

## **Health inequities in selected African countries: Review of evidence and policy implications**

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Inequality and ill-health are intertwined. Unequal access to health services by income group, rural/urban location and gender as social stratifiers results in lower health outcomes for disadvantaged groups. This study uses bivariate analysis of Demographic Health Survey data to identify the main sources of inequities in accessing health care in selected African countries. Findings show that large inequities in accessing health care due to income differences and rural/urban location exist in all countries in varying degrees. Overall the results of this study indicate that specific policies aimed at improving both geographical and financial access to health care are essential. Scaling up of strategies that are pro-poor and result in increased health services provision in underserved areas is crucial. It is also important that health plans should securely embed health equity, by clearly phrasing health objectives and strategies and mainstreaming health equity in the overall national development plans or poverty reduction strategies in order to achieve a well co-ordinated multi-sectoral strategy in promoting health equity.

Key words: health inequities, access to health services, health policies, Africa

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Acknowledgement: The authors would like to acknowledge the valuable comments provided by Kasirim Nwuke, the Chief of the MDGs, Poverty Analysis and Monitoring section.

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### **1.0 Introduction**

Recent assessments of Africa's progress towards the health MDGs shows that some progress has been achieved, however the rate of progress has been too slow to reach the health targets by 2015 (ECA, 2007). Inequities in health have been advanced as one of the factors explaining this outcome. Health inequities are avoidable and unfair systematic differences in accessing and utilizing health services between different socioeconomic groups. Global efforts to improve health equity were initiated by the World Health Organization (WHO) in the 1970s when it launched the Health-for-all programme. In the Alma-Ata (now Almaty) Declaration of 1978, States members of the WHO committed to achieving health for all by the year 2000. The Declaration emphasized the importance of equity, economic and social development, and of participation by the people in the process of improving health—and the crucial role of primary health care and encouraged each country to formulate national policies and strategies for health. The commitments of the Alma-Ata Declaration were renewed by the World Health Assembly in 1998 in the “World Health Declaration” wherein members affirmed the need to give effect to the “Health-for-All policy for the twenty first century” through the implementation of relevant regional and national policies. The “Health-for-All policy for the twenty first century” emphasizes the importance of reducing social and economic inequities in improving the health of the whole population and in particular to pay the greatest attention to those most in need, burdened by ill-health, receiving inadequate services for health or affected by poverty.

African Governments have repeatedly highlighted the importance of bridging health inequities by improving access to health for all. The most recent affirmation of their commitment was made at the 3rd Ordinary Session of the Ministers of Health of the African Union that was held 9 -13 April 2007 in Johannesburg, South Africa, that particularly focused on the theme “Strengthening of Health Systems for Equity and Development”. In the declaration issued at the end of the meeting, the Ministers renewed their commitment to strengthen health systems for equitable health outcomes and specifically to develop social protection systems, particularly for the poor and vulnerable groups in society, aimed at promoting greater access to health care services and protecting families from debt traps due to health emergencies. The Ministers also pledged to implement the Africa Health Strategy in collaboration with the AU Commission, RECs, regional health organizations, UN Agencies, private sector, development partners and other international and civil society organizations. The regional health strategy proposes strengthening of health systems with the goal of reducing disease burden through improved resources, systems, policies and management and to contribute to equity through a system that reaches the poor, the marginalized and displaced people.

Many African governments are grappling with the challenge of how to devise health policies and health care systems that can ensure equity of access to adequate health

care. Empirical evidence shows glaring intra-country differences in access and utilization of health care and health status based on income, gender, urban-rural populations and between dominant and marginalized ethnic groups. Even in countries that improved resources to health and strengthened their health systems and had achieved some progress on health outcomes; this progress has not been “inclusive” enough. Besides economic inequalities, social and geographic factors such as gender, race, rural/urban residency and ethnic background also contribute for the large differences in health status and the exclusion of some groups to health services (Carr, 2004).

However translating the commitments of African leaders on realizing equitable health outcomes to reality requires not only effective formulation of policies and strategies that can act on these inequities but also information explaining the incidence and the extent of the inequities. It is in this context that this study was commissioned. The objective of this paper is to empirically identify the main sources of health inequities in selected African countries and suggest policy implications on how to mainstream health equity into the national health policies and the broader development agenda in order to achieve equitable access to health care.

This paper is structured as follows; Section 2 presents an overview of the major socio-economic indicators in the selected study countries; while Section 3 presents the methodology and the data. Section 4 highlights the main sources of health inequities in selected African countries. Section 5 presents a summary of results, discussion and policy implications and Section 6 draws the main conclusions.

## 2.0 Macro-economic context and socio-economic indicators on health inequity in Africa

Table 1 and figures 1 and 2 provide a quick glance of health status and resource allocation to health among the study countries. As can be easily observed, life expectancy is low and infant mortality is high. Many African countries face the challenge of improving access to health care whilst at the same time struggling with the burdens of the HIV/AIDS pandemic. Amongst the study countries, Zambia and Malawi record high HIV/AIDS prevalence rates followed by Cameroon and Kenya.

Table 1. Basic country indicators (2004 except where indicated)

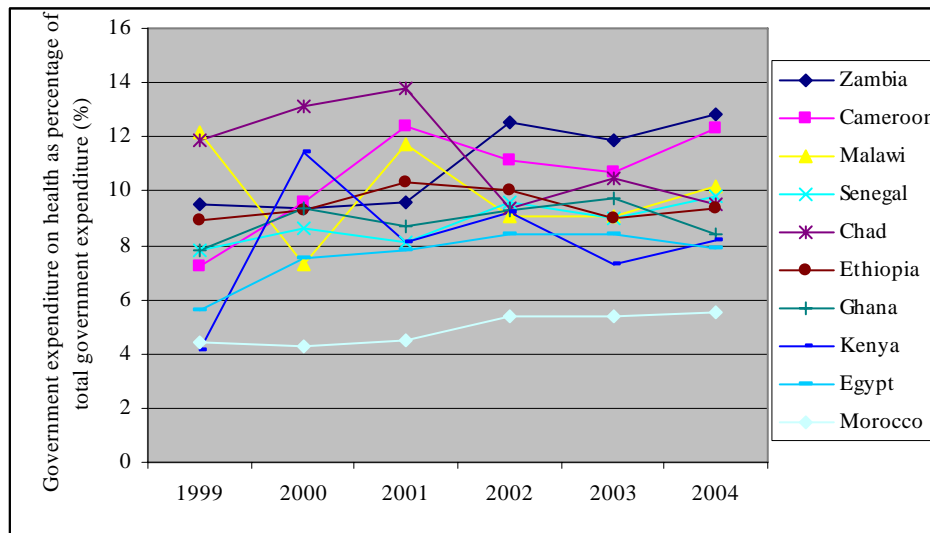
Country	Population (millions)	GDP per capita (constant 2000 US \$)	Life expectancy (years)	Infant Mortality rate per 1000	Adult HIV prevalence rate (2003)	Immunization, measles (% of children ages 12-23 months)
<b>Cameroon</b>	16.04	662.1	45.98	87.2	6.9	64
<b>Chad</b>	9.45	256.8	43.88	117	4.8	56
<b>Egypt</b>	72.64	1614.7	70.22	26.4	0.1	97
<b>Morocco</b>	29.82	1348.6	70.08	38.2	0.1	95
<b>Ethiopia</b>	69.96	112.6	42.48	110.4	4.4	71
<b>Kenya</b>	33.47	426.6	48.35	78.5	6.7	73
<b>Ghana</b>	21.66	278.5	57.20	68	2.2	83
<b>Senegal</b>	11.39	460.8	56.14	77.6	0.8	57

<b>Zambia</b>	11.48	336.2	38.08	102	16.5	84
<b>Malawi</b>	12.61	153	40.22	109.8	14.2	80

Source: World Development Indicators, WDI 2006

Public expenditure on health as a percentage of total expenditure on health has been low in the study countries with all countries failing to meet the target of allocating at least 15% of their annual budgets to the health sector as pledged by African Heads of State and Government at the Summit on HIV/AIDS, Tuberculosis and Other Related Infectious Diseases in Abuja, in 2001 (See Figure 1). Out of pocket expenditure in the private provision of health is predominant. Out of pocket payment has been considered as one of the most inequitable financing mechanisms of health delivery (Makinen et. al, 2000). Overall all countries except for Malawi and Kenya experienced an increase in public expenditure to the health sector over the period 1999 to 2004.

**Figure 1. Government expenditure on health as percentage of total government expenditure**

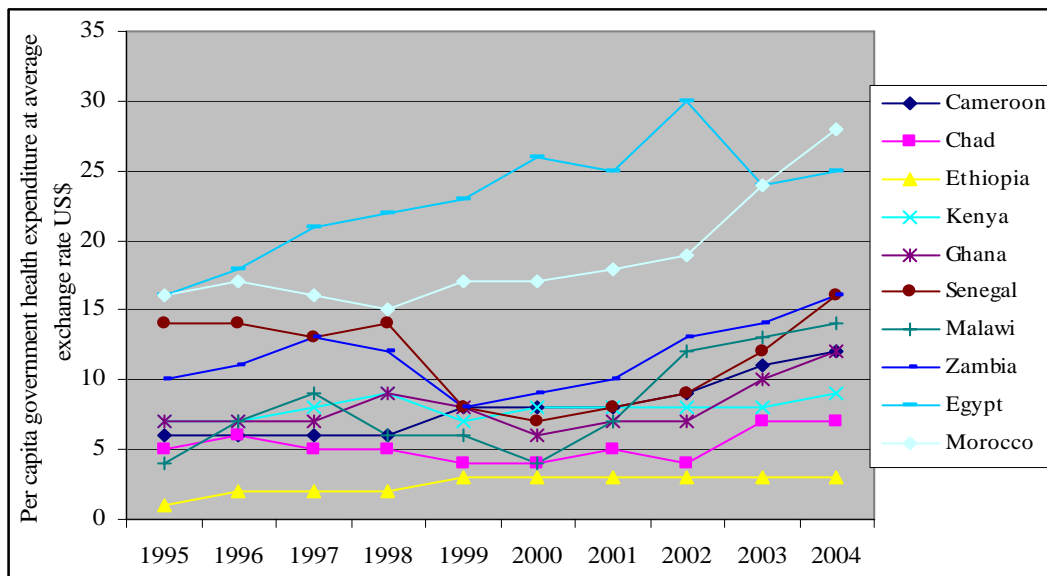


Source: WHO, 2007

The Millennium Project report suggests that in low-income countries, the current levels of expenditure on health would need to increase to US\$24 per capita in 2010 and US\$34 per capita by 2015 (UN Millennium project, 2005). In per capita terms, the countries that are allocating higher amounts (greater than US\$25 per capita) to health are Morocco and Egypt (See Figure 2). The trends in per capita public health expenditure for the two countries also show positive overall increase in per capita health expenditure over the period 1995 to 2004 (although Egypt experienced a decline in 2003 but showed recovery in 2004). Actual expenditure on health in the rest of the study countries (ranging from US\$3 per capita in Ethiopia to US\$16 per capita in Zambia and Senegal) falls far short of the costs of a package of minimum necessary health services, as estimated by the UN Millennium Project. This has profound implications for addressing health inequities and achievement of the health MDGs in Africa. Three countries in particular have public health expenditure that is lower than US\$10 per capita (Kenya US\$9, Chad US\$7 and Ethiopia US\$3). It is important for all

