

B. HEALTH

Several new sources of information about health, nutrition and HIV have been made available since the last PHDR, including new analyses of data from the 2002 population census, data from the 2003 HIV/AIDS indicator survey, the first in Tanzania to provide nationally representative data on HIV, and the 2003/04 demographic and health survey. They provide new information about progress towards national goals and targets and about geographic and other disparities in indicators of these development outcomes. They are summarised in the table below.

Table 10. Health indicators, Tanzania Mainland, 1999-2004.

Indicator	%	Year					Targets	
		1996	1999	2002	2003	2004	PRS 2003	MKUKUTA 2010
Infant mortality rate ²⁶ (per 1000 live births) DHS Census		88	99	95		68	85	50
Under-five mortality rate ²⁶ (per 1000 live births) DHS Census		137	147	162		112	127	79
Life expectancy at birth Female Male		52 (1988)		51 52 50				
Children 12-23 months immunised against: Measles TRCHS/DHS EPI ²⁷		81	78 72	89		80 94	85	
DPT (3) TRCHS/DHS EPI ²⁷		85	81 76	89		86 94		
Prevalence of stunting in under-fives		44	44			38		20
Prevalence of wasting in under-fives		7	5			3		2
HIV prevalence among pregnant women ANC surveillance THIS				9.6	6.8			5

Table continued on next page

²⁶ Data recorded according to year of data collection, but for mortality data this refers to a number of years preceding the survey; e.g. the infant and under-five mortality rates refer to the number of infant and under-five deaths during the 5 years preceding the survey for the DHS, and 3 years preceding the census.

²⁷ EPI = Expanded Programme of Immunisation, Ministry of Health (routine data system)

Table 10. Health indicators, Tanzania Mainland, 1999-2004 (continued).

Indicator	%						Targets	
		1996	1999	2002	2003	2004	PRS 2003	MKUKUTA 2010
HIV prevalence among men and women aged 15-24								
THIS								
Overall					3.5			
Male					3.0			
Female					4.0			
Blood donor estimates								
Overall			7.7	7.7	6.7			
Male			6.7	7.0	6.0			
Female			10.9	10.1	9.0			
Knowledge of HIV/AIDS transmission (THIS)								
AIDS virus can be transmitted to a child through breastfeeding								
Male					63.0			
Female					69.3			
With comprehensive knowledge ²⁸								
Male					54.2			
Female					46.3			
Maternal mortality ratio (per 100,000 live births)		529				578		265
Coverage of births attended by trained personnel ²⁹			36			46		80
Births taking place in health facility			44			47		
Population within 5kms of a health centre or dispensary		(1991/92)	(2000/01)					
Dar es Salaam		95	96					
Other urban		89	98					
Rural		77	68					
Tanzania Mainland		79	75					
Population within 10kms of a hospital		(1991/92)	(2000/01)					
Dar es Salaam		96	97					
Other urban		89	98					
Rural		45	36					
Tanzania Mainland		51	47					

Sources: NBS/Macro International 1996, TDHS 1996; NBS/Macro International 1999, TRCHS 1999; NBS/Macro International 2005, TDHS 2004/5; NBS 1993; HBS 1991/92; NBS 2002, HBS 2000/01; TACAIDS/NBS/Macro International 2005, THIS 2003-04.

²⁸ Comprehensive knowledge means knowing that consistent use of condoms and having just one uninfected, faithful partner can reduce the chance of getting the AIDS virus; knowing that a healthy-looking person can have the AIDS virus; and knowing that HIV cannot be transmitted by mosquito bites or by sharing food with a person who has AIDS.

²⁹ In the 2002 and 2003 P&HDR the concept of 'skilled' birth attendant was defined as a doctor and/or nurse/trained midwife. The preliminary 2004 TDHS defines a 'health professional' as Doctor/AMO, clinical officer, assistant clinical officer, nurse/midwife or MCH aide.

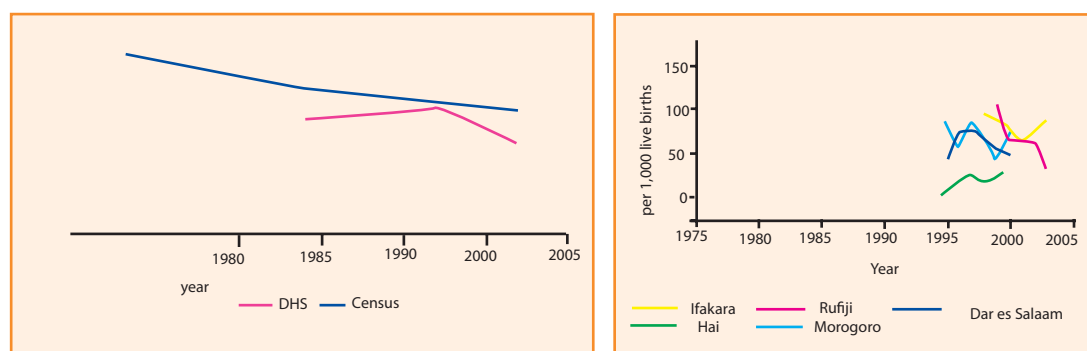
INFANT AND CHILD MORTALITY

The previous Poverty and Human Development Report (2003) reported stagnation in the decline of infant and child mortality in the late 1980s and up to the mid 1990s, followed by a slight increase in mortality thereafter (R&AWG 2003:30).³⁰ This increase was largely due to an increase in neonatal mortality, especially in urban areas, and was attributed to the increased prevalence of HIV/AIDS.

Analysis of data from the 2002 population census and more recent survey data, however, point to a reduction in mortality, with a particularly sharp drop in the most recent few years. Indirect estimates from census data show a decline in infant and under-five mortality rates during the period 1978 to 2002. Infant mortality fell from 137 to 95 per 1,000 live births, and under-five mortality from 231 to 162 per 1,000 live births. The trend generated by the preliminary 2004/05 DHS survey data is particularly optimistic. From the 1999 and 2004/05 surveys, infant and under-five mortality declined from 99 to 68 and from 147 to 112 per 1,000 live births, respectively. Much of this decline is likely to be the result of improved malaria control – both increased use of preventive mosquito nets (detailed in the following section) and improved curative care through a more effective drug treatment. According to these estimates, both infant and child mortality rates have surpassed the 2003 PRS targets and if this decline can be sustained, the MDG targets for 2010 are within reach.

On the whole, available data from surveillance sites confirm the declining trend in infant and child mortality in recent years. Between 1995 and 2000, AMMP (Adult Mortality and Morbidity Project) data showed a decline in infant mortality of between 11 and 15 per cent in two of the three sentinel sites (Dar es Salaam and Morogoro Rural) (MoH/AMMP 2004) (see also Figure 8). Rufiji demographic surveillance site showed a 32 per cent decrease in infant mortality between 1999 and 2002 (PHDR 2003:33). Both surveillance systems show a comparable decline in child mortality rates. Surveillance data from Ifakara, on the other hand, suggest little change in infant mortality but an increase in child mortality from 1997 to 2003. As observed in Figure 8, surveillance data show a fluctuating trend, mainly due to the small number of observations that are subject to random annual fluctuations.

Figure 8. Infant mortality estimated from different sources



Source: NBS DHS 1991/92-2004, NBS Census 2002, AMMP, 2003 and Ifakara 2005

³⁰ Quoting DHS data from 1987-92, 1991-96 & 1994-99.

The introduction of evidence-based planning as part of the Tanzania Essential Health Interventions Project (TEHIP)³¹ is largely responsible for the impressive decline in child mortality rates - by over 40 per cent - in the two districts of Rufiji and Morogoro. Interventions adopted included IMCI (Integrated Management of Childhood Illnesses)³², syndromic management of sexually transmitted infections, safe motherhood initiative, treated bed nets, and TB treatment.

Census data from 2002 suggest considerable geographic variation in mortality rates. Regionally, infant and under-five mortality ranged from 41 and 58 deaths per 1,000 live births in Arusha, to 129 and 217 in Lindi. More disaggregated information about districts is provided in the next chapter. In summary, infant mortality ranged from 31 in Ngorongoro (Arusha region), to 148 deaths per 1,000 live births in Ruangwa (Lindi region). Compared to infants and under-fives in urban areas, those in the rural areas had higher mortality rates per 1,000 live births: for infants, 78 versus 99, and for under-fives, 123 versus 162. These urban/rural differences are confirmed by the 2004 demographic and health survey.

Surveillance data from Ifakara indicate that as expected, infants and under-fives of the poorest mothers had a higher probability of dying compared to those of mothers from the least poor quintiles.³³ The gap in infant mortality however, appears to be closing. Infant mortality in the poorest quintile showed a steady decline from 130 per 1,000 live births in 1997, to 84 in 2003. In contrast, infant mortality in the least poor quintile seemed to fluctuate in the same time period, with an observed slight increase from 50 to 67 per 1,000 live births. The ratio of infant mortality in the lowest quintile to the highest quintile dropped from 2.6 in 1997 to 1.25 in 2003.³⁴ The respective ratio for Mainland Tanzania for the period 1996 to 1999 was 1.25 (TRCHS/DHS, 1999).

