8	32	0.4	1,072
40-49	60	37.4	2.1	97
Education				
No education	49	31.2	1.6	460
Primary	68.9	31.2	0.6	1,083
Secondary+	75.7	41.2	1	273
Wealth quintile				
Lowest	54.3	31.7	0.7	296
Second	54.2	27.6	1.1	344
Middle	64.9	29.8	2.2	390
Fourth	67.9	40.2	0.5	369
Highest	78.5	33.8	0.1	418
Residence				
Urban	74.4	26.8	1.2	416
Rural	62.1	34.5	0.8	1,400
District				
Wete-Kask	56.4	37.7	1.0	242
Kaskazini 'A'	71.9	62.3	1.8	246
Rungwe	62.4	30.5	1.6	38
Kilwa	47.8	23.6	1.3	156
Muheza	82.4	35.8	0.0	113
Arusha	84.3	18.4	0.0	139
Kigoma	75.3	18.8	1.1	57
Babati	68.2	59.6	0.5	70
Kibaha	84.1	27.2	1.1	338
Sengerema	29.0	9.5	0.0	147
Mvomero	31.6	12.1	0.8	84
Songea(U)	89.3	50.8	1.7	47
Meatu	52.2	24.5	0.6	51
Dodoma	85.0	55.4	2.0	14
Bunda	42.5	30.4	0.5	73
Total	64.9	32.7	0.9	1,816

(1) In this context, "counseled" means that someone talked with the respondent about all three of the following topics: 1) babies getting the AIDS virus from their mother, 2) preventing the virus, and 3) getting tested for the virus. (2) Only women who were offered the test are included here. Women who were either required or asked for the test are excluded from the numerator of this measure.

Note: Denominator for percentages includes women who did not receive antenatal care for their last birth in the past two years.

Table 42. Percentage of women aged 15-49 who have heard of HIV/AIDS by background characteristics and district

Background characteristic	Percentage who have heard about of AIDS	Number of women
Age		
15-24	91.8	3,804
25-39	94.3	4,175
40-49	92.0	1,423
Mother's education		
No education	83.7	1,943
Primary	95.2	5,378
Secondary+	98.9	2,018
Missing	2.8	63
Wealth quintile		
Lowest	87.4	1,422
Second	89.4	1,463
Middle	92.8	1,670
Fourth	95.0	1,948
Highest	96.1	2,899
Residence		
Urban	95.2	2,440
Rural	92.2	6,963
District		
Wete-Kask	96.6	731
Kaskazini 'A'	96.5	761
Rungwe	89.7	177
Kilwa	92.1	513
Muheza	97.6	610
Arusha	97.7	1,042
Kigoma	82.3	450
Babati	98.8	559
Kibaha	96.5	2,202
Sengerema	81.5	526
Mvomero	92.2	336
Songea(U)	93.5	397
Meatu	71.6	542
Dodoma	88.1	225
Bunda	93.7	332
Total	93.0	9,402

Table 43. Percent of women with comprehensive knowledge of HIV/AIDS by background characteristics and district

Background characteristic	A healthy person can have AIDS	AIDS cannot be transmitted by mosquito bites	AIDS cannot be transmitted by super-natural means	A person cannot be infected by sharing food	Percentage says healthy person can have AIDS and reject two most common local misconceptions (1)	Percentage with a comprehensive knowledge about AIDS (2)	Number of women
Age							
15-24	77.5	74.2	74.9	79.2	57.9	38.9	3,804
25-39	84.3	71.8	75.5	79.8	57.8	42.4	4,175
40-49	79.8	65.1	71.6	74.8	50.9	37.1	1,423
Education							
No education	65.1	49.4	51.2	58	31.9	20.2	1,943
Primary	83.7	74.9	79.3	82.8	59.9	44.4	5,378
Secondary+	90.8	87.2	87.2	90.4	74.1	49.2	2,018
Missing	2.4	2.8	2.8	0.4	2.4	2.4	63
Wealth quintile							
Lowest	69	59.4	59.1	66	40.8	26.4	1,422
Second	73.1	62.9	64.8	68.5	44.7	30.7	1,463
Middle	79.5	69.7	74.5	79.3	53.7	38.1	1,670
Fourth	84.6	73.1	77.2	80.4	57.5	41.8	1,948
Highest	88.9	82.6	85.7	88.8	72	51.7	2,899
Residence							
Urban	85.8	77.7	80.8	84.7	64.6	52.1	2,440
Rural	79.1	69.7	72.5	76.7	54	36	6,963
District							
Wete-Kask	82.5	62.1	64.3	73.5	43.8	17.5	731
Kaskazini 'A'	78.8	60.4	68.1	73.4	40.1	18.1	761
Rungwe	78.8	66.6	72.8	71.8	53.2	42.1	177
Kilwa	81.2	61.1	63.7	76.3	46.5	39.2	513
Muheza	90.1	74.1	81.2	83.4	60.5	32.8	610
Arusha	92	81.7	85.5	88.8	70.8	37.9	1,042
Kigoma	68	61	57	60.9	41.7	31.3	450
Babati	82.6	79.2	81.9	83.1	59	44	559
Kibaha	90.1	79.9	85	89.3	70	58.2	2,202
Sengerema	57.9	66.5	60.4	66.3	44.9	34.7	526
Mvomero	73.3	65.5	69.8	71.9	48.6	36.5	336
Songea(U)	85	75.3	82.6	82.9	66.6	56.4	397
Meatu	54.1	61	56.5	57.8	43.9	36.5	542
Dodoma	79.4	72.5	67.9	72.4	55.6	42.8	225
Bunda	67.7	78.8	79.6	77.9	57.1	44.6	332
Total	80.9	71.8	74.7	78.8	56.8	40.1	9,402

