

Public Health Sector Performance Profile 2001

DRAFT 1

Ministry of Health
Tanzania

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Acronyms

AMMP	Adult Morbidity & Mortality Project
BFC	Basket Financing Committee
CHC	Council Health Committee
CSD	Civil Service Department
CSP	Cost-Sharing Policy
Danida	Danish Agency for International Development
DFID	Department for International Development
DMO	District Medical Officer
DDH	District Designated Hospitals
DPs	Development Partners
DPT	Diphtheria, Pertussis, Tetanus (vaccine)
FY	Fiscal Year
GoT	Government of Tanzania
H-A	Height for age
HIPC	Highly Indebted Poor Country
HMIS	Health Management Information System
HRH	Human Resources for Health
HSPOW	Health Sector Programme of Work
HSR	Health Sector Reform
IA	Ireland Aid
IFMS	Integrated Financial Management System
IHRIS	Integrated Human Resources System
KFW	German Financial Cooperation (Kreditanstalt für Wiederaufbau)
LGA	Local Government Authority
MoH	Ministry of Health
MTEF	Medium Term Expenditure Framework
NBS	National Bureau of Statistics
NIMR	National Institute for Medical Research
NSS	National Sentinel System
PORALG	President's Office, Regional Administration and Local Government

PRSP	Poverty Reduction Strategy Paper
PSRP	Public Sector Reform Programme
PWC	PriceWaterhouseCooper
RAS	Regional Administration Secretariat
SDC	Swiss Agency for Development and Cooperation
SWAp	Sector-Wide Approach
TBA	Traditional Birth Attendant
TSED	Tanzania SocioEconomic Database
W-A	Weight for Age
WB	World Bank
W-H	Weight for height

Executive Summary

The health sector has been undergoing far-reaching reforms since the mid-1990s and has adopted a Sector-Wide Approach (SWAp). The reforms are being implemented at all levels and involve fundamental changes in many critical areas of the sector. The complexity of the current reforms and the challenges ahead are quite immense. Thus, close monitoring and evaluation of the health sector's performance overtime is quite imperative. To this effect, 26 indicators, (input, process, output and outcome), encompassing financial, human, utilisation and epidemiological data have been identified and selected.

The Public Health Sector Performance Profile has been developed to provide a commentary on the performance of the public health sector utilising the identified indicators. It is expected to be produced on an annual basis and will fulfill two critical roles, i.e., a tool to track the health sector reform progress year-on-year and to provide critical information for the monitoring of the health sector Poverty Reduction Strategy Paper (PRSP) targets.

The work on performance monitoring in the health sector comes at quite an opportune time in light of the PRSP and Poverty Monitoring. Efforts have been made to ensure that the work in the health sector is securely anchored to these critical processes.

This first profile provides baseline data for most of the identified indicators, although issues over completeness and quality of data, particularly routine and denominator data, still remains an outstanding and critical obstacle in this challenging process. Moreover, as this is a very new and innovative initiative, there may be other groups working on relevant/critical data which has not yet been accessed by the profile. Consequently, it is hoped that this profile will act as a catalyst and encourage such groups to come forward and to contribute to the next profile in 2002.

Altogether, there are 26 Health Sector performance indicators, including those indicators which the health sector is expected to report on for the PRSP. There are 7 input indicators covering financial and human resources at the national, regional and district level. Process indicators consist of four in total, including the utilisation of HMIS/NSS data at the district level, proportion of public health facilities in a good state of repair, percentage of public health facilities without any stock outs and availability of drug kits in public health facilities. There are six output indicators encompassing cost sharing, OPD attendance, proportion of births attended by skilled attendants', immunisation, malaria and consumer satisfaction. Finally, there are nine outcome indicators and these cover a number of aspects, including, maternal death, malnutrition, malaria and HIV/AIDS. Each indicator is presented under the following headings: relevance, sources of data, data quality, baseline data, discussion and future development of the indicator.

INTRODUCTION

History of health care services in Tanzania

Since Tanzania gained independence over forty-year's ago, public health care services in the country have developed and evolved over-time, a reflection of the strong emphasize that the Government places on the sector. The early 1960s saw a rapid expansion of health facilities to rural areas with the adoption of a Primary Health Care (PHC) Approach following the Arusha Declaration. By 1970s there was an emphasis on improving access and quality of health care services, particularly for those living in rural areas. By 1980s, 72 percent of the population were living within 5 kilometers of a government funded health facility.

Despite the many positive developments achieved, by the early 1990s there was a general recognition by many that public health care services had reached an impasse and were failing to effectively deliver on many of the identified health priorities of the country. Moreover, the significant health gains achieved since independence were under jeopardy and significant, innovative reforms were required to arrest this situation.

Health Sector Reforms

The health sector reforms of 1994 were based on a common approach through an action plan agreed between government and development partners. The reforms envisioned radical changes in the provision and financing of health care services to ensure the delivery of quality health care services in an equitable and accessible manner. In addition, public health services would be primarily delivered through a system in which authority and budgets would be decentralised to the local level.

Under the present system of decentralisation (devolution), the Ministry of Health has evolved many responsibilities for health but retains the overall responsibility of improving the health and well being of the population, including the development and implementation of health policy. It is directly responsible for the national, referral and specialised hospitals, various medical training institutions and the national health programmes. Regional hospitals are administered by the Regional Administration Secretariat (RAS), under the President's Office, Regional Administration and Local Government (PORALG). The Local Government Authorities (LGAs) are responsible for the running of district and district designated hospitals (DDHs), health centres and dispensaries, using subventions/grants from the Treasury, Ministry of Finance and their own locally generated resources.

The key areas of focus for the current health sector reforms are rooted in the following seven strategies (*Health Sector Reform Programme of Work 1999-2002*), See Box 1.

Box 1: Health Sector Reform in Tanzania – Seven Key Strategies

The Strategies and purpose:

- **Decentralisation** – To provide accessible, good quality, well supported, cost-effective district health services, with clear priorities and essential clinical and public health packages which are organised at the decentralised level;
- **Hospital Services** – To provide secondary and tertiary level referral hospital services to support primary health care;
- **Central health systems** – To redefine the role of the MoH to be a facilitator of health services, providing policy leadership and a normative and standard setting role;
- **Health management** – To ensure central support systems including personnel, accounting and auditing, supplies, equipment, physical infrastructure, transportation and communication;
- **Financing** – To ensure health care financing which is sustainable, involves both public and private funds as well as donor resources, and explores a broader mix of options such as Public Health Insurance, Community Health Fund (CHF) and user-fees;
- **Human resources** – To develop human resources management to ensure well-trained and motivated staff, deployed at the appropriate health service level;
- **Partnership** – To address the appropriate mix of public and private health care services; and to restructure the relationship between MoH and donors.

Source: Health Sector Reform Programme of Work (HSPOW 1999 – 2002).

Sector Wide Approach (SWAp)

In order to implement the HSRs, a Sector Wide Approach (SWAp) has been adopted which embraces both project support and basket funding to enhance co-ordinated planning and implementation of activities in the health sector.

The partners involved in basket funding include: the Government of Tanzania, the Danish Agency for International Development (Danida), the Department for International Development (DFID), Ireland Aid (IA), the Government of Germany (GTZ &KFW) the Government of the Netherlands, the Government of Norway (NORAD), the Swiss Agency for Development and Cooperation (SDC) and the World Bank (WB).

Basket funding officially began to be implemented during the FY1999/2000 after a joint MOH/Partners' approval of the annual Health Sector Plan of Action and following release of funds into the holding account in the Bank of Tanzania and disbursement into the consolidated fund account in the Treasury, Ministry of Finance.

Sectoral Indicators

Public Health Sector Performance Monitoring

The rationale for the health reforms is the desire to move towards an improved health system that is effective, efficient and equitable in the provision and accessibility of quality health services. The reforms are being implemented at all levels and involve fundamental changes in many critical areas of the sector. The complexity of the current reforms and the challenges ahead for the health sector are quite immense and as such requires close monitoring and evaluation.

A performance monitoring taskteam was established in the Ministry of Health in late 2000. The members were deliberately chosen and drawn from a number of key departments, sections and projects involved directly in the work of data collection. The work of the team involved carrying out a general overview of the various data sources in the Health Sector, bringing together critical data, both within the Ministry and outside the Ministry. Moreover using this analysis to identify a number of indicators (inputs, process, output and outcome) which would monitor the performance of the sector on an annual basis.

The March 2001 Health Sector Review examined the draft indicators developed by the Task team at that time and found that they were useful for monitoring sector wide performance. The Review recommended some fine-tuning to some of the indicators and that the number be limited to twenty to twenty-five indicators. Since the review, a concerted effort by the team has been made and information required for the various indicators has been collected.

Public Health Sector Performance Profile

The Public Health Sector Performance Profile is to be produced on an annual basis utilising the identified indicators. There are two key purposes for the profile, the first being that it will be a critical product for the annual Health Sector Review (HSR), i.e., a tool to track the reform progress year-on-year and secondly that it will feed into the monitoring of the health sector PRSP targets.

Health Sector Performance Monitoring and PRSP

Performance monitoring in the health sector comes at a time when monitoring and evaluation has become critical for both the Government and development partners in the era of PRSP. As a result of such prominence, there has been a demonstrated need for greater coherence between the various monitoring processes to ensure they are closely aligned and linked. Since the March 2001 review, efforts have been geared towards ensuring that the work in the health sector is securely anchored to the PRSP and the Poverty Monitoring Master Plan.

The Tanzania Socio-Economic Database (TSED) is the repository for data generated by the poverty monitoring system. It has been rolled out to a number of districts and it is planned in the future that it will be available to all districts. TSED is presently being used to enter the identified performance indicators for the Health sector, to store and process the data for all the information collected on the indicators and to produce maps, graphics, etc

Health Sector Performance Monitoring – the short-comings

Whilst developing the first Public Health Sector Performance Profile 2001, a number of difficulties were encountered which included the existence of multiple data collection systems, issues of completeness and quality of data, in particular the HMIS data. In addition, there may be shortcomings in the present data sources as there could be other groups working on pertinent data which has not yet been accessed or included in this profile. It is hoped, therefore, that this first profile will stimulate interest and encourage such groups to come forward and to contribute to the next Public Health Sector Performance Profile in 2002.

Public Health Sector Performance Profile - Indicator Table 2001

No.	Category	Indicator	Baseline 2001	Source	Level of reporting	PRSP Indicator	Data Quality
1	Input	Total GoT Public allocation to health per capita	TSh 2,265	PER 2001 for numerator, NBS/Census for denominator	Central Regional District	No	Good
2	Input	Total GoT and donor (budget and off-budget) allocation to health per capita	TSh 5,100	PER 2001 for numerator, NBS/Census for denominator	National	No	Good
3	Input	Recurrent expenditure broken down by level Central, Hospital Services; Preventive Services	TSh 123 TSh 1,100 TSh 600	PER 2001 for numerator, NBS/Census for denominator,	National	No	Good
4	Input	Distribution of Medical Officers as a proportion of the staffing norms by health facilities	0.57	Integrated Human Resources System (PSRP) for numerator; Staffing levels for Health Facilities/Institutions for denominator.	Region	No	Good
5	Input	Distribution of Assistant Medical Officer as a proportion of the staffing norms by health facilities	0.21	I Integrated Human Resources System (PSRP) for numerator; Staffing levels for Health Facilities/Institutions for denominator.	Region	No	Good