countries and for these three in particular to improve public spending on health as agreed at the Abuja Summit because all indications are that increased public spending is strongly associated with improvements in health outcomes and equity in low income countries (Gupta et al, 2001, Victora et al, 2004). However the increased spending should be well targeted to address the major sources of inequities in access to health care namely improving health infrastructure for the rural population and targeting the needs of the poor.

**Figure 2. Per capita public health expenditure**



Source: WHO, 2007

### 3.0 Methodology and data

The analysis in this paper is based on data from the Demographic and Health Surveys of ten African countries. Demographic and Health Surveys (DHS) are nationally-representative household surveys with large sample sizes (usually between 5,000 and 30,000 households). DHS surveys provide data for a wide range of monitoring and impact evaluation indicators in the areas of population, health, and nutrition. Typically, DHS surveys are conducted every 5 years, to allow comparisons over time. Ten countries were selected to represent each sub-region (East, West, South, North and Central Africa) and also to bring out as much diversity as possible in health policies, existing initiatives to address health inequities, and differences in population and standards of living. The countries include Ethiopia, Kenya, Ghana, Senegal, Zambia, Malawi, Egypt, Morocco, Chad and Cameroon.

The analysis of primary DHS data was based on standardized methods (See Wirth et. al, 2006a, Wirth et. al, 2006b, Gwatkin 2001, Gwatkin et. al, 2000) using the stratification of the population into groups according to underlying social disadvantage. This study used wealth, gender, and rural/urban location as stratifiers. On wealth stratification this study used the DHS constructed wealth quintiles that are based on a household wealth index calculated using a factor analysis procedure<sup>2</sup>. The health indicators that reflect

<sup>2</sup> See Rutsein and Johnson, 2004 for details.

access and utilisation in health care that are captured by DHS data include usage of modern contraceptive methods; prenatal care services; women receiving delivery assistance from skilled health worker; immunization coverage rates; children with acute respiratory infection taken to a health facility; children with diarrhea that were taken to a health facility; and a proxy for access to a health facility. Simple stratification (bivariate analysis) for the health indicators and tests for significance in the differences between groups was performed. The analysis is focused on women because of the data and the widely observed differences in access to health care across the countries.

A summary measure of inequalities in access to health – the concentration index<sup>3</sup> – was calculated for the health access and utilization indicators. The range of values of a concentration index range from -1.0, which would occur if access to health for an indicator for example immunization covers all in the poorest population, to +1.0, which would occur if access to health for an indicator covers all in the wealthiest quintile. Where there is no income-related inequality, the concentration index is zero. In addition, to add to the dynamic nature of the study two DHS data points were used to identify the trend in inequity for all the study countries.

#### **4.0 Inequities in access to and utilization of health care**

##### **4.1 Evidence of health inequities for all health indicators by wealth**

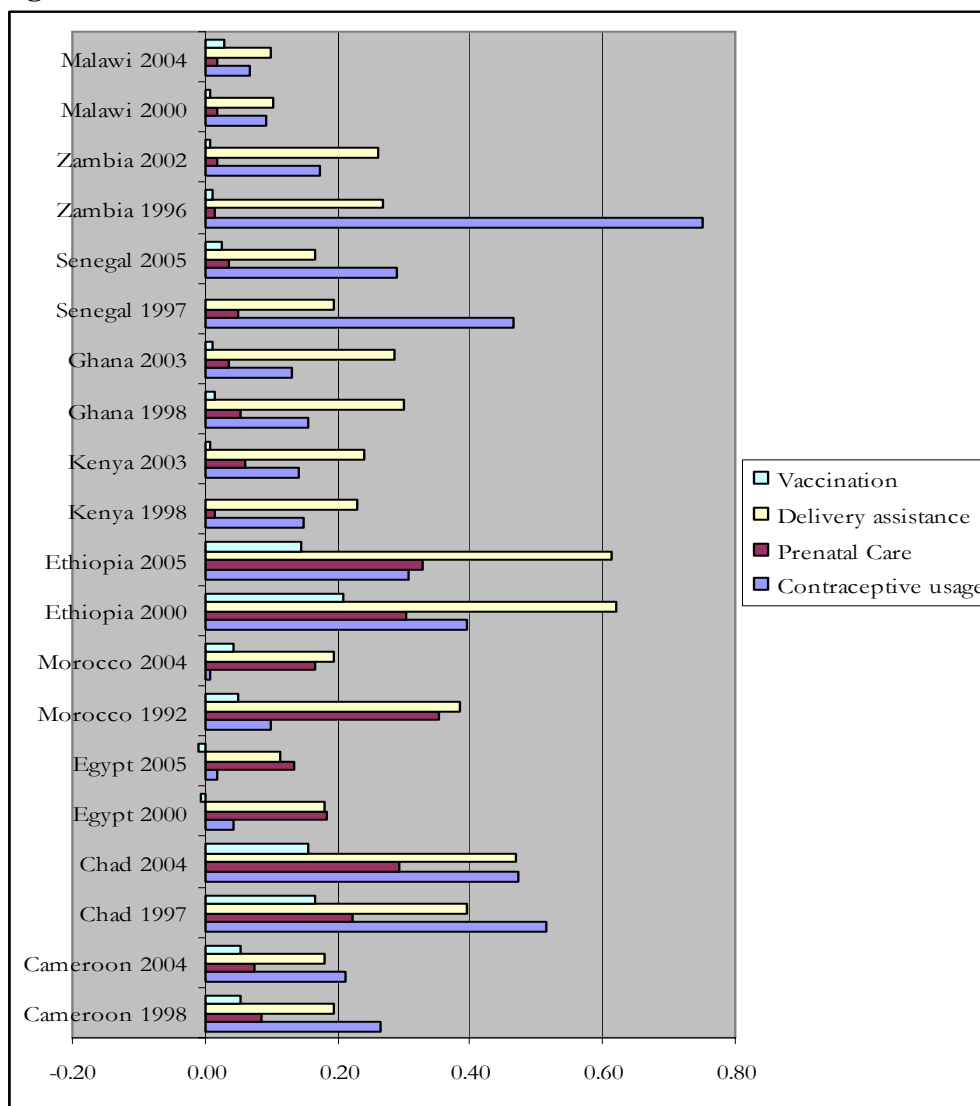
Income differentials in access to health are observed in different magnitude across all countries and across all health variables analysed. This can be comprehensively observed through the following table, which exhibits across the study countries, across the two DHS data points and across the health variables.

Figure 3 shows the concentration indices for all health indicators across all the countries (annex 1 also shows concentration curves for all the indicators for the latest year). Comparison across access to health indicators reveals that the indicator with the greatest inequity due to wealth differences is contraceptive usage followed by delivery assistance in all countries. An equitable distribution for these indicators is a concentration index of 0.0. Although access to immunization and prenatal care services appear closer to equity (closer to 0.0) in Zambia, Malawi, Ghana, Senegal and Kenya, huge disparities are evident in Ethiopia and Chad (see figure 3 and annex 1). Overall, presence of inequities due to wealth differences implies the need for policies that can address the rich poor source of inequities particularly for delivery assistance and contraceptive use.

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<sup>3</sup> The concentration index is analogous to the gini coefficient for income distribution.

