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Acronyms

ACT	Artemisin-Combination Therapy	MMR	Maternal Mortality Ratio
ARI	Acute Respiratory Infection	NACA	National Action Committee On AIDS
BMI	Body Mass Index	NAFDAC	National Agency For Food And Drug Administration And Control
CBN	Central Bank Of Nigeria	NDHS	Nigeria Demographic And Health Survey
CBO	Community Based Organization	NHIS	National Health Insurance Scheme
CEOC	Comprehensive Emergency Obstetric Care	NEEDS	National Economic Empowerment Strategy
CHEW	Community Health Extension Worker	NLSS	Nigeria Living Standards Survey
CSR	Country Status Report	NPC	National Planning Commission
CWIQ	Core Welfare Indicator Questionnaire	NPHCDA	National Primary Health Care Development Agency
DFID	Department For International Development (United Kingdom)	NPI	National Programme For Immunization
DOTS	Directly-Observed Treatment, Short-Course	ORS	Oral Rehydration Solution
DPT	Diphtheria-Pertussis-Tetanus Vaccine	ORT	Oral Rehydration Therapy
EOC	Emergency Obstetric Care	PAFA	Population Activities Fund Agency
FCT	Federal Capital Territory	PHC	Primary Health Care
FGM	Female Genital Mutilation	SSA	Sub-Saharan Africa
FGN	Federal Government Of Nigeria	TB	Tuberculosis
FMOH	Federal Ministry Of Health	TFR	Total Fertility Rate
GAVI	Global Alliance For Vaccines And Immunization	UK	United Kingdom
GDP	Gross Domestic Product	UNAIDS	Joint United Nations Programme On HIV/AIDS
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome	UNFPA	United Nations Population Fund
HMB	Hospital Management Board	UNICEF	United Nations Children's Fund
IMF	International Monetary Fund	US\$	United States Dollar
IPT	Intermittent Preventive Treatment	USAID	United States Agency For International Development
LGA	Local Government Area	VCT	Voluntary Counseling And Testing
MBB	Marginal Budgeting For Bottlenecks	VVF	Vesico-Vaginal Fistula
MDG	Millennium Development Goal	WHO	World Health Organization

Vice President:	Gobind T. Nankani
Country Director:	Hafez Ghanem
Sector Manager:	Laura Frigenti
Task Team Leaders:	Christine L. Peña and Maria Eugenia Bonilla- Chacin

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INTRODUCTION AND CONTEXT

INTRODUCTION

1. *The Health, Nutrition, and Population Country Status Report (CSR) for Nigeria aims to contribute to the evidence base of the Government's poverty reduction strategy and health system reform efforts, as well as inform the Bank's policy dialogue with the Government. A major theme of the CSR is the analysis of the health situation of the poor and how the health system is performing in terms of meeting the needs of the poor.*
2. The World Bank team collaborated with a Federal Ministry of Health (FMOH) CSR working group, and consulted with other government officials, international partners, and other stakeholders in the health sector.
3. The report has six chapters: i) Health Outcomes; ii) Household Behavior and Community Factors Affecting Health; iii) Health System and Policy; iv) The Role of the Private Sector in Health Care Provision; v) Health Care Financing; and vi) Extra Resources Needed to Achieve the Health-Related Millennium Development Goals (MDGs).
4. The report benefits from several recent high-quality and representative household surveys, including a series of Core Welfare Indicator Questionnaire (CWIQ) surveys and the 2003 Nigeria Living Standards Survey (NLSS), as well as a 2003 Nigeria Demographic and Health Survey (NDHS). The report also draws on administrative data on health services and financing from the FMOH, the Central Bank of Nigeria (CBN) and other government sources. Such information is sometimes dated and often incomplete, particularly with regard to the state and local levels. However, it is supplemented by a variety of surveys and studies of different aspects of the health system and financing, such as a large survey of primary health care (PHC) services in 2001 by the National Primary Health Care Development Agency (NPHCDA), a 2003 FMOH study of emergency obstetric care, a 2003 World Bank assessment of state finances, and an in-depth World Bank study of PHC services in Lagos and Kogi states in 2002. In addition, numerous state or issue-specific studies were consulted, including several reports by programs supported by international partners. Finally, national and global WHO and UNICEF reports were consulted on specific issues.

CONTEXT

5. *The sheer size and complexity of the country present large challenges to health policymakers. With a population of more than 130 million people, one out of every five people in Sub-Saharan Africa is Nigerian. Not only is the population large, but it is also very diverse: there are nearly 300 ethnic groups in the country, more than 500 languages, and two major religious groups (Islam and Christianity). This complexity is mirrored by widely varying patterns of health outcomes and health services.*
6. *Nigeria's federal system assigns different health system responsibilities to the three levels of government, each of which is largely autonomous in terms of management and financing. Administratively, the country is organized as a federation with a federal government, 36 states and the Federal Capital Territory (FCT), and 774 local government areas (LGAs). For the purposes of studies such as this, states are often grouped into six "geopolitical zones," but these do not have any legal existence (Figure 1 provides an illustration).*

7. Along with overall policy, the federal government is mainly responsible for tertiary-level health services, state governments are responsible for secondary services and local governments are responsible for primary services. At the same time, a number of programs and parastatal agencies, usually based at the federal level with state counterpart organizations, work on PHC services. Although national policies provide a certain measure of standardization, each level of government has large autonomy in financing and management of health services under its responsibility.

8. *Weak governance has been an obstacle to improvement in public services, including health care, although the democratic government is pursuing vigorous reforms.* The long years of military rule weakened, politicized, and corrupted government bureaucracies. In 2004, Transparency International ranked Nigeria as the third most corrupt country in the world. Similarly, the 2004 Africa Competitiveness report ranked Nigeria's public institutions as the second to last country in Africa, and the fifth to last in the world, using an index that combines measures of the degree of corruption and the rules of contract and law. However, after taking office in 1999, the democratic government has taken several steps to address these systemic issues, including launching a high-profile anti-corruption campaign through the creation of the Economic and Financial Crimes Commission; participating in the Extractive Industries Transparency Initiative; raising civil service salaries; and embarking on civil service reform.

9. *High dependency on oil revenue and poor economic management has resulted in volatility and uncertainty in the level of public resources.* Nigeria's economy is highly dependent on oil which in the last decade represented about 95 percent of total exports and 66 percent of total government revenue (World Bank, 2004). State and local government budgets, which are used for the delivery of primary and secondary health care, depend largely on oil revenue allocations since – with some exceptions – state and LGA revenue-generation capacity is low. Although oil revenue could potentially be used by the government for productive purposes, variations in oil prices have caused high volatility and unpredictability in government resources, negatively affecting the health system.

10. *However, economic growth and better macroeconomic and fiscal policies have improved the situation in the past few years.* Government reforms and macroeconomic and fiscal policies have contributed to robust economic growth in the past few years, notably in the non-oil economy. For example, in 2004 the federal and state governments were able to save some of the revenue windfall from high oil prices, although there is concern about the 2005 budget which would increase government spending by over 50% (IMF, 2005b). Both oil and non-oil GDP have grown significantly since 2003, keeping pace with and exceeding population growth. Real GDP growth was 10.9% in 2003, 3.6% in 2004, and a projected 7.4% in 2005. In 2005, the non-oil economy is projected to grow by almost 5% (IMF, 2005a).

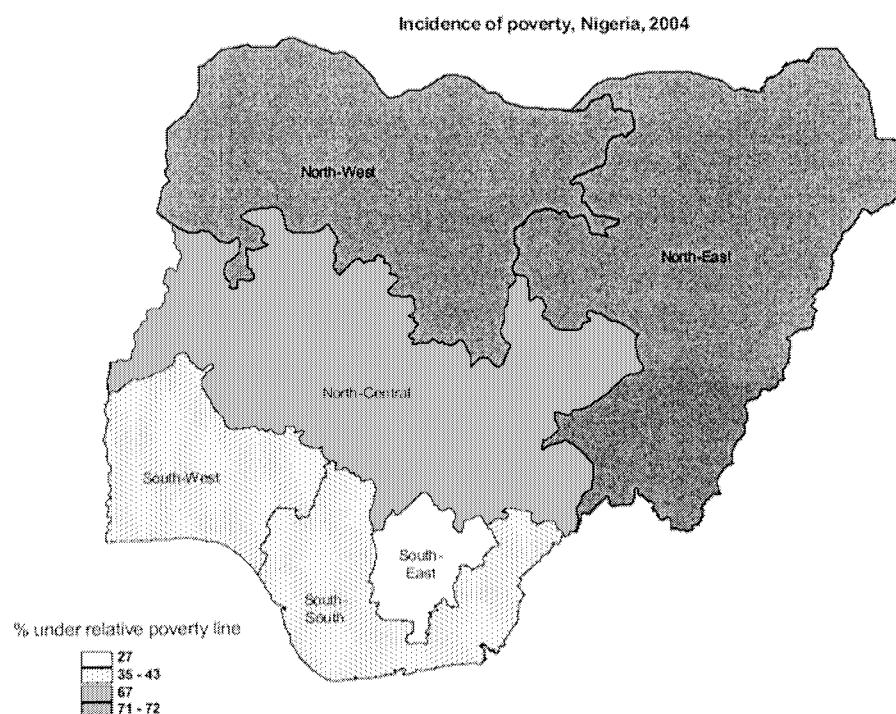
11. *The government has a large debt burden.* By the end of 2003 Nigeria's external debt was close to US\$ 33 billion, more than half of the country's gross domestic product (GDP). In 2004 alone, US\$ 1.8 billion were budgeted for external debt payments. This situation is not alleviated by official development assistance; in recent years the country received about US\$ 2 per capita compared to the sub-Saharan Africa average of about US\$ 28 per capita.

12. *Poverty is widespread and inequalities are large.* Economic status is one of the major determinants of both health outcomes and health service utilization. Despite recent economic growth, most Nigerians remain very poor. In 2005, projected GDP per capita is US\$ 582 (IMF, 2005a), less than the average for Sub-Saharan Africa. Non-oil GDP per capita, an indicator for

the resources directly available to households, is projected to be US\$ 224.¹ Based on preliminary estimates of the 2003 NLSS, around half of the population is considered poor (i.e. their per capita consumption is below 2/3 of the mean per capita consumption). Income is highly unequally distributed, with a Gini coefficient estimated at over 0.4.² (Federal Office of Statistics, 2004)

13. *There are large urban/rural and regional inequalities in economic status that often translate into disparities in health outcomes and access to health services.* Based on preliminary estimates of the 2003 NLSS, around one-third of the population in urban areas are considered poor, compared to two-thirds in rural areas (Federal Office of Statistics, 2004). There are also significant regional disparities, as the incidence and depth of poverty are higher in the northern states (Figure 1). The 2003 NLSS indicates that all the northern states share similar poverty rates. Poverty rates in the south are lower but vary across regions; of the southern regions, the South East has the lowest percentage of people living in poverty while the South South has the highest percentage. As will be detailed in the following chapters, inequalities in health outcomes and access to health services often follow these regional patterns.

Figure 1. Relative poverty across regions



Authors' calculations based on estimates from the 2003 NLSS reported by Federal Office of Statistics (2004). Poverty incidence is defined as the proportion of the population with per capita expenditure lower than 2/3 of the national average per capita expenditure.

14. *Poverty and inequality have fueled conflict and violence.* Ethnic, religious, and political clashes in parts of the country have often been violent. At the same time, poverty and inequality contribute to high rates of violent crime in some areas.

¹ Gross national income (GNI) per capita is estimated to be US\$ 390 in 2005. The difference with estimated GDP per capita is due to what is included in the two indicators; particularly relevant to Nigeria is that foreign outflows (for example, revenues to foreign firms from oil production) are not included in GNI.

² A Gini coefficient of 0 denotes complete equality and a coefficient of 1 denotes complete inequality.

15. *The vulnerable situation of women affects not only their own health but also that of their children.* Despite large regional differences, women in general have less access to productive assets, have lower participation rates in income-generating activities, and earn lower wages. All of these factors contribute to poverty and therefore to poor health. Additionally, women, particularly in the northern regions, have less access to education than men. The 2003 NDHS found that 55% of primary school-aged girls attended school, compared to 65% of boys. In the North East and North West zones, about these proportions were about 50% for boys and 35-40% for girls. These low levels of access to schooling for girls are worrisome as mother's education is a consistently important determinant of family health status and health service utilization.

16. *With a 4.4% urban population growth rate, cities in Nigeria are growing faster than the average cities in Africa* (UNFPA, 2004). Lagos, for instance, is one of the biggest cities in the world and its population is expected to double between 1990 and the year 2015 (National Population Commission, 1998). This fast urbanization, particularly in Lagos, presents many challenges in terms of provision of health, education, water and sanitation services.

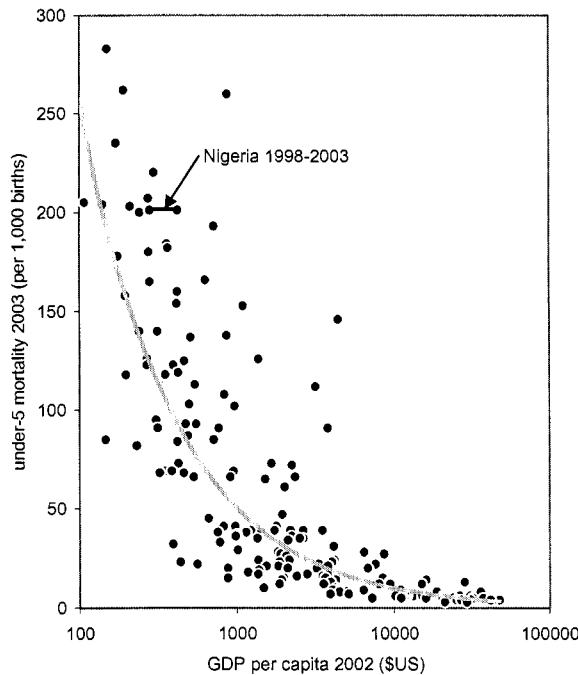
17. *The ecology of the country exposes the population to major infectious and parasitic diseases.* For instance, almost the entire population lives in areas of endemic risk for malaria. Environmental problems, such as oil spills in the Niger Delta, drought in the north, and floods in the south, also have had negative effects on the population's health. Although much improvement has occurred in the last decade, a large proportion of the population does not have access to improved sources of drinking water and adequate sanitation.

18. *The country's consolidation of democracy allows Nigerians to effectively confront these challenges and improve the health status of the population.* Since 1999 Nigerians have elected their political representatives. One of the main pillars of the government's poverty reduction strategy, the 2004 National Economic Empowerment Strategy (NEEDS), is investment in human capital, including improving the health system and health situation of the population.

CHAPTER 1. HEALTH OUTCOMES

1. This section will first present an analysis of trends, international comparisons, and regional, income, and rural and urban inequalities in the health status of the population. It will then present an assessment on the country's progress in meeting the Millennium Development Goals (MDGs).

Figure 2. Nigeria and global trend in under-five mortality vs. GDP per capita



Sources for Nigeria: 2003 NDHS for under-5 mortality estimate for the period 1998-2003 and IMF for GDP per capita estimates for 1998 and 2003.

Sources for other countries: WHO for estimates of under-5 mortality rates for 2003 and World Development Indicators for GDP per capita for 2002

CHILD HEALTH

2. *Every year about one million children die in Nigeria.* Many of these children die from either preventable diseases or from diseases that can be treated at very low cost. At present, one out of every ten children dies before his or her first birthday and one out of every five before his or her fifth. Given the country's large population, this high under-five mortality rate implies that each year about a million children younger than five die.³

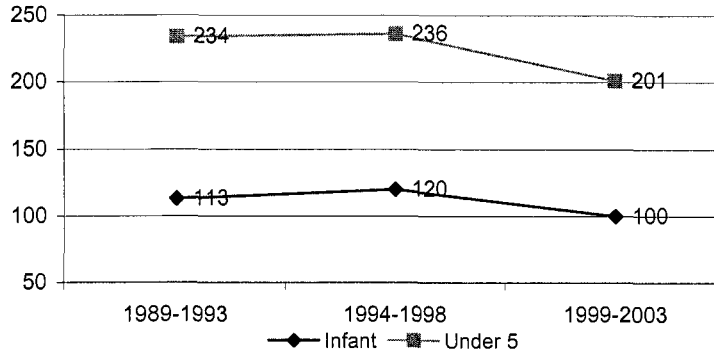
3. *Child mortality is higher than would be expected given Nigeria's per capita GDP.* Figure 2 plots under-five mortality rates by GDP per capita in all countries. For Nigeria, the estimate for under-five mortality from the 2003 NDHS (201 per 1,000 live births) refers to the period 1998-

³ To estimate the number of children dying each year, we transformed the birth cohort mortality rate over five years of 201 per 1,000 (NDHS 2003) to a yearly crude mortality rate. For this we used the formula below (Preston, Heuveline, and Guilliot, 2001), where n is the number of years in the interval (5 years), m is the observed crude mortality rate for one year, and a is the average number of years lived by those who died during the interval (here assumed to be 2).

$${}_5q_0 = \frac{nm}{1 + (n - a)m}$$

2003, a time when GDP per capita grew significantly. Nevertheless, Nigeria's under-five mortality rate is above the trend even when using the 1998 GDP per capita estimate (around US\$ 270).

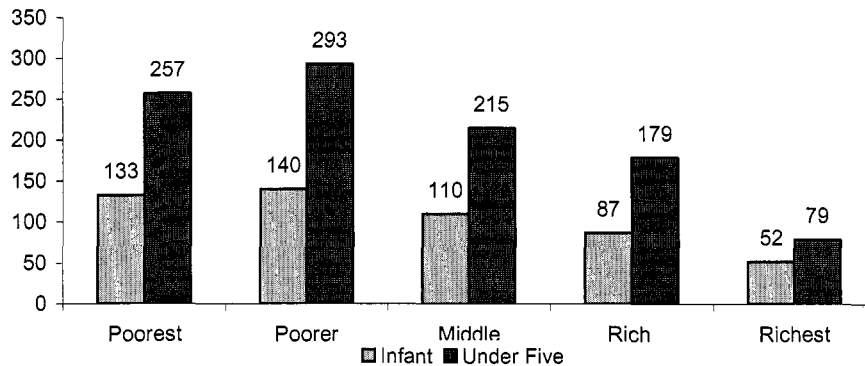
Figure 3. Trends in infant and child mortality, Nigeria



Source: Nigeria DHS 2003. These are mortality rates for five-year periods preceding the NDHS 2003 survey.

4. *Infant and under-five mortality rates show a slight improvement after a period of stagnation.* As seen in Figure 3, after two decades of military dictatorship and increases in poverty, infant and child mortality rates did not improve during the 1990s. This trend, however, has started to change and today both rates show slight improvements.

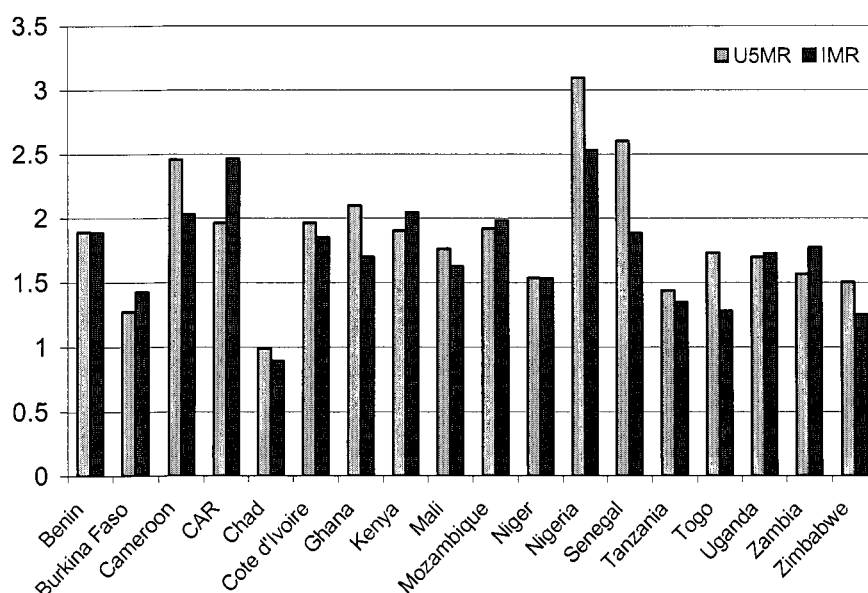
Figure 4. Infant and under five mortality across wealth quintiles, Nigeria, 1993-2003



Source: NDHS 2003

5. *Inequalities across income groups remain very worrisome.* Both infant and under-five mortality rates are more than 2.5 times higher among the poorest 20 percent of the population than among the richest 20 percent (see Figure 4). While the infant and child mortality rates of the richest end of the income distribution are only half sub-Saharan Africa averages, those of the poorest are more than 1.3 times as high. As seen in Figure 5, these differences are the greatest among all the SSA countries for which data are available. In Nigeria, the poor have as many as three times more under-five children dying than the rich; in Senegal, the country with the second greatest difference, the poor to rich ratio is about 2.5. In the case of infant mortality, Nigeria is once again the country with the greatest difference between rich and poor, followed closely by the Central African Republic.

Figure 5. Poorest/richest ratio for infant and under five mortality



Sources: World Bank HNP Stats and authors' calculations from 2003 NDHS

6. *There are also large regional and rural-urban inequalities in infant and child mortality.* In general, children living in the Northern regions fare much worse than children living in the Southern ones (Table 1). Children born in the South East and South West are more than twice as likely to reach their fifth birthday than children living in the North East and North West. The South South and North Central regions do not follow this North-South pattern. The very high infant mortality rates in the South South region are mostly due to a very poor performance in rural areas of this region where the infant mortality rate, of about 130 per 1,000 live births, is worse than in any other rural area of the country. In contrast, the infant mortality rate in urban areas in this region is lower than the rates in northern urban areas. In fact, these large differences between rural and urban areas are found in the entire country, with rural children faring much worse than urban children (Figure 6).

Table 1. Neonatal, Infant and under five mortality across geopolitical regions, Nigeria, 1993-2003

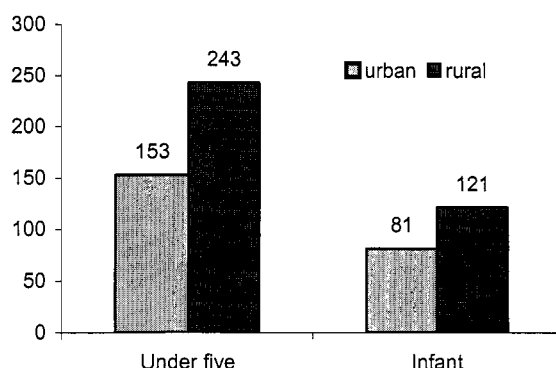
	neonatal	infant	under-five
North Central	53	103	165
North East	61	125	260
North West	55	114	269
South East	34	66	103
South South	53	120	176
South West	39	69	113

Source: NDHS 2003

7. There are a number of possible reasons for why the North East and North West regions, as well as rural areas in the South-South and elsewhere, fare worse than other parts of the country. Poverty is more widespread in the north and in rural areas than in the south and urban centers and this is certainly driving a large part of the differences. Also, both urban areas and the South East and South West regions as a whole have better access to clean water and sanitation and to health care services. Additionally, women living in urban centers and especially in the southern regions on average have more education, a well-documented determinant of child survival, than their

counterparts in the rest of the country. To understand the individual effects of variables such as mother's education, place of residence, or household wealth⁴ on infant and under five mortality we performed a multivariate analysis of child survival. The results of this analysis are presented in Table 2.

Figure 6. Infant and under five mortality in urban and rural areas, Nigeria, 1993-2003



Source: NDHS 2003 based on children born 10 years before the interview

8. The child survival analysis uses data from the NDHS 2003 and includes all children born during the ten years before the interview. The analysis includes individual, household, and community variables that the international literature has identified as important in explaining child survival.⁵

9. *Mother's education has a large and significant effect on reducing the probability of children's death.* The children of educated mothers are less likely to die than children whose mothers do not have any education. This effect increases with the mothers' level of education. While children whose mothers have finished primary school die at a rate that is more than 20% lower than the children of uneducated mothers; children whose mothers have higher education die at a rate that is more than 40% lower than children of uneducated mothers.

10. *Among household characteristics, the number of household members and the household's socio-economic status increase the probability of child survival.* However, once we account for all other variables, the effect of the wealth index is only statistically significant in increasing the survival of children belonging to the richest 20 percent of households. These children die at a rate that is more than 20 percent lower than children belonging to the poorest group.

11. *Once we account for mother's education, availability of health services, and wealth, the effect of region of residence on child survival almost disappears.* Only for children living in the South South region there is a difference in infant survival (with respect to the reference region) that cannot be explained by any of the other variables included in the analysis. Similarly, once

⁴ The DHS survey used in this analysis does not have information on income or consumption. Instead a wealth index based household asset ownership is used as an indicator for household socio-economic status.

⁵ The analysis includes individual variables (age in months and gender of the children), household variables (mother's parity and level of education, gender of head of household, and the number of people living in the household), community variables (the region where the household lives and an indicator for urban areas). Finally, as there was no information on household access to health facilities, the analysis includes the non-self community averages of the number of children vaccinated against measles, the number of women that received more than two pre-natal care examinations, and the number of women that gave birth in a health facility as variables that can act as indicators for availability and quality of health services.

Chapter 1

we account for other variables, the difference in child survival between rural and urban areas disappears.

Table 2. Results from a Cox proportional hazards model of infant and child survival in Nigeria using the NDHS 2003

	Infant	Under five
Children's Characteristics		
female	0.971 (0.040)	1.016 (0.049)
age	1.005 (0.001)***	0.982 (0.001)***
Birth order number	1.041 (0.008)*** (0.133)**	1.035 (0.009)*** (0.107)***
Household's characteristics		
Mother's education (none omitted variable)		
primary	0.783 (0.068)***	0.752 (0.069)***
higher	0.620	0.518
Wealth Index (poorest omitted)		
Poorer	1.186 (0.066)***	1.205 (0.069)***
Middle	0.939 (0.069)	0.949 (0.070)
Richer	0.951 (0.076)	0.959 (0.083)
Richest	0.687 (0.085)***	0.715 (0.097)**
Number of household members (<6 omitted)		
6-10	0.687 (0.035)***	0.675 (0.036)***
>11	0.684 (0.049)***	0.665 (0.051)***
Female head	0.863 (0.082)	0.860 (0.092)
Region (South West omitted)		
North Central	0.928 (0.116)	0.948 (0.128)
North East	1.159 (0.142)	1.215 (0.158)
North West	1.124 (0.142)	1.181 (0.157)
South East	0.981 (0.131)	0.923 (0.136)
South South	1.263 (0.168)*	1.259 (0.181)
urban (rural omitted)	0.954 (0.052)	0.973 (0.058)
Availability of services (non-self cluster averages)		
measles vaccination	0.649 (0.107)***	0.672 (0.118)**
delivery in health facility	0.638 (0.088)***	0.710 (0.109)**
>2 pre-natal visits	1.145 (0.139)	1.055 (0.134)
Observations	11391	11159

Hazard ratios are shown in first line robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

12. Finally, the variables that act as indicators for the availability of health services significantly increase the probability of child survival. The risk of child mortality is statistically less significant in sample clusters, with higher proportions of children vaccinated against measles and higher proportions of women who delivered in a health facility.

CHILD NUTRITIONAL STATUS

13. *The nutritional status of Nigerian children is poor, in line with countries with similar income per capita.* Malnutrition contributes to infant and child morbidity, mortality, and also reduces children's future learning capacity. Slightly more than one out of three five year old children in Nigeria are stunted, almost one out of every three is underweight, and about one out of every ten is wasted.⁶ Although these percentages are high, they are not very different to those of other countries in Sub-Saharan Africa (SSA) as can be seen in Table 3.

