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Social spending and Kenya's poor: A benefit incidence analysis*

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Abstract

The Kenya government devotes a significant proportion of its resources to investments in human capital—health and education. In 2006/07, more than a third of the government budget was allocated to these social sectors. This paper uses a benefit incidence approach to estimate who is benefiting from these services, both on average and at the margin, using data from the recent Kenya Integrated Household and Budget Survey (KIHBS).

The analysis shows that households clearly benefit from government social spending in Kenya. Our estimates suggest that government spending on education overall amounts to about 10 percent of household income/consumption, and health spending to just over 2 percent. Education spending dominates—the overall subsidy being five times that of health. The benefits to the poorest groups (the poorest 20 percent) are even more significant. The in-kind transfers they gain by sending children to school and using government subsidized health facilities amounts to over 40 percent of their income. For the richest quintile, it is only 5 percent of their income.

The education subsidy, moreover, is better targeted to the poorest groups—18 percent of the subsidy benefits the poorest quintile, while just 14 percent of health spending reaches the poorest. At the other end of the income scale, the richest get the largest share of the health spending—27 percent of the health recurrent budget. Because they benefit little from spending on primary education, the richest quintile get only its proportionate share of overall education spending.

In general, our estimates of the incidence of marginal changes in spending on education and health follow a similar pattern to those observed on average. They confirm that additional spending on primary education and primary health-care are likely to benefit the poorest groups in Kenyan society. There is no evidence of a gender imbalance/bias in the marginal benefits from education spending, and females are predicted to benefit more than males from an expansion in primary health spending. And whilst the richest females are shown to benefit most from an expansion of hospital services, their counterparts in the poorer quintiles gain far, far less—even less than the males in the quintile.

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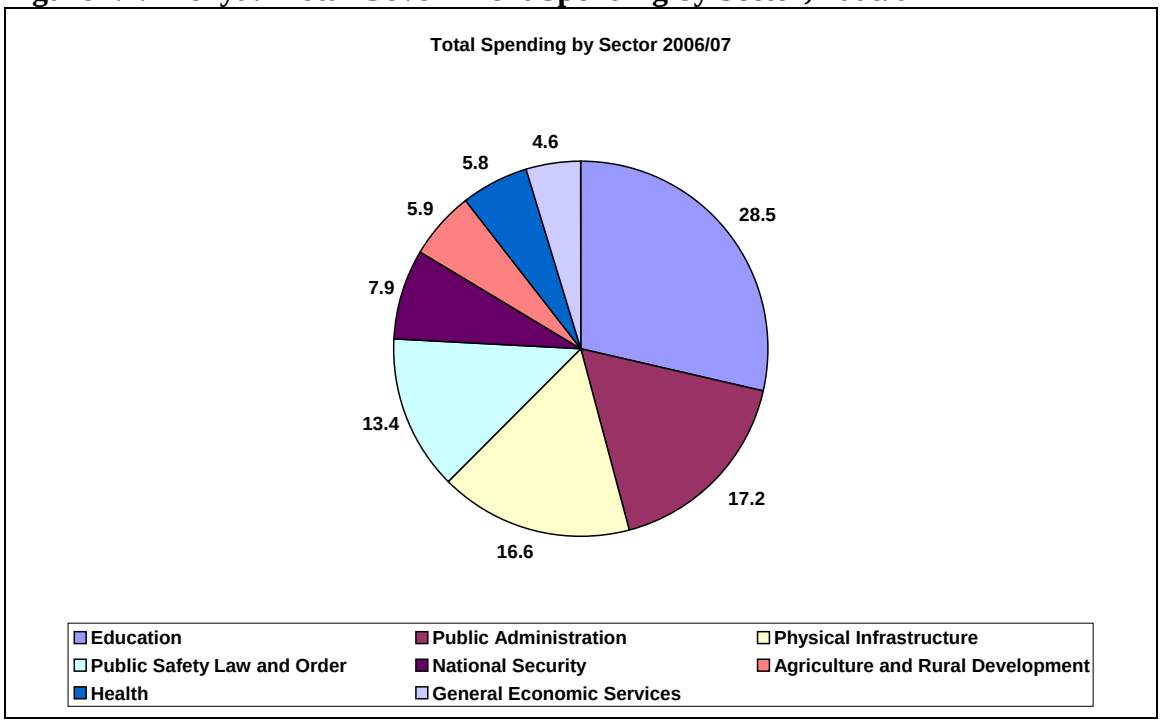
I. Introduction

The Kenya government devotes a significant proportion of its resources to investments in human capital—health and education. In 2006/07, more than a third of the government budget was allocated to these social sectors (Figure I.1). The objective of such spending is to subsidize the delivery of education and health-care services which will benefit in a profound way the population at large—improving health status, preventing avoidable death, reducing morbidity, raising literacy and numeracy, and expanding opportunities for economic and social wellbeing.

Figure I.1. Kenya: Total Government Spending by Sector, 2006/07



Source: Ministry of Finance, Quarterly budget and Economic Review, various issues

The reasons why governments are called upon to subsidize such services rather than leaving it to the market are complex. The case rests on both efficiency and equity grounds. Governments are often required to subsidize services that the market will not provide, or provides insufficiently. Pure *public goods*, where the marginal cost of additional consumption is zero, usually call for full state financing. Other private services may be subject to significant external benefits or costs, and thus merit some form of government intervention. For example the treatment of a communicable disease (such as tuberculosis) would not only benefit the individual concerned but also those who would otherwise contract the disease. Typically, the market would under-provide such treatment, and a government subsidy would be justified on efficiency grounds.[1] Subsidies might also be justified because of failures in related markets, such as education subsidies arising from credit market failure, and health subsidies where there is insurance market failure. Left to themselves, markets would under-provide such services, resulting in sub-optimal resource allocations. Governments therefore subsidize some services for efficiency reasons.

[1] This is the rationale for some of Kenya's health fee exemptions, which apply to some communicable diseases.

But equity is another fundamental rationale for government subsidies. The fact that poor people are disadvantaged in gaining access to important services which would help them escape from poverty suggests that the state should seek to target the provision of these services to such groups. The equity motive is particularly important for social spending, as education and health are seen as important in the escape from poverty. Typically poor people are trapped in poverty in part because of their limited human capital. Poor education prevents them from accessing better-paid employment, and ill health can seriously impair productivity and earning power—especially in a rural, farming setting. Both were highlighted by the communities themselves in the Kenya's Fourth Participatory Poverty Assessment (see Ministry of Planning and national Development, 2008).

It is therefore important to assess whether social spending in Kenya does in fact benefit poorer sections of Kenyan society. A useful technique for such an assessment is *benefit incidence* analysis (Demery, 2003). This has been previously applied to the social sectors in Kenya (Dayton and Demery, 1994, Demery and Verghis, 1994, and Castro-Leal et al, 1999). But the data on which these assessments were made were limited[2], and in any event, the findings are somewhat dated. The recently conducted Kenya Integrated Household Budget Survey (KIHBS) 2005/06 provides an opportunity to revisit this issue, and to inform public policy on the extent to which government social spending benefits poorer Kenyans.

II. What is benefit incidence?

Benefit incidence tells us who is benefiting from public services, and describes the welfare impact on different groups of people of government spending. It does this by combining information on the *unit costs* of providing those services with information on the *use* of these services. In effect, the analysis imputes to those households using the service the cost of providing that service. This imputation is the amount householders would have to pay if they had to meet the cost of providing the service.

Taking the example of government spending on education, this can be formally written as:

$$X_j \equiv \sum_{i=1}^{3} E_{ij} \frac{S_i}{E_i} \equiv \sum_{i=1}^{3} \frac{E_{ij}}{E_i} S_i \qquad (1)$$

where *Xj* is the amount of the education subsidy that benefits group *j*, *S* and *E* refer respectively to the government education subsidy and the number of public school enrolments, and the subscript *i* denotes the level of education (three levels are specified in (1)—primary, secondary and tertiary). The benefit incidence of total education spending imputed to group *j* is given by the number of primary enrolments from the group (E_{pj}) times the unit cost of a primary school place, plus the number of secondary enrolments times the secondary unit cost, plus the number of tertiary enrolments times the unit cost of tertiary education. Note that S_i / E_i is the *mean* unit subsidy of an enrolment at education level *i*. Also observe that there are several ways in which households and individuals are grouped for the purposes the benefit incidence estimates. The most common grouping is by income (or total household consumption). Frequently individuals are ranked by the per capita consumption of the household to which they below, and divided into

[2] The benefit incidence of health spending estimated by Dayton and Demery (1994) was for rural areas only, and based on a several key assumptions in manipulating the data.

quintiles—the poorest quintile or one fifth of the population belonging to households with the lowest per capita consumption, and so on. The analysis can also group individuals by gender, which can provide insights into why government services are used differently across the quintiles.

The *share* of total education spending imputed to group j (x_j) is:

$$x_j \equiv \sum_{i=1}^{3} \frac{E_{ij}}{E_i}\left(\frac{S_i}{S}\right) \equiv \sum_{i=1}^{3} e_{ij} s_i \qquad (2)$$

It can be seen that this depends on two major determinants:

- The $\boldsymbol{e_{ij}}$**'s** which are the shares of the group in total service use (enrolments in this case). These reflect *household behaviour*.
- The $\boldsymbol{s_i}$'s or the shares of public spending across the different types of service, reflecting *government behaviour*.

Understanding how the benefits of public spending are distributed, and doing something about it, requires, therefore, an understanding of how both governments and households behave—including how they are constrained in making choices. Equation (2) defines only one unit subsidy for each level of service. In some applications regional and other (ethnic) variations in subsidies are also taken into account. (2) would then become:

$$x_j \equiv \sum_{k=1}^{n}\sum_{i=1}^{3} \frac{E_{ijk}}{E_i}\left(\frac{S_{ik}}{S}\right) \equiv \sum_{k=1}^{n}\sum_{i=1}^{3} e_{ijk} s_{ik} \qquad (2a)$$

where the k subscript denote the region specified in the unit cost estimate, there being n regions.

It is important to recognise that this approach to public spending assessment is based on simple accounting—all the above equations are identities. As such, the method simply describes the situation as it is—how spending by the government is distributed across the groups on average. There is no guarantee that *changes* in spending will be distributed in the same way. Yet often the important policy question concerns who would benefit from an expansion in the services provided by a particular sector. There are techniques which can provide answers to this more difficult question, which go beyond mere accounting. These estimate the *marginal* benefit incidence of government spending (Lanjouw and Ravallion, 1999, and Younger, 2003). In what follows, the sections begin with a description of the situation as it is—providing estimates of the average benefit incidence of social spending in Kenya. This will include incidence by gender, and the use of regionally disaggregated unit subsidies. Estimates of the marginal benefit incidence are then provided. We begin with the education sector, followed by health.

III. The benefit incidence of public spending on education

Education outcomes in any country are the result of two main influences: household behaviour in deciding to enrol their children in school; and government behaviour in subsidizing education at

different levels. Both have changed over the recent past in Kenya, influencing how education spending is distributed across the population.

III.1 Household decisions to enrol children.