(1) Two most common local misconceptions: 'AIDS can be transmitted by mosquito bites' and 'AIDS can be transmitted by supernatural means'. (2) Comprehensive knowledge means knowing that consistent use of a condom during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and rejecting the two most common local misconceptions about AIDS transmission or prevention included here. Women who were either required or asked for the test are excluded from the numerator of this measure.

Table 44. Knowledge of HIV prevention methods by background characteristics and district

Background characteristic	Using condoms (1)	Limiting sexual intercourse to one uninfected partner (2)	Using condoms and limiting sexual intercourse to one uninfected partner	Abstaining from sexual intercourse	Number of women
Age					
15-24	58.0	74.9	52.6	70.3	3,804
25-39	64.3	83.8	60.3	78.5	4,175
40-49	59.0	80.5	55.5	74.7	1,423
Education					
No education	44.8	65.8	39.6	62.4	1,943
Primary	66.4	82.8	61.8	77.7	5,378
Secondary+	63.7	87.2	60.3	80.2	2,018
Missing	2.4	2.4	2.4	2.8	63
Wealth quintile					
Lowest	49.6	69.5	44.0	67.1	1,422
Second	55.3	72.2	49.6	69.3	1,463
Middle	60.9	79.6	57.1	75.0	1,670
Fourth	63.7	82.2	58.9	76.4	1,948
Highest	67.5	86.9	64.0	79.4	2,899
Residence					
Urban	72.3	86.8	68.3	81.6	2,440
Rural	57.0	77.2	52.3	72.1	6,963
District					
Wete-Kask	36.9	75.3	31.9	69.3	731
Kaskazini 'A'	41.3	76.4	36.7	73.2	761
Rungwe	69.7	78.5	64.5	75.2	177
Kilwa	69.8	83.3	64.4	83.8	513
Muheza	54.6	77.7	48.3	64.0	610
Arusha	56.2	83.0	50.5	74.6	1,042
Kigoma	56.8	68.1	53.0	63.9	450
Babati	69.7	90.0	66.6	86.3	559
Kibaha	75.4	91.3	72.7	84.3	2,202
Sengerema	56.2	61.1	48.7	61.4	526
Mvomero	62.5	73.9	55.9	75.3	336
Songea(U)	75.2	85.0	71.6	81.4	397
Meatu	52.1	59.8	48.6	52.8	542
Dodoma	65.0	79.8	60.7	80.8	225
Bunda	62.7	68.9	56.9	67.7	332
Total	61.0	79.7	56.5	74.6	9,402

(1) Using condoms every time they have sexual intercourse. (2) Partner who has no other partners.