**Figure 3. Concentration indices for selected access to health variables**

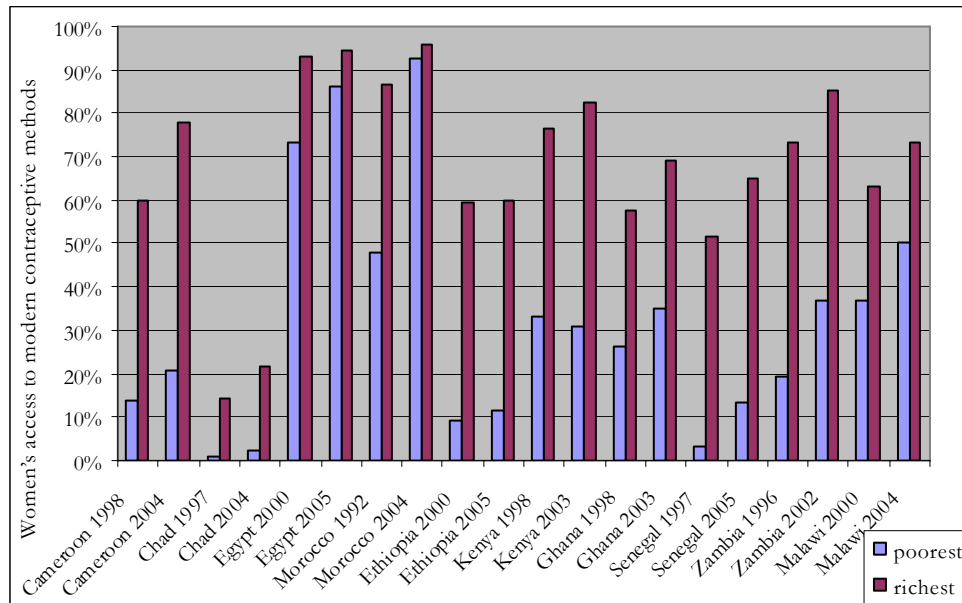


**Women’s access to modern contraceptive methods**

Modern contraceptive methods some of which include voluntary sterilization, oral contraceptives, intrauterine devices, condoms and injectables have been proven to be effective family planning methods. Stratification of women’s access to modern contraceptive methods by wealth shows wide disparities between the rich and the poor in accessing modern contraceptive methods (Annex 2 has details of all access to health indicators stratified by wealth). The distinct pattern emerging across all countries shows that women’s access to modern contraceptives improves with increasing level of wealth. Comparing the richest and poorest quintiles provides more information on the extent of inequity between the two groups as presented in figure 3. Women in the richest quintile in all study countries have better access to modern contraceptive methods than the poorest quintile. The countries with the greatest inequity include Cameroon, Ethiopia, Ghana and Zambia. The large inequities between the rich and the poor in these countries may reflect the disparities in accessing family planning services as well as

differences in the demand for contraceptives. The poorest groups in these countries do not use modern contraceptive methods due to possible asymmetric access to this information. There is also a high possibility that poorer groups are less educated and thus demand for modern contraceptive methods is low.

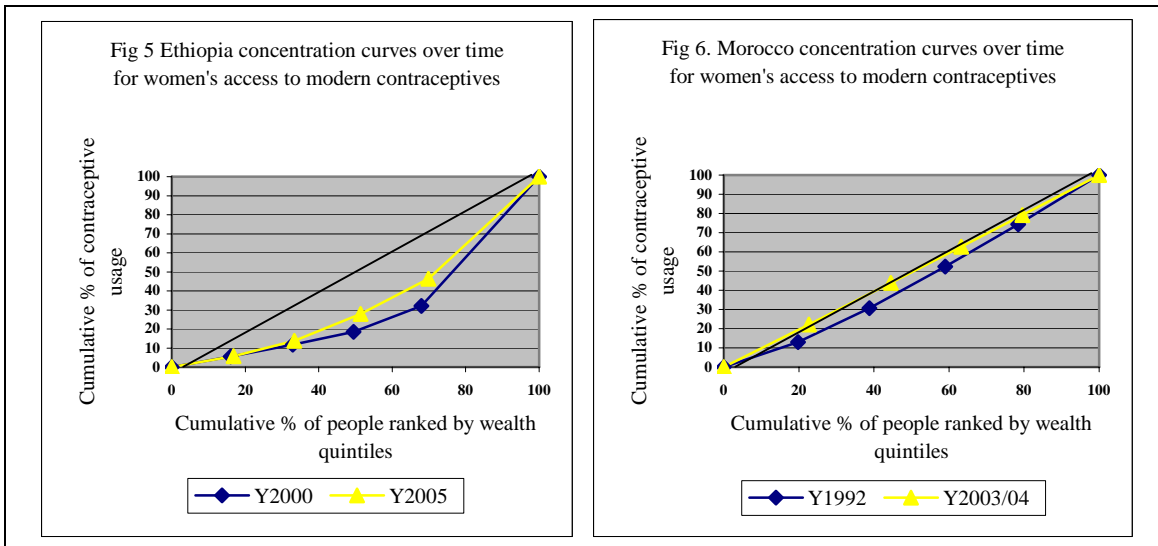
**Figure 4. Women’s access to modern contraceptive methods by richest and poorest groups**



Source: ECA calculations using DHS data

Two DHS data points were chosen for each country studied to observe trends irrespective of policy changes, and determined solely by DHS surveys years. The data over two time periods reveal that women’s access to modern contraceptive methods has improved over the time period in all countries, however, these improvements have not been able to close the gaps in equity between the rich and the poor. The change over time can be clearly demonstrated by using concentration curves for example Ethiopia that shows that improvements were made but not enough to close the inequity gap (see figure 5). Over a longer time period 1992 to 2003/04 Morocco has made considerable progress in the period under consideration. (See figure 6).

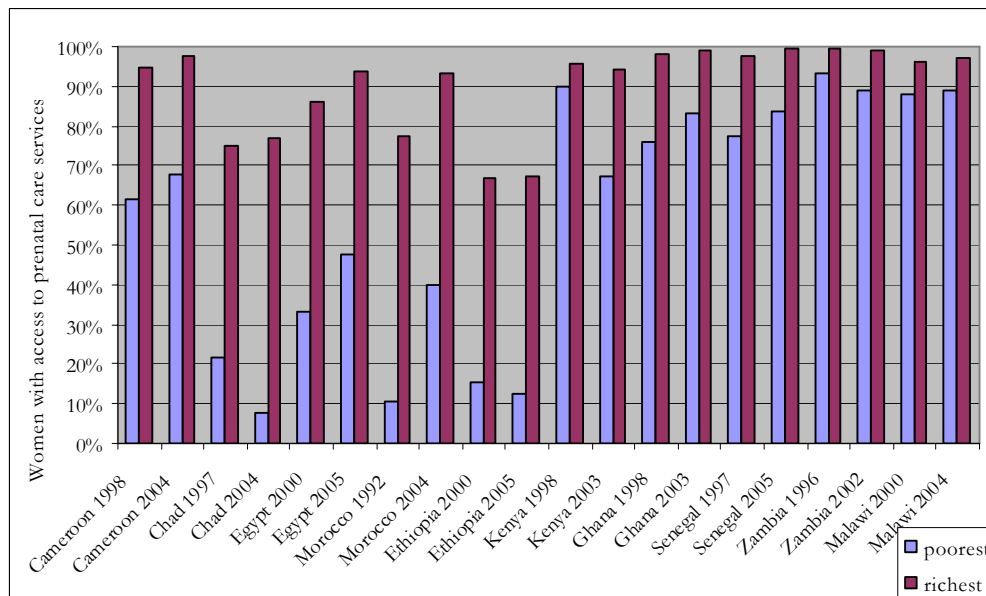




**Access to prenatal care services**

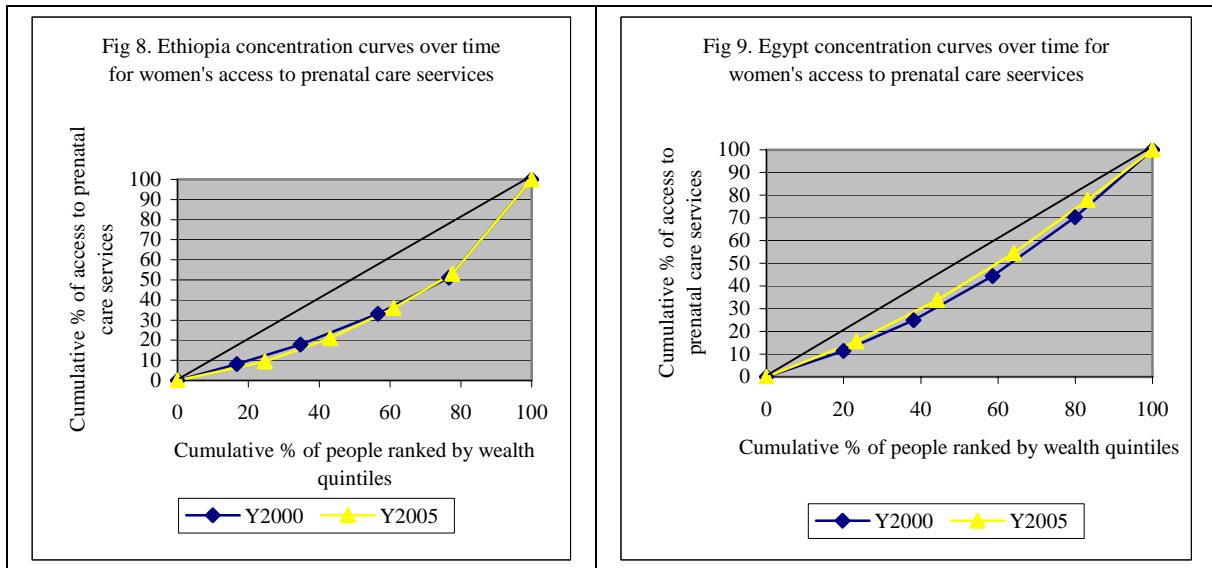
Modern prenatal care services in the DHS are those services that have been provided by health professionals to those women who gave birth in the three to five years preceding the survey. Access to and utilization of prenatal care services can help in addressing some of the causes of health care complications and mortalities associated with pregnancy. Data on women who have access to prenatal care services by wealth quintiles shows that the disparities are much less in Malawi, Zambia, Senegal and Ghana where more than 80% of the population in all the quintiles have access to prenatal care services. However, comparison of the richest and poorest quintiles reveal striking disparities between the two socio-economic groups in Cameroon, Ethiopia, Morocco, Egypt, Chad and Kenya.

**Figure 7. Women with access to prenatal care services by richest and poorest quintiles**



Source: ECA calculations using DHS data

The data over two DHS time periods reveal that some countries notably Cameroon, Egypt, Morocco, Ghana and Senegal have made some progress in addressing the inequity gap, however the progress was not large enough to close the gap. On the other hand, some countries (Chad, Ethiopia and Kenya) have experienced worsening of the poorest group in accessing prenatal care services. Figure 8 and 9 illustrate the case for Ethiopia where inequity in access to prenatal care services widened over time and Egypt where equity improved.