Table 3. Children's nutritional status in a sample of SSA countries

	Children's Nutritional Status		
	Stunted (low height-for age)	Wasted (low weight-for-height)	Underweight (low weight-for-age)
Benin	30.4	7.5	22.8
Burkina Faso	36.8	13.2	34.3
Chad	40.1	14.1	38.8
Cameroon	26.0	2.9	15.1
Cote d'Ivoire	25.2	7.8	21.2
Ethiopia	51.2	10.7	47.1
Ghana	25.9	9.5	24.9
Guinea	26.1	9.1	23.2
Malawi	49.0	5.5	25.4
Mali	37.6	10.7	33.3
Nigeria	38.3	9.2	28.7
Rwanda	42.4	6.8	24.5
SSA			31.0
Tanzania	42.6	5.4	28.9
Uganda	38.6	4.0	22.5
Zambia	46.8	5.0	28.2
Zimbabwe	26.5	6.4	13.0

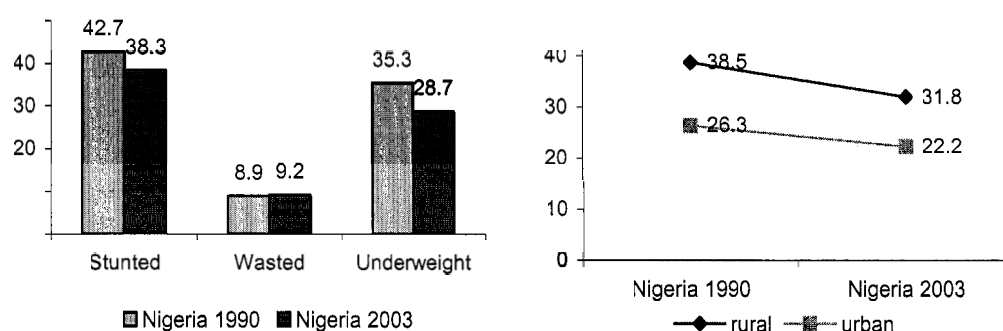
Source: DHS

14. *There are signs of improvements in child nutritional status.* The percentage of malnourished children has decreased in the last decade. Comparisons between the 1990 and 2003 NDHS surveys indicate that the number of children stunted, a measure of chronic malnutrition, decreased in relative terms by more than 10% since 1990, and the number of children underweight, an indicator for both chronic and acute malnutrition, decreased in relative terms by almost 20%.⁷ The percentage of children wasted did not change during this period. This measure generally indicates a lack of sufficient nutrients in the period just before the survey, and it is often the result of an illness, especially diarrhea. While the other two nutritional measures are more likely to be affected by improvements in income in this last decade, wasting is more likely to be affected by either lower prevalence of childhood illnesses or better treatment.

⁶ Children are considered stunted if their height-for-age z-score is less than two standard deviations from the median of the NCHS/CDC/WHO international reference population. Similarly, children are considered underweight if their weight-for-age is less than two standard deviations from the median, and wasted if their weight-for-height is less than two standard deviations from the median.

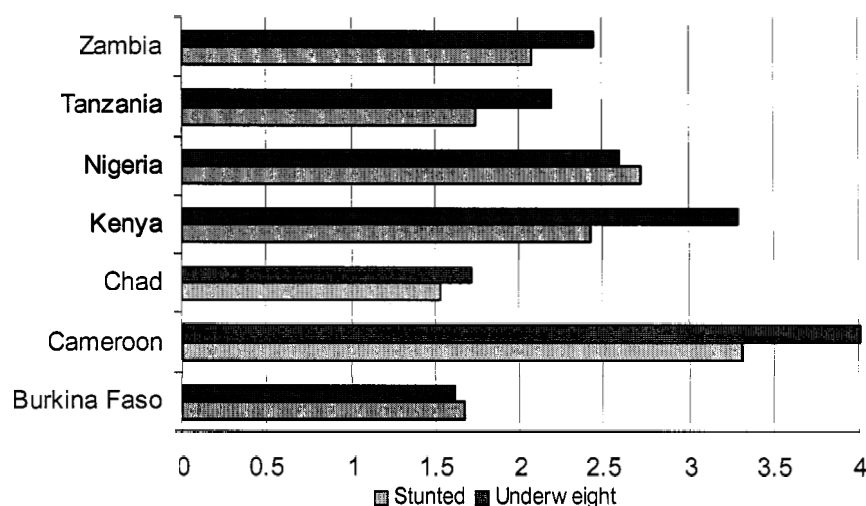
⁷ We do not have the standard errors of the 1990 estimates but the point estimates of the percentage of children stunted and underweight in this year do not fall in the confidence intervals of the 2003 estimates.

Figure 7. Malnutrition across time and differences in percentages of children underweight in rural and urban areas



Source: NDHS 2003

Figure 8. Poorest/richest ratio of the percentage of children stunted and underweight in a sample of SSA countries



Source: DHS

15. As was the case for infant and child mortality rates, there are also large differences in the nutritional status of children across income levels, regions, and rural and urban areas. Children living in poor households, children living in the Northern regions, and children in rural areas are much more likely to be wasted, stunted, or underweight than their richer, southern, and urban counterparts. The income differences are large; the percentages of children underweight and stunted among the poorest fifth of the population are more than 2.5 times larger than the percentages among the richest fifth. The poor-to-rich ratios in Nigeria are among the highest in countries for which data are available (see Figure 8). Finally, the differences between rural and urban areas, although large, are not as large as wealth-based or regional differences. For instance, 31% of children are underweight in rural areas, compared to only 22% in cities. Moreover 43% of children are stunted in rural areas, compared to 29% in urban areas. These differences have not changed much in the last decade as can be seen in Figure 7.

16. To better understand the effects of household socio-economic status (using wealth as a proxy), maternal education, and region of residence, a multivariate analysis of the determinants of malnutrition is done. The results of this exercise are presented in Table 5. The model indicates that the higher the level of maternal education, the lower the probability that a child is malnourished. Moreover the greater the level of household wealth, the lower the probability that a child is chronically malnourished or stunted. This effect, however, is only significant for children belonging to the richest 40 percent of the population. The level of household wealth, however, was not found to be a significant determinant of underweight and wasting.

Table 4. Nutritional status across regions, Nigeria, 2003

	Children Nutritional Status		
	Stunted	Wasted	Underweight
North Central	31%	8%	23%
North East	37%	10%	34%
North West	53%	13%	42%
South East	23%	4%	8%
South South	16%	13%	18%
South West	23%	11%	20%

Source: NDHS 2003

17. Some regional differences persist after other factors affecting malnutrition are accounted for. For instance, children living in the North West are much more likely to be malnourished than children in the South West (the reference region), while children in the South South are less likely to be stunted. Finally, children are also less likely to be malnourished if they live in communities with a large percentage of households with access to improved drinking water and access to mass media. This is not surprising because malnutrition is often not so much a consequence of lack of food but of inadequate knowledge on how to diversify food intake or on how to treat diarrhea.

18. Aside from protein-energy deficiencies, micronutrient deficiencies can also limit children's health and development. The micronutrient deficiencies that represent major public health problems are: vitamin A deficiency, iodine deficiency, iron deficiency, and zinc deficiency. Vitamin A deficiency increases the risk of children's death due to diarrhea, measles, malaria, and its deficiency can also cause child blindness. It is estimated that Vitamin A deficiency leads to about 82,000 children deaths each year in Nigeria (UNICEF, 2004). Iodine deficiency in the early stages of life can cause damage to the brain impairing the child's cognitive development. Serious iodine deficiency can create goitre among people living in iodine deficient areas. Iron deficiency is a major cause of anemia. Finally, there is good evidence showing that zinc supplementation is one of the major interventions that can prevent children's diarrhea and pneumonia (Lancet Child Survival Series, 2003); its deficiency can also cause growth retardation and mental lethargy.

19. A USAID and UNICEF food consumption and nutrition survey in Nigeria found high levels of vitamin A and iron deficiency, as well as various degrees of iodine deficiency in children under-five years of age (Maziya-Dixon, et al. 2004). For instance, the survey indicates that close to a quarter of Nigerian children suffer from marginal vitamin A deficiency⁸, while 5% suffer from severe deficiency. Despite the large government success in making iodized salt available in almost all the country, about 4% of children suffer from severe iodine deficiency, 9% from

⁸ Marginal deficiency was defined as having serum retinol concentration levels <20ug/dl, while severe vitamin A deficiency was defined as having levels lower than 10ug/dl.

moderate deficiency, and 15% from mild deficiency⁹. In the case of iron, almost 20% of children were found to have a high level of iron deficiency¹⁰, while 8% were found to have already depleted their iron stocks. Finally, one in every five Nigerian children under-five years of age suffers from zinc deficiency.

Table 5. Multivariate (probit) analysis of determinants of malnutrition using NDHS 2003

	stunted	wasted	underweight
Children's Characteristics			
Female	-0.140 (0.052)***	-0.012 (0.067)	-0.021 (0.050)
Age	0.013 (0.002)***	-0.008 (0.002)***	0.005 (0.002)***
Birth order number	-0.008 (0.012)	-0.004 (0.016)	-0.029 (0.011)**
Household's characteristics			
Mother's education (none omitted variable)			
Primary	-0.214 (0.077)***	-0.255 (0.127)**	-0.230 (0.081)***
Higher	-0.922 (0.190)***	0.123 (0.195)	-0.492 (0.165)***
Wealth Index (poorest omitted)			
Poorer	0.004 (0.083)	0.052 (0.096)	0.113 (0.087)
Middle	0.062 (0.094)	-0.035 (0.115)	0.079 (0.085)
Richer	-0.202 (0.100)**	-0.001 (0.118)	0.046 (0.095)
Richest	-0.279 (0.123)**	0.062 (0.157)	-0.165 (0.128)
Number of household members (<6 omitted)			
6-10	0.036 (0.057)	0.051 (0.083)	0.047 (0.059)
>11	0.289 (0.078)***	-0.022 (0.108)	0.154 (0.079)*
female head	-0.093 (0.103)	0.039 (0.127)	-0.086 (0.090)
Region (South West omitted)			
North Central	-0.075 (0.108)	-0.245 (0.132)*	-0.188 (0.123)
North East	0.092 (0.139)	-0.139 (0.163)	0.084 (0.148)
North West	0.562 (0.119)***	0.161 (0.144)	0.471 (0.130)***
South East	-0.054 (0.152)	-0.268 (0.174)	-0.409 (0.172)**
South South	-0.426 (0.119)***	0.157 (0.143)	-0.204 (0.122)*
urban (rural omitted)	0.057 (0.072)	0.019 (0.091)	0.092 (0.080)
Availability of services (non-self cluster averages)			
Improved sanitation	-0.121 (0.162)	-0.110 (0.152)	-0.102 (0.130)
Access to mass media	-0.564 (0.187)***	-0.280 (0.207)	-0.685 (0.180)***
Improved drinking water sources	-0.187 (0.103)*	-0.022 (0.112)	-0.156 (0.111)
Constant	-0.078 (0.172)	-0.814 (0.186)***	-0.103 (0.175)
Observations	4293	4414	4293

Standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

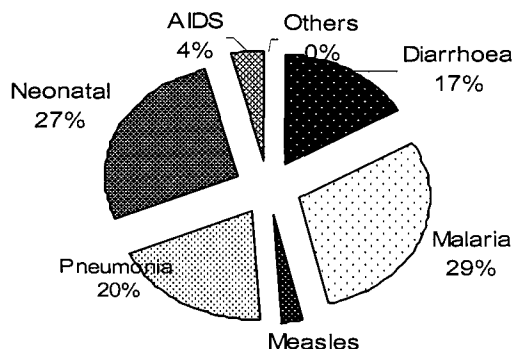
⁹ Children were considered to suffer from severe iodine deficiency if they had mean iodine levels lower than 20ug/l, moderate if the mean iodine level was between 20 and 49, and mild if it was between 50 and 99.

¹⁰ Iron deficiency was defined as having serum ferritin values of less than 10ng/ml. Children were considered to have depleted their stocks if they had levels lower than 20ng/ml.

CAUSES OF CHILD MORTALITY AND MORBIDITY

20. *Communicable diseases, often in association with malnutrition, are the major causes of mortality and morbidity among children in Nigeria.* The major causes of mortality and morbidity among children are malaria, neonatal related causes, diarrhea, pneumonia, measles, and AIDS (see Figure 9). Most of these causes (malaria, diarrhea, pneumonia, and measles) are preventable or can be treated at low cost.

Figure 9. Estimated Causes of Mortality of Children Under Five, Nigeria



Source: background to Lancet series.

Note: These estimates are based in models as there are no reliable data on causes of infant mortality in the country due to no reporting and to the weaknesses of the health system routine data collection.

21. *Malaria causes the largest number of child deaths in Nigeria – around 300,000 annually.* Although it potentially affects the entire population, the major risk for severe morbidity and mortality is suffered by children under five and by pregnant women. Malaria represents about 30% of estimated child deaths or about 300,000 children each year. It is also very likely that a large proportion of the 32% of children reporting fever and/or convulsions in the last two weeks in the 2003 NDHS were suffering from malaria.

22. More than 99% of the Nigerian population lives under endemic risk of malaria and 0.02% live under epidemic risk of the disease. The majority of cases are due to *Plasmodium falciparum*, the most malignant form of the disease. Due to growing drug resistance, Nigeria has adopted artemisin combination therapy (ACT) as first-line treatment.

23. *Diarrhea and pneumonia cause almost 400,000 child deaths annually in Nigeria.* Pneumonia, the most serious acute respiratory infection (ARI), is the third major cause of mortality among children; it is responsible for an estimated 200,000 deaths each year in Nigeria. Diarrhea is also a major cause of child morbidity and mortality, causing more than 176,000 deaths of children under five in the country. Many of these deaths could have been avoided, as both diarrhea and ARI can be treated at very low cost. Nevertheless, *data from the NDHS 2003 indicate that in the last two weeks before the interview about 19% of children under-five had diarrhea and 10% had acute respiratory infection (ARI) symptoms; these rates are lower than what is found by such surveys in other SSA countries.*

24. *Finally, neonatal related causes represent an estimated 27% of all deaths among children under five.* Nigeria, with a neonatal death rate of 53 per 1000 live births, is the country with the fourth largest number of estimated neonatal deaths in the world, representing close to 6% of global neonatal deaths. The majority of these deaths are due to asphyxia, premature birth, severe infection, tetanus, and congenital malformations. In very high neonatal mortality settings as it is the case in Nigeria, it is estimated that almost 50% of death are due to severe infections, tetanus,

and diarrhea (Lancet 2005, Neonatal Survival Series). Many of these causes are the result of poor maternal care and inadequate access to delivery services.

25. *Immunization coverage in Nigeria is among the lowest in the SSA region.* This has resulted in outbreaks of otherwise preventable diseases. Among vaccine-preventable diseases, measles is a major cause of morbidity in children. In the year 2001, Nigeria reported a total of 168,107 measles cases and in the following year 42,007¹¹ cases, for the year 2005 more than 500 death from measles has been already reported¹². These numbers are nonetheless an underestimation as they only include cases that were reported to the health system. Similarly, there were outbreaks of diphtheria and pertussis in the year 2002, and neonatal tetanus continues to be one of the main causes of infant mortality in the country. These last three diseases can be prevented by DPT immunization of the child and the last one also by two doses of Tetanus Toxoid (TT) for the mother during pregnancy.

26. *Nigeria is a reservoir for poliomyelitis, presenting a challenge to the international campaign to eradicate the disease.* Political controversy over the polio vaccination campaign in some states in northern Nigeria interrupted the eradication campaign in 2003-04, leading to a resurgence of the disease and its spread to other countries. Vaccination has resumed and the incidence of new cases up to end April 2005 has been at a slower rate than the previous year. Most cases are in northern states and among unvaccinated children under three years old. As the campaign overcomes this setback in Nigeria, it estimates that it is technically feasible to eradicate the disease by the end of 2005. (WHO, 2005c)

MATERNAL AND REPRODUCTIVE HEALTH

27. There is no recent reliable data on maternal mortality in Nigeria. However, using a statistical model, WHO, UNICEF, and UNFPA (AbouZahr and Wardlaw, 2001) estimated the maternal mortality ratio (MMR) at 800 per 100,000, equivalent to 37,000 maternal deaths per year. These estimates, however, are not precise and have a large range of uncertainty around them (see Table 6). This uncertainty makes the ranking of countries, or analysis of trends over time almost impossible. Nevertheless, as the Nigerian population is very large, it is thought that the country has the largest number of maternal deaths after India.

28. *The major causes of maternal mortality and morbidity in the country are complications during pregnancy and delivery.* As shown in Figure 10, hemorrhage, sepsis, eclampsia, and cephalo-pelvic disproportion are the major delivery complications causing maternal death. Malaria is a pregnancy complication responsible for a large share of maternal mortality in the country. These complications can be better managed through intermittent preventive treatment (IPT) for malaria, the use of insecticide-treated bed nets, as well as improved access to ante-natal care, birth attended by skilled personnel, and – above all – emergency obstetric care (EOC) services.

¹¹ WHO vaccine-preventable disease monitoring system, 2003 global summary.

¹² IRIN March 21, 2005.

Table 6. Indicators of maternal health in selected SSA countries

	Total fertility rate 15-49	Desire to limit childbearing	Mean ideal no. of children	Maternal Mortality		BMI % < 18.5
				Estimate	Range of uncertainty	
Benin	5.6	25.9	5.5	850	490 - 1200	10.5
Burkina Faso	6.4	19.6	5.7	1000	630 - 1500	13.3
Cameroon	4.8	19.6	6	730	430 - 1100	7.9
CAR	5.1	12.3	6.4	1100	670 - 1600	15.3
Chad	6.4	10	8.3	1100	620 - 1500	21.1
Cote d'Ivoire	5.2	20.7	5.4	690	170 - 1300	7.4
Ethiopia	5.5	32	5.3	850	500 - 1200	26.0
Gabon	4.2	23.1	4.9	420	240 - 600	6.6
Ghana	4.4	35	4.3	540	140 - 1000	11.3
Guinea	5.5	20.9	5.7	740	420 - 1100	11.8
Kenya	4.7	53.3	3.8	1000	580 - 1400	11.9
Madagascar	6.0	38.1	5.3	550	310 - 780	20.6
Malawi	6.3	42.3	5	1800	1100 - 2600	6.5
Mauritania	4.5	19.1	6.2	1000	630 - 1500	8.6
Mozambique	5.2	16.9	5.9	1000	260 - 2000	10.9
Niger	7.2	9.6	8.2	1600	420 - 3100	20.7
Nigeria	5.7	18.3	6.7	800	210 - 1500	15.2
Rwanda	5.8	33.7	4.9	1400	790 - 2000	5.9
Togo	5.2	28.6	4.5	570	340 - 810	10.9
Uganda	6.9	38.5	4.8	880	510 - 1200	9.4
Zambia	5.9	35.5	4.7	750	430 - 1100	13.0
Zimbabwe	4.0	40.9	3.9	1100	620 - 1500	4.5

Source: AbouZahr and Wardlaw (2001) for the maternal mortality estimates and DHS for the other indicators.

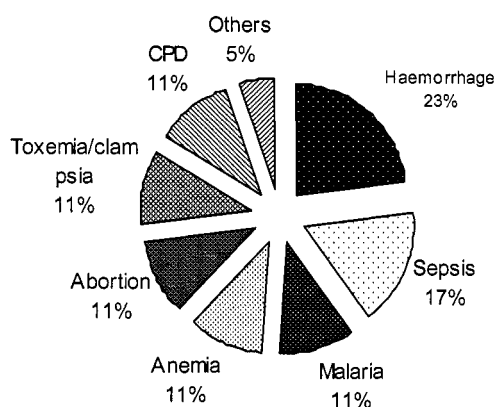
29. *Unsafe abortions have also been identified as one of the major causes of maternal mortality that can partly be avoided with better access to modern contraceptive methods.* Abortion is illegal in Nigeria, except to save a woman's life. Nonetheless, many pregnancies end in induced abortion, which are frequently performed by non-trained health personnel posing serious risks to women's health. There are no official data on abortions; however a 1998 study estimated that about 610,000 abortions are performed every year in Nigeria (Henshaw *et al.*, 1998). In other words, about 18-25 abortions are practiced per 1,000 women aged 15-44 every year. The rate is much higher in urban areas of the south than in the rural and northern areas.

30. *The risk of maternal morbidity is also high, of which vesico-vaginal fistula (VVF) is one of the most serious and prevalent in Nigeria, especially in the Northern regions.* VVF is usually caused by delivery complications and it is an abnormal opening between the bladder and the vagina that produces urine/feces incontinence. According to a USAID assessment, about 70% of the estimated 200,000 to 400,000 cases of VVF in Nigeria in 2001 occurred in the North.

31. *The large prevalence of Female Genital Mutilations (FGM) in the country also increases the possibility of maternal related morbidity.* As will be explained in the next chapter FGM can cause complications during pregnancy and delivery.

32. *The fertility rate in Nigeria has decreased since 1990, but is still higher than the Sub-Saharan Africa average.* The risk of death during pregnancy and childbirth is higher the more children women have, and the less time they have between births. Estimates from the 2003 NDHS indicate that the total fertility rate (TFR) in Nigeria is about 5.7 children per women. This is lower than the 1990 estimated rate of 6.3 children per women but it is still higher than the SSA average of 5.2. As expected, women in rural areas have, on average, one child more than women in rural areas. This large TFR is due to both a large demand for children (see Table 6) and an unmet need for contraception to space children and to avoid pregnancies.

Figure 10. Reported causes of maternal mortality, Nigeria, 1996



Source: FMOH as cited in NPC and UNICEF (2001)

WOMEN'S NUTRITIONAL STATUS

33. *Many women in Nigeria, particularly among the poor, have low nutritional status.* Table 6 compares the proportion of women with low nutritional status across some Sub-Saharan African countries. The 2003 NDHS found that about 15% of adult Nigerian women have a body mass index (BMI)¹³ lower than 18.5 which indicates chronic energy deficiency among non-pregnant women. Chronic poor nutritional status in women not only lowers their overall well-being and productivity, but among pregnant women, it can also result in complications during child birth as well as low birth weight in children, predisposing them in turn to higher morbidity and mortality. Only countries with lower income per capita – Eritrea, Ethiopia, Madagascar, Chad, and Niger - have a higher proportion of women with such a low BMI. There are also large regional and income disparities in women's nutritional status in Nigeria. The 2003 NDHS indicates that among the poorest fifth of the population as many as 22% of women have low BMI, compared with only 9% among the rich. Similarly, in the North East about 23% of women are considered malnourished, compared to only 8% of women in the South East region. Finally, the 2003 NDHS also reports that 6% of adult women are obese and close to 15% over-weight. Obesity can lead to diabetes and cardiovascular diseases.

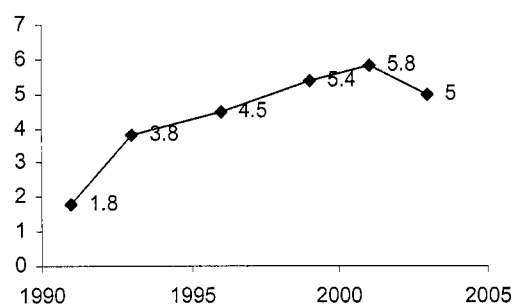
34. *There are also worrisome levels of micronutrient deficiency among women in Nigeria.* Micronutrient deficiencies, especially during pregnancy, can harm the health of both women and children. For instance, vitamin A deficiency can cause night blindness in pregnant women and increases their risk of death. Serious iodine deficiency during pregnancy can result in stillbirth, child brain damage, cretinism, and it can also produce goiter. Finally, iron deficiency among pregnant women can result in mortality and also in premature birth and low birth weight. A 2003 nutritional survey (Maziya-Dixon *et al.*, 2004) found that about 10% of pregnant women have vitamin A deficiency, about 20% suffer from iron deficiency, and 4% have severe iodine deficiency.

¹³ BMI is calculated by dividing the weight in kilograms by the square of the height in meters.

HIV/AIDS AND OTHER SEXUALLY TRANSMITTED DISEASES

35. Although HIV/AIDS prevalence in Nigeria has not reached the high levels found in other African countries, due to its population size, it has the third largest number of people infected with the virus in the world, after South Africa and India. In 2003, between 3.2 and 3.8 million people were living with HIV/AIDS in the country (FMOH, 2004). Nigeria also appears to be the country with the largest number of HIV/AIDS orphans in the world, with an estimated 1 million children that have lost at least a parent as a consequence of the disease (see Table 8).

Figure 11. HIV/AIDS sero-prevalence over the years, Nigeria Table 7: HIV/AIDS sero-prevalence in 2003



Source: FMOH 2004. HIV/AIDS sentinel survey

Age	HIV prevalence
15-19	4.0
20-24	5.6
25-29	5.4
30-34	4.0
35-39	3.1
40-49	3.2

Source: FMOH 2004, HIV/AIDS sentinel survey

36. The most recent national sentinel survey on HIV/syphilis, estimated the national adult prevalence as 5 percent; the highest rates were found among the youth. This estimate represents a slight decrease from the estimated prevalence of 2001. However, as the technical report on the last sentinel survey warns, this point prevalence is not sufficient to conclude that the epidemic has stabilized or is on a downward trend (FMOH, 2004). Additionally, this rate is still almost three times the rate prevalent a decade ago (see

Figure 11).

37. There are large regional variations in the adult prevalence rates, with the largest median prevalence in 2003 found in the North Central region, and the lowest in the South West. There are also large intra-regional variations, as the highest median prevalence rate, 12%, is found in Cross River State (South South region), and the lowest, 1.2%, in Osun (South West region). Similarly, there are variations across age groups. The highest prevalence rate (5.6%) was found among people 20 to 24 years old.

Age	HIV prevalence
15-19	4.0
20-24	5.6
25-29	5.4
30-34	4.0
35-39	3.1
40-49	3.2

Table 8. HIV/AIDS epidemic across the world

	Number of People Living with HIV/AIDS	Adults prevalence 15 to 49 years	Orphans (0-14)	AIDS deaths 2001
South Africa	5,000,000	20.1	660,000	360,000
India	3,970,000	2.7	55,000	12,000
Nigeria	3,500,000	5.0	1,000,000	170,000
Kenya	2,500,000	15.0	890,000	190,000
Zimbabwe	2,300,000	33.7	780,000	200,000
Ethiopia	2,100,000	6.4	990,000	160,000
Tanzania	1,500,000	7.8	810,000	140,000
DRC	1,300,000	4.9	930,000	120,000
Zambia	1,200,000	21.5	570,000	120,000
Mozambique	1,100,000	13.0	420,000	60,000
Cameroon	920,000	11.8	210,000	53,000
China	850,000	0.1	76,000	30,000
Malawi	850,000	15.0	470,000	80,000
Sub-Saharan Africa	28,500,000	9.0	11,000,000	2,200,000

Source: UNAIDS

38. FMOH (2002) projections indicate that by the year 2010 HIV/AIDS prevalence among adults 15-49 years old could reach more than 9%, which represents as many as 7 million infected people. A more worrisome picture was given by a study by the US National Intelligence Council (2002) which estimated that by the year 2010 10 to 15 million adults will be infected in Nigeria.

Table 9. HIV/AIDS epidemic scenarios in Nigeria

	2005	2010
HIV prevalence for 15-49 year olds		
High Scenario	7.75%	9.24%
Low Scenario	6.80%	6.73%
Number of HIV positive		
High Scenario	5.5 million	7.4 million
Low Scenario	4.9 million	5.5 million
Cumulative deaths		
High Scenario	2.6 million	5.5 million
Low Scenario	2.5 million	5.1 million

Source: FMOH (2002).

OTHER DISEASES PREVALENT IN NIGERIA

39. *Communicable diseases represent a major health burden in Nigeria.* Among these diseases, malaria is the main concern. However there is a long list of other communicable diseases that are endemic in the country and that are major causes of mortality and morbidity. These include tuberculosis (TB), measles, dysentery, typhoid, cholera, meningococcal meningitis, yellow fever, and onchocerciasis.