Table 45. Comprehensive knowledge of HIV/AIDS and of a source of condoms among youth by background characteristics and district

Background characteristic	Percentage with comprehensive knowledge of AIDS (1)	Percentage who know a condom source (2)	Number of women
Age			
15-24	38.9	59.1	3,804
Education			
No education	16.4	31.8	467
Primary	39.7	61.7	2,045
Secondary+	46.0	65.3	1,282
Missing	0.0	2.3	10
Wealth quintile			
Lowest	25.5	41.3	538
Second	27.2	42.7	574
Middle	37.9	54.4	623
Fourth	39.9	61.3	738
Highest	49.2	74.4	1,332
Residence			
Urban	54.6	74.1	963
Rural	33.6	54.0	2,841
District			
Arusha	37.0	84.4	449
Babati	43.2	76.4	206
Bunda	47.0	70.0	142
Dodoma	45.0	65.2	74
Kaskazini 'A'	17.8	21.2	333
Kibaha	59.0	76.8	881
Kigoma	33.4	44.9	205
Kilwa	37.8	55.3	152
Meatu	35.5	33.2	248
Muheza	29.1	70.2	245
Mvomero	38.1	51.2	115
Rungwe	45.0	65.0	58
Sengerema	32.5	45.2	210
Songea(U)	48.8	67.1	151
Wete-Kask	14.1	27.8	335
Total	38.9	59.1	3,804

(1) Comprehensive knowledge means knowing that consistent use of condom during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and rejecting the two most common local misconceptions about AIDS transmission or prevention. (2) For this table, the following responses are not considered sources for condoms: friends, family members and home.

Table 46. Support received by household with deaths in the past 24 months and among households with deaths, type of support by background characteristics and district

Background characteristic	Percentage of household with deaths in the past 24 months	Support received by household with deaths in the last 24 months				
		Medical care, supplies and medicine	Emotional or psychological	Social	Schooling	Material and medical financial help
		(1)	(2)	(3)	(4)	(5)
Wealth quintile						
Lowest	7.7	8	3.2	0.9	2.3	7
Second	7.9	14.9	7.2	0.9	7	3.4
Middle	7.7	14.3	10.4	1.9	2.2	1.7
Fourth	6.6	27.3	13.8	2.4	2.2	4.8
Highest	5.4	8.8	4.6	1.6	2.9	3.5
Residence						
Urban	6	22.3	10.1	0.7	2.1	2.8
Rural	7.2	12.3	7.2	1.8	3.6	4.4
District						
Arusha	7.8	18.6	4	2.1	1.4	0.9
Babati	5	8	16.4	0	0	11.2
Bunda	4.9	16.4	7.3	0	13	5
Dodoma	3.3	13.9	0	13.9	0	13.9
Kaskazini 'A'	5.7	16.3	2.4	1	0	0
Kibaha	5.5	24.7	12.4	0	0	2
Kigoma	5.3	0	5.4	0	1.6	0
Kilwa	3.6	5.6	5.3	0	9.8	3.6
Meatu	6	0	0	0	0	0
Muheza	15.1	12.2	2.5	0	4.8	6.1
Mvomero	9.4	13.1	0	0.7	5.5	2.7
Rungwe	11.9	15.7	10.6	5	5	1.7
Sengerema	10.3	11.2	23.1	2.7	7.2	3.4
Songea(U)	4.4	4.8	1.7	0	0	0
Wete-Kask	6.4	14.9	13.3	8.6	7.8	17.4
Total	6.9	14.6	7.8	1.6	3.3	4.1
		9,198				633

(1) Companionship, counseling from a trained counselor, or spiritual support. (2) Any material support, such as clothing, food, or financial support. (3) Help in household work, training for a caregiver, or legal services. (4) Allowances, free admission to school, books, or supplies.

Table 47. Percentage distribution of deceased in United Republic of Tanzania, by age

Age	Women		Men		Total	
	Percent	Number	Percent	Number	Percent	Number
0	39.1	43	60.9	66	100	109
1-4	43.6	42	56.4	54	100	95
5-14	51.9	13	48.1	12	100	25
15+	49.0	204	51	212	100	416
Other answers	52.5	26	47.5	24	100	50
Total	47.1	327	52.9	368	100	696

Table 48. Percent use of prophylactic anti-malarial drugs and use of Intermittent Preventive Treatment (IPT) among pregnant women by background characteristics and district