6	Input	Distribution of Public Health Nurse as a proportion of the staffing norms by health facilities	0.56	Integrated Human Resources System (PSRP) for numerator; Staffing levels for Health Facilities/Institutions for denominator.	Region	No	Good
7	Input	Percentage of GoT funds available for budgeted and actual district health activities against the total overall funds available for districts	18% (Budgeted) 15% (Actual)	Public Expenditure Supply Vote 2001; Quarterly Technical and Financial Reports of Phase I and Phase II LGAs, FY 2000/2001.	District	No	Good
8	Process	Number of districts reporting and showing use of the HMIS, NSS, Performance Monitoring data in the preparation and use of health plans.	24%	Quarterly Technical and Financial Reports of Phase I and Phase II LGAs, FY 2000/2001.	District	No	Good
9	Process	Proportion of public health facilities in a good state of repair	17%	HMIS, NIMR	Region	No	Poor
10	Process	Percentage of public health facilities without any stock outs of 4 tracer drugs and 1 vaccine	N/A	HMIS	Region	No	N/A
11	Process	Average number of days with no drug kits in public health facilities.	10 Days	HMIS	Region	No	Poor
12	Output	Cost-sharing fees collected by the public health facilities in 2000 as a proportion of 1998 targets.	0.46	MoH Appropriation Accounts 2000/2001, Hospitals Annual Financial Reports 2000/2001.	Facility	No	Fair
13	Output	Total OPD attendance per capita.	0.71	HMIS for numerator; NBS/Census for denominator	National, Regional	No	Fair
14	Output	Proportion of births attended by	34.5 –	NSS, TRCHS 1999	National, District	YES	Good

		skilled attendants'	97.2				
15	Output	Proportion of children under one-year fully immunised (Measles, Polio3, BCG, DPT3)	59.6 – 75.4	HMIS, TDHS 1996, TRCHS 1999, NIMR	National, District	YES	Good
16	Output	Malaria cases as a percentage of all <5 cases presenting at OPD	39.2	HMIS	Regional	No	Fair
17	Output	Consumer satisfaction with the quality of health services	N/A	Survey	National	No	N/A
18	Outcome	Top 6 causes of morbidity among OPDs attendees and top 6 causes of mortality	Malaria (Morbidity) TB/AIDS (Mortality)	HMIS, NSS	Regional, District	No	Fair
19	Outcome	Infant Mortality Rate (IMR)	48.5 - 113	NSS TRCHS 1999	District, National	YES	Fair
20	Outcome	Maternal Mortality Ratio (MMR)	326.4 – 731.1	NSS, TDHS 1996	National, District	YES	Good
21	Outcome	Proportion of deaths to women of child-bearing age due to maternal causes	5.1 – 6.8	NSS	District	No	Good
22	Outcome	Proportion of children under-one with severe malnutrition.	H-A 5.5 W-H 0.4 W-A 3.9	TRCHS 1999	National	YES	Fair
23	Outcome	Proportion of under-five children with severe malnutrition	H-A 17.1 W-H 0.6 W-A 6.5	TRCHS 1999	National	YES	Fair

24	Outcome	Proportion of all under-five case fatality that is due to malaria	N/A	HMIS/NSS	District	YES	N/A
25	Outcome	Number of reported HIV/AIDS IEC interventions	N/A		District	YES	N/A
26	Outcome	Prevalence of HIV infection among antenatal clinic attendees	4.2%–32.1%	MOH	District	YES	Poor

INPUT INDICATORS

Total GoT public allocation to health per capita (Central, Regional and District)(Indicator 1)

Introduction

The public health sector has been identified as one of the priority sectors in Tanzania. The Government is committed to reducing morbidity, improving nutrition, and strengthening access to health services and safe water for the population. A key objective for the Ministry of Health is to mobilise sufficient resources and to ensure proper management of human, financial and material resources (HSPOW 1999 – 2002). A detailed Medium Term Expenditure Framework (MTEF 2001/2-2003/4) has been developed for the next three year, which outlines the financial resource requirements for the sector. The MTEF anticipates increasing resources being channeled to the sector both by Government and Development Partners alike.

This indicator is interested in examining the Government's commitment to the sector through the budgetary allocations (approved and actual releases) which are made to health. Moreover, it is concerned with investigating how resources are allocated for use at the various levels, i.e., central, regional and district level.

Source of data

Information on estimates allocated to the Ministry of Health from the Government of Tanzania for recurrent expenditures and development projects, and the actual expenditure made from these funds for financial years 2000/01 have been taken from the appropriation accounts of the Ministry of Health (Vote 52). Information on expenditure estimates by the Regional Authorities on Government of Tanzania funds and the actual expenditure of these funds for the financial year 2000/01 have been taken from the appropriation accounts of the Regional Authorities. Information on health budgets and spend for local councils was obtained from the budget documents 'Kitabu cha Nne Makadirio ya Fedha za Serikali (Sehemu B) – Mipango ya maendeleo ya Halmashauri ya Wilaya na Miji – Kama yalivyowasilishwa Bungeni 2000/01. All of this information was gathered during the Health Sector Public Expenditure Review exercise in November 2001. Population data has been taken from the National Census 1988, National Bureau of Statistics (NBS) and has been projected to 2000/2001 using the recommended criteria/formula by NBS (see appendix 2).

Data quality

In a number of cases, the appropriation accounts provided by the Regional Authorities did not split the development budget or expenditure between local and foreign funds, and in a number of accounts no sector breakdown was given for development funds. In such cases an estimate has been made based on the data provided in the Volume III Estimate Book, however the figures given are likely to be an under estimate. Data on actual expenditures for rural councils are a combination of the estimates given for personal emoluments given in the 'Appendices to Volume III Estimate' documents (assuming that salaries which have been budgeted for will need to be honoured) and the releases of funds made by the Ministry of Finance for other charges over the financial year. The Treasury made the data on release of funds available for year's 2000/01. For Urban councils, the estimates of actual recurrent expenditure were made in a similar way, except actual expenditure was used when available. In addition there was no record made available for

actual development expenditure on these documents, so this figure has been left blank for all councils. Finally, it is worth highlighting that the central level will include transfers to institutions at the same level of government and expenditures made on behalf of councils, including items such as pharmaceuticals, supplies, kerosene and vehicles.

Baseline data

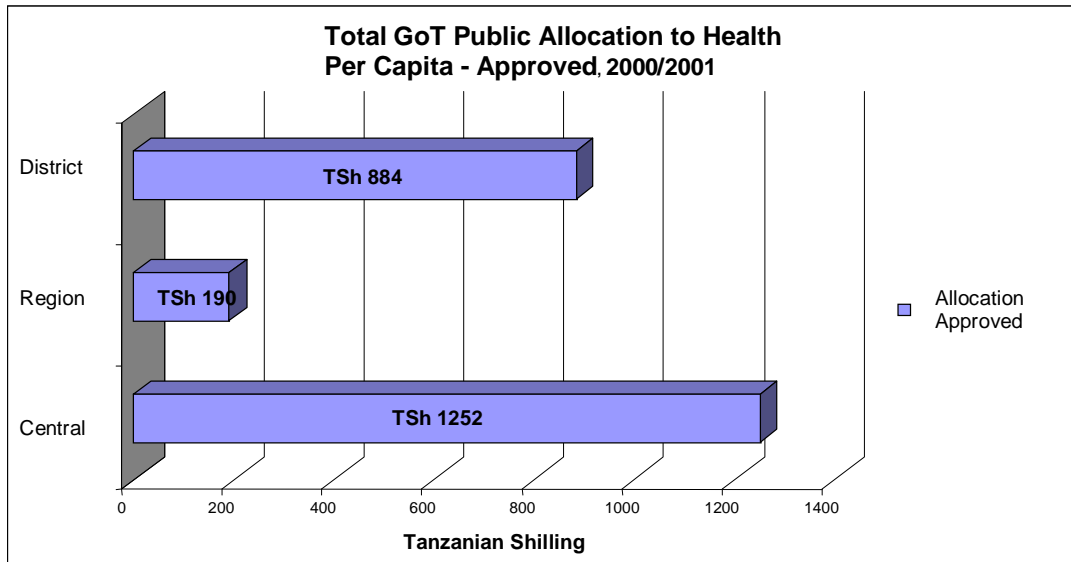


Diagram 1

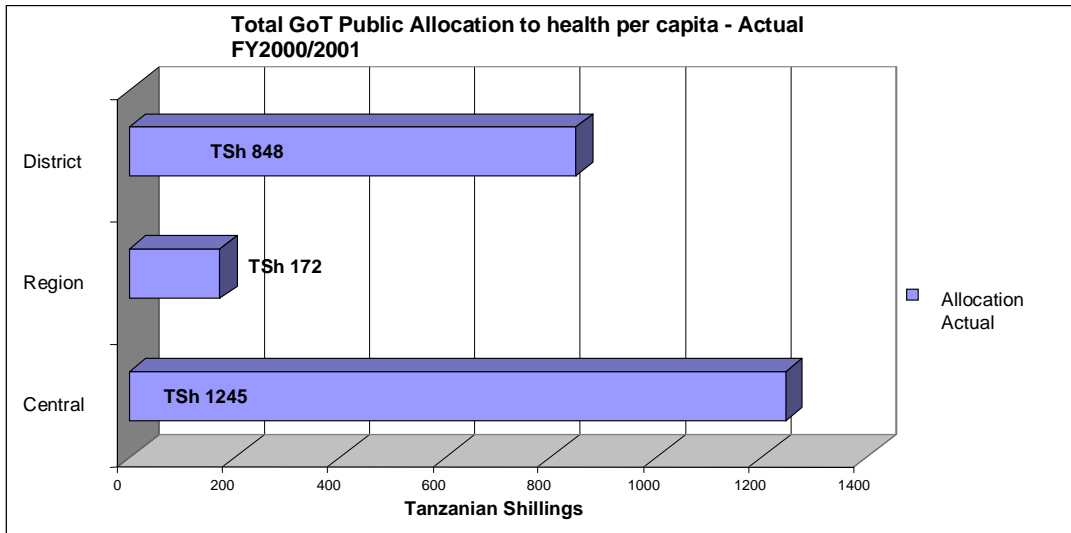


Diagram 2

Discussion

In FY2000/2001, the Government approved TSh 2,326 per capita for health, of which TSh 2,265 was actually released. This appears to show that the Government releases matched very closely the approved budget figure. The majority of funds that were released were targeted at the central level, however, as already noted a sizeable amount of resources are procured at the central level on behalf of the regional and district level. Thus this may overstate the magnitude of resources available at the central level and underplay those available at the regional and district level.

Future Development of the Indicator

It may in future be worth, beginning in the next profile also to utilise constant prices, i.e., use FY2000/2001 as the base year and deflate using the Consumer Price Index (CPI). Therefore, using CPI as a proxy for inflation for the purpose of deflating the nominal figure and tracking changes in prices over time and the effect on health spend. It may also be worth showing the per capita figure in United States Dollars as well as Tanzanian Shilling. This may prove useful for international comparison purposes. Finally, as more quality data becomes available, it will be important to provide this data broken down by each region.

Total GoT and Donor allocation (budget and off-budget) to health per capita (Indicator 2)

Introduction

One of the key objectives of the Health Sector Reforms is to increase the financing sources (HSPOW 1999-2002) and to mobilise sufficient resources for the Health Sector (MTEF 2001/2-2003/4).

There are many different stakeholders involved in providing resources to the public health sector in Tanzania and also there are various methods in place in which to channel resources in support of health activities. Two of the most significant stakeholders in terms of the level of financing that they provide are the Government of Tanzania and Development Partners (DPs).

The indicator is interested in examining the total per capita spend on the public health sector (budgeted and actual) from these two main sources of financing. Moreover, it is also interested in tracking overtime the level of DPs assistance compared to the Government of Tanzania.

Source of data

Information on estimates allocated to the Ministry of Health from the Government of Tanzania for recurrent expenditures and development projects, and the actual expenditure made from these funds for financial years 2000/01 have been taken from the appropriation accounts of the Ministry of Health (Vote 52). Information on expenditure estimates by the Regional Authorities on Government of Tanzania funds and the actual expenditure of these funds for the financial year 2000/2001 have been taken from the appropriation accounts of the Regional Authorities. Information on health budgets and spend for local councils was obtained from the budget documents 'Kitabu cha Nne Makadirio ya Fedha za Serikali (Sehemu B) – Mipango ya maendeleo ya Halmashauri ya Wilaya na Miji – Kama yalivyowasilishwa Bungeni 2000/2001.

The Development Partners funds include basket funds, non-basket funds and off-budget funds. Information on basket funds for 2000/2001 have been taken from the Ministry of Health Appropriation Accounts 2000/2001. All funds from development partners, which are recorded in the budgets of the Government of Tanzania, are listed as allocations towards development projects of the recipient Ministry. The information on funds from external partners contributing to the health sector in Tanzania, but not recorded in the budget has been collected where possible.

All of this information was gathered during the annual Health Sector Public Expenditure exercise 2002, conducted during November 2001. The report provides further details on the sources of funding.

Data Quality

Data on actual expenditures for rural councils are a combination of the estimates given for personal emoluments given in the 'Appendices to Volume III Estimate' documents (assuming that salaries which have been budgeted for will need to be honoured) and the releases of funds made by the Ministry of Finance for other charges over the financial year. The Treasury made the data on release of funds available for year's 2000/2001. Urban councils, the estimates of actual recurrent expenditure were made in a similar way, except actual expenditure was used

when available. In addition there was no record made available for actual development expenditure on these documents, so this figure has been left blank for all councils.

The off-budget element of Development Partners funds for 2000/2001 has been estimated utilising the 1999/2000 figure and increasing it by a conservative 10 per cent. The Health PER 2002 report provides further details on this issue.