Faced with the advantages of educating their children, and the costs involved (both direct costs and opportunity costs in terms of foregone earnings), it the households who make decisions about sending their children to school. In this section we examine the outcome of those decisions in the past.[3]

Enrolling in primary school

We observe the following major features of primary school enrolment behaviour in Kenya:

There has been a significant historical increase in schooling: Since independence in 1963, the number of students enrolled at various levels of education has increased substantially. Enrolment at the Early Childhood Development and Education level, has grown 85 percent, from 483,148 children in 1982 to 894,295 children in 2003 (47 percent girls and 53 percent boys), which corresponds to a net enrolment rate of about 30 percent. Primary enrolments grew from 0.89 million pupils in 1963 to 7.6 million in 2006 pupils of which, 3.7 million were girls and 3.9 million were boys.[4]

Most provinces have seen increases in primary enrolments since the early 1990s: But in some provinces (Central, Nyanza, Rift Valley) the improvements have been less striking (Table III.1)

Enrolment trends have been uneven over time: There were gains in the 1990s which were reversed in the early 2000s. Since 2003, with the implementation of the policy of Free Primary Education, households have responded by enrolling more children in primary schools (especially in Nairobi and Nyanza).

Enrolments increase with income: The net primary enrolment rate was .almost 90 percent among the richest groups in 2005/06, but only just over 70 percent for the poorest.

The increase in primary enrolments since 2003 has come mainly from poorer groups: The net enrolment rate among the poorest quintile increased sharply in the early 2000s (from just 61 percent in 2003 to 73 percent in 2005/06—see Table III.2).

The surge in primary enrolments among the poorest has involved both boys and girls: The net primary enrolment rate among the poorest quintile increased by 11 percentage points for boys and 12 percentage points for girls (Table III.2)

Enrolments of girls among better off seem to have stabilized: Net female primary enrolment rates among the three middle quintiles even declined marginally between 2003 and 2005/6. Reasons for this are unclear.

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[3] In addition to the KIHBS we use the data from repeated rounds of the Kenya Demographic and Health Survey (KDHS).

[4] The 2005/06 KIHBS estimates primary school enrolments to be 8.1 million in that year (see Table E.6)

Kenya is similar to other countries: Overall primary enrolments in Kenya compare favourably with other countries, including enrolments among the poorest groups (Table III.3)

Table III.1 Kenya: Net primary enrolment rates by province, 1993—2005/6

	1993 (KDHS)	*1998 (KDHS)*	*2003 (KDHS)*	*2005[a/] (KIHBS)*
Coast	59	69	70	73
Central	83	93	91	89
Eastern	76	86	84	85
Nairobi	70	86	85	91
Rift Valley	73	84	73	77
Western	74	84	86	82
Nyanza	77	89	80	84
North Eastern	*	*	36	50
Kenya	**75**	**85**	**79**	**81**

a/ The KIHBS straddled 2005 and 2006, but for convenience is referred hereafter as 2005.
Note: 2005/6 and the 2003 data include North Eastern Kenya, while 1998 and 1993 do not
Source: KDHS (various years); KIHBS, 2005/06

Table III.2 Kenya: net primary enrolment rates by quintile and sex 1993—2005/6[5]

	Survey:	*1993 (KDHS)*	*1998 (KDHS)*	*2003 (KDHS)*	*2005 (KIHBS)*
	Kenya	**74.5**	**85.0**	**78.7**	**80.5**
Total	Poorest quintile	71.1	75.9	61.4	72.9
	2nd Quintile	74.1	85.2	79.9	80.4
	3rd Quintile	72.1	87.5	83.8	83.9
	4th Quintile	75.5	89.2	87.8	86.3
	Richest quintile	81.2	89.4	86.1	88.7
	Kenya	**74.2**	**84.6**	**78.9**	**79.1**
Female	Poorest quintile	72.1	73.7	59.7	72.0
	2nd Quintile	74.0	86.0	80.9	78.0
	3rd Quintile	69.6	87.8	84.1	82.6
	4th Quintile	75.8	89.2	87.5	84.9
	Richest quintile	80.8	87.9	86.6	87.9
	Kenya	**74.9**	**85.4**	**78.6**	**82.0**
Male	Poorest quintile	69.9	78.0	62.9	73.8
	2nd Quintile	74.3	84.3	79.0	82.8
	3rd Quintile	74.8	87.2	83.4	85.2
	4th Quintile	75.2	89.3	88.1	87.7
	Richest quintile	81.5	90.9	85.6	89.6

Note: 2005/6 and the 2003 data include North Eastern Kenya, while 1998 and 1993 do not
Source: KDHS (various years); KIHBS, 2005/06

[5] [5] Throughout this analysis households are ranked according to their mean per-adult equivalent total consumption, this being a good measure of the living standard (and permanent income) of the household. Using this ranking, we divide households into wellbeing quintiles—the poorest 20 percent being those households with the lowest levels of consumption per adult equivalent, and so on

Table III.3 Kenya: net primary enrolment rates by wealth quintile, selected countries

	Kenya (2005)	*Tanzania (2004)*	*Mozambique (2003)*	*Uganda (2006)*	*Bangladesh (2004)*	*Colombia (2005)*
Poorest quintile	73	58	65	72	78	68
2nd Quintile	80	66	68	80	88	76
3rd Quintile	84	73	69	82	89	81
4th Quintile	86	82	72	86	92	83
Richest quintile	89	88	79	89	92	85
All quintiles	81	73	71	82	87	78

Source: For Kenya, KIHBS 2005/06. Other countries, DHS surveys

Enrolling in secondary school

From survey evidence, households have recently enrolled significantly more children in secondary school. The gross secondary enrolment rate increased sharply in the early 2000s, with most provinces experiencing substantial increases—the exception being Nairobi where the rate was higher than elsewhere in the first place (Table III.4).

Table III.4 Kenya: Gross secondary enrolment rates by province, 2003 and 2005

	2003 KDHS	*2005 KIHBS*
Nairobi	44.9	46.1
Central	31.3	47.7
Coast	15.1	24.9
Eastern	14.3	35.6
Nyanza	30.5	41.2
Rift Valley	17.0	36.0
Western	28.7	37.2
North Eastern	4.3	13.3
Kenya	**23.1**	**37.2**

Source: KDHS (2003); KIHBS, 2005/06

The surge in secondary enrolments appears to have occurred across the full income spectrum, but the better-off groups (quintiles 3, 4 and 5) are the most affected (Table III.5). The gross enrolment rates for the richest quintile more than doubled between 2003 and 2005. Nonetheless it is encouraging to find increased secondary enrolments even among the poorer households

Table III.5 : Gross secondary enrolment rates

by quintile, 2003 and 2005 (percent)

	2003 KDHS	*2005 KIHBS*
Poorest quintile	9	16
Quintile 2	19	34
Quintile 3	22	50
Quintile 4	29	59
Richest quintile	41	84

Source: KDHS (2003); KIHBS, 2005/06

III.2 Government decisions in the education sector

Education outcomes result also from government decisions—in allocating its spending in the sector, and in implementing key education policies. Given the centrality of education and human capital deepening for economic development, the provision of education is considered fundamental to the Government of Kenya's overall development strategy. It is embodied in the Vision 2030, the 2005 Sessional Paper I, and related strategic documents for action. Education in Kenya is organized around a 2-8-4-4 structure, 2 years of pre-primary or early childhood development education, 8 years of primary schooling, 4 years of secondary/technical education, and 4 years of tertiary education. Since January 2003, the Government has implemented a policy of Free Primary Education, with an associated budget shift.

Government spending on education is summarized in Table III 6. The following are the key points:

- *Government spending on education has increased recently:* It has almost doubled between 2000/01 and 2005/06.

- *But as a percentage of the overall government budget and GDP it has declined* In recent years, the share of spending on education has fallen from 34 percent to 30 percent (between 2002/03 and 2005/06).

- *Budget allocations have remained stable over recent past:* The share of primary spending has increased marginally, while that of secondary has declined. Tertiary remained unchanged (Table III.6).

Table III.6: Allocation of government spending on education, 2000/01—2005/06

	2000/01	2001/02	2002/03	2004/05	2005/06
Primary	54.0	51.4	49.4	55.5	na
Secondary	23.8	28.0	25.3	21.4	
University	12.3	12.1	11.3	12.3	
General admin and planning	7.0	5.4	11.5	8.0	
Technical	1.6	1.7	1.4	1.8	
Other miscellaneous items	1.3	1.4	1.0	0.9	
Total	100	100	100	100	
Total education budget (KShs million)	48,636	53,587	63,377	80,934	92,601
Education budget as percent of total government spending	28.6	31.1	33.8	30.6	29.7
Education budget as percent of GDP				5.9	

Source: Ministry of Finance: Quarterly Budget and Economic Reviews, various issues

These features of government and household behaviour combine to influence the way that government spending on education has been distributed across the Kenyan population. The following sections analyze the incidence of public education spending—using both public accounts data on spending and the KIHBS on the use of education services. First we assess the suitability (and accuracy) of the KIHBS data for this type of analysis.

III.3 Estimates of school enrolment

Tables III.7 and III.8 compare the information on enrolments from the KIHBS with that of the Ministry of Education (MoE). The large sample means that KIHBS obtains robust estimates of school enrolments in public schools. There is an acceptable correspondence between the survey and the MoE estimates of both primary and secondary enrolments. Survey estimates tend to be higher than MoE data for all provinces (except primary enrolments in Nyanza). The estimates are substantially higher in North Eastern province.

Table III.7: Primary school enrolments: survey versus Ministry of Education estimates, 2005-06

	Gross primary enrolment rates		*Primary enrolments*	
	KIHBS	*MoE*	*KIHBS*	*MoE*
Nairobi	43.7	37.0	254,856	216,228
Central	104.4	104.8	900,366	904,029
Coast	116.7	90.1	724,718	559,325
Eastern	140.0	125.2	1,520,002	1,359,981
Nyanza	118.5	124.2	1,235,188	1,295,415
Rift Valley	115.6	113.8	2,050,642	2,019,077
Western	146.4	140.9	1,206,592	1,160,915
North Eastern	76.0	28.0	223,417	82,316
Country	**114.5**	**107.2**	**8,115,781**	**7,597,286**

Sources: Ministry of Education, KIHBS, 2005-06

Table III.8: Secondary school enrolments: survey versus Ministry of Education estimates, 2005-06

	Gross secondary enrolment rates		*Secondary enrolments*	
	KIHBS	*MoE*	*KIHBS*	*MoE*
Nairobi	46.1	20.4	64,434	28,536
Central	47.7	42.7	203,014	181,610
Coast	24.9	19.4	62,630	48,824
Eastern	35.6	33.0	187,101	173,591
Nyanza	41.2	31.0	226,636	170,557
Rift Valley	36.0	26.6	279,771	206,897
Western	37.2	29.6	148,617	118,051
North Eastern	13.3	4.9	16,393	6,084
Country	**37.2**	**29.3**	**1,188,596**	**934,149**

Sources: Ministry of Education, KIHBS, 2005-06

Finally, the KIHBS 2005/6 estimates enrolments at the tertiary level to be 94,273. This compares with the enrolments in public universities reported by the Ministry of Education for the most recent year (2004/5) of 81,491. Given that tertiary enrolments are a relatively rare event in national surveys, these data also give confidence in the use of the 2005/06 KIHBS in assessing the benefit incidence of government spending on education.

III.4. Unit subsidies in public education

The evolution of the government education budget, its allocation across the different levels of education, and the enrolment decisions of households play their part in determining unit subsidies in public education. Using government recurrent spending by level of education and survey-based estimates of school enrolment, unit subsidies are obtained for the three broad levels of schooling in Kenya (primary, secondary and tertiary)—see Table III.9.