Background characteristic	Percentage who took any antimalarial drug	Sulphadoxine-pyrimethamine (SP)		Number of women
		Percentage who took any SP (1)	Percentage who took 2+ doses	
Age				
15-24	70.8	66.5	33.7	646
25-34	76.9	74.1	45.6	841
35-49	80.5	77.6	53.3	325
Education				
No education	70.7	69.0	41.8	459
Primary	74.5	70.5	40.2	1,081
Secondary+	87.0	83.3	54.4	273
Wealth quintile				
Lowest	70.3	66.9	38.8	294
Second	68.3	64.4	37.4	343
Middle	77.2	74.9	44.1	390
Fourth	79.3	75.9	45.4	367
Highest	79.7	76.0	46.3	418
Residence				
Urban	80.4	75.9	38.6	415
Rural	73.9	70.9	43.9	1,398
District				
Arusha	78.9	71.8	44.5	139
Babati	75.8	74.4	46.6	70
Bunda	37.7	33.7	15.2	73
Dodoma	65.7	65.7	30.4	14
Kaskazini 'A'	96.9	96.9	71	246
Kibaha	85.4	83.7	45.5	338
Kigoma	79.1	73.4	40.9	57
Kilwa	57.4	54.9	20	154
Meatu	28.4	22.5	12.2	51
Muheza	90.5	86.3	61.1	113
Mvomero	58.9	54.3	27.6	84
Rungwe	49	46.9	22.3	38
Sengerema	50.1	35.6	18.2	146
Songea(U)	79.9	78.6	33.6	47
Wete-Kask	87.1	87.1	54.6	242
Total	75.4	72.1	42.7	1,813

(1) IPT: Intermittent Preventive Treatment is preventive treatment with a dose of sulphadoxine-pyrimethamine (SP) to pregnant women at each scheduled antenatal visit after the first trimester, but not more frequently than once a month.

Table 49. Percent distribution of women age 15–49 who had a live birth in the five years preceding the survey by number of antenatal care (ANC) visits by background characteristics and district

Background characteristic	Number of ANC visits					Number of women with ANC
	None	1	3	4+	Don't know/missing	Total
Mother's age at birth						
<20	1.7	1.8	37.8	50.6	8.1	100.0
20–34	0.9	1.7	41.1	52.3	3.9	100.0
35+	1.5	2.2	39.0	53.2	4.1	100.0
Birth order						
1	1.0	1.7	38.2	54.1	5.1	100.0
2–3	1.3	1.9	44.9	48.7	3.3	100.0
4–5	6.6	11.1	32.2	32.4	17.7	100.0
6+	0.0	0.0	100.0	0.0	0.0	100.0
Education						
No education	2.5	2.8	43.1	44.6	7.1	100.0
Primary	0.8	1.7	41.5	52.6	3.5	100.0
Secondary+	0.3	0.4	31.1	63.5	4.7	100.0
Missing	0.0	0.0	0.0	100.0	0.0	100.0
Wealth quintile						
Lowest	1.7	2.1	43.4	45.7	7.1	100.0
Second	1.8	2.1	46.4	45.9	3.8	100.0
Middle	0.6	3.4	41.9	50.7	3.4	100.0
Fourth	1.3	1.1	41.0	52.1	4.5	100.0
Highest	0.3	0.5	32.0	62.9	4.2	100.0
Residence						
Urban	0.3	2.0	44.6	50.8	2.3	100.0
Rural	1.4	1.7	39.0	52.7	5.3	100.0
District						
Wete-Kask	0.3	1.2	47.4	45.2	5.9	100.0
Kaskazini 'A'	0.0	1.0	48.3	44.3	6.4	100.0
Rungwe	1.3	1.2	37.1	58.4	2.0	100.0
Kilwa	0.5	0.9	45.4	47.1	6.1	100.0
Mtweza	0.0	1.2	44.8	52.5	1.5	100.0
Arusha	1.0	1.5	25.7	68.9	2.9	100.0
Kigoma	1.1	2.2	38.7	55.7	2.3	100.0
Babati	0.2	1.3	40.2	52.7	5.6	100.0
Kibaha	0.0	2.2	45.3	50.4	2.1	100.0
Sengerema	4.9	1.1	37.8	53.8	2.5	100.0
Mvomero	0.0	1.6	20.1	69.0	9.3	100.0
Songea(U)	0.2	1.9	35.5	48.8	13.5	100.0
Meatu	11.6	10.5	34.2	41.1	2.7	100.0
Dodoma	0.0	0.0	37.9	42.7	19.4	100.0
Bundia	3.8	2.4	36.2	57.3	0.3	100.0
Total	1.1	1.8	40.4	52.2	4.5	100.0

Table 50. Percentage of children aged 12–23 months who received specific vaccines at any time before the survey, and percentage vaccinated by 12 months of age