Baseline data

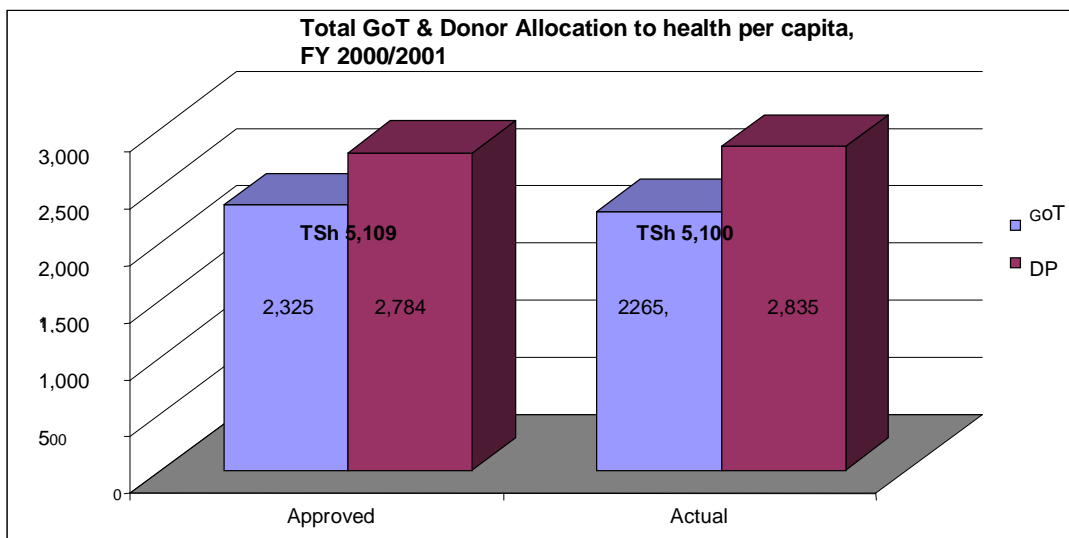


Diagram 3

Discussion

Development Partners provide a larger proportion of funding for the health sector in Tanzania (over 50 per cent) compared to Government. The large majority of such funding are off budget, i.e., not channelled through the Exchequer system or the line Ministry.

A sizeable financing gap still remained in FY2000/2001, approximately USD 3.00 (USD 9.00 to provide minimum quality health care services), although as HIPC relief begins to be channelled through the health budget for 2001/2002, one should expect the financing gap to drop quite dramatically, although this may take some time before it actually materialises into efficiency gains in service delivery.

Future Development of the Indicator

As more detailed quality financial data becomes available and additional DPs resources are channelled through the Exchequer System, it will be important to show this indicator broken down on a regional basis and utilising regional welfare indices when they become available for issues of regional inequities.

Per Capita Government of Tanzania Recurrent expenditure broken down by level (Central, Hospital services, Preventive services)(Indicator 3)

Introduction

One of the objectives of the MoH is to improve access, quality and efficiency of primary health services and to further strengthen secondary, tertiary and services delivery in support of primary health care (HSPOW 1999-2002).

This indicator has been developed to analyse which areas are the major recipients of Government of Tanzania resources, and this has been further broken down by the following type of services: MoH Administration/Central, Hospitals and Primary Health Care (PHC). The indicator is interested in tracking over-time the levels of resources being spent on PHC in comparison to hospital services and analysing on an annual basis whether there has been any significant shifts in GoT resources between these two services/levels.

Source of data

See Indicator 1 and Indicator 2

Data quality

See Indicator 1 and Indicator 2

Baseline data

Table 1: Per Capita GoT Recurrent Expenditure broken down by level FY1999/00

Level	1999/00		1999/00	1999/00
	Per Capita TSh		Per Capita TSh	Per Cent
	PE	OC	Total	
MoH Admin/Central	83	40	123	7%
Hospitals	760	340	1,100	60%
Primary Health Care	378	242	620	33%
Total	1,221	622	1,843	100%

Discussion

In FY1999/2000 approximately two-thirds of GoT resources were targeted and spent at the hospital services level, with only a third of total GoT resources being targeted at the PHC level.

It has been argued, however, that the high level of donor funding may have affected the shape of the Tanzanian health system and consequently the health budget. The GoT may have targeted many of its resources on hospital services as a result of Development Partners placing a higher priority on Primary Health Care (PHC).

Future Development of the Indicator

This indicator should remain, however, it may also be worth including an additional indicator that would examine the DPs spend on the various levels as a comparison. However, this is subject to the quality of data available and may be difficult given the large element of donor funds that are off budget and as such do not go through the Exchequer System.

Human Resources Indicators (Indicators 4, 5, 6)

Indicator 4 **Distribution of Medical Officers by region as a proportion of the staffing norms by health facilities.**

Indicator 5: **Distribution of Assistant Medical Officers by region as a proportion of the staffing norms by health facilities.**

Indicator 6 **Distribution of Public Health Nurses/Midwives by region as a proportion of the staffing norms by health facilities**

Introduction

Human resources have been recognised as one of the critical components towards improving the health status in the country. The Health Sector Reforms puts great emphasis on significant improvements in the quality and provision of health care services to the public. This brings with it changing demands on personnel which requires them to be much more responsive and receptive to the health cares needs and expectations of the consumer, i.e., the user of the service.

To this effect the Ministry of Health has developed a number of objectives with respect to human resources including to provide competent and adequate number of health staff to manage health services (MTEF 2001/2002 – 2003/2004, Policy Statements and Performance Review, Volume I); and to move towards self-sufficiency in manpower by training all the cadres needed to implement health reforms (HSRPOW 1999 – 2000). Moreover a number of strategies have also been developed by the Ministry of Health to achieve these objectives.

The three indicators have been developed to provide baseline data which will examine the current distribution of skilled staff by focusing on the following cadres: Medical Doctors (MD), Assistant Medical Officers (AMO) and Public Health Nurses B and looking at these with respect to the staffing norms which have been developed for the Health Sector.

Source of Data

The personnel data was extracted from the Integrated Human Resources System, Public Sector Reform Programme (PRSP), Civil Service Department (CSD) during the August 2001 payroll-data-processing period. The Ministry of Health staffing norms were obtained from ‘Staffing Levels for Health Facilities/Institutions 1999’, Ministry of Health and Civil Service Department. Information on type and location of facilities was extracted from the ‘Health Statistics Abstract 1999’, Ministry of Health 1999.

Data quality

This data is made-up of all civil servants that receive their salary/personal remuneration’s directly from the central payroll, Treasury, Ministry of Finance. This includes subventions for personal emoluments, which are transferred to the councils, based on the payroll. It consists of Vote 52 – Ministry of Health, Regions (70 – 89), all councils (urban and rural) and other

organisations (Muhimbili Medical Centre (MMC), KCMC Hospital, Bugando Hospital, Ocean Road Cancer Institute, Muhimbili University College Health & Sciences). It excludes those staff whose salary is paid for out of locally generated resources, e.g., Urban/Rural Councils who use their own resources to pay personal remunerations for employees. In addition, Voluntary Agencies (VAs) who have agreements with the MoH about Designated District Hospitals (DDHs) and/or secondment of Staff have also not been included in this calculation.

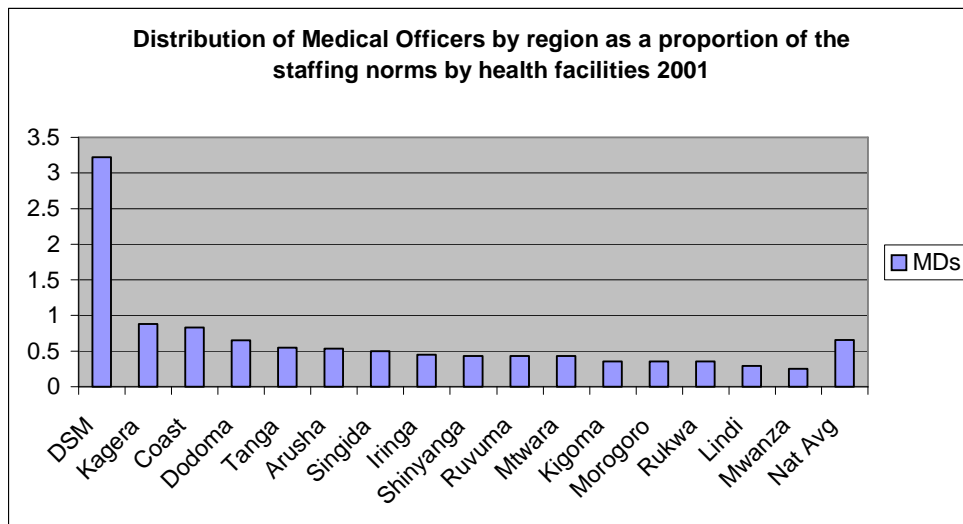
The indicator data uses all the identified sources above but excludes National Ministry of Health employees and other Organisations on the premises that they may actually distort the number of skilled personnel who are available to the regions in the provision of health services.

The Integrated Human Resource System (IHRS) has identified a number of ‘unknowns’, i.e., no identification of the scheme of service of the employee, however, although the numbers are relatively small they may, in some cases, under-report the number of qualified staff. Moreover as the IHRS provides information by location (district) rather than designation (facility type), a rather crude calculation has been made to extract the data and arrive at the proportions for the staffing norms.

Although data was available on human resources for Kilimanjaro, Mara, Mbeya and Tabora region, the information from the HMIS on facility type was too poor to use to extrapolate results for these regions.

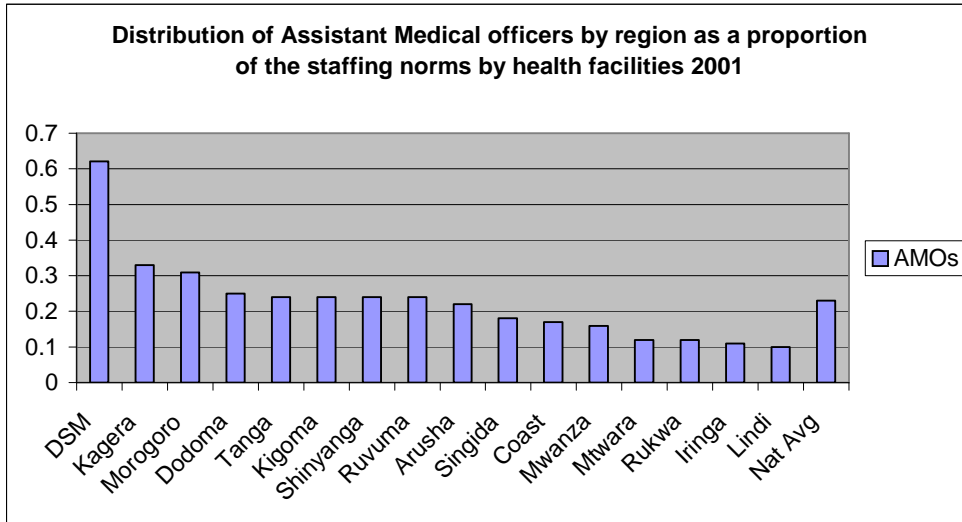
Baseline Data

Diagram 4



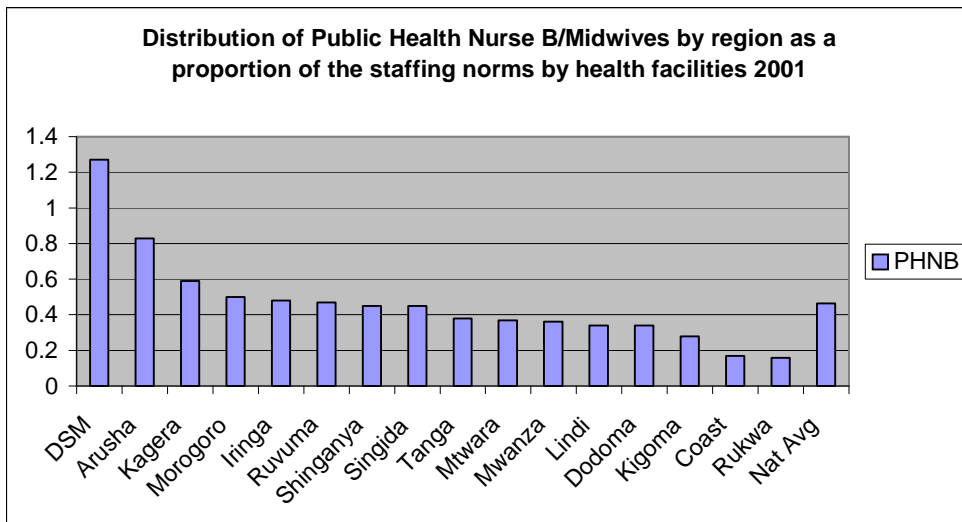
National Average figure is 0.57 or 57% of the Norm for Medical Doctors.

