MALAWI MEDICAL JOURNAL;18 (1): 5 - 12
March 2006

Poverty and Health in Malawi

Cameron Bowie

Department of Community Health, College of Medicine, Blantyre

Abstract

Health affects poverty and poverty affects health. Poverty limits an individual's ability to respond to events, such as famine or a serious illness in the family. Lack of income is one limiting factor; lack of education, political freedom, ability to buy and sell goods, or land tenure are other limiting factors. Poverty can be absolute or relative. Reducing poverty to increase capabilities will increase freedom, which can be considered the ultimate goal. Poverty reduction remedies would seem to lie in a mixed bag of initiatives across a broad range of human endeavours – political, social, health, economic, security and education.

Malawi is the second poorest nation in the world measured by national income (GNP per head). In respect of absolute poverty, rural life is more disadvantageous than poverty in child mortality. The rural poor report less, but probably have more ill health. Full primary education eliminates unequal fertility rates. Both education and poverty seem to play a part in malnutrition. In respect of relative poverty, child mortality is becoming more inequitable as it improves, whereas malnutrition is becoming more equitable as it improves. The use of health services is inequitable (except EPI). Adult mortality including maternal mortality seems to be equitable (based on sibling's wealth). Underlying determinants of health show a mixed picture – some inequality, some equality. Recent efforts to improve health care have tended to increase inequality because the underlying determinants of disease have not yet been successfully addressed.

Background

Health factors and wealth factors

Health affects poverty and poverty affects health but each does so in different ways. Improving health in isolation has not been found to reduce poverty to a significant degree because poverty is caused by many factors such as illiteracy, unemployment in urban areas or tenure of poor land. For example, the life expectancy in the state of Kerala in India has reached 74 years due to a tradition of universal health care, education and land reform. Improving health can increase the capacity for people to potentially become more economically successful. The recent economic growth is China is built on years of equitable education and health care. But good health without literacy, social inclusion and a conducive marketplace probably will not reduce poverty.

What about the effect of poverty on health? Poverty can directly and indirectly cause ill health. Absolute poverty clearly affects food security, nutrition, housing and basic amenities, therefore affecting the capacity to lead a healthy life. Relative poverty seems to have a more devious effect, linked to social exclusion, lack of security in urban areas and inability to access welfare services. The former (absolute poverty) is the underlying situation in Malawi, with low life expectancy and high child and maternal mortality. The latter (relative poverty) is what is found in Brazil where big differences in life expectancy exist between rich and poor. Countries with high extremes of income tend to have poorer health than those of the same overall wealth but with more equitable distribution of income. Indeed relative wealth seems to be more important than absolute wealth. Brazil has a GNP per capita of $4000 and life expectancy of 64 years; China has GNP per capita of $400 per capita but life expectancy of 74 years.

Developing affluence

So if good health will not necessarily reduce poverty, will economic development? Unfortunately the answer is that economic development alone will not rid Malawi of poverty, if the aim is to rid the community of all that keeps people trapped in indigence – so poor as to lack means of subsistence. A useful concept for a developing country such as Malawi is Amartya Sen's concept of Development as Freedom.[1] He describes development as helping people develop the capacity to accomplish what they value in life. It is measured by assessing the amount of freedom people have to make choices, such as to feed ones family, to afford health care, to be involved in political decisions, to generate income, to travel, to buy and sell, and to avoid premature death, famine, violence and discrimination. So the solution to ridding poverty is not simply having more money. Sen suggests that freedom itself enhances the ability of people to help themselves.

The rhetoric of poverty reduction

Does this mean those keen to see Malawi develop should be wary of poverty reduction strategies? Not if poverty reduction is seen as a means to an end. Reducing poverty to increase capabilities will increase freedom. Raising income levels such as through food handouts will neither increase freedom (except in extreme famine from hunger) nor increase human capabilities. Inappropriate remedies can be resisted if success is measured not by counting income levels but by assessing change in freedoms.

Remedies would seem to include a mixed bag of initiatives – political, social, health, economic, security and education. This, of course, is why the government's poverty reduction strategy is multisectoral and involves all aspects of society. Which brings us back to the question of the contribution of the health sector to this strategy - how many health interventions, of what sort, in what mix, to whom, and when and in what balance with other non-health initiatives.