MALARIA MORTALITY AND MORBIDITY

Malaria is one of the most important causes of morbidity and mortality in infants and under-fives. The PRS indicator intended to reflect the burden of mortality due to malaria is based on information obtained from hospitals. Unfortunately, the Health Management Information System (HMIS) has not been able to provide it. Therefore, as in the 2003 PHDR, this section is based on population-based information obtained from demographic surveys and surveillance sites.

The 2004 TDHS data indicate that the percentage of under-fives reported to have had fever in the two weeks prior to the survey, a proxy indicator for malaria, declined from 35 per cent in 1999, to 23 per cent in 2004. Further, 58 per cent of under-fives with fever were given anti-malarial drugs, and there was little urban-rural difference (65 per cent versus 57 per cent).

The proportion of child deaths due to malaria/acute febrile illness, between 1993-1995 and 2000-2002, shows a slight decline in the three AMMP sentinel areas, ranging from 0.3 per cent in Morogoro to 7.0 per cent in Dar es Salaam (MoH/AMMP 1, 2004: 42). Ifakara data also suggest a decline in child deaths due to malaria or acute febrile illness: from 10.4 per

³¹ In addition to improving health workers' performance to effectively deliver the interventions, along with small funding increases – US\$1 per capita, simple user-friendly tools were introduced around 1997 to allow decentralized planners to incorporate burden of disease into their work in a manageable and practical way (de Savigny et al, 2004).

³² Evidence from a study undertaken by Armstrong et al, 2004 suggests child mortality levels to be 13 per cent lower in the IMCI districts, than in comparison districts. IMCI was associated with 3.8 fewer deaths per 1,000 child years.

³³ IFAKARA DSS, 2005 unpublished

³⁴ Rufiji surveillance data also suggest a decline in under-five mortality rates between 1998 and 2000 for the better off as well as the poorest quintiles, though there are variations in improvement levels between the quintiles (Msechu and Mtenga 2005).

1,000 person years in 2000, to 3.7 per 1,000 person years in 2003.

Consistent use of bed nets, especially treated ones, is a key preventive measure in reducing malaria transmission. The proportion of households owning bed nets has increased from roughly 25 per cent nationally in 1999 (TRCHS 1999), to 46 per cent in 2004 (TDHS 2004/05). Even though, in comparison to rural households, roughly twice the proportion of urban households owned a bed net (74 per cent versus 36 per cent), there was little difference in the percentage of under-fives reported to have slept under a net (38 per cent versus 36 per cent). Regarding use of nets by pregnant women, according to the 2004/5 survey data, roughly 33 per cent had reportedly slept under a net, and 11 per cent under a treated net, the night before the survey.

Data from the National Malaria Control Program also suggest an increase in under fives sleeping under nets, and in particular those sleeping under treated nets. Bed net use increased from 46 per cent in 2001 to 53 per cent in 2003, and the use of treated nets increased from 15 to 26 per cent over the same time period (Joint Health Sector Review Meeting 2005).

The rollout of the Tanzania National Voucher Scheme (TNVS)³⁵ may further accelerate the use of treated nets in pregnant women and children under five. Effectively reaching out to all pregnant women, and especially the poorest, is a prerequisite to the success of the national voucher scheme.

CHILD IMMUNISATION

Tanzania continues to have high levels of child immunisation compared to other sub-Saharan countries. As shown in Figure 9, survey data indicate that the coverage of both DPT3 and measles vaccinations have returned to 1996 levels after a slight decline in 1999. The 2004 coverage rates are 80 per cent for measles and 86 per cent for DPT3, exceeding the 85 per cent DPT target that was set for 2003. In general, compared to the rural areas, coverage levels for both vaccinations is higher by about 10 percentage points in the urban areas. Available routine EPI data, on the other hand, show not only a slight continued improvement in the coverage of both DPT3 and measles vaccinations, but also at much higher levels. EPI's reported 2004 immunisation levels for both DPT3 and measles reached 94 per cent. Since EPI estimates are based on community assessments of the numbers of children, it is likely that the denominator is underestimated and therefore coverage rates overestimated.

Regional variations in DPT3 immunisation range from full coverage in the Eastern regions of Mtwara, Kilimanjaro and Morogoro, to less than 80 per cent in parts of western Tanzania, such as Rukwa, Tabora, Shinyanga and Mara. Map 1.1 shows the regional pattern of child immunisation. A somewhat similar pattern is observed when looking at measles, ranging from close to full coverage in Iringa and Kilimanjaro (above 95 per cent), to less than roughly 80 per cent in Mbeya, Tabora, Shinyanga and Mara. Generally, regions located in the Southeast tend to have better coverage of DPT3 and measles vaccination than those in the Northwest.

³⁵The Scheme provides discount vouchers to all pregnant women attending antenatal clinics to purchase treated nets at a minimal cost. Recent figures from the Malaria Control Programme suggest that over 75 per cent of women who received a voucher used it to purchase an ITN (NATNETS Programme Tanzania, 2005).³⁵

Map 1.1 Child Immunisation by Region, 2004

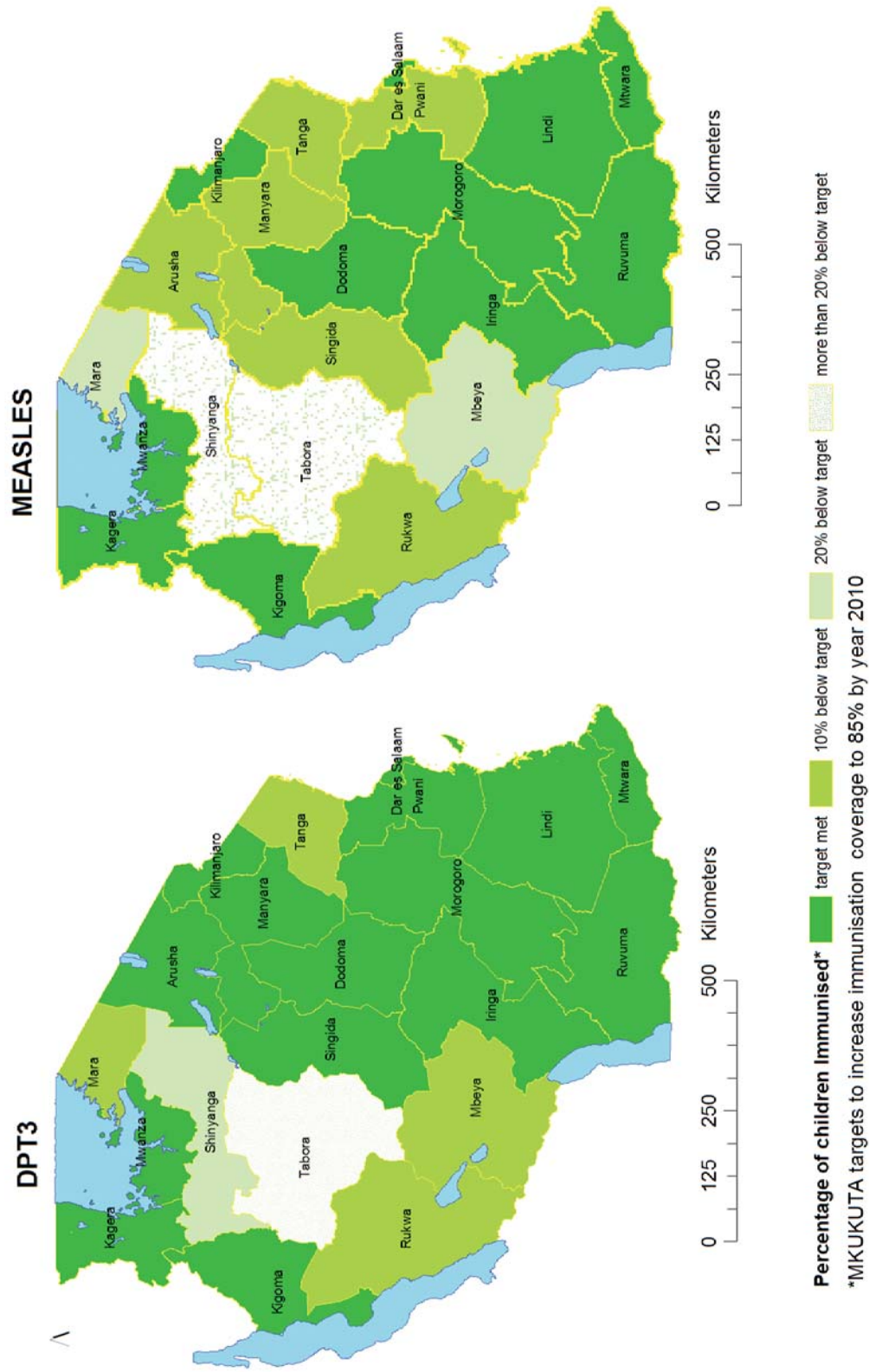
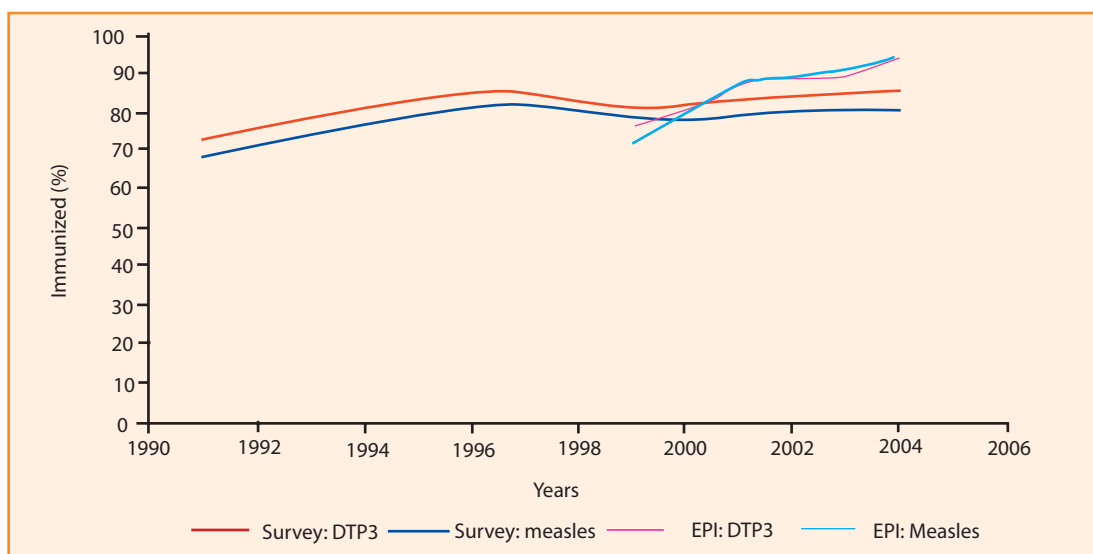


