

Table of Contents

1.	Introduction.....	1
2.	Data sets and indicator definitions.....	1
3.	Data quality and coverage.....	1
3.1.	Data captured within the HMIS.....	1
3.2.	Status on data coverage.....	2
3.2.1.	Key data element gaps.....	2
3.2.2.	Response rate.....	4
3.3.	Correlations among the collected data.....	6
4.	MDG overview.....	7
4.1.	The goals.....	7
4.2.	The indicators.....	7
4.2.1.	MDG4.....	7
4.2.2.	MDG5.....	7
4.2.3.	MDG6.....	7
4.3.	MDG monitoring.....	8
5	Poverty Reduction Indicators (Mkuza) & ZHSSP.....	9
6	Expanded Programme on Immunization.....	11
6.1	BCG under 1 year coverage.....	11
6.2	Measles under 1 year coverage.....	12
6.3	Fully immunised under 1 year coverage.....	13
6.4	Drop-out in the immunisation programme.....	14
7	Reproductive and Child Health.....	15
7.1	Family Planning.....	15
7.1.1	Family planning coverage.....	15
7.2	Antenatal Care.....	17
7.2.1	ANC first visit coverage.....	17
7.2.2	ANC first visit rate before 20 weeks.....	18
7.2.3	Malaria in pregnant women.....	19
7.2.4	Anaemia in pregnant women.....	20
7.3	Deliveries.....	21
7.3.1	Low birth weight rate (institutional).....	21
7.4	Maternal Health.....	22
7.4.1	Maternal Mortality ratio in the ward (institutional).....	22
7.4.2	Births attended by skilled attendants.....	23
7.5	Child health.....	24
7.5.1	Malnutrition.....	24
7.5.2	Diarrhoea incidence under five years.....	25
7.5.3	Pneumonia incidence under five years.....	27
8.1	OPD Top 10 (new cases).....	28
8.2	OPD Top 10 under 5 years (new cases).....	29
8.3	Pneumonia trend 2006.....	30
8.4	Diarrhoea trend 2006.....	31
9	Malaria.....	32

9.1	Malaria incidence rate.....	32
9.2	Malaria incidence rate under five years	33
9.3	Malaria trend.....	34
9.3.1	Out-patients.....	34
9.3.2	In-patients	36
10	In-patient data from the hospitals	37
10.1	Bed Occupancy Rate.....	37
10.2	Average length of stay	38
10.2.1	Crude death rate	39
10.3	Causes of death	40
10.4	Causes of admission.....	42
11	Indicator descriptions.....	44

List of Tables

Table 1:	Number of Expected reporting facilities and Coverage by Forms	3
Table 2:	The status of MDG monitoring (* not available)	8
Table 3	Selected indicators based on HMIS routine data collection	10
Table 4:	National BCG under 1 year coverage.....	11
Table 5:	National Measles under 1 year coverage.....	12
Table 6:	Fully immunised coverage nationally.....	13
Table 7:	Total Family Planning coverage.....	15
Table 8:	Percentage of ANC first visits coverage.....	17
Table 9:	Percentage of ANC first visits before 20 weeks	18
Table 10:	Malaria rate in Pregnant women.....	19
Table 11:	Anaemia rate in Pregnant women.....	20
Table 12:	Percentage of live births under weighted.....	21
Table 13:	Institutional Maternal Mortality ratio (in wards).....	22
Table 14:	Distibution of Institutional Maternal Deaths and Total Live Births.....	22
Table 15:	Percentage of births attended by skilled personnel.....	23
Table 16:	Underweight for age rate under five years	24
Table 17:	Percentage of Diarrhoea case for underfive years	25
Table 18:	Pneumonia incidence under five years	27
Table 19:	Malaria incidence rate.....	32
Table 20:	Malaria incidence rate for underfive years	33
Table 21:	Distribution of out patients Malaria cases by age group, 2006	34
Table 22:	Average length of stay	38
Table 23:	Top ten Causes of Deaths in Zanzibar hospitals, 2006.....	40
Table 24:	Distribution of deaths in Zanzibar Hospitals, per ward, 2006.....	41
Table 25	Top ten causes of admission in Zanzibar hospitals, 2006.....	42

List of Figures

Figure 1:	PHC Reporting Coverage Based on Data Collection Tools.....	3
Figure 2:	Data coverage 1st vs 2nd half of 2006	4
Figure 3:	Monthly data coverage, 2006	5
Figure 4:	PHC data coverage by key elements, 2006	5

Figure 5: Life cycle chart.....	6
Figure 6: BCG coverage under 1 year (%) by District, 2006	11
Figure 7: Measles under 1 year coverage by district, 2006	12
Figure 8: Proportion of Children Under 1 year Fully Immunised, 2006	13
Figure 9: Correlation between BCG, DPT-1, DPT-3 and Measles.....	14
Figure 10: Family Planning Total Coverage in %, 2006	15
Figure 11: Percentage of Antenatal first visit coverage, 2006.....	17
Figure 12: Proportion of Antenatal first visit before 20 weeks	18
Figure 13: Proportion of pregnant women with malaria per 1000 ANC first visits, 2006	19
Figure 14: Proportion of pregnant women with anaemia per 1000 ANC first visits, 2006.....	20
Figure 15: Percentage of Children born with Low birth weight, 2006.....	21
Figure 17: Percentage of Births Attended by Skilled Personnel, 2006.....	23
Figure: 18 Percentage of under five children who are under weight per district, 2006.....	24
Figure 19: Proportion of Children under-five with Diarrhoeal diseases by district, 2006	25
Figure 20: Percentage of Children under-five with Pneumonia disease by district, 2006.....	27
Figure 21: Number of new cases (top ten) as reported in Zanzibar health facilities, 2006	28
Figure 22: Distribution of New cases for Under-five of Age as reported	29
Figure 23: Monthly distribution of Pneumonia cases by age group, 2006	30
Figure 24: Monthly distribution of Diarrhoeal diseases by age group, 2006	31
Figure 25: Distribution of Malaria cases per 1000 capita by district, 2006.....	32
Figure 26: Percentage of Children under-five treated for Malaria by district, 2006	33
Figure 27: Trend of malaria (out patients) cases in 2006	35
Figure 28: Trend of Malaria (in-patients) cases in 2006.....	36
Figure 29: Bed Occupancy rate in Zanzibar hospitals, 2006	37
Figure 30: Average length of stay (days for inpatient) in Zanzibar hospital, 2006	38
Figure 31: Number of deaths per total admission in 2006.....	39
Figure 32: Top ten causes of deaths in Zanzibar hospitals, 2006	41
Figure 33 Top ten causes of admission.....	43

Foreword

The Unit of Health Management Information System was established with the main task of managing the information generation and to facilitate advocacy and capacity development on use of statistical information for decision making. The mission of HMIS is to develop a well defined and functional system capable of providing complete, quality and up to date health management information that can be easily accessible and available on regular basis through different reporting formats and channels. This bulletin, the first in the planned series of quarterly and annual publications, marks the initial effort paid by the unit. Information covered relates to statistics covered for the year 2006 pertaining to government-owned health facilities only.

This bulletin comprises ten sections. Major areas covered include Service Utilisation, an overview of the Millennium Development Goals (MDG), an Expanded Programme of Immunisation, Reproductive and Child Health, Disease Surveillance, and observed trends of diarrhoea, and malaria. Other information covered is the inpatient data from the hospitals (diagnoses, deaths and average length of stay). These are the prominent unified management information to which the Health Ministry, through HMIS intends to capture; to monitor and evaluate her health programs. The same information provides relevant indicators for monitoring the Zanzibar Strategy for Growth and Reduction of Poverty (ZSGRP) and MDG.

As an initial effort, the information portrayed has been found to suffer some degree of incompleteness. However, the information serves well to provide a clear picture of health service provision in Zanzibar. While effort is made to improve coverage and data quality, it is expected that the information presented will arouse interest to health management and planners.

Mohammed S. Jidawi (MD)
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Acknowledgement

The data collection process is an expensive exercise: both in terms of cost and time. The Ministry of Health, through its HMIS unit, has paid great effort of establishing the system for data capture. It has installed the DHIS software at the district level; for which the raw information from facilities are captured by the software and mailed (through web-based net) to HMIS head office.

The effort in creating this information system has been highly augmented by our partners in progress. In particular, DANIDA and WHO have paid the crucial roles for providing both the financial support and the highly valuable technical assistance.

The Ministry of Health pays a high gratitude to all individuals and institutions who, in one way or the other, have contributed to the success of establishing the information system; to which this publication is its first outcome. The continuing effort of both WHO and DANIDA towards establishing a full Health Management Information System (HMIS) is highly appreciated. HMIS Unit, on its part, expresses its high gratitude to all health facility staffs, the District and Zonal Medical Officers, the HISP team, and all others involved for the year-long, tireless effort they paid in gathering the necessary information. It is their crucial role and through joint cooperation that made this publication a success.

Last, but in no way least, the HMIS staff is looking forward towards a success; a success that mainly rests to the health management and program managers on both the production and use of information.

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1. Introduction

A number of bulletins have been published by the then statistical unit within the Ministry since 1980s. But the 2006 bulletin is the first publication since the establishment of HMIS unit. The bulletin provides the description of health services rendered by public health facilities. It highlights information which are useful for monitoring and evaluation of the health system in general. More than 90% response rate of its HMIS tools returned and processed.

2. Data sets and indicator definitions

The terms used in this bulletin as far the HMIS tools are concerned are the data sets, indicator sets and population estimates.

Data sets: These are the five data collection tools in which each tool has a number of data elements.

Indicators sets: These derived from National Indicators Set and MDG Indicator Set

Population estimates: The 2006 mid-year estimate of the population. Population estimates are obtained from population projections, which are extracted from the National Bureau of Statistics (NBS) publications, based on her 2002 Tanzania Population & Housing Census (TPHC).

3. Data quality and coverage

3.1. Data captured within the HMIS

The HMIS unit collects routine data from all public facilities: These are the Primary Health Care Units (PHCUs), Primary Health Care Centre (PHCC), the District Hospitals, and Mnazi Mmoja referral hospital (which also include its two specialized subsidiaries - Mwembeladu Maternity Home and Mental Hospital). In the meantime, the limitation of this bulletin is that; HMIS do not as yet collect data from private hospitals, also does not include the information on regards to contraceptive users. The information on family planning users by method and private hospital will be provided in 2007 and 2008 bulletin respectively.

Data are collected from facilities on monthly basis using standardized tools. The tools in use include:

- i) Immunisation and Cold Chain Monitoring
- ii) Reproductive and Child Health
- iii) Disease Surveillance Report
- iv) STIs and HIV/AIDS Management
- v) Maternity Ward Report

In addition, the out-patient data is collected from the above mentioned hospitals and integrated with the disease surveillance data from PHCUs to ideally provide full national coverage of morbidity data (see comments on data gaps below).

3.2. Status on data coverage

In the past, different data collection tools were put to use between different health facilities, and even between the different departments within the same health facility. The introduction of standardized tools has been slow to some facilities, thus rendering low coverage with the HMIS data flow system. The gaps currently observed in the routine data collection are:

- Missing information on diagnosis from the Mnazi Mmoja OPD clinics (about 30 percent of all out-patients), major reasons contributed to this are:-
 - i. Non-use of register books at Mnazi Mmoja Male OPD to write down the diagnosis
 - ii. No monthly aggregated forms are compiled at Mnazi Mmoja Female OPD, although they make use of register books with specification of diagnosis.
- Non-compliance from Mkoani district hospital of their OPD data
- Missing disease surveillance data (about 12 percent under coverage) from the West district.

These gaps are spread throughout the year on different health facilities. Other districts also have some gaps in disease surveillance reporting, but not as noticeable as West district

3.2.1. Key data element gaps

- Headcounts from OPD (disease surveillance form)
- Fully immunised under 1 year

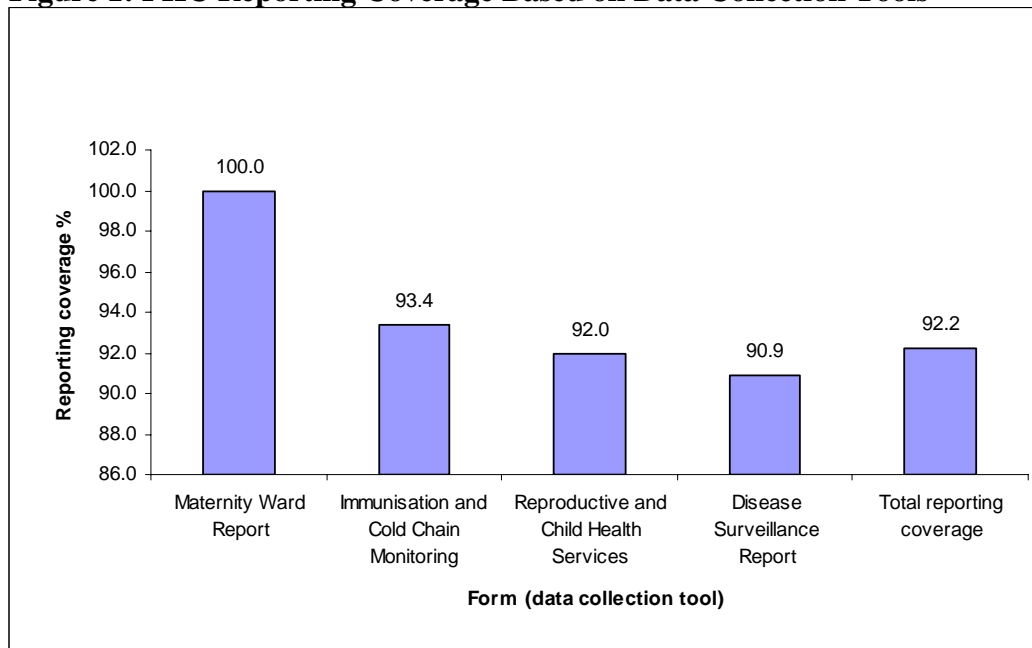
- Children born protected

These three data elements were new when introduced in 2006 and the gaps are mainly in the first 3-5 months of the year. Generally, a poor understanding among the health staff at the reporting facilities of the definitions of these new data elements was among the reasons. The problem have solved for 2007.

Table 1: Number of Expected reporting facilities and Coverage by Forms

Reporting forms	Unit reporting	Total reporting months (unit*12)	Forms received	Coverage
1. Maternity Ward form	8	(96) 93 ¹	93	100.0
2. Immunisation & cold chain monitoring form	143	1716	1603	93.4
3. RCH form	144	1728	1589	92.0
4. Disease Surveillance form	142	1704	1549	90.9
Total reporting coverage		5244	4834	92.2

Figure 1: PHC Reporting Coverage Based on Data Collection Tools



¹ Vitongoji cottage was closed for 3 months resulting to expected maternity form to be 93 instead of 96

3.2.2. Response rate

Based on the expected number of tools supposed to be returned to the district for analysis in 2006, maternity ward form has complete coverage (100%). Disease surveillance form has the lowest coverage of 90.9 percent from its 142 reporting facilities. Note that these numbers are calculated based on using one or two of the most common data elements from each form and does not indicate that the whole form has been filled out. Still it gives a rather good indication on how many of facilities that are reporting each form every month. Figure 2 indicates that there are important data elements in these forms that have remarkably lower coverage than the forms itself, meaning that the forms are being reported without filling in the numbers for that specific data element. It also observed that reporting coverage has shown a clear improvement during the year, particularly for the second half of 2006 (see figure 3)

In addition to these forms there is the HIV/STI form which has had very poor data coverage in 2006, notably; its exact coverage is difficult to calculate due to the uncertainty of how many facilities that are expected to report this form.