Situation analysis

How poor is Malawi and how unequal?

But first, is Malawi poor? In terms of Gross National Product (GNP) per capital, expressed in US dollars adjusted for purchasing power, Malawi with GDP per capita of PPP US$ 605 in 2003 is the poorest country in the world bar one, Sierra Leone.[2] However not everyone is poor. Contemporary evidence on the distribution of wealth in Malawi comes from the 1998 Integrated Household Survey (IHS), which measured absolute poverty (Tables 1-3).[3] It worked out a poverty line below which individuals would not have sufficient income (both money and in kind) to meet basic needs such as food, clothes and shelter.4 In 1998 the poverty line was 10.47 kwacha a day. The proportion of people below the poverty line in Malawi then was 65% (see

Figure 1). Inequity between incomes was also measured, The northern region is less inequitable than the central which is less inequitable than the southern region. This result can be compared to other countries in the world. Malawi is more equitable than the USA and similar to neighbouring countries in Africa (Table 4).

Table 1 - Poverty, food poverty, and non-food poverty lines and spatial price indices at April 1998 prices, by poverty line area

	Poverty line (MK)	Food (MK)	Non-Food (MK)	Food share of poverty line (%)	Special price index *
Southern Rural	7.76	6.53	1.23	84.1	74.1
Central Rural	9.27	7.76	1.51	83.7	92.3
Northern Rural	11.16	8.90	2.26	79.7	112.4
Urban	25.38	16.95	8.43	66.8	222.1
National weighted average poverty line	10.47	-	-	-	100.0

Spatial price differences are revealed by the different poverty lines in each region. The poverty lines represent the different prices across the country for a comparable basket of goods necessary to meet the daily basic needs of an individual in Malawi. The spacial price index uses the weighted average poverty line (6,586 household data set) as a base, and is calculated as: 100 total povery line ÷ national weighted average poverty line.

April 1998: MK 25.40 = US$ 1.00

Poverty line derivation

The method used to determine the poverty line for the poverty analysis of the Malawi IHS is the cost-of-basic-needs method. In brief, the following steps were taken: the objective core of the poverty line is the per capita recommended daily calorie requirement for the households in the IHS data set used here. These requirements have been established by nutrition researchers. This recommended calorie requirement is used to establish the food component of the poverty line by determining what it costs for poorer households in Malawi to acquire sufficient calories to meet their recommended calorie requirements. The cost for each calorie is determined by calculating the value of each calorie reported consumed by these poorer households.

More than simply food is needed to meet the basic needs of a household. There is a non-food component to the poverty line as well. Since these households are sacrificing nutritionally necessary food consumption to consume these non-food items, the items can be considered basic necessities for household welfare. The value of these items makes up the non-food component of the poverty line. Summing the food and non-food components results in the poverty line.

In summary:

- Malawi is the second poorest nation in the world measured by national income
- 65% of people live below the poverty line and 28% of people are ultra poor
- Income inequality is similar to the USA

Figure 1 Poverty percentages by region in Malawi

Measuring inequality in Malawi

	Poverty headcount (percent)	Percent of Malawi's poor
MALAWI	65.3	100.0
Southern Region	68.1	49.2
Central Region	62.8	40.2
Northern Region	62.5	10.6
Rural	*66.5*	*89.7*
Urban	*54.9*	*10.3*

Table 2 Individual ultra-poverty measures and mean consumption by region and rural/urban: 6,586 household data set

	Ultra-poverty headcount (% of pop.)	Ultra-poverty gap index	Ultra-poverty severity index	Absolute number of ultra-poor persons	Percent of Malawi's ultra-poor in area	Weighted IHS population share (%)
MALAWI	28.7	0.09	0.04	2,813,257	100.0	100.0
	(2.51)	*(0.010)*	*(0.005)*			
Southern Region	31.8	0.10	0.05	1,477,753	52.5	47.5
	(3.82)	*(0.016)*	*(0.009)*			
Central Region	25.3	0.07	0.03	1,032,596	36.7	41.6
	(3.81)	*(0.014)*	*(0.007)*			
Northern Region	28.4	0.07	0.03	302,909	10.8	10.9
	(4.53)	*(0.012)*	*(0.004)*			
Rural	29.3	0.09	0.04	2,575,520	91.5	89.8
	(2.77)	*(0.011)*	*(0.006)*			
Urban	23.8	0.07	0.03	237,737	8.5	10.2
	(2.88)	*(0.010)*	*(0.005)*			

* Mean and median consumption values are calculated from temporally (April 1998) and spatially deflated Kwacha values.