40. *Nigeria has the fourth highest number of TB cases in the world.* In 2004, there were an estimated 293 new TB cases per 100,000 population (incidence) and an estimated 546 per 100,000 total cases (prevalence) (WHO, 2005a). This is equivalent to about 675,000 people infected with the disease, so that Nigeria has the fourth largest number of TB cases in the world. It is thought that about one quarter of TB cases are co-infected with HIV.

41. Meningococcal meningitis is another vaccine-preventable disease that affects Nigerians. The most recent significant outbreak of the disease was in 1996, when almost 16,000 cases and more than 2,500 deaths were reported. This outbreak affected 12 states, mostly in the north, which lies on the African “Meningitis Belt.” (WHO, 1996).

42. Among the vector borne diseases, onchocerciasis (river blindness), guinea worm (dracunculiasis), trypanosomiasis (sleeping sickness), schistosomiasis (bilharzias), and yellow fever represent an important health burden for the population.

NON-COMMUNICABLE DISEASES¹⁴

43. *Although communicable diseases are major causes of mortality and morbidity in the country, there are reasons to believe that non-communicable diseases (NCDs) represent an increasing share of Nigerians' burden of disease.* WHO (2002) estimates that in countries in Sub-Saharan Africa with mortality profiles similar to that of Nigeria, non-communicable diseases represent 25% of total mortality, of which 50% is due to cardiovascular disease, 25% to cancers, and about 10% to respiratory disease. In addition, an estimated 7% of total mortality is attributed to injuries. Sickle cell disease is the most common genetic disorder affecting Nigerians. Major NCDs in Nigeria include: hypertension, diabetes mellitus, coronary heart disease, sickle cell disease, cancers, G6PD deficiency anemia, mental health, road traffic injuries and violence, oral health, blindness, rheumatic heart disease, stroke, osteoporosis.

44. *Data from a national survey on NCDs in Nigeria between 1990 and 1992 and published in 1997 identified hypertension as one of the main NCDs of concern in the country.* This survey found that 11.2% (4.3 million) Nigerians over 15 years of age have hypertension. Of these 66% (2.84 million) have mild hypertension, 20% (0.85 million) have moderate hypertension and 14% (0.64 million) have severe hypertension. 12.5% (4.8 million) Nigerians, 15 years and above have borderline hypertension. The survey showed that hypertension is more prevalent in urban than in the rural areas.

45. *This national survey also collected information on Coronary Heart Disease (CHD) in Nigeria, as well as risk factors that promote arteriosclerosis and CHD.* It was found that the mean total cholesterol (TC) is (122.4 + 42.0 mg per dl) low in the general population, although urban men and women have higher levels than their rural counterparts. Glucose intolerance and/or diabetes was found to be linked with excessive smoking, with hypertension or with hypercholesterolaemia in 0.07%, 0.7% and 0.09% respectively within the study population. About 4.14 million Nigerians over the age of 15 years smoke and 1.26 million people smoke 10 or more cigarettes a day. These persons are more at risk of developing Coronary Heart Disease than the general population.

46. *About 1.05 million Nigerians who are at least 15 years of age are estimated to be Diabetic.* Of these, 225,000 are aware that they have diabetes and 198,000 are on treatment. The risk of diabetes increases threefold after the age of 44 years. The male/female prevalence ratio is 1.1 to 1.0. Factors that appear to enhance the risk of diabetes in Nigeria include urban living, overweight, physical inactivity, alcohol abuse and diabetes in a parent (1990-92 national survey of NCDs in Nigeria).

¹⁴ This section is based on information provided by Dr. M.E. Anibueze at the CSG/NC NCDs at the FMOH.

47. *Half of one percent (240,000) of adult Nigerians has Sickle Cell disease (SCD) i.e. SS or SC. This figure, however, does not include the large paediatric population of SCD patients not covered by the survey. Sickle cell trait (AS) accounts for 23.04% (10.9 million) of adult Nigerians.*

48. *Data from the national cancer registry show that 100,000 new cases of cancer are currently diagnosed every year in Nigeria. 1 out of every 6 Nigerians will develop cancer. The five most common cancers in Nigeria are: cancer of the cervix, primary cancer of the liver (Hepatoma), breast cancer, lymphomas, and prostate cancer.*

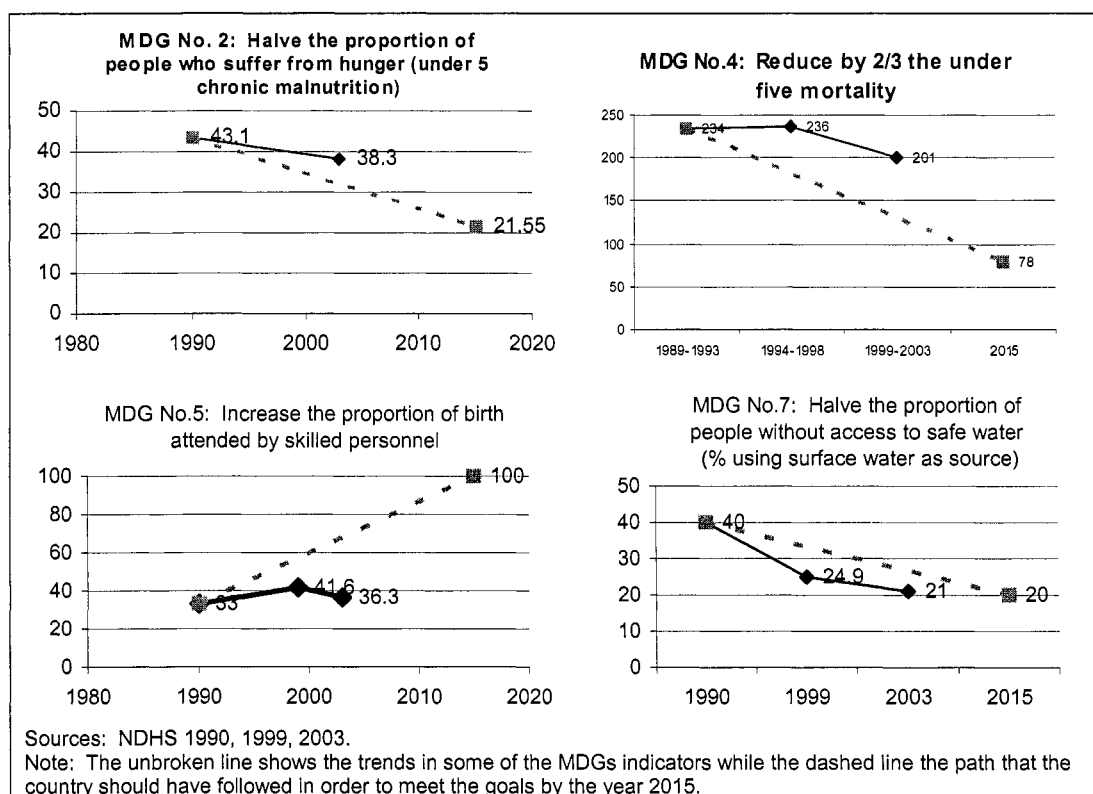
49. *There are as yet no community-based data on Asthma prevalence in Nigeria. However, Hospital based data indicate that: (i) asthma is the most common chronic disorder in childhood; (ii) about 6 million Nigerians, mostly children are asthmatic; and (iii) less than 5% of asthmatics in Nigeria receive appropriate medical care.*

50. *As at 2001, Nigeria ranked second on the weighted scale of countries with very high road traffic crashes. (WHO Nigeria publication on Road safety 2004). Similarly, according to data from the Federal Road Safety Commission (FRSC), over 7,000 Nigerians die every year from road traffic crashes, while over 26,000 injuries are recorded. From 2000 – 2002, the annual death toll from road crashes in Nigeria stood at more than 8,400 from about 17,000 road crashes. This is an average of one death in every two crashes. Nationwide, a total of 208,361 cases of road traffic crashes were recorded by FRSC from 1990 – 2001. These resulted in 81,657 deaths and 238,573 injured people. Between January and November 2003, 4,514 cases of road traffic crashes were recorded in Lagos state. A total of 742 people lost their lives, while 1,903 were injured.*

THE MILLENNIUM DEVELOPMENT GOALS

51. In September 2001 at the UN Millennium General Assembly, the international community endorsed the Millennium Development Goals (MDGs) with the aim of promoting poverty reduction and human development. Five out of these eight goals are related to health: (i) eradicate extreme poverty and hunger in the world; (ii) reduce child mortality; (iii) improve maternal health; (iv) combat HIV/AIDS, malaria and other diseases; and (v) ensure environmental sustainability.

Figure 12. Progress towards meeting the Millennium Development Goals, Nigeria, 1990-2003



52. As seen in the summary table (Table 10), Nigeria's MDG indicators have a mixed record when compared to other SSA countries. While progress has been made toward some of the goals, much effort is needed to get on track in others. The percentage of children suffering from chronic malnutrition (stunting) seems to have decreased in the last decade, from 43.1% of under-five children measured by the 1990 NDHS to 38.3% measured by the 2003 NDHS. Based on this indicator, the country is achieving progress towards the hunger MDG (although still slightly off track) (Figure 12). Similarly, it seems likely that the country will reach the MDG of reducing by half the number of people without improved sources of water and sanitation. For example, in 1990, 40% of households drew water from rivers, lakes or ponds, and this had decreased to 21% by 2003. Nevertheless, despite this encouraging trend, the 2003 NDHS found that only 42% of Nigerian households had a source of clean water.¹⁵

¹⁵ Sources expected to be relatively free of disease are piped water and protected wells. Access to these sources was measured by the 2003 NDHS, but the 1990 NDHS and 1999 NDHS did not distinguish between protected and unprotected wells. We have, therefore, limited analysis of trends to the proportion of households relying on surface water as their (unsafe) source of drinking water.

Table 10. Meeting the Millennium Development Goals

Target	Indicator/Proxy Indicator	Nigeria	SSA	Cameroon	Benin	Ethiopia
MDG 1: Eradicate Extreme Poverty and Hunger						
Halve, between 1990 and 2015, the proportion of people who suffer from hunger	% population below \$1 a day		49	33		82
	income per capita (constant 1995 US\$)	254		675	414	116
	Prevalence of chronic malnutrition (under-5s)					
	% below -3SD	9			11	26
	% below -2SD	38	41	15	30	51
	% infants < 6 mos. exclusively breastfed	17				
	% infants < 2 mos. exclusively breastfed	26		19	63	79
MDG 4: Reduce child mortality						
Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate	infant mortality rate (per 1,000 live births)	100	105	97	94	116
	under five mortality rate (per 1,000 live births)	201	164	155	158	173
	vaccinated against measles by 12 months of age	30	58	62	65	52
	% of children with diarrhea who receive ORT	40		33	32	19
MDG 5: Improve maternal health						
Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio	maternal mortality ratio (per 100,000 births)	800	920	730	850	871
	% deliveries by qualified attendant	36	43	56	60	10
MDG 6: Combat HIV/AIDS, malaria, and other diseases						
Have halted by 2015 and begun to reverse the spread of HIV/AIDS	HIV prevalence (% adults)	5	9	13	4	8
	contraceptive prevalence rate all women	9	21	16	16	8
	% using condom during last high risk sexual act	46		29	21	30
	male	24	21	15	9	14
	female	1 M	2.2 M	210,000	34,000	990,000
Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases	number of children orphaned by HIV/AIDS					
	% under-5 children sleeping under ITN	1		1	7	
	TB incidence (per 100,000)	293	345	180	87	356
	TB cases detected under DOTS (%)	18		86	94	36
MDG 7: Ensure environmental sustainability						
Halve, between 1990 and 2015, the people without sustainable access to safe drinking water	% with improved water source	42	58	58	63	24
	% with improved sanitation	74	53	79	23	12

Sources: Data for Nigeria come from NDHS 1999, NDHS 2003, FMOH HIV/syphilis sentinel survey 2004, WHO (TB and MMR data). For other countries data come from: <http://www.developmentgoals.org>, WHO and DHS. Data on income per capita come from World Development Indicators.

Note: all data correspond to the most recent year available.

53. *The country is noticeably off track in reducing child and maternal mortality.* In the last decade, child mortality rates have not changed much; significant improvement will be required to attain the fourth goal of reducing under-five mortality by two-thirds. Similarly, it is very unlikely that maternal mortality will be reduced by three-quarters by the year 2015. For instance, the process indicator of assuring that by the year 2015 all births will be attended by skilled personnel has not shown any progress in the last decade. For Nigeria to be on track in attaining this goal, more than 70% of all births should be already professionally attended, which would entail doubling the current rate of 36%.

54. *Nigeria has also shown limited progress in controlling TB and malaria.* The incidence of TB in Nigeria is lower than in some of the other countries in SSA; however, the percentage of detected cases using DOTS (18%) is the smallest of all of the countries where data are available and very far from the global goal of 70%. In the case of malaria, the country adopted the Roll Back Malaria strategy in 2000 and developed a strategic plan in 2001, but the success of this strategy will largely depend on improvements in primary health care. Additionally, the coverage

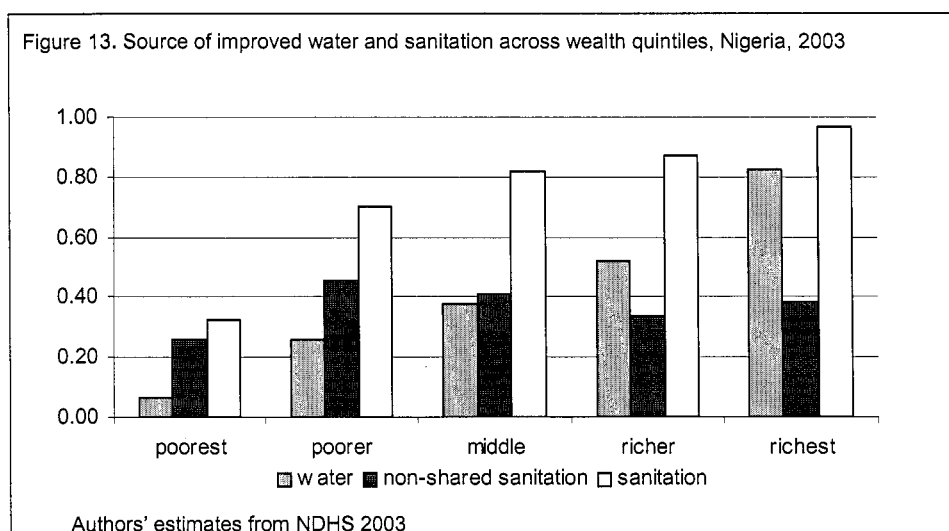
of insecticide-treated nets (ITNs) is extremely low, at around 1% of households, although around 11% of households use untreated nets.

55. *There are some encouraging data on combating HIV/AIDS.* The most recent sentinel surveys suggests that prevalence among adults have not change much in the past few years, and it is currently estimated to be 5.0%. Although this is not enough to conclude that the epidemic has stabilized, it is nonetheless an encouraging development. Similarly, the proportion of both men and women using condoms during their last high risk sexual act is higher in Nigeria than in other SSA countries (Table 10).

CHAPTER 2. HOUSEHOLD AND COMMUNITY FACTORS AND HEALTH SERVICE UTILIZATION

1. The health of an individual is not only influenced by access to quality health services, but also by the knowledge, behaviors, and actions of individuals and households. Community related factors such as the environment and infrastructure also influence health outcomes. This chapter analyzes the extent to which some of these individual and household behaviors and actions, and community factors, have an effect on health in the Nigerian context. It starts by analyzing access to improved sources of drinking water and sanitation; it then discusses household knowledge and behavior that affect children's health and nutritional status, behaviors and actions that influence maternal and reproductive health, and morbidity and utilization patterns.

2. The chapter also analyzes household survey data on health service utilization, including barriers and utilization by type of provider.



ACCESS TO IMPROVED SOURCES OF WATER AND SANITATION

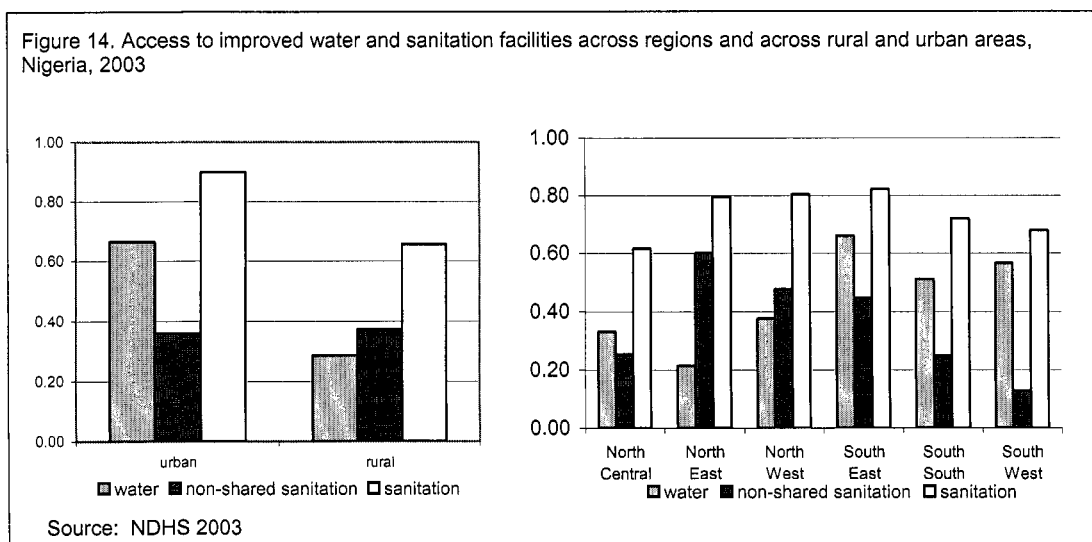
3. *Only a relatively small percentage of Nigerian households have access to improved sources of drinking water and sanitation.*¹⁶ Having access to safe water and sanitation prevents a number of diarrheic and parasitic diseases that are water-borne or are associated with inadequate sanitation. This is specially the case for children, as diarrheic illnesses are one of the major causes of child morbidity and mortality in the country. Only 42% of Nigerian households have access to safe sources of drinking water and only 74% have access to an improved sanitation facility. If a more strict definition of improved sanitation is used, so that only households that do not share their facilities are included, only 37% have access to an improved sanitation facility.¹⁷

4. *The poorest 20% of households have almost no access to safe sources of drinking water and only 33% have access to an improved sanitation facility.* As can be seen in Figure 13, only about 6% of the poorest households have access to an improved source of water compared to more than 80% of the richest households. Similarly, almost all rich households have access to a flush toilet

¹⁶ Improved sources of drinking water include piped water, public taps, and protected wells, while improved sources of sanitation facilities include flush toilets and latrines.

¹⁷ Household with flush toilets and latrines are also more likely to share them with other households, therefore this definition should be treated with caution.

or to a latrine (although many share these facilities with another household) relative to only 25% of the poorest households. Lack of access to clean water renders the poor twice as vulnerable because they are more exposed to illness and they also have to spend more time fetching water from open sources.



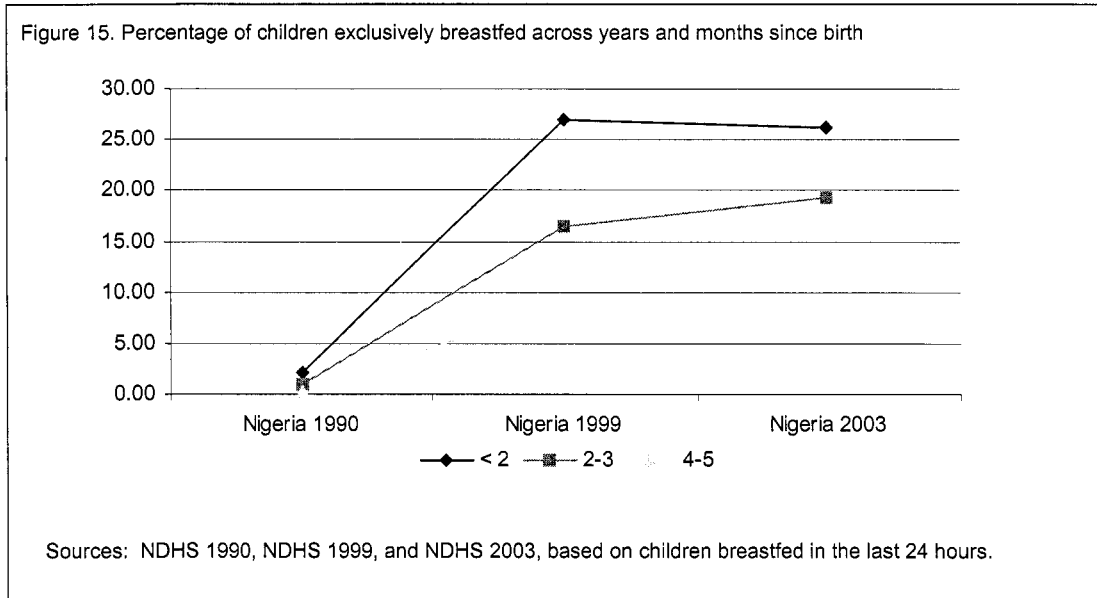
5. While there are marked differences in access to improved water and sanitation between rural and urban areas, differences are evident across regions in terms of access to safe water but not in terms of access to sanitation. As shown in Figure 14, households in urban areas are more than twice as likely to have access to a safe drinking water source compared to households in rural areas; similarly, urban households are more than 1.3 times as likely to have access to an improved source of sanitation compared to rural ones. Regional differences seem to be less marked: households in the Southern regions have better access to safe drinking water than those in the North, although there are no large regional differences in access to improved sanitation facilities. However, a closer look at the NDHS data shows that there are large differences in the type of improved sanitation facility across regions. For instance, more than 20% of the households in the Southern regions have access to flush toilets compared with less than 10% of those in the Northern regions.

HOUSEHOLD BEHAVIOR AND ACTIONS AFFECTING CHILD HEALTH AND NUTRITION

6. A review of the literature on child survival identified a few preventive and curative interventions that have proven to be effective in reducing mortality and that are also feasible to deliver at high coverage in developing countries (Jones, *et. al.*, 2003). The study identified the following interventions as effective in preventing diarrhea, pneumonia, measles, and malaria: breastfeeding, complementary feeding, insecticide-treated materials, water and sanitation, HiB vaccine, zinc, vitamin A, and measles vaccine. It also identified the following effective treatment interventions: oral rehydration therapy (ORT), antibiotics for pneumonia, antimalarials, antibiotics for dysentery, zinc, and vitamin A. Many of these interventions depend directly on household knowledge and behavior and in some cases, on household demand (breastfeeding, health care, etc.). The following sections will examine Nigerian households' knowledge and practices regarding some of these key interventions.

Breastfeeding

7. *Despite large increases in the last decade, very few children are exclusively breastfed during their first six months of life.* Although breastfeeding in general is a widespread practice in Nigeria (almost all children younger than 11 months are breastfed), less than one fifth of children are exclusively breastfed. This is one of the lowest exclusive breastfeeding rates among the SSA countries for which DHS data are available¹⁸. Nevertheless, as Figure 15 shows, the percentage of breastfed children has markedly increased in a decade.

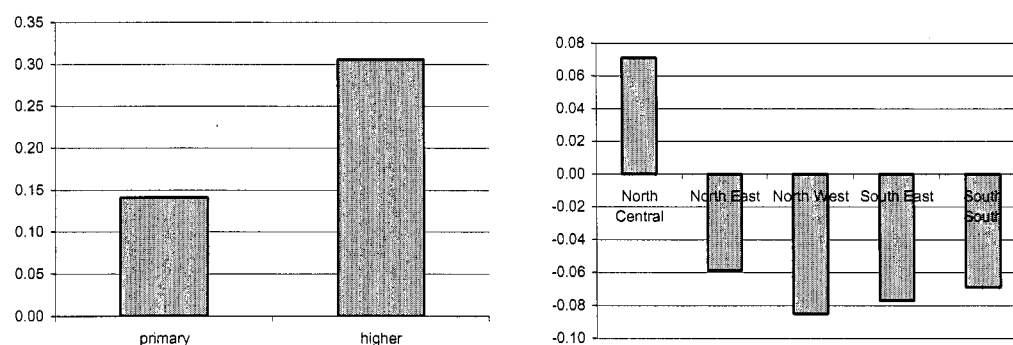


8. *The multivariate analysis indicates that the probability that a child under six months of age is exclusively breastfed increases with the mother's level of education and significantly varies with the region of residence.* Once other variables¹⁹ are taken into account, the age of the child, the education of the mother, and the region of residence are the factors found to have a significant correlation with the probability that a child is exclusively breastfed. As can be observed in Figure 16, everything else held equal, the education of the mother increases the probability that the child is exclusively breastfed. The effect increases with the mother's level of education. Similarly, everything else constant, children from the North Central and South West regions are much more likely to be exclusively breastfed.

¹⁸ Mainly poorer countries than Nigeria such as Chad, CAR, Niger, and Comoros have lower rates of exclusive breastfeeding among children younger than 6 months.

¹⁹ The multivariate analysis includes the following variables: child's age in months, child's gender, mother's educational attainment, level of household wealth, region or residence, a variable indicating urban residence, and variables indicating access to health services. See the analysis in the annex.

Figure 16. Effect of maternal education and region of residence in the probability that a child is exclusively breastfed



Note: The first graph shows results in relation to a mother with no education, while the second shows results in relation to the South West region.

Authors' estimates from a multivariate probit analysis using the NDHS 2003

Treatment of Diarrhea

9. Diarrhea is one of the major causes of child mortality in Nigeria. Oral rehydration salts (ORS) or any oral rehydration therapy (ORT) is effective in preventing dehydration due to diarrhea. These treatments can be provided directly by the households. As seen in Table 11, *the use of ORS packets or of any ORT (including recommended home remedies) has markedly increased in the last decade*. In the case of ORS, the relative increase has been almost 60%. The increase in usage has occurred mostly in rural areas, while the usage in urban areas has remained the same or has slightly decreased. Despite this positive trend, Nigeria has still one of the lowest ORT usage rates in all the SSA countries for which DHS data are available. Similarly, harmful home food practices when the child has diarrhea remain prevalent. For instance, data from the NDHS 2003 show not only that about 40% of the children with diarrhea received fewer fluids, but also that about half of them received less food.

Table 11. Treatment of diarrhea, Nigeria, 1990-2003 (% of children with diarrhea in previous 2 weeks).

	1990			2003			% difference 1990-2003
	Urban	rural	overall	urban	rural	overall	overall
treatment from health provider	40.3	22.6	25.1	30.3	18.8	21.5	-0.14
ORS packet	25.5	9.3	11.6	22.9	16.8	18.2	0.57
any ORT	57.1	29.6	33.5	49	37.5	40.2	0.2

Source: NDHS 1990, 2003.

10. *Poor children are much less likely to receive the recommended treatment for diarrhea*. Data from the NDHS 2003 shows that children from the poorest 20 % of households are half as likely to receive ORS or any ORT in case of diarrhea as children from the 20 % richest households. Only 33% of poor children receive the recommended treatment.

Insecticide treated materials

11. The utilization of insecticide treated bed-nets effectively prevents malaria which is one of the main causes of child mortality and morbidity in the country. Despite being a country where the disease is endemic, data from the NDHS 2003 show that only about 10% of households in Nigeria own a mosquito net and only 2% of households own insecticide treated bed nets. Almost no children under five years of age sleep under an insecticide treated net (the estimate is 1.2%).

Utilization of child health services

12. The differences in child health status that were detailed in the previous chapter are partly the result of differences in utilization of both preventive and curative health services. Households differ in terms of knowledge and cultural norms regarding health care, they face different time and resource constraints in using health services, and they also differ in terms of physical access to a health care providers. This section examines differences and some determinants of utilization of the following children's health interventions: immunization, vitamin A supplementation, and health care utilization during episodes of diarrhea, fever and cough. In this section we will only analyze household and individual factors that affect the utilization of health services. In the following chapters we will examine supply factors.

Utilization and coverage of child immunization services

13. With the data available, it is not possible to differentiate between the demand and supply constraints that have resulted in such a low level of immunization in the country.²⁰ This section only examines some factors that might hinder the demand for children's vaccinations. In Chapter 3, we will revisit immunization by examining problems with the supply and distribution of vaccines.