Figure 2: Data coverage 1st vs 2nd half of 2006

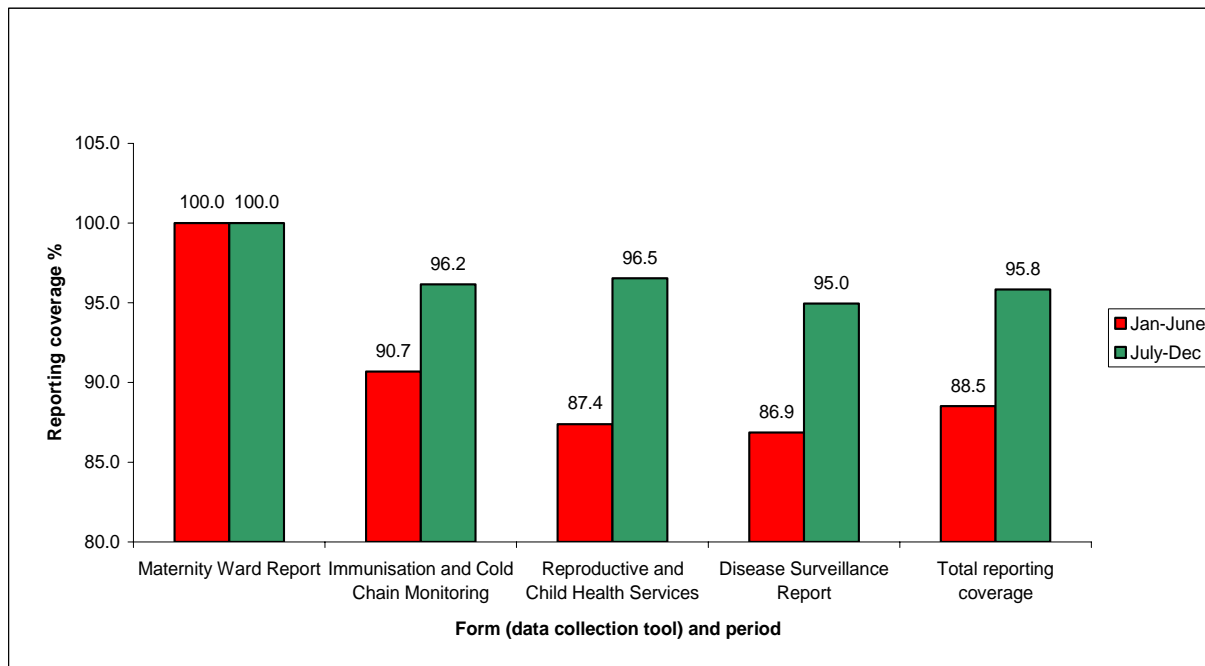


Figure 3: Monthly data coverage, 2006

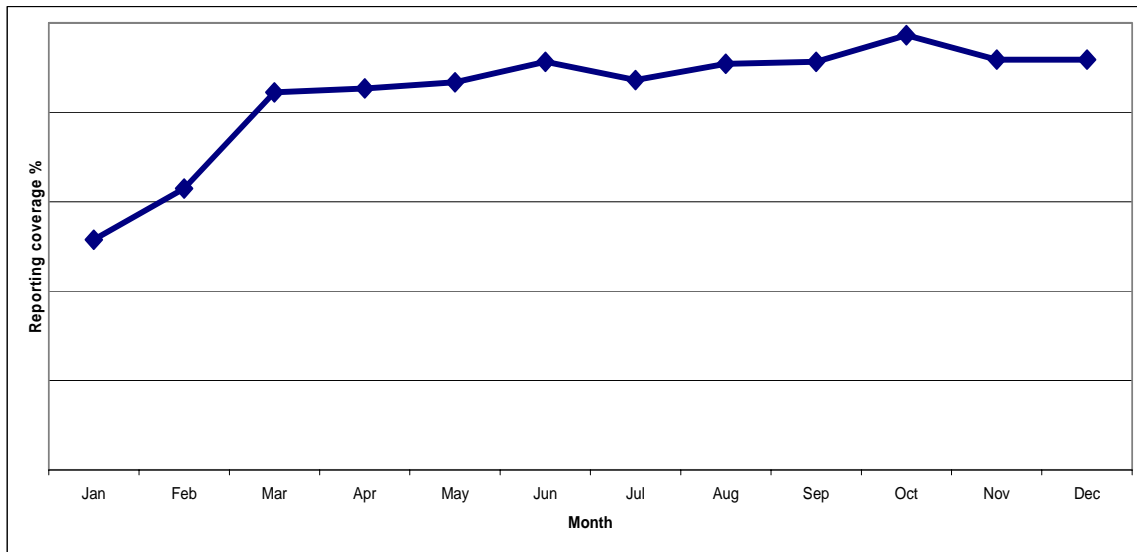
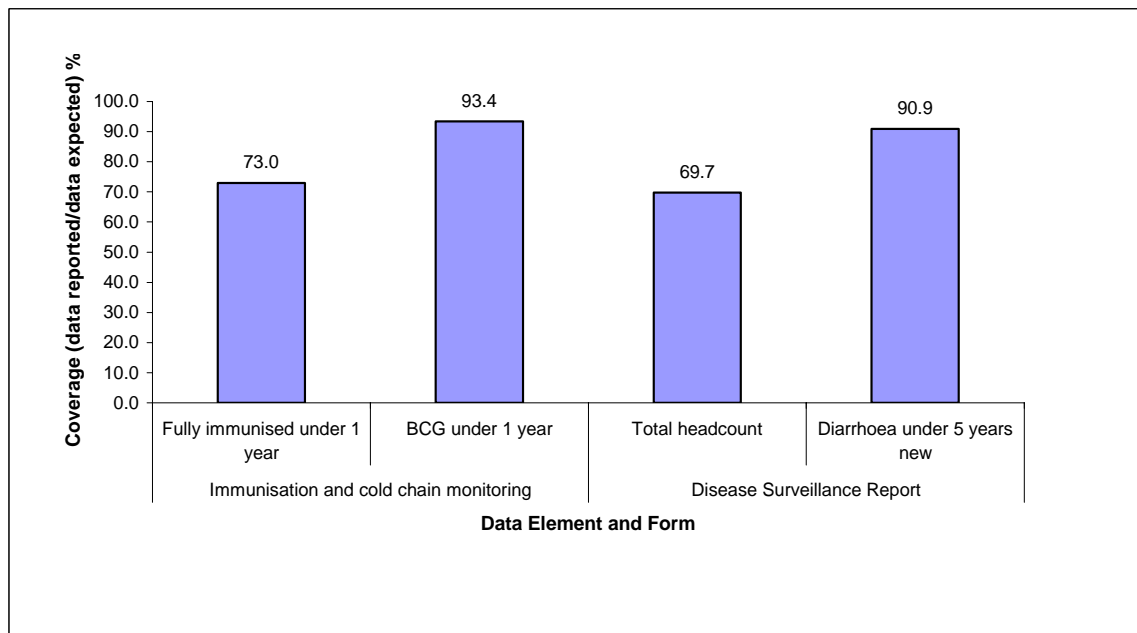


Figure 4: PHC data coverage by key elements, 2006



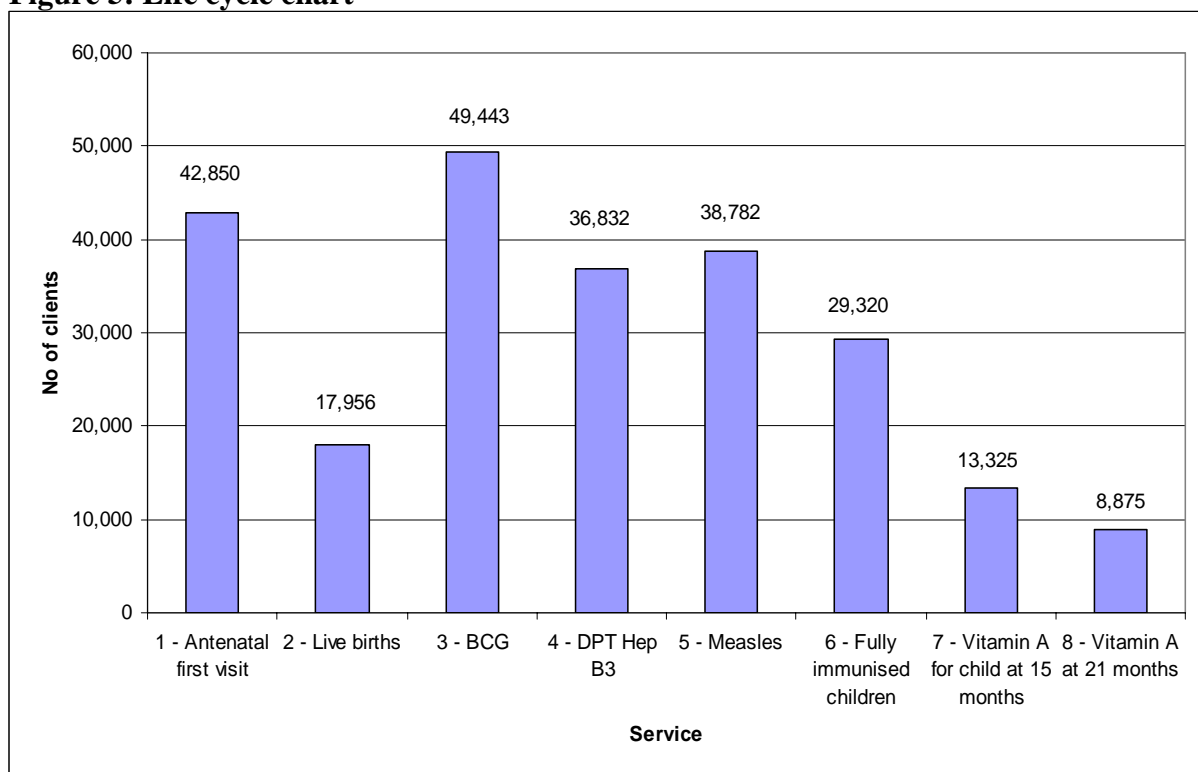
Both of these data elements have been newly introduced in 2006 and the low coverage is most likely due to a lack of understanding of their definition and how to calculate them. For instance, “Fully Immunised under 1 year” and “BCG under 1 year” which are reported on the same form would normally expect to have the same reporting coverage as this element rarely/never is 0. The differences observed in figure above are among the gaps which need further consideration.

(Instructions on how to calculate these data elements have been included on the forms in 2007 to improve their reporting coverage).

3.3. Correlations among the collected data

The lifecycle graph is useful to analyse data across health programmes and to detect gaps in reporting, the following graphs shows correlations between the data from the Antenatal Care services, Immunisation services and Child health services.

Figure 5: Life cycle chart



BCG vaccine is the highest here and can be used as an indication of the actual number of pregnant women, live births and children under 1 year to immunise. Comparing antenatal first visits, live births and the number of children got BCG, it gives the indication that many of the live births are home based deliveries (note: live births shown in the figure are those delivered in health facilities).

Measles vaccination is a bit lower than BCG indicating a certain drop-out in the immunisation programme. More over, Vitamin A appears to be quite low compared to all the other numbers here and very much lower than the BCG vaccinations.

4. MDG overview

4.1. The goals

Goal 4: Reduce child mortality

Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate.

Goal 5: Improve maternal health

Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio.

Goal 6: Combat HIV/AIDS, malaria and other diseases

Have halted by 2015 and begun to reverse the spread of HIV/AIDS.

Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases.

4.2. The indicators

4.2.1. MDG4

- Under-five mortality rate *
- Infant mortality rate*
- Proportion of 1 year-old children immunised against measles

4.2.2. MDG5

- Maternal mortality ratio
- Proportion of births attended by skilled health personnel

4.2.3. MDG6

- HIV prevalence among pregnant women aged 15-24 years*
- Condom use rate of the contraceptive prevalence rate:*

 - Condom use at last high-risk sex
 - Percentage of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS
 - Contraceptive prevalence rate

- Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years*
- Prevalence and death rates associated with malaria
- Proportion of population in malaria-risk areas using effective malaria prevention and treatment measures*
- Prevalence and death rates associated with tuberculosis
- Proportion of tuberculosis cases detected and cured under directly observed treatment short course DOTS (Internationally recommended TB control strategy)**

* Not available in routine HMIS, it can be obtained from household surveys.

** Information on TB treatment not yet collected by HMIS

4.3.MDG monitoring

Table 2: The status of MDG monitoring (* not available)

Goal	MDG Indicator	1999	2002 census	2004/05 TDHS	2006 HMIS
4	Under-five mortality rate	*	141	101	*
4	Infant mortality rate	*	89	61	*
4	Proportion of 1 year-old children immunised against measles	*	*	82 ²	87.1
5	Maternal mortality ratio	377 ³	*	578 ⁴	473.4 ⁵
5	Proportion of births attended by skilled health personnel	*	*	51	62.5
6	Malaria prevalence rate	*	*	*	204.4

² For children 12-24 months

³ Unicef study

⁴ For the whole of Tanzania

⁵ Institutional (Zanzibar public hospitals)

5 Poverty Reduction Indicators (Mkuza) & ZHSSP

A. Infant and Child Health

- Reduced infant mortality from 61/1000 in 2005 to 57/1000 in 2010
- Reduced mortality of children under five from 101/1000 in 2005 to 71/1000 by 2010
- Increased proportion of fully immunized children from 85% in 2005 to 95% by 2010

B. Maternal Health and Reproductive Health

- Reduced Maternal Mortality from 377/100,000 in 1999 to 251/100,000 in 2010.
- Increased percentage of births delivered in health facilities from 49% in 2005 to 60% in 2010
- Improved contraceptive prevalence rate from 10% to 15% for modern methods and from 15% to 20% for any method by 2010

C. Communicable Diseases:

(i) Malaria

- Increased the percentage of under-fives having prompt access to and receiving appropriate management for febrile illness within 24 hours from 13% in 2005 to 70% in 2010
- Increased the percentage of under-fives sleeping under ITNs from 37% in 2005 to 90% in 2010.
- Reduced the case-fatality rate from 2.1% in 2005 to 0.5% in 2010.

(ii) HIV and AIDS

- Reduced HIV prevalence among 15-24 years pregnant women from 1% in 2005 to 0.5% in 2010
- Increased the proportion of population with comprehensive correct knowledge of HIV and AIDS from 44% of women and 20% of men to 80% of the general population by 2010
- Increased condom use among women at last higher risk sex from 34% in 2005 to 80% in 2010
- Reduced stigma surrounding HIV and AIDS from 76% in 2005 to 60% by 2010 (measured as the inverse of the proportion of the population expressing acceptance of 4 measures as per TDHS)

(iii) TB

- Reduced the death rate from 8% to 5% in 2010
- Increased cure rates from 80% to 85% by 2010
- Increased HIV screening of patients from 20% to 100% by 2010

D. Non Communicable Diseases (NCD)

- Administered prevalence survey for key NCDs by 2010

E. Substance Abuse

- Administered prevalence survey for substance abuse by 2010
- Operationalised detoxification and rehabilitation services for substance abusers by 2010

F. Human Resource management

- 75% of primary health facilities established agreed norms for trained staff, with attention to gender balance, by 2010

Table 3 Selected indicators based on HMIS routine data collection

Selected indicators	Plan	Pemba	Unguja	Zanzibar
Antenatal visits before 20 weeks rate (13)	ZHSRSP	33.8	43.8	40.0
Births attended by skilled attendants (11)	MKUZA/ZHSRSP	53.9	67.7	62.5
IPT coverage in ANC clients (15)	ZHSRSP	108.2	75.4	87.0
Maternal Mortality Ratio (20)	MKUZA/ZHSRSP	502.2	462.9	473.4
Measles under 1 year coverage (12)	ZHSRSP	65.2	105.8	87.1
Proportion of fully immunized children	MKUZA	55.7	74.5	65.8
Underweight for age rate under 5 years (21)	ZHSRSP	9.6	8.2	8.6

Note: 1. Within brackets indicates ZHSRSP indicator numbering
2. All information are based on Public health facilities

6 Expanded Programme on Immunization

The denominators in the following immunisation coverage graphs are the populations under 1 year for each district as obtained from the NBS 2006 projection data. The source of data for doses given, are monthly reports from the PHCUs.