Table 3 Indices of inequality in total daily consumption by region

	As a percentage of the total consumption of the population				
	Gini Coefficient*	Consumption of the poorest 20% of the population	Consumption of the richest 20% of the population	Consumption of the poorest 10% of the population	Consumption of the richest 10% of the population
MALAWI	0.401	6.3	46.8	2.5	31.8
Southern region	0.423	5.9	48.7	2.2	34.0
Central region	0.383	6.6	45.4	2.6	30.3
Northern region	0.362	7.4	44.2	3.1	28.8
Rural	0.374	6.7	44.3	2.6	29.0
Urban	0.520	4.5	58.4	1.7	42.9

* The Gini coefficient provides an indication of how equitable the distribution is across the population. A Gini coeficient of zero results if all households have the exact same level of consumption and expenditure-perfect equity. A coefficient of one results from a situation where all except one member of the population have no consumption and expenditure.

Table 4 Country and GDP per capita

Country	Gini index	GDP per capita (ppp US$)
South Africa	57.8	10,346
Zambia	52.6	877
USA	40.8	37,562
Malawi	40.1	605
Mozambique	39.6	1,117
Tanzania	38.2	621
UK	36.0	27,147
Denmark	24.7	31,465
Source: UNDP Report 2005 except Malawi HIS 1998		

While the detailed data collection on income and expenditure of households as provided in the IHS provides sound information on poverty, easier survey methods are available to make use of assets found in households. The asset score approach has been used extensively by the Demographic Health Survey group – measured in conjunction with the World Bank.[5] A wealth index is constructed from assets found in houses using principal component analysis and each household is ranked and then grouped into one of five quintiles from richest to poorest. Analysis by wealth quintile provides a simple way of examining relationships between socio-demographic and health variables and wealth.

Besides counting income and assets, there are other measures of inequality which can be used in Malawi. The DHS surveys collect data on such attributes as educational attainment, gender, age, religion, ethnicity, place of residence, household size and composition and sex of head of household. These can all be used to assess other aspects of potential inequality. The measures which Sen would probably say are missing are ones which measure social inclusion, disability, victim of crime and lack of security, freedom of expression, political power, household decision making and food security. Some of these factors are collected in other surveys and synthesis work would be necessary to link them to health issues.

Basic health inequalities in Malawi

This article considers poverty in relation to overall health experience in Malawi; accompanying articles consider poverty in relation to specific diseases. Data are the IHS and the various DHS surveys. The information on absolute poverty from the IHS can be used to assess health inequalities comparing those above and below the poverty line

Morbidity

Rural life seems to be more disadvantageous than poverty with regards to child mortality (Table 5). In rural areas the poor report less ill health, stop normal activities because of illness and seek less medical consultations. They are more likely to use tradi-

tional medicine. In urban areas the poor report more illnesses and seek the same number of medical consultations as the rich. It is unlikely that the rural poor report less ill health because they experience fewer illnesses. A more likely explanation is that because of limited access they cope with ill health in a more self-sufficient way.

Fertility

The rural ultra poor have a higher fertility rate than the urban ultra poor and both groups have a higher fertility than the non-poor. Full primary education in women seems to reduce fertility and eliminate the difference between the poor and non-poor (Figure 2).