	BCG	DPT 3	Polio 3	Measles	All basic vaccinations (1)	No vaccinations	Number of children
Vaccination card	74.1	71.8	72.0	61.1	60.5	0.2	705
Mother's report	22.3	15.3	5.2	20.4	3.9	2.9	239
Either source	96.4	87.1	77.2	81.5	64.4	3.1	943
Vaccinated by 12 months of age (2)	95.7	85.1	75.4	71.0	55.8	3.5	943
Valid dates	70.3	62.4	62.3	41.7	40.6	28.6	705

(1) BCG, measles and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth). (2) For children whose information was based on the mother's report, the proportion of vaccinations given during the first year of life was assumed to be the same as for children with a written record of vaccination.

Table 51. Percentage of children aged 12-23 months who received specific vaccines at any time before the survey by background characteristics and district

Background characteristic	BCG	DPT 3	Polio 3	Measles	All basic vaccinations (1)	No vaccinations	Percentage with a vaccination card seen	Number of children
Sex								
Male	96.1	87.8	80.1	78.2	64.4	3.3	77.1	505
Female	96.7	86.3	74.0	85.3	64.3	2.9	72.0	438
Birth order								
1	97.1	85.1	74.4	82.2	63.3	2.5	73.5	548
2-3	95.3	90.1	81.3	80.3	65.8	4.0	76.5	393
4-5	100.0	87.7	72.3	87.7	72.3	0.0	72.3	2
6+	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0
Education								
No education	95.2	83.3	78.7	76.0	62.0	4.8	74.0	226
Primary	96.4	88.0	75.9	83.4	64.2	2.7	73.1	576
Secondary+	97.8	89.7	80.2	82.2	68.9	2.2	82.4	141
Wealth quintile								
Lowest	95.9	84.8	78.4	79.1	60.3	2.3	73.0	143
Second	94.4	84.9	75.3	77.4	61.6	5.2	70.6	174
Middle	97.3	89.3	79.1	81.8	69.5	2.5	76.0	206
Fourth	97.4	90.4	82.4	79.6	65.5	2.2	81.0	184
Highest	96.5	85.8	72.2	87.0	63.5	3.3	72.7	236
Residence								
Urban	97.6	85.6	76.0	82.5	67.2	2.4	78.8	211
Rural	96.0	87.6	77.6	81.2	63.5	3.3	73.5	733
District								
Were-Kask	98.6	91.0	85.9	84.5	76.3	1.4	84.0	121
Kaskazini 'A'	100.0	96.8	92.3	83.8	77.1	0.0	88.0	124
Runqwe	88.8	73.8	66.9	80.5	58.6	11.2	75.3	23
Kilwa	93.3	80.5	71.3	70.7	43.9	3.1	59.9	71
Muheza	100.0	100.0	92.6	90.0	82.6	0.0	86.9	72
Arusha	97.5	94.8	63.6	93.8	59.0	1.6	63.6	77
Kigoma	88.3	76.7	76.7	72.8	65.7	11.7	74.7	34
Babati	94.2	81.0	79.7	63.0	47.7	5.8	73.1	42
Kibaha	100.0	85.3	75.3	80.8	65.7	0.0	82.0	159
Sengerema	92.1	72.5	58.3	84.9	51.1	7.9	50.8	73
Mvomero	96.8	90.8	80.3	81.1	67.1	0.0	77.6	34
Songea(U)	97.7	84.6	81.3	67.9	51.5	2.3	82.6	29
Meatu	82.7	73.8	55.3	79.1	48.2	15.0	50.3	26
Dodoma	100.0	91.7	85.3	57.5	42.8	0.0	76.4	10
Bunda	89.9	83.1	67.8	85.6	64.4	10.1	57.8	48
Total	96.4	87.1	77.2	81.5	64.4	3.1	74.7	943

(1) BCG, measles and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth).