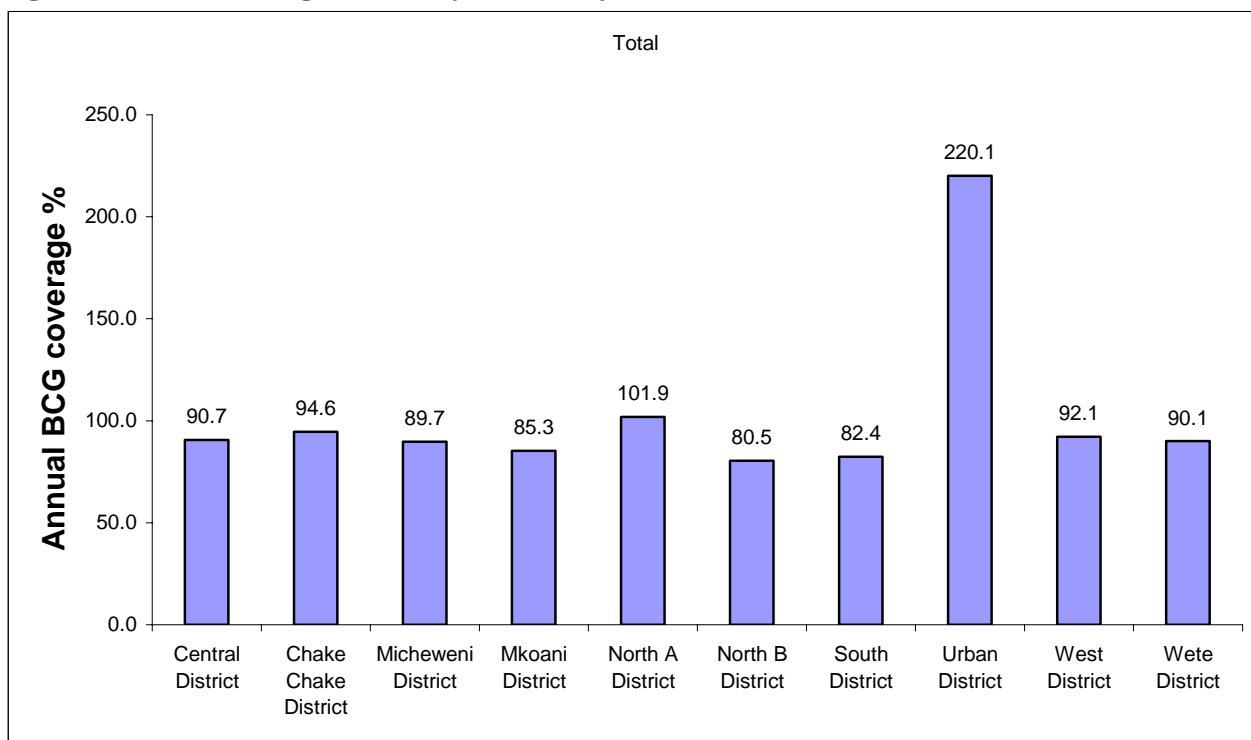
6.1 BCG under 1 year coverage

Formula: $100 \% \times \text{BCG doses given to children under 1 year} / \text{target population under 1 year}$

Table 4: National BCG under 1 year coverage

Zone	Percentage (%)
Unguja	129.2
Pemba	89.8
Zanzibar	111.0

Figure 6: BCG coverage under 1 year (%) by District, 2006



The country-wide immunisation coverage is 111 % with unexpected coverage of 220.1% in urban district. Coverage of more than 100% has several possible explanations. District coverage over 100% can often be explained by migration of patients across district borders due to availability of

services and/or client choice. Urban district having the advantage of two public hospitals (Mnazi Mmoja referral hospital and Mwembeladu maternity home) has a very high due to its many deliveries of children belonging to other districts. As BCG is mostly given at the maternity ward just after birth there is likely to be a higher coverage in the districts providing delivery services.

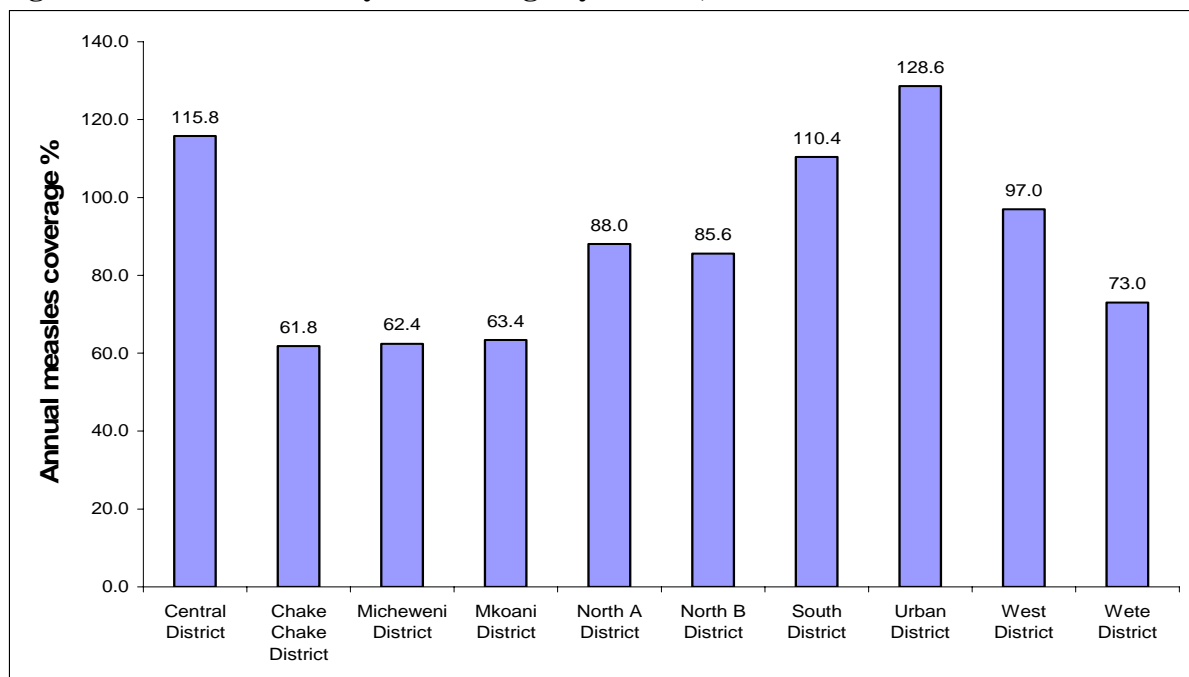
6.2 Measles under 1 year coverage

Formula: $100 \% \times \text{Measles doses given to children under 1 year} / \text{target population under 1 year}$

Table 5: National Measles under 1 year coverage

Zone	Percentage (%)
Unguja	105.8
Pemba	65.2
Zanzibar	87.1

Figure 7: Measles under 1 year coverage by district, 2006



6.3 Fully immunised under 1 year coverage

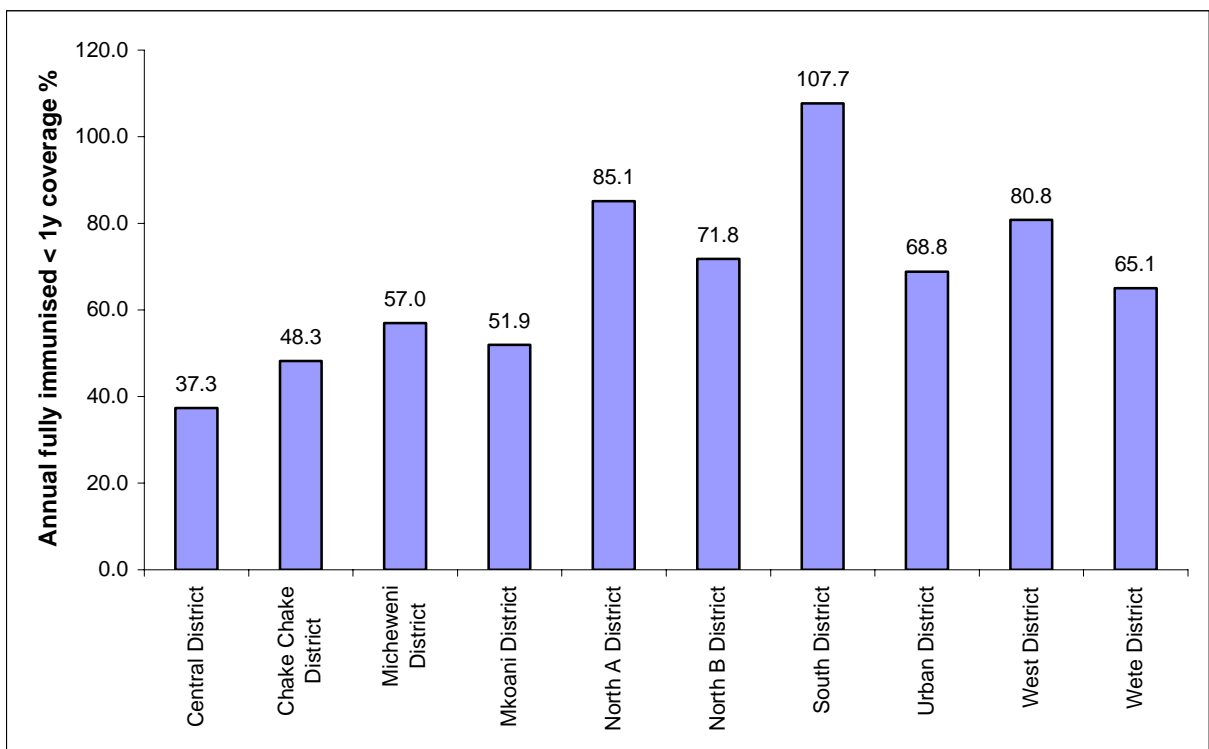
The fully immunised under 1 year coverage indicator provides the percentage of children under 1 year in the target population that have completed the immunisation programme. The numerator, fully immunised under 1 year is a monthly reported data element indicating how many children finalising the immunisation program every month in the health facility.

Formula: $100 \% \times \text{fully immunised children under 1 year} / \text{target population under 1 year}$

Table 6: Fully immunised coverage nationally

Zone	Percentage (%)
Unguja	74.5
Pemba	55.7
Zanzibar	65.8

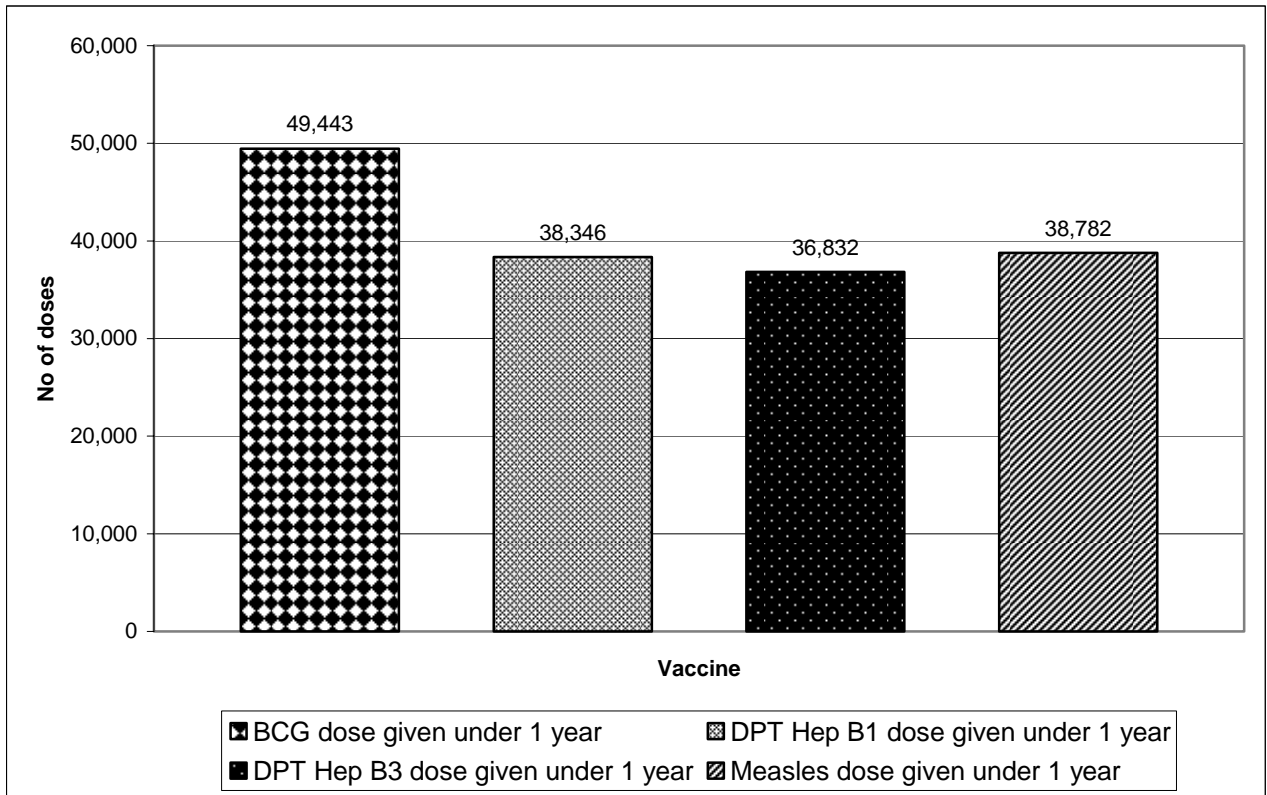
Figure 8: Proportion of Children Under 1 year Fully Immunised, 2006



Note the unexpectedly low values compared to the measles coverage (figure 7) above, as these numbers usually are the same with measles fulfilling the immunisation programme. Most likely this difference is due to health staff still not being familiar with this newly introduced data element in the immunisation and cold chain form.

6.4 Drop-out in the immunisation programme

Figure 9: Correlation between BCG, DPT-1, DPT-3 and Measles



The graph shows that there is quite a number (20-25 %) of children receiving the BCG vaccine and then not the DPT-3 and Measles vaccines. More surprising may be, there are more children receive the measles vaccine than the DPT-3. Remembering the very high BCG coverage (111%) and adding the graph above to the reasoning there is a reason for assuming that there is duplication in the BCG reporting leading to an incorrectly high total number of BCG doses given.

7 Reproductive and Child Health

7.1 Family Planning

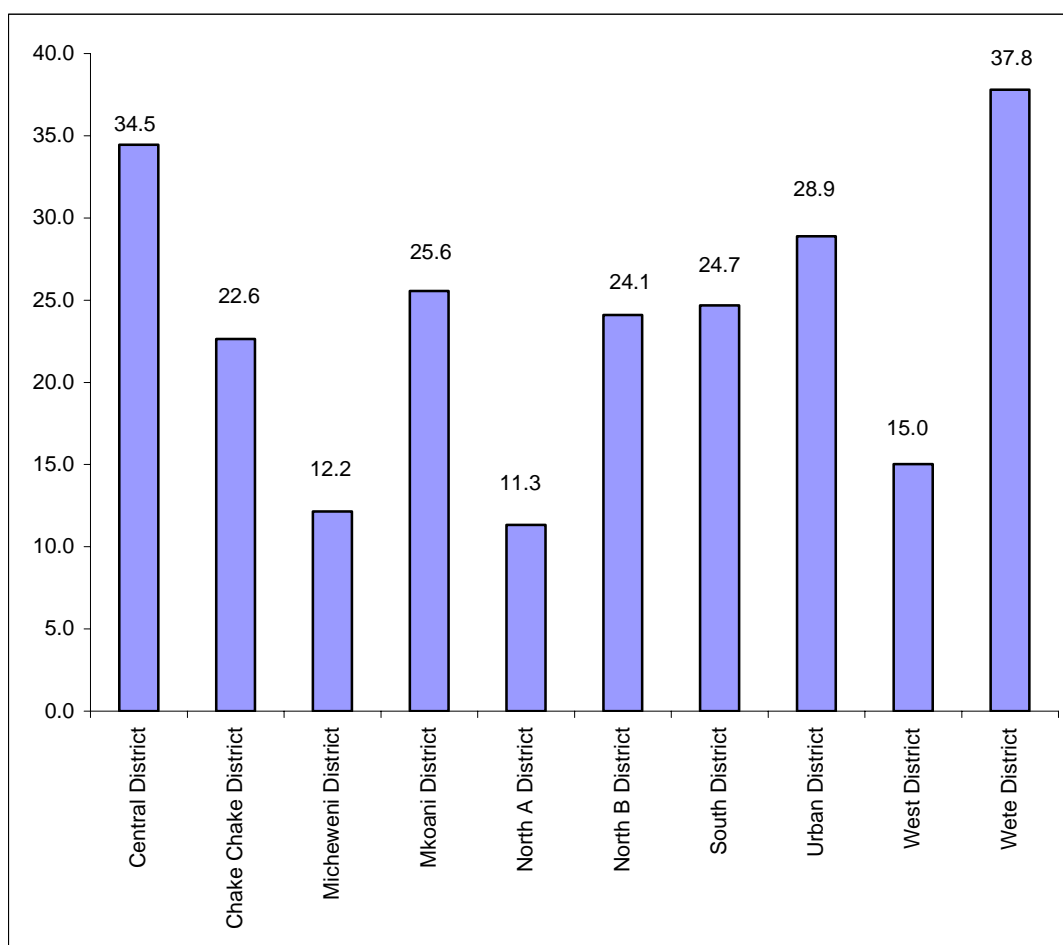
7.1.1 Family planning coverage

Formula: $100 \% \times \text{Family planning total (new+continuing) clients} / \text{Women of Reproductive Age (WRA)}$

Table 7: Total Family Planning coverage

Zone	Percentage (%)
Unguja	22.7
Pemba	25.3
Zanzibar	23.6

Figure 10: Family Planning Total Coverage in %, 2006



Family planning service is one of the important components of RH services especially at the prevailing situation of persisting high TFR and MMR in Zanzibar that is contributed, amongst other causes, by low use of family planning leading to un-spaced births. The total coverage of FP use is an important indicator both nationally and internationally.