Table 5 Child mortality comparisons between poor and non-poor, and rural and urban populations

	Rural		Urban	
	Poor	Non-poor	Poor	Non-poor
Children ever born to women aged 15 to 45 who are still alive (%)	78.5	76.4	87.4	89.7
Women aged 15-45 who have given birth who have had no children die (%)	55.2	57.3	73.4	78.2

Figure 2 Mean number of children ever born to women aged 15-45, by mother's educational level

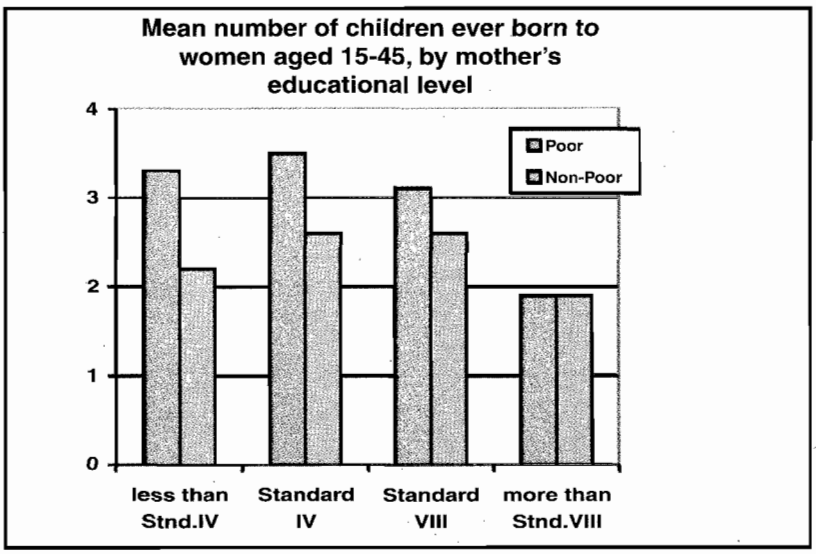
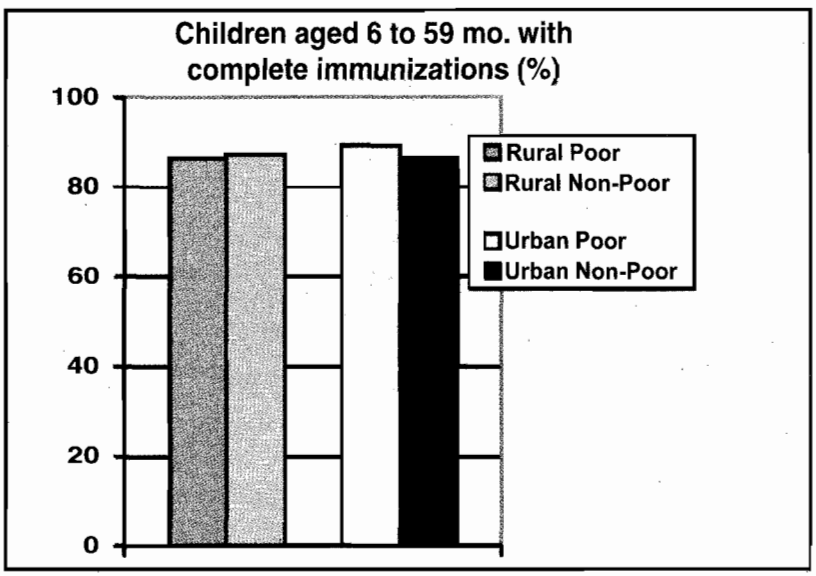


Figure 3 Children aged 6-59 mo. with complete immunizations (%)



Immunisation

Immunisation uptake is the same in rich and poor groups whether urban or rural (Figure 3).

Malnutrition

The prevalence of underweight (Figure 4) and stunting is more common in the poor and similar between the poor and ultra-poor. The prevalence of wasting (usually due to famine or HIV) is similar in poor and non-poor in Malawi. Education and poverty seem to play a part in malnutrition.

In summary:

- Rural life is more disadvantageous than poverty in child mortality.
- The rural poor report less but probably have more ill health
- Full primary education eliminates unequal fertility rates
- Both education and poverty seem to play a part in malnutrition
- The equitable EPI is a success

Health and relative poverty

UN Millennium Goal targets

The goals and targets relate to the UN Millennium Goals. Figures 4 to 8 illustrate the prevalence of various health indicators and compare between 1992 and 2000 and between different wealth quintiles. Severe malnutrition is worse the poorer the group but improvement in the eight years was greater in the poorest quintile (Fig 4). Infant mortality has improved over time especially in the richer families, increasing the inequality (Fig 5).