Table 52. Percentage of children aged 12-59 months at the time of the survey who received specific vaccines by 12 months of age, and percentage with a vaccination card, by current age

Age in months	BCG	DPT 3	Polio 3	Measles	All basic vaccinations	No vaccinations	Percentage with a vaccination card seen	Number of children
Final table								
12-23	95.7	85.1	75.4	71	55.8	3.5	74.7	943
24-35	95.8	84.6	68.8	69.1	49.9	3.5	65.4	897
36-47	91	80.2	61.9	66.7	43.2	5.1	58.2	779
48-59	92.9	84.2	63.5	70.6	46.4	5.5	55.8	720
Total	94.1	83.7	67.9	69.1	48.9	4.2	64.3	3,340
Vaccinated between 0-11 months								
12-23	69.9	60.9	60.9	36.3	35.2	28.8	704.8	705
24-35	70.3	67.4	68.4	50.8	47.1	27.1	586.8	587
36-47	70.7	68.4	68.4	50.7	46.3	25	453.4	453
48-59	70.5	67.3	68.1	51.5	49.7	27.9	402.1	402
Total	70.3	65.5	65.9	46.1	43.5	27.4	2,147.10	2,147
Reported by mother								
12-23	88.1	60.5	20.6	80.6	15.4	11.3	0	239
24-35	91	70.7	21.3	81.8	17.7	8.6	0	311
36-47	91.4	71.4	23.7	86.5	20.6	8	0	325
48-59	90.4	78.6	27.2	89.1	22.8	8.2	0	318
Total	90.4	70.9	23.4	84.8	19.4	8.9	0	1,193
Card seen								
12-23	99.2	96.2	96.4	81.7	80.9	0.3	704.8	705
24-35	99.5	97.4	97.5	92.1	90.6	0.2	586.8	587
36-47	99.3	98.1	97.4	91.8	90.5	0.3	453.4	453
48-59	98.3	97.8	97.6	90.4	89.2	0.1	402.1	402
Total	99.1	97.2	97.1	88.3	87.1	0.2	2,147.10	2,147
Valid dates								
12-23	70.3	62.4	62.3	41.7	40.6	28.6	0	705
24-35	70.9	70.3	70.7	65	61.7	26.7	0	587
36-47	74.5	74.1	73.6	68.1	65.7	23.8	0	453
48-59	71.9	71.5	71.3	65.6	64.1	26.5	0	402
Total	71.7	68.7	68.7	58.1	56.1	26.7	0	2,147

(1) BCG, measles and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth).

Table 53. Percentage of young women aged 15-24 years who had sexual intercourse before age 15 and 18-24 who had sexual intercourse before age 18 by background characteristics and district

Age	Percentage who had sexual intercourse before age 15		Percentage who had sexual intercourse before age 18		Number of women (18-24)
15	5.0	424	-	-	-
16	11.0	425	-	-	-
17	9.5	343	-	-	-
18	13.4	419	39.5	419	419
19	8.6	359	44.2	359	359
20	15.2	539	52.1	539	539
21	21.7	314	50.7	314	314
22	14.3	327	49.4	327	327
23	10.1	323	43.9	323	323
24	7.8	331	42.3	331	331
Education					
No education	16.4	467	55.1	365	365
Primary	14.8	2,045	57.7	1,401	1,401
Secondary+	4.9	1,282	23.4	845	845
Missing	0.0	10	9.9	2	2
Wealth quintile					
Lowest	14.3	538	55.1	339	339
Second	14.0	574	53.8	378	378
Middle	15.5	623	50.4	439	439
Fourth	12.2	738	45.2	563	563
Highest	7.4	1,332	38.3	893	893
Residence					
Urban	16.8	963	59.4	703	703
Rural	9.9	2,841	41.4	1,910	1,910
District					
Arusha	3.7	449	31.1	316	316
Babati	11.9	206	45.1	151	151
Bunda	21	142	70	93	93
Dodoma	19.5	74	62.3	45	45
Kaskazini 'A'	1.2	333	8.4	220	220
Kibaha	17.5	881	62.6	617	617
Kigoma	11.5	205	43.2	157	157
Kilwa	29.8	152	75.5	130	130
Meatu	6.3	248	37.5	127	127
Muheza	9.6	245	47.7	155	155
Mvomero	17.9	115	74	78	78
Rungwe	5.1	58	43.1	40	40
Sengerema	18.7	210	70.1	146	146
Songea(U)	16.3	151	48.6	104	104
Wete-Kask	1.2	335	12	233	233
Total	11.6	3,804	46.2	2,612	2,612

Table 54. Percent of women 15-24 years who had never had sex, those who had ever had pre-marital sexual intercourse, level of condom use in the last sexual encounter by background characteristics and district