The current data presented in Figure 10 (compared to TDHS 2005) surprisingly portrays a drastic increase of number of continuous users, especially in Pemba where the utilization trend was very low compared to its counter-zone. This increase can be found in Wete district (37.8%) followed by Chake (22.6%) and Mkoani (25.6%) while Micheweni remain as usual, the lowest. This phenomenon can be also observed in Unguja where Central district is leading by having 34.5% followed by Urban, North B and South districts with very small discrepancies (see the figure above). West and North A districts are being the lowest with respectively 15 % and 11.3%. Notably the TDHS estimate is for married women only while HMIS results are all women in childbearing age.

Reasons for the increase can be explained, amongst other factors, by the existing approach of compiling data on family planning users with little attention of follow-up and updating clients' records and filling their family planning cards on regular basis. This situation is found in all health facilities providing FP service. Thus, there is a need to review the existing approach to ensure that clients who have dropped out are not counted as continuous users.

7.2 Antenatal Care

7.2.1 ANC first visit coverage

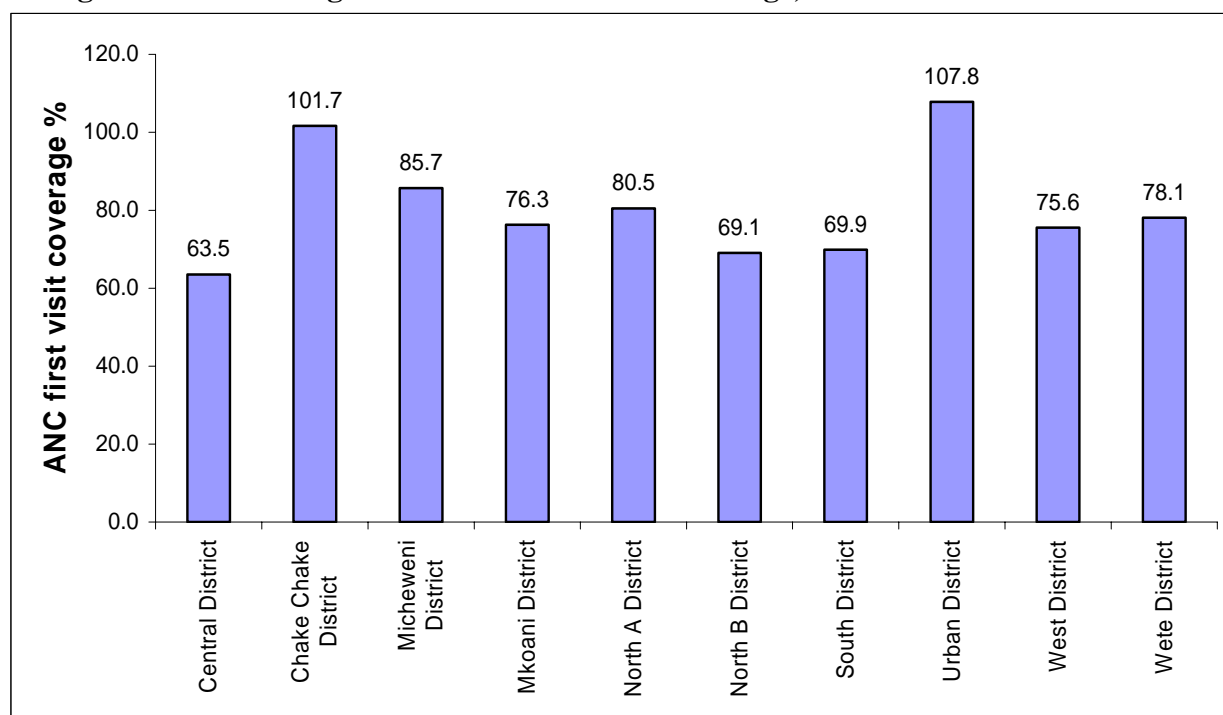
Formula: $100 \% \times \text{total antenatal first visits} / \text{Potential antenatal clients}$

(Potential antenatal clients are estimated as 4.5 % of the total population).

Table 8: Percentage of ANC first visits coverage

Zone	Percentage (%)
Unguja	85.0
Pemba	85.3
Zanzibar	85.2

Figure 11: Percentage of Antenatal first visit coverage, 2006



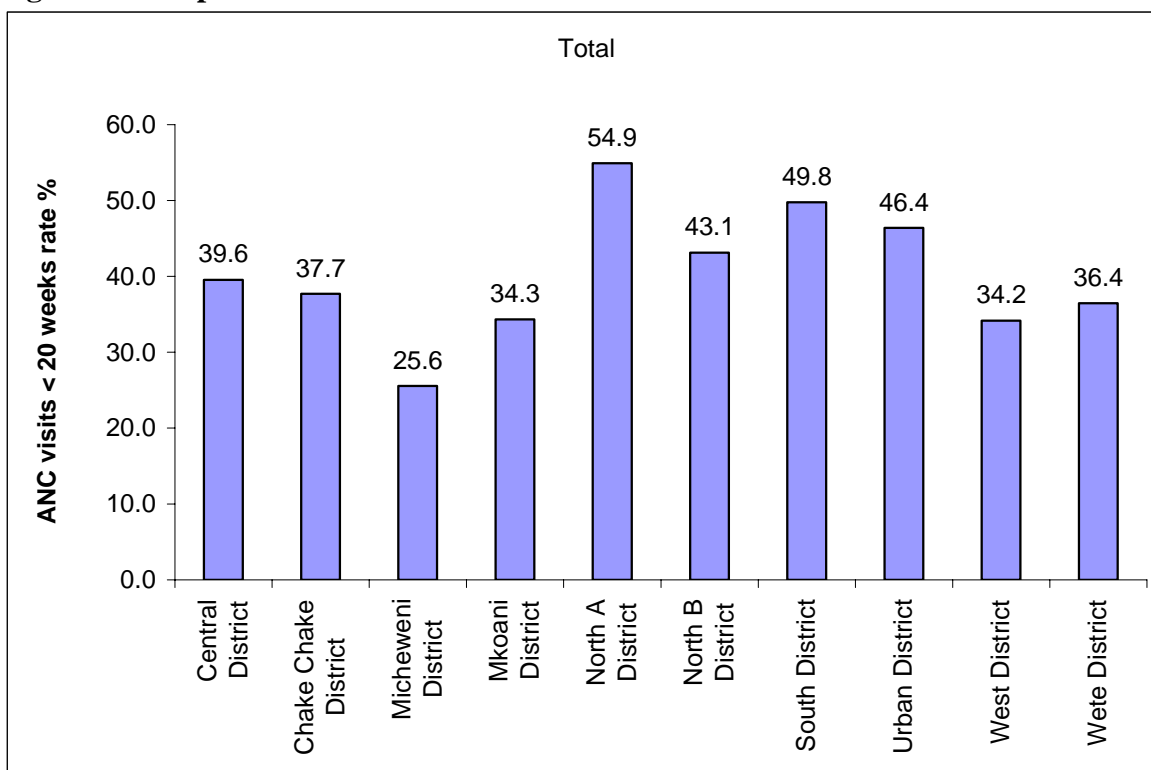
7.2.2 ANC first visit rate before 20 weeks

Formula: $100 \% \times \text{antenatal first visits before 20 weeks} / \text{total Antenatal first visits}$

Table 9: Percentage of ANC first visits before 20 weeks

Zone	Percentage (%)
Unguja	43.8
Pemba	33.8
Zanzibar	40.0

Figure 12: Proportion of Antenatal first visit before 20 weeks



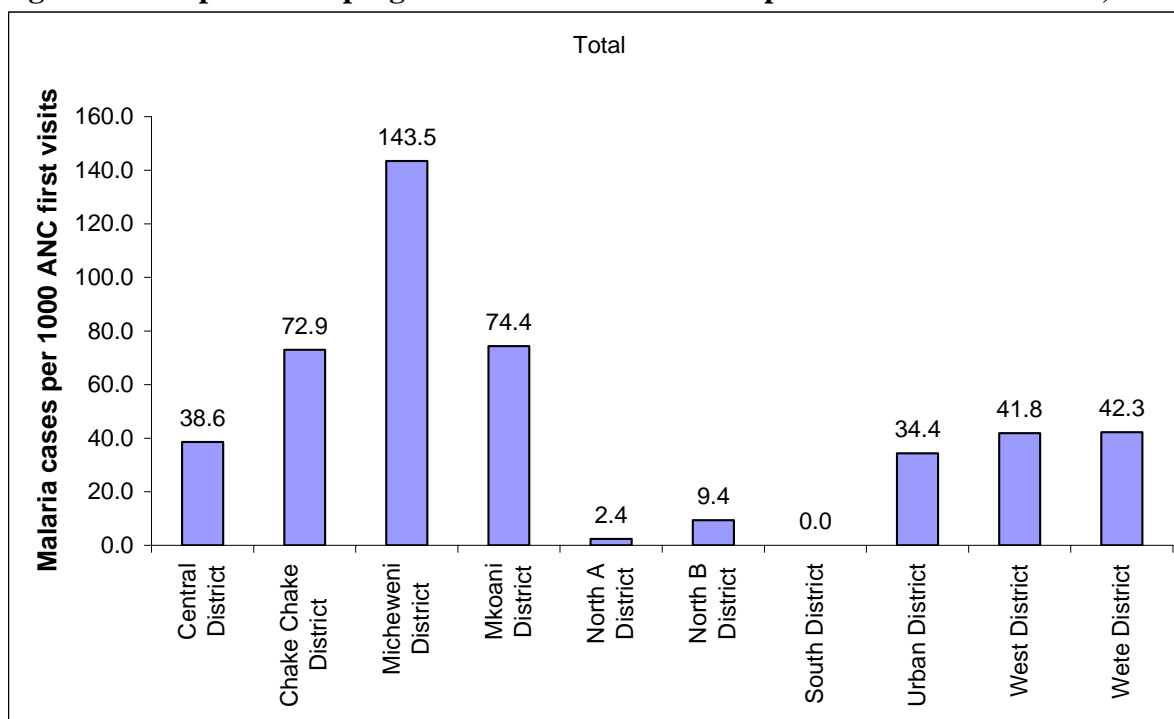
7.2.3 Malaria in pregnant women

Formula: *Malaria cases in pregnant women / 1000 Antenatal first visits*

Table 10: Malaria rate in Pregnant women

Zone	Per 1000
Unguja	29.3
Pemba	81.8
Zanzibar	49.1

Figure 13: Proportion of pregnant women with malaria per 1000 ANC first visits, 2006



Malaria is one among the indirect cause of maternal mortality. Although the rate not much higher in the overall, but it is found that Micheweni district has the highest (143.5 cases per 1000 ANC visits).

7.2.4

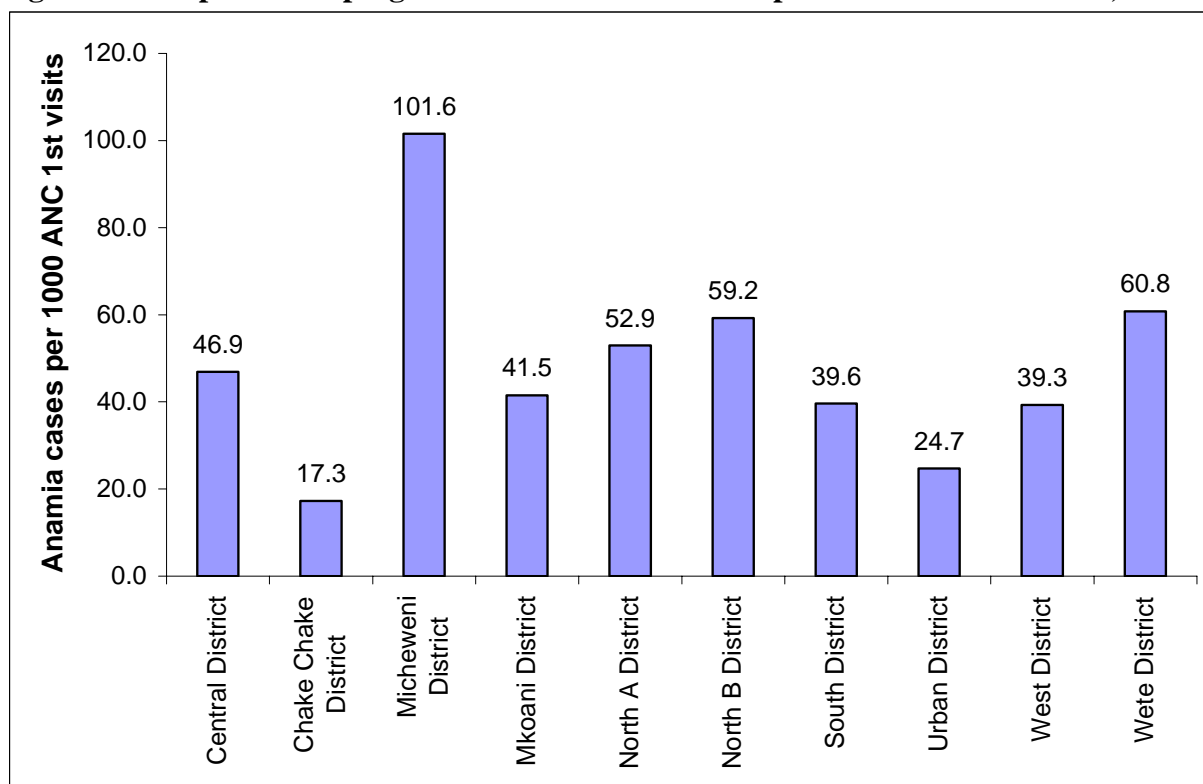
Anaemia in pregnant women

Formula: *Anaemia cases in pregnant women / 1000 antenatal first visits*

Table 11: Anaemia rate in Pregnant women

Zone	Per 1000
Unguja	36.7
Pemba	53.6
Zanzibar	43.1

Figure 14: Proportion of pregnant women with anaemia per 1000 ANC first visits, 2006



7.3 Deliveries

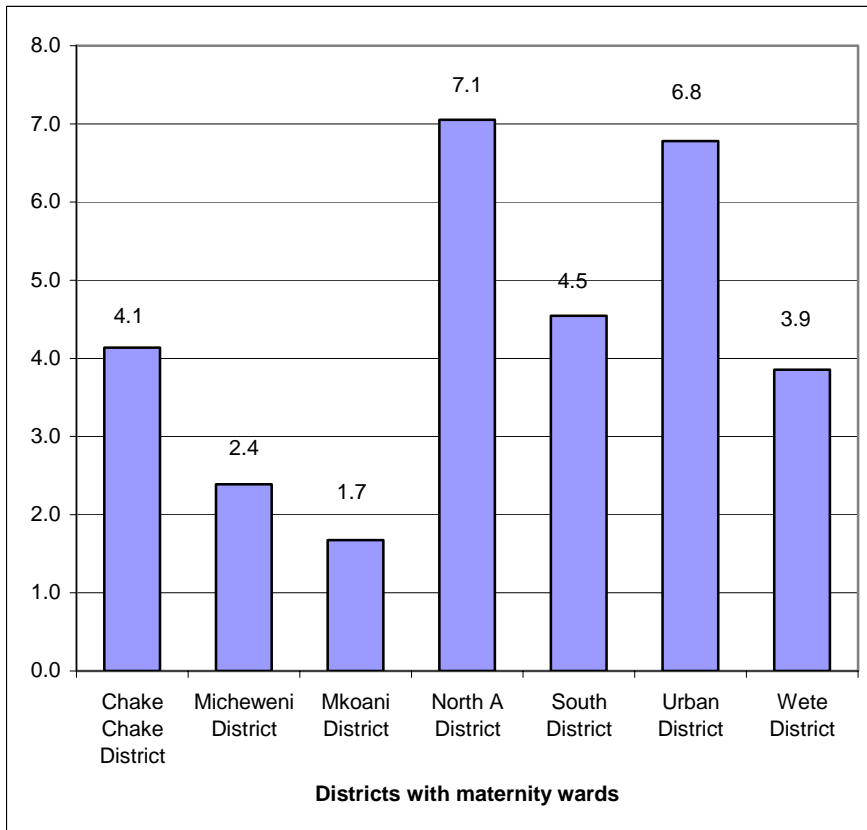
7.3.1 Low birth weight rate (institutional)

Formula: *Live births under 2500 g in the maternity ward / total live births in the maternity ward*

Table 12: Percentage of live births under weighted

Zone	Percentage (%)
Unguja Zone	6.8
Pemba Zone	3.4
Zanzibar	5.9

Figure 15: Percentage of Children born with Low birth weight, 2006



Bad values of low birth weight rates are those occurring above 10.0%. A Zanzibar rate per districts (institutional) ranges from 7.1% and 1.7 % North A and Mkoani districts respectively. This scenario gives Zanzibar to be counted among countries with good rates of low birth weight status, and thus indicates that the maternal nutrition especially during pregnancy is not bad.