Table 12. Immunization coverage, Nigeria, 1990-2003 (% children 12-23 months)

	1990			2003			% difference 1990-2003
	urban	rural	overall	urban	rural	overall	overall
measles	68.8	39.8	46.0	52.1	28.5	35.9	-22%
DPT3	58.9	26.4	33.3	40.2	12.8	21.4	-36%
all vaccinations	52.5	23.3	29.6	25.1	7.4	12.9	-56%
no vaccinations	16.3	42.4	36.8	16.7	31	26.5	-28%

Sources are 1990 and 2003 NDHS.

14. *Immunization rates in Nigeria are extremely poor and have declined significantly in the last decade.* As shown in Table 12, the 2003 NDHS found that only 13%²¹ of one-year-old children had received all recommended immunizations, while 26.5% had not received any vaccinations. Only 21% obtained three doses of diphtheria-pertussis-tetanus (DPT3) vaccine, often used as a performance indicator for routine immunization. Measles immunization, sometimes provided in

²⁰ The NDHS 2003 does not have information on physical access and quality of health services. This limits multivariate analysis to household and individual variables.

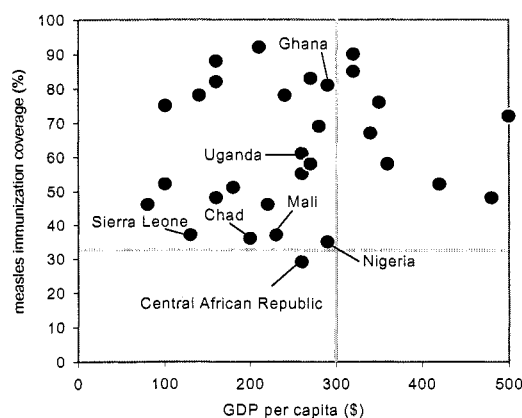
²¹ Estimates from the 1999 NDHS are similar, although slightly higher (around 5% higher for the different immunization indicators).

campaigns, is a little higher, at 35.9%. Coverage of each type of vaccination (except for the first few doses of polio vaccine) is significantly lower than in 1990.²²

15. *Immunization coverage in Nigeria is among the lowest in Sub-Saharan Africa (and the world).* Figure 17 shows that Nigeria's measles immunization coverage is comparable to those of war-affected countries such as Sierra Leone or Somalia. The numerous points in the upper left quadrant of the graph represent countries such as Ghana and Uganda which have lower (or similar) GDP per capita but which have achieved higher immunization coverage than Nigeria.

16. *There are large differences in immunization coverage across regions, place of residence, and across income groups.* Rural areas and poorer regions have dramatically lower immunization coverage although urban areas have also experienced a decline, indicating a significant deterioration of routine immunization in many areas. Table 12 shows that immunization coverage in rural areas is considerably lower than in urban areas. For example, only 13% of one-year-old children in rural areas have received DPT3 and only 7% have obtained all recommended vaccinations, compared to 42 % and 25% in urban areas. The NDHS 2003 shows that regional differences in measles immunization coverage closely follow regional economic differences, as coverage in the North-East and North-West is only 16% to 23%, compared to 64% to 73% in the South. Similarly, coverage of DPT3 and all vaccinations are lower in the North. These data indicate severe weakness in routine immunization in these regions as well as in poorer rural areas in the rest of the country. These large regional differences in immunization persists even after controlling for other variables such as mother's education, household income status, and an indicator for access to child health services. Figure 18 shows that, everything else constant, living in a region different from the South West (the reference region) decreases the probability of being immunized. This is especially the case for the Northern regions where immunization coverage is the lowest, particularly for polio.

Figure 17. Measles immunization coverage by GDP per capita (SSA countries with GDP per capita less than US\$ 500)



Sources are World Bank *HNPStats* (estimates are for 2001) and 2003 NDHS.

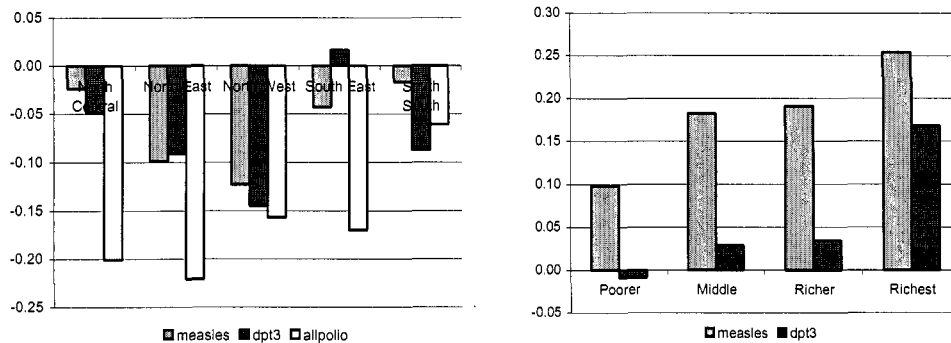
17. *Poor children are much less likely to be immunized than their wealthier counterparts.*

Controlling for other variables, the wealth status of the household has a large and significant effect on the probability that a child receives a measles vaccine and receives three doses of DPT. The wealthier the family, the more likely a child has received those immunizations (see Figure 18). For instance, in the case of measles, children belonging to the richest quintile of the wealth distribution are about 25 percentage points more likely to be immunized against measles than

²² The exception is the proportion of children who had no vaccinations, which has declined due to polio vaccination campaigns.

children belonging to the poorest quintile. Finally, maternal education has a significant effect in increasing the probability that a child will receive all vaccines (see analysis in the annex).

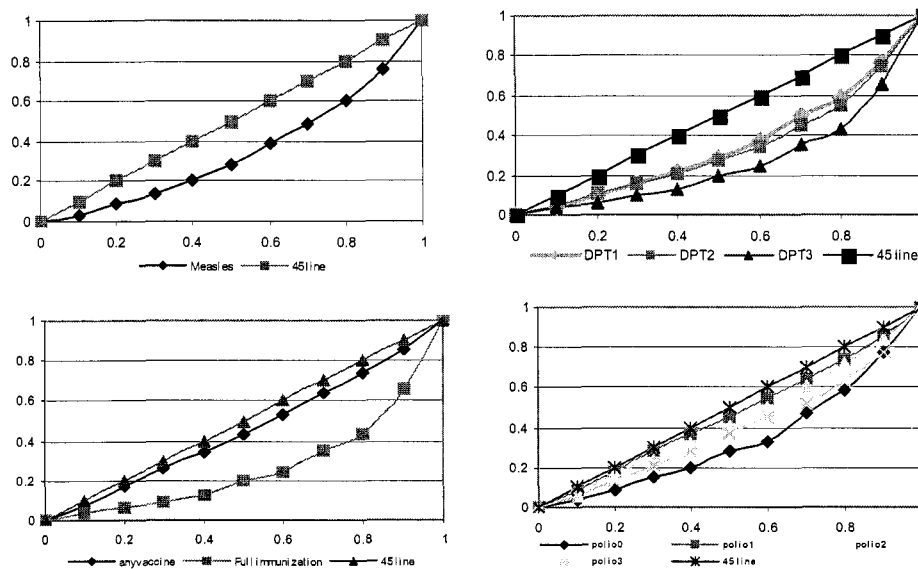
Figure 18. Effect of region of residence and household wealth status on the probability that a child is immunized



Source: Based on a multinomial probit analysis of determinants of child immunization. Other variables in the analysis include: maternal education, children's characteristics, and indicator of urban areas, and an indicator for access to children health services.

18. To better illustrate wealth inequalities in immunization rates, concentration curves were constructed for measles, DPT, polio, full immunization, and any immunization (Figure 19). These concentration curves are similar to inequality Lorenz curves. In the horizontal axis they plot the cumulative proportion of children between 12 and 23 months of age ranked in ascending order of their family wealth status. On the vertical axis they plot the cumulative proportion of children receiving a particular vaccine. The 45 degree line represents the line of full equality, where there are no wealth differences in immunization rates. The larger the distance between the concentration curve and the 45 degree line, the greater the inequality.

Figure 19. Immunization Concentration Curves



Authors' estimates from NDHS 2003.

19. Figure 19 suggests that children from wealthier families are more likely to use health services and thus more likely to receive routine immunization services than their poor counterparts.

Similarly wealthier children are more likely to be born in a health facility and therefore more likely to obtain the two required immunizations given at birth: BCG (not shown in the figure) and OPV0. The largest wealth inequalities appear in the continuity of these services. As can be observed in the case of DPT, the first dose has a similar degree of inequality as those vaccines that only require one dose (measles and BCG); the inequality slightly increases by the second dose²³, and it is much higher by the third dose. Polio is an exception. As can be seen in the figure the inequalities in polio vaccination are very small. Only in the case of OPV0 are these inequalities large. In contrast to the other three doses of polio, OPV0 is not given during campaigns but at birth, which might explain these differences. The polio eradication campaigns have successfully decreased wealth inequalities through active outreach activities. The other routine immunizations are offered in health centers only, suggesting that the health system has failed to reach the poor. This also explains the large differences in the concentration curves for full immunization and for any immunization. As a result of including the polio vaccines the latter curve is very close to the diagonal line of full equality; in contrast, the full immunization curve is far from it, showing a large degree of wealth inequality.

20. Nigeria is the second largest global reservoir of the wild polio virus so that a major priority of international donors in recent years has been the polio eradication campaign. This has achieved some success in terms of surveillance and vaccination campaigns, but coverage remains insufficient, particularly for the second and third doses. The 2003 DHS found that among one-year-old children, 27% had received the vaccine at birth (OPV0), 67% had received the first dose (OPV1), 53% OPV2, and 30% OPV3. In contrast to measles and DPT vaccination, there was no significant household wealth effect on the probability of having received all polio vaccines (not shown in the figure).

Vitamin A

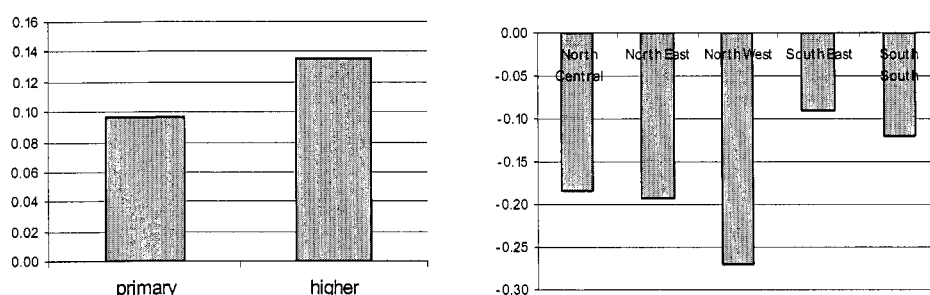
21. A review of the literature (Jones *et al.*, 2003) found clear evidence that vitamin A prevents mortality due to diarrhea and is also an effective treatment for measles. The review also found limited evidence that vitamin A can prevent measles and malaria. Data from the NDHS 2003 indicate that less than half (43%) of children younger than three years of age consume fruits and vegetables rich in vitamin A. Similarly, among children between six months and five years of age only about 34% received vitamin A supplementation in the six months preceding the survey.

22. To better understand which household and individual variables are correlated with the probability that a child between six months and five years of age receives vitamin A supplementation, a multivariate analysis was performed using the NDHS 2003 data.²⁴ This analysis shows that *maternal education, region of residence, household wealth, and access to children's health services (proxied by the percentage of children in the community that had received measles immunization) significantly affect the probability of receiving vitamin A supplements*. Figure 20, indicates that, after controlling for the effect of other variables, maternal education increases the probability that a child receives vitamin A supplementation. Even after controlling for household wealth status, the region of residence remains one of the more significant determinants of vitamin A supplementation. The children living in the North are less likely to receive this supplement compared to children living in the South.

²³ The difference is small and it is probably not significant.

²⁴ See complete regression in annex.

Figure 20. Effect of maternal education and region of residence on the probability of receiving vitamin A supplementation



Authors' estimates from a probit analysis of determinants of vitamin A supplementation using the NDHS 2003

23. Children belonging to households in the richest two quintiles are significantly more likely to receive Vitamin A supplements than those belonging to the poorest quintile. The effect is not statistically significant for children living in the second and third quintiles of the distribution.

Utilization of health services in case of diarrhea or pneumonia

24. *Very few Nigerian children receive medical treatment in case of diarrhea or in case of a fever or cough.* Less than one out of every four children receives medical treatment²⁵ from a trained health care provider in case of diarrhea and one out of every three in case of fever or cough. Whether or not a child is taken to a health provider and the type of health provider sought is highly influenced by the wealth status of the household. As seen in Table 13, while almost 70% of children with diarrhea in the poorest quintile of the population were not taken to any health provider, only 42% of children in the richest quintile were not. Similarly, while only 10% of the poorest children received medical treatment, 35% of the richest children did. Not surprisingly, the rich are more likely to take their children to private providers; however, the rich are also more likely to use public facilities than the poor. Finally, more poor children are taken to pharmacies and traditional and spiritual healers than the richest children. A similar pattern is also found in the case of children with cough and fever.

Table 13. Percentage of children taken to a health care provider across wealth quintiles

	Wealth index					overall
	poorest	poorer	middle	richer	richest	
Diarrhea						
No Care	65.9	65.0	53.0	42.7	42.4	56.5
Public hospital	4.2	2.5	9.0	19.4	19.8	9.0
Health Center	2.0	3.2	8.8	12.9	3.8	6.0
Health post/ mobile clinic/CHW	1.0	4.3	1.7	1.4	1.7	2.2
Private hospital/clinic	1.6	0.8	0.8	4.4	8.8	2.4
Private doctor	0.0	0.0	0.5	0.0	0.0	0.1
Private other	0.6	0.2	0.0	0.0	0.5	0.2
Pharmacy	19.7	13.6	16.5	18.2	10.2	16.3
Traditional/spiritual healer/other	5.2	10.5	9.8	1.0	12.9	7.4

²⁵ Excludes pharmacies, shops, traditional, and spiritual healers.

	Wealth index					overall
	poorest	poorer	middle	richer	richest	
Cough/fever						
No Care	32.4	27.3	18.1	9.2	15.2	21.2
Public hospital	4.7	6.8	11.9	18.7	19.8	11.6
Health Center	4.3	7.5	9.1	15.2	6.7	8.5
Health post/ mobile clinic/CHW	3.4	4.3	4.1	1.9	1.1	3.2
Private hospital/clinic	2.8	2.4	3.8	7.0	23.5	6.8
Private doctor	0.2	0.4	1.2	0.2	0.9	0.6
Private other	0.7	0.4	0.5	0.0	0.0	0.4
Pharmacy	39.7	38.1	41.6	44.2	29.4	39.1
Traditional/spiritual healer/other	11.7	12.7	9.8	3.6	3.4	8.8

Source: NDHS 2003

Note: All cases where more than one response was given were not included in the analysis. This excluded 16 observations out of 845 in the case of diarrhea and 53 out of more than 1500 in the case of fever or cough.

25. *When taking children to a public sector health provider for medical attention, about half of households bypassed lower level facilities such as health posts, mobile clinics, and community health workers and went directly to higher level facilities in search for care.* It is also worth noting that in cases of diarrhea, fever or cough, households rely significantly on pharmacies to seek treatment for children. In particular, treatment was sought from a pharmacy for about 25% of children with diarrhea and for more than 33% of children with fever or cough.

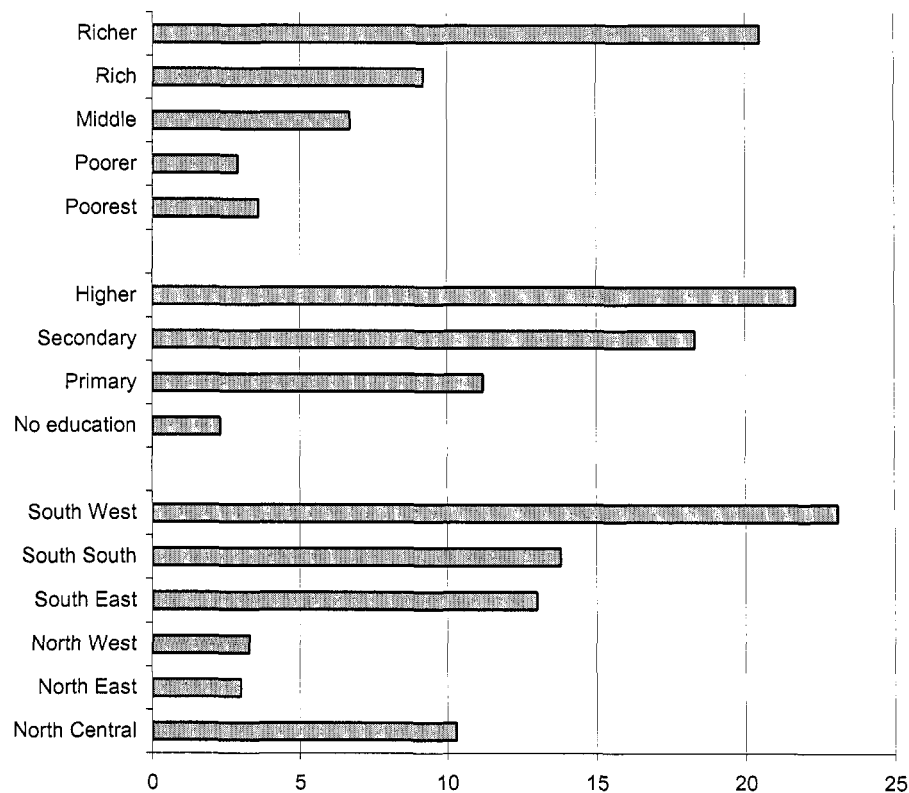
26. A multivariate analysis of the determinants of utilization of health care services in case of diarrhea or fever/cough confirms that household wealth is a significant determinant of utilization. Similarly, maternal education and region of residence are also related to variations in utilization. The higher the level of maternal education the more likely the child will be taken to a health provider. Similarly, children from the South are more likely to be taken to a provider in case of diarrhea or in case of cough or fever (see complete analysis in the annex).

MATERNAL AND REPRODUCTIVE HEALTH

Contraception

27. *The risk of maternal and child mortality and morbidity can be reduced if the mother has control of the number and spacing of births she has.* Knowledge and access to modern methods of contraception as well as decision making power within the household influence the extent to which women have control over their pregnancies.

Figure 21. Current used of modern contraception among currently married women across income, education, and across regions of residence, Nigeria, 2003



Source: NDHS 2003

28. *Knowledge of modern methods of contraception is increasing.* In 1990 the NDHS reported that only 40% of married women had any knowledge of modern methods of contraception, by 1999 this percentage had increased to 60%. In 2003, 76% of married women knew about at least one modern method of contraception.

29. *Despite this large increase in knowledge of modern methods of contraception, their current use is very limited.* Data from the NDHS 2003 indicate that only 12% of currently married women use any method of contraception and only 8% use a modern one. The usage of contraception largely varies with the level of women's education, their income level, the degree of autonomy they have in family planning decisions, and access to family planning services. As can be seen in Figure 21, the percentage of women using modern contraception is 11 times higher among women with higher education than among those without. The poor are also much less likely to use any modern method than the rich. Moreover women living in the Northern regions, especially in the North West and North East are much less likely to use a modern method of contraception than those in the south.

30. It is very difficult for household surveys to capture the level of empowerment women have inside the household. The NDHS 2003 asked the women interviewed whether they participated in taking decisions related to their own health, large household purchases, visits to family or relatives, children's health care and others. This survey found a positive correlation between the number of decisions where the women have a final say and the percentage of women using a

modern method of contraception. Women living in the Northern regions and women with no education are less likely to participate in many of these decisions; they are also the least likely to use modern methods.

31. *Despite their low utilization, access to contraceptives is relatively high.* NDHS 1999 data show that modern contraceptives are available within 5 km to 70-80% of households in urban areas and to over 50% of households in rural areas. Married women interviewed in the NDHS 2003 cited their desire to have more children (36%), own or husband's opposition to their use (18%), and lack of knowledge of a method (8.4%), as reasons for not using contraceptives. Only less than 2% of women reported not having access to any method, not knowing a source, or that their costs were high.

32. *There is still some unmet need for family planning to space and limit childbirth.* The NDHS 2003 data report that, on average, 17% of currently married women have expressed an unmet need for family planning (12 percent for spacing childbirth, and 5 percent for limiting it). The unmet need for spacing is largest in the North Central region, while the unmet need for limiting is highest in the South South. Nonetheless this is still one of the lowest rates of unmet need for family planning in all SSA countries for which DHS data are available.

Table 14. Percentage of women who received professional antenatal and delivery care, and percentage of women that delivered in a health facility, Nigeria

	antenatal care by professional	delivery by professional	delivery in health facility
Urban			
1990	85.2	60.8	58.2
2003	83.0	58.8	54.2
rural			
1990	52.3	25.7	23.6
2003	50.6	27.1	23.8
overall			
1990	59.3	33.0	30.9
2003	60.1	36.3	32.6

Notes: The denominator for antenatal care is the most recent birth among women who had a live birth in the previous 5 years, while the denominator for delivery care is all live births in the previous 5 years. Health professionals are: doctor, nurse, midwife, auxiliary midwife, or community health worker. Sources are 1990 and 2003 NDHS.

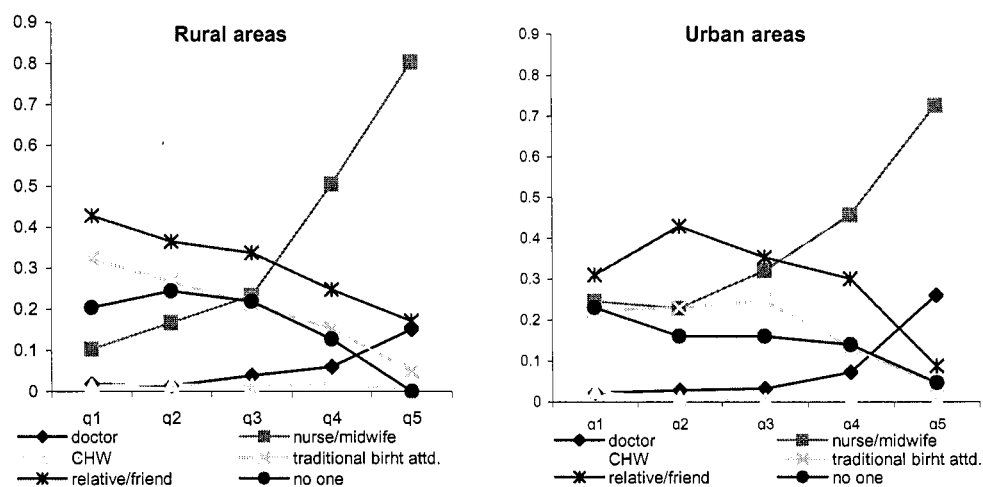
Utilization of pre-natal and delivery care

33. *Utilization of prenatal and delivery care, although consistent with other countries of similar income per capita, has not improved in the last decade.* Table 14 shows that the proportions of women who received antenatal care, whose children were delivered by a health professional, and who delivered in a health facility, have remained largely unchanged between 1990 and 2003. Despite this, the level of professional delivery care in the country is similar to other Sub-Saharan Africa countries with GDP per capita of under US\$ 500.

34. *There are significant urban/rural, regional, and economic disparities in utilization and coverage of maternal health services.* Coverage of delivery by a health professional in rural areas is only 27%, compared to 59% in urban areas. As Figure 22 shows, the poor in both urban and rural areas are more likely to receive care from a traditional birth attendant, a relative, or no one at all. Conversely, in both urban and rural areas, the better-off are much more likely to receive delivery care from a nurse, midwife, or a doctor. These data also indicate that nurses and midwives are the most common care providers for all economic levels in urban areas, and among

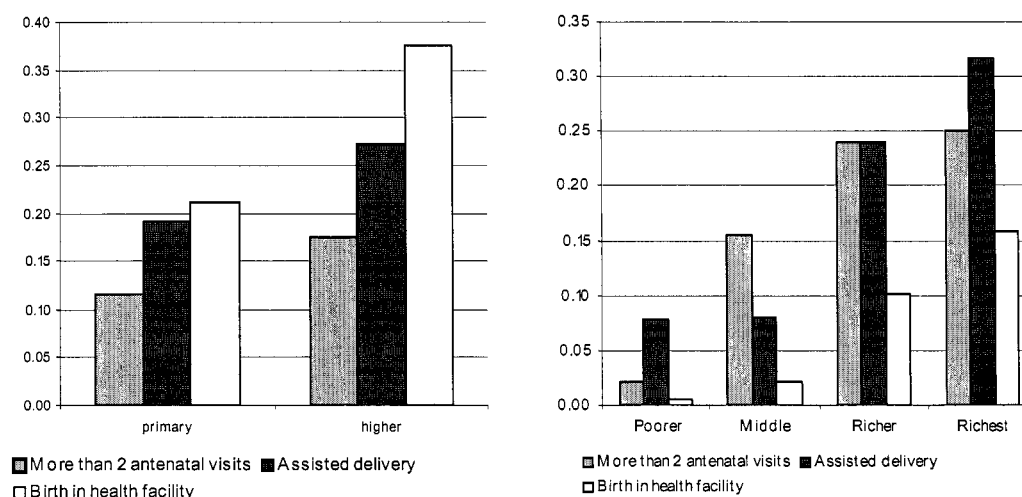
the better-off in rural areas. Finally, the NDHS 2003 also shows enormous regional disparities, with less than 22% of births attended by health professionals in the North-West and North-East, compared to 80% or more in parts of the south.

Figure 22. Assistance during delivery (percentage of births) across wealth quintiles



Source: NDHS 2003

Figure 23. Effect of women's education and household wealth on the probability of more than two antenatal care visits, of being assisted by skilled personnel during delivery, and of delivering in a health facility, Nigeria 2003



Authors' estimates from probit analysis of data from NDHS 2003.

35. These income and regional differences persist after taking into account other variables that affect utilization of maternal health care services. A multivariate analysis of some of the factors that affect utilization of maternal health care services was performed (see complete analysis in annex). This analysis shows, that holding everything else constant, the probability of going to

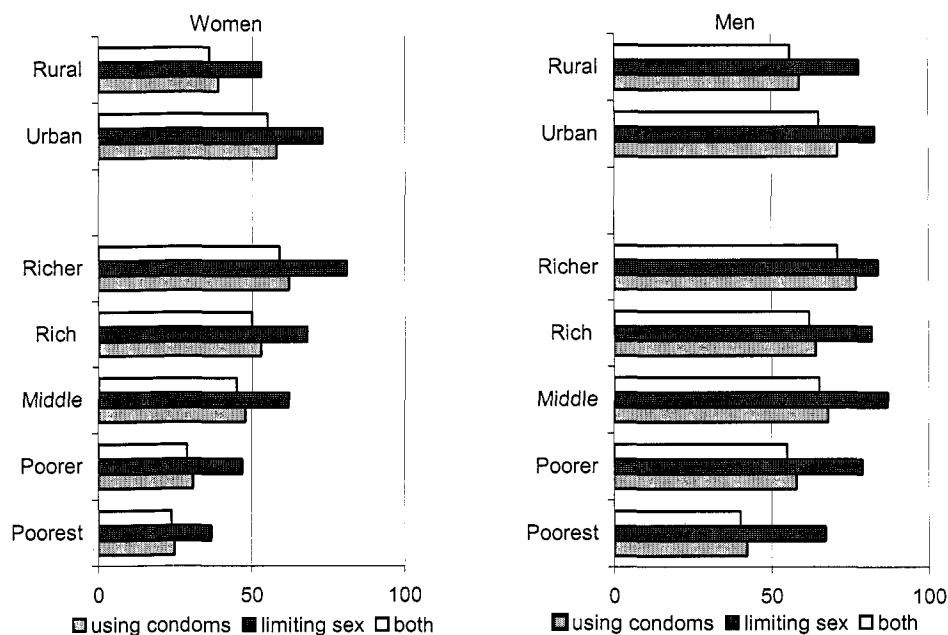
more than two antenatal care visits, of being attended by skilled personnel during delivery, and delivering in a health care facility increases with the level of women's education and with the wealth status of the household (see Figure 23). The regional differences (not shown) also persist once the effect of all other variables are taken into account.