Tertiary education attracts much larger public subsidies per pupil than other levels: The tertiary unit subsidy was some 22 times the primary subsidy in 2005. This estimate is of a similar order to estimates from the Ministry of Education (based on school enrolment data). These place the tertiary weight to be 23 times the primary subsidy.

The high relative weight to tertiary has declined: In the early 1990s the tertiary unit subsidy was over 30 times the primary subsidy, so this imbalance in sub-sector allocations has reduced somewhat.

The secondary weight has been more stable: This has declined only marginally from 2.8 times the primary subsidy to a factor of 2.4. Ministry of Education data give the secondary weighting as 3 times the primary unit subsidy.

In sum, these unit subsidies which in effect act as weights when computing the benefit incidence of government spending, correspond well to Ministry of Education estimates (based on institutional data).

Table III.9 Education public spending unit subsidies by sub-sector, 1992/93, and 2005

	1992/93		2005				
	Unit subsidy	Ratio of subsidy	Public spending (KShs)	Public spending (Percent share)	Enrolments	Unit subsidy (KShs)	Ratio of subsidy
Primary	1,368	1	57,182,887,969	59.6	8,115,781	7,046	1
Secondary*	3,868	2.83	23,903,477,494	24.9	1,401,696	17,053	2.42
Tertiary**	42,050	30.74	14,836,641,203	15.5	94,273	157,380	22.34

* Includes technical education; **Includes teacher training
Note: Administration spending assigned pro-rata to the three sub-sectors.
Source: author's estimates based on Ministry of Finance expenditure data and KIHBS enrolments; Castro-Leal et al, 1997

III.5. The distribution of government education spending

There have been significant changes in the distribution of the education budget in the early 2000s. It is not so much that budget allocations among the sub-sectors have changed (in percentage terms at least), but household behaviour has changed, thus modifying their claims on the education budget.

Poor people lay claim to a growing share of primary spending: The Free Primary Education policy has seen a sharp increase in primary enrolments, especially among poorer Kenyans. This has meant that poorer groups have secured a larger share of the primary budget by raising their primary school enrolments. The share of the poorest quintile of the primary budget increased from 22 percent in 1992/93 to 25 percent in 2005 (Tables III.10 and III.11, and Figures III.1 and III.2). At the other end of the wealth spectrum, the richest quintile enrolled far fewer children at the primary level, and saw its share of the subsidy fall, from 17 percent in 1992/93 and 10 percent in 2005/06 (Table III.11). A major factor behind the distribution of the primary subsidy is that poorer Kenyans simply have more children of primary-school age children compared with the better-off (Table III.12). Whereas 30 percent of such children live in households in the poorest quintile, just 8 percent are from the richest quintile.

They also seen their share of the secondary subsidy increase: Changes in enrolment behaviour have seen the share going to the poorest quintile rise (from 7 to 10 percent between 1992/93 and 2005). The share to the richest quintile fell—from 30 percent to 24 percent.

Poor people get little from tertiary spending: As is typical in Africa, the poorest groups do not benefit from spending on tertiary education, with no change over time (at about 2 percent of the tertiary budget). The growth in university enrolments has clearly come from better off households. The richest quintile has seen its share of the tertiary budget increase sharply since the early 1990s.

The distribution of education spending is very progressive: Relative to income the poor gain far more than the better off from education subsidies (Table III.13). The benefit the poorest quintile gains from primary spending alone represents almost a third of its income/consumption. For the richest quintile it represent hardly one percent. Relative to income the gains for the poorest from

secondary education are much lower (at just 5 percent of income) and are negligible for tertiary education.

Overall, the distribution of education spending has been unchanged: Give the relative weights implied by the unit subsidies and the changes in enrolment behaviour, there have been only marginal changes in the distribution of the overall education budget. The shares of the poorest and richest quintiles being more or less unchanged—in each case, up by just one percentage point since the early 1990s (Table III.11 and Figure III.2).

Table III.10: Average benefit incidence of public spending on education, by level and welfare quintile, 2005 (percent)

	2005			
	Primary	*Secondary*	*Tertiary*	*All education*
Poorest quintile	24.7	9.7	1.9	17.7
Quintile 2	25.2	17.1	2.0	19.9
Quintile 3	21.6	22.3	7.0	19.8
Quintile 4	18.2	27.1	19.1	20.6
Richest quintile	10.2	23.8	70.0	21.9

Based on unit costs derived from KIHBS enrolment estimates (see Tables III.8 and III.9)
Source: authors' estimates

Table III.11: Benefit incidence of education spending by level, and poorest and richest quintiles, 1992-93, 2003 and 2005 (percent)

	Poorest quintile				*Richest quintile*			
	Primary subsidy	*Secondary subsidy*	*Tertiary subsidy*	*All education*	*Primary subsidy*	*Secondary subsidy*	*Tertiary subsidy*	*All education*
1992-93	22	7	2	17	15	30	44	21
2005	25	10	2	18	10	24	70	22

Sources: Castro-Leal et al, 1997; Table III.10

Table III.12 Kenya: Benefit incidence of public spending on primary education, and share of primary school-aged children, by quintile, 2005 (percent)

	Share of primary school aged children	*Share of Primary subsidy*
Poorest quintile	30.2	24.7
Quintile 2	26.3	25.2
Quintile 3	20.6	21.6
Quintile 4	14.8	18.2
Richest quintile	8.1	10.2

Source: authors' estimates based on KIHBS 2005/06 data.

III.6 Gender differences in the distribution of education spending

Because we know which children the households enrol in school from the KIHBS data, we can assess whether there are differences in the distribution of the education budget by gender. While boys only have a slight advantage over girls in the distribution of the primary education budget, biases against girls increase for the other subsectors. Girls gain 47 percent of the total secondary budget, and just 38 percent of the tertiary budget. Gender inequality in secondary education seems to be dues to girls in quintiles 2 and 3 being particularly disadvantaged. Similarly, gender biases in the distribution of the tertiary education budget appear to come mainly from a couple of quintiles—in this case quintiles 3 and 4. For the education sector overall, there are only marginal gender differences—boys gaining 53 percent of the budget. Given the emphasis in the budget on primary education (where gender differences are minimal) education spending overall is not subject to marked gender inequality.

Table III.13 Kenya: Benefit incidence of education spending relative to mean household total consumption, 2005

	Mean annual subsidy K Shs				*Mean annual household consumption*	*Subsidy as share of consumption Percent*			
	Primary	*Secondary*	*Tertiary*	*All education*		*Primary*	*Secondary*	*Tertiary*	*All education*
Poorest quintile	1,954	324	34	2,312	6,546	29.9	4.9	0.5	35.3
Quintile 2	1,998	570	36	2,604	11,950	16.7	4.8	0.3	21.8
Quintile 3	1,712	742	126	2,580	17,402	9.8	4.3	0.7	14.8
Quintile 4	1,444	903	342	2,689	26,665	5.4	3.4	1.3	10.1
Richest quintile	808	794	1,256	2,858	69,740	1.2	1.1	1.8	4.1
Kenya	1,583	666	359	2,609	26,457	6.0	2.5	1.4	9.9

Source: authors' calculations based on KIHBS, 2005/06

Table III.14 Gender differences in education sector benefit incidence (percent of total subsidies)

	Primary			*Secondary*			*Tertiary*			*All education*		
	Both sexes	*Males*	*Females*	*Both sexes*	*Males*	*Females*	*Both sexes*	*Males*	*Females*	*Both sexes*	*Males*	*Females*
Poorest quintile	24.7	12.8	11.9	9.5	4.8	4.7	1.9	1.9	0.0	17.4	9.1	8.3
Quintile 2	25.2	12.9	12.3	15.9	9.2	6.8	2.0	1.4	0.6	19.3	10.2	9.1
Quintile 3	21.6	10.8	10.9	21.9	12.7	9.2	7.0	5.8	1.2	19.4	10.5	9.0
Quintile 4	18.2	9.3	9.0	25.5	12.4	13.1	19.1	15.6	3.5	20.2	11.0	9.2
Richest quintile	10.2	5.1	5.1	27.2	13.6	13.6	70.0	37.6	32.4	23.7	12.2	11.4
Kenya	100	50.9	49.2	100	52.7	47.4	100	62.3	37.7	100	53.0	47.0

III.7. Geographical inequality in public education subsidies

The basic benefit incidence estimates presented above assume that government spending per enrolled pupil does not vary geographically—it remains the same wherever the child is enrolled. The objective was to give public expenditure based weights to the different levels of schooling which enabled us to report how the education budget as a whole is distributed (summing across sub-sectors). The distribution of the public subsidy for each level of education was determined solely by the behaviour of households in their decisions to enrol their children. But another influence on the distribution of the subsidy has been neglected in these estimates—this being *geographical* inequalities in the way the education budget is disbursed.

Education spending and enrolment data by district are available for the primary sector.[6] They indicate a great deal of variation in spending per pupil across the provinces (Table III.15). Central and Nyanza Provinces appear to benefit the most, while North Eastern received the lowest subsidy per pupil. These data, following closely on a significant increase in primary enrolments, will among other things reflect different surges in primary school enrolments. There is significant variation across the districts. Figure 11.3 ranks districts according to the primary subsidy per pupil enrolled. Although 34 districts are within +/- 20 percent of the average primary subsidy, 35 are outside these bounds. 17 of these receive unit subsidies that are less than KSh 5,600. Despite these variations the impact on overall average benefit incidence is only very limited (Table III.16).

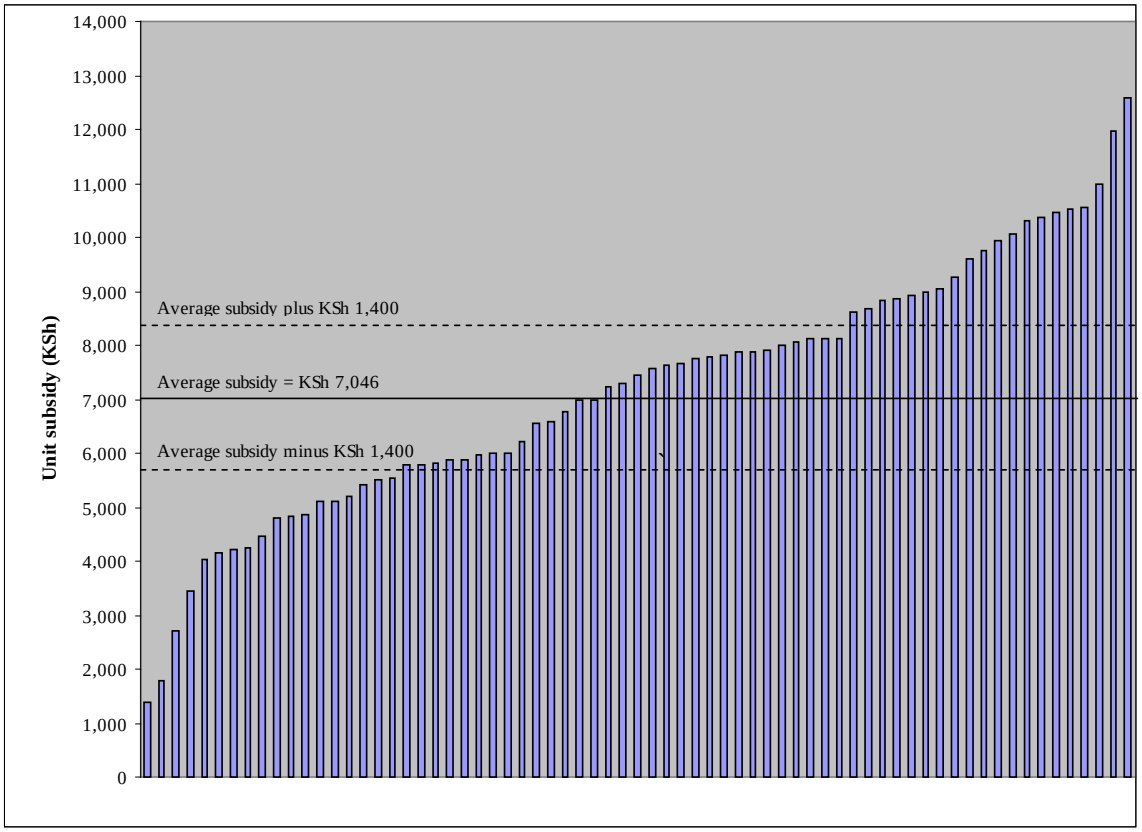
Table III.15 Kenya: Unit subsidies in primary education by province, 2005/06