7.4 Maternal Health

7.4.1 Maternal Mortality ratio in the ward (institutional)

Note that it is difficult to get maternal deaths from the community through the monthly RCH form. These maternal deaths and live births outside the maternity wards have only been sporadically reported and therefore are not included in these calculations. The definition of maternal mortality in the community is also very difficult to be known.

Formula: *Maternal deaths in the ward / 100 000 live births in the ward*

Table 13: Institutional Maternal Mortality ratio (in wards)

Region	Per 100 000
Unguja	462.9
Pemba	502.2
Zanzibar, Overall	473.4

Table 14: Distribution of Institutional Maternal Deaths and Total Live Births by District with maternity ward, 2006

Zone	District	Maternal deaths	Total live births
Pemba	Chake Chake District	12	2,200
	Micheweni District	4	251
	Mkoani District	2	1,135
	Wete District	6	1,193
Pemba Zone Total		24	4,779
Unguja	North A District	0	1,092
	South District	0	286
	Urban District	61	11,799
Unguja Zone Total		61	13,177
Zanzibar		85	17,956

As maternal mortality being one of the indicators given priorities to reduce it in both MDGs, MKUZA and ZHSRSP in respective years, maternal deaths are still alarming and the rates becomes higher now and then. Noting that these rates (473.4 per 100,000 lives births) are found in health facilities (community deaths excluded). Comparing to 1999 UNICEF institutional survey (377 per 100,000 livebirths) and to what has been found in 2006, the result depicts that MMR is increasing. This indicates that there might be higher rates than what we have. Based on these rates there is a need for the Ministry of Health to come up with a large study on maternal mortality to know what reason for having high rates of maternal deaths. Unfortunately, other limitation for the information captured does not provide detailed on complications and cause of these deaths.

7.4.2 Births attended by skilled attendants

The definition of the skilled personnel by the official UN site for the MDG indicators are those skilled health personnel who are trained in providing life saving obstetric care, including giving the necessary supervision, care and advice to women during pregnancy, labour and the post-partum period; to conduct deliveries on their own; and to care for newborns. Thus, births attended by skilled personnel are the percentage of births attended by doctors, nurses or midwives. Traditional birth attendants, even if they receive a short training course, are not included.

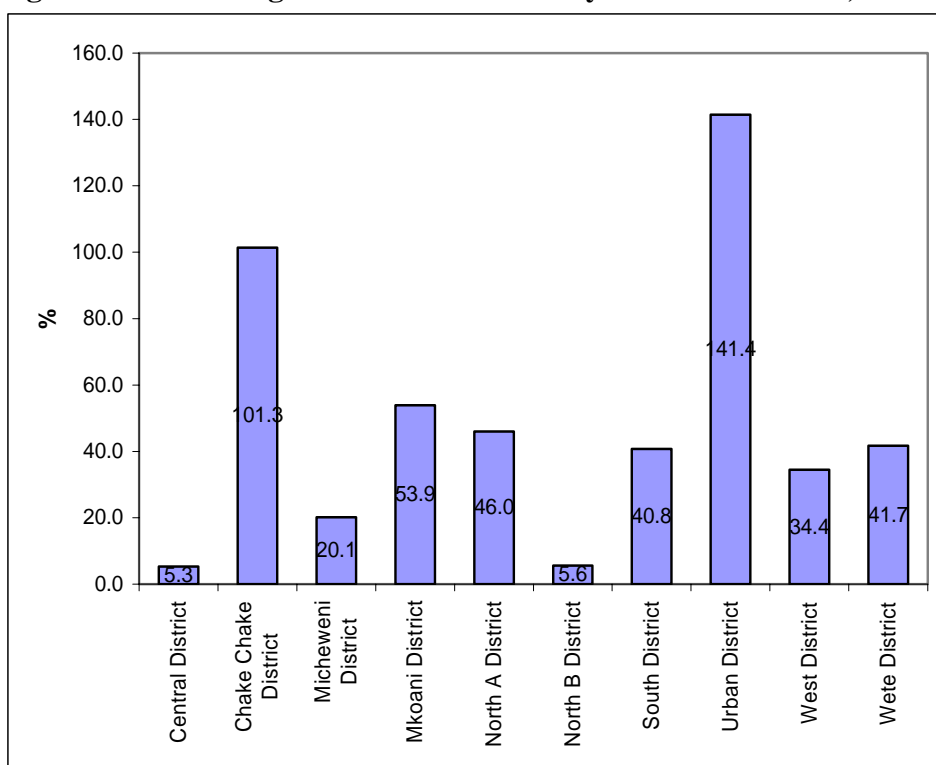
Formula: *Deliveries attended by skilled personnel/ total expected deliveries*

(Total expected deliveries are estimated as 4.5% of the total population).

Table 15: Percentage of births attended by skilled personnel

Zone	Percentage (%)
Unguja Zone	67.7
Pemba Zone	53.9
Zanzibar	62.5

Figure 16: Percentage of Births Attended by Skilled Personnel, 2006



Deliveries by skilled attendants include all deliveries at health facilities plus reported home deliveries attended by health facility staff. Urban and Chake Chake districts (*141.4 and 101.3 deliveries by skilled attendants per 100 expected deliveries respectively*) have higher rates due to the fact that these areas serve all districts on respective islands.

7.5 Child health

7.5.1 Malnutrition

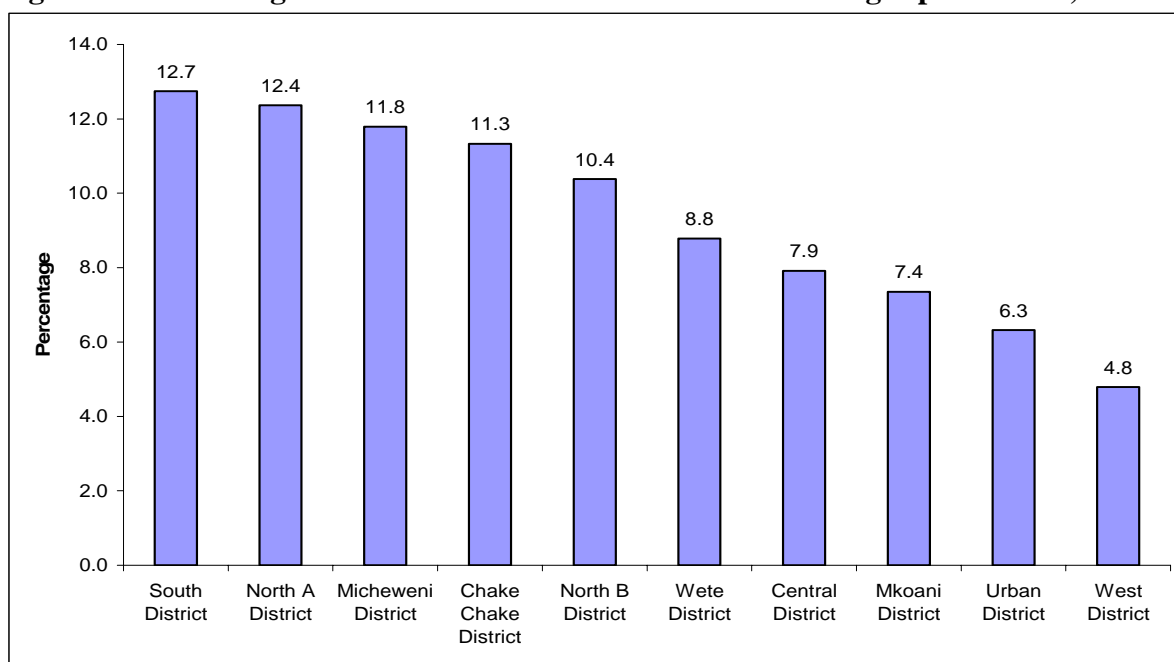
Underweight for age rate under 5 years

Formula: Underweight (severe cases / 100 children weighed)

Table 16: Underweight for age rate under five years

Zone	Percentage
Unguja	8.2
Pemba	9.6
Zanzibar	8.6

Figure: 17 Percentage of under five children who are under weight per district, 2006



West district with 4.8% severe malnutrition cases shows some improvement compared to all other districts. South district with 12.7% severe cases is worst district in terms of child nutritional status

levels. This is followed by North A and Micheweni districts with 12.4% and 11.8% respectively. The DHS survey in 2004/5 number for the same indicator was 19%, which indicates that the numbers reported in the routine HMIS are too low, although part of this reduction is most likely a result of improved health services. This underreporting could be due too poor or lack of systematic weighing routines at facilities, or caused by poor understanding of the standards used for reporting malnutrition.

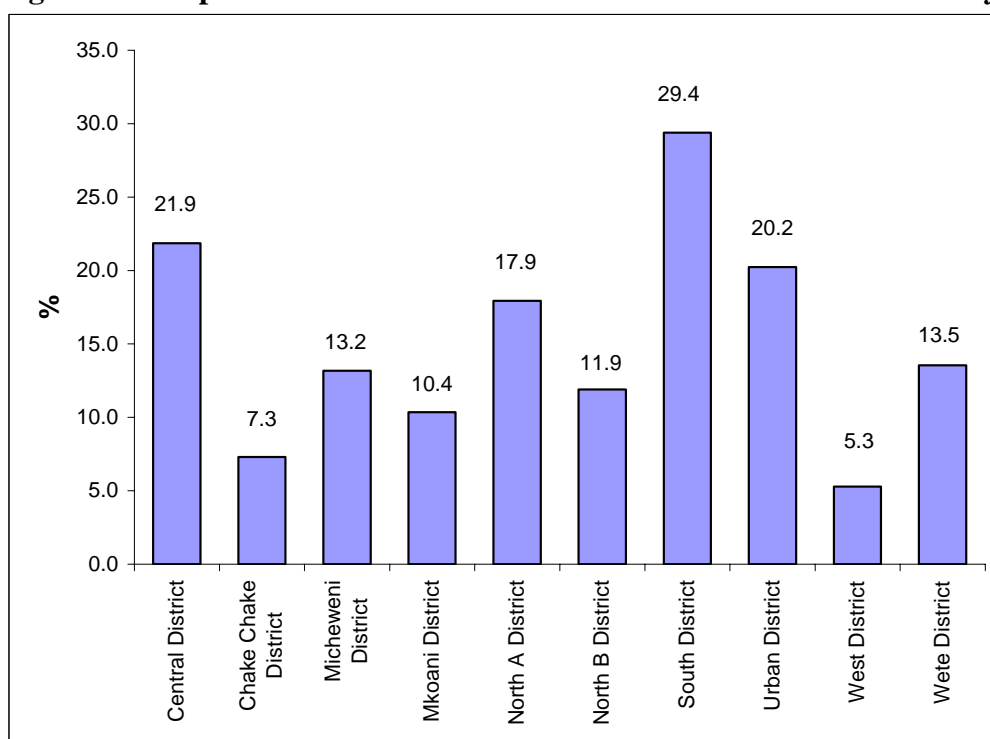
7.5.2 Diarrhoea incidence under five years

Formula: $100 \% \text{ Diarrhoea case under 5 years} / \text{total population under 5 years}$

Table 17: Percentage of Diarrhoea case for underfive years

Zone	Percentage (%)
Unguja	14.9
Pemba	11.2
Zanzibar	13.2

Figure 18: Proportion of Children under-five with Diarrhoeal diseases by district, 2006



South and Central districts have the highest diarrhoea rates. West district has a remarkably lower rate than the national (more than one-third) which should be seen in relation to the mentioned gaps (12 percent missing) in disease surveillance reporting.

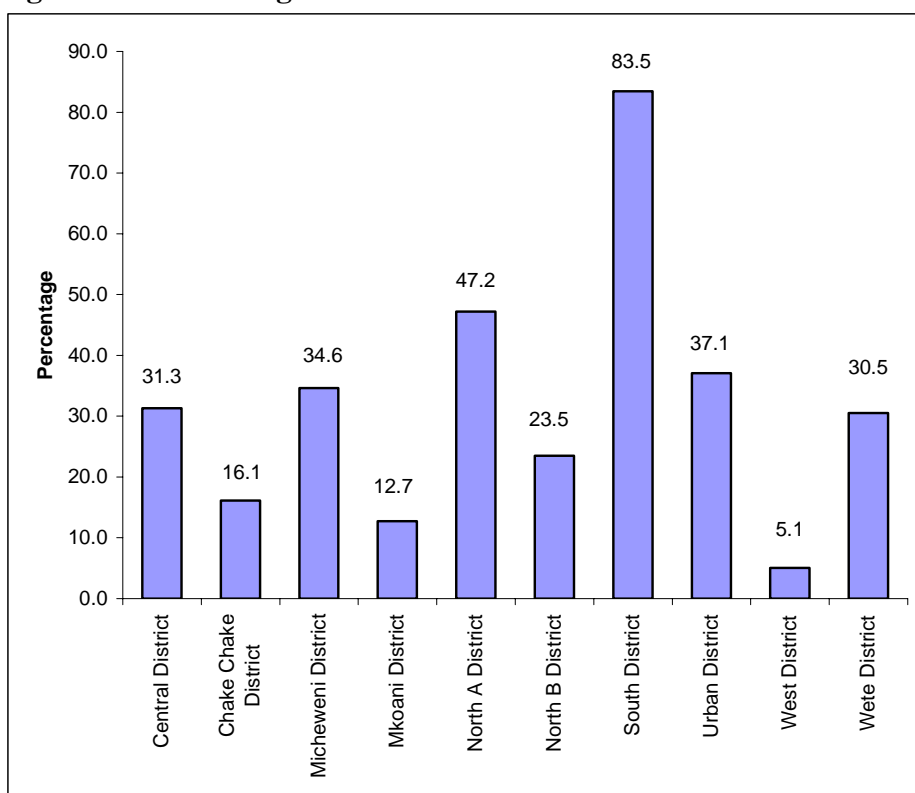
7.5.3 Pneumonia incidence under five years

Formula: $100\% \times \text{Pneumonia cases under 5 years} / \text{total population under 5 years}$

Table 18: Pneumonia incidence under five years

Zone	Percentage
Unguja	28.6
Pemba	23.5
Zanzibar	26.3

Figure 19: Percentage of Children under-five with Pneumonia disease by district, 2006



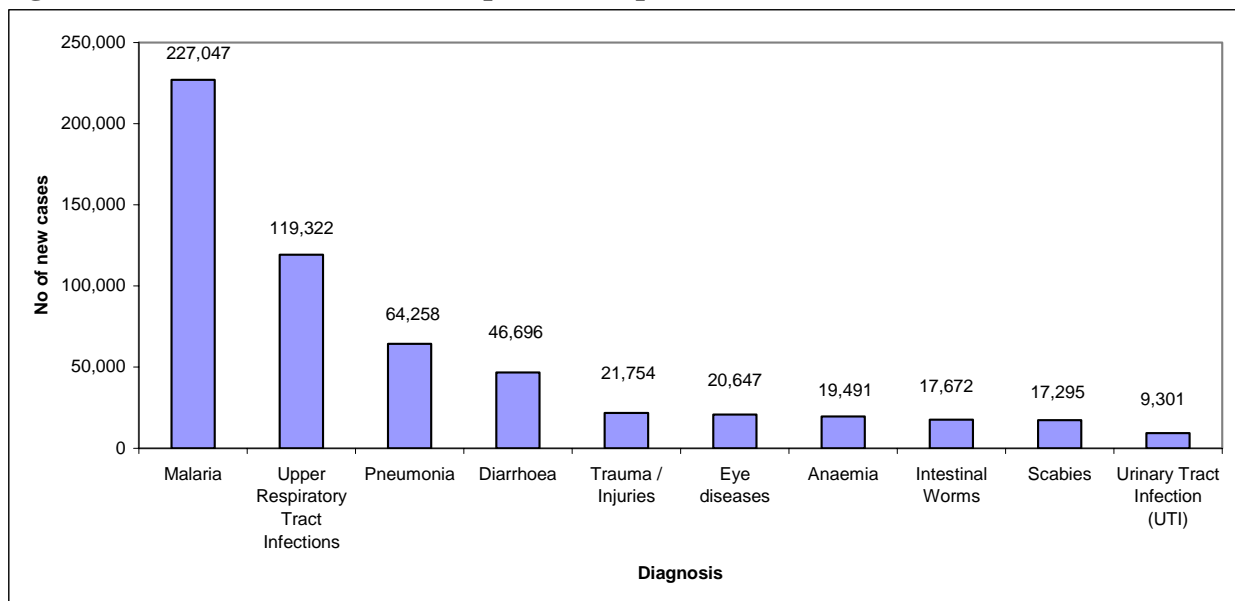
Like wise the diarrhoeal rates, South districts have the highest pneumonia rates, three times higher than the national average. Again, West district has a very low rate compared to the national average (about one-fifth) which should be also seen in relation to the mentioned gaps.