Diagram 5



National Average figure is 0.21 or 21% of the norm for Assistant Medical Officers.

Diagram 6



National Average figure is 0.56 or 56% of the norm for Public Health Nurse B/Midwives.

Discussion

Human resources for health remain perhaps the main constraint in the struggle to improve health status in Tanzania. The baseline data clearly shows that the distribution of qualified staff is unequal across regions based on the norms. This reinforces many recent studies, including the 1999 PriceWaterhouseCooper (PWC) tracking study which revealed that there was no rationale for the allocation of health workers across the various service delivery centres, and that the deployment of health workers has a high level of inequity and inefficiency. In addition the recent HSR March Review 2001 group working on Human Resources concluded that all the anecdotal evidence appears to point to the fact that human resources in health is dominated by unskilled staff and that this is unequally deployed both in terms of geographical location and skill level.

Future development of the indicators

Quality up-to-date information for monitoring human resources is crucial if the sector is to move towards improving quality and the provision of health care services. There is a clear need for the Human Resources Health (HRH) database that is nearing finalisation to link closely with the IHRS in the CSD, both systems can reinforce and strengthen each other. The future development of this indicator will involve moving to designation rather than location with this indicator.

Note: Assistant Medical Officer includes the following cadres: Assistant Medical Officer (II), Assistant Medical Officer (I), Senior Assistant Medical Officer (II), Senior Assistant Medical Officer (I), Principal Assistant Medical Officer (II) and Principal Assistant Medical Officer (I).

Medical Doctor includes: Medical Doctor (III), Medical Doctor (II), Medical Doctor (I), Senior Medical Officer (II), Senior Medical Officer (I), Principal Medical Officer (III), Principal Medical Officer (II), and Principal Medical Officer (I)

Nurses/Midwives and Public Health Nurse includes: Nurse Midwife & PHN – B (III), Nurse Midwife & PHN – B (II), Nurse Midwife & PHN – B (I), Senior Nurse Midwife & PHN – B (III), Senior Nurse Midwife & PHN – B (II), Senior Nurse Midwife & PHN – 'B' (I), Principal Midwife & PHN – 'B'

Percentage of GoT funds budgeted for district health activities against the total overall funds available for district activities (Indicator 7)

Introduction

Decentralisation is at the heart of the ongoing reform processes in Tanzania, particularly in the Health Sector, where it has been recognised as a key strategy towards improving district health services (HSPOW 1999-2002).

To implement the policy of decentralisation, Local Government Authorities (LGAs) (urban and rural) are now responsible for planning and managing resources for a number of sectors, including health, in their district. They receive subventions consisting of personal emoluments and other charges directly from central government to facilitate this function. There are five areas, i.e., health, and education, roads, water and administration that receive resources through this method. Such transfers account for between 70% - 80% of the annual revenue in most LGAs and about 23% of central government resources (Tanzania Country Financial Accountability Assessment Study 2001).

This indicator has been developed to provide baseline data on the level of funding which the district health care services receives from Government to implement activities compared to other services at the local level, i.e., the overall global spend. This is a critical indicator for the health sector as the districts are at the centre of health care service provision. Moreover it will become even more crucial as devolution firmly takes route, and more and more resources are channeled through LGAs. It will be important, therefore to monitor quite closely the level of funding for priority sectors such as health overtime at the district level.

Source of the Data

Information has been taken from the Appendices to Volume III Estimates, Public Expenditure Supply Vote (Regional), Details on urban and district councils, Grants and Subventions 2001/2002, issued by the Treasury, Ministry of Finance. Moreover, information on actual spend has also been extracted from the 82 reforming councils Phase I and Phase II quarterly financial and technical reports (4 quarters) for the health basket FY2000/2001. The regional welfare rankings are taken from the Poverty Reduction Strategy Paper (2000).

Data quality

The information for the baseline data is based on budgeted figures for urban and rural councils that are provided by the Ministry of Finance through the Public Expenditure Supply Vote Volume III. Budgeted figures are used because there are too many shortcomings and gaps in the current reporting on actual financial utilisation at the council level (see PER 2001, CFAA-Tanzania 2001, Pro-poor Expenditure Tracking Study 2001). Therefore, in order to supplement this lack of information, data on actual spend of the government grant for health activities in the 82 reforming councils has been extracted from the quarterly reports for the Health Basket FY2000/2001 and provided in a separate table.

Baseline Data

Table 2: Percentage of GoT funds budgeted for district health activities against the total overall funds available for district activities FY2001/2002.

Poverty Quintile 1	%
Dodoma	18
Kigoma	19
Lindi	21
Kagera	12
Average	17%
Poverty Quintile 2	
Coast	16
Mara	14
Morogoro	16
Tanga	20
Average	18%
Poverty Quintile 3	
Arusha	16
Mtwara	17
Mwanza	17
Rukwa	22
Average	18%
Poverty Quintile 4	
Iringa	17
Mbeya	15
Shinyanga	19
Tabora	19
Average	17%
Poverty Quintile 5	
Kilimanjaro	17
Ruvuma	18
Singida	20
Dar	18
Average	18%
National Average	18%

Table 3: Percentage of GoT funds spent on district health activities against the total overall GoT funds available for district activities in 16 regions (Phase I LGAs).

Poverty Quintile 1	%
Dodoma	13
Kigoma	17
Lindi	21
Average	15%
Poverty Quintile 2	
Coast	18
Morogoro	13
Average	15%
Poverty Quintile 3	
Arusha	12
Mtwara	18
Mwanza	17
Rukwa	16
Average	14%
Poverty Quintile 4	
Iringa	12
Mbeya	12
Shinyanga	15
Average	12%
Poverty Quintile 5	
Kilimanjaro	22
Ruvuma	12
Singida	18
Dar	18
Average	17%
National Average	15%

Discussion

District level health activities receive on average 18% of the global subvention figure budgeted by central government for LGAs. There appears little regional variation except for Kagera (Pop: 1,974,870, Yr. 2000) which receives only 12% of the total budgeted resources compared to a region such as Rukwa (Pop: 1,365,673, Yr. 2001) which receives 22%. This does appear to confirm the findings from a number of studies concerning the lack of clarity on the resource

allocation criteria and/or formula that is used to determine the level of subvention for each LGA and the actual determination of the proportion of transfers which are given to the various sectors which are supported by central Government.

In addition a number of studies have also highlighted concerns around the actual transfers from Central Government to the Local Government Authority (LGA), with some tracking studies finding significant deviations between disbursements made by the Treasury compared to the Parliament approved funds (PWC 1999, REPOA/ESRF 2001). Moreover, there are also concerns with respect to the transfer of funds from the Council Treasurer to the sectors themselves, according to some studies this also appears to be a potential source of leakage with in some cases sectors receiving less than that which was claimed by the Treasury (REPOA/ESRF 2001).

There appears little variation between the 5 Poverty Quintiles, although, it appears that the 'less deprived' regions do better in relative terms with respect to allocations. It may be more suitable when examining the issue of regional poverty ranking to look at all sources of funds that are coming into the sector rather than just targeting the Government of Tanzania resources.

Future Development of the Indicator

In the future it will be important to look at the actual spend of councils on health as a comparison of the total global fund spend from the GoT subventions. It may take some time before quality data on actual spend becomes available and it is suggested that until such time, a regular tracking study be included in the annual Health Sector PER exercise.

PROCESS INDICATORS

Number of districts reporting and showing use of the HMIS,NSS, Performance Monitoring data in the preparation and use of health plans (Indicator 8)

Introduction

Decentralisation is key to the Government's reform efforts – empowering people at the local level to be in a position to provide quality services that are efficient and effective. In terms of the public health services this has involved devolving powers of decision-making for district health services and the district hospitals to the Local Government Authority (LGA). The LGA will be responsible for mobilising, managing and accounting for health resources and implementing health activities in-line with the approved plans and budget allocations.

The reform process for the LGAs is being introduced in phases and coincides with the introduction of the Sector Wide Approach (SWAp) in the health sector with the focus on providing accessible quality health care services in LGAs. To this effect, the GoT health budget (subventions to the health sector) is being supplemented by USD 0.50 cent per capita, which is a district health basket grant that is being targeted at improving the provision of basic health services in the 82 Phase I and Phase II LGAs.

The 82 reforming councils are expected to develop an annual comprehensive health plan and to produce technical reports on performance and finance on a quarterly basis on this plan. This indicator has been developed to examine whether data from the HMIS, NSS and performance monitoring data is actually being utilised by the councils in their reporting.

Source of data

The District Medical Officer (DMO) is expected to report on a quarterly basis to the Council Health Committee (CHC) on the technical and financial performance of the council in its provision of health services. The reports are then forwarded to PORALG/MoH and finally the Basket Financing Committee. These quarterly technical reports on performance and finance have been reviewed for the 82 Reforming Councils for FY 2000/2001.

Data quality

The quality of the technical reports varies from council to council, with some LGAs still unclear as to what they actually should report. Generally, Phase II LGAs reports were of a higher standard than Phase I and appeared to follow more closely the planning guidelines on the utilisation of the health basket grant. Reports from six LGAs were incomplete or not available and they therefore have not been included in the analysis.

Baseline Data

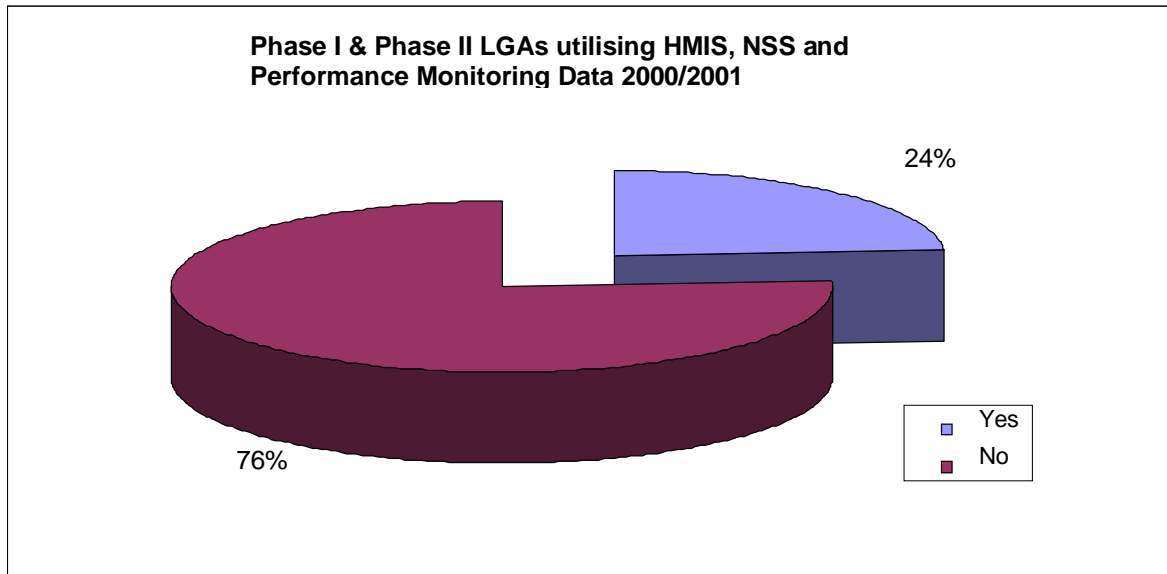


Diagram 7

Discussion

The quarterly technical reports produced by the Phase I and Phase II LGAs are expected to review performance against their health plan. All of the reports have a very strong emphasis on reviewing financial performance (input), with very few actually reviewing their performance against their stated priorities and utilising data from the HMIS, NSS or other performance data (output/outcome) to be able to do this effectually. In general, the quality of the reports varies quite substantially between councils. However, there are exceptional councils, producing very high standard reports, with utilisation of both financial and HMIS/NSS to report on their performance against their stated objectives/priorities.

Future development of the indicator

The indicator may need to be modified to make it much more explicit in that the focus is on utilisation of the HMIS/NSS and other Performance Monitoring data to address issues such as outcome and impact.

Proportion of public health facilities in a good state of repair (Indicator 9)

Introduction

The MoH stated objective (MTEF, 2001/2002) relating to health service infrastructure is - to rationalise the health facilities infrastructure network, facilitate rehabilitation and provide a maintenance system for health facilities, equipment and instruments. There are a number of related policies existing and new such as: the standard guidelines for health facilities buildings; the standard drawing and functional sizes, and; rationalisation of the health service network. The MoH frequently cites the state of health facility infrastructure as an important constraint to the effective provision of services. The number of health facilities has increased significantly over the last three decades and currently there are 224 hospitals (81 GoT), 344 health centres (284 GoT), 4276 Dispensaries (2877 GoT) making a total of 4844 facilities (2877 GoT) (Health Statistics Abstract, MoH 1997).