Figure 9. Immunisation coverage, 1991-2004



Source: NBS, Macro 1992, 1996, 1999 and 2004/05 and Ministry of Health 2003-2005

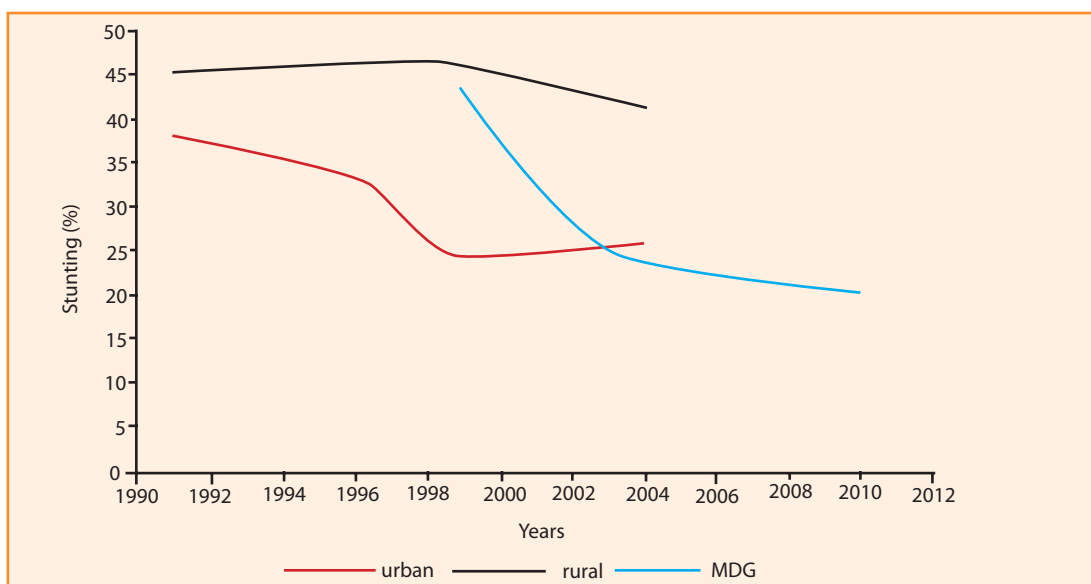
CHILD NUTRITION

Malnutrition continues to be a major cause of morbidity and mortality in under-fives in Tanzania. This is likely to be caused by inappropriate feeding practices and repeated incidences of childhood illnesses. Malnutrition starts with low birth weight, itself a manifestation of poor maternal health.

At the national level, under-five nutrition status did not change during the 1990s (DHS surveys). There is an improvement from 1999 to 2004, though this is much less substantial than the recent reductions in child mortality. The prevalence of stunting went down from 44 per cent in 1999 to 38 per cent in 2004. Wasting dropped from 5 per cent to 3 per cent during the same time period. Surveillance data from Rufiji and Ifakara also suggest a decrease in moderate and severe stunting in under-fives. From 1999 to 2002 the prevalence of stunting decreased from 42 to 32 in Ifakara, and from 44 to 34 in Rufiji.

It is the declining stunting rate in rural children which accounts for the recent improvements observed at the national level. Between 1999 and 2004, the prevalence of stunting in the urban areas increased slightly to 26 per cent. Rural rates on the other hand, declined from 48 per cent to 41 per cent in the same time period (see Figure 9). However, given the current still high rural rates, it is unlikely that Tanzania will reach the target of 20 per cent stunting set for 2010.

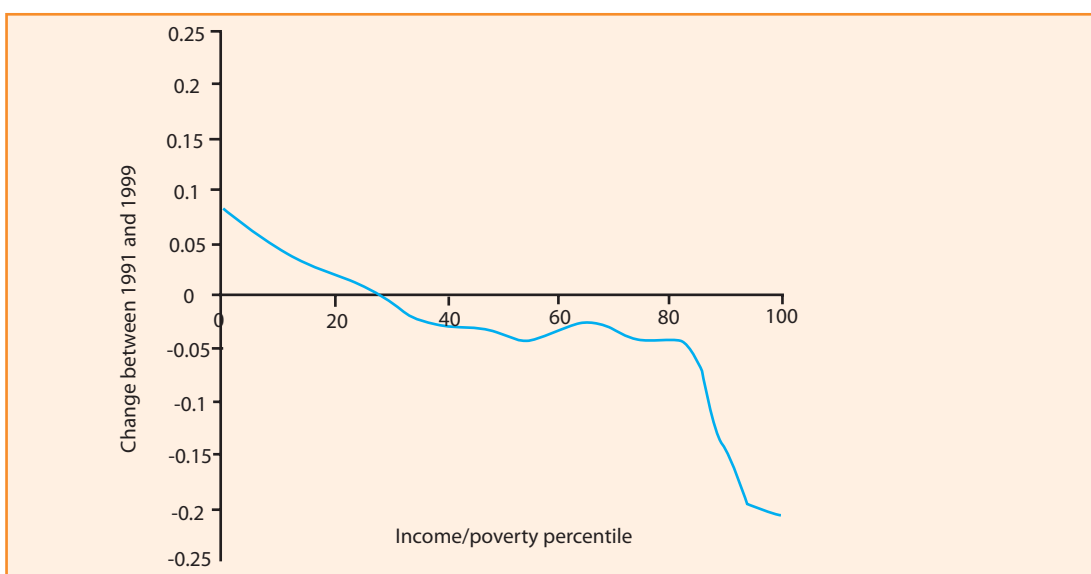
Figure 10. Prevalence of stunting in urban and rural areas, 1991-2004.



Source: DHS, 1991/92-2004

Findings of a recent study undertaken by REPOA³⁶ indicate a widening gap between the poorest and least poor between 1991/92 and 1999: an increase of roughly eight per cent in prevalence of stunting in children from the poorest households, and a large decrease of about 20 per cent in those from the least poor households (see Figure 11).