8 Disease surveillance

Currently these numbers does not include the OPD clinics at Mnazi Mmoja referral hospital and Mkoani district hospital. Apart from that all PHCUs and public hospital OPDs are included. The reason for not presenting these data in the normal pie chart is that the disease surveillance form only captures a selection of the most important diagnoses and not all. *A pie chart representing the “share” of each diagnosis would not have been correct as the total number of new cases reported is only reflecting a selection of diagnoses and not the complete number of new cases in the clinics*”. As of 2007 the diseases surveillance form has been changed so that the total number of all other diagnoses not specifically mentioned in the form will re registered, and hence the total number of registered new cases will be complete.

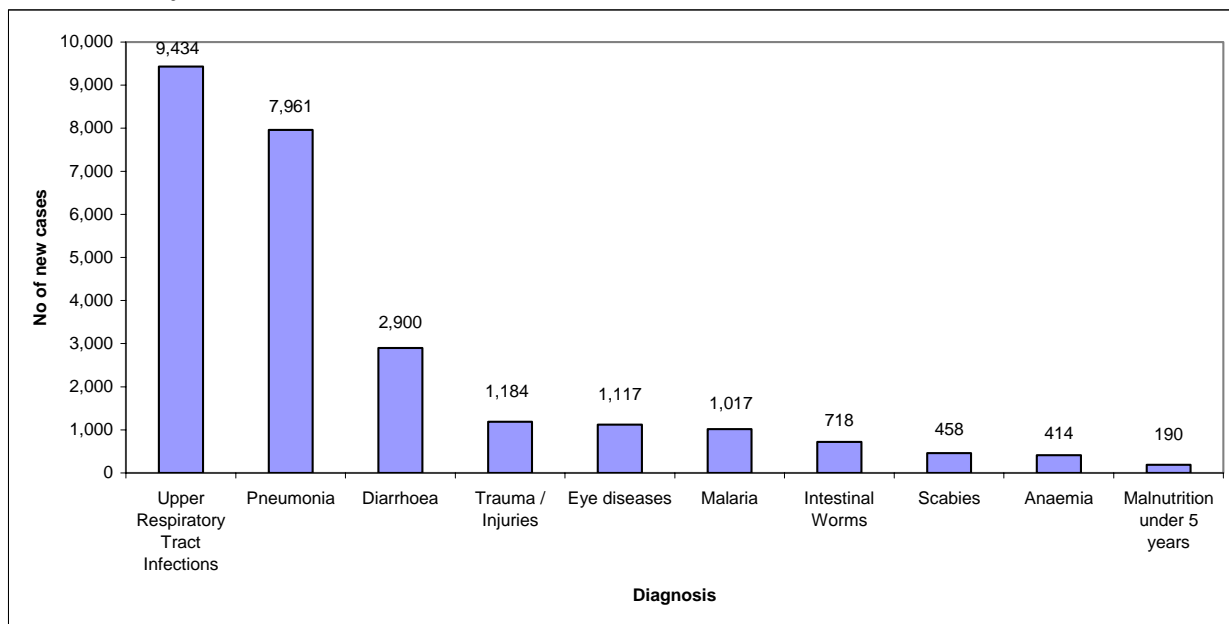
8.1 OPD Top 10 (new cases)

Figure 20: Number of new cases (top ten) as reported in Zanzibar health facilities, 2006



8.2 OPD Top 10 under 5 years (new cases)

Figure 21: Distribution of New cases for Under-five of Age as reported by health facilities, 2006

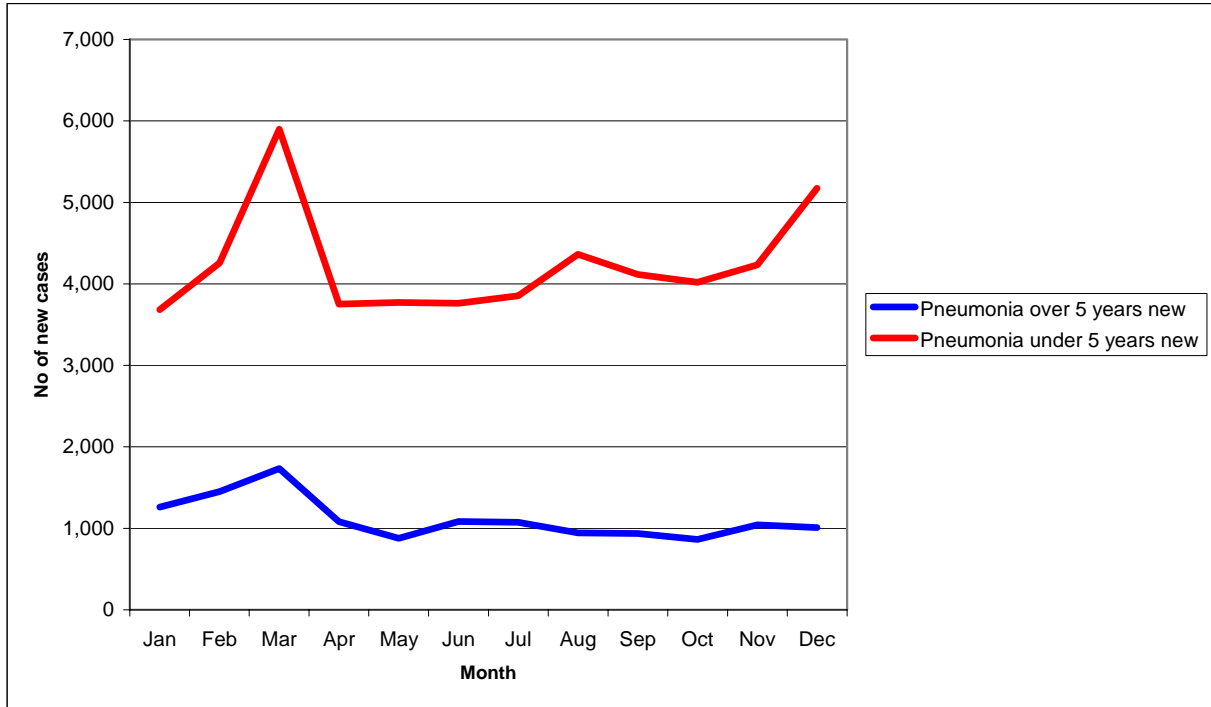


It has been seen that still malaria becomes a major problem in the isles. It is number one leading diagnoses among all new case reported in mentioned facilities. About 225,973 new cases were diagnosed as malaria in all ages and stand in the sixth position in all diagnoses for children under-fives years. Due to many efforts taken by ZMCP (house spraying & use of ITN) there is some improvement in reduction of number of malaria cases in general.

It is stated that pneumonia is a serious disease which uses a lot of antibiotics in its treatment. This disease (pneumonia) found to be the second diagnoses for children under- five years; this might be a wrong diagnose from the prescribers especially in the peripheral areas. Apart from other disease children under five are mostly suffer with Upper respiratory tract infection (see figure 22).

8.3 Pneumonia trend 2006

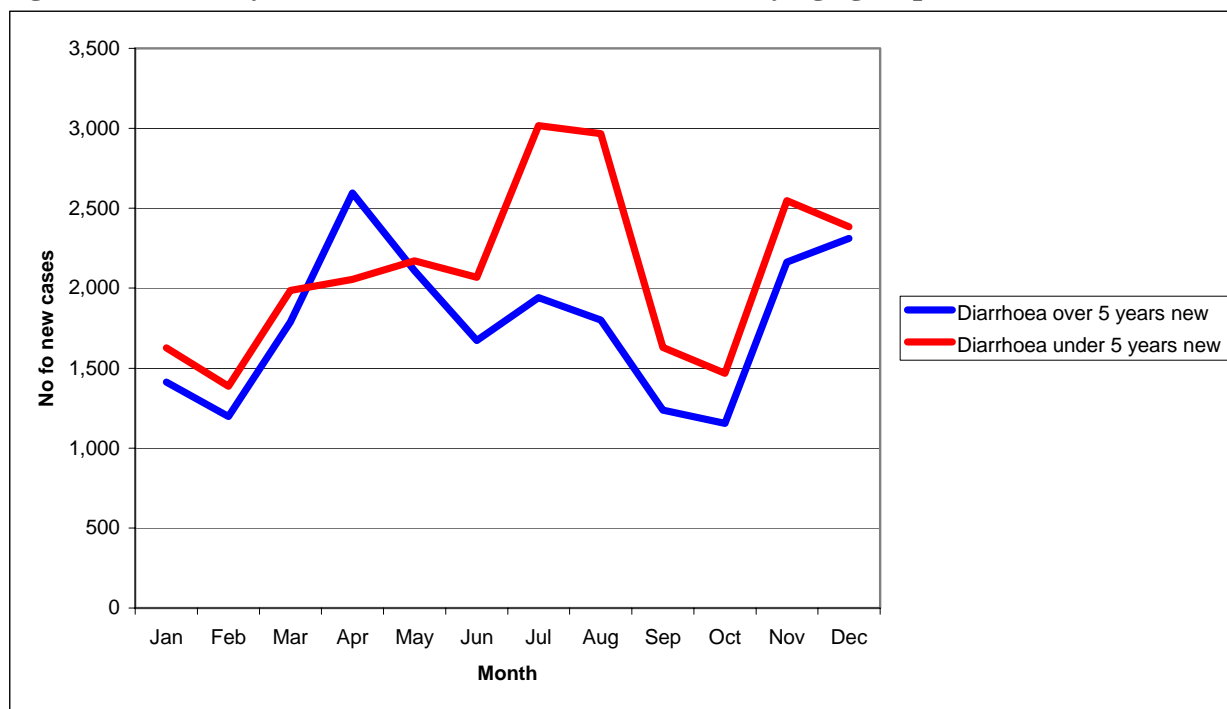
Figure 22: Monthly distribution of Pneumonia cases by age group, 2006



This graph shows the annual trend of Pneumonia cases for the age group under five years (red) and over five years (blue). There is a clear peak in March, especially for the under five group. In the last quarter there is a steady increase in cases for the under five years group. The monthly average is 4222 cases for under five and 1104 for over five meaning that the March peak roughly represents an 50 % increase in pneumonia cases compared to the average.

8.4 Diarrhoea trend 2006

Figure 23: Monthly distribution of Diarrhoeal diseases by age group, 2006



This graph shows the monthly trend of Diarrhoea cases for the age groups under five years and over five. The two age groups roughly follow the same trend throughout the year with peaks in April, July and December. However, worth noticing is the over five peak in April which is the only month where this group has more cases than the under five group. The under five age group has its annual high in July with 3018 cases compared to the monthly average of 2106 cases, which roughly indicates a 50% increase to the average.

9 Malaria

Currently these numbers does not include the OPD clinics at Mnazi Mmoja referral hospital and Mkoani district hospital. Apart from that all PHCUs and public hospital OPDs are included.

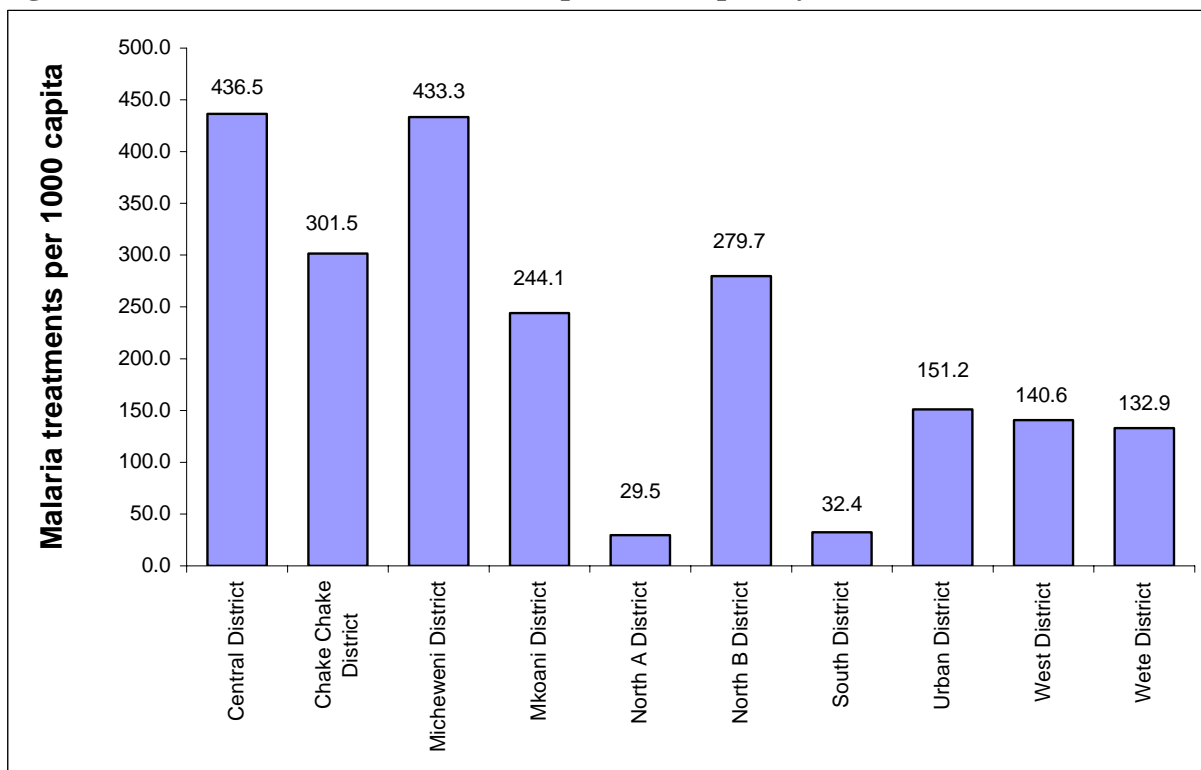
9.1 Malaria incidence rate

Formula: Malaria new cases / 1000 capita

Table 19: Malaria incidence rate

Zone	Per 1000
Unguja	165.1
Pemba	270.3
Zanzibar	205.0

Figure 24: Distribution of Malaria cases per 1000 capita by district, 2006



Note that the two districts North A and South, both having dramatically lower malaria numbers than the other districts, area also the only two districts which have started using the Rapid Diagnostic Test (RDT) for malaria at the health facilities. Starting from 2007 all districts will be using rapid testing at the health facilities. As mentioned, missing of 12 percent of its disease surveillance reports, might explain the lowest rate among the “non-testers”.