The state of the public health service infrastructure is important for the effective provision of services. It affects the way people judge the quality of services that are available and for practical reasons it affects the functioning of the health facilities and morale of the health staff. The construction, rehabilitation, repair and equipping of health centres is an important consideration for Urban and Rural Councils as they prepare their forward plans and annual budgets and for the future development and monitoring of a capital development plan as recommended in the 2001 Annual Review of the Health Sector.

Source of data

An annual inventory of health facility structures and equipment is undertaken at district level and using the district facility form entered into HMIS.

Data quality

Although data from HMIS for 2000 is available for 46/114 districts and representing 9/20 Regions this is only presented for 3 Regions due to concerns over data accuracy. A more comprehensive baseline should be possible for 2000 once further data checks have been made.

A second source of data is the survey undertaken as part of the HSR Performance Target setting in the first 37 reform districts which is presented below (National Institute of Medical Research (NIMR) 2000).

Baseline data

Table 4: State of Repair of Health Facilities (HMIS 2000)

Region	State of Repair of health facilities (%)		
	Good Condition	Fair Condition	Poor Condition
Mbeya	23	40	37
Singida	22	32	47
Rukwa	7	29	62

HMIS 2000

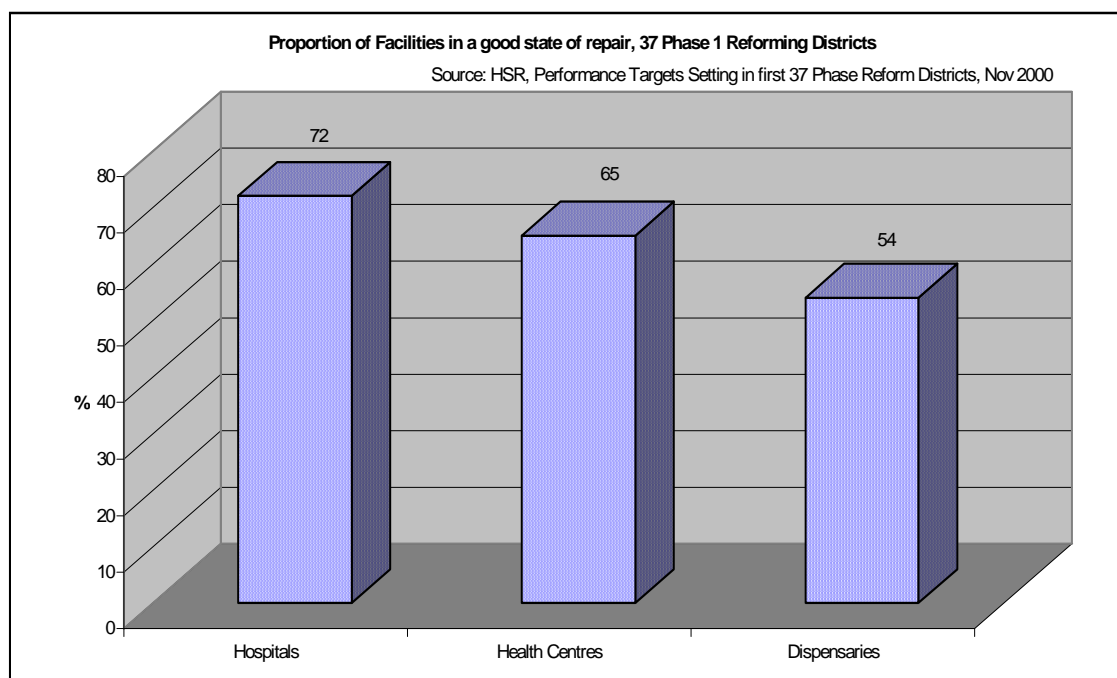


Diagram 8

Discussion

The limited HMIS data available for 2000 suggests that the state of repair of health facilities is a problem that needs to be addressed in the district health plans. The data needs to be interpreted with caution but suggests that at least three quarters of all district health facilities are in only fair or poor condition.

The HSR survey data looks at the proportion of facilities in a good state of repair defined as the percentage of health facilities/buildings in an acceptable state of physical appearance that is conducive to medical work. The survey covered only the 37 phase I reforming districts but provides a better snapshot of the state of repair of health facilities. It indicated that of all

facilities surveyed, an average of 64% were in a good state of repair, with 72% of hospitals in good shape, compared with 54% of dispensaries.

Future development of the indicator

This indicator should remain but the data quality and access issues linked to HMIS needs to be resolved. A revised baseline using all available 2000 data from districts should be produced. Targets will need to be set.

Percentage of public health facilities without any stock outs of 4 tracer drugs and 1 vaccine (Indicator 10)

Introduction

The regular and timely supply of essential drugs and medical supplies to all health facilities is an important aspect of providing an effective health service and an important aspect that determines consumer satisfaction. The MoH stated objective is - to ensure availability of good quality, safe, effective and affordable drugs and medical supplies. There is an essential drugs policy and list as well as relevant guidelines. Monitoring of stock-outs at different levels of the facility is an important indicator of performance and work should be undertaken to ensure that the HMIS is able to provide accurate and timely information. Given the wide range of essential drugs it is useful to develop a tracer system that focuses on a limited number of essential drugs that can allow judgement on overall performance in drug supply and availability at health facilities to be assessed. In view of the priority objective to reduce the number of infant and child deaths from communicable diseases, which is also prioritised in the PRSP (2000), one vaccine is also suggested as a tracer. Four drugs have been selected and one vaccine, namely, Sulphamethoxazole-Pyrimethamine (SP), Cotrimoxazole, a TB drug and an STI drug and measles vaccine.

Data source

The HMIS collects information of stock-outs of essential drugs and will be the source of this data.

A second source of data is the survey undertaken as part of the HSR Performance Target setting in the first 37 reform districts which is presented below (National Institute of Medical Research (NIMR) 2000).

Data quality

At present the quality of data available is not sufficient to allow a baseline to be set for 2000. The HMIS should be developed to allow this to be made available for 2001.

Baseline data

The HMIS data for 2000 does not currently allow setting of a baseline for this indicator. However with some additional analysis the HMIS Unit should be able to provide this within the coming months. Until a full baseline is established other sources have been assessed to provide an early indication of the current situation.

Information from 2000 on the proportion of health facilities with a regular supply of pharmaceuticals (Ref - HSR Performance Target Setting) suggests that hospitals have the most regular supply followed by health centres with dispensaries having the most irregular supply (see Table 5)

Table 5: Proportion of health health facilities with a regular supply of pharmaceuticals

Health Facility Level	Regular supply (%)
Hospital	90
Health Centre	84
Dispensary	76

The availability of anti-malarials in health facilities for 1999 is reported (see Table 6) in the TRCHS (Health Facility Survey - Preliminary Report) and indicates that over 96% of facilities had supplies of chloroquine in stock when surveyed. With the new policy on malaria drugs the focus should now shift to SP.

Table 6: Percentage of government health facilities with anti-malarials in stock

Type of Anti-malarial	Percentage in-stock
Chloroquine	96
SP	25
Quinine	37
Metakelvin	21

The availability of vaccines is also reported in the TRCHS (1999) and shows that between 70-80% of facilities consistently have stocks of DPT and Measles vaccines.

Table 7: Proportion of government facilities with vaccines in stock

Vaccine	Proportion of facilities in-stock
Measles	81
DPT	72
Polio	59
BCG	77
TT	81

Future development of the indicator

A good baseline for the four drug and one vaccine tracers should be established for 2001 using HMIS.

Average number of days with no drug kits in public health facilities (Indicator 11)

Introduction

Given the importance of a reliable supply of good quality essential drugs for the effective delivery of health services it is important to be able to track the performance of the drug kit delivery system. The policy of providing monthly drug kits to health centres (blue kits) and dispensaries (yellow kit) is planned to continue in the foreseeable future [CHECK] and therefore provides a useful basis for tracking performance of supply to facilities of drugs that are subject to quality control procedures.

Source of data

The data on timeliness of drug kits is recorded routinely through the HMIS system.

Data quality

There is concern about the accuracy and completeness of this data for 2000 and verification should be undertaken to provide more complete and accurate data provided by the districts.

Baseline data

A rough baseline is provided based on 2000 data from 4 Regions that provided a reasonable level of completeness.

Table 8: Average number of days drug kit is late at facility

Region	Average no. days drug kit is late at facility (per quarter)				
	1 st	2 nd	3 rd	4 th	Year Av.
Arusha	6	3	3	2	2.8
Dodoma	17	9	13	14	13.1
Iringa	18	19	27	20	19.4
Lindi	4	7	3	2	4.6

Discussion

The data gives a first indication of the type of information that can be generated by HMIS, in this case it suggests considerable Regional variation. It also suggests that there are considerable delays in drug kits arriving at the health facilities in some Regions. While this is not reliable data at present it does give an early indication about the information that will be generated. There is no breakdown between health centre and dispensary levels.

Future development of the indicator

Targets around this indicator will need to be set. It may also be useful to group Regions by area covered by the different zonal stores.

OUTPUT INDICATORS

Cost-Sharing fees collected by Public Health Facilities in 2000 as a proportion of the 1998 targets (Indicator 12)

Introduction

A cost-sharing policy was introduced into Government hospitals in 1993, and in 1999, for those primary care facilities (dispensaries and health centres), who also wished to institute charges. The policy decision was motivated by the financial difficulties and underfunding experienced in the health sector, and thus the main objective of the CSP was to generate additional revenues that would contribute to improving the quality of health services in public facilities. At the same time wavier and exemption guidelines were introduced as a means of protecting the poorest and most vulnerable members of society.

The indicator has been developed to look at the performance of the cost-sharing policy over-time.

Source of data

Taken from the Appropriation Accounts of the Ministry of Health (Vote 52), 2000/2001. All the annual reports submitted by the National, Regional and District Hospital to the Central Ministry of Health on the Health Service Fund (cost sharing) are included in this document.

Data quality

The quality of the recording of cost-sharing revenue data varies from facility to facility and is further complicated by confusion over the operation and implementation of the exemption and wavier mechanism. Although this is fixed by the Ministry of Health (children under-five, MCH, the poor, chronic and epidemic diseases), it appears to be applied very variably across institutions. In addition the targets for Costing Sharing were set in 1998 based on only a few facilities, although it was anticipated that other facilities would follow and develop a similar criteria in setting their own individual targets. However, it still remains unclear whether this has in fact actually taken place, as such targets do not appear in the Appropriation Account report of the Ministry of Health.

Baseline data

Table 9: Cost-Sharing fees collected by Public Health Facilities in 2000/2001 as a proportion of the 1998 targets

FY 2000/2001	%
Individual Public Health Facilities	
Mbeya Referral Hospital	48%
Bagamoyo District Hospital	15%
Kisarwe District Hospital	32%
Iringa Regional Hospital	59%
Tukuyu District Hospital	0%
Morogoro Regional Hospital	60%
National Average	46%
<i>(Based on 1998 Target setting)</i>	

Discussion

Cost sharing is perceived as one alternative source of funding that would go some way to addressing gaps and shortages of funding in the health sector. The results appear to indicate that for those hospitals, for which a target is available, revenue from cost sharing has dropped dramatically and has on average reached just 46% of the 1998 target. At the national level, taking into account all revenue collected, irrespective of whether a target is available for that hospital, the revenue collected for 2000/01 represents 60% of the budgeted figure for cost-sharing for the same year. The results, if correct, clearly indicate that further analysis and investigation of the current cost-sharing scheme, including the exemption mechanisms and targets are required as a matter of urgency.

Future Development of the Indicator

If more detailed and quality information becomes available from the cost-sharing scheme (including the type and level of exemptions) and other sources (e.g., Household Budget Survey (HBS)), there may be a need to refine this indicator or develop an additional indicator that would investigate and analyse the impact of cost-sharing on equity.

Total OPD attendance per capita (Indicator 13)

Introduction

This indicator gives an overall indication of utilisation of public and private health facilities. The availability of this data will provide a rough indication of changing demand for public health services and the impact of service utilisation of major policy changes. As HMIS captures more private sector information, trends in public/private utilisation will be possible.

Source of data

Routine reporting from all public health facilities through HMIS. The data presented is from 73/114 districts and is therefore still very incomplete and even for these 73 districts data comes from different years i.e. 1998, 1999 and 2000. The estimates provided for the baseline are therefore based on a composite data set from these three years. The district denominators are based on projections from the 1988 Census and again probably fairly inaccurate (see Appendix 2). Data is also presented by groups of Regions grouped according to Poverty and Welfare Monitoring Indicators (November 1999). 5 Regional groupings based on welfare ranking have been established. While this is recognised as very crude it begins to introduce the concept of analysing data by poverty group. This approach will become considerably more useful as the tools for measuring poverty are introduced.