Figure 4: Percentage of severely underweight children by quintile in 1992 and 2000 (UN Millenium Goal 1, target 2)

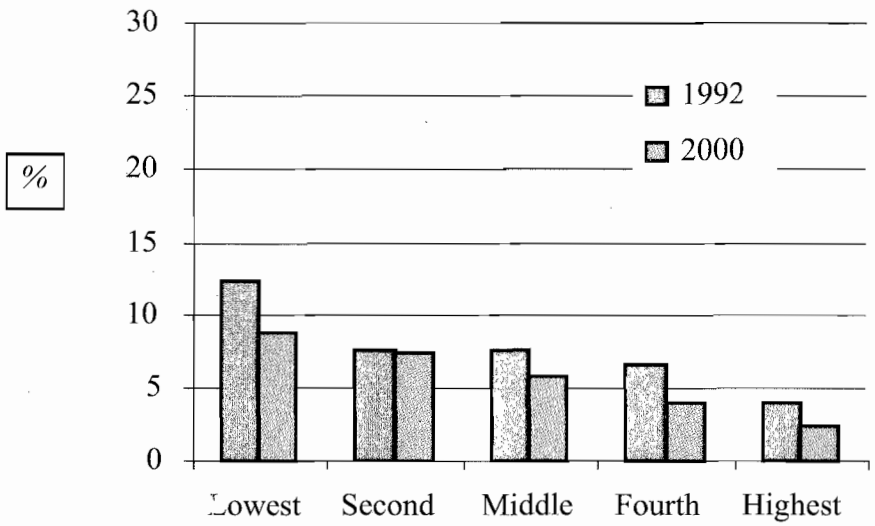


Figure 5: Infant Mortality Rate (deaths/1000 live births) by quintile in 1992 and 2000 (Goal 4, target 5)