	Average unit subsidy (KSh per enrolled child)	*Ratio to mean*
Nairobi	5,557	0.79
Central	8,023	1.14
Coast	5,065	0.72
Eastern	7,732	1.10
North Eastern	1,995	0.28
Nyanza	7,935	1.13
Rift Valley	7,431	1.05
Western	6,326	0.90
All Kenya	7,046	1.00

Source: authors' estimates

[6] Details on how district primary education spending was estimated, see the technical annex.

Figure III.3 Ranking of districts by level of unit subsidy for primary education, 2005



Source:

Table III.16 Benefit incidence of primary school spending compared: uniform versus district-specific unit subsidies, 2005

	District-specific unit subsidies				*Uniform subsidy*			
Quintile	*Primary subsidy (M Ksh.)*	*Share of subsidy (percent)*			*Primary subsidy (M Ksh.)*	*Share of subsidy (percent)*		
		Both sexes	*Males*	*Females*		*Both sexes*	*Males*	*Females*
Poorest quintile	13,499	23.6	11.9	11.7	14,128	24.7	12.8	11.9
Quintile 2	14,531	25.4	13.0	12.5	14,423	25.2	12.9	12.3
Quintile 3	12,719	22.2	11.0	11.2	12,370	21.6	10.8	10.9
Quintile 4	10,741	18.8	9.5	9.3	10,427	18.2	9.3	9.0
Richest quintile	5,693	10.0	4.9	5.0	5,835	10.2	5.1	5.1
Kenya	57,183	100	50.3	49.7	57,183	100	50.9	49.2

Source: authors' calculations based on KIHBS, 2005/06

III.8 Marginal benefit incidence of education spending

The above assessment of how the education budget is distributed across the population is based on the observed use of government funded schools by the Kenyan population. As such is describes the current situation, and can be described as an exercise in current accounting. Because of this, it may not give an accurate notion of how *changes* in the education budget will be distributed across the quintiles. There are two broad ways of extending this analysis to obtain insights into how changes in the budget might be distributed. The first is to use historical data on public spending and enrolments—tracing how changes in enrolments (and spending) are distributed across the quintiles. A second approach is to use cross-section analysis of the survey data, assuming that the variations we observe across households and regions will apply to over time changes in public spending. In what follows we focus on the second of these.

Average and marginal odds of school enrolment

In order to relate estimates of the marginal benefit incidence to what has gone before, and following Lanjouw and Ravallion (1999), we define the average participation rate as the proportion of the population of a particular quintile that participates in a government sponsored program. In this context, we can define the average enrolment rate either as the proportion of the *school-age* population currently enrolled in a publicly funded school, or simply to proportion of the *total* population currently so enrolled.[7] The average odds of participation (or more accurately in this context, enrolment) are defined as the ratio of the quintile enrolment rate to the overall average enrolment rate (across all quintiles). The marginal odds of enrolment is the *change* in the quintile enrolment rate divided by the change in the overall enrolment rate. The average odds of participation closely relate to the benefit incidence shares reported above. Lanjouw and Ravallion (1999) mistakenly state that multiplying the average odds of participation by one fifth (the quintile share of the *population*) gives the average benefit incidence *share*. This only applies when the participation rate is expressed in per capita terms (the number of people participating in a program divided by the population). In their case participation in primary schooling was normalized on the school-aged population, so to obtain benefit incidence shares from the average odds of enrolment, the former must be multiplied by the share of the quintile in the school-aged population (and not by a fifth as they assumed). When the average and marginal odds are obtained from participation measures normalized on the total population, quintile *shares* are obtained by dividing the average odds by five. Our preference is to define all participation behaviour in per capita terms—basically normalizing school enrolments on the total (rather than school-age) populations.

[7] Lanjouw and Ravallion (1999) normalize school enrolments in India on the school-aged population (using the *net* primary enrolment rate as the measure of the average participation rate). Younger (2003) prefers to normalise enrolments (in his case secondary enrolments in Ecuador) on the total population. Because the school-aged population varies significantly across the quintiles, our preference is to normalize on the total population (assumed to be equal in all quintiles).

As in the context of estimating average benefit incidence, the analysis is restricted to public facilities—that is schools and clinics financed by the government. This is because our interest is in estimating how much each quintile gains from an increase in government spending in the respective sector. We estimate benefit incidence at the margin by utilizing cross-sectional variations in both average and quintile-specific participation (enrolment) rates. The implicit assumptions of this approach are that firstly increases in average participation rates mirror increase in public spending in the respective (sub-) sectors and that secondly cross-sectional variations can be used as a basis for predicting changes over time. Regression analysis can then shed light on the quintile-specific responses to an increase in public funding to the sectors. Following Younger (2003) this can be done either using grouped or using individual-level data.

Grouped Data

Using grouped data we estimate the following regression equation:

$$p_{d,k,q}=\alpha_q+\beta_q p_k+\mu_{d,kq} \qquad \text{for q=1,…,5} \qquad (3)$$

where *d* denotes a district, *q* a quintile and *k* a province. The left-hand side variable is the average participation rate for a given district and quintile, the right-hand side variable is the average participation rate at the provincial level.[8] The regression is estimated separately for each quintile *q*. Using OLS to estimate the above equation would result in an upward bias of the β_q coefficients because the district-quintile specific participation rates are also captured under the province-level participation rates. Following Ravallion and Lanjouw (1999), we use a TSLS estimation, whereby the 'left out mean' (excluding the respective district and quintile) serves as an instrument for the province-level participation rate.

An alternative approach to running separate regressions by quintile, is to run one regression with quintile-fixed effects (Q_q) and quintile-specific interaction effects (p_kQ_q):

$$p_{d,k,q}=\alpha+\beta p_k+\sum_{q=2}^{5}(\alpha_q Q_q+\beta_q p_k Q_q)+\mu_{d,k,q} \qquad (4)$$

Finally, in order to ensure that the quintile-specific responses account for the total changes in participation, we fit a constrained linear regression model, enforcing the following linear constraints:

$$\alpha+\frac{s_q}{s}\sum_2^5\alpha_q=0 \qquad \text{and} \qquad (5)$$

$$\beta+\frac{s_q}{s}\sum_2^5\beta_q=1 \qquad (6)$$

[8] To include Nairobi district (which corresponds to Nairobi province – thus not being embodied into a larger geographical unit) into the analysis we create four artificial districts for Nairobi by grouping together between 15 and 20 primary sampling units.

where S_q is the population in quintile q and S is the total population.

Individual Data

Using grouped data comes at the expense of small sample sizes and hence reduced precision in the regression estimates. This can be avoided by using individual level data and estimating the following regression model:

$$P_{i,q}=\alpha_q+\beta_q p_d+\mu_{i,q} \qquad \text{for } q=1,\ldots,5 \qquad (7)$$

where the left-hand side is an indicator variable in the context of education (which equals to 1 if the individual is currently enrolled in primary/secondary school, otherwise 0, and a continuous variable in the context of health (denoting the number of visits someone has made to a regional hospital/primary health facility (see section IV below). The right-hand side variable is the average participation rate at the district level. Again, the population-weighted quintile-specific marginal effects are forced to sum to unity. Both grouped and individual data are drawn from the 2005-06 Kenya Integrated Household Budget Survey.

Results

Estimates of the average and marginal odds of enrolment for primary and secondary schooling confirm that marginal benefits from education spending are subject to large variations across quintiles (Table III.17). The results confirm Younger's (2003) point that the use of individual observations in analyzing marginal benefits from surveys of this kind is to be preferred, with greater precision in the estimated coefficients.[9] Using individual observations, it is clear that the poor quintiles benefit more at the margin from primary school spending, and less at the margin from secondary school spending. If per capita spending on primary schooling were raised by KSh 100, the poorest quintile would benefit on average by KSh 135 (based on the marginal odds of enrolment estimated using individual data). And at the other end of the distribution the richest quintile would at the margin get an average of just KSh 66. A quite different distribution is predicted for marginal changes in secondary school spending—the richest quintile gain the most, while the poorest would benefit the least at the margin. If per capita spending on secondary schooling were raised by KSh100, the mean benefit to the poorest quintile would amount to just KSh 58. Generally, the differences between marginal gains to the poorest quintiles and those to the better-off quintiles are statistically significant (see details of the cross-quintile significance tests reported in the technical annex).

These distribution patterns also apply when we distinguish gender. In fact, such small differences between boys and girls in the marginal benefits from primary and secondary school spending are not statistically significant. But for what it is worth, the point estimates obtained from the marginal odds of enrolment regressions suggest larger gains

[9] We therefore focus on the more precise estimates obtained from individual-level data in what follows.

for girls at the primary level, and losses for girls at the secondary. The technical annex gives details of the significance tests applied to the estimated coefficient.

Table III.17 Average and marginal odds of school enrolment

Primary education

Quintile	*Average odds*			*Marginal odds*					
				Grouped data			*Individual data*		
	Both sexes	*Boys*	*Girls*	*Both sexes*	*Boys*	*Girls*	*Both sexes*	*Boys*	*Girls*
Poorest quintile	1.23	1.26	1.21	1.74***	0.90	1.81**	1.35***	1.26*	1.44***
Quintile 2	1.26	1.28	1.25	0.87	1.07	0.82	1.03	0.89	1.16
Quintile 3	1.08	1.06	1.10	0.46***	1.17	0.80	0.97	1.03	0.91
Quintile 4	0.91	0.92	0.91	0.95	0.93	0.77	0.99	1.09	0.89
Richest quintile	0.51	0.49	0.53	0.97	0.91	0.82	0.66***	0.74***	0.58***
Mean	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

Secondary education

Quintile	*Average odds*			*Marginal odds*					
				Grouped data			*Individual data*		
	Both sexes	*Boys*	*Girls*	*Both sexes*	*Boys*	*Girls*	*Both sexes*	*Boys*	*Girls*
Poorest quintile	0.41	0.46	0.49	0.73	0.59	0.88	0.58***	0.45***	0.71*
Quintile 2	0.71	0.87	0.71	0.74	0.49	1.25	0.74*	0.64**	0.83
Quintile 3	1.08	1.21	0.97	1.22	1.09	1.02	1.21	1.43*	0.99
Quintile 4	1.34	1.19	1.38	1.16	0.95	0.88	1.11	1.16	1.06
Richest quintile	1.77	1.27	1.46	1.14	1.25	1.60	1.36*	1.19	1.54**
Mean	1.0	1.0	1.0	1.0	0.9	1.1	1.0	1.0	1.0

*** indicates statistical significance at 1% level; ** at 5% level and * at 10% level, testing whether the coefficients are significantly different from unity.
Source: authors' estimates, based on KIHBS, 2005-06 data

Table III.18 translates these estimates into *shares*—underscoring how are marginal changes in education spending are likely to be distributed across the population. The poorest quintile is predicted to benefit greatly from increments in spending on primary education—even more so that it has on average. From the perspective of the poorest Kenyans (and especially poor girls), therefore, it makes sense to continue the public effort in providing free primary schooling. Any let up in the implementation of this policy is predicted to affect the poorest sections of the community most, and the continuation of the policy to benefit them the most. Using individual data (which gives the most precise estimates), the poorest quintile would gain 27 percent of any increment in primary school spending, up from the 25 percent they have received on average. And girls get the larger share of these gains. Interestingly, the 'not-so poor' Kenyans (those in

the second quintile, are not predicted to benefit as much for marginal changes in primary spending (21 percent) than they have on average (25 percent).