Baseline data

Table 10: Per capita health facility OPD attendance by region, age and welfare ranking.

Regional Ranking	Per Capita OPD Attendance Rate		
	<5 year olds	5+ year olds	All ages
1 – poorest	1.94	0.63	0.85
2	2.26	0.75	1.01
3	1.71	0.56	0.75
4	0.78	0.26	0.35
5 – wealthiest	2.25	0.64	0.80
National	1.63	0.53	0.71

Discussion

The baseline figures for the Regional groupings are more varied than may be expected between regions and there is no obvious correlation with regional welfare rankings. The latter is not

unexpected as the ranking is rather crude and does not include use of private sector services, which may well lead to the exclusion of the wealthier section of the population and therefore have a leveling effect across the five Regional rankings. The data is consistent in the comparison between <5 year olds and 5+ years for each region.

The Tanzania Social Sector Review (1999) provided a useful background analysis based on HRDS (1993/94) data. This estimated that about 58% of all those who were sick and sought care turned to a government provider. The figure was 70% for the poorest 20% of households. Government health centres and dispensaries were the most common source of outpatient care - 40% of those who sought care.

Table 11: Accessing health care by quintile

Source of Care	Lowest 20%	Highest 20%	All
Government Hospital	15	20	17
Voluntary Agency/ Private Hospital	5	9	6
Government Health Centre or Dispensary	55	26	40
Voluntary Agency Health Center or Dispensary	10	9	10
Private Health Centre or Dispensary	6	24	14
Other (traditional and pharmacy)	9	12	13

Source: HRDS, 1993/94

Preliminary results from demographic sites that looks at utilisation of health services prior to death from all causes based on verbal autopsy indicate that at least in those areas covered the percentage of people dying who do not access formal health services prior to death is high [Morogoro 41%; Hai 23%; DSM 15%] [AMMP 1997 data].

Future development of the indicator

The baseline should be revised once all 2000 data is available through HMIS. When the data becomes available attendance at non-government health facilities should be included as well as analysis by poverty level. In view of the data which that suggests that a high percentage of individuals are not accessing health facilities prior to a life threatening illness, the setting of targets will need to be carefully considered.

Proportion of births attended by skilled attendants (Indicator 14)

Introduction

Reducing maternal mortality and morbidity is an important component of the government's health policy and one of the main strategies is to increase the access of women to skilled birth attendants. The MoH states that women are recommended to give birth in a health facility, and where this is not possible they should be attended by a trained traditional birth attendant. The Poverty Reduction Strategy Paper (PRSP) also contains the target of increasing coverage of births by trained personnel from 50% to 80%. This indicator is an increasingly accepted indicator of safe motherhood and of risk of maternal death.

Sources of data

There are two sources of data for this indicator. One is the National Sentinel Surveillance (NSS) system and is therefore based on data from selected sites. The NSS data presented here are for births which took place in 1999 in three sentinel sites. The second data source is the Tanzania Reproductive and Child Health Survey (TRCHS), a sample survey, which includes information on the type of personnel assisting with deliveries. Data from TRCHS are summarised for urban and rural areas.

Data quality

National Sentinel Surveillance system Annual and semi-annual update rounds are likely to miss some births, especially those of children who die in the first few months of life. The NSS results may therefore be biased towards those who survived the first year of life.

Tanzania Reproductive and Child Health Survey Data are based on all children born to women in the previous 5 years and therefore represent the situation in the period 1995-1999.

Baseline data

The NSS data provides a baseline for percentage of births taking place at a health facility and progress in this area can be monitored on an annual basis. As the NSS develops the data will become increasingly representative of Tanzania. The TRCHS provides an opportunity for tracking progress periodically (every 4 years).

Table 12: Proportion of births attended by skilled attendants

Site	Births in a health facility (%)		Births attended by a skilled attendant (%)
	NSS	TRCHS	TRCHS
Urban	97.2	82.8	90.1
Rural	-	34.5	48.8
Affluent rural	79.0	-	-
Poor rural	42.1	-	-

Based on 9,032 births in 1999 3,282 births in the 5 years before survey

Discussion

The results from the NSS and the TRCHS as presented in Table [1](#) indicate that in urban areas the Poverty Reduction Strategy Paper target appears to have been reached. In rural areas there is considerable variation, with more affluent rural areas coming close to the PRSP target while in poorer rural areas there is still much room for improvement.

Data on trends for this indicator from several years preceeding 1999 are available from the NSS. The TRCHS data can only be divided into urban and rural areas; further disaggregation by region or district is not possible.

Future developments of the indicator

Two more Ministry of Health and district council run surveillance sites will start to collect data during the year 2002 and other Demographic Surveillance Systems (DSS) in Tanzania may also contribute to the next Profile. In 2001 changes were made to the way the Ministry of Health and district managed sites collect data to include recording whether or not a trained TBA was present for home births. These data will be available for subsequent editions of the Public Health Sector Performance Profile.

Proportion of children under one year fully immunised (measles, Polio 3, BCG, DPT3) Indicator 15

Introduction

One of the government's health policy objectives is to reduce infant and child mortality by controlling communicable diseases. This indicator will enable progress on immunisation of children against six preventable diseases to be monitored (measles, polio, diphtheria, whooping cough, tetanus, tuberculosis). The importance of immunisation is recognised in the Poverty Reduction Strategy Paper target - to increase the percentage of children under 2 years immunised against measles and DPT from 71% to 85% by 2003. WHO recommends that children receive the complete schedule of vaccinations by the age of 12 months¹. The immunisation programme is implemented by the MoH through the Expanded Programme on Immunisation (EPI) and follows the WHO guidelines for vaccinating children.

Sources of data

Routine surveillance for immunisable diseases has been established and information on immunisation is recorded routinely by health facility staff. The HMIS provides annual data on immunisation rates for each antigen. Additional sources of data are the 1999 TRCHS, 1996 DHS and 2000 survey for HSR performance target setting for the first 37 reforming districts.

Data quality

Concerns over HMIS data quality and completeness exist and the most recent data available is from 1998. Most of the DHS data was supported by evidence from clinic cards with the remaining being reported by the mother. The TRCHS report provides detail on steps taken to verify these data.

Baseline data

During the 2001 Annual Health Sector Review it was reported that there was a rise in coverage of DPT3 from 76% in 1999 to 79% in 2000.

Table 13: Proportion of children immunised against measles, Polio 3, BCG and DPT3 and measles (HMIS, health statistics abstract 1999)

Vaccine	HMIS (1999 abstract)
BCG	68.2
Polio 3	88.9
DPT 3	66.7
Measles	62.3

Table 14: Proportion of children immunised against measles, Polio 3, BCG and DPT3 and measles (survey data)

Vaccine	DHS (1996)	TRCHS (1999)	MoH/NIMR (2000)
BCG	95.5	92.7	73.8
Polio 3	77.1	79.9	75.6
DPT 3	82.0	81.0	78.5
Measles	68.0	78.1	73.8
All vaccines	59.6	68.3	75.4

Discussion

Full data from EPI for 2000 should be included in the baseline. In the data presented there are considerable differences between HMIS and survey data with the former reporting lower rates with the exception of the Polio 3 rates. Given the focus on Polio through the Global Polio Eradication the survey results for Polio 3 is surprisingly low. Supplementary immunisation rounds for polio were carried out in 2000 targeting 44 border districts with coverage of 100% in the second round. Given the need for annual monitoring of progress is important to improve HMIS quality and ensure more timely availability of this data. The surveys can be a useful validation of progress on a periodic basis.

Future development of the indicator

Disaggregation of the data by poverty quintile would be a useful development.

Malaria cases as a percentage of all <5 cases presenting at OPD (Indicator 16)

Introduction

Malaria is one of the major causes of morbidity and mortality in Tanzania and the MoH Policy states that malaria is included in the basic health package. A set of interventions are being implemented to tackle malaria including: prompt and effective management of malaria; prevention through the use of insecticide treated bednets, intermittent presumptive treatment of malaria in pregnancy. The new malaria treatment guidelines are being distributed that shifts the emphasis from Chloroquine to SP for treatment.

Acute febrile illness (including malaria) is also the leading cause of mortality among under 5 year olds and a major cause of morbidity in all ages. In view of its importance in terms of burden of disease and socio-economic effects this indicator has been included in the Poverty Monitoring Plan.

Sources of data

Data on outpatient attendance is taken from HMIS (see Indicator 19).

Data quality

HMIS These data represent just over half of the districts in Tanzania. Some of these 73 reports are from 1998, others from 1999 and a few from 2000.

Baseline data

Based on data from health facility OPDs the percentage of total attendance by <5 year olds for malaria is reported to be 39%.

Table 15: OPD attendance in under 5s by Poverty Welfare quintile

Poverty Welfare Quintile	Percentage of <5s attending OPD
1 - poorest	42%
2	33%
3	36%
4	40%
5- wealthiest	43%
National average	39.2%

Discussion

Approximately 39% of outpatient visits by < 5 year olds is reported as being for malaria. The same data when grouped by Regions according to welfare ranking shows little variation between regional groups.

Acute febrile illness is also reported as the leading cause of death among under five-year-olds in demographic surveillance sites. Preliminary results from these demographic sites, that look at utilisation of health services prior to death from malaria based on verbal autopsy, indicate that at least in those areas covered the percentage of people dying who access facilities is low.

Future developments of the indicator

It would be useful to move to an indicator based on rates by Region and also disaggregated by poverty quintile.

Consumer satisfaction with the quality of health services (Indicator 17 - to be developed)

Introduction

An indicator that allows an assessment of health sector performance in the view of users of public and private sector services would be very useful. At present there is no agreed indicator that can be used as a baseline. A suitable measurable indicator should be established as soon as possible.

OUTCOME INDICATORS

Top 6 causes of morbidity among OPD attendees and Top 6 causes of mortality (based on Demographic Surveillance) (Indicator 18)

Introduction

A morbidity profile based on health facility OPD attendance and a mortality profile based on community-based data are provided. The data are summarised by Poverty Welfare quintile. This approach provides a broad perspective on the relationship between poverty and health. The data presented will allow observation of trends over subsequent years in terms of the burden of disease and a comparison between morbidity and mortality data.

Sources of data

OPD attendance data are obtained through the HMIS based on reports from 73 districts (see Indicator-19) over a period of three years. Data from different levels of the health system are included resulting in a mix of clinical and laboratory diagnosis.

Community-based cause-specific mortality data are obtained from the National Sentinel Surveillance (NSS) system based on work in 3 demographic surveillance sites.

Data quality

HMIS These data represent just over half of the districts in Tanzania. Some of these 73 reports are from 1998, others from 1999 and a few from 2000.

NSS Reporting of mortality data is thought to be good.

Baseline data

The Top 6 causes of morbidity nationally based on OPD attendance is provided as a percentage of total morbidity. This is also broken down into under 5 and over 5 years age categories. The data is presented for Regions grouped by welfare ranking.