Source: ECA calculations using DHS data

### Delivery assistance by health professional

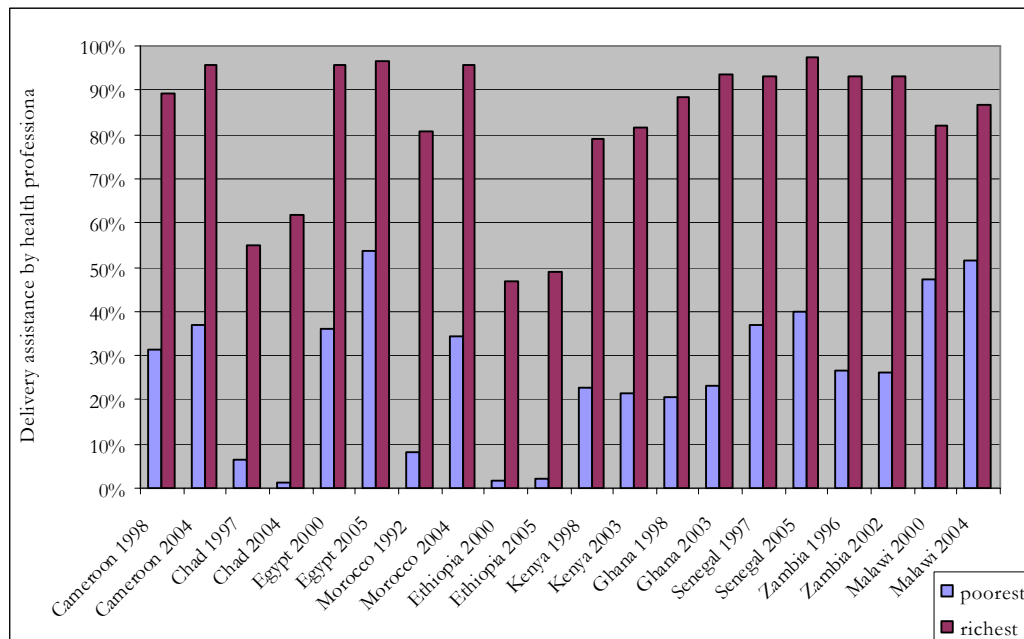
Delivery attendance services in DHS are those that were provided by health professionals such as doctor, nurse/midwife, auxiliary midwife, clinical officer, health assistant or country specific health professional. Only those women who gave birth in the three to five years preceding the survey were considered. Professional assistance at delivery is critical since a number of serious pregnancy-related complications cannot be predicted in advance.

Stratification of the delivery assistance indicator by wealth reveals striking evidence on inequities. Women in the richest wealth quintile have greater access to delivery assistance by a health professional when compared to the poorer groups in all the study countries (see figure 10 and annex 1). Ethiopia and Chad that have the lowest figures overall of women receiving delivery assistance from a health professional, also show wide disparities between the richest and the poorest – less than 3% of the poorest wealth quintile are able to access delivery assistance from a health professional compared to almost 50% and 60% of those from the richest group in Ethiopia and Chad respectively.

It is important to note good performers that have improved equitable health outcomes of delivery assistance outputs have also had overall progress towards maternal mortality goals. In fact, the maternal health goal of decreasing maternal mortality by 75% by

2015 has an indicator of delivery by health professionals as a vital input to reach the goal. In Sub-Saharan Africa in 1990 health professionals covered only 42% of deliveries and this increased only to 46% by 2004. On the other hand, North Africa which had an initial 40% covered by health professionals in 1990 this significantly increased to 71% by 2004 (UN 2006). Egypt and Morocco are the two countries that made some significant progress in improving delivery assistance of the poorest groups, although the gaps in inequities have not been fully addressed. Overall all the other countries need to work towards addressing the huge inequity gaps between the wealth groups in accessing delivery assistance from a health professional.

**Figure 10. Women with access to delivery assistance by richest and poorest wealth quintiles**

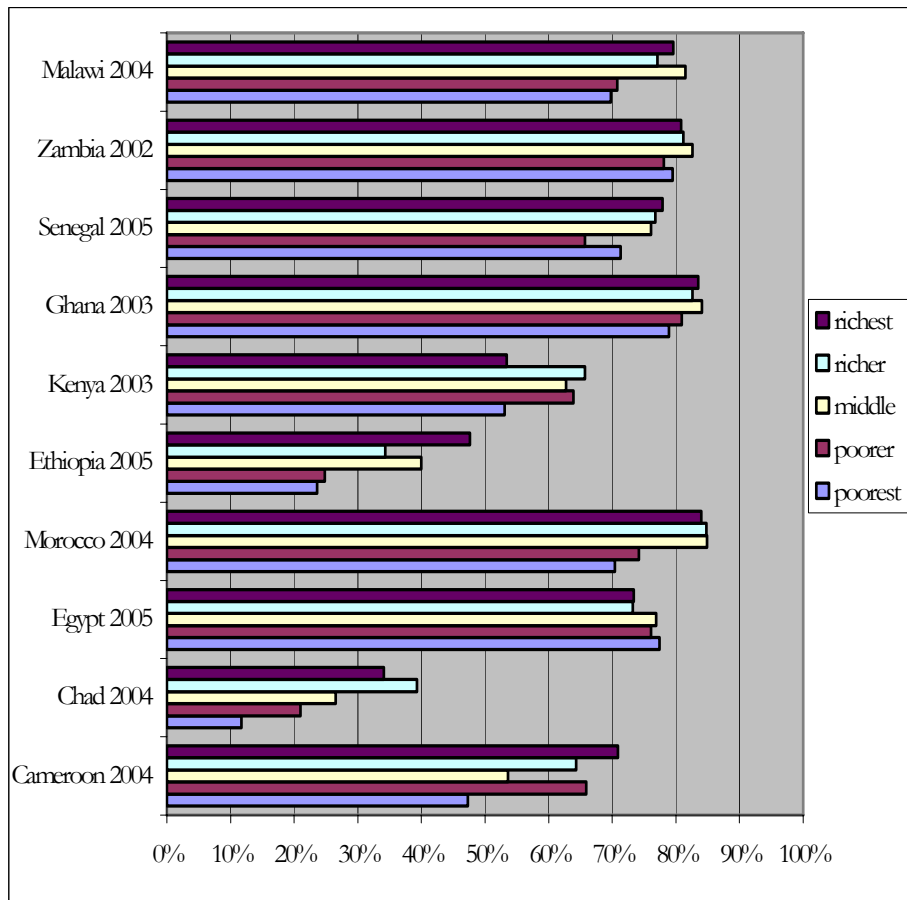


Source: ECA calculations using DHS data

### Access to immunization

Immunization rates have been on the increase in Africa. In fact, due to extensive vaccination campaigns between 1990 and 2005 measles cases have dropped on average by 75% (UN 2007). However immunization rates still suffer from inequities. Figure 11 shows the immunization rates stratified by income groups, and as can be seen equity considerations by income seem to be less of a problem in the countries surveyed, except for Ethiopia and Chad. If the highest and poorest quintile are portrayed the inequities increased in all countries, demonstrating that although median groups have gained the poorest groups have not gained as much in access to immunization.

**Figure 11. Immunization of children by wealth quintiles**



Source: ECA calculations using DHS data

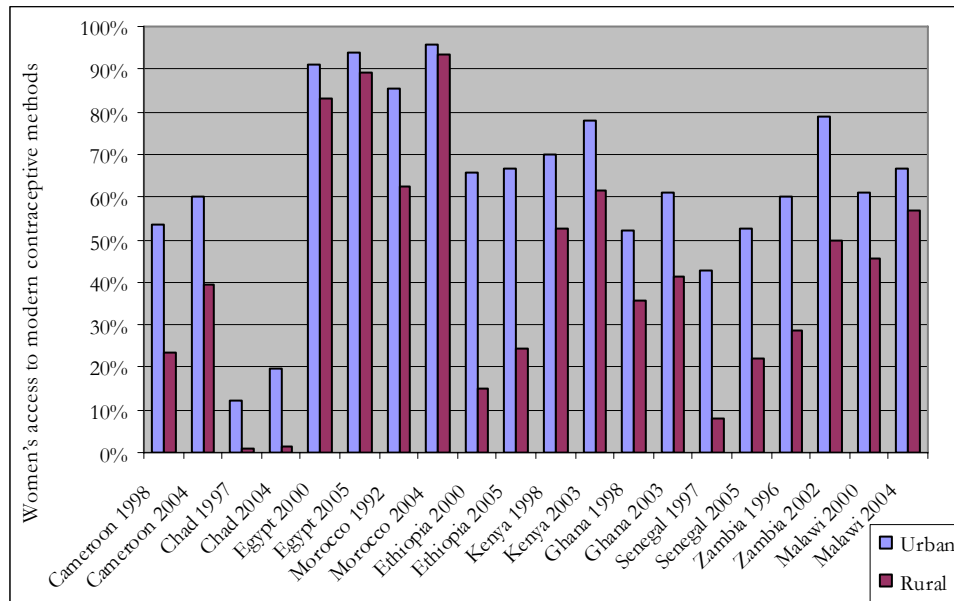
#### **4.2 Evidence of health inequities for all health indicators by rural - urban location**

Although as has can be observed, income differentials are important prerequisites to access and utilization of health services, location is even more inequitable. The urban-rural divide cuts across all health variables with the rural population severely under-serviced (see annex 3 for summary table).

##### **Modern contraceptive use**

Equity in accessing modern contraceptives methods is by geographical area of residence that clearly reveals inequities in women's access to modern contraceptive methods between the rural and urban areas. Women in urban areas have better access to modern contraceptives than rural women in all countries (see figure 12). Countries with the greatest inequities include Cameroon, Ethiopia, Chad, Egypt, and Morocco. Developments over time show an improvement in women's access to modern contraceptive methods in both rural and urban areas in Cameroon, Morocco, Egypt, Ghana and Senegal. However the improvements were not big enough to close the rural urban disparities. In other countries, the rural urban disparities either widened (as in Chad, Kenya and Zambia) or did not change (as in Malawi).