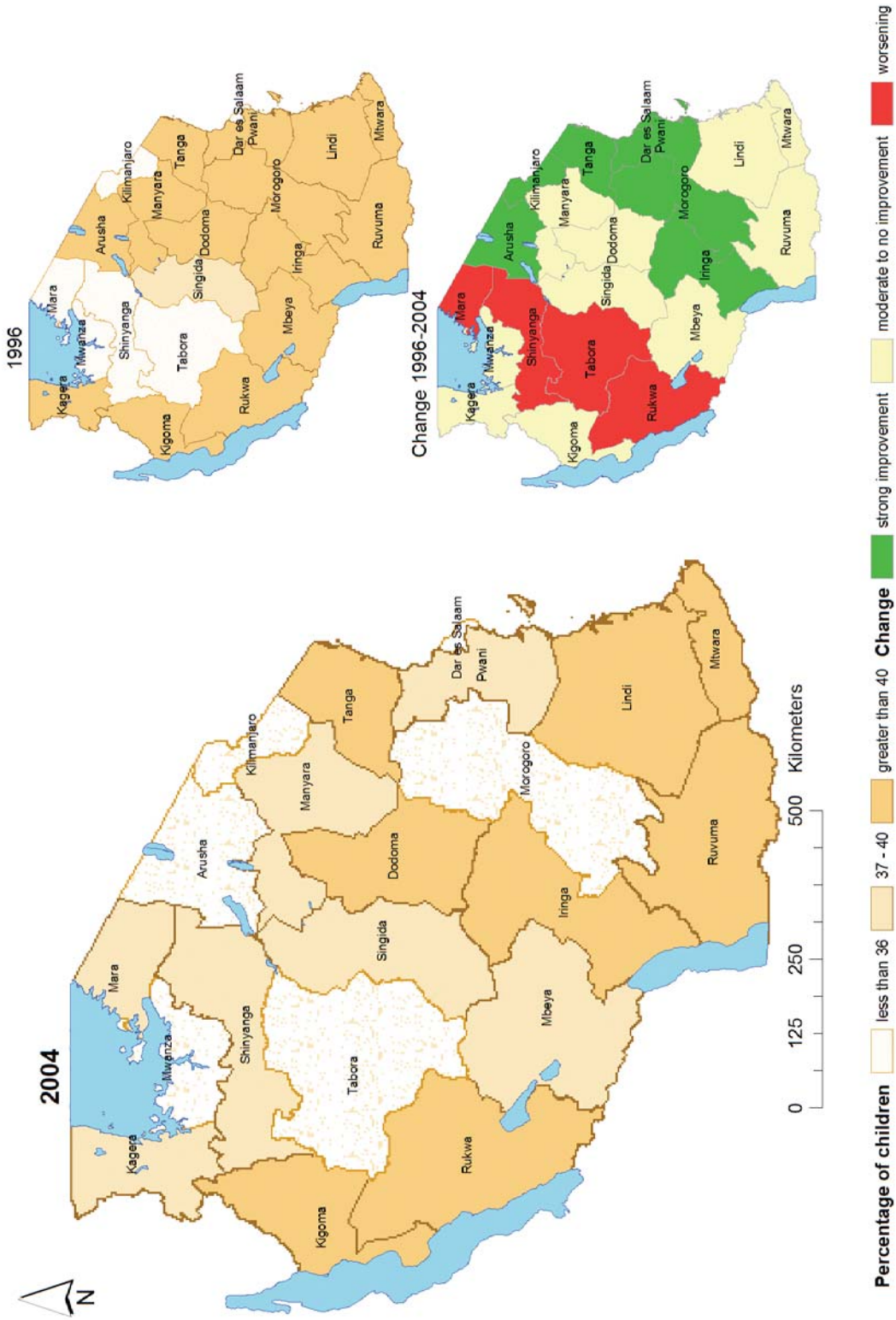
Figure 11. Proportion change in the prevalence of stunting by income/poverty percentile (concentration index growth curve), 1991-1999



Source: Lindeboom & Kilama, 2005

³⁶ The REPOA study analyses the DHS data-sets independently and pooled together

Map 1.2 Percentage of Children Stunted by Region, 2004 and 1996



SOURCE: Tanzania Demographic and Health Survey 1996 and Tanzania Demographic and Health Survey 2004-05 Preliminary report

Overall, children from roughly 30 per cent of the poorest households did not show any improvement in their nutritional status. Rather, the prevalence of stunting worsened in this group.

Children in most regions have a high prevalence of stunting, from 36 to 54 per cent. Map 1.2 shows the regional data for 2004 and the changes which have occurred since 1996.

Children in Dar es Salaam, Kilimanjaro, Arusha, Tabora and Mwanza have relatively better nutritional status, with prevalence rates of stunting ranging from 17 to 34 per cent. Map 1.2 also clearly shows that the percentage of under-fives who were stunted fell between 1996 and 2004 and major improvements can be observed in Iringa, Morogoro, Coast, Arusha and Kilimanjaro. Rates of stunting worsened in Mara, Shinyanga, Tabora and Rukwa, though stunting rates in Mara and Tabora still remain below the national average observed in the latest Demographic and Health Survey. Relating regional poverty estimates with the change in under-five stunting prevalence, it becomes clear that regions with lower rates of poverty showed higher rates of improvement in stunting, compared to poorer regions. (See also district based poverty maps in the next chapter.)

Child malnutrition is the result of inadequate feeding and care as well as childhood illness. More effective treatment and prevention of malaria is likely to result in improved nutritional status. At the same time, findings of a recent evaluation of a nutrition programme in Kagera stress the fundamental role of feeding interventions in reducing stunting in under-fives, in particular in the lowest income groups (Alderman et al, 2005).

HIV/AIDS

HIV/AIDS is considered to be one of the most impoverishing forces facing Tanzanians, mainly affecting individuals in the prime of their productive and childbearing years with consequent repercussions for their families (R&AWG 2004). Recent projections from ESRF (2003) show that by 2015, the economy will be 8.3 per cent smaller and the per capita GDP will be around 4 per cent lower as a result of HIV/AIDS.³⁷ The pandemic threatens to undermine the rights and well-being of Tanzanians in almost every aspect; in health and education, livelihood and food security, political and economic development.

Until 2004, HIV/AIDS prevalence estimates depended on blood donor data and on ANC (antenatal care) attendees in surveillance sites. These surveillance estimates are generated annually and therefore have the advantage of facilitating analyses of trends over time. The estimates, however, are not based on a national, geographically representative sample. Information is obtained from very specific sub-populations and is not representative of a cross-section of the Tanzanian population currently at risk. The 2003-04 Tanzania HIV/AIDS Indicator Survey (THIS) was the first attempt to produce reliable national and regional level estimates on the prevalence of HIV/AIDS in Tanzania (TACAIDS, NBS and Macro 2005).

In contrast to earlier official national estimates³⁸, the recently released national survey data produce an estimate of the overall prevalence rate of 7 per cent, 7.7 per cent in females and 6.3 per cent in men. The new estimate implies that roughly 1,070,000 people³⁹ between

³⁷ The REPOA study analyses the DHS data-sets independently and pooled together

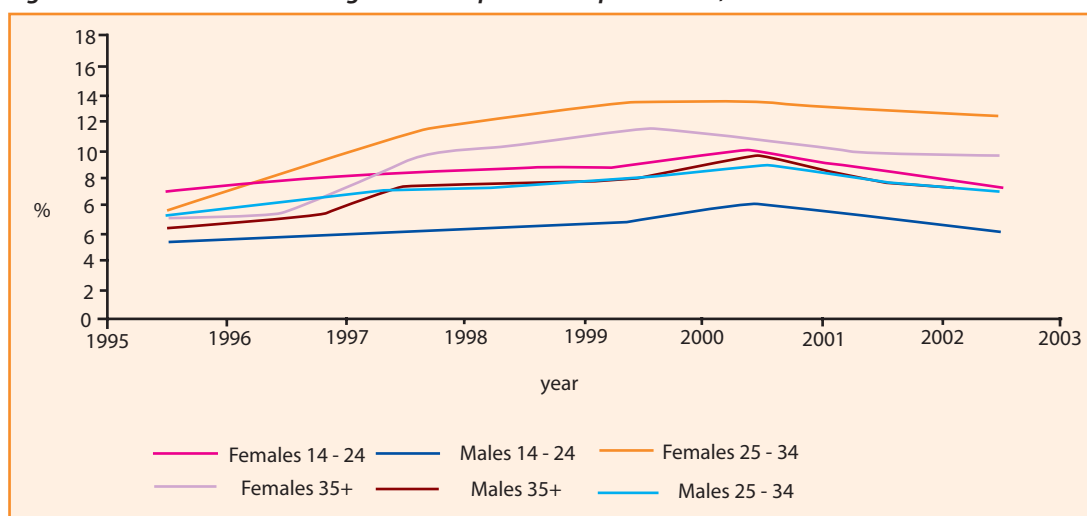
³⁸ Official national prevalence rate estimated at 12% at the first Joint Annual Review on HIV/AIDS in 2004.

³⁹ Rather than earlier estimates of 2+ million, current estimates are derived by applying national survey results to the national population of adults (updated from the 2002 census).

15-59 years are currently HIV positive: 610,000 women and 460,000 men. Data also indicate an average prevalence in pregnant women of 6.8 per cent which is lower than the 7.7 per cent estimated among all women. Surveillance data⁴⁰ from 2002 had reported a much higher prevalence rate of 9.6 per cent among ANC attendees (NACP No. 17, 2003: 11).

According to blood donor data, the percentage of the 14-24 year age group which is HIV positive has been on the decline since 2001, implying a decrease in new infections in both males and females (see Figure 12). The overall reported prevalence rate in 2003 was 8.8 per cent, 8.2 per cent for male blood donors, compared to 11.9 per cent in female blood donors (NACP No. 18, 2004:10).