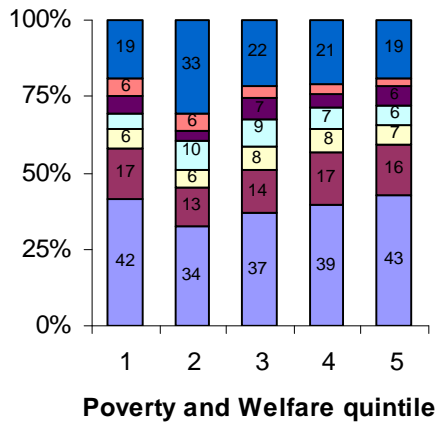
Diagram 9: Top 6 causes of OPD attendance for under-fives

Diagram 10: Top 6 causes of OPD attendance – 5 years + above

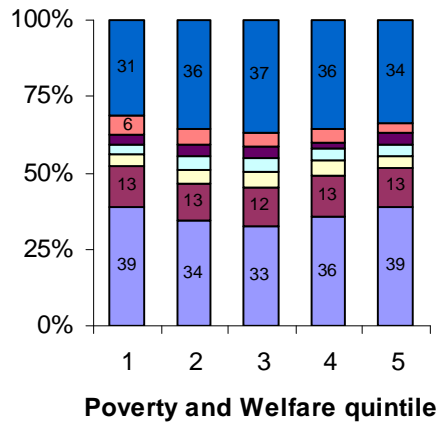
Diagram 11: Top 6 causes of death in under 5s

Diagram 12: Top 6 causes of death – 5+ years

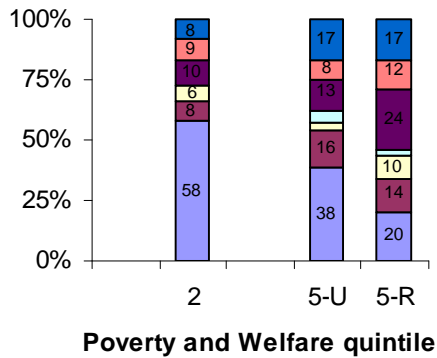
Top 6 causes of OPD attendance for under 5s



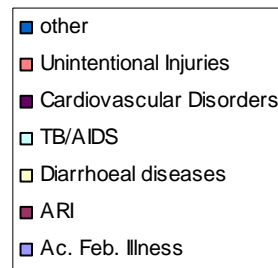
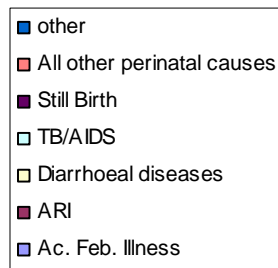
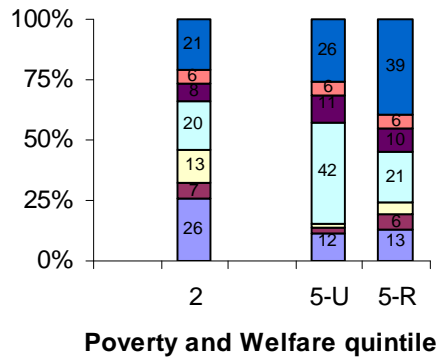
Top 6 causes of OPD attendance - 5 years and over



Top 6 causes of death in under 5s



Top 6 causes of death - 5+ years



The Top 6 causes of mortality are presented for comparison. The mortality data from three sites, one of which is rural and in poverty welfare quintile 2; the other two are both in Poverty Welfare quintile 5, i.e. the least poor, and one of these is an urban area and one is a rural area.

Discussion

In the <5 years age category:

The major cause of morbidity for this age group among those attending an OPD is malaria. This is by far the largest cause of illness. It should be noted that the majority of these diagnoses will be clinical and not based on objective laboratory results. It is possible that other acute febrile illnesses are being classified malaria, which would lead to over-reporting. The other common causes of morbidity are (in order): ARI, Diarrhoeal Diseases, Pneumonia, Eye infections, and, Intestinal worms. Morbidity data do not vary considerably between the Poverty and Welfare quintiles. No major trends by welfare ranking at this level can be discerned.

Cause specific mortality data for children <5 years of age, based on demographic surveillance, give a similar picture with acute febrile illness (including malaria) being the major cause of death followed by acute respiratory infections.

In the 5+ years category

The major reported cause of morbidity among OPD attendees is also malaria and ARI. However the mortality picture is quite different with Tuberculosis/AIDS the leading cause of death. The variation in the mortality picture between each of the sites is quite marked.

Comparison of morbidity and mortality

The morbidity and mortality profiles from two quite different, but complementary, sources show different patterns. For people of five years and above the mortality data shows the importance of TB and HIV/AIDS, which this does not appear in the HMIS, generated morbidity data.

Future developments of the indicator

The NSS is developing tools that will allow the disaggregation of cause-specific mortality data by Poverty and Welfare quintiles within each of the Ministry of Health and district council run sites. This should permit more accurate and informative assessments of the relationship between mortality and poverty.

Infant mortality rate (IMR) (Indicator 19)

Introduction

The Infant Mortality Rate measures the probability of a child dying before its first birthday. It is an outcome indicator that reflects a county's level of socio-economic development and quality of life and is commonly used to assess overall performance of the health sector. The Poverty Reduction Strategy Paper includes the target - *to reduce IMR from 99 per 1,000 in 1999 to 85 per 1,000 in 2003, 50 per 1,000 in 2010 and 20 per 1,000 by 2025.*

Sources of data

There are two sources of data for this indicator. The National Sentinel Surveillance (NSS) system and the Tanzania Reproductive and Child Health Survey (TRCHS). The NSS has a continuous, active mortality reporting system operating in selected areas of Tanzania. The number of live births is determined by annual or semi-annual enumeration of the population in these areas. The data presented here are for 1999.

The TRCHS is a survey that is conducted every 4 to 5 years and produces data that represent the mortality of children over the five years before the survey. The data presented here are for the period 1995-1999.

Data quality

NSS The continuous mortality reporting system is likely to under-estimate neonatal deaths and some perinatal deaths. An assessment of under-reporting of births, especially for children who die between enumeration rounds, has been made and correction factors for this have been developed and applied to the rates reported here.

TRCHS The NBS states that examination of the data did not indicate that there were any serious biases in reporting.

Baseline data

The estimated IMR at the national level is 99 per 1,000 live births (World Population Data Sheet, 2001). NSS estimates show that infant mortality is both high in absolute terms (48 to 113 per 1,000 live births) and inequitably distributed. Unadjusted estimates for IMR indicate that the PRSP target of 85 per 1,000 live births may already be attained in many areas.

The infant mortality ratios for urban and rural areas of Tanzania are shown in table 16.

Table 16: Infant mortality rate (IMR) per 1,000 live births

Site	NSS (1999)	TRCHS (1995-1999)
Urban	48.5	87.3
Rural		113.0
Affluent rural	61.6	
Poor rural	79.9	

Discussion

The TRCHS 1999 report gives a strong warning about the difficulty of obtaining and comparing IMRs. In particular there are large intervals around figures that come from survey methods. The NSS infant mortality rates may be an under-estimate. The 2002 National Census will provide a good indication of IMR and an opportunity to compare with NSS estimates. If the NSS estimates of IMR prove to be robust then Tanzania can be said to be progressing well on this indicator.

Future developments of the indicator

Further development of the NSS will improve the reliability of this indicator. Reliability issues notwithstanding, in future editions of this profile it will be possible to disaggregate this indicator within each of the sites by poverty quintile.

Maternal Mortality Ratio (Indicator 20)

Introduction

One of the priorities of the Ministry of Health is the provision of care for women during and after pregnancy and childbirth. The safer motherhood intervention forms an important element of services that are delivered. Measuring the number of maternal deaths through surveys is one way of monitoring performance although estimates are not easy to make due to the relatively rare occurrence making sample size requirements very high. The NSS sites provide a different way of obtaining estimates. The target outlined in the Poverty Reduction Strategy Paper is - *to half MMR from 529 per 100,000 live births to 265 per 100,000 live births by 2010.*

Sources of data

There are two sources of data for this indicator. The National Sentinel Surveillance (NSS) system and the Tanzania Demographic and Health Survey (TDHS). The NSS has a continuous, active mortality reporting system operating in selected areas of Tanzania. The number of live births is determined by annual or semi-annual enumeration of the population in these areas. The data presented here are for 1999.

The TDHS data are from the 1996 survey and were collected using the 'Sisterhood' method. These data represent the mortality of women over the period 1987 to 1996.

Data quality

NSS Estimation of the number of deaths due to maternal mortality is thought to be good, although the total numbers of women dying from maternal mortality in these areas in one year are relatively small and these ratios must therefore be treated with some caution. As discussed in Indicator 19, births are likely to be under-reported by the Ministry of Health and district council managed sites and adjustment factors have been determined for this. These adjustment factors have been applied in the data presented in this profile.

TDHS As with the NSS data, the TDHS rate is based on a relatively small number of deaths and must be treated with some caution. The TDHS 1996 report states that comparison of mortality rates with the 1988 National Census suggests that there was some under-reporting of adult mortality and therefore this maternal mortality ratio may also be an underestimate.

Baseline data

The maternal mortality ratios for urban and rural areas of Tanzania are presented in table 17.

Table 17: Maternal Mortality Ratio (MMR) per 100,000 live births

Site	NSS (1999)	TDHS (1987-96)
Tanzania		529
Urban	563.5	
Affluent rural	326.4	
Poor rural	731.1	

Discussion

Maternal mortality ratios are notoriously difficult to calculate accurately. These data indicate that there is considerable variation in maternal mortality ratios in Tanzania. The data also show that maternal mortality is more likely among poor rural women than wealthier women in rural areas and women in urban areas.

The NSS ratios for 1999 are considerably lower than the ratios for previous years with much variation between the years. Detailed analysis of these data suggest a strong relationship with the education of the household head after controlling for other factors such as place of birth and some indicators of socio-economic status (ref: AMMP Maternal Morality paper (submitted for publication)).

Future developments of the indicator

The NSS will examine the use of small area analysis to disaggregate this indicator by poverty welfare quintiles.

Proportion of deaths to women of child-bearing age due to maternal causes (Indicator 21)

Introduction

The death of a woman during pregnancy or due to other causes is a tragedy. It is important to get a measure of the causes of death among women of reproductive age and to understand the proportion due to maternal deaths.

Sources of data

Under the National Sentinel Surveillance (NSS) system Ministry of Health and district council managed sites conduct continuous active mortality surveillance in which the bereaved family of any resident who dies is interviewed in order to determine a probable cause of death.

Data quality

The NSS is confident that it is able to ascertain most adult deaths. The probable cause of death is subject to potential misclassification errors, although a rigorous triple-coding procedure helps to reduce this. Work is underway to validate the assignment of probable cause of death.

Baseline data

The 1999 NSS data show that maternal deaths account for less than 7% of all deaths. This is slightly lower than in previous years.

Table 18: Percentage of deaths due to maternal mortality

Site	Percentage of deaths due to Maternal Mortality (%)
Urban	5.2
Affluent Rural	5.1
Poor Rural	6.8

Discussion

The proportion of deaths due to maternal causes is relatively small indicating that many women of child-bearing age die from other causes.

Future developments of the indicator

As with other indicators that come from the NSS, subsequent editions of the Profile will include data from more sites representing more parts of Tanzania. The data will also be disaggregated within sites by Poverty Welfare quintile.

Proportion of children under-one with severe malnutrition (Indicator 22)

Introduction

Nutritional status of young children is an important determinant of well-being and children who are severely malnourished are at far greater risk of illness and death than those who are well nourished. Three anthropometric measures are used to determine nutritional status and severe malnutrition is judged to occur among those with measurements that are below minus three standard deviations from the median of the reference population. The Poverty Reduction Strategy Paper has set the target: to reduce prevalence of stunting from 43.4% to 20%. This target refers to the percentage of children that fall below minus two standard deviations for height for age.

Sources of data

The main source of nutritional data is the TRCHS 1999

Quality of Data

TRCHS The NBS states that examination of the data did not indicate that there were any serious biases in reporting.

Baseline data

Based on 1999 data for nutritional status of under one year olds: 5.5% were severely stunted, 0.4% were severely wasted and 3.9% were severely underweight.

Table 19: Percentage of children under one year of age with malnutrition

Index	1999	TRCHS
Height-for-age		
<-2SD	23.2	Stunted
<-3SD	5.5	Severe stunting
Weight-for-height		
<-2SD	5.8	Wasted
<-3SD	0.4	Severe wasting
Weight-for-age		
<-2SD	21.5	Underweight
<-3SD	3.9	Severely underweight

Discussion

Data collected on the nutritional status of children under 1 years of age in the 1999 TRCHS show a marginal improvement to those obtained in the 1996 TDHS, particularly with respect to wasting and underweight. Although, it is very likely that these data conceal substantial differences/variations, particularly for those children living on and/or below the poverty line and those children who come from wealthier households.

Future developments of the indicator

Move towards disaggregated data by age, urban/rural, head of household and poverty quintile.

Proportion of under-five children with severe malnutrition (Indicator 23)

Introduction

The nutritional status of children is an important determinant of well-being and children who are severely malnourished are at far greater risk of illness and death than those who are well nourished. Children's nutritional status is determined by a number of interrelated factors, including the political situation, biological aspects, educational issues, food security and cultural aspects. Thus, the nutritional status of children can reflect the socioeconomic development of an individual family, community or country.

Three anthropometric measures are used to determine nutritional status and severe malnutrition is judged to occur among those with measurements that are below minus three standard deviations from the median of the reference population. The Poverty Reduction Strategy Paper has set the target: to reduce prevalence of stunting from 43.4% to 20%. This target refers to the percentage of children that fall below minus two standard deviations for height for age.

Sources of data

The main source of nutritional data is the TRCHS 1999

Quality of data

TRCHS The NBS states that examination of the data did not indicate that there were any serious biases in reporting.

Baseline data

Based on 1999 data on nutritional status of under 5 year olds: 17.1% were severely stunted, 0.6% were severely wasted, 6.5% were severely underweight.