Harmful traditional practices

36. *Harmful traditional practices such as female genital mutilation (FGM) are still prevalent.* Every year about 132 million acts of FGM are practiced around the world, almost a quarter of these are in Nigeria. Immediate health problems associated with this practice are: severe bleeding, pain, shock, and infections. Among the long term effects: bleeding, recurrent urinary track infections, incontinence, chronic pelvic infections, infertility, fistulae, sexual dysfunction, and problems in pregnancy and childbirth. Data from the NDHS 2003 indicate that about 19% of all women 15-49 are circumcised, the majority living in urban areas and in the Southern regions of the country. Only a very small percentage of cases, about 4%, are infibulations, the most extreme form of FGM.

37. *There are other practices prevalent in Nigeria with detrimental effects on the health of the mother and the child such as early marriage and short birth spacing.* The NDHS 2003 found that one in every four teenage women (15-19 years) is pregnant or already has a child. In the North West and North East regions about 45% of teenage women have already begun childbearing, compared to less than 5% in the South East and South West. Additionally, the survey found that more than 60% of women who gave birth in the last five years had shorter birth intervals than the recommended three years.

Figure 24. Knowledge of methods to prevent HIV/AIDS across gender, income level, and place of residence



Source: NDHS 2003

HIV/AIDS KNOWLEDGE

38. *Awareness of the epidemic is almost universal, but knowledge of prevention is more limited.* The NDHS 2003 indicates that about 86% of all women and 97% of all men have heard of the disease. Despite this awareness, only 65% of women and only 85% of men believe that there is a way to avoid HIV/AIDS. As seen in Figure 24, women are also much less likely to know of any method to prevent the spread of the disease than men. Poor women and women living in rural areas are especially vulnerable. For instance, only 25% of the poorest women are aware that condom use limits the spread of the disease, compared to about 66% of the richest women and 40% of the poorest men. These figures highlight the need to increase household and individual information, especially among the most vulnerable groups of the population, to prevent a further advance of the disease.

39. Even though the situation is worrisome, there has been a marked improvement in overall awareness indicating that awareness campaigns may have had an effect, although the rural poor are less likely to be reached. The 1999 NDHS found that less than 75 % of women knew about the disease, compared to 86% in 2003. Moreover it seems that this knowledge is starting to be translated into practice, albeit slowly; the percentage of condom use during the last high risk sexual intercourse is about 46% for men and 23% for women. Nevertheless, these percentages are very low, especially among women.

MORBIDITY AND CARE SEEKING BEHAVIOR

40. *The 2004 Nigeria Living Standards Survey (NLSS) estimated that 12% of the population had an illness or injury in the previous two weeks* (Table 15).²⁶

Table 15. Percentage of people reporting an illness or injury in the last two weeks by age, Nigeria, 2004²⁷

Age	Total
0-5	16.2%
6-14	9.0%
15-24	8.0%
25-45	10.5%
46-69	15.3%
>70	29.0%
All	11.6%

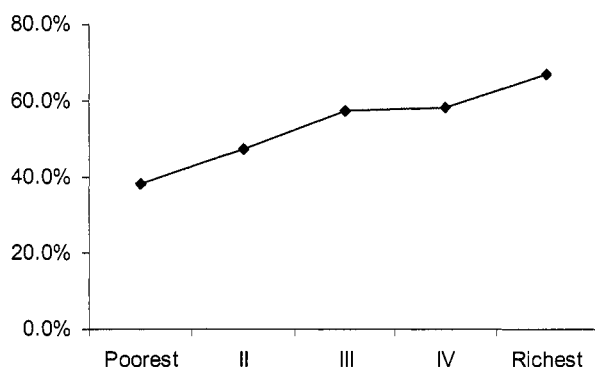
Authors' estimates from 2004 NLSS.

41. *Less than 60% of people reporting an illness or injury in the last two weeks visited a health care provider; the poorest were the least likely to seek care.* Only 56% of Nigerians reporting an illness or injury visited a formal or informal health care provider. There are significant income differences in the percentage of people seeking care in case of illness or injury. The richest 20 % of the population is about 2 times more likely to seek care in case of illness or injury than the poorest 20 % (Figure 25).

²⁶ As this is a self reported measure of illness, the percentage of rich people reporting an illness is higher than those among the poor. This is relatively common using this type of measure. Given that the Southern regions are richer than the Northern ones, more people in the South reported an illness or injury in the last two weeks. Even when restricting the measure of illness and injury to those that forced the person to stop their normal activities, a higher percentage of rich people reported an illness or injury.

²⁷ There are measurement issues related to gender in the NLSS so the gender-disaggregated estimates should be viewed with caution. In contrast to the DHS, there is a large difference in the female-to-male ratio across regions in the NLSS, suggesting some underreporting of females in the Northern regions.

Figure 25. Percentage of people reporting and illness or injury in the last two weeks that visited a health care provider, by income quintile, Nigeria, 2004



Authors' estimates from 2004 NLSS.

42. *When also considering people who went to a health service for preventive health care interventions²⁸, the income differences are even larger.* The poorest segment of the population is much less likely to have used a health care provider in the last two weeks than the richest segment. While 13% of the richest fifth of the population consulted a health provider in the previous two weeks, only 4% of the poorest fifth did. In other words, the richest 20 percent of the population are more than 3 times more likely to use a health care provider for both preventive and curative care than the poorest 20 percent.

43. *Among medical providers, utilization is divided equally between hospitals and PHC services.* The 2004 NLSS found that, among people of all ages who visited a health care provider, 40% went to a hospital and 38% went to a PHC provider (Table 16).

Table 16. Health service utilization by type of provider, Nigeria, 2004 (% of children and adults ill or injured in the previous two weeks who received care) (n = 7,028)

	urban	rural	overall
<i>Hospital</i>	51	32	40
Public	37	23	29
for-profit	13	8	10
non-profit	1	1	1
<i>PHC provider</i>	28	45	38
Public	11	25	19
for-profit	16	18	17
non-profit	2	2	2
<i>Other</i>	21	23	22
Total	100	100	100

Authors' estimates from 2004 NLSS data.

44. *Among medical providers, around two-thirds of patients go to the public sector and one-third uses private sector providers.* The 2004 NLSS found that among children and adults of all ages

²⁸ The NLSS collected information on visits to health care providers in the last two weeks before the interview. Some of these visits were not linked to an illness episode as is the case of people received a preventive health service from these providers (e.g. vaccinations, pre-natal care).

who visited a health service, 48% went to a public sector facility, 27% went to a private for-profit provider, and 3% went to a private non-profit provider (Table 16). Three quarters of hospitals consulted were in the public sector while PHC providers consulted were evenly split between public and private. In general terms, excluding consideration of pharmacies/patent medicine dealers and other non-formal providers, public medical services are consulted about two-thirds of the time and private providers about one-third of the time.

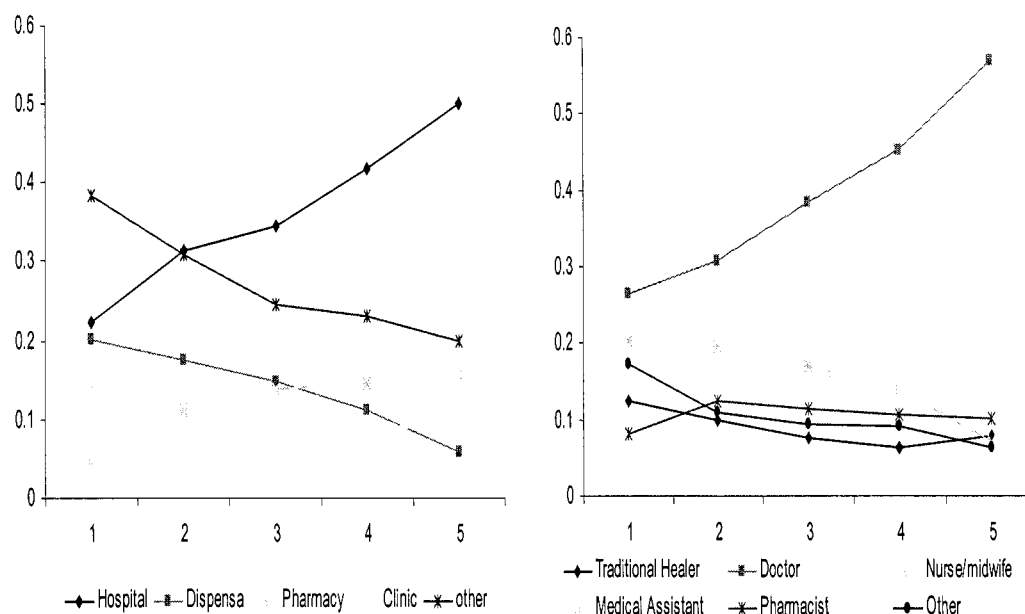
45. *Rural residents are less likely to use hospitals and more likely to use PHC services, but there seems to be little difference in the use of private sector services.* Among patients of all ages, the 2004 NLSS found that 32% in rural areas went to a hospital, compared to 51% in urban areas; conversely, 45% in rural areas went to a PHC provider, compared to 28% in urban areas (Table 16). However, there does not seem to be a large urban-rural difference in the use of public versus private sector medical providers. In fact, the 2004 NLSS found that the proportion of patients who used a public sector service was equivalent in rural and urban areas (48%). Similarly, proportions of people who use non-formal private health providers, particularly patent medicine dealers, are similar in urban and rural areas, although people in rural areas may be slightly more likely to go to a traditional healer.

46. *Use of hospitals versus PHC providers is similar across the country, but patients in the north are more likely to go to public sector providers.* The 2004 NLSS found that utilization of hospitals is for the most part similar across regions, ranging from 31 to 52% of patients, compared to a range of 34 to 47% for PHC providers. However, with regard to both hospitals and PHC facilities, utilization of public sector services is higher in the north than in the south.

47. *Utilization patterns are consistent with the fact that higher-level health services, particularly private ones, are more available in the south while lower-level PHC services are more available in the north.* The availability of health care facilities will be discussed in Chapter 3.

48. *The poor are less likely to use hospitals and more likely to go to PHC facilities.* Figure 26 presents estimates from the 2004 NLSS showing that utilization of PHC providers decreases and hospitals increases as household income rises. The poorest households tend to obtain health care in PHC facilities such as dispensaries, maternity homes, MCH posts, their homes, etc. Although the use of pharmacies and clinics is fairly similar across all income levels; the use of dispensaries (a low level PHC facility) decreases with income. About half of people (44%) seek care from doctors. There are, however, large differences across income levels; the rich are two times more likely than the poor to see a doctor. Finally, the richest households are less likely to receive care from a Medical Assistant or a Traditional Healer. These findings are consistent with the 2003 NDHS data on utilization in cases of child illness presented in Table 13.

Figure 26. Place of consultation and who was consulted by income quintile



Authors' estimates from 2004 NLSS. The income quintiles are showed in the horizontal axis. The first quintile represent the poorest 20% of the population while the fifth the richest 20 %. For example, the first graph show that on average among the 20% poorest individuals about 20% use a hospital as a place of consultation while among the richest 20% more than 50% of them use a hospital as place of consultation.

Note: In the left graph, others include Maternity homes, MCH post, Consultants home, patient's home and others. In the right graph, others include TBA, spiritualist, and others.

REASONS FOR NOT USING HEALTH SERVICES

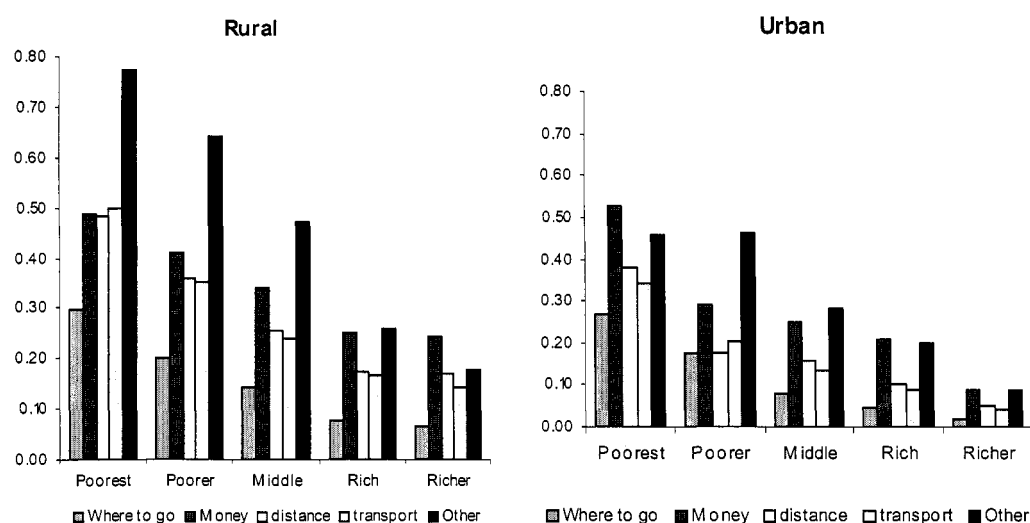
49. *One in every two women reports having problems in accessing health care services.* The DHS 2003 asked women between 15-49 years if any of the following could prevent their access to health services when ill: (i) knowing where to go; (ii) getting permission to go; (iii) getting the money needed for treatment; (iv) the distance to the health facility; (v) having to take transport; (vi) not wanting to go alone; and (vii) concern that there may not be a female provider. Half of the women indicated that at least one of these issues represented a problem for them. The largest barrier women face is that of not having the resources to afford these services as one in every three mentioned that getting the money for treatment was a big concern. The second largest concern was that of physical access to these services as one in every four women mentioned the distance to the services and/or having to take transportation to reach them. The other problems mentioned were the lack of knowledge of where to go in case of illness (14%), the concern that there may not be a female provider (17%), or not wanting to go alone (14%).

50. *Poor women, especially those living in rural areas, are more likely to face barriers to access health services.* 75 % of women belonging to the poorest fifth of the population mentioned at least one problem in accessing health care when ill. As can be seen in Figure 27, poor women in both urban and rural areas are more likely to report problems in accessing health care when ill. In both urban and rural areas financial and knowledge barriers are reported by a similar percentage of women. Poor women in both areas are equally likely to report having financial barriers to access services, as half of the women belonging to the poorest fifth of the population reported this problem. Poor women in both areas are also equally likely to report not knowing where to seek

care. However, physical barriers to access are a larger problem for women in rural areas, especially for the poor, as more than 40 % of women living in the poorest two fifths of the population report distance and/or transportation as a big problem in accessing health services.

51. *The largest difference in access to health care between rural and urban areas is due to differential household preferences and behaviors and not so much because of supply constraints.* In the rural areas women, especially the poorest, are much more likely to report not having permission to seek care, not wanting to go alone to a health provider, or having concerns that there might not be a female provider.

Figure 27. Women's problems in accessing health care across wealth status and place of residence

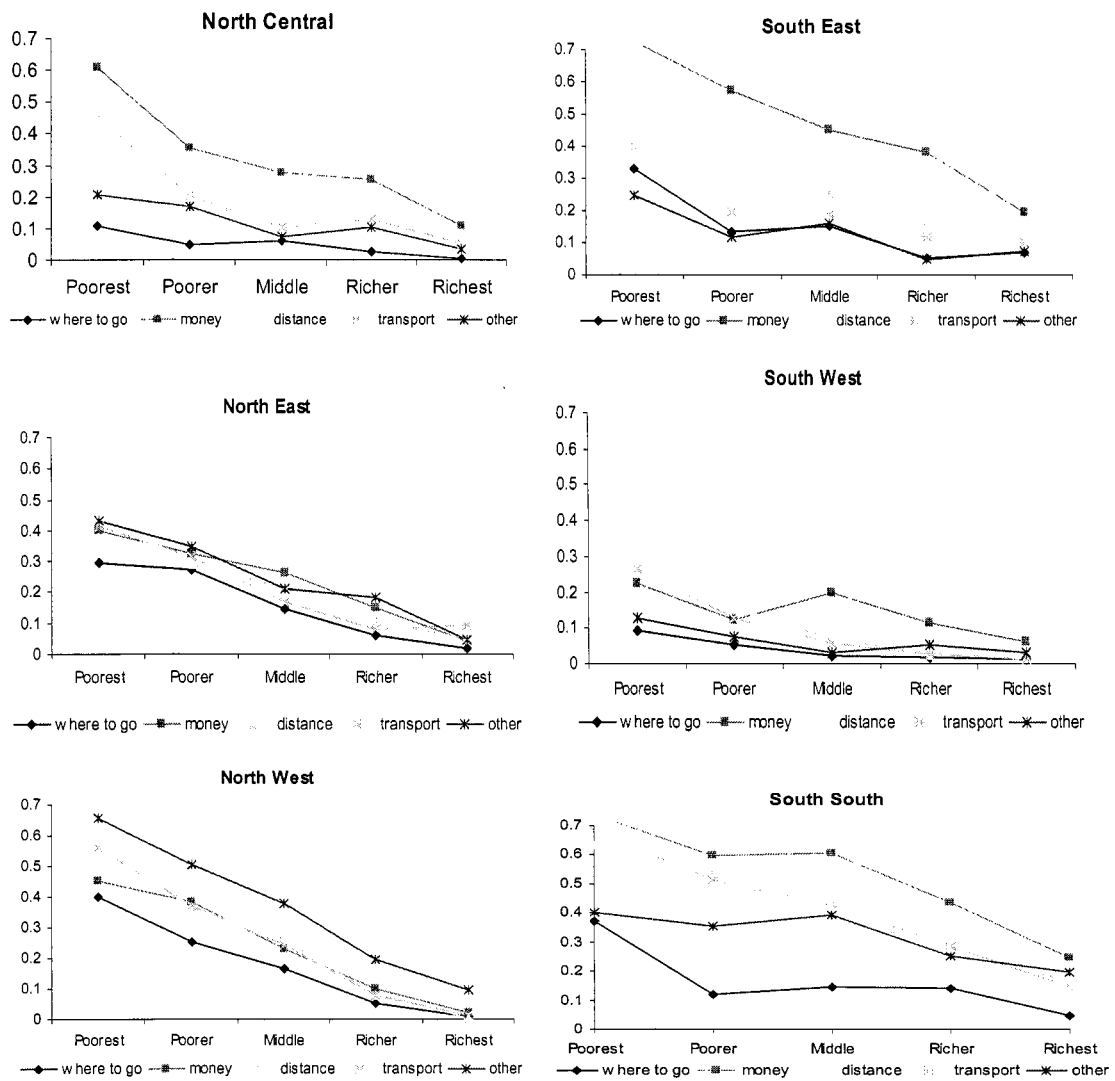


Source: NDHS 2003

52. *There are also marked differences in women's barriers to health care across regions.* According to the DHS 2003, women in the South South region were the most likely to report a problem in accessing health care, about 60% of them reported at least one difficulty. In contrast, women in the South West region were the least likely to do so, only 16% reported a problem. In all regions except the North West, the major problem in accessing health services was having the money to pay for them followed by physical access to these services. In the North West, the major issue was a concern that these services would not have a female provider followed also by not having physical access to these services.

53. Poor women in all regions are the least likely to have access to health care services (see Figure 28). *The differences in access to services across household wealth quintiles are large in all regions but the South West.* The South South region deserves special attention, as it was in this region where the largest number of women reported both financial and physical barriers to access health care. In this region, about 47% of the women reported not having the money to pay for these services and 35% reported distance to the services (and/or having to take transportation) as a problem.

Figure 28. Women's problems in accessing health care across wealth status and place of residence



Source: NDHS 2003

CHAPTER 3. THE HEALTH SYSTEM IN NIGERIA

1. This chapter describes the organization of the health system in Nigeria and characteristics of the service delivery network, both public and private sector. Key components of the system are assessed, in particular facilities and equipment, human resources, drug supply, and support services. The health services and public health programs that are provided are described. Finally, government health policy and strategy are discussed.

HEALTH SYSTEM ORGANIZATION AND GOVERNANCE

Health System Organization

2. *The health system is decentralized under a federal structure. The federal level is responsible for overall policy as well as tertiary services, the state level is responsible for secondary services, and local governments are responsible for primary services.* Nigeria's Government is a federation of 36 States, with the Federal Capital Territory (FCT) and 774 Local Government Areas (LGAs). Governments at the different levels are involved in all of the major health system functions: stewardship, financing, and service provision. The current (1999) Constitution mentions health only with regard to the responsibilities of local governments, implying that responsibility for health services is shared between the state and local levels. However, in practice, the division of responsibilities is based on the 1988 National Health Policy and related directives.

3. Under the 1988 policy, the National Health Council, chaired by the federal Minister of Health and comprising the Commissioners for Health of all the states, has overall responsibility for national policy. The federal level is responsible for policy guidance and technical support to the overall system, international relations on health matters, national health management information systems (HMIS), and government service provision by tertiary and teaching hospitals and national laboratories. State governments are responsible for government secondary (and some tertiary) hospitals and for regulation and technical support to primary health care (PHC) services. Operation of public sector PHC services is the responsibility of local governments, under which services are organized by district (ward) (with 7 to 10 districts per LGA).

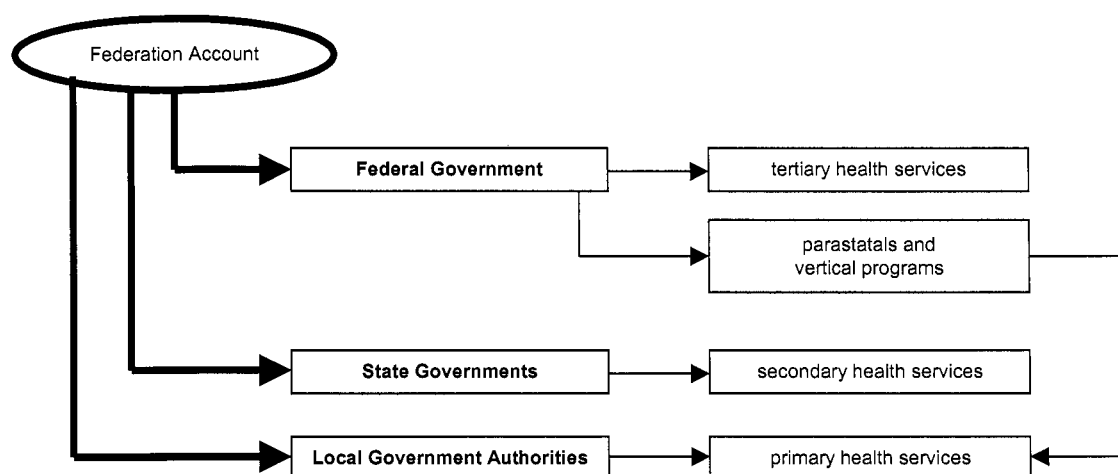
4. For- and non-profit private health care services at the different levels of care are regulated by the appropriate levels of government.

5. *Responsibilities are tied to funding flows, leading to poor coordination and integration of the referral system.* Figure 29 provides an illustration of how the government health system is funded. Although the federal and state governments have tax revenues, the lion's share of government resources comes from oil revenues to the Federation Account, which are shared between levels of government according to an allocation formula. The transfers from the Federation Account to the states and local governments are not earmarked – that is, each state and local government decides how their funds are allocated between sectors. They are not required to provide budget and expenditure reports to the federal government. This considerably limits the effective influence that the federal Ministry of Health (FMOH) may have over primary and secondary health services (except through special agencies and programs, discussed below), and that the state Ministries of Health (SMoHs) may have over primary health care services. This, combined with poor coordination between levels of government, has led to limited integration of the referral system, in particular impeding the connection between primary and first-referral services.

6. *Parastatal agencies and vertical programs, particularly at the federal level, also intervene across the different levels of services.* The FMOH, the SMoHs, and the Local Government

Health Authorities, retain overall responsibility for health services at their respective levels. However, federal and state parastatal agencies have been created to implement programs and manage services across the different levels. In the late 1980s, Hospital Management Boards (HMBs) were created at the federal and state levels to manage government tertiary and secondary level facilities respectively. Federal parastatals created in the early 1990s included the National Agency for Food and Drug Administration and Control (NAFDAC), National Primary Health Care Development Agency (NPHCDA), National Programme for Immunization (NPI), and the Population Activities Fund Agency (PAFA). By 1999 at the federal level, there were 16 programs, at least 11 agencies and departments, and 14 different policies or strategies to address particular issues. More recent organizations are the National Action Committee on AIDS (NACA) and the National Health Insurance Scheme (NHIS).

Figure 29. Government funding flows to the health system in Nigeria



7. In many cases, the impetus behind these federal initiatives was to address problems, particularly at the PHC level, through direct provision of resources and implementation of programs. In addition, particularly in a context of low domestic public funding for health in the late 1990s, single issue initiatives were also driven by external donors.

8. The effectiveness of federal health parastatals and programs has been mitigated, particularly since the mid-1990s, by fluctuating funding levels, problems with management and political interference, and poor coordination with state and local governments. At the same time, even well-supported programs can contribute to fragmentation and duplication, with different programs operating in the same LGA under different administrative and reporting modalities, all making different demands on the same health staff. More recent agencies have been created outside the FMOH for more technical reasons – HIV/AIDS requires a multi-sectoral response and health insurance is justifiably kept separate from government's regulatory and service provision functions.

9. *Coordination mechanisms are being revitalized.* Coordination structures put in place in the early 1990s included the National Health Council which joins the FMOH, SMOHs, parastatal agencies, and other stakeholders, for an annual meeting. Similarly, State Health Councils which bring together the SMOH and Local Health authorities, were also created. Although many of these structures became moribund by the end of the 1990s, the National Health Council and some State Health Councils have recently started to meet more frequently.

Governance and Accountability

10. *Like other sectors, the health system is recovering from a period of poor governance and corruption.* The long decades of military rule weakened, politicized, and encouraged rent-seeking in government bureaucracies, and the health system was no exception. The culture and incentives became such that their own economic interest is the first priority for many public employees. The present democratic government is faced with an enormous and long-term challenge, and has taken steps to address this systemic problem, including launching a high-profile anti-corruption campaign, raising civil service salaries, and embarking on public service reform. Improvement in the governance and accountability of the public sector health system will depend to a large extent on such government-wide reforms. At the same time, a number of actions specific to the health system can be taken, including more inclusive policy development and management mechanisms. Examples include revitalization of the National and State Health Councils and involvement of civil society representatives on Hospital Management Boards.

11. *Governance and accountability is particularly weak at the local level.* Although reforms are required at the federal and state levels, and could be characterized as the “top-down” components of a strategy to improve governance and accountability, health system administration at the local level presents a particular challenge requiring more “bottom-up” initiatives. During the funding cuts and other disruptions of the 1990s, public sector primary health care services seem to have fared somewhat worse than tertiary and secondary hospital services. Part of this is due to capacity limitations at the local government level, exacerbated by the proliferation of LGAs, which has spread capacity even more thinly. In 1988, when responsibility for PHC services was assigned to the local level, there were only 158 LGAs, compared to 774 in 2005.

12. The financial resources available to LGAs may have been insufficient for them to meet their responsibilities in some years, but this is currently less of a constraint given increased oil revenues. (Under the current allocation formula, LGAs are to receive transfers of 20% of the Federation Account). However, there seems to be significant problems with commitment, governance, and accountability. A 1995 assessment of PHC services in Niger State concluded that commitment to health services by LGAs was minimal and reflected in insufficient releases of funds to their Health Departments (Niger State Ministry of Health, 2000). A similar assessment in Benue State found that LGAs “have yet to accept responsibility for the sustainability of health services,” particularly with regard to meeting non-salary recurrent costs. In general, information from such assessments suggests that although salaries are usually met, there is little funding made available by the LGA for drugs, supplies, and maintenance (PATHS, 2003j).