Figure 12. Blood donor data: age and sex specific HIV prevalence, 1996-2003



Source: NACP Report No. 18, 2004

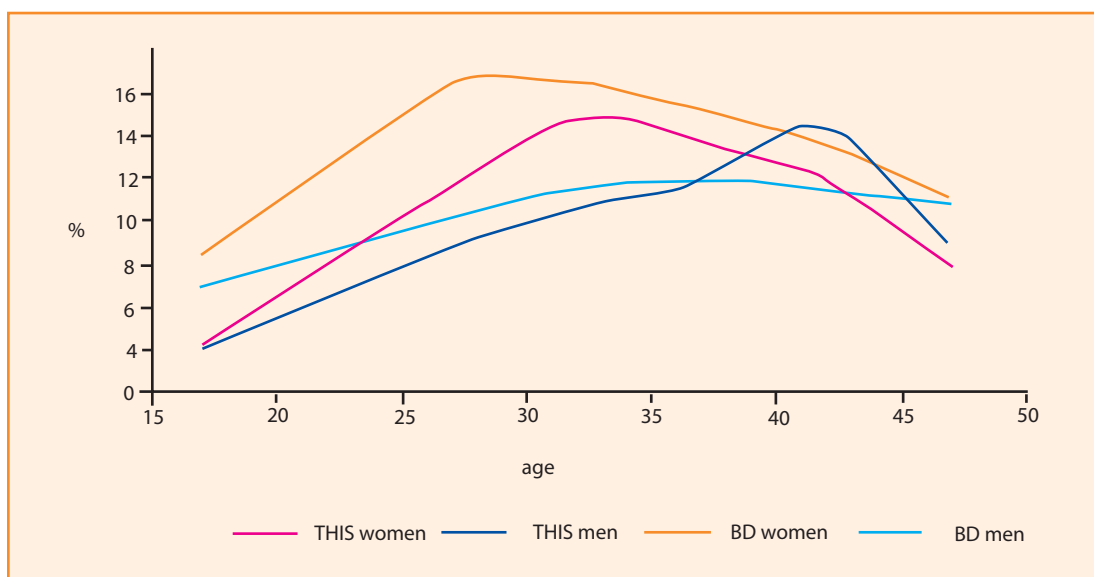
Women, in particular young women, are biologically and socially more vulnerable to infection. Women also tend to contract the infection earlier, and die younger, than men. As expected, survey data suggest that prevalence rates in women peak at an earlier age (13 per cent at 30-35 years) than in men (12 per cent at 40-45 years), though they peak much later than suggested by the female blood donor data (see Figure 13).⁴¹

These national averages conceal marked variations across geographical areas and across socio-economic groups. Survey data show substantial regional variation, ranging from an average prevalence of 2.0 per cent⁴² in Manyara and Kigoma, to over 13 per cent in Iringa and Mbeya. Dar es Salaam has a prevalence rate of 10.9 per cent, higher than the national average of 7 per cent.

⁴⁰ Covers 24 antenatal clinics across 6 regions

⁴¹ Blood donors, as mentioned earlier, are a select group and are likely to show a higher prevalence of HIV/AIDS when compared to the general population.

Figure 13. Age specific HIV prevalence rates by sex, 2003, 2004



Source: NACP report No. 18, 2003 and TACAIDS, NBS and Macro 2005

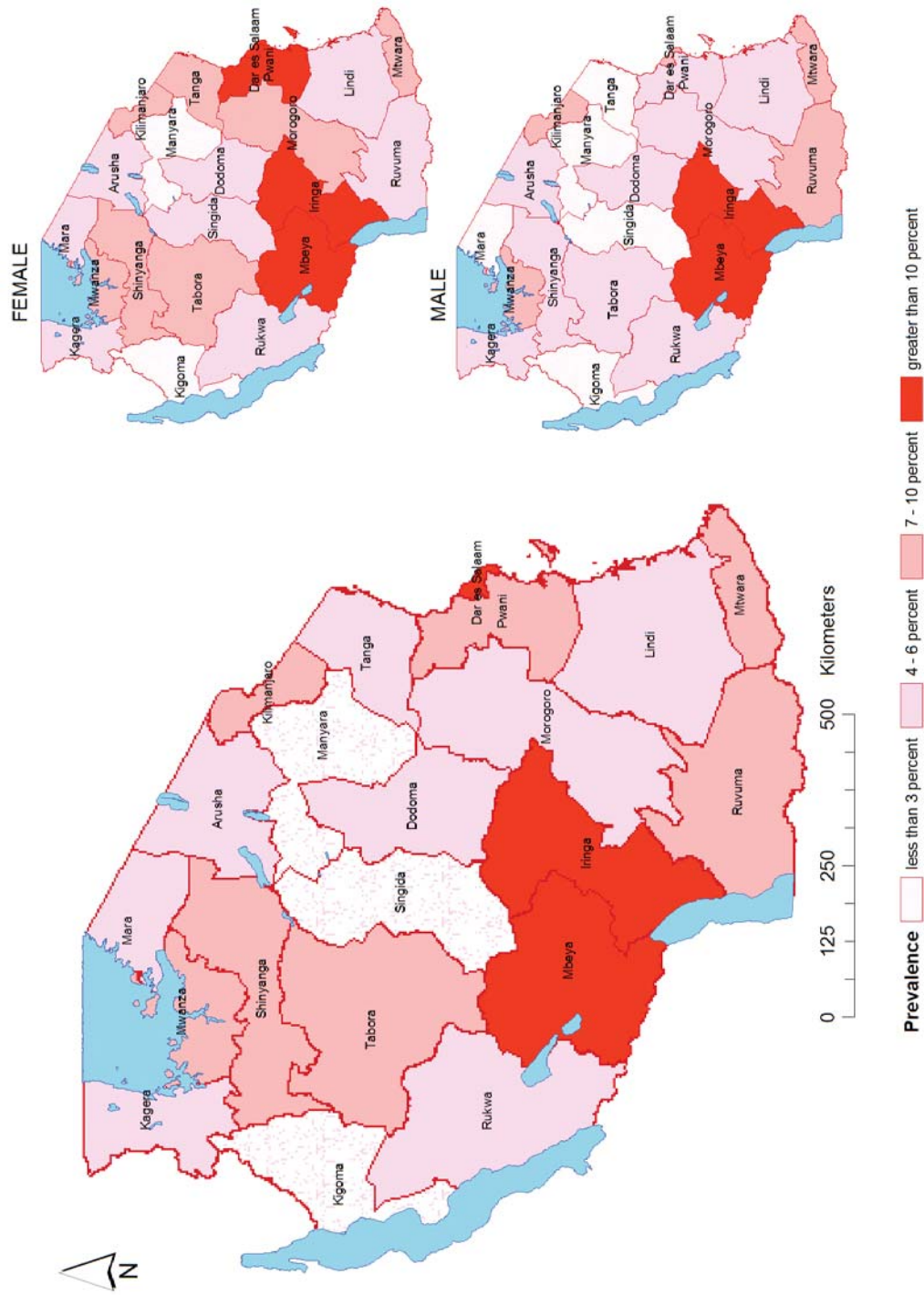
The risk of being HIV positive is twice as high for residents of urban areas than for rural residents, and this is true for both men and women (see Figure 13). The overall urban infection rate is 12.0 per cent, compared to 5.8 per cent in the rural areas. Urban youths (15-24 years) – both female and male – are more likely to be infected than those in rural areas (5.5 per cent versus 2.5 per cent).⁴³ Data also suggest a positive relationship between HIV prevalence rates and wealth (3.4 per cent in the poorest quintile versus 10.5 per cent in the least poor quintile). Once again, similar trends are observed in both men and women. Of interest is the relatively higher HIV prevalence in men compared to women in the poorest quintile (4.1 per cent versus 2.8 per cent); and quite the opposite in the least poor quintile where women are more at risk than men (11.4 per cent versus 9.4 per cent). The difference between the poorest and the least poor may actually be even more pronounced than that estimated, given the higher non-response rate – about twice as high – in the least poor quintile, when compared to the poorest (18.4 per cent versus 9.8 per cent).

⁴² 15-59 years, male and female

⁴³ TACAIDS, NBS and Macro 2005: 97.