While there is some improvement in the imputed share of increments in secondary school spending going to the poorest quintile (compared with average benefits), the shape of the marginal distribution is very similar to the average. At 27 percent, the richest quintile gains at the margin what it currently gets on average.

Table III.18 Average and marginal shares in public spending on education

	Primary education								
Quintile	*Average shares*			*Marginal shares*					
				Grouped data			*Individual data*		
	Both sexes	*Boys*	*Girls*	*Both sexes*	*Boys*	*Girls*	*Both sexes*	*Boys*	*Girls*
Poorest quintile	24.7	12.8	11.9	34.9	8.8	18.4	27.1	12.5	14.7
Quintile 2	25.3	12.9	12.3	17.5	10.5	8.3	20.6	8.7	11.8
Quintile 3	21.6	10.8	10.9	9.2	11.5	8.2	19.4	10.2	9.3
Quintile 4	18.2	9.3	9.0	19.0	9.1	7.8	19.7	10.7	9.0
Richest quintile	10.2	5.1	5.1	19.5	9.1	8.2	13.2	7.4	5.8
All	100.0	50.8	49.2	100.0	49.1	50.9	100.0	49.4	50.6
	Secondary education								
Quintile	*Average shares*			*Marginal shares*					
				Grouped data			*Individual data*		
	Both sexes	*Boys*	*Girls*	*Both sexes*	*Boys*	*Girls*	*Both sexes*	*Boys*	*Girls*
Poorest quintile	9.5	4.8	4.7	14.7	5.8	9.0	11.6	4.4	7.2
Quintile 2	15.9	9.2	6.8	14.7	4.8	12.7	14.7	6.2	8.5
Quintile 3	21.9	12.7	9.2	24.4	10.7	10.3	24.2	14.1	10.1
Quintile 4	25.6	12.4	13.1	23.3	9.3	9.0	22.2	11.4	10.8
Richest quintile	27.2	13.6	13.6	22.9	12.5	15.9	27.3	11.9	15.4
All	100.0	52.7	47.3	100.0	43.1	56.9	100.0	48.0	52.0

Source: authors' estimates, based on KIHBS, 2005-06 data

In sum, from these results, the poorest Kenyans are likely to benefit even more than at present from an increment in primary school spending. And it is the richest sections of the population that will benefit from an increase in spending on secondary schools. No gender imbalance is evident in the predicted marginal benefits.

IV The benefit incidence of public spending on health

We now consider how the distribution of government spending on health-care is distributed across the population.

IV.1 Context

The following are the main themes emerging from the current situation of health care provision in Kenya:

Health outcomes and poverty are closely linked: Poor health is known to be a major cause of poverty in Kenya. Several recent studies (Place et al, 2007, Mango et al, 2007, World Bank, 2007) have found this to be the case. According to the Fourth Participatory Poverty Assessment, health shocks are frequently responsible for households falling into poverty. And the escape from poverty is often made extremely challenging because of ill health. At the same time, poverty is seen as a possible cause of ill-health—households unable to afford a healthy life style, access clean drinking water, and preventive and curative health-care will be more prone to chronic sickness.

Health outcomes have deteriorated: Between 1990 and 2003, life expectancy in Kenya fell by about five years. Infant mortality increased (from 60 to 78 per 1000 live births) and the under-five mortality rate rose from 100 to 114. Malaria continues to be the leading cause of morbidity and mortality in Kenya. Other major causes include acute respiratory infection, malnutrition, diarrhoea disease, HIV/AIDS (with at least 1.2 million Kenyans now living with HV/AIDS) and tuberculosis (TB), (with the estimated TB incidence rate of 620 per 100,000—one of the highest in the world). Maternal mortality also remains very high at 414 per 100,000 live births.

Inequalities in health have persisted: Health outcomes vary significantly by gender, socio-economic and geographical groups. The 2003 Kenya Demographic and Health Survey (KDHS) survey reports that HIV prevalence among women 15 to 49 years old is almost twice that of men in the same ages, and the HIV infection rate of girls 15 to 19 years old is six times higher than that of boys in the same age. According to the same survey, the infant and under-five mortality rates among the lowest socio-economic quintile was 50 percent higher than in the richest quintile. The incidence of moderate and severe malnutrition was almost four times greater. Geographical health disparities are also profound. Poverty mapping, which includes health indicators (HIV/AIDS, malnutrition, immunization, and access to safe drinking water and health facilities), shows that 60 percent of the rural poor live in 35 percent of the 422 divisions in the country, with unfavourable health outcomes and limited access to health services.

Health financing is inadequate: The health sector has been constrained by inefficient financing mechanisms and inadequate funding. Table IV.1 reports major spending trends in health. More recent data [reported in the Health SWAP PAD] indicate that Government allocations for health in 2007/08 are now about US$11 per capita, or 7.3 percent of the national budget. While this compares favourably with other East African countries, it is still below both the Abuja (15 percent) and ERS (12 percent) targets for public expenditure on health. Of available Government funds for health, 53 percent are for salaries and personnel emoluments, 14 percent for commodities, and 26 percent for tertiary referral services and other state corporations, leaving limited funds to support service delivery in rural areas. Between 2002 and 2005, government expenditures on health increased by 37 percent (Table IV.1), and by a further 50 percent between 2006/07 and 2009/10. Much of the increase has been in the development budget, while recurrent

expenditures have tended to increase more gradually. Despite increases in development allocations, actual expenditures for development have not grown commensurately. The Ministry of Health spent only Ksh.2.475 billion (or 22 percent) of a targeted development budget of Ksh 11.029 billion in 2006/07.

Resource constraints are deeper than just financing: Human resources for health are a major constraint to improving service delivery and health outcomes. Ensuring that adequate numbers of qualified health staff with appropriate skills are available in the right places remains a considerable challenge. The distribution of staff across provinces is uneven. A study in 2005 (ref?) indicates overstaffing in provincial and district hospitals, and acute understaffing in many rural health facilities. Around 47 percent of dispensaries were staffed by only one Enrolled Community Nurse, and 3 percent had only support staff not qualified to administer drugs. Unattractive working and living conditions, poor incentives (including allowances), and weak deployment procedures all contribute to the staffing imbalances. Another major issue concerns the weak management capacity of the sector. The Public Expenditure Tracking Study (2007) concluded that funding (especially development funding) is not reaching the operations units because of inefficient financial management.

Health access is uneven: According to a number of recent studies (including the National Health Sector Strategic Plan II (NHSSP II) and the 2003 Household Health Expenditure and Utilization Survey), access to health services has been limited, particularly in rural areas, and the quality of services has been inconsistent and generally poor. The Kenya Service Provision Assessment Survey of 2004 found that only 57 percent of facilities could provide a basic package of child, maternal, reproductive health and HIV/AIDS services, and only 10 percent of clinics were able to provide 24-hour delivery services. Distance to facility, and facility access in general appears to be a major constraint for rural households. The uneven distribution of facilities geographically is clear from Table IV.2. While most facilities serve large numbers (on average each facility in Kenya serves over 15,00 people), this varies by province, with Central, Rift Valley, Coast and Eastern being better placed than the others.[10]

These data on the distribution of facilities point to deep-seated inequalities in the provision of health care in Kenya. Because it is rural areas that are typically poorly served, such inequalities often compound existing inequalities in Kenya society—inequality in income, in access to well paid employment, in livelihood opportunities more generally. Information obtained in the recently conducted KIHBS allow us to investigate such inequality further. The survey not only obtained information on the living standards of the Kenyan population, it identified which households used services subsidized by the government, including health-care services. By combining this information on the *use* of health services with data on how the government subsidized these services, we are able to estimate the benefit incidence of health spending in Kenya—at least for the year of the survey, 2005-06.

[10] Note, these data refer only to public facilities. Clearly, development planning in health takes into account the private sector activity across the regions.

Table IV.1 Ministry of Health Actual Expenditure (Gross) KSh million

	2001/02	*2002/03*	*2003/04*	*2004/05*	*2005/06*
Recurrent	12,715	14,405	15,438	17,417	19,765
Development	2,519	945	1,003	1,741	3,242
Total	15,234	15,351	16,441	19,158	23,007
Per Capita KSh	488.44	481.97	506.05	578.28	681.78
Per Capita $	6.28	6.29	6.52	7.48	9.47
As % of Total Government[1]					
Recurrent	8.23	8.69	7.76	7.66	6.29
Development	17.18	5.12	2.77	2.01	3.73
Total	9.01	8.33	6.99	6.1	5.73
As % of GDP					
Recurrent	1.38	1.4	1.41	1.41	1.29
Development	0.27	0.09	0.09	0.14	0.21
Total	1.65	1.49	1.51	1.55	1.5

Source: Ministry of Health Public Expenditure Review, 2007

Table IV.2 Kenya: Distribution of Public Health Facilities by Province, 2004

FACILITY TYPE	CENTRAL	COAST	EASTERN	NAIROBI	NORTH EASTERN	NYANZA	RIFT VALLEY	WESTERN	TOTAL
Dispensaries	205	144	325	18	43	180	540	81	**1,527**
Health Centres	57	33	58	8	6	80	136	62	**440**
District Hospitals	12	11	26	1	10	24	21	13	**118**
Provincial Hospitals	1	1	2	-	1	1	1	1	**8**
National and Specialized Hospitals	1	-	-	2	-	-	-	-	**3**
Rural Health Training & Demonstration Centres	1	15	7	-	5	6	12	7	**53**
Total Facilities	**277**	**204**	**418**	**29**	**65**	**291**	**710**	**164**	**2,158**
Facilities %	*12.8*	*9.5*	*19.4*	*1.3*	*3*	*13.5*	*32.9*	*7.6*	***100***
Population	**3,918,538**	**2,860,649**	**5,180,139**	**2,656,997**	**1,235,592**	**4,868,010**	**8,077,517**	**3,954,081**	**32,751,523**
Population per facility	14,095	14,022	12,393	91,620	19,009	16,728	11,376	23,964	**15,176**
Facilities per 100,000 pop'n	**7**	**7**	**8**	**1**	**5**	**6**	**9**	**4**	**7**

Source: Human Resource Mapping Report, 2004

IV.2 Household responses to illness.