9.2 Malaria incidence rate under five years

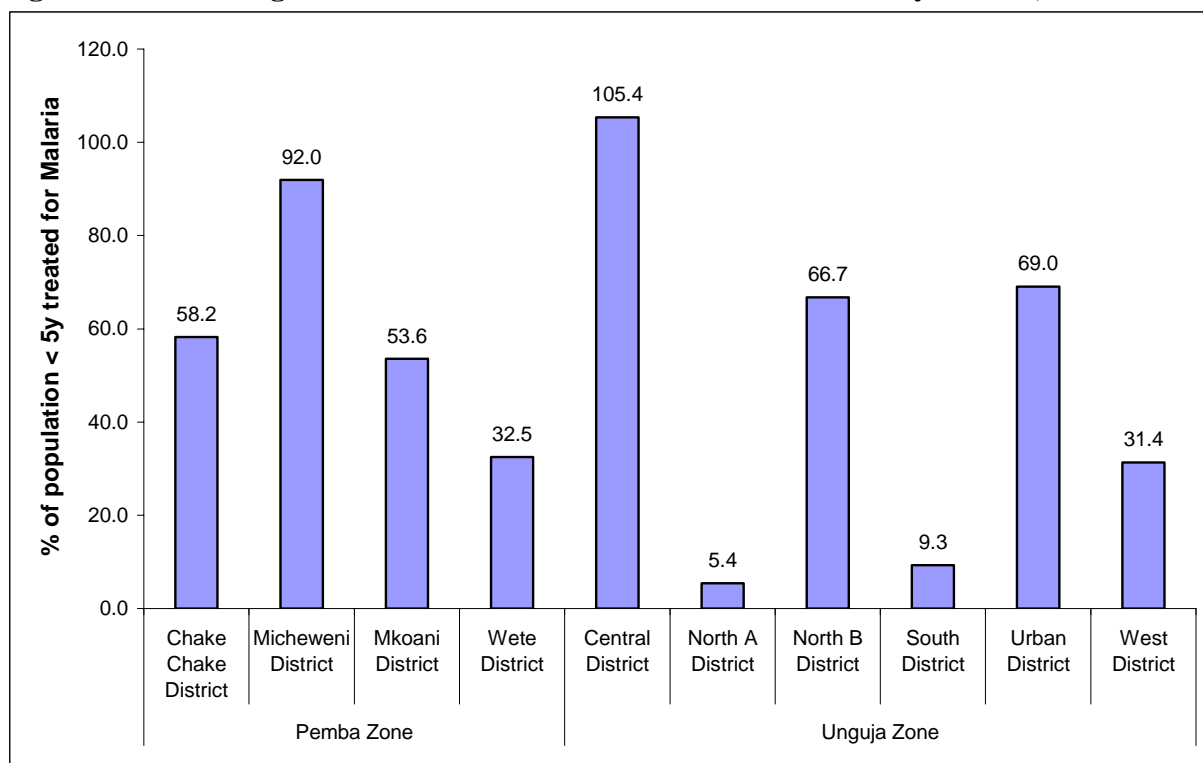
NOTE: This formula is in % of target population as opposed to the overall incidence rate above which is per 1000 capita (10 times bigger values).

Formula: 100 % Malaria new cases under 5 years / total population under 5 years

Table 20: Malaria incidence rate for underfive years

Zone	% of under five population
Unguja	47.6
Pemba	58.4
Zanzibar	52.4

Figure 25: Percentage of Children under-five treated for Malaria by district, 2006



See comment above on the use of rapid testing in North A and South, and the gaps in district West's reporting

Table 21: Distribution of out patients Malaria cases by age group, 2006

Zone	District	Age group		Total
		< 5y	>= 5y	
Pemba Zone	Chake Chake District	12,079	17,762	29,841
	Micheweni District	19,476	22,353	41,829
	Mkoani District	12,025	13,890	25,915
	Wete District	7,470	8,089	15,559
Pemba		51,050	62,094	113,144
Unguja Zone	Central District	10,670	18,883	29,553
	North A District	1,017	1,727	2,744
	North B District	7,358	9,944	17,302
	South District	447	698	1,145
	Urban District	22,004	13,740	35,744
	West District	11,327	16,088	27,415
Unguja		52,823	61,080	113,903
Total		103,873	123,174	227,047

Table 21 depicts that, although malaria cases are distributed through out Zanzibar but shows some discrepancy between districts. Urban and Micheweni districts have reported to have many cases of malaria (few cases found in south district). It is also found that more than one-third (45.8%) of all reported cases (malaria) are children under five years of age.

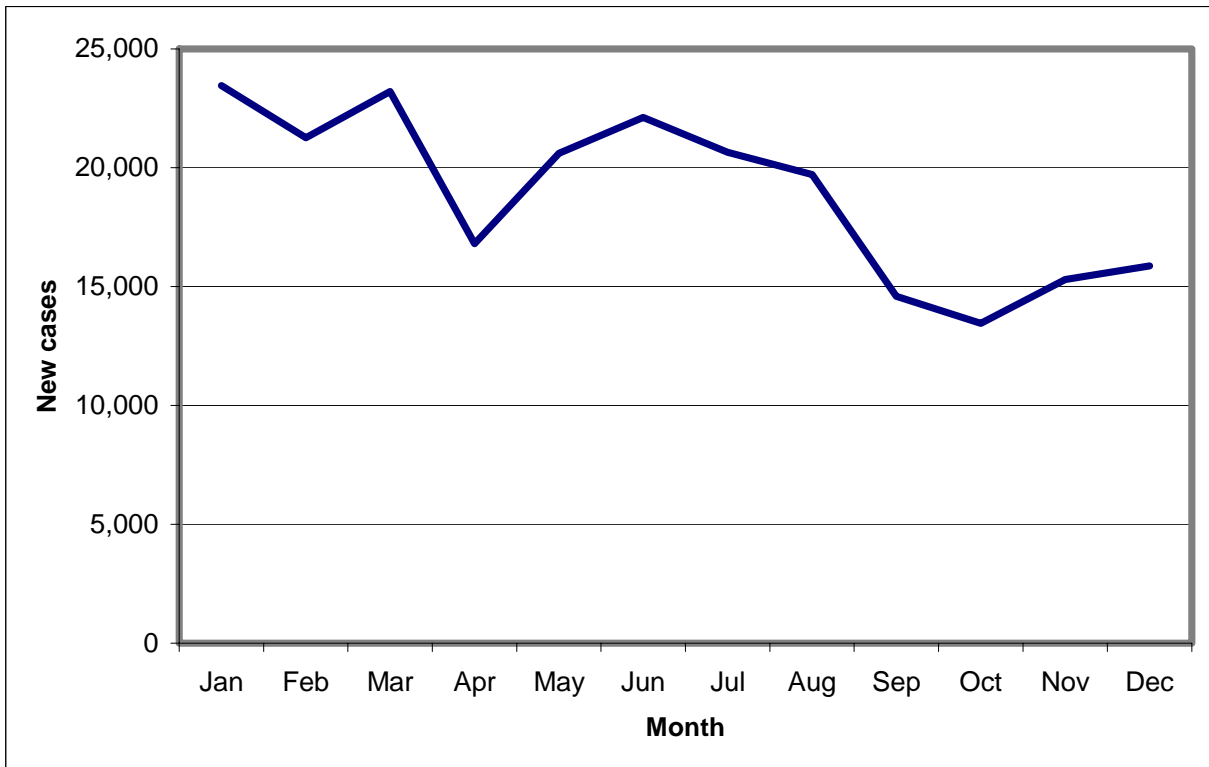
9.3 Malaria trend

9.3.1 Out-patients

Total of new cases of Malaria registered at all health facilities and hospital OPDs (except for Mnazi Mmoja and Mkoani hospitals) by month to indicate the seasonal malaria trends.

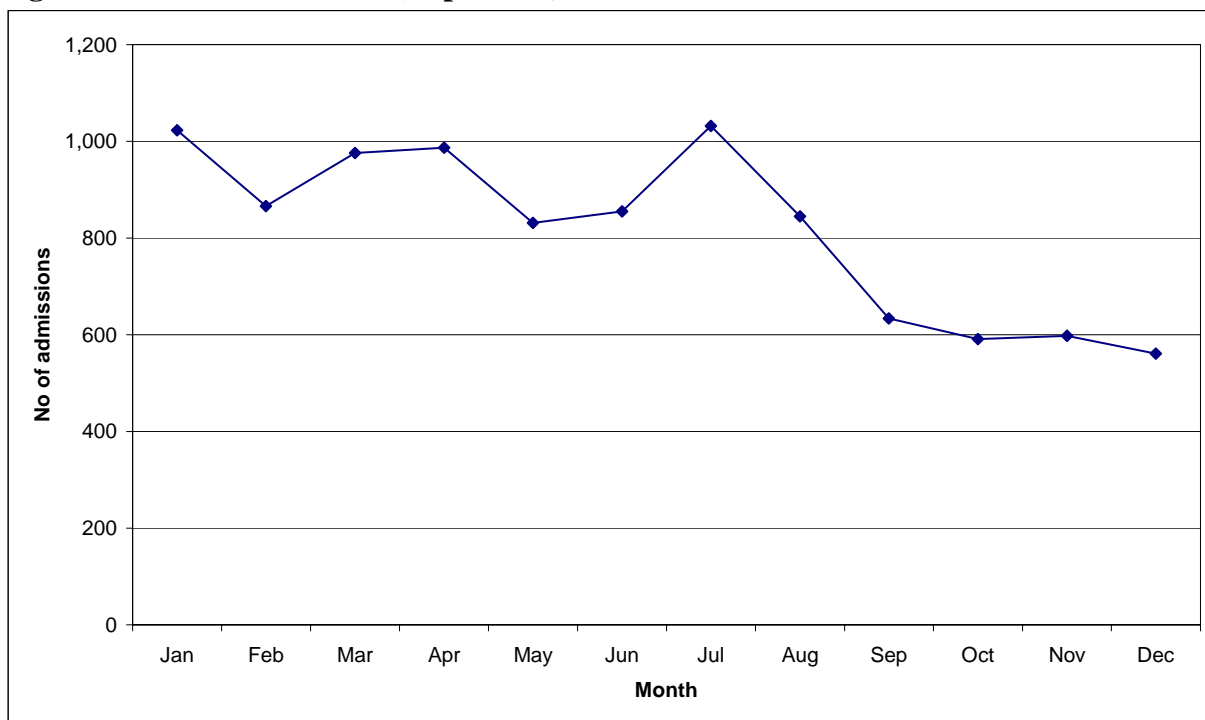
The trends show that many cases of malaria reported in the said facilities are in March (high peak). The figure gives a picture that there is a seasonal variation. *Why are we not seeing the typical year-high peak in June here? There is a peak in June, but still January and March have more cases than June. With the exception of the normal peak towards the end of the rainy season (May-June) where there is a steady decline throughout the year.* The decline can be seen in relation with the spraying that started in the beginning of the year

Figure 26: Trend of malaria (out patients) cases in 2006



9.3.2 In-patients

Figure 27: Trend of Malaria (in-patients) cases in 2006



The malaria admissions trend more or less follows the same malaria trend from the OPDs and has a general decline throughout the year with the exception of the normal seasonal peaks in March-April and June-July.

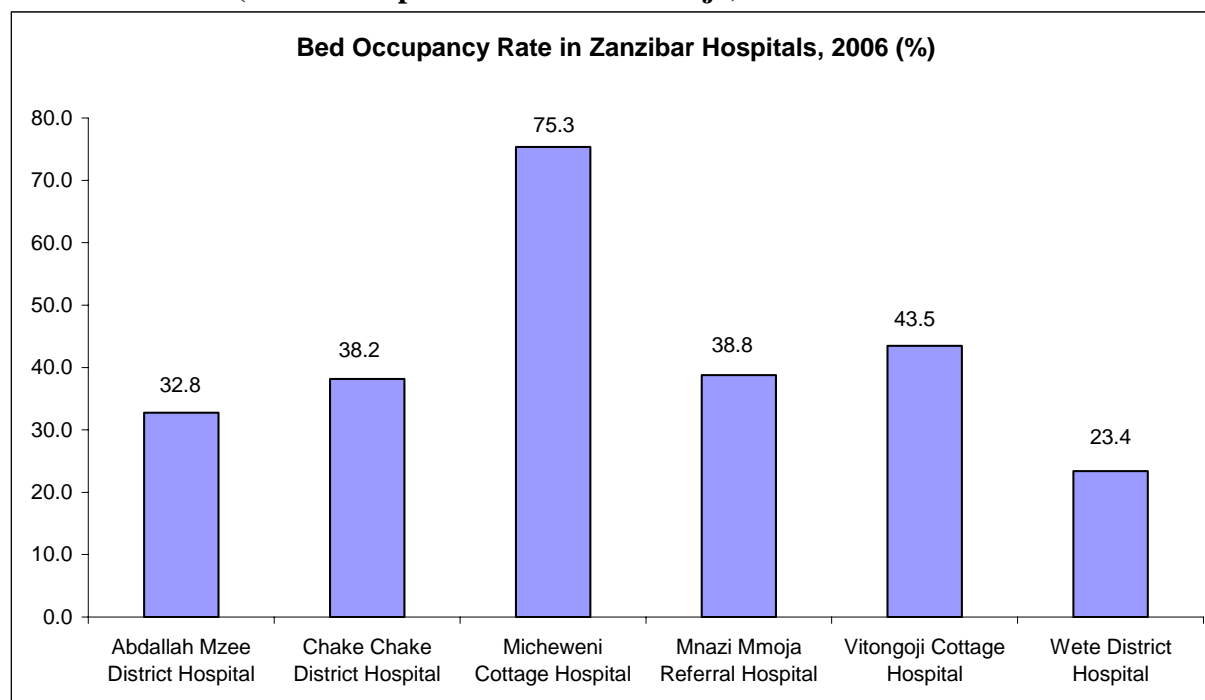
10 In-patient data from the hospitals

This section includes data from the referral hospital, the district hospitals as well as the cottage hospitals in Pemba. The two cottage hospitals in Unguja (Makunduchi and Kivunge) are not included due to lack of data collection (here the new standard data collection process started January 2007). It provides information on length of stay, deaths by causes and distribution per ward with respective hospital and admission.

10.1 Bed Occupancy Rate

Abdallah Mzee District Hospital	32.8
Chake Chake District Hospital	38.2
Micheweni Cottage Hospital	75.3
Mnazi Mmoja Referral Hospital	38.8
Vitongoji Cottage Hospital	43.5
Wete District Hospital	23.4
Grand Total	37.7

Figure 28: Bed Occupancy rate in Zanzibar hospitals, 2006
(Mental hospital is within M/Mmoja)



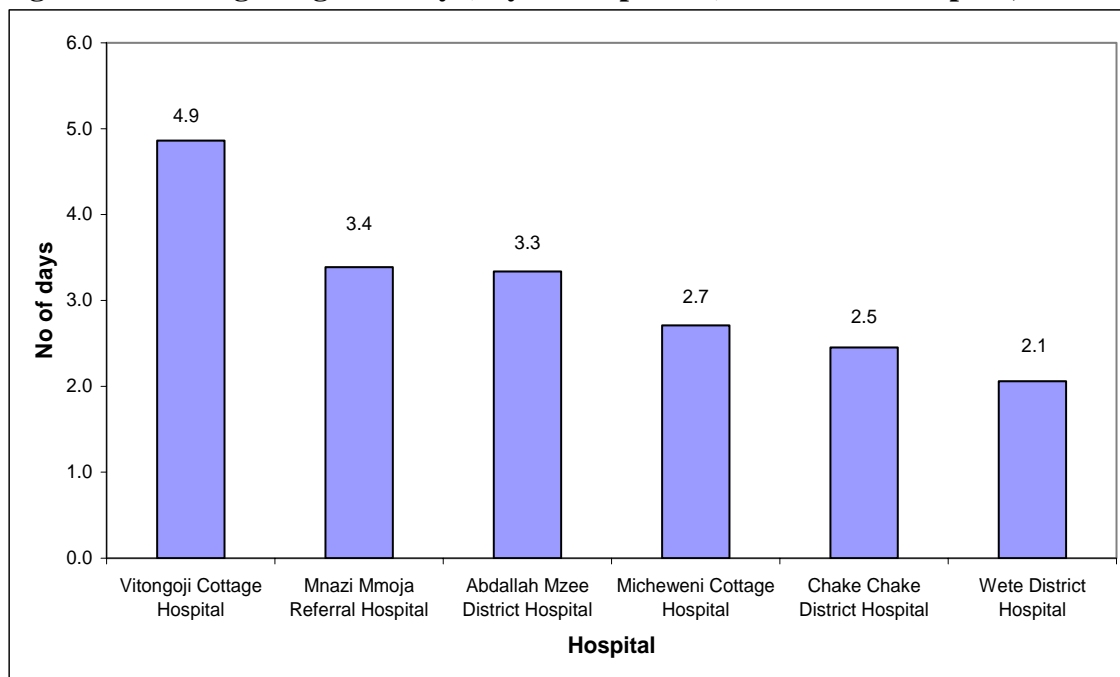
10.2 Average length of stay

Formula: $\text{Total laying days} / \text{total separations (discharges + deaths)}$