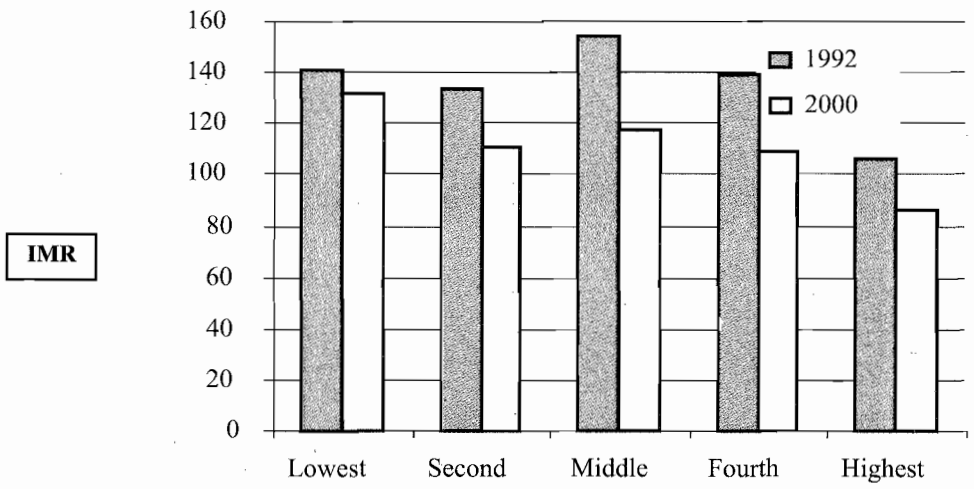
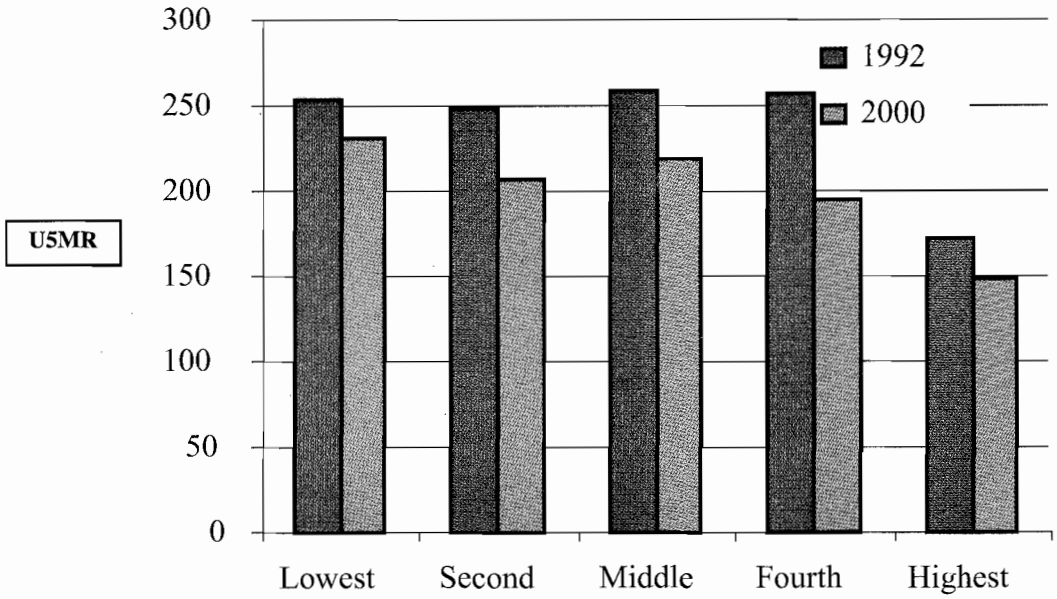
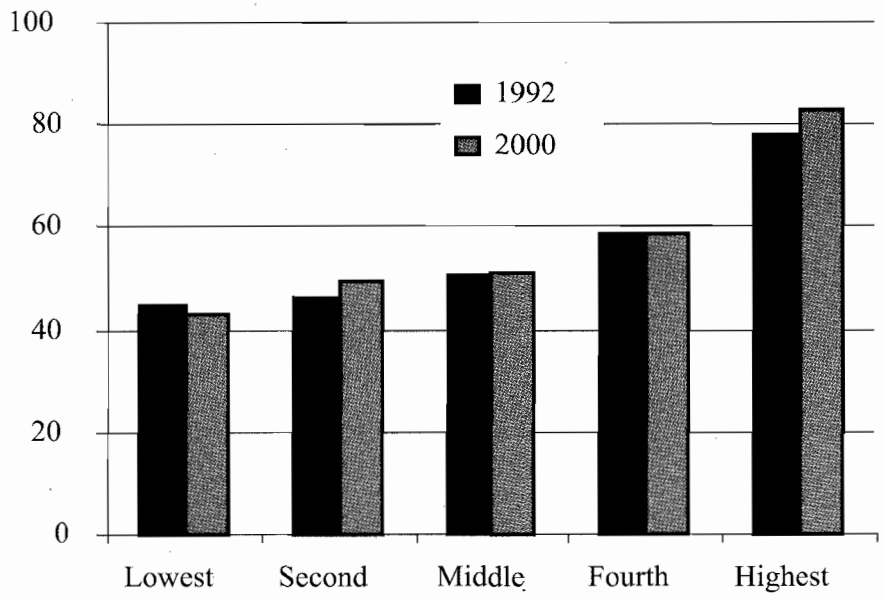


Figure 6: Under 5 Mortality Rate (U5MR) by quintile in 1992 and 2000 (Goal 4, target 5)