13. There is also evidence that even wages are not being paid in some areas, and that this is not due to lack of resources. A 2003 World Bank study of PHC services in 30 LGAs in Lagos and Kogi States found that although most staff in Lagos have been regularly paid, 42% of staff in Kogi reported not receiving any salary for six months or more during the previous year. The study found little correlation between budget allocations and non-payment, suggesting significant problems with “leakage” of funds. This evidence suggests a problem of accountability at the local government level, perhaps partly attributable to the fact that most or all of LGA revenues derive from oil production and not taxation. That is, citizens may be less incited to hold government accountable for spending money that they have not contributed in taxes (Khemani, 2004).

14. Similar problems with wage payments for primary school teachers led the federal government to deduct teachers’ salaries at source from local governments’ transfers from the Federation Account. This led, in some cases, to the phenomenon of “zero allocation,” where the deduction at source totally consumes the transfer, leaving nothing for other local government expenses, including PHC services. In the past few years, however, high oil revenues have increased

transfers to the LGAs while deduction at source has been ruled unconstitutional, increasing the resources transferred to LGAs.

Community Role

15. *Community involvement at the local level has long been recognized as important, but is difficult to achieve.* Measures can be taken for greater community involvement in governance of the health system. Such initiatives could be seen as “bottom-up” components of a comprehensive strategy which also involves reforms at the federal and state levels. The 1988 National Health Policy emphasized the community’s role in strengthening PHC services, and its implementation included the creation of PHC Management and Technical Committees at the LGA level, District (Ward) Development Committees, and Village Development Committees. It seems that although these committees have been put in place in most cases, many are not adequately functional. A 2001 survey of 202 LGAs in two states in each of the six geopolitical zones found that 89% had a PHC Management Committee. Patterns were found to be similar across the country, indicating that implementation of this aspect of the 1988 Health Policy was similarly effective in both North and South. For example, in the North East zone, 77% of LGAs had a PHC Management Committee, not significantly lower than the national average.

16. However, only 27% of PHC Management Committees had met in the previous three months. Similarly, 75% of LGAs had formed a PHC Technical Committee. This committee, focused on operational issues, is more functional, as 44% were found to meet regularly. The same patterns were seen at lower levels of governance. Among 403 Districts surveyed, 84% had a District Development Committee, but only 22% had met in the previous three months. Of 698 villages surveyed, 78% had formed a Village Development Committee, but only 25% had met in the previous three months (Adeniyi *et al.*, 2001).

17. Some initiatives have been supported by international donors, such as a four-state program supported by DFID to implement the Bamako Initiative (particularly drug revolving funds), and a project among six communities in four states which included community involvement in management and a self-financing scheme (Dare, 2000). More recent projects included one in Niger State involving tripartite agreements between the project, the community, and the LGA, (Niger State Ministry of Health, 2000) and a program in Benue State which worked at improving the links between Village Development Committees and LGA PHC Management Committees (Benue Health Fund Project, 2002). Lessons from these initiatives are that ensuring true participation is not easy and takes time, requiring awareness-raising and capacity development among both community members and the local health administration. Volunteerism may also not be feasible as poor community members are unable to devote unpaid time to such activities. Adaptation of community governance mechanisms to urban areas, where communities are less tightly-knit than in rural areas, is also a challenge (FPC and UNICEF, 2001).

18. *In some instances, communities have a significant role in facility management but may not affect overall availability of resources.* A 2003 World Bank study of PHC services in Lagos and Kogi States found that of 145 facilities surveyed, 48 indicated that the Community Development Committee was the principal decision-maker in one or more of the following areas: supply of drugs/medical supplies, acquiring and maintaining equipment, setting charges for drugs, and determining use of facility revenues. (World Bank, 2003b) A regression analysis found a significant relationship between community involvement in these decisions and staff productivity. On the other hand, no correlation was found with equipment and drug availability. As well, most of the facilities with community involvement were in Kogi State, where non-payment of staff salaries was much more common. These patterns suggest that community involvement has more impact on facility operations than on overall availability of resources (i.e. drug supplies and salaries).

19. *Community-based organizations are active in many areas, and increasing their involvement in local health services may be beneficial but is similarly challenging.* A number of assessments (PATHS, 2003b; PATHS, 2003g) have found that a variety of community-based organizations (CBOs) are active in Nigerian communities, including traditional and kinship institutions, community associations, occupational associations, women's groups, ethnic associations, faith-based groups, women's groups, and more institutionalized non-governmental organizations (NGOs). A World Bank study in the mid-1990s of CBOs in 36 communities across Nigeria confirmed the rich variety of civil society organizations but also indicated that in most cases they have little input into government programs (World Bank, 1996b).

20. The large presence of CBOs in Nigerian communities provides a basis for enhancement of community involvement in health service administration, while experiences in some locations can provide examples and lessons. However, it should be emphasized that community involvement is not a "magic bullet" for improving either financial sustainability or governance of health services. Health services, even at the primary level, are expensive, and it is clear from experience in Sub-Saharan Africa that in most cases community financing should be complementary to stronger sources of financial resources (Ekman, 2004). This means that "bottom-up" initiatives will be most effective in conjunction with "top-down" reform as well as a general context of greater accountability. As well, efforts to strengthen the role of civil society organizations in health system governance will confront a number of limitations. First, the numbers and capacities of civil society organizations are not evenly distributed. In fact, the World Bank study mentioned above found that the poorest communities and regions of the country also tend to have fewer and weaker CBOs. Second, in general, CBOs have significant capacity constraints, often characterized by a "missing middle," between their membership and a limited number of capable leaders. Third, CBOs are just as vulnerable as other structures in Nigerian society to factionalism, patronage, and corruption.

Management

21. *There are general problems with planning, budgeting, and financial management at all levels.* It is widely acknowledged that there are deficiencies at all levels of the government health system in terms of the basic management functions of planning, budgeting, financial control, monitoring, and evaluation. An assessment at the federal level found a low level of knowledge among FMOH staff regarding standard procedures and regulations as well as current plans and budgets (DFID, 2000).

22. Recent studies at the SMOH level – in Jigawa, Benue, and Enugu States – have found similar problems (PATHS, 2003c; PATHS, 2003g; PATHS, 2003h). Strategic planning is not done, and allocation of resources (infrastructure, equipment, and staff) is done in an *ad hoc* fashion driven by political considerations. Although budgets are drawn, they do not correlate with expenditures and there are no financial performance reviews. Financial management is focused primarily on salaries. These assessments also looked at the local government level, finding even less management capacity, and an absence of effective planning, budgeting, and monitoring mechanisms.

23. At the facility level, a study of secondary hospitals in Jigawa State found that although hospital management committees exist, their responsibilities are unclear and their meetings irregular. Strategic planning and target-setting are not done, and budgeting is not done in relation to service delivery needs and goals. There is no overall financial control, since accounting is done separately by individual hospital departments (PATHS, 2003j).

24. *Capacity-building in budgeting and financial management is needed, but systemic disincentives are the real problem.* Training and other capacity-building activities, such as

developing and redesigning budgeting and financial management systems or provision of computer equipment, would clearly be beneficial at all levels of the Government health system. However, the overall system provides very little incentive for staff to put their management skills into practice. At every level, from the FMOH to PHC facilities, lack of control and uncertainty about funding undermines rational planning and budgeting.

Table 17. Public sector health system service levels

facility	admin. level	level of care	catchment population	staffing
specialized/teaching hospital	Federal	tertiary		
Federal hospital	Federal	tertiary		
general hospital	State	secondary	500,000	3 doctors 21-34 nurses 9-18 nurse attendants 4-7 x-ray and lab technicians 6-9 administrative staff 24-37 other support staff
comprehensive primary health care center	LGA	primary	50,000-100,000	1 doctor 1 clinical officer 2 nurses/midwives 1 environmental health officer 1 lab technician 3 CHEWs 8 Junior CHEWs (JCHEW)
primary health care center	Ward	primary	10,000-20,000	1 clinical officer 1 nurse/midwife 1 environmental health officer 1 lab technician 4 CHEW/JCHEW
health clinic/health post	community	primary	500-3,500	1 CHEW and 2 JCHEW traditional birth attendants (TBAs) volunteer village health workers (VHWs)

* One ward can have several PHC centers based on settlement areas, population, and existing facilities.

25. For example, within the FMOH, personnel budgets are not under the control of individual department heads. At the same time, plans and budgets may be approved, but managers cannot have confidence that funds will actually be released, especially for non-wage expenditures. A similar lack of control is evident at the state level. One study found that in Enugu State, for example, managers know that resources are not allocated based on the plans they produce, so they do not work on strategic planning. The SMOH planning department instead concentrates on project planning geared to specific international donor programs (PATHS, 2003g). An assessment of local government Health Departments in Jigawa State found that although three-year rolling plans are produced annually, they are never carried out because the release of funding is not related to planned budgets. "There is a pervading sense of helplessness as managers have no control over personnel, funding, the erection of new facilities or purchases of new equipment." (PATHS, 2003c).

HEALTH SERVICE DELIVERY SYSTEM

26. Table 17 describes service levels of the public sector health delivery system. The federal government operates a number of tertiary and specialized hospitals and there is a federal hospital in most states, although the level of services available in many is often characterized as more at the secondary level. General/secondary hospitals are the responsibility of state governments, and should have several physicians and at least 20 nurses. Local governments are responsible for primary health care facilities. Comprehensive primary health care centers should have a doctor and offer both PHC and a limited number of secondary clinical care services. There should be one comprehensive primary health care center per LGA. Within LGAs, there should be at least one primary health care center per ward, staffed by a clinical officer (medical assistant) and a nurse or midwife, and offering basic preventive and curative services. At the community or village level, health clinics or posts should be staffed by community health extension workers (CHEWs) and support birth attendants and other community health workers.

Health Service Network

27. Data on health facility numbers are somewhat dated and perhaps incomplete, but the available information provides a good picture of the patterns of the network. Numbers of registered health facilities, both public and private, are available for 2000 from the the FMOH, although one state is not included. A 2001 survey by the National Primary Health Care Development Agency (NPHCDA) sampled 202 LGAs, designed to be representative of each of the six geopolitical zones. The study collected information on the numbers and types of health facilities in each sampled LGA (Adeniyi *et al.*, 2001). The 1999 Nigeria Demographic and Health Survey (NDHS) collected data on distance to health facilities, providing information on the actual availability of health services to households.²⁹

Hospital Facilities

28. *On average, Nigeria seems to have an adequate number of tertiary and secondary hospitals.* At the tertiary level, the federal government operates 15 teaching hospitals, 8 psychiatric hospitals, and 3 orthopedic hospitals, as well as 27 Federal Medical Centers distributed among the states. There was reported to be one private sector tertiary hospital in the country in 2000. The total of 54 tertiary and specialized hospitals implies a population to facility ratio of around 2.1 million. This suggests relatively good average availability of higher-level services at the same time as representing an average catchment population more than large enough to generate the demand for a large hospital.

29. There were reported to be 855 public sector secondary facilities in the country in 2000, for a population to facility ratio of around 135,000, which is considerably better than the standard of 500,000 noted in Table 17. In addition, there are a large number of privately-operated facilities, bringing the reported total to 3,002 secondary facilities in the country.

30. *Overall averages mask considerable regional disparities, as there are significantly fewer hospital facilities in the north.* Table 18 shows that there are considerable regional disparities in the distribution of secondary level services. Population to facility ratios are under 50,000 in the North Central and southern zones, but over 150,000 in the North West and North East zones.

Table 18. Population per health facility and proportion public sector, Nigeria, 2000

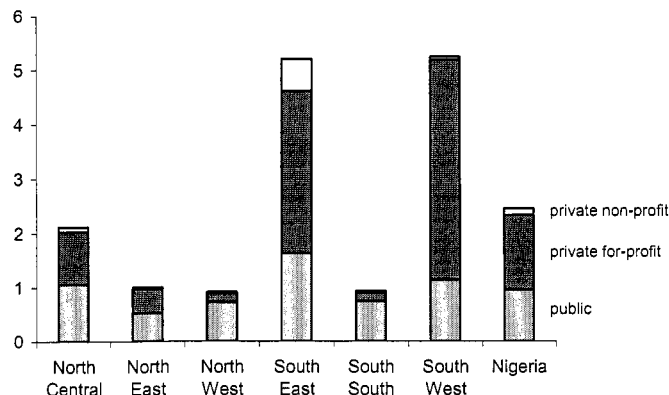
²⁹ These data were collected from 399 communities and linked for this analysis to the survey data on 7,647 households.

	primary		secondary	
	population per facility	% public	population per facility	% public
North Central	3,205	62%	49,729	57%
North East	6,234	86%	162,355	95%
North West	7,170	91%	199,181	76%
South East	5,437	35%	12,506	8%
South South	6,854	67%	25,213	28%
South West	5,421	54%	29,566	26%
Nigeria	5,585	67%	38,383	28%

Authors' estimates from FMOH data

31. This disparity is largely due to the much greater numbers of private sector secondary facilities operating in the south, and to a lesser extent in the center of the country. Overall, private providers account for 72% of secondary facilities, but only 5% in the North East and 24% in the North West, compared to over 90% in the South East and over 80% in the South South and South West. In the North Central Zone, just over half of secondary facilities are private sector. The large number of private secondary facilities in the south accounts for the low population to facility ratios in these regions (as well as for the low all-Nigeria average). At the same time, the north also has less public sector secondary hospitals. Population to facility ratios for public secondary facilities in the North East and North West are more than double the ratios in the South West, South South, and North Central zones.

Figure 30. Comprehensive PHC centers and general hospitals per 100,000 population, Nigeria, 2001



Source: Authors' estimates from data in Adeniyi *et al.* (2001).

32. Facility survey data indicate that the availability of hospitals services in the South South zone is similar to the northern regions. In general, the regional patterns shown by the 2000 FMOH administrative data are confirmed by the 2001 NPHCDA survey, which puts in the same category general hospitals and comprehensive PHC centers (which provide a number of secondary inpatient services). Figure 30 shows that this level of facility is concentrated in the South East, South West, and to a lesser extent in the North Central zones.³⁰ The number of comprehensive PHC centers and general hospitals per capita in the North West and North East is much lower.

³⁰ For ease of visual interpretation, the graphs present facilities per 100,000 population rather than population per facility ratios.

Private facilities are the majority in the South East and South West, but there are also more public sector facilities per capita in these regions than in the north. In the southern part of the country, the South South region, however, has ratios comparable to the northern regions. This result differs from Table 18 but is consistent with the 1999 NDHS data presented in Table 19.

33. *Private non-profit secondary facilities are important in the South East.* The private non-profit sector, often church missions, does not operate a significant proportion of secondary facilities in any region except for the South East, where they represent just over 10% of the sample.

34. *However, private for-profit hospitals tend to be small and non-profit hospitals tend to be large.* Facility numbers may be misleading about real service capacity. For example in Benue state, although 76% of secondary facilities are private for-profit, they account for only 8% of bed capacity. Conversely, private non-profit hospitals, run by church missions, account for 17% of the total number of secondary facilities in the state but for 61% of hospital bed capacity.

Table 19. Health facility availability, Nigeria, 1999 (% of households)

	urban	rural	Overall
PHC facility within 5 km	80	66	71
North Central	57	60	63
North East	80	63	65
North West	86	85	67
South East	79	58	84
South South	80	77	62
South West	87	82	83
hospital within 20 km	78	58	64
North Central	66	66	67
North East	60	32	45
North West	63	57	60
South East	85	79	79
South South	58	57	61
South West	77	53	70

Authors' estimates from 1999 NDHS data. Similar data not available from 2003 NDHS

35. *Hospitals are most available in urban areas and least available in rural areas of the North.* Regional patterns are confirmed by the 1999 NDHS data, which also provide information on urban/rural differences in availability of hospital services. Table 19 provides estimates of the proportion of households living within 20 km of a hospital (public or private). Overall, 64% of the population is within this distance from a hospital, but the proportions are lower in the North East (45%), North West (60%), and South South (61%), than in the other parts of the country. As would be expected, urban areas are better served, as 78% of households are within 20 km of a hospital, compared to 58% in rural areas. Urban areas in the North East, North West, and South South zones have the lowest proportions, around 60% within 20 km of a hospital. In rural areas, availability is by far the lowest in the North East, with only 32% of households within 20 km of a hospital, while availability is highest in the South East.

Table 20. Functioning of referral within wards, Nigeria, 2001 (% of wards) (n=400 wards)

	with referral center	operating 2-way referral	with transport for referral
North Central	54	48	9
North East	45	27	13
North West	62	38	16
South East	45	42	3
South South	77	49	9
South West	61	57	10
Nigeria	58	44	11

Source is Adeniyi *et al.* (2001).

36. *The ward (district) referral system is functioning in around two-thirds of districts.* An important component of the “classic” PHC strategy, adopted by a number of countries in the 1980s and early 1990s, is the integration of primary and first-referral services under a single administrative structure in catchment areas (often called districts) of around 100,000 or 200,000 people. In Nigeria, the division of responsibilities between local governments, responsible for primary health care, and state governments, responsible for secondary-level services, is a structural barrier to full implementation of the district strategy. Nevertheless, the ward system was implemented in Nigeria, involving collaborative arrangements between states and local governments as well as between individual secondary (first-referral) hospitals and PHC facilities. The 2001 survey of PHC services in 202 LGAs collected information on referral in 400 wards which provides indications of how well the “district” model is functioning. It found that 58% of wards had a referral facility (Table 20). Two-way referral was functioning in 44% of wards, while only 11% had transport available for referral.³¹

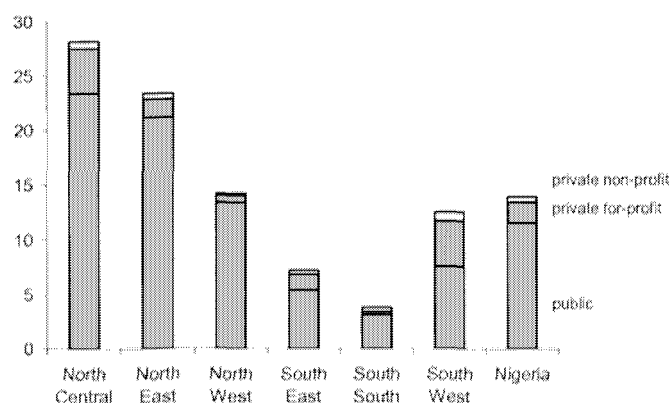
Primary Health Care Facilities

37. *Overall numbers of PHC facilities suggest reasonable availability, with less regional disparities than is the case with hospitals.* According to FMOH data, in 2000, there were over 13,000 public sector PHC facilities and almost 7,000 private PHC facilities, for a total of about 20,000. The overall population to facility ratio of around 5,500 suggests reasonable availability of PHC services. Population-to -facility ratios are highest in the North East, North West, and South South zones (Table 18), a pattern largely consistent with the data on secondary services. However the regional differences are not as great, and this is due to the large number of public sector PHC facilities in the northern regions. In fact, when considering only public sector PHC facilities, population to facility ratios are better in the north than in the south.

38. Data on availability of PHC facilities from the 1999 NDHS provide further evidence. Table 19 shows the estimated proportion of households living within 5 km of any type of PHC facility. It indicates that, overall, 71% of households are within 5 km of a PHC facility. Similar to the pattern of facility numbers, the proportions are highest in the South East and South West (over 80%), compared to the South South and the northern regions (around 65%). In urban areas, 80% of households are within 5 km of a PHC facility, compared to 66% in rural areas. In urban areas, the North Central zone unexpectedly has the lowest proportion (57%), while availability in other regions is similarly high. In rural areas, the South East and South West zones have the highest proportions of households within 5 km of a PHC facility, over 80%. Availability in rural areas of the South South and northern zones is comparable, around 65%.

³¹ This contrasts with the higher estimates for availability of transport discussed in the sections on equipment below – presumably only in some cases is available transport used for referral.

Figure 31. Health posts/clinics/dispensaries per 100,000 population, Nigeria, 2001

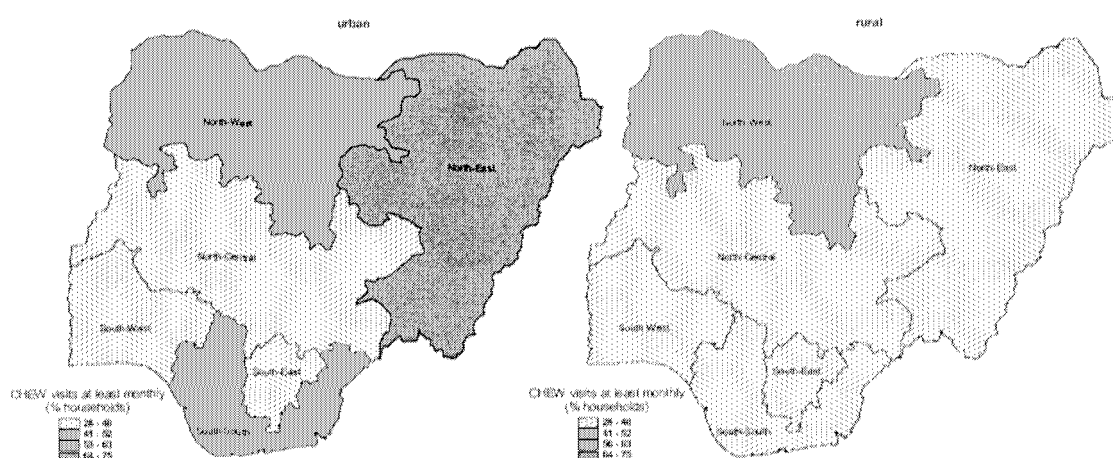


Authors' calculations from data in Adeniyi *et al.* (2001).

39. However, a facility survey indicates that most PHC facilities in the north provide lower-level services – health posts, clinics, and dispensaries. Figure 31, based on the 2001 NPHCDA survey of facilities in 202 LGAs, shows that there are significantly more lower-level PHC facilities per capita in the northern regions than in the south. In all regions, most lower-level facilities are operated by the public sector, although there is a significant concentration of private providers in the South West, which brings its per capita number closer to the national average.

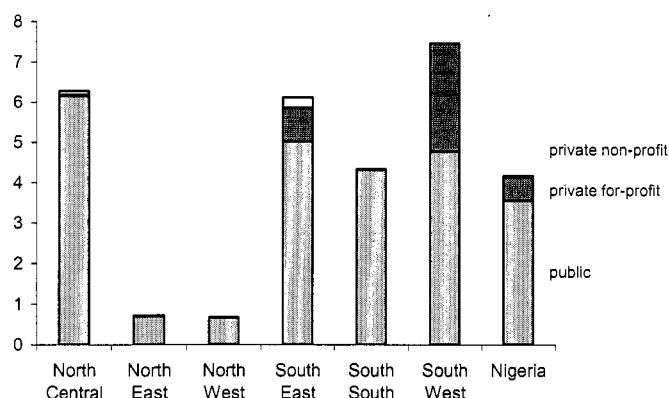
40. Data on availability of community health workers similarly suggest that lower-level public sector PHC services are more available in the north, but concentrated in urban areas. Figure 32 presents estimates from the 1999 NDHS on the availability of community health workers in urban and rural areas. Overall, it is estimated that only 39% of households live in communities visited by a community health worker (CHEW) at least once a month. The overall average is similar in urban areas (43%) as in rural areas (38%), except for the northern regions and to some extent the South South, where availability is concentrated in urban areas.

Figure 32. Community health extension worker (CHEW) visits at least monthly, Nigeria, 1999 (% households)



Authors' estimates from 1999 NDHS data.

Figure 33. Primary health care (PHC) centers per 100,000 population, Nigeria, 2001



Authors' calculations from data in Adeniyi *et al.* (2001).

41. *PHC centers, which provide higher-level services, are concentrated in the center and south.* Figure 33, based on the NPHCDA facility survey, shows that in contrast with lower-level facilities, there are far fewer PHC centers per capita in the northern regions than in the south of the country. Overall, the 2001 survey indicates that there are around 24,000 people per PHC center, which slightly exceeds the standard range of 10,000 to 20,000 given in Table 17. The ratio is around 15,000 in the South East, South West, and North Center, compared to almost 150,000 in the North West and North East. The ratio of around 25,000 per PHC center in the South South is worse than in the rest of the south. Private for-profit providers operate a significant proportion of PHC centers in the South West and to a lesser extent in the South East. There are some private non-profit PHC centers in the South East.

Table 21. Registered pharmacies in Nigeria, 2003

	number	population per pharmacy
North Central	544	30,147
North East	114	280,702
North West	213	140,845
South East	348	99,425
South South	343	51,312
South West	1,189	48,360
total	2,751	42,421

Source is Pharmacists Council of Nigeria (2003).

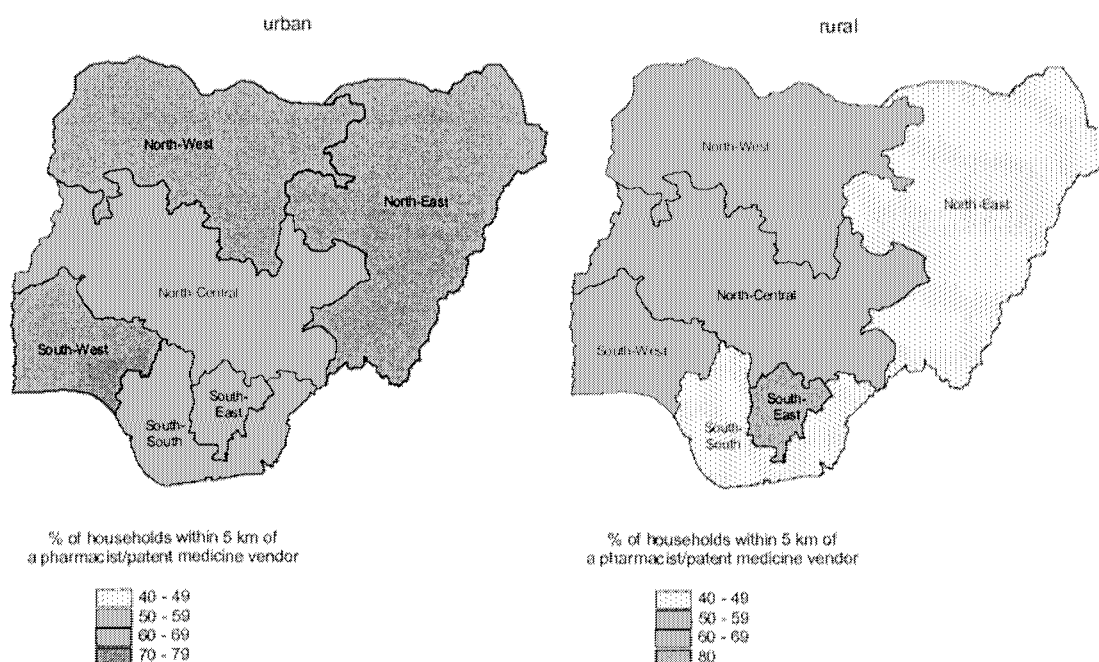
Pharmacies and Patent Medicine Vendors

42. *Patent medicine vendors, a legally-recognized category of drug seller, far outnumber registered pharmacies.* Registered pharmacies are licensed to fill prescriptions while patent medicine vendors are also a category recognized and licensed by the government to sell over the counter medicines. Patent medicine vendors are far more numerous than registered pharmacies and are significant providers of “informal” care. In 2003, there were 2,751 registered pharmacies, which represent significant growth from the 1,821 registered in 1992. In contrast, there may be 36,000 or more patent medicine vendors in the country. In addition, there are an unknown number of informal drug sellers. More details on the pharmaceutical retail sector are provided in Chapter 4.