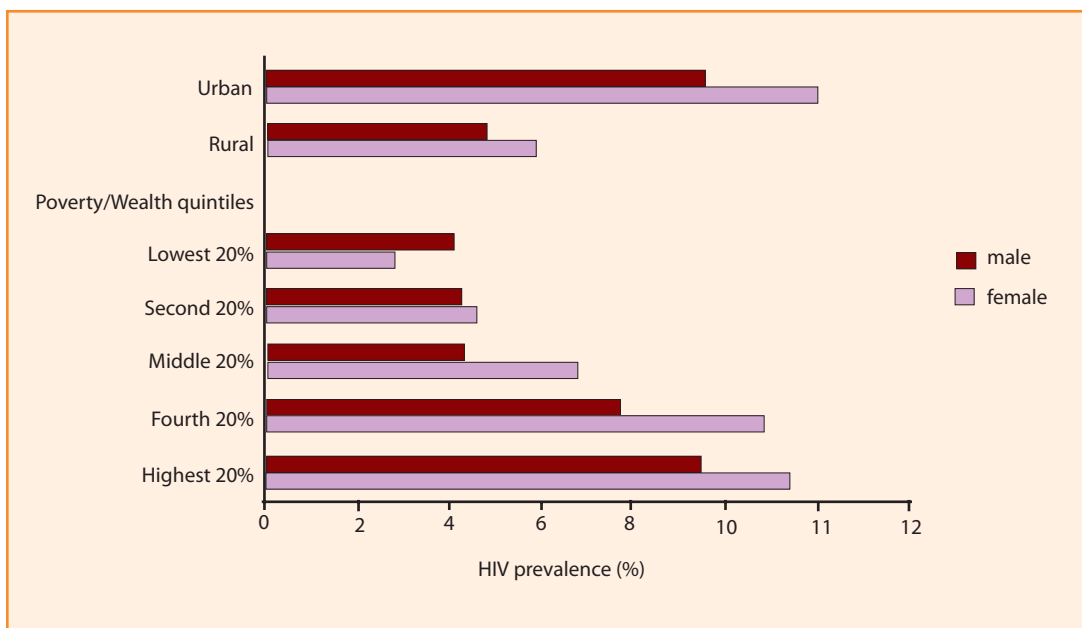
⁴⁴ The odds-ratios were 1.33 and 1.098; statistically significant at 0.001.

Map 1.3 HIV Prevalence Rates for Adults Aged 15-49 Years, by Region 2003/04



SOURCE: Tanzania HIV/AIDS Indicator Survey 2003-04

Figure 14. HIV prevalence rates by residence and poverty/wealth status



Source: TACAIDS, NBS and Macro 2005

Further analysis reveals that in both rural and urban areas a reduction in poverty is associated with increasing HIV prevalence. In the rural areas, the probability of being HIV positive increases by 33 per cent as one moves from a lower to an upper quintile. The corresponding risk for an urban resident is 10 per cent. ⁴⁴

The overall increase in HIV prevalence in the past decade has also resulted in a continuing increase in the number of TB patients. This has occurred despite the fact that TB treatment completion rates improved from 76 per cent in 1998 to 80.7 per cent in 2002 (MoH, 2003-2005). More than 50 per cent of TB patients are HIV positive (Smithson 2005: 6).

Even if HIV prevalence has begun to decline, the impact will continue to increase because of the long incubation period between infection and death. The current burden of AIDS morbidity and mortality is likely to double over the next decade. It is imperative that HIV remains at the top of the policy agenda.

The poverty monitoring system does not identify specific indicators to assess knowledge of HIV/AIDS transmission. This section therefore proposes two indicators for which information is available from the national survey and which are also commonly covered by other behavioural surveys. One of the indicators is focused on mother to child transmission. The other is a composite measure of general knowledge regarding the transmission of HIV/AIDS.

National survey data suggest that most adults are informed about HIV and AIDS. At least two-thirds of the adults know the major facts about HIV transmission and prevention. Specific knowledge regarding HIV transmission or prevention, as indicated by responses to the individual knowledge areas, is widespread. But the composite measure suggests that collectively only about half of those interviewed had a deeper understanding of HIV. Nonetheless, when compared to the findings of the 1999 TRCHS, knowledge regarding transmission of HIV/AIDS appears to have improved significantly. Compared to men,

women's knowledge of condom use appears to have improved substantially in the last five years.

The one area where men and women are not well informed concerns the prevention of mother to child transmission. Data indicate that while between 70 per cent and 60 per cent of the interviewed men and women know that the virus can be transmitted to an infant through breastfeeding, less than 20 per cent are aware that this transmission can be stopped if both mother and baby take antiretroviral medication. This is not surprising since the prevention of mother to child programmes are still new in Tanzania.

MATERNAL HEALTH

Women's health status continues to be compromised by early and repeated pregnancies, and inadequate family planning and maternal health care services, especially in the rural areas. This has implications for both infant and maternal mortality and morbidity.

Data from the 2004/05 demographic and health survey show that pregnancy related mortality has not improved over the last two decades. The maternal mortality ratio for the period 1995 to 2004 was 578 per 100,000 live births, not significantly different from the 1987 to 1996 ratio of 529 per 100,000 live births. Surveillance of maternal mortality is being undertaken in some sites, but conclusions from the data so far are compromised by the small number of deaths in pregnant women and random fluctuations in both pregnancy related mortality and childbirth. The data which are available from surveillance in Ifakara suggest a substantial decline in the maternal mortality ratio, from 295 per 100,000 live births in 2000, to 160 in 2003.

Because of the difficulties in obtaining precise estimates of maternal mortality, a proxy indicator is monitored: assisted deliveries by health professionals. Nationally, between 1999 and 2004, there was a slight increase in the proportion of births assisted by health professionals, from 41 per cent in 1999 to 46 per cent in 2004. Estimates from earlier demographic and health surveys are not comparable to the most recent estimate based on 2004 survey data because of different definitions employed for 'skilled' attendance.⁴⁵

Another proxy indicator for maternal mortality is the percentage of births taking place in a health facility. Survey data for the 1990s showed a steady decline from 53 per cent in 1991, to 44 per cent in 1999, and a slight improvement thereafter. By 2004, facility-based deliveries had reverted to 1996 levels of 47 per cent.

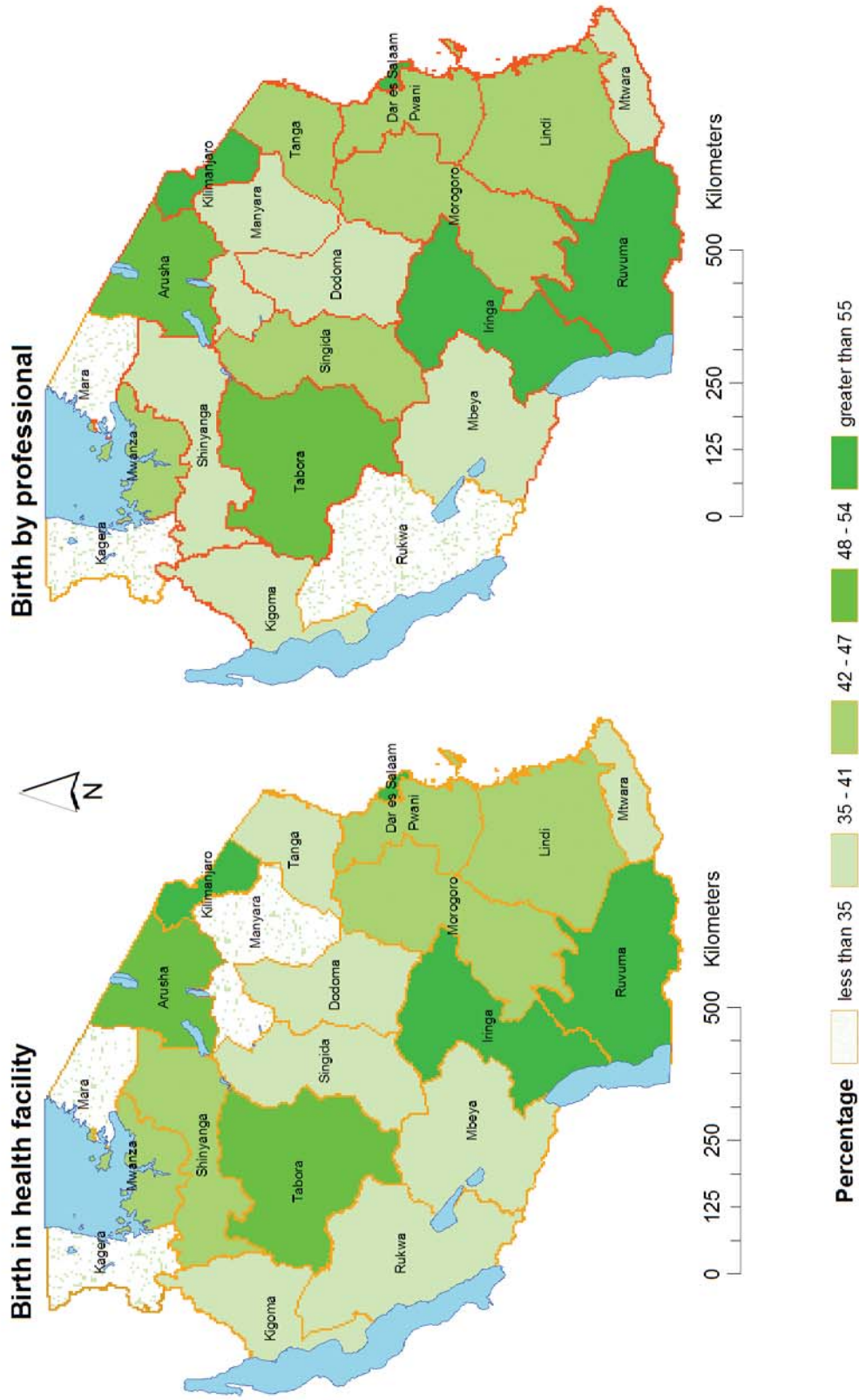
There is considerable urban/rural and regional variation in both these indicators. Urban women are twice as likely as rural women to have had a health provider in attendance during delivery, or to have delivered at a health facility (roughly 80 versus 39 per cent). Regionally, figures for both indicators ranged from about 30 per cent in Mara and Kagera to roughly 90 per cent in Dar es Salaam. In most regions, with the exception of Tabora, Arusha, Iringa, Ruvuma, Dar es Salaam and Kilimanjaro, less than 50 per cent of births take place at a health facility; or receive professional care. Furthermore, pregnant women in regions with relatively greater income poverty have less access to both health facilities and skilled attendants.⁴⁶ The data are shown in map 1.4 on the next page.