The KIHBS obtained information on the recent (past 4 weeks) health status of all members of the households sampled, and on the treatment options the household took (Table IV.3). It also identified members of the household who were not ill or injured but who nevertheless visited a government subsidized health facility for a health-related reason (peri-natal care, vaccination, etc).

Table IV.3: Household responses to illnesses, 2005/06

	Share of population sick	*Share of sick seeking treatment*	*Of those seeking treatment, share seeking*		*Of those seeking private treatment, share seeking*		*Of those seeking public treatment, share seeking treatment at*			
			private treatment	*public treatment*	*modern treatment*	*traditional treatment*	*referral hospital*	*District/ provincial hospital*	*dispensary*	*health center*
Poorest quintile	27.6	60.5	48.9	52.6	61.8	38.5	2.9	19.9	50.8	27.8
Quintile 2	26.0	68.8	51.3	49.9	67.7	32.8	2.8	20.7	50.9	27.1
Quintile 3	28.3	71.2	47.7	54.0	73.5	27.3	3.1	26.9	45.3	26.3
Quintile 4	28.4	73.8	51.6	49.6	82.5	18.0	4.5	31.1	36.2	29.5
Richest quintile	27.0	77.5	59.5	42.4	89.4	11.3	12.8	33.0	32.9	23.2
All Kenya	27.4	70.4	52.0	49.5	76.4	24.2	5.1	26.5	43.1	26.8

Source: KIHBS, 2005-06

The survey found very even patterns of illness across the income groups in Kenya (Table IV.3). Just over a quarter of the population in all quintiles reported being ill or injured over the 4 weeks prior to the survey interview.[11] Differences begin to emerge in the response to the illness. Poorer Kenyans are far less likely to seek treatment when sick. The better off are not only more likely to seek care, but typically chose private care. The poor on the other hand typically seek treatment in the public sector. Interestingly, many better off Kenyans will use government health facilities. Similarly, poor Kenyans often use private providers, many of whom (62 percent) are modern rather than traditional. In Kenya at least, traditional health care providers treat the rich and the poor, though mostly the latter. When poorer Kenyans get sick and go to a government facility, in most cases (78 percent) they visit a primary facility—either a dispensary or a health centre. Better-off Kenyans are more likely than their poorer counterparts to use hospital facilities—just under a half of those in the richest quintile seeking care in government facilities go to a hospital.

Table IV.3 already suggests persistent inequality in health care in Kenya. Pursing this further, we investigate how the household treatment behaviour exhibited in these data translates into the way the government health budget is distributed across the income/consumption groups.

IV.3 The benefit incidence of government health spending

Benefit incidence brings together public expenditure accounts and survey data on use of publicly subsidized facilities. KIHBS reports the use by households of four main categories of publicly subsidized health care providers—referral hospitals, provincial/district hospitals, dispensaries and health centres. Such use of government subsidized services represents an in-kind transfer to the household—the transfer being what the household would need if it was required to pay the full cost of providing the service. For each visit to a subsidized health facility the household gains the unit cost (or subsidy) attached to that visit. Because such costs vary by facility, households who use high-cost facilities gain a greater in-kind transfer. Because these are seen as current transfers, only the recurrent budget of the government is relevant for this purpose.

Unit subsidies in government health care provision

To obtain estimates of unit subsidies in the government health facilities we first obtained spending estimates for the different types of facility distinguished in the survey. Government spending data were only available for primary facilities as a whole (i.e. dispensaries and health centers combined). A breakdown of health spending across the three types of facility we distinguish (referral hospital, district/provincial hospital and primary facility) is not available directly from the public accounts. However, the Shadow Health Budget, prepared for 2007, provides this information. We therefore applied the distribution of the shadow budget across the three facility categories to the level of government health spending in 2005-06. In this way we were able to obtain a reasonable estimate of government health spending across the facilities distinguished in the KIHBS. To obtain unit subsidies, we simply divided this spending estimate by the number of facility visits as estimated by the KIHBS. The results are given in Table IV.4.

Each visit to a referral hospital costs on average KSh 1,463, 13 times higher than a visit to a primary facility. A visit to other hospitals was about 8 times more costly than to a primary facility.. Clearly those able to seek a consultation at a referral hospital gain an in-kind transfer

[11] Some have argued that illness is typically under-reported by poorer people because they view many illnesses (such a diarrhoea) as a regular feature of normal life.

from the government which is many times greater than those who are only able to visit a dispensary or a health center. This is of a similar order to that estimated for 1992/93 (Castro-Leal et al, 1999). Households using referral hospitals therefore gain a much greater in-kind transfer than those using primary facilities. What are the implications for inequality in Kenya?

Table IV.4 Kenya: estimated unit subsidies for health care by facility, 2005/06

	2005/06 health budget a/		*KIHBS estimate of facility visits*	*Unit subsidy*		
	(KSh000)	*Percent share*		*(KShs)*	*Ratio*	*Ratio in 1992-93*
Referral hospitals	3,862,888	19.5	2,640,742	1,463	13.0	10.1
Provincial/district hospitals	12,019,283	60.8	13,949,650	862	7.7	
Primary facilities	3,882,829	19.6	34,590,478	112	1.0	1.0
All facilities	19,765,000	100.0	51,180,870			

Sources: Public Expenditure Tracking Survey, 2007; Health Shadow Budget, 2007; KIHBS, 2007, Castro-Leal et al (1999)

The distribution of government health sending

Bringing together the unit subsidies reported in Table IV.4 and the reported use of facilities from the KIHBS, estimates are obtained of the in-kind transfer to households across the income (or consumption) distribution (Table IV.5 and Figure IV.1).

Table IV.5 Kenya: Quintile distribution of benefit incidence of government health care spending by facility, 2005/06

	Referral hospital	*District/ provincial hospital*	*Primary facilities*	*All public facilities*
Poorest quintile	9.5	13.9	20.0	14.3
Quintile 2	9.6	14.1	20.2	14.4
Quintile 3	12.8	23.8	22.2	21.3
Quintile 4	18.8	24.6	21.5	22.9
Richest quintile	49.3	23.5	16.1	27.1
All Kenya	100	100	100	100

Source: author's estimates based on budget data and KIHBS 2005/06

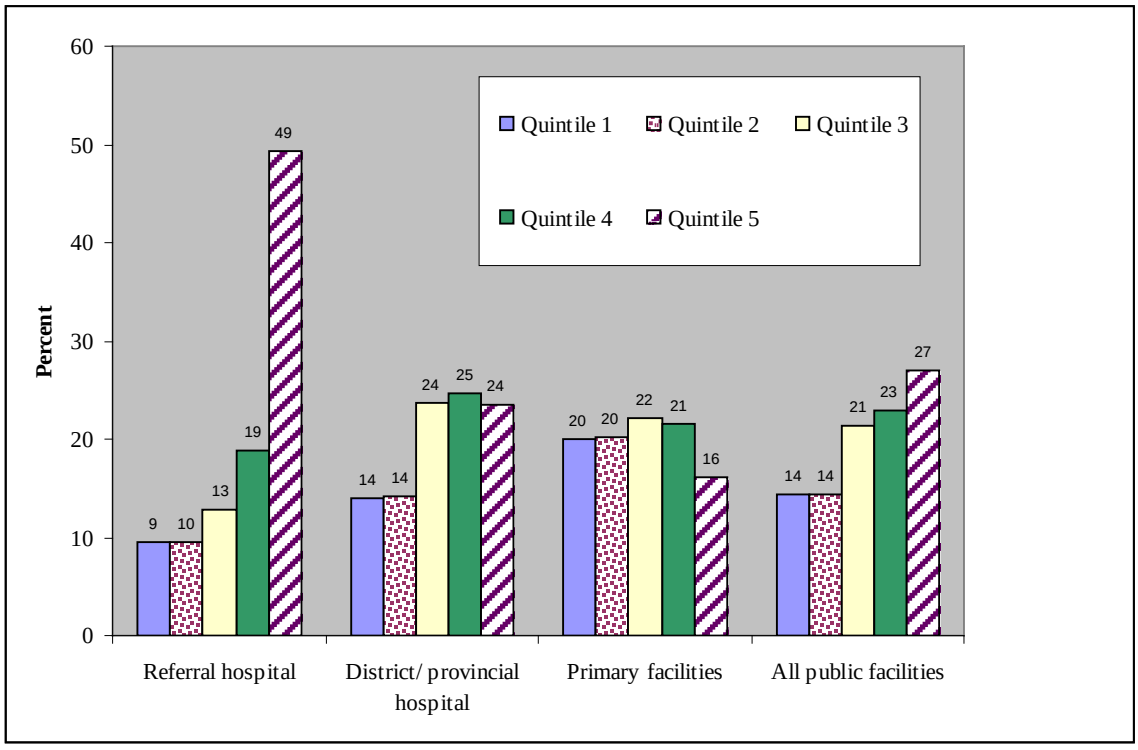
Poor people hardly use referral hospitals. Half the consultations at referral hospitals are from the richest quintiles. Poor people gain little directly from the significant subsidies at the highest level of health care delivery. Even residents of Nairobi did not consider use of the referral hospitals an option. The PPA-IV found that 'most of the Nairobi communities felt that Kenyatta National Hospital was not really a public facility because of the high payments for medication and the harsh and negative attitude of the medical personnel.' (Ministry of Planning and National Development, 2008, p. 79)

***The use of other hospitals is more widespread*:** But even here, the better-off use the facilities far more than the poor. Note that the distinction here is between the bottom two and top three quintiles—within these groups the shares are similar, but they are quite different between them (the latter each gaining about a quarter of the subsidy, each of the bottom two quintiles gaining just 14 percent).

Poor people rely on primary care: They get a proportionate share of spending on primary facilities (the poorest 40 percent gain 40 percent of the primary subsidy).

Poorer Kenyans benefit less from overall health spending: The poorest 20 percent of Kenyans receive just 14 percent of the government health budget. By using publicly subsidized health facilities, the richest quintile received an in-kind transfer amounting to 27 percent of the government health budget.

Figure IV.1 Kenya: Benefit incidence of government health spending, 2005-06



Source: authors' estimates based on budget data and KIHBS 2005/06

Although poorer Kenyans gain relative less than the better-off from health care, the subsidy they obtain should also be judged relative to their income (Table IV.6).

In absolute terms health spending is regressive in Kenya: Poor people benefit less that the better off. The mean health subsidy going to the poorest quintile is only about half that going to the richest. The top three quintiles are far better placed.

Relative to income the subsidy is progressive. The in-kind subsidy the poorest quintile gains from using government health facilities represents 6 percent of their income/consumption. For the richest, the ratio is only 1 percent.