**Figure 12 Women’s access to modern contraceptive methods stratified by urban and rural geographical residence**

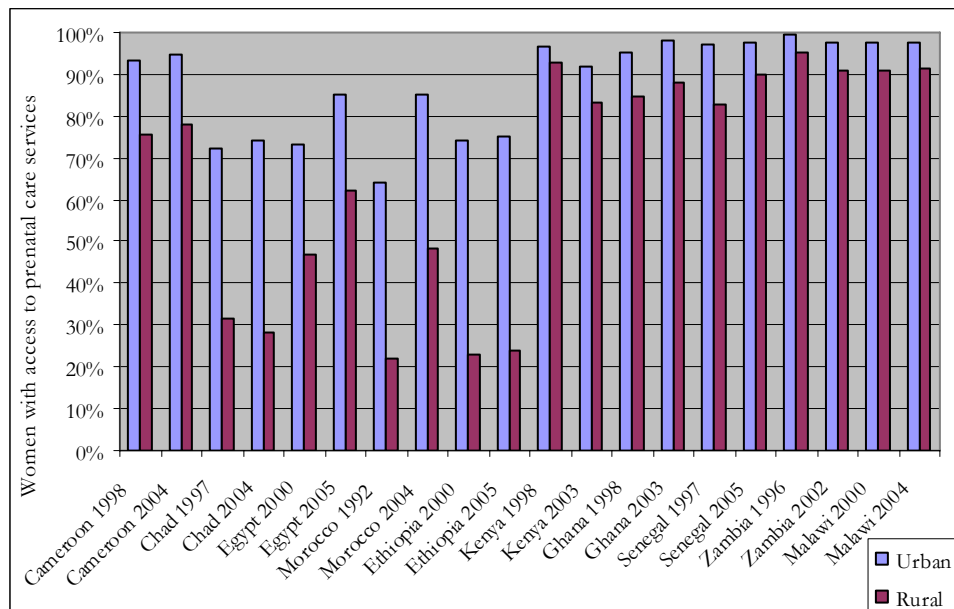


Source: ECA calculations using DHS data

**Access to pre-natal care**

The access to prenatal care services indicator by rural-urban place of residence reveals wide disparities between the two locations as illustrated by figure 13. The disparities were widest in Chad, Egypt, Morocco and Ethiopia. In Kenya, Ghana, Senegal, Zambia and Malawi, the disparities are not as huge and generally access to prenatal services is high (greater than 80%) for both rural and urban populations. Trends in access to prenatal care services by urban-rural place of residence reveals that some countries notably Egypt, and Morocco have made some efforts to address the rural-urban inequity gap.

**Figure 13. Women with access to prenatal care services by urban and rural residence**

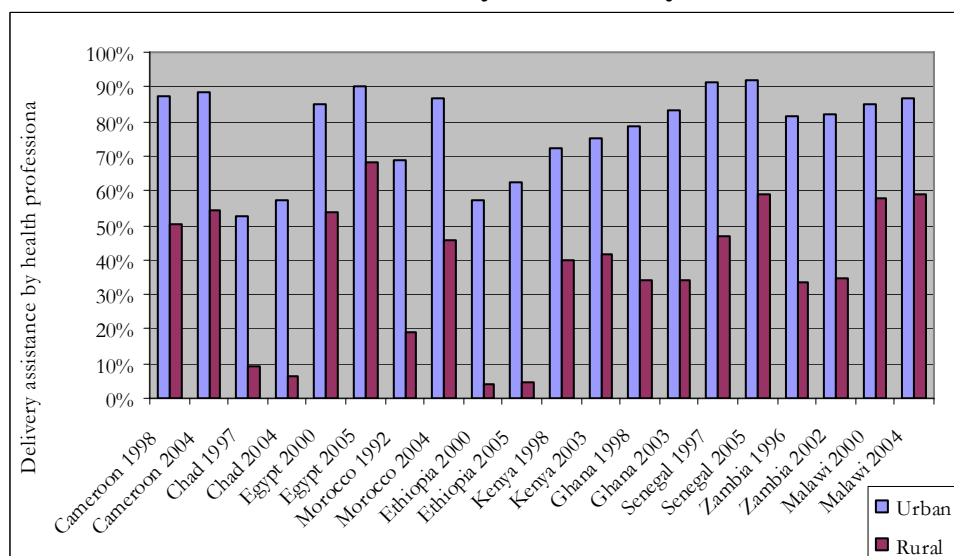


Source: ECA calculations using DHS data

### Delivery assistance

Stratification of delivery assistance by place of residence also reveals huge disparities between urban and rural areas (see figure 14). Women resident in urban areas have a much higher chance of getting delivery assistance from a health professional than those in rural areas. The biggest disparities are in Chad, Ethiopia and Zambia. Over time the countries that have made significant progress to address the inequities are Egypt, Morocco and Senegal.

**Figure 14. Women with access to delivery assistance by urban and rural residence**

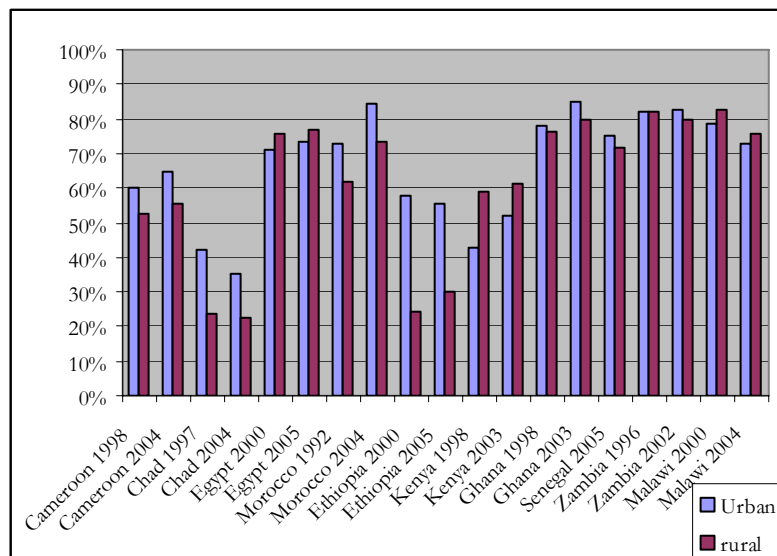


Source: ECA calculations using DHS data

## Immunization

As is evident in other health services access and utilization, the rural-urban divide is the most inequitable stratifier. As can be seen in the figure 15 the rural-urban dichotomy still portrays deep inequity. An observation that is clearly evident is that in a dynamic perspective the countries with initial rural inequity in access to immunization have remained inequitable, notwithstanding average increases in overall immunization rates. It is interesting to note that in Egypt, Kenya and Malawi, the rural areas are more advantaged than the urban areas, and over the two time periods, the countries have improved immunization in both areas and managed to slightly close the rural-urban gap.

**Figure 15. Immunization of children by rural-urban location**

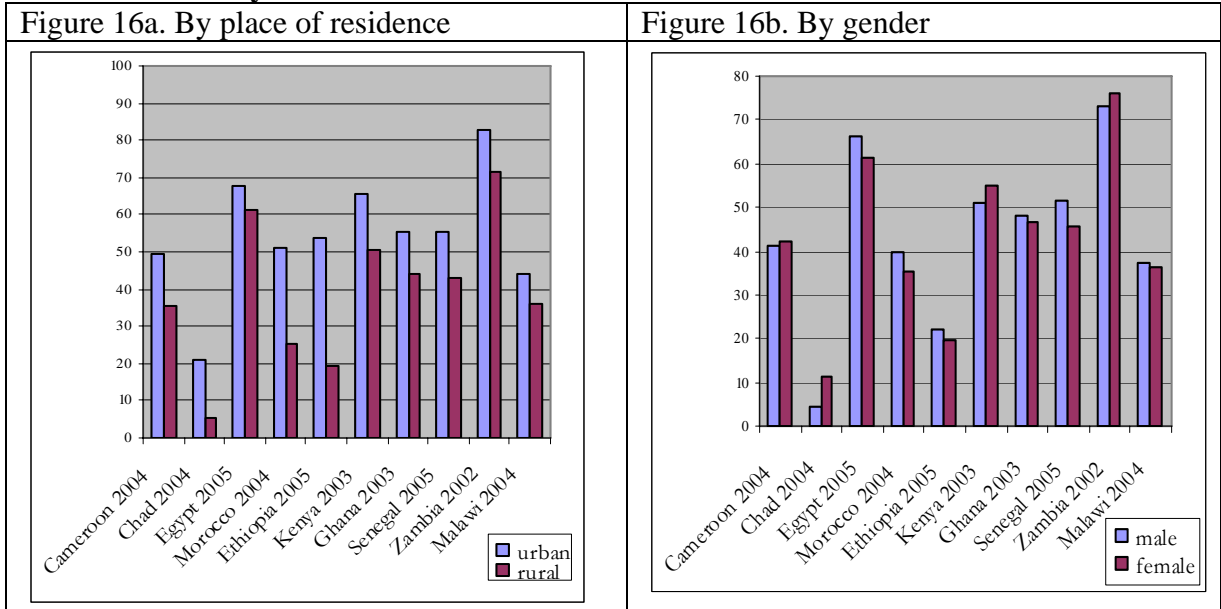


## Children with acute respiratory infection taken to a health facility

Transport and infrastructural services in general are important aspects underpinning the rural/urban dichotomy. On average, in the ten countries, the children with ARI taken to a health facility in urban areas is about 55% much higher than 39% the average rate of children with ARI that are taken to a health facility in the rural areas (see figure 16a).

Figure 16b presents the indicator, children with ARI taken to a health facility stratified by gender. From this figure, it can be seen that overall the pattern of male and female children with ARI that are taken to a health facility is equitable in all countries. On average, in the ten countries, the percentage of children with ARI taken to a health facility who are male is about 43.4% marginally higher than the average rate for female children, which is 42.9%.