Effective access to quality health care, but especially to emergency obstetric care services, is a prerequisite to ensuring improved maternal health care.

⁴⁵ In the 2002 and 2003 P&HDR the concept of 'skilled' birth attendant was defined as a doctor and/or nurse/trained midwife. The preliminary 2004 TDHS defines a 'health professional' as Doctor/AMO, clinical officer, assistant clinical officer, nurse/midwife or MCH aide.

⁴⁶ $r = -0.44$, $p\text{-value} = 0.045$; $r = -0.047$, $p\text{-value} = 0.032$

Map 1.4 Percentage of Birth in Health Facility, Percentage Attended by a Professional, by Region, 2004



SOURCE: Tanzania Demographic and Health Survey 2004-2005 Preliminary Report

ACCESS TO QUALITY HEALTH CARE

There remain many obstacles in accessing quality health care, including health care charges and other “unofficial” costs.⁴⁷ For example, there are long distances, inadequate and unaffordable transport systems, poor quality of care, poor governance and accountability mechanisms and poorly implemented exemption and waiver schemes meant to protect the most vulnerable and poor people (REPOA October 2005; RAWG 2005; Mamdani & Bangser 2004; RAWG 2004; REPOA 2003; SCF 2005; SDC 2003).

Exemptions, and waivers in particular, are not effective as a means of protecting vulnerable social groups and the very poor (IHRDC 2004, SCF 2004, SDC 2003). The absence of clear policy guidelines and the inherent difficulties entailed in defining who is poor and who is not, makes it very difficult to implement the waiver scheme. Also, communities are generally not adequately informed of exemptions and waivers, who qualify for them, and how to obtain them. Most important, facilities are generally discouraged from granting exemptions and waivers as they are not compensated for the resulting loss in revenue.

Several studies have shown that poor households with limited assets resort to a number of short-term survival strategies⁴⁸ to pay for health care, especially in emergencies and for chronic illnesses (Msechu and Mtenga 2005, REPOA 2004, Msuya et al. 2004, SCF 2003, SDC 2003, WDP 2004). This further impoverishes them and exacerbates the risks of long-term vulnerability.

The 2003 PSSS found that for 73 per cent of respondents, health care had become “less affordable” in the last 5 years (REPOA 2003). Cost of treatment was ranked as the most serious problem in the health sector, with 50 per cent stating it to be a “serious problem”. When asked about personal experiences with corruption, 6 per cent reported having paid a bribe to a health worker in the previous 12 months - the second highest of any sector.

Proximity to primary health care facilities is good, especially in urban areas. Almost 100 per cent of the urban population and close to three-quarters of the rural population live within 5 kilometres of a health centre, or a dispensary (see Table 10). A comparison of HBS data from 1991/92 and 2000/01 suggests that, for Dar es Salaam based residents, the overall proximity to a health facility (hospitals/health centres/dispensaries) has remained almost the same, and has improved for those located in other urban areas. Whereas for the rural population it has slightly worsened, suggesting an increasing and/or a more scattered rural population. Access to essential referral care is perhaps the single most prominent barrier to health care for the poor; in addition to direct health care costs, those associated with transport and subsistence are prohibitive (ACCESS 2004).

Regarding quality of care, there have been improvements in the availability of drugs but some continuing deficiencies prevail.⁴⁹ The cost of drugs, in particular, still makes them unavailable to many poor people. The shortage of skilled providers continues to persist and is likely to be further aggravated in an attempt to meet the increased health care demands induced by HIV/AIDS. Altogether, many poor women in rural areas fail to access quality primary care when they need it most, and many more fail to obtain the necessary referral for more skilled care.

⁴⁷ For drugs and supplies, as well as unofficial payments

⁴⁸ Coping strategies include using their own savings, engaging in petty trade, borrowing money, taking a loan, selling critical assets, taking children out of school, reducing the number of meals taken in a day, etc.

⁴⁹ The situation of drug supplies has improved tremendously in facilities where the indent system - ordering health supplies according to demand - has been adopted, but most facilities still experience drug shortages especially towards the end of ordering quarters. Overall, most rural dispensaries are characterised by having inadequately trained staff, experiencing frequent drug stock outs, being poorly equipped, providing short and inadequate patient consultations, poor prescribing practices and long waiting times (Msechu & Mtenga, 2005).

There appears to be an absolute shortage of resources at the primary health facility level, which in turn impacts negatively on the quality of care delivered (RAWG 2004). From 2001/02 to 2004/05, the total per capita expenditure, and that at the local government level, doubled: from roughly TShs 4,200 to TShs 8,700, and from about TShs 1,400 to about TShs 2,400 (see Table 11).⁵⁰ But in real terms this increase would be substantially less. In addition, it is not clear how much of the released amount was actually made available at the primary facility level.

There have been two national public expenditure tracking studies⁵¹ covering the health sector: the 1999 and the 2001 studies covering three and five districts, respectively. The 1999 study found that only 12 per cent of the funds reached the intended beneficiaries. The 2001 study found that less than half the funds reached the intended beneficiaries.

Table 11. Total and per capita actual health expenditure in Tanzania, Fiscal Years 2000 to 2004

	2001/02		2002/03		2003/04		2004/05	
	TShs billion	TShs per capita	TShs billion	TShs per capita	TShs billion	TShs per capita	TShs billion	TShs per capita
Local Government	47.73	1,400	59.18	1,700	66.09	1,900	87.28	2,400
Total	141.05	4,200	176.36	5,100	220.10	6,300	312.81	8,700

Source: MoF Public Expenditure Review, 2005 and authors' calculations using NBS, Census 2002

Note: To obtain population estimates for the non-census years, an annual growth rate of 2.5 per cent was applied. Figures for 2004/05 are budgeted numbers and not actual expenditure.

All in all, adequate management and information systems have not been put in place to ensure appropriate collection and utilisation of fees. Also, communities do not have access to relevant information - about budgets, incomes, expenditures, use of medical supplies, etc. - and are generally not involved in the planning and financial management of health services. Further, reliable mechanisms for raising concerns and for channelling these to the district level for action are not in place. Essentially, communities are not able to ensure the effective use of available resources.

Interestingly, the most recent Afrobarometer results show a marked improvement in the respondents' assessment of the Government's performance in the health sector. In 2001, 50 per cent of respondents thought the Government was performing well, while in 2003 this had gone up to 70 per cent, and remains at that level according to preliminary results for 2005. According to the Auditor General's Report, the Audits of the Ministry of Health have improved since the late 1990s (TGNB 2005). Whereas it received an adverse opinion in Fiscal Years 1999 and 2000, it received a qualified opinion from Fiscal Year 2001 to Fiscal Year 2003. Also there has been a significant decrease in the amount of questioned expenditures, from 46 per cent in Fiscal Year 1999 to 4 per cent in Fiscal Year 2002, although it went up again to 5 per cent in Fiscal Year 2003, slightly above the national average of 4 per cent.

⁵⁰ These figures relate to the health expenditure, and exclude off-budget support and incomes from cost sharing.

⁵¹ REPOA and ESRF 2001. "Pro Poor Expenditure Tracking," draft report submitted to the PER Working Group, March 2001, Dar es Salaam; and Price Waterhouse Coopers 1999. "Tanzania Public Expenditure Review: Health and Education Financial Tracking Study," commissioned by the Government of Tanzania and DfID, March 1999, Dar es Salaam.