Table 20: Percentage of children under 5 year of age with severe malnutrition

Index	1999	
	TRCHS	

Height-for-age		
<-2SD	43.8	Stunted
<-3SD	17.1	Severe stunting
Weight-for-height		
<-2SD	5.4	Wasted

<-3SD **0.6 Severe wasting**

Weight-for-age

<-2SD 29.4 Underweight

<-3SD **6.5 Severely underweight**

Table 21: Percentage of children with indications of severe malnutrition in urban and rural areas of Tanzania.

Site	Height for age	Weight for height
	stunting - severe stunting	severe for wasting
	(%) Urban	(%) Rural
H-A	7.7	19.1
W-H	0.4	0.7
W-A	4.9	6.8

Discussion

Data collected on nutritional status of children under 5 years of age in the 1999 TRCHS are similar to those obtained in the 1991/2 TDHS and 1996 TDHS. The level of stunting (height-for-age) has remained around 43% for children under 5 years. Data for underweight and wasting are also stable during this period. It is likely that these data mask some substantial differences especially between children living in poverty and those who are from wealthier households.

Future developments of the indicator

The Poverty Reduction Strategy Paper target is more specific than the definition used in this profile for this indicator. This indicator talks about severe malnutrition, which is defined as less than -3 standard deviations from the median, while the Poverty Reduction Strategy Paper target talks about stunting without specifying whether or not it means severe.

Proportion of all under-five case fatality that is due to malaria (Indicator 24)

Introduction

Malaria is the leading cause of morbidity and mortality among children under 5 years of age and the Ministry of Health has made treatment and control of malaria a highest priority. The wider importance of malaria in terms of its impact on households and communities is increasingly recognised. The Poverty Reduction Strategy Paper target is - to reduce malaria case fatality rate for under five children from 12.8% to 10% by year 2003.

Sources of data

HMIS - OPD data gives the number of cases of malaria seen at each facility while the IPD data can give the number of cases admitted with malaria and the number of those admissions that died. This data will still not give the number of actual cases in the community. The IPD data were not available for inclusion in this profile.

NSS – NSS is only able to provide mortality figures for deaths to children under-five due to acute febrile illness (although most assumed to be malaria). However, this is not case fatality but does provide a general guidance/indication to the burden of malaria of under-fives.

Data quality

HMIS - Diagnosis is based on a mixture of methods and is made by different cadres of health personnel. At one extreme the diagnosis will be from a hospital, made by a medical officer and supported with a positive blood slide. At the other the diagnosis might be made by a nurse or clinical officer based in a dispensary using clinical judgement with no access to laboratory facilities. The accuracy of diagnosis of malaria is likely to be mixed.

NSS - Misclassification of probable cause of death is possible. NSS has a triple-coding scheme to reduce this (see Misclassification Paper and VA validation study).

Baseline data

Not currently available.

Number of reported HIV/AIDS IEC interventions (Indicator 25)

Introduction

A PRSP indicator

Source of data

Methodology needs to be developed

Data quality

Baseline data

No data available

Discussion

Future development of the indicator

Prevalence of HIV infection among antenatal clinic attendees (Indicator 26)

Introduction

The Tanzania Commission for AIDS (TACAIDS) has been established to provide leadership and coordination of the multisectoral approach to tackling the HIV/AIDS epidemic. A new multisectoral policy guideline is now in place. One of the key specific objectives outlined in the national policy (November 2001) is the prevention of transmission of HIV/AIDS. The importance of HIV/AIDS and its impact on all parts of Tanzanian society is recognised in the PRSP.

Source of data

National AIDS Control Programme, HIV/AIDS/STI Surveillance Report (January - December 2000).

Data quality

A total of 6,505 antenatal clinic attendees were recruited from 28 sites for the year 2000.

Baseline data

The prevalence of HIV infection from various antenatal clinic sentinel surveillance sites throughout the country ranged from 4.2% in one site in Mwanza to 32.1% in Iringa.

The prevalence is by site and there is no overall national figure.

Discussion

A total of 11,673 AIDS cases were reported to the NACP from the 20 regions in 2000. NACP estimates that only 1 out of 5 were reported and that a cumulative total of 660,000 AIDS cases have occurred since the beginning of the epidemic.

Future development of the indicator

Efforts are underway to improve AIDS monitoring in Tanzania and an appropriate indicator will be selected/proposed on this basis for the Public Sector Performance Profile.

Methodology

Sources of Data Collection

Health Utilisation Data

The Health Management Information System (HMIS) was initially developed in the late 1970s when surveillance was introduced for four specific diseases into the health sector. However, as the demand for health information grew, a facility-based data collection system, focusing on attendance and disease data was introduced around the mid-1980s.

During the early 1990s, data collection was further modified in the light of the need to integrate the various information systems that had been established in the interval into one overall system. Furthermore, it was also felt that other basic information from health facilities needed to be incorporated. Thus, a new information system called the MTUHA (Mfumo wa Taarifa za Uendeshaji wa Huduma za Afya) or the Health Management Information System was introduced

This system was further updated in the late 1980s to become MTUHA Version 2 and it included new registers and there were also some changes in the format of some reporting forms. The timing of reporting was also switched from a monthly basis to a quarterly basis (the health facilities themselves still continued to report on a monthly basis), and a new computer software package was also introduced at the national and regional level.

The system is currently operating in all government facilities and some sections of the private health facilities.

Table 22: Percentage of facilities using all applicable MTUHA registers regularly

Facility	Government	NGO/Private
Hospitals	88	87
Health Centres	94	86
Dispensaries	87	77

Table 23: Percentage of facilities compiling all applicable MTUHA data tables regularly

Facility	Government	NGO/Private
Hospitals	12	23
Health Centres	8	16
Dispensaries	17	11

Source: TRCHS 1999, Health Facility Survey, Preliminary Report

The tables above show that the MTUHA registers are regularly used in Government facilities (90%) and NGO/Private facilities (83%). However, a significant problem appears to be found in the consolidation of information at facility level for forwarding to the districts, regional and national level.

A number of reviews of the HMIS have been conducted. The most recent study is the HERA study, which was conducted in 2000, and identified a number of key problems with the current HMIS including: low use of data; inadequate access to data; some information bypassing decision-makers; low initiative for using data; weak analysis; poor preparation of data for use; information-related efforts seen as a burden; HMIS unit not able to contribute effectively to policy and planning.

AMMP

Another source of data is the Adult Morbidity and Mortality Project (AMMP). The second phase of AMMP (AMMP-2) is a project of the Tanzanian Ministry of Health, funded by the Department for International Development (UK), and implemented in partnership with the University of Newcastle upon Tyne (UK). Within the context of health sector reform, the purpose of the project is to strengthen evidence-based policy and planning and the development of cost-effective health services at both the national and district levels. AMMP-2 currently supports the Ministry of Health and local councils to manage three demographic surveillance sites. These sites form the nucleus of a National Sentinel System for health and poverty monitoring (NSS) which is being established within the Ministry.

Financial Information

Financial information on the public health sector is accessed from a number of different sources and can be categorised into three broad areas: Government of Tanzania Funds, Foreign Partner Funds and other funding sources¹. This can be further sub-categorised as follows:

- **Government of Tanzania:** Ministry of Health, President's Office, Regional Administration, and Local Government
- **Foreign Partner Funds:** Basket Funds, Non-Basket Funds and Off-Budget Funds
- **Other funding sources:** Cost-Sharing Funds (includes Community Health Fund and User Charges).

Human Resources

Current data on all personnel working in the health sector is not presently available at the central Ministry of Health. Information may be obtained from the nominal roll but this would be very basic information (Name, Number, Location, cadre) and it would only cover those personnel under the direct responsibility of the Ministry of Health, i.e., Central Ministry, National Health Programmes, National Referral Hospital and national training institutions. In addition, it is also unclear how accurate and up-to-date such information may be. The Public Sector Reform Programme (PSRP), in the Civil Service Department, is in a position to provide information on the entire health workforce structure, broken down by skills, age, gender and employer (regional,

local government), using the central GoT payroll. The Department of Human Resources is currently in the process of finalising a personnel database system, however, it is still unclear how this will be linked to the ongoing work which is being conducted by the PSRP.

Surveys

Surveys that were accessed included the Tanzania Demographic Health Survey (DHS) 1996 and Tanzanian Reproductive Child Health Survey (TRCHS) 1999. The DHS 1996 was a nationally representative survey of 8,120 women age 15-49 and 2,256 men age 15-59. Its main purpose was to provide information on fertility, family planning, infant and child mortality, maternal and child health and nutrition, knowledge and attitudes of AIDS, and female circumcision. The TRCHS 1999 was a nationally representative sample survey covering 4,029 women aged 15-49 and 3,542 men aged 15-59. Its main function was to provide information on levels and trends of fertility, family planning knowledge and use, infant and child mortality, and indicators of maternal and child health and nutrition.

Poverty Welfare Indicators

There are currently no estimates of poverty at the district level for Tanzania that cover the entire country. The most recent regional estimates come from the 1999 Poverty Welfare Indicators report of the Vice President's Office. Table 24, Appendix 1 lists the poverty-welfare quintiles for all of Tanzania's 20 mainland regions and divides them into quintiles.

For the purposes of this exercise, we have applied these welfare rankings to the available data. We recognise that this assumption of representativeness is crude and must be interpreted with caution.

Once reliable measures of income (or other) poverty measures become more widely available, it will be possible to generate estimates for all poverty welfare quintiles, and to adjust for confounding variables or area effects. The release of the National Household Budget Survey, and the poverty proxy information to be included in the 2002 National Census will also be of great use in this regard.

Appendices

Appendix 1

Regional Poverty and Welfare Ranking

Table 24

Quintile	Region	Food Security	Unemployment	GDP per Capita	Female illiterate Rate	Gross Enrolment (prim. School)	Health Status	Health Services	Nutrition level
1	1. Dodoma	3	18	3	7	6	2	11	10
	2. Kagera	10	15	1	11	4	1	5	3
	3. Lindi	5	6	10	8	2	4	18	6
	4. Kigoma	6	4	2	4	4	10	9	15
2	5. Coast	4	5	7	3	9	9	13	11
	6. Morogoro	2	8	8	14	14	7	13	7
	7. Mara	7	9	6	15	18	3	7	2
	8. Tanga	1	3	5	16	12	13	13	17
3	9. Mtwara	9	11	9	8	13	8	12	9
	10. Rukwa	18	14	19	5	3	5	2	5
	11. Arusha	8	7	18	11	7	17	2	14
	12. Mwanza	14	18	14	6	10	10	9	8
	13. Iringa	11	20	17	17	17	5	13	1

4	14. Mbeya	15	12	11	13	15	10	7	12
	15. Shinyanga	16	13	15	1	7	16	1	18
	16. Tabora	17	17	12	2	1	18	4	19
5	17. Singida	12	19	13	10	10	19	5	12
	18. Kilimanjaro	13	2	4	20	20	20	20	16
	19. Ruvuma	19	10	16	18	15	15	19	3
	20. DSM	20	1	20	19	19	13	13	20

Appendix 2

Population Projections – Tanzania 1990, 1995 and 2000

Assumptions

Introduction

Population projections though an indispensable input for planning, are invariably subject to some degree of uncertainty. Bougeois-Pichat underlines this aspect of projection in a statement which is difficult to improve upon: 'Population projections, in fact, may be obsolete as soon as they are published, so unpredictable is demographic behaviour of populations and so much does it challenge the wisdom of demographers'. The uncertainty applies to developed as well as developing countries, though perhaps not for identical reasons. One major factor contributing to the uncertainty in the context of Tanzanian projections is that the knowledge of basic parameters can at best be described as scanty. For instance HIV/AIDS assumptions should be incorporated in the projection but this information is far back incomplete, only hospital cases are available. Under mortality assumptions, we normally use North model rather than African model for the life table even though the population distribution of Tanzania follow the pattern of North model.

Base Year Population – mid-year 1988

The 1988 population census was carried out in last Sunday of August 1988. In doing projections the 1988 population census was adjusted to June 1988 to make mid-1988. Exponential population growth formula was used to adjust the base population.

$P_t = P_o e^{rt}$ where

P_t = adjusted mid 1988 population

P_o = August 1988 population census

r = inter-censal growth rate

t = time from 28/29 August 1988 to 30th June 1988

Medium Variant

Mortality Assumptions

It was assumed that the mortality level is still moderately high and it was assumed that the mortality level will remain constant throughout the projection period.

Fertility Assumptions

The observed level of fertility (TFR) from the 1988 population census (6.5 children per woman) was assumed to remain constant for five years. The remaining level of fertility was assumed to be moderately declining by a factor of 0.03 from 6.5 children per woman in 1988 to 5.3 children per woman by year 2000.

Migration Assumptions

International migration was assumed to be zero.

The observed age pattern of fertility is assumed to remain constant throughout the projection period.

Source: National Bureau of Statistics (NBS)

Bibliography