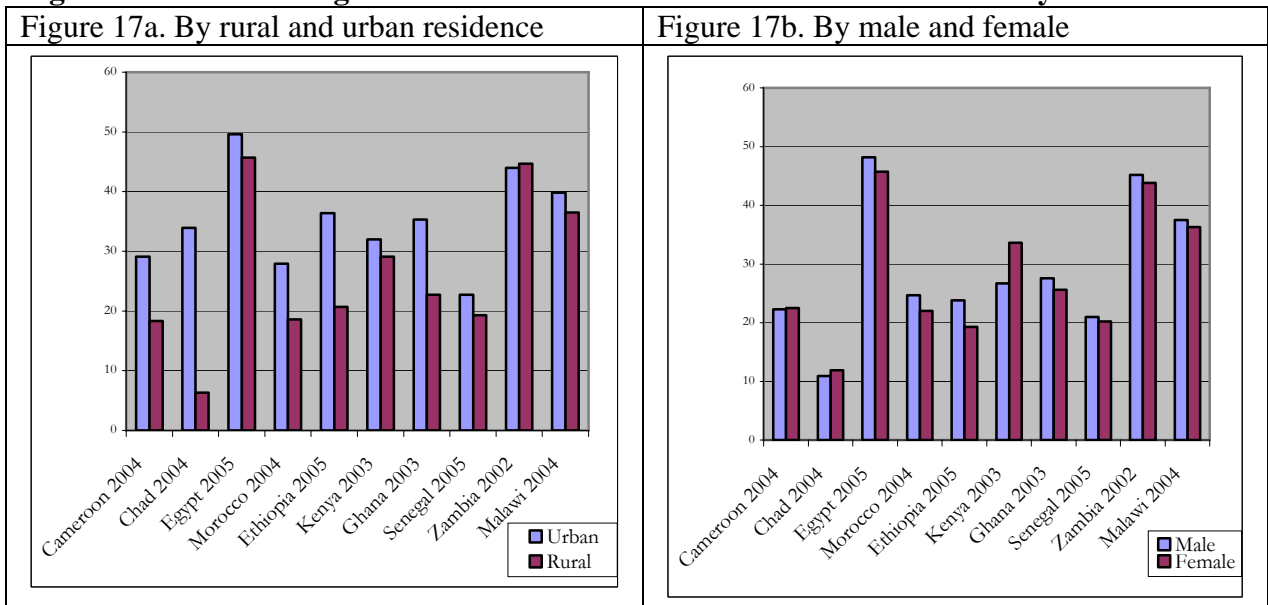
**Figure 16. Percentage of children with acute respiratory infection (ARI) taken to a health facility**



**Children with diarrhea taken to a health facility**

The indicator children with diarrhea who were taken to a health facility refer to under-five children who had diarrhea in the two weeks preceding the survey. Figure 17a and 17b show stratification of the indicator by place of residence and by the sex of the child. Figure 17a shows that there are urban and rural inequities in children with diarrhea accessing a health facility. The rural-urban disparities were greatest in Cameroon, Chad, Ethiopia, Morocco and Ghana. Stratification by sex reveals no major difference between male and female children accessing health services.

**Figure 17. Percentage of children with diarrhea taken to a health facility**





## **5.0 Summary of results, discussion and policy implications**

The findings show that health equity is a serious issue in the countries studied. However there are some variations between countries. In all study countries women from the poorest quintiles are less likely than those in better off quintiles to use basic health services such as prenatal care, modern contraceptives, delivery assistance by a health professional, and immunization. The health indicator with the greatest inequity due to economic reasons is delivery assistance by health professional. The findings also show striking evidence of rural to urban disparities in accessing health services in all countries. Rural-urban inequities are most extreme for delivery assistance, and children with ARI and diarrhea taken to a health facility.

Stratification by sex did not reveal major differences in accessing health care for immunization and children with ARI and diarrhea taken to a health facility because the access to health care by children is determined by their mothers who as the data shows, do not differentiate by the sex of the child. However at an older age, available literature<sup>4</sup> indicates disparities in the patterns of accessing health in women and men. Women have greater needs of health services that stem from their higher morbidity related to reproductive health; higher risk to diseases such as HIV/AIDS and vulnerability to gender-based violence. Women are also overrepresented among the poor and have less access to remuneration for accessing health services. In most households in Africa, women have little influence in health-related decisions which are made by husbands (UNICEF, 2007). All these economic, social and cultural obstacles may limit the access to health care of women more often than men from the same social group.

Access to health is generally low in most countries in particular for delivery assistance. This has important repercussions for achieving the MDGs. Delivery assistance has an indicator used to assess progress towards Goal 5 - decrease maternal mortality by 75% by 2015. In Sub-Saharan Africa in 1990 health professionals covered only 42% of deliveries and this increased only to 46% by 2004. On the other hand, North Africa that had an initial 40% covered by health professionals in 1990 experienced significant increases to 71% by 2004 (UN 2006). In two countries Ethiopia and Chad overall access to all health indicators are low yet inequities by wealth and rural-urban differences are present. There is need for policies and strategies that can improve the overall level of access to health while at the same time addressing inequities.

Over the two time periods, results reveal that some countries have made some progress in closing the inequity gap. Countries that have made substantial progress in addressing the inequities due to wealth differences include Morocco and Egypt. Marginal progress was made in Ghana, Malawi, Senegal and Cameroon. Countries that have made substantial progress in addressing the rural-urban inequities include Morocco, Egypt, Senegal and Ghana. Marginal progress was made in Cameroon.

These findings that confirm evidence of inequities in access to health care by wealth and geographical location have direct implications for policy.

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<sup>4</sup> UNICEF (2007), WHO (1998).

- **Deeper integration of health equity in national health plans**

There is need for health plans to become more equity focused. A review of the health plans for the study countries reveals that all the plans have a reference to equity issues to a varying degree (ECA, forthcoming). Some plans have a clear articulation of the health equity objectives and the strategies to be adopted to achieve the equity objectives for example, articulation of strategies to address health inequities made in Kenya's second Health Sector Strategic Plan 2005-2010 or Ghana's five-year health sector strategy (2002-2006). However overall there is generally a need to improve the targets of the health goals so that they reflect both geographical and financial access.

- **Scaling-up of equity oriented interventions**

Health policies should also promote scaling up of strategies that improve geographical and financial access, address socio-cultural barriers and gender inequity issues which deny women access to health care. Equity oriented interventions that need scaling up include: basic or essential health packages; expansion of the health services to remote areas; expansion and integration of community level health services; targeted fee exemptions at public facilities; free health services; expansion of national health insurance; promotion of community based health insurance; and financial decentralization. Morocco and Egypt followed by Ghana, Senegal and Malawi are countries that have shown great strides in addressing health inequities. The progress is partly explained by the adoption of a mixture of strategies aimed at improving both geographical and financial access to health services.

The rate of improvements in the amount of resources allocated to the health sector in all countries studied is rather low. The pace of change in addressing health inequities is dependent not only on the specific health policies but whether these are supported by adequate resources. The two countries that have experienced the greatest positive equity impacts over health variables and over time have the largest public expenditure per capita on health allocation. All the countries studied have not reached the Abuja declaration commitment of 15% of total government expenditure allocated to health. Governments need to increase resources allocated to health to help the sector implement equity promoting strategies.

There is also need to mainstreaming health equity in the allocation of resources within the health sector in order to address the rich-poor and rural-urban inequities. Countries need to strengthen or develop resource allocation formulas that address health inequities in the allocation of all resources including financial, human resources, equipment and drugs. In particular there is need to reprioritize resources to delivery assistance and contraceptive use as they were the most inequitable across countries. Intensified training of health personnel and incentives for distribution towards low serviced areas is important.

- **Strengthening of the institutional framework that can support greater integration of health equity into the health sector**

A review of existing supportive institutional frameworks indicates that some countries have institutional framework that supports integration of health equity in the health sector in the form of inter-sectoral parliamentary committees (in most of the countries), equity and access sub-group (eg. in Malawi) and civil society lobby groups (ECA, forthcoming). There is need to strengthen and establish (where they are non existent) institutional frameworks that can support mainstreaming of health equity such as inter-sectoral committees.

- **Mainstreaming health equity in monitoring progress**

Data for monitoring progress in addressing health inequities is essential for making informed choices on policies and strategies. National average data conceals major access inequities suffered by the disadvantaged groups. The commonly used MDG data need to be reflected in a disaggregated way so as to allow monitoring of health equity. This justifies the case for sub-national or spatial MDG monitoring.

- **Deeper integration of health equity in the national development strategies and poverty reduction strategies**

Success in addressing health inequities depends on the successful integration of health equity in the relevant supporting sectors which include water and sanitation; education, agriculture; transport; social welfare; and others. It is important that relevant sectors securely mainstream health equity into their sectoral policies to assist in improving geographical and financial access to health care. This can be successfully achieved through mainstreaming of health equity in the overarching framework for national development - the national development plan or PRSP. The national development plan or poverty reduction strategy paper sets out the development strategy for achieving overall socio-economic development in a country and the priorities for public expenditure by the government. It is important that health equity is clearly mainstreamed in this national plan because it provides the overall strategic direction to ensuring that development is more inclusive; it can infuse the multi-sectoral linkages required in addressing health inequities; and can strengthen the case for increased resources to health.

- **Strengthening of political leadership in the process of tackling health equity**

Political leadership in addressing health equity is essential in to ensure success. In Morocco the national health policy and its position, anchored within the national development plan has had the initial thrust and continuous monitoring through the Head of State.

- **Mainstreaming health equity in regional processes**

Regional institutions can help foster the mainstreaming of health equity in national development strategies by helping countries mobilize resources that are essential for addressing health inequities.