HUMAN RESOURCES IN THE HEALTH SECTOR

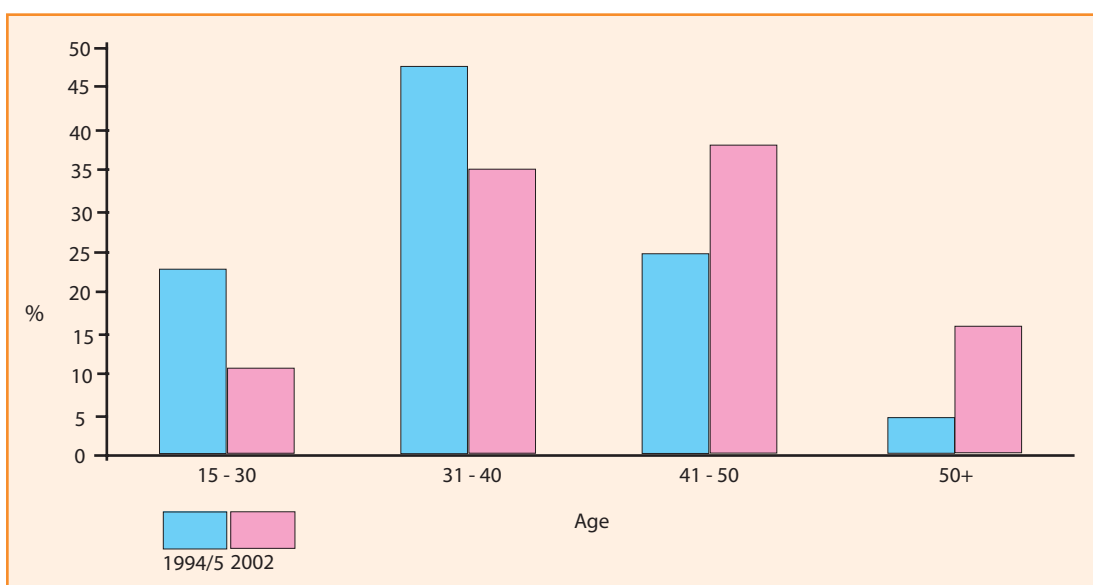
Human resources are the single most important input in the health sector. The most pressing problems facing the health system are a lack of health personnel, sufficiently trained and appropriately deployed, and poor health worker performance (Mliga, Mwakilasa & Mwakalukwa, 2005).

The total number of active health workers in 2001/02 was estimated at 54,200, with unskilled workers forming the largest group (31 per cent), followed by the professional group of nurses and midwives (24 per cent) (Kurowski et al, 2003: 24⁵²). Between 1994/5 and 2001/02, the number of active health workers per 100,000 population decreased by 35 per cent: from the observed 249.4 to an estimated 162.1 per 100,000 population. Shortage of health staff is even more acute when differentiated by cadres, with significant deficits among skilled health professionals.

The estimated ratios of currently active professionals per 100,000 population are 38.9 for nurses, 2.5 for physicians and 25.3 for medical cadres (i.e. medical officers, assistant medical officers and clinical officers).

The decline in human resource followed a freeze in civil service employment adopted by the Government in 1993⁵³; it is also responsible for the ageing cohort that will need to be replaced within the very near future (see Figure 15). Roughly 50 per cent of all budgeted

Figure 15. Age composition of health sector employees, 1994/5 – 2002



Source: Kurowski et al, 2003

Deployment of available health workers is highly imbalanced (Kurowski et al, 2003). Overall, 65 per cent of the 54,200 health workers in 2002 were located in the public sector, 22 per cent in private not-for-profit and 14 per cent in private-for-profit. Roughly 84 per

⁵² Study based on a survey sample of 23 districts. Corresponding absolute numbers are roughly 67,600 and 54,200; estimates are based on a sample of the 2001/02 human resource census data; per capita figures are calculated using NBS, Census 1988 and 2002, using the 1988 census and an exponential annual growth rate of 2.7%, n=7.

⁵³ The employment freeze was lifted in 1998 for priority sectors, including health.

cent of the health workers, mainly constituting low skilled cadres, were employed in the rural areas. The 16 per cent who are employed in urban areas represent a disproportionate share of high skilled cadres. Even after corrections for infrastructure⁵⁴, regional variation in staff per population remains significant, and the disparities are even greater at the district level. The number of nursing staff per 10,000 population for example, varied between 1.6 in Mkuranga and 16.2 in Ilala. These disparities are also confirmed by findings of a recent facility-based survey of the current status of human resource quality, availability and distribution in six districts of Northern Tanzania (covering 129 facilities) (Olsen OE, Ndeki S, Norheim OF, 2005).

The barriers to improving the human resource situation are many and imposing, in particular for highly skilled workers in the public sector who are overburdened, poorly paid and working under conditions that are demoralizing (Kurowski et al., 2003; Mliga, Mwakilasa & Mwakalukwa, 2005).

Poor health worker motivation and performance is commonly manifested in many of the documented issues faced by patients: in lack of courtesy to patients, illegitimate charging for drugs and equipment, high levels of absenteeism, "dual practice", and poor task performance such as failure to conduct proper patient examinations. These problems among health staff not only negatively affect quality of care, but also reduce the utilisation of health services and ultimately impact negatively on health outcomes. According to Kurowski et al (2003), staff productivity was around 57.5 per cent⁵⁵. Through improved staff management and optimised staffing levels, the potential exists to achieve a productivity gain of 30 per cent (for example, by addressing breaks, waits for patients, social contacts, unexplained absences).

Existing constraints in staffing are likely to be further aggravated by the HIV epidemic's impact on increased mortality and morbidity in the work force; and because of increasing demands placed on the health sector for additional care of those infected, and the rolling out of the national treatment plan. Unless many of the aforementioned issues are addressed, there is the real possibility both of failing adequately to respond to the HIV/AIDS epidemic, and of hampering effective delivery of essential health care.

CONCLUSIONS AND RECOMMENDATIONS

Summary of progress

Recent data indicate substantial reductions in infant and under-five mortality and more modestly reduced rates of child malnutrition, though the prevalence of stunting in children, 38%, is still very high. Life expectancy at birth, now estimated from the 2002 population census at 51, is little changed compared to the estimate from the 1988 census. Maternal mortality is unchanged and continues to be very high, now estimated to be 578 (per 100,000 live births).

More effective prevention and treatment of malaria are likely to be important contributors to improved health, especially to the reduction in infant and under-five mortality. Immunisation rates have been sustained at a high level.

Newly available information which is nationally representative indicates an HIV prevalence rate in adults of 6.8 per cent. This implies that about 1 million adults in Tanzania are HIV positive.

⁵⁴ 55% of the active workforce is employed in hospitals, 13% in health centres and 32% in dispensaries.

⁵⁵ Based on time and motion studies in 10 public facilities in the Rufiji district and Kinondoni and Ilala Municipalities; defined as the time health workers spent on patient care, outreach activities, administrative tasks, in meetings, in training activities, on cleaning, preparatory and maintenance activities, and research.

There remain substantial urban-rural, regional and socio-economic differences. Rural poor children are more likely than their urban counterparts to die, and when they survive are more likely to be malnourished.

Evidence of changing disparities over time is mixed. In less poor regions/districts and less poor households, rates of stunting in children improved to a greater extent than in poorer areas, but overall, rural children experienced a reduction in rates of stunting, while urban children did not, between 1996-2004. Analysis of infant mortality in the 1990s suggests a widening gap between the poorest and less poor. This may be evidence of greater inequities in outcomes. However, more recent health measures might help redress this.

Policy and operational issues identified

The lack of qualified human resources for health care is a major limiting factor in implementing health policies and health reforms within the country. One of the major challenges is securing the availability and effective use of qualified human resources. Strategies need to be put in place to increase effective capacity and performance, primarily in the public sector. The TEHIP experience is useful here. Training and innovative management tools (for building district planning capacity and improving the performance of health workers) towards improved productivity were key to its success.⁵⁶

The continuing high rate of child malnutrition, especially in young children, remains a concern and needs attention, with special focus on very young children and mothers, especially adolescent mothers. Strategies for improved feeding practices for young children need to be explored.

High rates of maternal mortality need to be reduced. Emergency obstetric care needs to be improved, and access to antenatal care and delivery facilitated, including improved referral services, especially for poor and rural women.

Recommendations for indicators and monitoring systems

More analytic work is needed with the data sets now available from the census and the demographic and health survey to explore socio-economic differences in health outcomes. This analytic work can be complemented by greater systematic use of panel studies and information from surveillance sites.

Focused facility based surveys can be useful in monitoring the quality of care provided.

The monitoring system does not adequately attend to the needs of adolescents. In the absence of adequate information on adolescent fertility and reproductive and sexual behaviour, it is not possible to assess the effectiveness of programmes that aim to promote gender equity, safe reproduction and the retention of girls in primary and secondary education.

Further analysis is needed of future financing strategies towards improved health care delivery and their equity implications.

More systematic use of tracking surveys would be helpful to assess the flow of resources to primary health care facilities and to better understand the use of these resources and their impact on the quality of health services. The tracking surveys need to include information not only about financing for "other charges," but also for supplies of drugs and other medical supplies.

⁵⁶ The MoH is working towards activating the Zonal Training Centre system, with national scaling up of the TEHIP Tools and IMCI.