Benefit incidence of health spending has changed little over time: There have been few previous assessments of the distribution of health care spending in Kenya. Castro-Leal et al (1999) provide estimates for 1992-93 (Table IV.7; Figure IV.2).[12]

Table IV.6 Kenya: Per capita health subsidy relative to per capita total household consumption, by quintile, 2005/06

	Health subsidy per capita	*Household consumption per capita*	*Health subsidy as percentage of household consumption*
	(KSh)		*(%)*
Poorest quintile	397	6,546	6.1
Quintile 2	402	11,950	3.4
Quintile 3	594	17,402	3.4
Quintile 4	637	26,665	2.4
Richest quintile	754	69,740	1.1
All Kenya	557	26,457	2.1

Source: authors' estimates based on budget data and KIHBS 2005/06

Table IV.7 Kenya: Benefit incidence of government health spending by poorest and richest quintile and level of care, 1992-93 and 2006-06 (percent share)

	Poorest quintile			*Richest quintile*		
	Primary facilities	*Hospital based care*	*All health*	*Primary facilities*	*Hospital based care*	*All health*
1992-93	22	13	14	14	26	24
2005-06	20	13	14	16	30	27

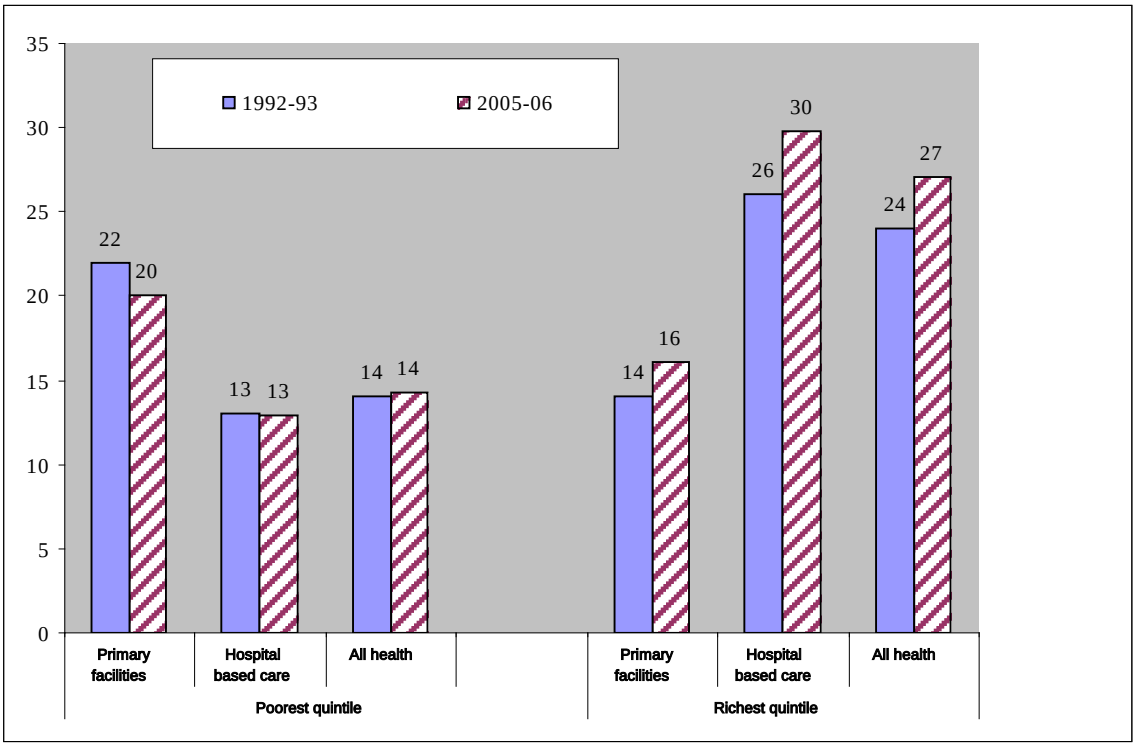
Source: Table IV.5; Castro-Leal, et al (1999)

***No marked changes in the distribution of the government health budget*:** These are changes in the *shares* of government health spending obtained through the use of government health facilities, and not the absolute values.

[12] 1992-93 data not available for the two types of hospital distinguished in KIHBS. Therefore Table H.6 and Figure H.1 report only hospital services taken as a whole. An important caveat is that Dayton and Demery used creative data constructs to obtain these estimates from weak data which might affect the comparison.

Such changes that did occur are not encouraging: The richest quintile gained an increasing share of all levels of service. The poorest quintile lost its share of even primary services.

Figure IV.2 Kenya: Benefit incidence of government health spending by level and richest/poorest quintile, 1992-93 and 2005-06 (percent)



Source: author's calculations; Castro-Leal et al (1999)

IV.4 Other dimensions of inequality

Gender inequality in health care

Assessing how government spending was distributed across income groups in Kenya is important, but there are other ways the distribution can be assessed. One important distinction for health care in Kenya is gender (Tables IV.8 and IV.9)

Females get a larger share of health spending: Overall, females get more out of health spending than males (they get almost 60 percent of the subsidy—the males 40 percent).

Poor females don't do so well: Relative to better off women, poorer women (the poorest quintile) are disadvantaged in benefiting from health care subsidies—particularly with respect to referral hospital care. Poor males get more benefit from referral hospitals than poor females—the opposite pattern from the better off (better off females use all health facilities (including hospitals) more than better off males). Not surprisingly poorer females get most out of the primary subsidy

Table IV.8 Kenya: Benefit incidence of public health spending by sex, facility and quintile, 2005-06 (percent)

Benefit incidence of public health spending by sex, facility and quintile, 2005-06 (percent)

	Referral hospital	*District/ Provincial Hospital*	*Primary*	*All public health facilities*	*Referral hospital*	*District/ Provincial Hospital*	*Primary*	*All public health facilities*
	Males				*Females*			
Poorest quintile	12.3	14.9	19.4	15.2	7.1	13.3	20.5	13.6
Quintile 2	10.2	14.4	19.6	14.5	9.0	14.0	20.7	14.4
Quintile 3	10.9	24.9	22.7	21.5	14.4	23.0	21.9	21.2
Quintile 4	21.3	23.8	22.0	22.9	16.7	25.2	21.1	22.9
Richest quintile	45.2	22.0	16.3	25.9	52.7	24.5	15.9	27.9
All Kenya	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: author's estimates based on budget data and KIHBS 2005/06

Table IV.9 Kenya: Row shares of public health spending benefit incidence by sex, facility and quintile, 2005-06 (percent)

	Referral hospital		*District/Provincial Hospital*		*Primary*		*All public health facilities*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Poorest quintile	59.0	41.0	43.0	57.0	40.1	59.9	44.3	55.7
Quintile 2	48.6	51.4	41.0	59.0	40.2	59.8	41.7	58.3
Quintile 3	38.8	61.2	42.2	57.8	42.3	57.7	41.8	58.2
Quintile 4	51.6	48.4	38.8	61.2	42.5	57.5	41.6	58.4
Richest quintile	41.8	58.2	37.8	62.2	42.1	57.9	39.7	60.3
All Kenya	45.5	54.5	40.3	59.7	41.4	58.6	41.5	58.5

Source: author's estimates based on budget data and KIHBS 2005/06

Inequality in household spending

The benefit incidence estimates provided above assess only the distribution of government health subsidies. But households themselves spend significant amounts on health care, which potentially increase inequality in health care provision across (Table IV.10). Household spending reported in Table IV.10 includes spending on both public and private providers of health care.

Households are responsible for the greater burden of health-care spending: Households account for just under three quarters of health care spending, and the government just over one quarter.

Table IV.10 Kenya: Accounting for the provision of public sector health care: private and public contributions

	Mean annual household spending on health care				*Mean annual government health subsidy*	*Total mean annual health spending on publicly provided health*	*Share of total spending*		*Household and government spending as percent of household consumption*	
	Frequent health items	*Medical diagnosis and treatment*	*Other drugs*	*All household health spending*			*Household*	*Government*	*Household*	*Government*
	(KShs)						(Percent)		(Percent)	
Poorest quintile	55	438	46	539	397	936	57.6	42.4	8.2	6.1
Quintile 2	89	307	126	523	402	924	56.5	43.5	4.4	3.4
Quintile 3	150	410	217	778	594	1,371	56.7	43.3	4.5	3.4
Quintile 4	214	610	553	1,377	637	2,014	68.4	31.6	5.2	2.4
Richest quintile	544	2,035	1,686	4,264	754	5,019	85.0	15.0	6.1	1.1
All Kenya	210	760	525	1,496	557	2,053	72.9	27.1	5.7	2.1

Source: author's estimates based on budget data and KIHBS 2005/06

The burden of spending varies systematically across quintiles: Poorest Kenyans contributed 58 percent and gained 42 percent from the government. The richest quintile contributed 85 percent, receiving just 15 percent in government subsidies.

Inequality in private spending is far greater than in public spending*:* The mean public subsidy for health care received by the top quintile is 1.9 times that for the bottom quintile. For private spending the ratio is 6.7.

Burden of health spending is greater for the poor*:* Although poor people spend less in absolute terms on health care, such spending represents a greater burden to them. Households in the poorest quintile spend 8 percent of their income on health care (in contrast to the richest quintile, which spend 6 percent on health).

Bottom three quintiles share the same budget shares. The top two quintiles make very significant contributions to health care relative to government spending. For the poorest three quintiles the burden of total health care is more evenly spread between the households and the government (respectively 57 percent and 43 percent).

The current waiver system is not working**:** That the poorest households spend more of their income proportionately than the richest (even though they use mostly primary facilities) is clearly a cause for policy concern. These data would suggest that the current system of waivers and exemptions is not working—at least not well enough to make a difference to the relative burden of health care. The recent Public Expenditure Tracking Survey (2007) concluded that 'the application of waivers and exemption guidelines at facility level is not standard and is subject to abuse by the facility staff. In particular and against the laid down procedures the well to do groups in the society are being exempted from payments an issue which works against the principles of equity and access to health services by the poor and the vulnerable groups. As we develop the strategy issues to do with poverty definitions and measurement should be addressed to ensure that the poor groups access services.'[13]

IV.5 The marginal benefit incidence of health spending

As with education spending, we also estimate how *changes* in health spending are likely to be distributed across the population in Kenya. We take the same approach by defining participation in government-financed health care as the percentage of the population that visited a public health facility during the year. Two levels of health care are distinguished—primary care delivered through public health centres and clinics, and hospital-based care through the network of provincial and district hospitals.[14] And as with education we use two types of data construct, grouped data and individual data. To estimate the marginal distribution of health spending, equations (1) to (5) are applied to health, based on the odds of participation in health care programs across the quintiles.

[13] Quoted from Muchiri (2008: p. 15)

[14] Since visits to the large teaching/referral hospitals are not common events in the KIHBS, we do not cover such care here.

Results

As with the average incidence, at the margin the poorest groups use primary facilities as much as the richest, especially poor females. But poor males (those in the bottom two quintiles) gain the least—their marginal odds of participation being (statistically) significantly below unity. This is in contrast with the females in the poorest quintile. Their marginal odds are significantly (in the statistical sense) higher than their male counterparts. Interestingly whilst the poorest females fare reasonably well from an expansion in primary care, it is females in quintile 4 that would appear to benefit the most.