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## Annex 1. Concentration curve across health indicators for selected countries

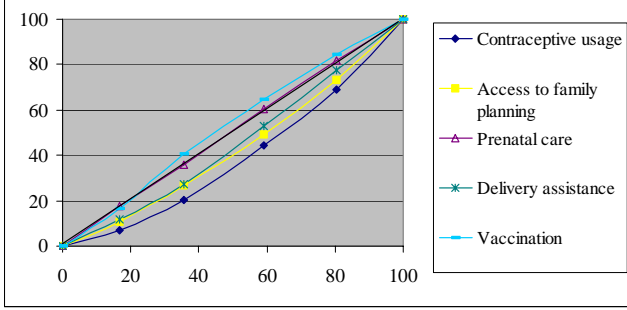


Fig 1. Cameroon: concentration curves across indicators, DHS 2004

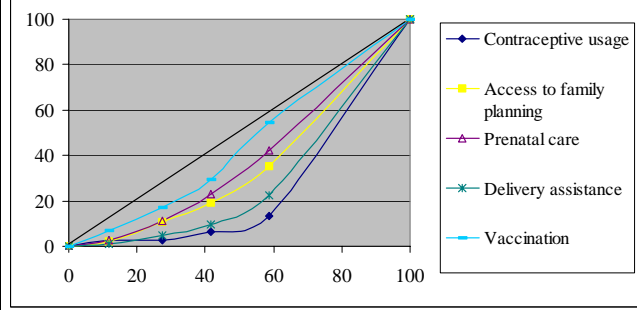


Fig 2. Chad: concentration curves across indicators, DHS 2004

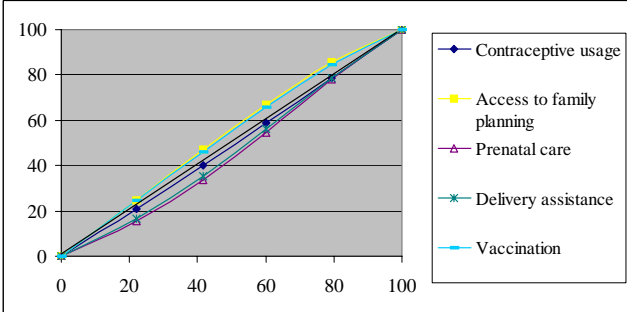


Fig 3. Egypt: concentration curves across indicators, DHS 2005

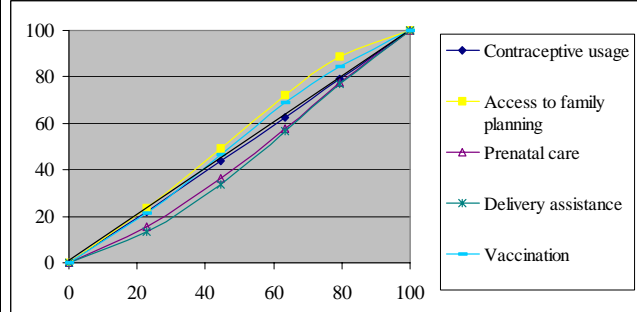


Fig 4. Morocco: concentration curves across indicators, DHS 2003/04

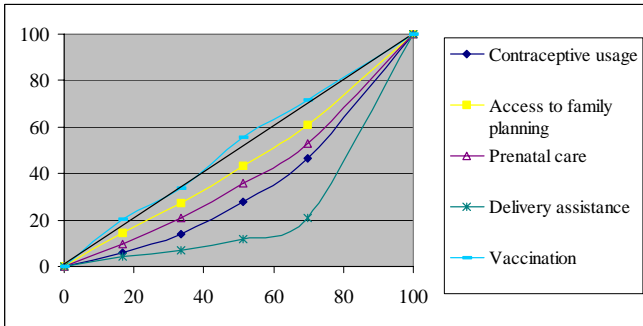


Fig 5. Ethiopia: concentration curves across indicators, DHS 2005

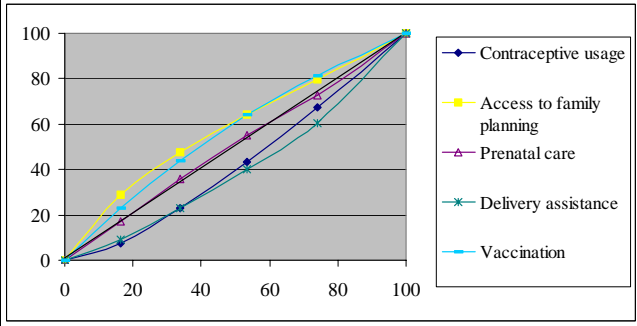


Fig 6. Kenya: concentration curves across indicators, DHS 2003

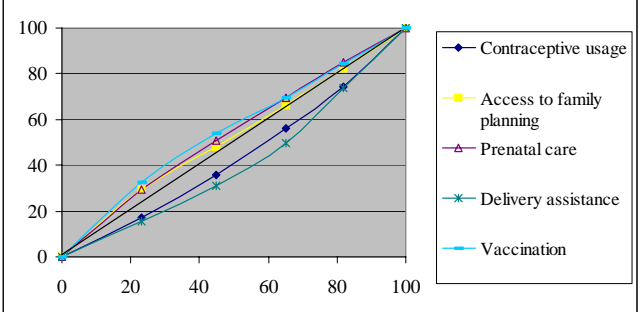


Fig 7. Ghana: concentration curves across indicators, DHS 2003

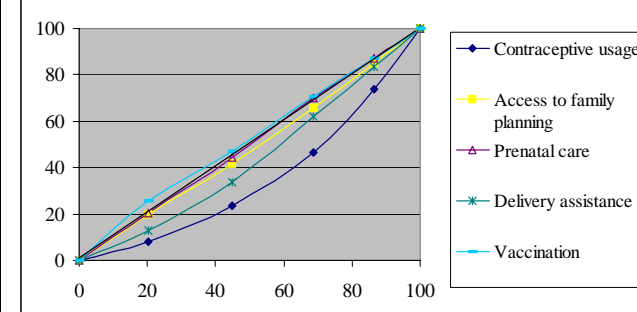


Fig 8. Senegal: concentration curves across indicators, DHS 2005

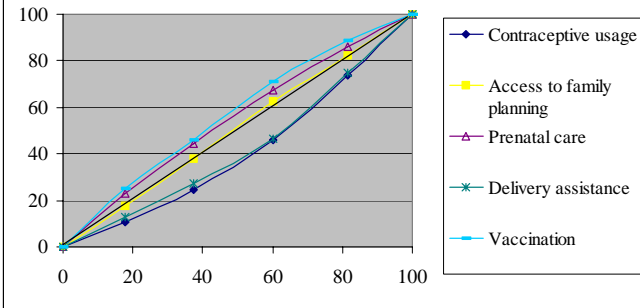


Fig 9. Zambia: concentration curves across indicators, DHS 2001/02

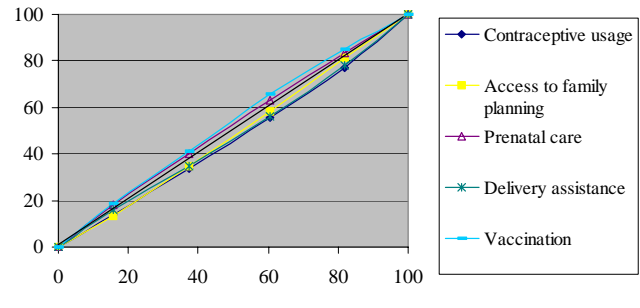


Fig 10. Malawi: concentration curves across indicators, DHS 2004

## Annex 2. Stratification of health variables by wealth quintiles (%)

	Indicator	DHS Year	poorest	poorer	middle	richer	richest	Low-High Diff.*	Conc. Index Value	C.I. Std Error	
<b>Central Africa Sub-Region</b>	<b>Cameroon</b>										
	Women's access to modern contraceptives	1998	13.7	16.5	27.9	48.3	59.8	46.1	0.266	0.022	
		2004	20.6	35.2	49.8	57.0	77.7	57.1	0.211	0.013	
	Women's access to family planning services	1998	11.1	14.1	22.5	24.7	29.7	18.6	0.178	0.018	
		2004	8.7	13.9	17.6	20.5	24.4	15.7	0.180	0.014	
	Prenatal care services	1998	61.4	70.7	86.4	94.2	94.8	33.4	0.086	0.006	
		2004	67.9	77.7	89.2	95.8	97.5	29.6	0.073	0.003	
	Delivery assistance by health professional	1998	31.4	43.0	67.6	86.0	89.4	58	0.194	0.01	
		2004	36.7	53.5	75.5	90.2	95.8	59.1	0.180	0.005	
	Immunization coverage	1998	51.2	51.1	51.4	57.4	66.4	15.2	0.054	0.019	
		2004	47.3	65.9	53.6	64.3	70.9	23.6	0.053	0.017	
	<b>Chad</b>										
	Women's access to modern contraceptives	1996/97	1.1	.0	2.7	2.8	14.2	13.1	0.515	0.046	
		2004	2.3	.0	3.0	4.0	21.7	19.4	0.473	0.038	
	Women's access to family planning services	1996/97	3.8	5.4	6.0	11.2	22.0	18.2	0.340	0.019	
		2004	1.0	5.4	6.1	8.8	16.8	15.8	0.354	0.002	
	Prenatal care services	1996/97	21.7	33.2	32.7	49.1	75.2	53.5	0.224	0.008	
		2004	7.9	27.1	41.6	53.7	76.7	68.8	0.294	0.009	
Delivery assistance by health professional	1996/97	6.6	9.9	11.6	23.9	54.9	48.3	0.395	0.01		
	2004	1.5	7.3	10.3	21.0	61.7	60.2	0.468	0.011		
Immunization coverage	1996/97	21.0	18.6	25.2	38.6	41.4	20.4	0.168	0.024		
	2004	11.7	21.0	26.5	39.3	34.1	22.4	0.156	0.027		
<b>North Africa Sub-Region</b>	<b>Egypt</b>										
	Women's access to modern contraceptives	2000	73.5	84.1	88.1	92.7	93.1	19.6	0.042	0.002	
		2005	86.0	90.0	91.7	94.7	94.5	8.5	0.020	0.002	
	Women's access to family planning services	2000	12.5	14.3	14.6	11.9	7.2	-5.3	-0.10	0.012	
		2005	21.3	20.7	19.2	17.2	13.0	-8.3	-0.09	0.009	
	Prenatal care services	2000	33.0	43.4	55.1	70.0	86.2	53.2	0.183	0.005	
		2005	47.6	61.8	74.6	86.9	93.6	46	0.133	0.004	
	Delivery assistance by health professional	2000	35.9	50.9	67.4	81.4	95.6	59.7	0.179	0.005	
		2005	53.7	69.5	81.6	90.0	96.7	43	0.113	0.003	
	Immunization coverage	2000	71.1	76.0	78.3	77.7	65.5	-5.6	-0.01	0.008	
		2005	77.4	76.1	76.9	73.2	73.4	-4	-0.01	0.006	
	<b>Morocco</b>										
	Women's access to modern contraceptives	1992	47.8	68.2	78.1	82.1	86.8	39	0.101	0.007	
		2003/04	92.6	94.0	95.3	95.9	95.8	3.2	0.007	0.002	
	Women's access to family planning services	1992	-	-	-	-	-	-	-	-	
		2003/04	12.9	14.5	14.6	12.4	7.6	-5.3	-0.073	0.015	
	Prenatal care services	1992	10.7	20.4	36.4	58.8	77.5	66.8	0.352	0.011	
		2003/04	39.7	56.8	70.5	85.7	93.4	53.7	0.167	0.006	
Delivery assistance by health professional	1992	8.2	18.6	35.0	61.9	80.7	72.5	0.386	0.011		
	2003/04	34.2	55.3	73.7	87.4	95.8	61.6	0.194	0.006		
Immunization coverage	1992	54.1	66.1	69.7	76.3	66.4	12.3	0.051	0.013		
	2003/04	70.4	74.2	84.9	84.8	84.0	13.6	0.041	0.009		
<b>East Africa Sub-region</b>	<b>Ethiopia</b>										
	Women's access to modern contraceptives	2000	9.1	11.0	11.7	20.5	59.6	50.5	0.395	0.014	
		2005	11.3	16.5	26.1	33.6	59.9	48.6	0.306	0.012	
	Women's access to family planning services	2000	10.4	10.1	9.3	14.9	24.9	14.5	0.209	0.014	
		2005	8.4	10.3	13.5	15.7	20.7	12.3	0.188	0.015	
	Prenatal care services	2000	15.5	17.4	22.3	28.8	66.8	51.3	0.305	0.009	
		2005	12.3	20.1	26.6	33.1	67.1	54.8	0.328	0.009	
	Delivery assistance by health professional	2000	1.6	1.9	3.4	5.0	46.9	45.3	0.622	0.011	
		2005	2.3	2.1	3.6	7.7	48.8	46.5	0.612	0.012	
	Immunization coverage	2000	20.6	19.6	21.2	31.4	51.3	30.7	0.210	0.02	
		2005	23.6	24.8	40.0	34.3	47.6	24	0.146	0.027	