Table 22: Average length of stay

Zone	No. of days
Unguja	3.4
Pemba	2.7
Zanzibar	3.1

Figure 29: Average length of stay (days for inpatient) in Zanzibar hospital, 2006



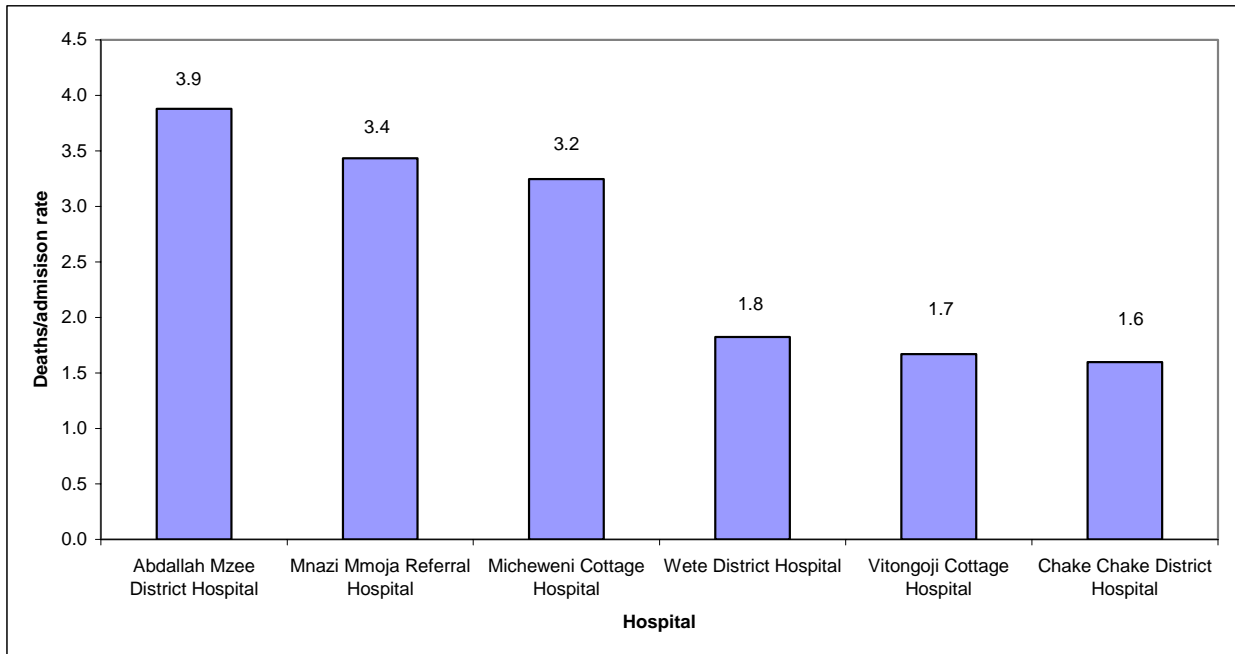
Although the average number of days for hospitalized in Zanzibar is 3.1. Micheweni cottage, Abdulla Mzee and Mnazi mmoja has the number above the average; 4.9, 3.3 and 3.4 respectively. (Notably, with exceptional diagnoses. patient can stay long).

10.2.1 Crude death rate

Formula:

$$\text{Total deaths} / \text{Total admissions}$$

Figure 30: Number of deaths per total admission in 2006



10.3 Causes of death

These data are aggregated from the monthly routine forms submitted by the public hospital wards in 2006. It is found that most common causes of deaths in Zanzibar are associated with infectious and parasitic diseases. Malaria still remains number one killer of all hospitalized patients. More than one-fifth of all 1643 deaths that occurred in Zanzibar hospitals in 2006 are attributed to Malaria. Pneumonia and hypertension stands as second and third respectively accounting for less than a quarter each. For detailed information see table 23 and Fig 32 below.

Table 23: Top ten Causes of Deaths in Zanzibar hospitals, 2006

Causes of deaths	Number	% of all deaths
Malaria Deaths	358	21.8
Pneumonia Deaths	124	7.5
Hypertension Deaths	97	5.9
Possible serious bacterial infection Deaths	85	5.2
Gastro Enteritis Deaths	82	5.0
Anaemia Deaths	68	4.1
Prematurity Deaths	53	3.2
Asphyxia Deaths	50	3.0
Congestive Cardiac Failure (CCF) Deaths	50	3.0
Diabetic Deaths	46	2.8
All other deaths	630	38.3
All causes of deaths	1,643	100.0

Figure 31: Top ten causes of deaths in Zanzibar hospitals, 2006

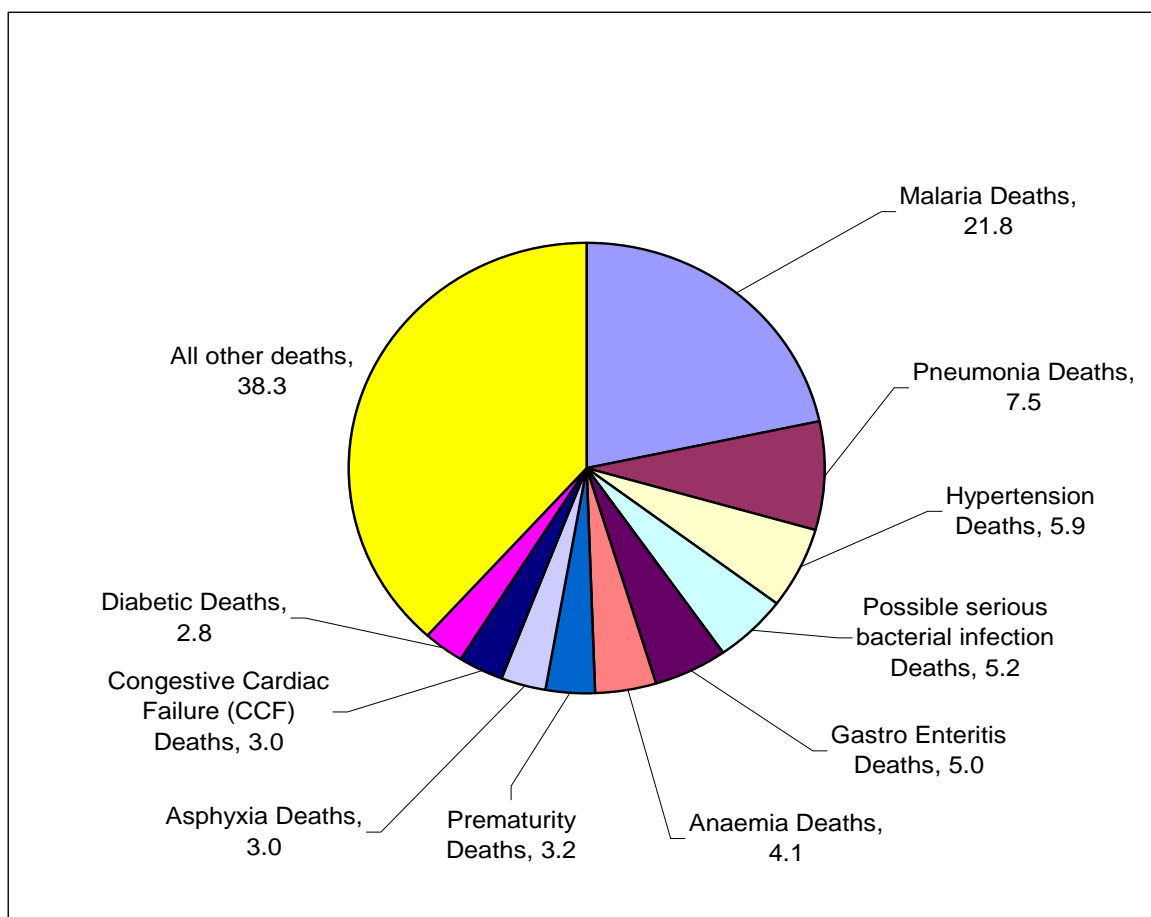


Table 24: Distribution of deaths in Zanzibar Hospitals, per ward, 2006

Hospital/Ward	Cot Ward	TB Ward	Surg. Ward	ICU Ward	Med. ward	Psyc. Ward	Neon. Ward	VIP Ward	Grand Total
Abdallah Mzee District Hospital	35				119				154
Chake Chake District Hospital	65	3			51	0			119
Micheweni Cottage Hospital	62				37				99
Mnazi Mmoja Referral Hospital	313	22	158	167	398	8	105	4	1,175
Vitongoji Cottage Hospital	7				5				12
Wete District Hospital	45				39				84
Grand Total	527	25	158	167	649	8	105	4	1,643

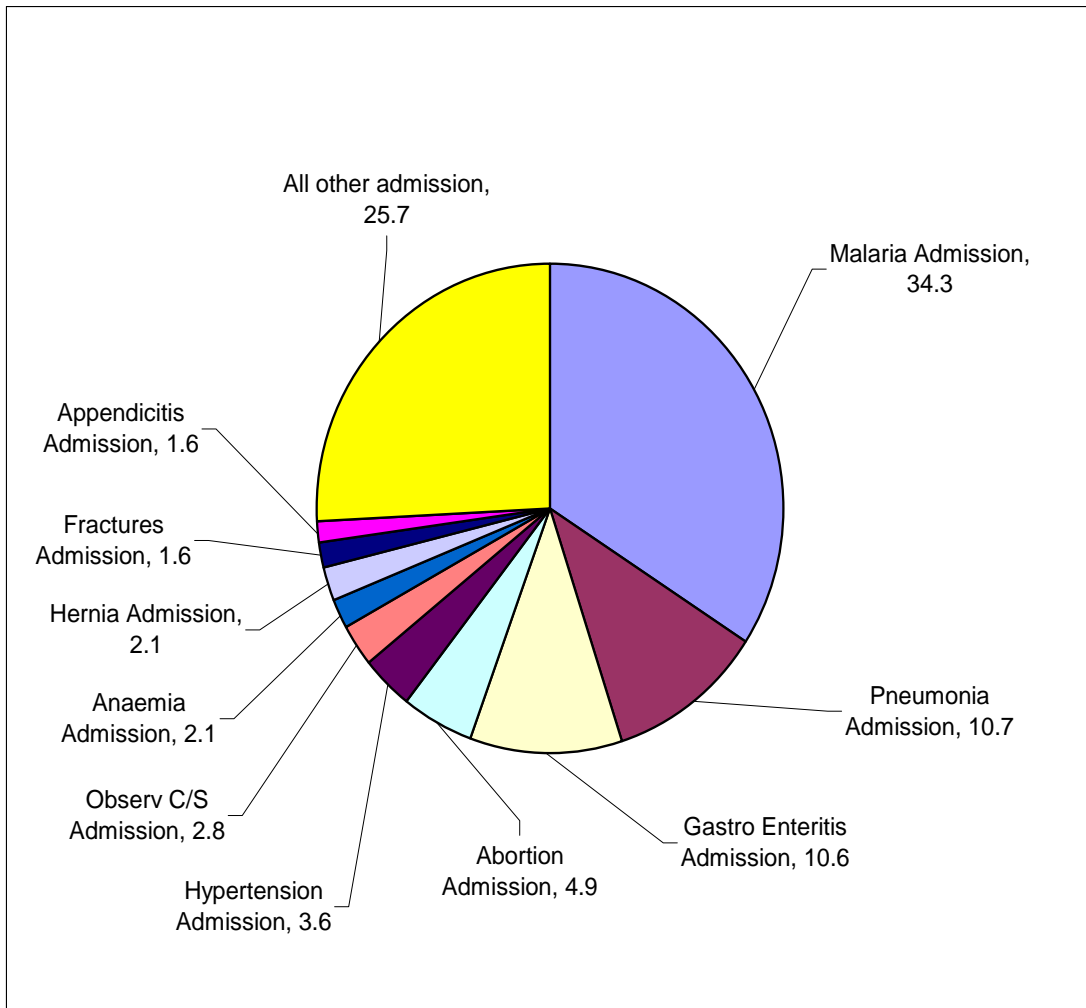
It is observed that more deaths occurs in cot-ward (children) and medical ward. This emphasizes to pay more attention on these cohorts. Almost 37.3% out of all deaths in Zanzibar and 32.2% of deaths in Mnazi mmoja Hospital are for children mostly under thirteen years.

10.4 Causes of admission

Table 25 Top ten causes of admission in Zanzibar hospitals, 2006

Causes of Admission	Number	%
Malaria Admission	9,799	34.3
Pneumonia Admission	3,067	10.7
Gastro Enteritis Admission	3,018	10.6
Abortion Admission	1,406	4.9
Hypertension Admission	1,033	3.6
Observ C/S Admission	801	2.8
Anaemia Admission	601	2.1
Hernia Admission	590	2.1
Fractures Admission	469	1.6
Appendicitis Admission	446	1.6
All other admission	7,352	25.7
Total	28,582	100.0

Figure 32 Top ten causes of admission



Malaria is by far the main cause of admission the hospitals, followed by pneumonia and gastro enteritis (diarrhoea). Somewhat more surprising is the high number of abortion admissions (1406 admissions, and overall 4th cause of admission), and note that all of these are coming from Mnazi Mmoja referral hospital.

11 Indicator descriptions

Indicator	Numerator	Denominator	Type
Utilisation rate (annualised)	Total headcount from OPD clinics at hospitals (mal	Total population	No
Utilisation rate < 5 (annualised)	Total headcount under five years	Total population under five years	No
Underweight for age rate under 5 years	Underweight for age (red and grey cases) under 5 years	Total attendance growth assessment	%
Diarrhoea incidence under 5 years	Diarrhoea cases under 5 years	Population under 5 years	%
Pneumonia incidences under 5 years	Pneumonia < 5 years new	Population under 5 years	%
Vitamin A coverage under 5 years	Vitamin A supplement to children under 5 years	Target Population under 5 year	%
Under 5 death rate	Death of children under 5	Population under 5 years	per1K
Fully immunised under 1 year coverage	Immunised fully under 1 year new	Target Population under 1 year	%
BCG under 1 year coverage	BCG dose under 1 year	Target Population under 1 year	%
OPV3 under 1 year coverage	Oral Polio 3rd dose	Target Population under 1 year	%
DPT-HepB 3 under 1 year coverage	DPT-HepB 3 doses under 1 year	Population under 1 year	%
Measles under 1 year coverage	Measles dose under 1 year	Target Population under 1 year	%
DPT -HepB 1-3 Doses drop-out rate	DPT1 - DPT3 Doses	DPT1 doses given	%
DPT-HepB 3 - measles drop-out rate	DTP-HepB 3rd dose – Measles 1st dose under 1 year	DTP-HepB 3rd dose	%
Family Planning total coverage	Total family planning clients (new and continuing)	Women Reproductive Age (WRA)	%
Antenatal first visit coverage	Antenatal first visit	potential antenatal clients in population	%
Antenatal visits before 20 weeks rate	Antenatal 1st visit before 20 weeks	All first visits	%
Children born protected from Tetanus	Children born protected from tetanus	Total Deliveries	%
Malaria rate in pregnant women	Pregnant women treated for malaria	Antenatal first visit	per1K
Anaemia rate in pregnant women	Pregnant women treated for anaemia	Antenatal first visit	per1K
Births attended by skilled attendants	Deliveries by skilled personnel	Total Expected deliveries	%
Maternal Mortality Ratio	Maternal Deaths in the ward	Live Births in the ward	per100K
Delivery rate in facility to women under 18 year	pergnancy women under 18 years	All ANC cases	%
Low birth weight rate	Total live births under 2500 g	Total live births	%
Perinatal mortality rate	Still births + early neonatal deaths (1-14 days)	Total births (live+still)	per1K
Still birth rate	Total still births	Total births	%
Malaria incidence under 5 years	Malaria Treatment under 5 years	Total Population under 5 years	%
Malaria incidence over 5 years	Malaria treatments over 5 years	Total population over 5 years	%
Malaria incidence rate (all ages)	Total new cases treated as malaria	Total population	per1K
Malaria death rate	Deaths attributed to Malaria	Total population	%
HIV prevalence in the tested clients	HIV tested positive	All the clients tested	%
Male Urethral discharge Syndrome rate	Male Urethral discharge syndrome treated –new	STI treated new episode	per1K
Condom distribution rate	Condom distributed	Male population over or equal to 15 years	per1K