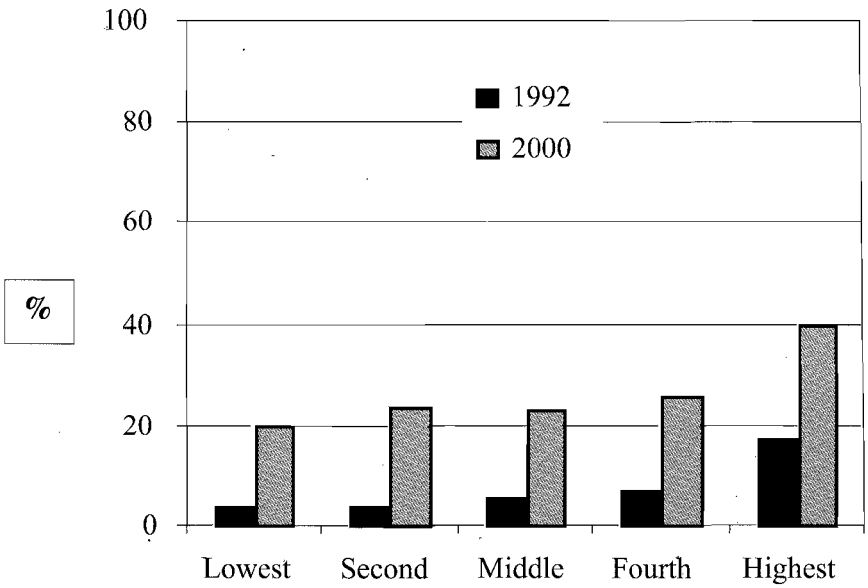
Under-5 year child mortality in 1992 was much the same in all groups but the richest quintile. Improvement in the eight years has occurred most in the middle quintile groups, but inequalities have widened (Fig 6). This has been seen in other developing countries and seems to be related to the ability of rich families to better respond to childhood illnesses and better use services[4] which is why child survival improves with female literacy and empowerment.

Figure 7: Birth attended by skilled personnel (%) by quintile in 1992 and 2000 (Goal 5, target 6)



Skilled birth attendance is much more common in the richer groups. There has been little change over time (Fig 7). Contraception is twice as commonly in use in the richest compared to the poorest group. Contraception has increased over time in all groups (Fig 8).

Figure 8: Contraceptive use (%) by married women 15-49 yrs by quintile in 1992 and 2000 (Goal 6, proxies for target 7)