Background characteristic	Percentage who have never had sexual intercourse	Percentage who had sexual intercourse in the past 12 months	Number of never married respondents	Among respondents who had sexual intercourse in the past 12 months
Age				
15-24	63.8	29.6	2,440	5.9
Education				
No education	62.0	35.0	204	8.7
Primary	57.3	34.5	1,116	5.6
Secondary+	70.5	23.8	1,119	5.7
Missing	0.0	100.0	0	0.0
Wealth quintile				
Lowest	76.8	21.9	305	4.9
Second	67.3	29.4	352	9.3
Middle	63.0	32.0	370	7.5
Fourth	59.0	35.2	412	6.4
Highest	60.8	28.9	1,000	4.0
Residence				
Urban	50.9	42.4	588	7.7
Rural	67.9	25.6	1,852	5
District				
Arusha	61.7	24.3	338	0
Babati	61.5	31.6	126	0
Bunda	50.7	44.3	81	0
Dodoma	61.9	38.1	40	0
Kaskazini 'A'	99.3	0.7	236	0
Kibaha	47.3	47.4	554	0
Kigoma	61.9	32	132	23.3
Kilwa	25.7	64.1	50	21
Meatu	70.9	28.7	202	0
Muheza	63	22.8	158	0
Mvomero	55.4	33.5	50	25.5
Rungwe	65.2	15.5	42	73.7
Sengerema	47.2	40.2	112	37.9
Songea(U)	51.5	43	110	0
Wete-Kask	99	0.5	207	0
Total	63.8	29.6	2,440	5.9

Table 55. Percent of higher-risk sexual intercourse among youth and condom use at last higher-risk intercourse in the past 12 months by background characteristics and district

Background characteristic	Respondents aged 15-24 who had sexual intercourse in the past 12 months		Respondents aged 15-24 who had higher risk intercourse in the past 12 months	
	Percentage who had higher-risk intercourse in the past 12 months	Number of women	Percentage who reported using a condom at last higher-risk intercourse	Number of women
Age				
15-24	8.8	2,038	30.3	180
Education				
No education	12.8	325	27.2	42
Primary	8.4	1,292	25.9	108
Secondary+	7.1	421	50.4	30
Missing	0	0	-	0
Wealth quintile				
Lowest	11.8	295	17.5	35
Second	12.1	314	28.5	38
Middle	8.6	356	35.3	31
Fourth	9.7	462	28.5	45
Highest	5.2	611	44.1	32
Residence				
Urban	7.1	618.0	51.4	44
Rural	9.6	1420.0	23.4	136
District				
Arusha	0.8	185.0	0.0	2
Babati	1.1	117.0	0.0	1
Bunda	0.0	96.0	-	0
Dodoma	0.5	49.0	0.0	0
Kaskazini 'A'	2.2	95.0	0.0	2
Kibaha	0.3	585.0	100.0	2
Kigoma	41.8	114.0	23.3	48
Kilwa	29.3	131.0	26.8	38
Meatu	2.2	103.0	0.0	2
Muheza	0.0	120.0	-	0
Mvomero	27.4	77.0	29.9	21
Rungwe	32.4	21.0	74.8	7
Sengerema	38.6	135.0	37.2	52
Songea (U)	2.3	89.0	13.2	2
Wete-Kask	1.7	121.0	0.0	2
Total	8.8	2038.0	30.3	180

Note: Sexual intercourse with a partner who neither was a spouse nor who lived with the respondent.

Table 56. Average household health care expenditures in the 12 months preceding the survey by residence and district (Tanzanian Shillings)

Residence/ district	Average cost mandatory insurance and pre-paid plans	Average cost of voluntary insurance	Average cost of related items (1)	Number of households
Wealth quintile				
Lowest	4,968.2	4,246.3	474.2	1,630
Second	3,936.3	3,676.9	481.1	1,553
Middle	13,801.1	4,314.6	2,401.5	1,636
Fourth	10,778.4	4,782.3	546.0	1,906
Highest	68,887.8	16,179.2	3,411.2	2,473
Residence				
Urban	28,085.8	10,711.8	429.2	2,433
Rural	49,508.5	9,554.1	1,976.7	6,765
District				
Wete-Kask	-	-	288.8	665
Kaskazini 'A'	-	-	136.0	803
Rungwe	9,002.3	2,577.3	1,781.9	230
Kilwa	3,416.7	2,444.2	601.2	629
Muheza	10,329.3	10,415.4	128.8	692
Arusha	63,638.1	7,569.4	5,896.2	1,019
Kigoma	51,466.6	602.2	106.7	434
Babati	161,653.3	57,497.7	3,735.5	574
Kibaha	52,951.7	8,867.6	1,150.6	2,093
Sengerema	11,136.0	13,681.4	240.3	473
Mvomero	5,147.6	1,312.4	5,675.0	405
Songea(U)	14,386.3	4,216.5	613.6	373
Meatu	4,243.1	6,465.8	312.4	308
Dodoma	19,360.2	17,662.6	697.3	233
Bunda	23,512.4	47,410.7	1,710.3	271
Total	39,747.8	10,048.9	1,576.9	9,198

(1) Such as prescription glasses, hearing aids, canes, and prosthetic devices.