43. *As with other private sector health services, registered pharmacies are concentrated in the south. In the South West zone, for example, there is one pharmacy for every 50,000 people, but in the North East, there is one for every 280,000 people (Table 21).*

44. *Patent medicine vendors are also more available in the south, but the regional disparities are not as great as with registered pharmacies. The 1999 NDHS collected data on distance to the nearest pharmacy or patent medicine vendor. Given the large numbers of patent medicine vendors, it is safe to assume that these estimates refer mostly to the availability of that category. Overall, 60% of households live within 5 km of a pharmacy or patent medicine vendor. These providers are most available in the South East, where 75% of households live within 5 km, and least available in the North East and South South, where the proportions are around 50%.*

Figure 34. Availability of pharmacists/patent medicine vendors, Nigeria, 1999 (% households living within 5 km)



Authors' estimates from 1999 NDHS data. Similar data not available from 2003 NDHS.

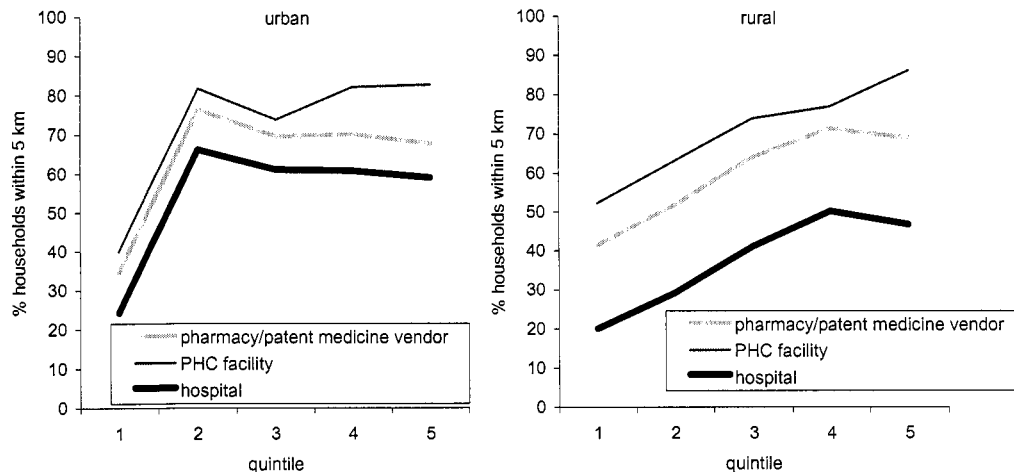
45. *Patent medicine vendors in the north are concentrated in urban areas, while in some states, there are more in rural areas. This may reflect a situation where patent medicine vendors establish where there is a combination of poor health services and sufficient purchasing power. Looking only at urban areas, availability of patent medicine dealers is as high in the north as it is in the South West, as over 70% of households live within 5 km of such a provider (Figure 34). In some regions, however, particularly the North Central and South South zones, availability of patent medicine vendors is higher in rural areas than in urban areas. A possible explanation for these patterns could be that patent medicine vendors establish themselves in situations where health services are limited but there is sufficient purchasing power in the community or neighborhood.*

Socio-Economic Differences in Health Service Availability

46. *In urban areas, availability of health services is lowest for the poorest, but similar for the rest of the population, while in rural areas socio-economic differences are evident along the scale. The 1999 NDHS data also allow description of socio-economic differences in availability of*

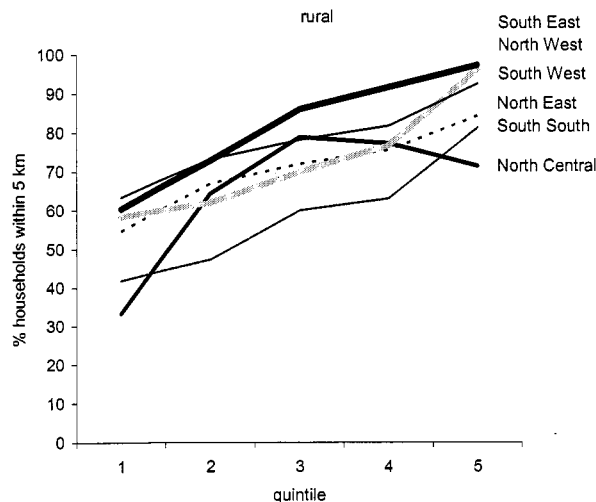
different types of health facilities. These are, of course, consistent with urban/rural and regional disparities, in that rural populations are generally poorer than urban residents, and the North East, North West, and South South zones are generally poorer than the rest of the country. Figure 35 indicates that within urban areas, the availability of health services, both public (most PHC are public sector) and private (patent medicine vendors), is significantly lower for the very poorest, but similar among the rest of the socio-economic scale. This is consistent with a situation where the poorest live in urban settlements/slums distant from city centers. In rural areas, differences in availability are evident along the socio-economic scale, increasing with each higher quintile.

Figure 35. Availability of health service providers by socio-economic status, Nigeria, 1999 (% households within 5 km)



Authors' estimates from 1999 NDHS data. Similar data not available from 2003 DHS

Figure 36. Availability of PHC facilities by socio-economic status and region, Nigeria, 1999 (% households within 5 km)



Authors' estimates from 1999 NDHS data.

47. *The relationship between poverty and low availability of health services holds in rural areas within each region.* Figure 36 describes shows how availability of PHC facilities changes by socio-economic status in rural areas within each region. It shows that the poor are less likely to be living close to a PHC facility in all regions. This shows that the relationship described in the

previous graph (Figure 35) is not only due to differences in health services between regions but also due to socio-economic differences between communities and households. In most regions, availability of PHC services increases steadily as socio-economic status rises. In urban areas within each region (not shown) the pattern is not clear).

Summary of Regional Patterns

48. The regional patterns shown by the different data sources are largely consistent and can be summarized as follows:

- North Central: The number of secondary hospitals per capita in this zone is lower than in the south, but considerably higher than in the North East and North West, with about half of the facilities in the private sector. Urban/rural disparities in the availability of hospital services are not evident, as around two-thirds of households live within 20 km of a hospital. The number of PHC facilities per capita (mostly public sector) is among the highest in the country, and this is true with regard to both lower-level facilities and PHC centers. Again, household survey data indicate that urban/rural differences are not large, although overall, the proportion of households living within 5 km of a PHC facility is not as high as the reported numbers of facilities would suggest, perhaps indicating geographic clustering of facilities in certain areas or states. Patent medicine vendors are readily available to more than half the population, and seem to be more available in rural areas than in urban. Like in all other zones, health services are less available to the poor in rural areas, although availability seems to be somewhat similar among the highest three quintiles (Figure 36).
- North East: The number of secondary hospitals per capita in the North East is much lower than in the center and south of the country, and there are large urban/rural disparities. Close to half of higher-level services (comprehensive PHC and secondary hospitals) are provided by the private sector, while PHC facilities are mostly public sector. The number of PHC facilities per capita in this zone is lower but comparable to the national average, but this is mostly due to large numbers of lower-level facilities, like health posts and dispensaries. Data on availability of community health workers suggest that these basic services are most functional in urban areas. The per capita number of PHC centers, which provide higher-level services, is clearly much lower than the national average. Urban/rural differences in availability of PHC services are not as pronounced as with hospitals. About half the population lives close to a patent medicine dealer, whose availability is significantly higher in urban areas. The rural poor are less likely to have health services closely available.
- North West: Along with the North East, availability of secondary hospitals in the North West is much lower than the rest of the country. A large difference between urban and rural areas is not evident, however. Also like the North East, the number of PHC facilities per capita is comparable to the rest of the country, but this is due to large numbers of lower-level services. With regard to PHC centers, availability is on par with the North East – much lower than rest of the country. Urban-rural differences in the availability of PHC centers are not evident. The private sector is not absent, but (along with the South South) accounts for among the lowest proportions of services in the country. Patent medicine vendors are within 5 km of about 60% of the population, and more available in urban areas than in rural. Like elsewhere, the rural poor are less likely to have access to all types of health services.
- South East: The South East has among the highest number of hospitals per capita in the country, with more than half operated by the private sector. The region has the highest proportion of private non-profit hospitals, and these likely account for a majority of

hospital capacity. Differences in availability of hospital services between urban and rural areas are not large. There is a lower concentration of lower-level PHC facilities than in the north, but much higher per capita number of PHC centers. Most PHC centers are public sector, although about 10-15% are private. The difference between urban and rural areas in PHC facility availability is larger than in most other regions. Patent medicine vendors are closely available to about three-quarters of the population, and more concentrated in rural areas. Health services are less available to the rural poor.

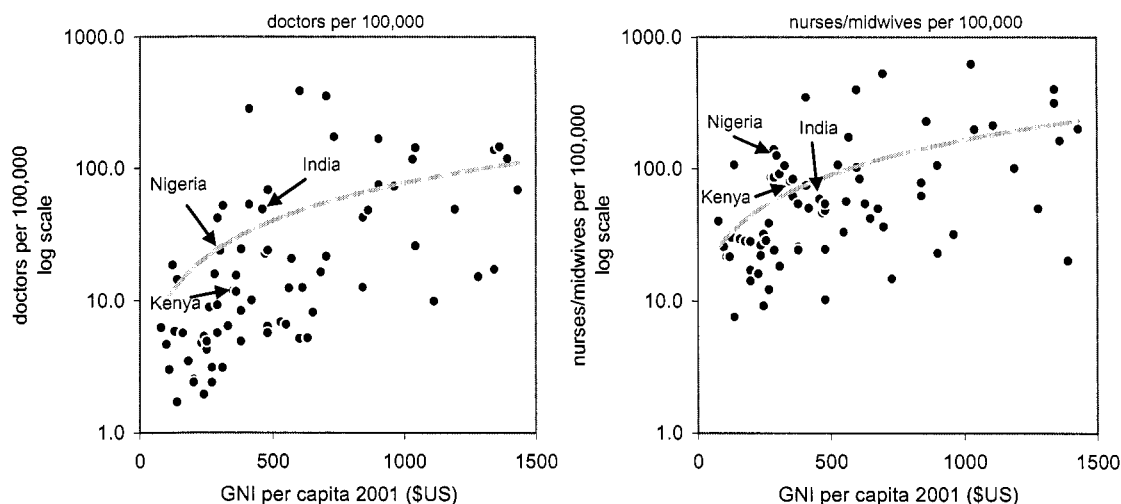
- South South: The different sources of data show that the health facility network in the South South zone is generally comparable to the northern regions – that is, poorer than the rest of the south and the North Central zone. The difference with the north is that there are not as many lower-level PHC facilities and more PHC centers in the South South. There are some private sector hospitals, but generally health facilities are managed by the public sector. About half the population lives close to a patent medicine vendor (comparable to the North East), but these are concentrated in urban areas. Health services are less available to the rural poor.
- South West: Along with the South East, the South West has the best health facility network in the country. The difference with the South East, likely due to Lagos, is that a majority of hospitals and a large proportion of PHC facilities are run by the private for-profit sector. Although present, the private non-profit sector is less important than in the South East. There is a significant difference between urban and rural areas in the availability of hospital services, although this is not the case with regard to PHC facilities. Patent medicine vendors are widely available, although somewhat less common in rural areas than in urban. Like in other regions, in rural areas health service availability is worse for the poor.

49. *Overall, considerable complexity is evident in the regional, urban/rural, and socio-economic distribution of health services in Nigeria.* However, it is clear that higher-level services are significantly less available in the North East and North West, especially in rural areas. It seems that the network is dominated in the north by lower-level PHC services, and that these are more functional in urban than in rural areas. Availability of health services in the South South zone is somewhat comparable to the northern regions. Urban-rural disparities in service availability are evident across the country, but not always. Patent medicine vendors are widely available, although somewhat less so in rural areas of the North East and South South. In urban areas across the country, health services are less available to the poorest, but similarly accessible to the rest of the population. In rural areas in all regions, availability of services steadily decreases as socio-economic status decreases.

Human Resources

50. *The federal government is responsible for training of doctors, states are largely responsible for nurse and midwife training, and professional associations are responsible for the registration of health professionals.* The federal government has the major responsibility for regulation and training of physicians, and operation of medical schools and teaching hospitals. State governments are responsible for schools of nursing and health technologies. Professional associations register health professionals. Government health workers are employed and paid by the level of government responsible for the service where they are working, that is, Federal for tertiary hospitals, States for secondary hospitals, and Local Government Authorities for PHC services. There are exceptions to this: in some States, professionals working in PHC facilities may be employed by the State Government, while skilled health staff employed by Federal parastatals and vertical programs may be working at the secondary and primary levels.

Figure 37. Doctors and nurses/midwives per 100,000 population by GNI per capita, 2001 (countries with GNI per capita under US\$1,500)



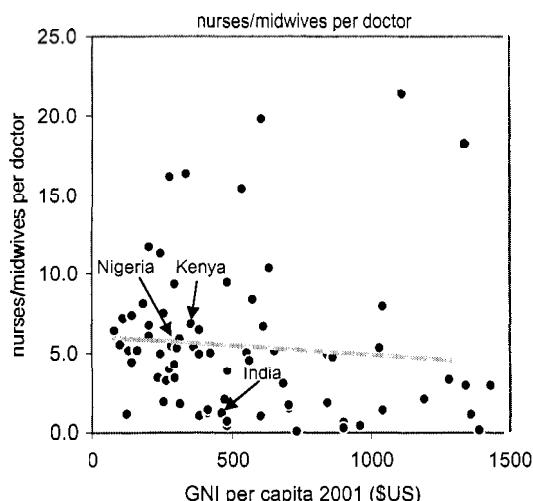
Note: Countries of the former Soviet Union and former Yugoslavia are excluded.
Data sources are World Development Indicators, Joint Learning Initiative (2004) and NPC and UNICEF (2001).

51. *Large numbers of doctors and nurses are being trained, although growth slowed during the 1990s.* Growth in the number of physicians registered in Nigeria was dramatic in the 1970s and 1980s, with numbers increasing from 5,300 in 1975 to 21,000 in 1985. The increase to 25,000 in 1995 was somewhat slower, although growth in the number of trained doctors is continuing, as there were a reported 31,000 in 2001. There are 15 medical schools in the country. A comparable pattern in the training of nurses and midwives is evident, as their number per capita increased seven-fold between 1970 and 1986. The number of newly trained nurses and midwives increased more slowly – slightly higher than population growth – over the next decade so that by 1997, there were reported to be 95,000 registered nurses and 70,000 registered midwives. (NPC and UNICEF, 2001)

52. *The overall number of doctors is in line with other countries of similar income per capita while the number of nurses exceeds what would be expected.* Figure 37 plots doctors and nurses/midwives per 100,000 population by gross national income (GNI) per capita in countries with per capita income under \$US 1,500. In Nigeria in 2001 (GNI \$US 300), there were estimated to be around 24 doctors per 100,000 population, which puts it on the trend line, situating it between the ratio of 12 in Kenya (GNI \$US 350) and 49 in India (GNI \$460). The number of nurses/midwives per capita in Nigeria is somewhat above the trend line, as there are an estimated 126 nurses/midwives per 100,000, compared to 80 in Kenya and 58 in India. Separating the two categories, there are estimated to be 73 nurses per 100,000 and 53 midwives per 100,000 in Nigeria.

53. *The balance between nurses and doctors is also in line with most countries of similar income per capita.* Figure 38 plots the ratio of nurses to doctors against GNI per capita. It indicates that there may be a trend towards fewer nurses per doctors (i.e. more doctors) as income rises, but there are a number of important exceptions. In any case, Nigeria, with a ratio of 5.3 nurses per doctor, is on the trend line, similar to Kenya (6.8) and higher than India (1.2).

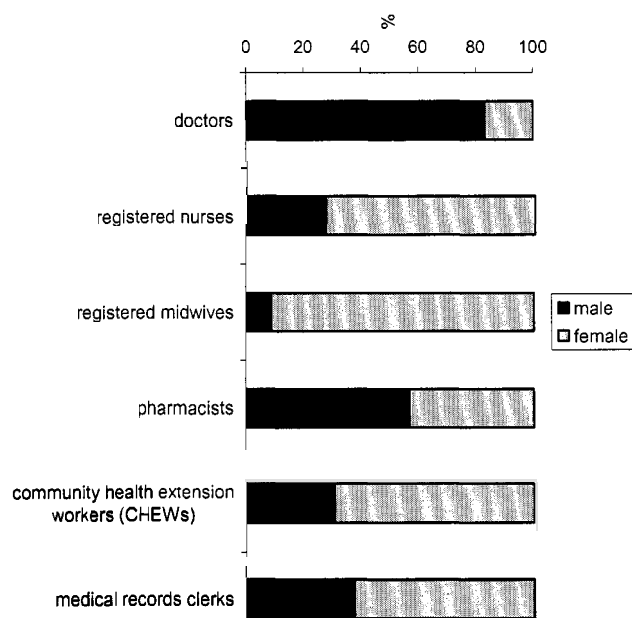
Figure 38. Nurses/midwives per doctor by GNI per capita, 2001 (countries with GNI per capita under US\$1,500)



Note: Countries of the former Soviet Union and former Yugoslavia are excluded.
Data sources are World Development Indicators, Joint Learning Initiative (2004) and NPC and UNICEF (2001).

54. *Most doctors are male and most nurses and midwives are female, and the majority of community health workers are female.* A 2003 survey of health personnel in five states (Ondo and Lagos in the South West, Cross River in the South South, Kano in the North West, and Plateau in the North Center) found that over 80% of doctors are male and over 70% of nurses and 90% of midwives are female. Pharmacists are more evenly divided by gender. Two-thirds of community health workers are female, which may improve cultural accessibility of services. Most records clerks are female (Figure 39).

Figure 39. Gender distribution of health personnel in 5 states, Nigeria, 2003 (%) (n=930)



Source is Dare *et al.* (2003).

55. *A large number of Nigerian doctors and a growing number of nurses are not working in Nigeria.* Table 22 presents information about registered doctors in 2003. It indicates that around 6,400 registered doctors, or 18% of the total, are abroad. For example, in 2003, there were 2,855 Nigerian physicians registered with the American Medical Association (Dare *et al.*, 2003).

Table 22. Professional situation of registered doctors, Nigeria, 2003

	number	%
Resident	3,228	9
public hospitals	3,562	10
private hospitals	19,571	55
Abroad	6,422	18
outside the profession	2,800	8
Total	35,584	100

Source is National Association of Resident Doctors, cited by Dare *et al.* (2003).

56. There is also some evidence that a growing number of Nigerian nurses are working abroad. Data from the nurses registry in the United Kingdom indicates that there were 509 Nigerian nurses working in that country in 2003, compared to 179 in 1999 (Dare *et al.*, 2003).

57. *For financial and career development reasons, the desire to migrate abroad is very common among Nigerian doctors.* The 2003 survey of health professionals mentioned above found that in three states (Lagos, Cross River and Plateau) between 50 and 60% of doctors expressed the desire to work abroad, while the proportion was 34% in Ondo and 24% in Kano. Depending on the state, remuneration was a stated reason by between 17 and 73%, while career development was cited by between 20 and 50% of respondents (Dare *et al.*, 2003). Similarly, a 1999 survey of 105 interns in two hospitals in Lagos found that 69% hoped to practice abroad, mostly for financial and professional development reasons. (Odusanya and Nwawolo, 2001)

Table 23. Public sector PHC personnel, Nigeria, 2001 (per 100,000 population)

	Medical Officer	Community Health Officer	Nurse or Midwife	Senior or Junior Community Health Extension Worker
North Central	0.3	4.9	12.3	33.7
North East	0.7	2.0	13.3	30.8
North West	0.2	1.8	3.7	23.9
South East	0.3	1.7	4.1	14.9
South South	0.6	3.1	7.3	18.0
South West	0.6	3.0	9.0	20.1
Nigeria	0.4	2.7	7.9	23.0

Authors' calculations from data in Adeniyi *et al.* (2001).

58. *There are more doctors per capita in the south, but there are no large regional differences in the numbers of nurses.* Incomplete data from 1994 indicate that, consistent with the regional disparities in higher-level health services discussed above, there are more doctors per capita in the south of the country than in the north. Although registered midwives are concentrated in the south, particularly the South East, nurses are more evenly distributed across the country (FPC and UNICEF 2001).

59. *Most doctors and nurses work in higher-level and private services.* Table 22 indicates that most doctors work in hospitals (88% of doctors practicing in Nigeria) and most work in private hospitals (74% of doctors practicing in Nigeria). Only 12% of practicing doctors in Nigeria work in private practice or in public sector PHC services. Table 23 presents data on public sector PHC personnel from a 2001 survey of 202 LGAs in two states in each of the six geopolitical zones. Overall, there were 0.4 medical officers (doctors) working in PHC services per 100,000 population; this can compare to the ratio of all practicing doctors to population of 24 per 100,000. Similarly, the survey found that overall 7.9 nurses/midwives are working in PHC services per 100,000, which can compare to the ratio of 126 per 100,000 for all nurses, indicating that most nurses work in higher-level services.

60. *There are generally more public sector PHC personnel per capita in the north than in the south.* Regional differences in medical officers (doctors) and community health officers (medical assistants) are not very evident, although there seem to be fewer of these higher-skilled categories working in PHC services in the North West and South East (Table 23). PHC nurses/midwives and community health workers, however, are generally more numerous in the north than in the south, consistent with the patterns of facilities discussed above.

Table 24. Traditional birth attendants and village health workers, Nigeria, 2001 (% of villages) (n=674)

	with trained traditional birth attendants (TBAs)	TBA kits replenished regularly	with trained village health workers (VHWs)	VHW kits replenished regularly	supervision of TBAs/VHWs taking place
North Central	56	9	30	9	33
North East	60	10	31	14	35
North West	63	13	65	13	33
South East	29	15	32	14	34
South South	56	4	50	4	27
South West	48	15	42	15	34
Nigeria	52	8	42	12	33

Source is Adeniyi *et al.* (2001).

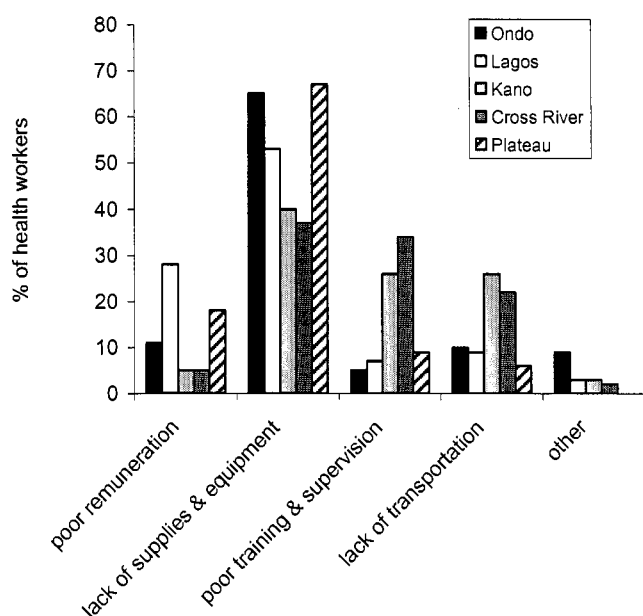
61. *Traditional birth attendants and village health workers have been trained in a significant proportion of communities, but most do not receive regular support from the health system.* An important part of Nigeria's PHC strategy in the 1980s and early 1990s was to train and support community-based health workers. The 2001 survey in 202 LGAs found that half of surveyed villages had a trained traditional birth attendant (TBA) and around 40% had a trained village health worker (VHW) (Table 24). This shows progress in implementing the strategy, but it appears that ongoing support from the health system—which has been shown in other countries as essential to the success of this strategy in improving health outcomes—is lacking. In only around 10% of surveyed villages were TBA and VHW kits replenished regularly, although supervision was taking place in a third of villages. Regional differences are not clear, although villages in the North West zone are more likely to have both trained TBAs and trained VHWs. Ongoing support was similar in the North West as in other regions, however.

62. *Remuneration and working conditions draw skilled health personnel to urban areas and the private sector.* A 2003 survey of health staff in five states found that between 10 and 25% expressed the wish to move to another part of the country. (Dare *et al.*, 2003) A 1999 survey of interns in two hospitals in Lagos found that, of the minority (40%) who intended to work in Nigeria, two-thirds wanted to settle in Lagos or Abuja, although most indicated a willingness to work in rural areas if "social amenities" were provided. (Odusanya and Nwawolo, 2001) At the

same time, although it is clear from the available data (Table 22) that skilled professionals such as doctors prefer to work in the private sector, information on their perceptions and incentives in this regard is not available.

63. *Human resource management in the public sector requires improvement.* Federal and state ministries of health and local health departments have little control over salary levels, yet the wage bill accounts for most of their budgets. Rigid civil service rules, although perhaps necessary in order to reduce arbitrary and corrupt management, inhibit effective personnel management and lead to undesirable results. For example, a 2002 survey of 700 health workers in 252 facilities in Lagos and Kogi States found that salaries basically depend on seniority, and have no relation to skills and qualifications, so that physicians, who tended to be younger, were usually paid less than other health staff. High turnover rates were evident, particularly for physicians, who averaged only 3 months in their current facility, compared to 2.7 years for all staff. (World Bank, 2003b)

Figure 40. Health worker perceptions of reasons for poor performance in 5 states, Nigeria, 2003 (% of health workers)



Source is Dare et al. (2003).

64. *Lack of support undermines performance and poor remuneration leads public sector health workers to supplement their incomes.* A 2003 survey in five states asked health staff their views on the main reasons for poor performance. Figure 40 shows that the highest proportion of health workers cited lack of supplies and equipment as underlying poor performance. Poor remuneration is stated as important in some states, but lack of training and supervision and other factors are more important in others. It is common in many developing countries for public sector health workers to provide services privately in order to supplement their income, and Nigeria is no exception. The 2003 survey in five states found that between 30 and 45% of health workers reported having a second source of income. The 2002 study in Lagos and Kogi states found that 42% of staff reported that salaries had not been paid for 6 months or more in the previous year, although non-payment of salaries was not a significant problem in Lagos. Analysis showed that the greater the extent of non-payment of salaries the higher the likelihood that staff sell drugs privately and provide services outside the facilities. (Khemani, 2004)

Drug supply

65. *Public sector drug procurement is decentralized and fragmented.* A 2002 FMOH assessment in the six geopolitical zones found that although state drug stores are generally well-organized for storage, they do not fill any central procurement function, as procurement is done directly by individual hospitals and local government authorities. (FMOH and WHO, 2002) The lack of central procurement prevents economies of scale and top-down control over the system, although it may provide a certain safeguard of diversification against poor central management.

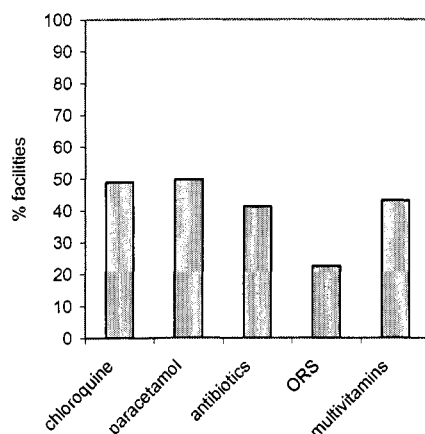
Table 25. Availability of essential drugs, Nigeria, 2001 (% of facilities with different proportions of essential drug package available) (n=674)

	100%	75-99%	50-74%	0-50%
North Central	0.8	7.6	20.5	50.0
North East	1.5	13.3	25.9	40.7
North West	1.6	20.5	28.7	44.3
South East	2.5	12.7	24.1	45.6
South South	0.0	8.9	25.6	42.2
South West	0.0	2.6	13.9	51.7
Nigeria	1.2	11.0	17.1	45.8

Source is Adeniyi *et al.* (2001).