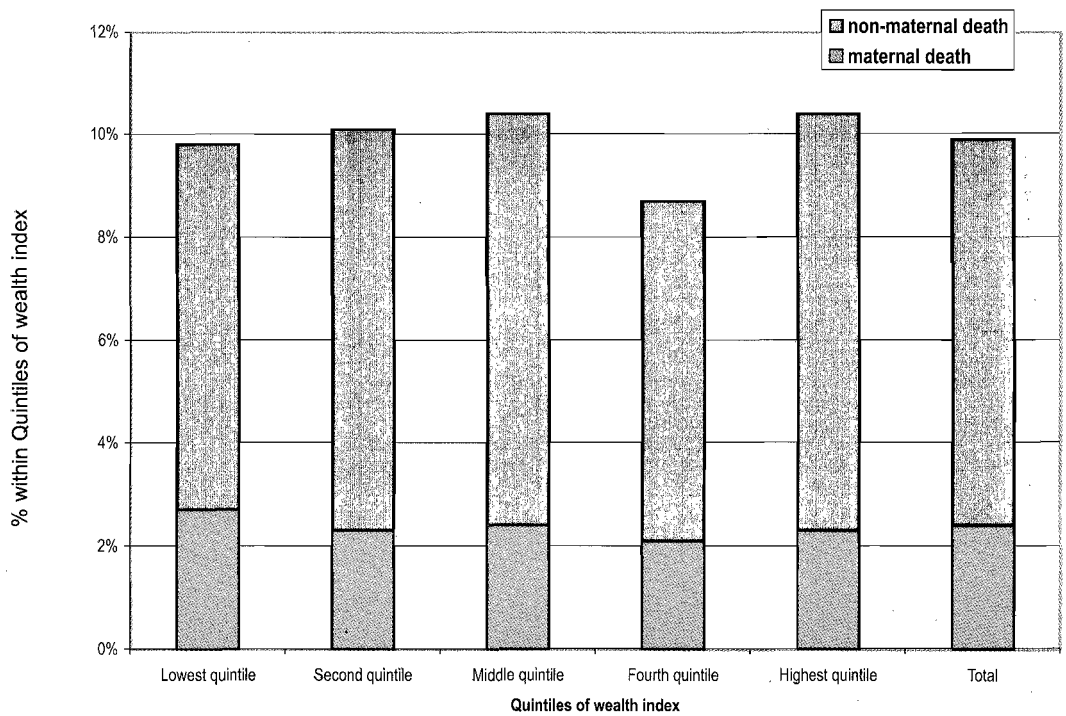
Other health indices

Detailed determinants of health and DHS variables of health status are also available analysed by wealth quintile.[4] The key demographic indicators of child mortality and fertility all show statistically significant levels of inequality. Nearly all the indicators of health service use show inequality except for EPI services and treatment of fever in a public health facility. Antenatal services are inequitable but not by much while VCT and bed net usage are highly inequitable. Reported basic hygiene practice is equitable, as is Vitamin A supplementation and the consumption of alcohol. Reported dangerous sexual behaviour is equitable in women but inequitable in men. Self reported STIs show no statistical significant differences between quintiles while severe stunting is highly inequitable. Knowledge and attitudes about HIV show inequitable distribution. Decision-making seems to be largely equitable between wealth groups. Orphan prevalence and domestic violence are inequitable.

Adult mortality

DHS surveys can be used to assess relative poverty associated with adult mortality by making a major assumption that the wealth of the woman reporting the death of a sibling is similar to the wealth of the sibling who died.[4] Both male and female mortality were 6.4% and 6.5% in the six years prior to the DHS 2000 survey respectively with no difference across quintiles. This probably relates to the contribution AIDS deaths make to mortality. Maternal mortality from 1995-2000 using the same sisterhood method to ascertain a maternal death also finds no inequality (Fig 9).

Figure 9: Maternal mortality by wealth quintile Malawi; Sisters 15-49 years of age DHS2000 who died since 1995



In summary:

- Child mortality is falling but becoming more inequitable
- Malnutrition is falling and becoming more equitable
- Use of most health services is inequitable (except EPI)
- Underlying determinants show a mixed picture – some show inequality, some equality
- Adult mortality is equitable

Conclusion

Malawi shows a mixed picture of equality in respect of health status, health determinants and health care usage. Inequality is not found for those indicators which tend to be influenced by absolute poverty. This is presumably because so many people live below the poverty line. Improvements are being seen in the richer quintile groups. Universal education would appear to be a key way to limit further inequality. Female literacy - an underlying determinant of health - is probably more important than increasing income levels or improving health care.

Inequality is common for those health indicators not affected by absolute poverty. Where the health service has largely overcome problems of access such as EPI and antenatal care, relative poverty is not a factor. Poverty in all its facets is a key underlying cause of ill health in Malawi. Recent efforts to improve health care have tended to increase inequality because the underlying determinants of disease have not yet been successfully addressed.

Acknowledgements

I would like to acknowledge the help and advice provided by Dr Don Mathanga, Mr Humphreys Misiri and DFID staff based in Malawi.

References

1. Sen AK. Development as Freedom. Oxford: Oxford University Press. 1999.
2. UN Development Programme Report. UNDP; 2005.
3. Profile of poverty in Malawi (revised). Lilongwe: Economics Development Council; 2000.
4. Ministry of Health and Population. Integrated Household Survey 1998. Lilongwe: Government of Malawi; pp. 57
5. Shea RO, Johnson K. The DHS Wealth Index. DHS Comparative Reports No. 6. Calverton, Maryland: ORC Macro; 2004.
6. National Statistics Office. Integrated Household Survey – Poverty Profile. Availablefrom:http://www.nso.malawi.net/data_on_line/economics/ihs/poverty_profile.html.
7. World Bank. Malawi Country Report. Available from: http://siteresources.worldbank.org/INTPAH/Resources/Publications/Country-Reports/malawi.pdf.
8. Wagstaff A, Bustreo F, Bryce J, Claeson M. Child Health: Reaching the Poor. Am J Public Health. 2004;94:726–36.
9. Gwatkin D, Rustein S, Johnson K, Pande R, Wagstaff A. Socio-economic differences in health, nutrition, and population in Malawi. HNP/Poverty Thematic Group, World Bank; May 2000.
10. Graham W, Fitzmaurice A, Bell J, Cairns J. The familial technique for linking maternal death with poverty. Lancet. 2004;363:23–7.