Table 57. Average amount spent by households on inpatient and outpatient care for HIV, TB, malaria and other conditions by residence and district (Tanzanian Shillings)

Residence/ district	Average household expenditures on HIV care		Average household expenditures on TB care			Average household expenditures on Malaria care			Average household expenditures on other conditions/diseases			Total households	
	Inpatient	Outpatient	Inpatient	Outpatient	Pharmaceut.	Inpatient	Outpatient	Pharmaceut.	Inpatient	Outpatient	Pharmaceut.		
Wealth quintile													
Lowest	0.0	0.0	204.1	32.7	233.2	471.0	431.2	706.3	1406.9	563.8	1323.8	1,630	
Second	0.0	1018.9	22.2	44.5	23.5	1124.8	519.3	1034.4	2420.6	834.9	2944.6	1,553	
Middle	0.0	3.7	73.0	111.5	110.1	734.6	871.6	798.6	2454.6	1243.2	2012.6	1,636	
Fourth	1.1	0.0	25.3	25.3	17.8	834.8	704.7	1073.7	2007.0	1064.2	2423.0	1,906	
Highest	0.0	0.0	399.2	5.7	10.3	1679.6	1035.0	1455.4	4440.1	1006.2	3063.3	2,473	
Residence													
Urban	0.9	650.5	41.7	24.9	179.9	1297.5	843.8	1010.2	1222.7	482.6	871.6	2,433	
Rural	0.0	0.9	210.0	45.3	32.3	931.9	707.3	1071.9	3237.1	1122.3	2970.7	6,765	
District													
Arusha	0.0	0.0	857.7	0.0	0.0	1464.4	1137.8	1628.6	8012.7	1720.4	4429.3	1,019	
Babati	0.0	0.0	581.0	299.6	214.0	970.4	1924.5	1721.8	1916.4	1462.3	2345.1	574	
Bunda	0.0	0.0	171.3	97.6	255.3	1482.5	788.0	1703.3	3744.6	1076.8	4444.6	271	
Dodoma	0.0	0.0	92.4	31.4	28.0	227.9	1218.2	1346.7	1399.7	2202.3	4621.9	233	
Kaskazini 'A'	0.0	0.0	0.0	0.0	0.0	75.6	110.2	303.3	1820.2	1191.5	2704.1	803	
Kibaha	0.0	756.4	0.0	27.3	180.0	1247.1	893.7	989.9	879.8	497.3	1802.4	2,093	
Kigoma	0.0	0.0	149.3	0.0	13.1	821.6	477.6	436.8	1849.3	296.0	432.3	434	
Kilwa	0.0	0.0	0.0	0.0	0.0	384.7	341.8	480.6	1683.4	481.4	869.1	629	
Meatu	0.0	0.0	0.0	0.0	0.0	187.8	96.3	184.8	207.5	38.3	90.3	308	
Muheza	3.0	0.0	0.0	43.8	1.8	745.2	319.6	906.5	3361.9	519.8	1600.5	692	
Mvomero	0.0	0.0	32.1	101.8	90.0	4989.4	1870.8	4909.8	4912.8	1494.9	2903.8	405	
Rungwe	0.0	26.3	32.9	0.0	0.0	1958.8	489.9	722.2	2596.6	995.7	1389.0	230	
Sengerema	0.0	0.0	325.2	67.4	53.1	661.3	487.5	330.1	2611.8	977.7	1885.7	473	
Songea(U)	0.0	0.0	21.1	3.4	33.5	667.1	699.0	912.4	999.7	1232.8	1535.5	373	
Wete-Kask	0.0	0.0	0.0	0.0	0.0	129.4	128.6	224.0	3803.7	1225.8	4979.6	665	
Total	0.2	172.7	165.5	39.9	71.3	1028.6	743.4	1055.6	2704.2	953.0	2415.4	9,198	