Table IV.11 Average and marginal odds of participation in government-funded health care, by quintile and level of care, 2005-06

Primary health care

Quintile	*Average odds*			*Marginal odds*					
				Grouped data			*Individual data*		
	Both sexes	*Males*	*Females*	*Both sexes*	*Males*	*Females*	*Both sexes*	*Males*	*Females*
Poorest quintile	1.00	0.97	1.02	0.95	0.75	1.12	0.91	0.67**	1.16
Quintile 2	1.01	0.98	1.03	0.46*	0.51	0.73	0.73**	0.66**	0.79
Quintile 3	1.11	1.13	1.09	1.08	1.34	0.79	1.12	1.15	1.10
Quintile 4	1.07	1.10	1.06	1.40	1.13	1.29	1.24*	0.99	1.47***
Richest quintile	0.80	0.82	0.79	1.10	0.99	1.35	1.00	0.73	1.27
Mean	1.0	1.0	1.0	1.0	0.9	1.1	1.0	0.8	1.2

Regional hospital-based care

Quintile	*Average odds*			*Marginal odds*					
				Grouped data			*Individual data*		
	Both sexes	*Males*	*Females*	*Both sexes*	*Males*	*Females*	*Both sexes*	*Males*	*Females*
Poorest quintile	0.70	0.74	0.67	0.99	1.19	0.67	0.61**	0.65*	0.58**
Quintile 2	0.71	0.72	0.70	1.17	1.16	1.06	0.78	0.63**	0.93
Quintile 3	1.19	1.25	1.15	1.02	1.00	0.94	0.79	0.66*	0.93
Quintile 4	1.23	1.19	1.26	0.87	0.74	0.90	1.15	0.93	1.36
Richest quintile	1.18	1.10	1.23	0.95	1.01	1.32	1.66**	1.33	1.98***
Mean	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.8	1.2

*** indicates statistical significance at 1% level; ** at 5% level and * at 10% level, testing whether the coefficients are significantly different from unity.

Source: authors' estimates, based on KIHBS, 2005-06 data

Distinctly greater inequality emerges in the distribution of hospital based care. As with average benefits, at the margin the poorest groups stand to gain the least from an expansion in hospital-based healthcare—and this applies as much to poor males and females. If average spending on hospital care were to be raised by KSh100, the poorest quintile would gain on average by only KSh61, which is in striking contrast to the richest quintile, which are likely to gain on average KSh166. Females in the richest quintile gain by far and away the most from any expansion in hospital-based care. This inequality becomes strikingly clear from the marginal shares accruing across the quintiles (Table IV.12). Based on the results from the individual data, the richest females in Kenya (comprising about 10 percent of the population) are predicted to gain almost 20 percent of any increase in hospital-based care. The poorest females (also representing just 10 percent of the population), would gain just 6 percent.

Table IV.12 Average and marginal shares in government-funded health care, by quintile and level of care, 2005-06

Primary health care

Quintile	*Average shares*			*Marginal shares*					
				Grouped data			*Individual data*		
	Both sexes	*Males*	*Females*	*Both sexes*	*Males*	*Females*	*Both sexes*	*Males*	*Females*
Poorest quintile	20.0	8.0	12.0	19.1	7.4	11.4	18.2	6.6	11.7
Quintile 2	20.2	8.1	12.1	9.3	5.0	7.4	14.6	6.4	8.1
Quintile 3	22.2	9.4	12.8	21.7	13.2	8.0	22.4	11.3	11.2
Quintile 4	21.5	9.1	12.4	28.1	11.1	13.1	24.7	9.7	15.0
Richest quintile	16.1	6.8	9.3	21.9	9.9	13.5	20.1	7.3	12.7
All	100.0	41.4	58.6	100.0	46.6	53.4	100.0	41.2	58.8

Regional hospital-based care

Quintile	*Average shares*			*Marginal shares*					
				Grouped data			*Individual data*		
	Both sexes	*Males*	*Females*	*Both sexes*	*Males*	*Females*	*Both sexes*	*Males*	*Females*
Poorest quintile	13.9	6.0	8.0	19.7	11.8	6.8	12.2	6.4	5.9
Quintile 2	14.1	5.8	8.3	23.5	11.4	10.8	15.7	6.2	9.5
Quintile 3	23.8	10.0	13.8	20.4	9.8	9.6	15.8	6.5	9.4
Quintile 4	24.6	9.6	15.1	17.4	7.3	9.2	23.0	9.1	13.9
Richest quintile	23.5	8.9	14.6	19.0	10.1	13.2	33.3	13.3	19.7
All	100.0	40.3	59.7	100.0	50.4	49.6	100.0	41.6	58.4

Source: authors' estimates based on Table IV.11 and KIHBS (2005-06) data.

In sum, the inequality patterns which emerged from estimates of the average benefit incidence apply to (and are indeed reinforced in) the marginal benefit incidence. Primary health care is evenly distributed on average, and at the margin. Even the poorest females are predicted to benefit from an expansion in spending. And the unequal distribution observed on average for hospital-based care, is even more distinct at the margin, with the richest quintile getting a third of the additional spending, and the richest females, one fifth. The inequality in the average incidence of secondary school spending is muted somewhat for marginal changes, though the upper quintiles are expected from these results to continue to gain the most. Increases in spending on hospital-based services is estimated to be even more unequal that average benefit incidence would suggest—and strikingly so.

V. Concluding observations

Households clearly benefit greatly from government social spending in Kenya. Our estimates suggest that government spending on education overall amounts to about 10 percent of household income/consumption, and health spending to just over 2 percent (Table V.1). Education spending dominates—the overall subsidy being five times that of health. The benefits to the poorest groups (the poorest 20 percent) are even more significant. The in-kind transfers they gain by sending children to school and using government subsidized health facilities amounts to over 40 percent of their income. For the richest quintile, it is only 5 percent of their income.

The education subsidy, moreover, is better targeted to the poorest groups—18 percent of the subsidy benefits the poorest quintile, while just 14 percent of health spending reaches the poorest. At the other end of the income scale, the richest get the largest share of the health spending—27 percent of the health recurrent budget. Because they benefit little from spending on primary education, the richest quintile gest only its proportionate share (22 percent) of overall education spending.

Table V.1 Kenya: Distribution of social spending by quintile, 2005/06

	Per capita subsidy		*Share of the subsidy*		*Subsidy as percentage of household consumption*	
	Education	*Health*	*Education*	*Health*	*Education*	*Health*
	(KSHs per annum)		*(Percent)*			
Poorest quintile	2,312	397	17.7	14.3	35.3	6.1
Quintile 2	2,612	402	20.0	14.4	21.9	3.4
Quintile 3	2,574	594	19.7	21.3	14.8	3.4
Quintile 4	2,710	637	20.8	22.9	10.2	2.4
Richest quintile	2,835	754	21.7	27.1	4.1	1.1
All Kenya	2,609	557	100.0	100.0	9.9	2.1

Source: author's calculations

Government spending on both health and education are regressive in absolute terms, but progressive relative to household income/consumption. The poorest quintile gains massively from education, which represents over one third of their income. Its gains from health, though still progressive, are lower at just 6 percent of income. These findings are encouraging, but they also contain some important policy messages, for both sectors.

In general, our estimates of the incidence of marginal changes in spending on education and health follow a similar pattern to those observed on average. They confirm that additional spending on primary education and primary health-care are likely to benefit the poorest groups in Kenyan society. There is no evidence of a gender imbalance/bias in the marginal benefits from education spending, and females are predicted to benefit more than males from an expansion in primary health spending. And whilst the richest females are shown to benefit most from an expansion of hospital services, their counterparts in the poorer quintiles gain far, far less—even less than the males in the quintile.

V.1 Education

The incidence of government spending on education is generally progressive, in that the gains poorer household received relative to their income are far greater than the better-off. This comes mainly from the distribution of government spending on primary education. Although the primary net enrolment rates have been persistently lower among the poorest quintile (than other groups), they have increased in recent years in response to the FPE policy (at just over 70 percent). But it is the sheer weight of numbers that draws the primary subsidy heavily towards poorer groups. It is among these groups that most of the primary school-aged population is to be found (Table III.12).

The following education policy messages emerge from this analysis:

Continued efforts are needed to raise enrolments among the poorest*:* At 70 percent (for both girls and boys), the net primary enrolment rate among the poorest quintile should be higher. It is particularly low in Coast, Rift Valley and North Eastern provinces, where the policy effort should be focussed. Impact evaluation studies have shown that support to poor households does raise school enrolment. A study of the 'Impact of Distributing School Uniforms on Children's Education in Kenya' concluded that proving school uniforms raised school attendance by 6.5 percent. Our own analysis suggests that increasing the unit subsidy in primary education has a noticeable effect on enrolments—households do respond to increased government allocations to the schools by sending their children to school.

Ensure that the gains in primary school enrolments are not lost*:* Poor people have responded to the FPE policy. The challenge now is to ensure the gains made are not lost. Poor quality of education and the failure of children to improve education attainment, might eventually discourage attendance at school among poorer groups. Schooling standards at the primary level should be enhanced. The marginal benefit incidence findings suggest that any weakening in the primary education policy effort would impact most on the poorest Kenyans—especially poor girls. As a corollary, any further advances would benefit them the most.

Raise secondary enrolments among the poor*:* The very poorest groups in Kenya (the bottom 20 percent) gain very little from secondary school spending. Although this has increased since the early 1990s, there is a clear need to improve on this. To frame appropriate interventions, research is needed on the main constraints facing poor people in enrolling children in secondary school—candidate factors are poor educational attainment at primary level, costs of schooling, access to

secondary school facilities, perceptions of the benefits of secondary schooling in a farming context. There are close to 21,000 public and private primary schools in the country, but only about 4,800 at the secondary level. This sparse distribution is certain to make access difficult and costly to poorer Kenyans living in (often remote) rural areas. This is probably the reason why increases in secondary spending are predicted to continue to benefit richer groups. One policy under implementation is the introduction of secondary school bursaries. A recent evaluation of this suggests a number of weaknesses in the implementation of the policy. It found that it is non-transparent, inconsistent in providing support to poorer households, and generally inefficient in its implementation procedure. Clearly the implementation of the secondary school bursary scheme needs to be made more transparent and actions taken to ensure that poorer households get to benefit.

V.2 Health

The pattern of health spending across the levels of health-care delivery has remained largely unchanged over the past decade. The share of the budget allocated to the higher levels of care has remained high, with front line rural services suffering as a result. Poor people tend to use those services which have benefited least from budget allocations. Although poorer Kenyans gain proportionately from primary health care spending, the quality of the service they obtain when attending a primary facility might be limited compared with that obtained through hospital-based care. Given their limited access to hospital facilities, poorer people gain relatively little (compared with the better-off) from government subsidized hospital care. Overall women benefit more than men from health spending, but poorer women appear to be disadvantaged relative to men. The distribution patterns observed on average for health care apply also at the margin. An expansion in hospital-based services is predicted to benefit the richest the most—especially rich females. Inequality in household spending on health is significant, and public subsidies do little to correct for this.

The key policy challenge is to two-fold:

First improve the quality of care at the primary level: These are the facilities used mostly by poor people. According to the Fourth Participatory Poverty Assessment (PPA-IV), 'the communities described lower level health institutions (dispensaries and health centres) as offering inadequate services, mainly because some services were not available, while district, provincial and national hospitals have more qualified doctors, are normally better stocked with drugs, and offer more specialized services.' (Ministry of Planning, and National Development, 2008, p. 77)

***Second encourage greater use by poor people of district and provincial hospitals*.** This in turn would call for two types of intervention. First improve access to district and provincial hospitals—better all-year roads. And second, improve the implementation of fee exemptions which are likely to discourage the poor more than the non-poor.. Many communities covered by the PPA-IV survey reported that unofficial payments often were needed to obtain care—in addition to the scale of charges levied in public facilities. These and other costs (transport, waiting time etc) are likely to discourage use of these services by poor people.

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Technical Annex

To be drafted