	<b>Kenya</b>										
Women's access to modern contraceptives	1998	33.3	48.2	55.5	65.1	76.4	43.1	0.150	0.01		
	2003	30.9	57.6	68.9	77.2	82.6	51.7	0.141	0.009		



	Indicator	DHS Year	poorest	poorer	middle	richer	richest	Low-High Diff.*	Conc. Index Value	C.I. Std Error		
	Women's access to family planning services	1998	19.2	20.1	20.3	22.7	28.8	9.6	0.077	0.015		
		2003	7.2	5.5	4.9	4.4	3.8	-3.4	-0.132	0.035		
	Prenatal care services	1998	90.1	92.3	93.7	96.2	95.9	5.8	0.014	0.003		
		2003	67.2	85.7	91.0	92.1	94.0	26.8	0.059	0.004		
	Delivery assistance by health professional	1998	22.8	34.9	42.1	57.1	79.0	56.2	0.230	0.011		
		2003	21.4	39.0	47.2	62.0	81.6	60.2	0.240	0.008		
	Immunization coverage	1998	52.6	56.3	65.1	59.9	46.2	-6.4	-0.001	0.015		
		2003	53.1	63.9	62.7	65.7	53.4	0.3	0.008	0.015		
	<b>West Africa Sub-region</b>	<b>Ghana</b>										
		Women's access to modern contraceptives	1998	26.4	35.3	39.0	49.3	57.4	31	0.156	0.019	
2003			35.1	41.8	48.1	52.5	69.3	34.2	0.129	0.016		
Women's access to family planning services		1998	-	-	-	-	-	-	-	-		
		2003	32.2	30.0	32.3	30.9	31.8	-0.4	-0.002	0.014		
Prenatal care services		1998	76.2	85.8	93.5	96.1	98.1	21.9	0.055	0.005		
		2003	83.2	90.9	94.2	95.9	98.9	15.7	0.035	0.003		
Delivery assistance by health professional		1998	20.4	28.9	52.8	68.2	88.5	68.1	0.299	0.012		
		2003	23.1	36.2	49.9	77.6	93.6	70.5	0.284	0.01		
Immunization coverage		1998	73.5	75.2	83.9	75.2	78.8	5.3	0.015	0.012		
		2003	78.9	80.9	84.1	82.6	83.5	24	0.013	0.01		
<b>Senegal</b>												
Women's access to modern contraceptives		1997	3.2	6.8	12.8	31.5	51.5	48.3	0.467	0.022		
		2005	13.4	21.7	33.5	52.9	64.9	51.5	0.288	0.016		
Women's access to family planning services		1997	-	-	-	-	-	-	-	-		
		2005	13.8	13.4	14.8	17.2	17.6	3.8	0.054	0.013		
Prenatal care services		1997	77.3	80.4	90.5	96.5	97.6	20.3	0.052	0.003		
		2005	83.5	90.2	95.9	98.9	99.6	16.1	0.035	0.002		
Delivery assistance by health professional	1997	36.7	42.9	64.5	82.9	93.0	56.3	0.195	0.007			
	2005	39.8	59.5	80.2	94.9	97.3	57.5	0.168	0.004			
Immunization coverage	1997	-	-	-	-	-	-	-	-			
	2005	71.3	65.7	76.1	76.8	77.9	6.6	0.024	0.013			
<b>Southern Africa Sub-region</b>	<b>Zambia</b>											
	Women's access to modern contraceptives	1996	19.2	31.5	32.6	53.1	73.5	54.3	0.750	0.017		
		2001/02	36.7	41.7	56.5	77.2	85.2	48.5	0.173	0.011		
	Women's access to family planning services	1996	68.4	69.1	69.2	69.1	79.2	10.8	0.020	0.005		
		2001/02	23.4	26.9	29.7	31.1	34.4	11	0.070	0.013		
	Prenatal care services	1996	93.2	96.4	96.3	99.4	99.7	6.5	0.014	0.002		
		2001/02	89.0	91.1	92.8	95.6	99.0	10	0.019	0.002		
	Delivery assistance by health professional	1996	26.5	31.6	45.3	75.6	93.0	66.5	0.268	0.008		
		2001/02	26.2	30.5	41.1	73.4	93.1	66.9	0.263	0.008		
	Immunization coverage	1996	79.5	83.1	81.4	82.7	84.6	5.1	0.010	0.007		
		2001/02	79.5	78.1	82.6	81.2	80.8	1.3	0.007	0.008		
	<b>Malawi</b>											
	Women's access to modern contraceptives	2000	36.8	46.0	45.4	49.1	63.0	26.2	0.093	0.01		
		2004	50.2	53.4	55.3	59.1	73.1	22.9	0.066	0.008		
	Women's access to family planning services	2000	41.2	44.9	46.8	48.1	49.6	8.4	0.034	0.006		
		2004	37.8	41.6	43.3	44.8	46.2	8.4	0.033	0.007		
	Prenatal care services	2000	87.9	90.0	93.6	92.7	96.3	8.4	0.017	0.002		
		2004	88.9	89.9	90.5	94.7	97.2	8.3	0.017	0.002		
Delivery assistance by health professional	2000	47.1	55.6	63.5	64.1	82.0	34.9	0.102	0.005			
	2004	51.7	53.3	56.8	68.6	86.5	34.8	0.099	0.005			
Immunization coverage	2000	79.3	80.9	82.9	86.8	79.7	0.4	0.007	0.006			
	2004	69.8	70.8	81.5	77.1	79.6	9.8	0.028	0.007			

\* Absolute difference between the richest and poorest quintiles

Source: ECA calculations using DHS data

### Annex 3. Health variables stratified by place of residence (percent)

Country	DHS Year	Women's access to modern contraceptive methods			Prenatal care services			Delivery assistance by health professional			Immunization coverage		
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Cameroon	1998	53	24	38	93	75	82	87	50	65	60	53	56
	2004	60	40	49	95	78	85	89	54	69	65	55	59
Chad	1996/97	12	1	6	72	31	47	53	9	26	42	24	31
	2004	20	1	10	74	28	49	57	7	29	35	23	28
Egypt	2000	91	83	87	73	47	58	85	54	67	71	76	74
	2005	94	89	91	85	62	71	90	68	77	74	77	76
Morocco	1992	86	62	73	64	22	38	69	19	38	73	62	65
	2003/04	96	93	95	85	48	65	87	46	65	85	73	79
Ethiopia	2000	66	15	28	74	23	32	57	4	13	58	24	30
	2005	67	24	34	75	24	32	62	5	14	55	30	33
Kenya	1998	70	52	55	97	93	93	72	40	44	43	59	56
	2003	78	62	66	92	83	86	75	42	51	52	61	59
Ghana	1998	52	36	41	95	85	87	79	34	44	78	76	77
	2003	61	42	48	98	88	91	83	34	49	85	80	81
Senegal	1997	43	8	19	97	83	87	91	47	59	-	-	-
	2005	53	22	34	98	90	93	92	59	70	75	72	73
Zambia	1996	60	29	42	99	95	97	82	34	50	82	82	82
	2001/02	79	50	60	98	91	93	82	35	48	83	80	80
Malawi	2000	61	46	49	98	91	92	85	58	63	79	83	82
	2004	67	57	58	97	91	92	87	59	62	73	76	76

Source: ECA calculations using DHS data