66. *Drug supply is inadequate in public sector facilities, particularly PHC services.* When resources are available to local governments, salaries are the first priority so that there is often little left for other recurrent costs, particularly drugs, leading to “out of stock syndrome.” The 2002 FMOH assessment found that of 28 PHC facilities surveyed, fully 18 reported that they had not received drugs from the Government in the past two years and so staff were purchasing and selling stocks privately. (FMOH and WHO, 2002) The 2001 survey of 674 facilities in 202 LGAs described previously found that 46% had less than half of the essential drugs list available (Table 25). This varied little between regions, although the North East and South South regions had the lowest proportions, around 40%. The survey found that 54% of facilities had experienced drug stock-outs in the previous three months, and that this differed little by region, except for the North Central zone, where stock-outs were less frequent (Table 26). Similarly, a 2002 study of 252 government facilities in Lagos and Kogi States found that less than half of the facilities had government-supplied stocks of selected basic drugs. (Figure 41)

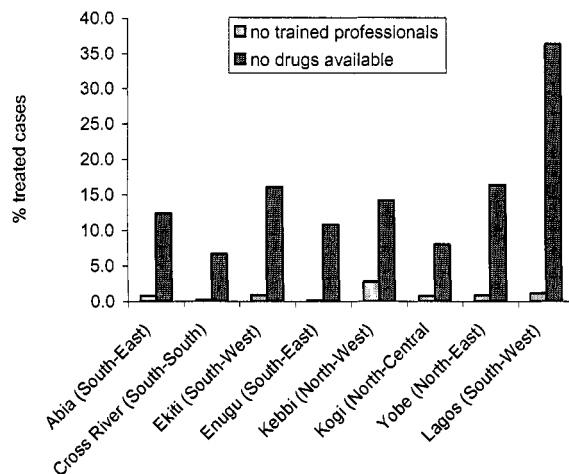
Figure 41. Government-supplied drug stocks, Lagos and Kogi States, Nigeria, 2002 (% of facilities) (n = 252)



Source is World Bank (2003b).

67. *Hospitals have more reliable drug supply, but not sufficient to meet their needs in many cases.* Secondary and tertiary facilities tend to have more regular drug supply, likely related to the better overall funding available at the federal and state levels. The 8 secondary-level facilities surveyed by the 2002 FMOH assessment were found to have regular drug supplies. However, a series of household surveys in 1999 and 2002 in 8 states found that among patients treated at public sector hospitals during the previous four weeks, lack of drugs was a major cause of dissatisfaction, ranging from around 5% in Cross River state to 35% in Lagos (Figure 42).

Figure 42. Causes of patient dissatisfaction with public hospitals, Nigeria, 1999 (% of treated cases of illness in the previous 4 weeks)



Sources are CWIQS (1999 and 2002).

68. *Drug revolving funds have been established widely, but have not been effective in ensuring reliable supply.* Drug revolving funds were an important component of the PHC strategy adopted by the government in the 1980s and 1990s and were established widely, sometimes with external donor support. In 1997 the Federal Government attempted to generalize drug revolving funds through support from the Petroleum Trust Fund. Poor management, political interference and corruption led to the discontinuation of this program in 1999. The 2001 survey of facilities in 202 LGAs found that around 40% of facilities had a drug revolving fund in place, and that in most regions, this proportion was over 60%, reaching 75-85% in the north. The lowest proportion (27%) was in the South West, where presumably private sector drug supply is ample, particularly in Lagos. However, the drug revolving funds do not seem to have ensured regular supply, as over half of facilities experienced a stock-out in the previous three months. The exception may be the North Central zone, where 86% of facilities have a fund in place and only 28% experienced a recent stock-out (Table 26).

69. The problems experienced by drug revolving funds include requirements by state and local governments that drug sale proceeds be centralized, which loosens accountability and control, so that funds are often used for purposes other than to replenish drug supply. Even when retained by the facility, funds are often used to meet other costs, in particular staff remuneration. More successful experiences are those where local governance and accountability have been strengthened overall, particularly with community involvement.

70. *Strong private sector supply improves drug availability.* There has been a strong private sector response to the shortcomings of the public system's drug supply. This has been facilitated by the regulatory environment, which officially registers both qualified pharmacists and "patent medicine dealers." The latter are not permitted to fill prescriptions, but in practice this is hardly

enforced. Informal and itinerant “drug hawkers” also sell drugs, often obtaining their supplies from patent medicine dealers. Much supply is imported, but there are also around 200 manufacturers in the country.

Table 26. Drug stock-outs, availability of essential drugs list, and drug revolving funds in health facilities, Nigeria, 2001 (n=674)

	stock-out in past 3 months	essential drugs list	drug revolving fund in place
North Central	27.8	67.4	85.6
North East	50.4	32.6	74.8
North West	60.7	66.4	88.5
South East	57.0	32.9	84.8
South South	54.4	44.4	61.1
South West	57.8	32.8	26.7
Nigeria	54.2	47.2	42.7

Source is Adeniyi *et al.* (2001).

71. As mentioned above, in many instances government health workers have *de facto* privatized drug supply in public facilities. The 2002 study of 252 public facilities in Lagos and Kogi States found that 38% had such privately-owned stocks of chloroquine, 39% had paracetamol, 34% had antibiotics, 17% had oral rehydration salts (ORS), and 32% had multivitamins. This was more common in Kogi than in Lagos, where private drug retailers are more accessible. (World Bank, 2003b)

72. The 2002 FMOH assessment included a household survey which found that 56% of respondents who were ill in the previous two weeks purchased drugs from a private seller, compared to 35% who obtained drugs from a public health facility. Of those who bought from private sources, 45% went to a drug seller, 30% to a private clinic, 14% to a pharmacist, 9% to a traditional healer, and 2% to a neighbor or family member. Similarly, a study of 158 diarrhea cases in Oyo State found that 55% bought treatments from private sources, mainly drug sellers, compared to 33% who obtained drugs at health facilities. (Omotade, *et al.*, 2000)

73. The cost to households of drugs is discussed in Chapter 5.

74. *There are problems with rational use of pharmaceuticals.* A large number of patients who receive medical advice from potentially unqualified drug sellers, raising concerns about inappropriate use of drugs. For example, it has been observed that street drug hawkers often choose drugs for their customers on the basis of the color and pictures on the packaging. (PATHS, 2003a) Problems have also been observed with the rational use of drugs prescribed in public sector facilities. A hospital assessment in Jigawa State found significant polypharmacy, with prescriptions in all facilities exceeding, on average, the 2-3 drugs recommended by WHO. The study also found that antibiotics and injections are over-used, as each are included in over 40% of prescriptions, compared to recommended levels of around 20% for antibiotics and around 10% for injections. (PATHS, 2003j) Consistent with this, the 2002 FMOH study of 36 government facilities across the country found that the average number of drugs per prescription was 4.7 and that 59% included antibiotics and 38% included injections. The study also assessed the appropriateness of prescribed treatments, judging that only 6% of prescriptions for diarrhea, 11% for acute respiratory infection (ARI), 21% for pneumonia met accepted standards. The FMOH has developed treatment guidelines, called “Standing Orders,” but only 38% of facilities had copies (FMOH and WHO, 2002).

75. *There are concerns about drug quality, but little empirical evidence is available.* It has been estimated that up to 40% of drugs in circulation in Nigeria are fake. However, this term tends to be applied to drugs which have not been registered by the National Agency for Food and Drug Administration and Control (NAFDAC), and for which there is no evidence about quality one way or another. (PATHS, 2003a) A laboratory study of the quality of basic drugs from 35 registered pharmacies in the Lagos and Abuja areas found that 48% of the 581 samples contained amounts of active ingredients outside of standard limits. However, most were just outside the limits, and the samples were as likely to contain too high of concentrations as too low. The proportion which contained no active ingredient was 1%. (Taylor *et al.*, 2001) However, this study did not include patent medicine dealers or drug hawkers, which supply a large proportion of the drugs sold in Nigeria. There is little empirical evidence regarding the quality of the drugs they sell.

76. With regard to expired drugs, the FMOH assessment of 36 facilities found that 7% of essential drugs in stock were expired.

77. *A regulatory framework is in place.* NAFDAC is responsible for regulation of pharmaceuticals and has registered a total of 4,363 medicines, including 83 traditional medicines which have been proved safe. A National Drug Policy was adopted in 1990. An Essential Drugs List was first published in 1986 with 204 drugs and now contains 484. This inclusive list is one reason why the 2002 FMOH assessment found that 90% of reviewed prescriptions were for drugs on the list. Only 24% of facilities, however, had a copy of the list itself (FMOH and WHO, 2002). A much larger facility survey in 2001 (Table 26) found that the list was available in 47% of facilities, ranging from 33% to 67% in different regions.

Equipment

78. *Most health facilities in all regions are poorly equipped.* The 2001 NPHCDA health facility survey in 202 LGAs measured the availability of a minimum package of equipment (defined by the researchers) in a sample of public and private sector 674 health facilities. It found that, overall only around 25% of health facilities had more than half of the minimum package of equipment, while 40% had less than a quarter of the set of equipment (Table 27). The proportion with more than half of the equipment package differed little by region. The proportion of facilities with less than a quarter of the equipment was higher in the North East, North West, and (surprisingly) South East, reaching 45-50%.

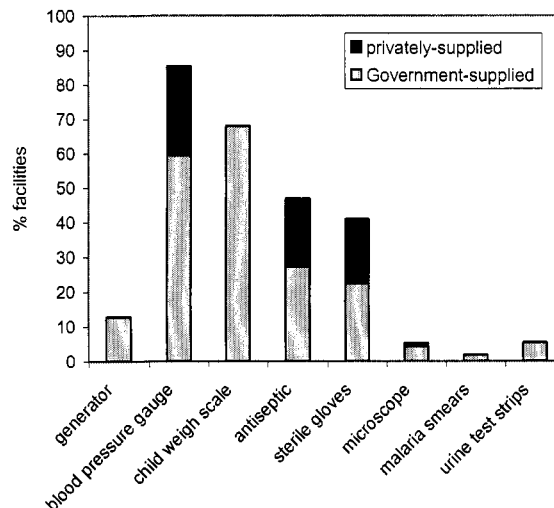
Table 27. Availability of minimum package of equipment by region, Nigeria, 2001 (% of facilities) (n=674 facilities)

	more than half of equipment package	less than one quarter of equipment package
North Central	27	35
North East	24	44
North West	23	49
South East	23	48
South South	27	33
South West	21	33
Nigeria	24	40

Source is Adeniyi *et al.* (2001).

79. As with drugs, health personnel privately supply some basic medical equipment and supplies. Figure 43 presents data from a 2002 survey of facilities in Lagos and Kogi, showing that a third of the available blood pressure gauges and up to half of the available antiseptics and sterile gloves were supplied by health personnel themselves.

Figure 43. Supplies and equipment in health facilities, Lagos and Kogi States, Nigeria, 2002 (% of facilities) (n = 252)



Source is World Bank (2003b).

80. *A significant number of higher-level facilities are poorly equipped.* Table 28 presents equipment availability by level of facility, showing that as would be expected, the proportion of facilities with less than half of the equipment package decreases as the level of facility increases. However, it is still striking that only 30-40% of PHC centers, comprehensive PHC centers and secondary hospitals have more than half of the defined set of equipment. Similarly, 30% of PHC centers and 22% of comprehensive PHC centers and secondary hospitals have less than one quarter of the equipment package.

Table 28. Availability of minimum package of equipment by level of facility, Nigeria, 2001 (% of facilities) (n=674 facilities)

	more than half of equipment package	less than one quarter of equipment package
Health posts/clinics/dispensaries	19	47
PHC centers	31	30
Comprehensive PHC centers and general hospitals	38	22

Source is Adeniyi *et al.* (2001).

81. *The survey found, however, that more facilities than might be expected had a functioning vehicle.* Overall, 58% of facilities had a functioning vehicle. Nor are regional patterns exactly what would be expected, as the highest proportions (70-75%) were in the South West and South South and the lowest (45-50%) in the South East and North East. A 2002 study in Lagos and Kogi states similarly found that around a third of facilities in both states had access to a vehicle in an emergency (World Bank, 2003b).

82. *About 66% of public sector PHC facilities and over 80% of public secondary facilities have basic obstetric care instruments, but more complicated equipment is available in a minority of*

public sector hospitals. A large survey of obstetric care in 4,503 health facilities in 12 states in 2003 collected data on equipment (Table 29). As would be expected, few lower-level PHC facilities had more than basic instruments, although even these (such as fetal stethoscope and sphygmomanometer) were available in only around two-thirds. This is consistent with the a survey in the South West in 1998, which found for example that 69% of PHC facilities had a fetal stethoscope, 59% had an oral thermometer, and 79% weigh scales for children (NPC and UNICEF, 2001). As would be expected, public sector secondary facilities have more basic obstetric equipment than PHC facilities, with 80-90% possessing for example a fetal stethoscope. More complicated equipment, including hepatitis and HIV tests, are not as available, and are reported in only between a quarter and half of the facilities. It is significant that only 61% of public secondary facilities have a sterilizer in their delivery wards.

Table 29. Availability of obstetric and reproductive health equipment, Nigeria (% of facilities) (n=4,503 facilities)

	private sector facilities	public sector secondary facilities	public sector primary facilities
fetal stethoscope	91	92	61
blood pressure gauge	93	79	67
artery forceps	89	88	72
Speculum	87	81	37
manual vacuum aspiration kit	54	30	9
Vacuum	43	19	10
Partograph	24	22	14
Sterilizer	82	61	
bleach solution	74	53	
hepatic test kits	23	24	
HIV test kits	33	52	

Source is Fatusi and Ijadunola (2003).

83. Availability of basic instruments is similar in private facilities as in public sector secondary facilities, while some types of more complicated equipment are more common in private facilities – except for HIV tests. Significantly more private facilities (82%) than public (62%) have sterilizing equipment.

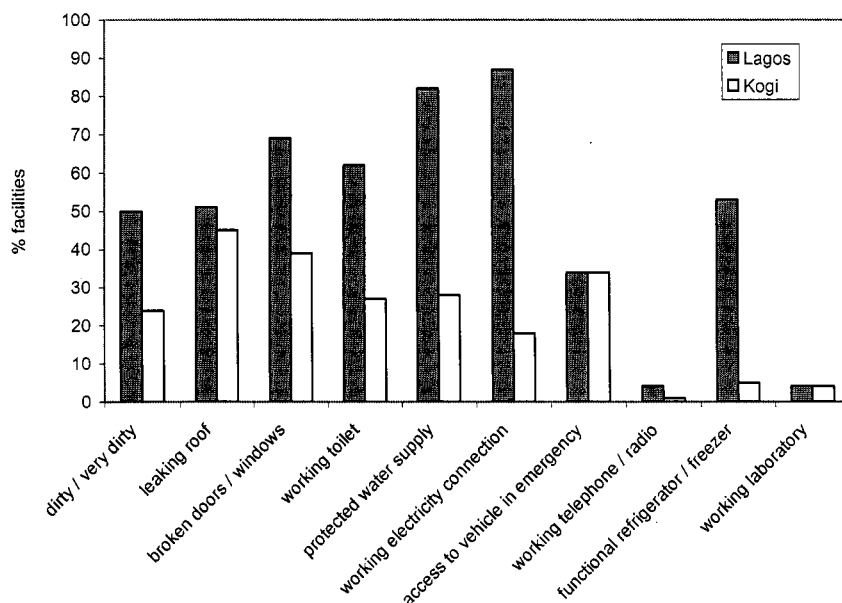
Support Services

84. *There are deficiencies in support services, particularly laboratories, although water and electricity supply is good in Lagos.* Lack of adequate funding for PHC services at the local level has undermined repair and maintenance, as well as capital investment, in services such as ambulances, laboratories, electricity, cold chain, water supply, and environmental sanitation. Figure 44 provides information from a survey of 252 health facilities in Lagos and Kogi states. In Lagos, over 75% of facilities had water and electricity supply, but around 50% suffer from poor cleanliness and maintenance. In Kogi, in contrast, 25% or less of the facilities had reliable water and electricity supply, but building maintenance was generally better. Only a few health facilities have a functioning laboratory in both states.

85. *Blood supply and screening is largely ad hoc, but a number of centralized transfusion centers are being established.* An assessment of hospital and PHC services in Jigawa State similarly found deficiencies in laboratory services, electricity supply, and cleanliness. (PATHS, 2003j) In addition, the Jigawa assessment found that blood transfusions are mainly obtained from donations by relatives and from private sellers, and that there are deficiencies in blood storage, mainly due to problems with electricity. However, all the hospitals visited were instituting HIV screening of

blood supplies. The government is making efforts to address the blood supply situation in order to reduce the risks of transmitting infectious diseases, particularly HIV, through transfusion. It recently opened the first of a planned seven centralized transfusion centers where screening will be routine and standardized. (IRIN, 2005)

Figure 44. Facility cleanliness, maintenance, equipment, and services, Lagos and Kogi States, Nigeria, 2002 (% of facilities) (n = 252)



Source is World Bank (2003b).

Health Management Information System

86. *The health management information system is challenged by the decentralized character of the health system itself.* More centralized health systems have difficulty with disease surveillance and health management information systems, so it is not surprising that these functions present challenges to Nigeria's decentralized and fragmented system. In theory, information should flow upwards from health providers and facilities to the LGA health administration, and then to state ministries of health, and then to the federal ministry of health. One considerable challenge is that in most cases, private health service providers are not included in this flow, missing a large proportion of the relevant data. Another problem is that the various vertical programs, unable to get the data they need from the existing system, are tempted to institute their own reporting requirements and systems. Consequently, a 1994 survey of PHC services found no less than 34 different reporting formats for different vertical programs.

87. *An information system is in place, but poorly implemented at both the facility and administrative levels.* The National Health Management Information System was established in 1990 and forms and procedures have been developed and implemented. However, there are difficulties at all levels. Assessments in Jigawa and Benue States, for example, indicate that reporting requirements are complex and unclear, facility record-keeping is incomplete, information is poorly transmitted through the system, capacity for data analysis is low within the SMOH, the collected information is not used by policy-makers, and there is no feedback to facilities. (PATHS, 2003c; PATHS, 2003h) A 2001 survey of health facilities in 202 LGAs found that only 44% had the needed HMIS forms on hand and that only 55% had sent completed

forms to the LGA in the previous three months. Only 16% reported receiving feedback from the LGA. (Table 30)

Table 30. Health management information system at the facility level, Nigeria (% of facilities) (n=674 facilities)

	have forms	have sent forms to LGA in past 3 months	receive feedback from LGA
North Central	44	66	13
North East	48	32	11
North West	53	69	16
South East	41	25	10
South South	49	57	12
South West	28	71	32
Nigeria	44	55	16

Source is Adeniyi *et al.* (2001).

88. At the LGA level, 92% of the 202 surveyed LGAs had forms on hand, but only 16% had sent completed forms to the state government. About 66% of LGAs had compiled statistics for the previous year (Adeniyi *et al.*, 2001).

89. At the state and federal levels, lacking timely and complete data from LGAs and facilities, there is little possibility for analyzing and using information for planning and policy development. The information relay between the states and the federal ministry is also weak, as basic information such as state health budgets and expenditures or facility numbers is difficult to obtain in the capital.

90. *Household surveys supplement the routine information system.* Nigeria is not alone in its difficulties in operating a reliable health management information system. For example, the United States, with its federal system, has similar challenges reporting, coordination and standardization. In such situations, facility and household surveys can often provide more reliable sources of data on a number of issues, and indeed this report relies heavily on a number of such studies. For example, the 2001 NPHCDA facility survey mentioned numerous times provides data not available elsewhere, and a repeat study would be very useful as Nigeria puts more priority on improving its health system. The government's experience with population-representative household surveys has improved dramatically in the past few years, as a *Nigeria Demographic and Health Survey* (NDHS) and a *Nigeria Living Standards Survey* (NLSS) were completed in 2004. A census planned for 2005 will provide essential demographic data.

HEALTH SERVICES AND PROGRAMS

91. *Packages of essential health services have not been officially defined, but the range of services to be provided by different levels of facilities is generally understood.* Although policy work has been done on this by the FMOH, standard service packages have not been officially adopted across the country. However, it is generally understood that PHC services comprise basic preventive and curative interventions, including health education, immunization, nutrition promotion and monitoring, management of uncomplicated malaria, diarrhea, respiratory infection and other common illnesses, antenatal care, family planning, and some basic surgical care such as incision and drainage. Secondary services include delivery care and management of delivery complications, care for complicated and severe malaria, and surgical services including obstetric, orthopedic and radiological. Most secondary facilities also provide a range of PHC services, such as antenatal care. The tertiary level is focused on medical training and specialized services,

including management of cancer, radiological investigation, renal dialysis and advanced surgical care. (NPC and UNICEF, 2001)

92. Health service utilization is analyzed in Chapter 2 while service availability is discussed here.

Immunization

93. *The performance of immunization services in Nigeria has risen and fallen based on domestic and international interest and funding.* The Expanded Program on Immunization (EPI) started in Nigeria in 1979. An assessment in 1983 explained low coverage by poor funding and vaccine supply, insufficient community mobilization, and over-reliance on high-cost mobile campaigns. These problems have continued to hamper routine immunization in the country. The program was modified in the mid 1980s with substantial international donor support, and achieved progress, largely through the use of campaigns. Coverage peaked in 1990 and then quickly deteriorated due to cuts in donor funding not compensated for by government support. For example, UNICEF funding for immunization was US\$ 90 million in 1990, dropping to US\$ 25 million in 1991 and to US\$ 10 million in subsequent years (NPC and UNICEF, 2001).

94. In the mid-1990s, the poor state of immunization services again received attention, so that the National Program on Immunization (NPI) was created as a parastatal agency and available funding increased through the Family Support Program, headed by the wife of the president. Confusion between roles of the NPI, the Family Support Program, the structures of the federal and state ministries of health, and the local health authorities, hampered improvement in the system. A 1997 assessment highlighted vaccine shortages, poor coordination, lack of community mobilization, poor health staff training, and deficiencies in the cold chain, particularly at the LGA level (FMOH, 1997). A 2001 facility survey in 202 LGAs found that immunization services are offered by 76% of facilities, but this presumably did not account for real functionality, since vaccine shortages were common. Only 12% of facilities provided immunization on a daily basis (Table 32). Various small assessments have found that vaccine shortages are an important factor behind low coverage rates. For example, a 2002 assessment of a USAID-supported project in Lagos, Abia, and Kano states found that despite material and training support to health services, vaccination coverage declined in project areas over a two-year period due to shortages in central supply (BASICS II, 2002).

95. *Despite recent setbacks, the polio eradication campaign has been well-supported and has achieved success in expanding coverage.* Because of Nigeria's importance as a reservoir of the disease, the polio eradication campaign has received considerable international and domestic support in recent years. Success in expanding coverage was recently interrupted by controversy over vaccine quality in some northern states. Resurgence in transmission of the disease has spread polio to other countries and set back the global eradication campaign. The political obstacles have now been resolved, and mass campaigns are being implemented in Nigeria and other countries in order to regain the lost ground.

96. *Due to the weakness of routine immunization, the polio eradication campaign has dominated immunization efforts in recent years, introducing a number of distortions.* The mass mobile campaigns are costly, both in terms of funds and in terms of diverting human resources from routine activities. Such campaigns have achieved success in terms of polio vaccine coverage, and can provide a means of rapidly increasing coverage of other antigens, but Nigeria's experience over the past two decades suggests that they cannot replace a sustainable routine immunization system. The polio campaign has increasingly relied on monetary incentives to motivate staff to reach coverage goals. This may come to be expected by health staff with regard to improving coverage of other types of vaccinations. Finally, the political profile of polio eradication, both positive and negative, may affect efforts to improve routine immunization. Positive political

attention to polio, translated in particular into international donor funding, has focused resources on this single antigen, possibly diverting limited capacity away from routine activities. Negative political attention, in particular the recent controversy over polio vaccination in some northern states, may affect community acceptance of other vaccines.

97. *There is renewed focus on improving immunization services, with the federal government retaining a leadership role.* Despite the overall division of responsibilities for health services between the federal, state, and local levels, the federal government has retained its strong role in immunization, for example specifying this as a federal responsibility in the proposed Health Act. The NPI is currently implementing a five-year strategic plan, including a five-year cold chain investment plan. After several years of vaccine shortages, government funding has improved and vaccine procurement has been handled by UNICEF. Cold chain and distribution, particularly at the LGA level, continue to pose problems, although this has been addressed to some extent by increase investment and private sector involvement. GAVI approved in 2001 US\$53.0 million for support to immunization services over five years and in 2003 US\$ 27.7 million for support to new and under-used vaccines. Table 31 describes the immunization schedule in Nigeria.

Table 31. Immunization schedule, Nigeria, 2005

birth	OPV0	BCG				HBV1
6 weeks	OPV1		DPT1			HBV2
10 weeks	OPV2		DPT2			
14 weeks	OPV3		DPT3			HBV3
9 months				measles	yellow fever	VitA1
15 months						VitA2

OPV oral polio vaccine; BCG Bacille Calmette-Guérin (tuberculosis vaccine); DPT diphtheria, pertussis, tetanus; HBV hepatitis-B vaccine; VitA vitamin A

Source is NPI.

98. *Divergence between administrative and survey-based estimates of coverage should be recognized when assessing program performance.* Government documents refer to successful achievement of 80% coverage with all antigens by 1990, but this is not at all evident in the data collected by the 1990 Demographic and Health Survey, which found that around 30% of children had received all recommended vaccinations. This divergence between official and survey-based estimates of immunization coverage remain wide even when accounting for the general observation in other countries that DHS estimates tend to be lower than facility-based data by about 10 to 20 percentage points, and is likely due to NPI's reliance on incomplete administrative estimates from only public sector facilities.

Child Health and Nutrition Services

99. *A large proportion of PHC services address child health, but data are limited on service composition and quality.* Of course, many of the interventions routinely provided by health facilities address child illness and a large proportion of patients are children with common conditions, particularly diarrhea, respiratory infection, malaria, and malnutrition. Data on the utilization of such services is discussed in Chapter 2. Detailed information on availability of treatments for these particular conditions is not available. A 2001 PHC facility survey found, however, that "general outpatient services," are available in 70-80% of facilities (Table 32). Because this is a basic service of PHC facilities, the rest of the facilities were presumably not functional. Data on service composition and quality are not available, but many of the ingredients are discussed in the previous sections (human resources, drugs, and equipment).

Table 32. Child health service availability, Nigeria, 2001 (% of facilities) (n=674)

	North Central	North East	North West	South East	South South	South West	Nigeria
<i>service is offered</i>							
general outpatient services	81	84	83	81	77	78	81
immunization	79	67	75	72	80	82	76
growth monitoring	55	44	38	41	59	71	51
school health services	28	21	15	22	19	37	23
<i>service is offered daily</i>							
general outpatient services	80	80	80	75	71	73	77
immunization	12	12	13	8	11	13	12
growth monitoring	16	7	6	6	10	16	10
school health services	8	3	5	3	4	10	5

Source is Adeniyi *et al.* (2001).

100. *IMCI has been introduced but has not yet been scaled-up.* The Integrated Management of Childhood Illness (IMCI) program is an important tool to improve the quality of child health services, involving training of health workers in childhood illness management as well as a community component. Supported by international partners (in particular WHO, UNICEF, and USAID), IMCI was introduced in 1997 and piloted in six LGAs. So far, the strategy has been introduced in 19 of the 36 states as well as the Federal Capital Territory. The community component, promoting practices such as hand washing, exclusive breastfeeding, and use of oral rehydration therapy (ORT) and bed nets, was introduced in 2002. For the most part, IMCI implementation has been limited to the pilot phase.

Table 33. Participation in nutritional programs, Nigeria, 1999-2002 (% children under-5)

	urban		rural	
	nutritional program	growth monitoring (weigh-in)	nutritional program	growth monitoring (weigh-in)
Kogi (North Central)	27.5	12.7	27.4	24.6
Yobe (North East)	8.3	11.0	3.0	5.8
Kebbi (North West)	2.1	2.1	5.1	7.1
Abia (South East)	25.2	52.0	22.2	43.3
Enugu (South East)	57.0	57.7	12.5	14.0
Cross River (South South)	57.0	57.7	12.5	14.0
Ekiti (South West)	4.7	51.9	0.0	50.1
Lagos (South West)	80.2	84.3	57.9	57.9

Sources are 1999 and 2002 CWIQS.

101. *A number of other initiatives relating to child health have been established over the years, usually under the impetus of international donors,* including the Baby Friendly Initiative, the Child Survival Program, the Women and Children Friendly Health Services Initiative, and the Roll Back Malaria program. In addition to such programs as well as the various departments of the FMOH, the National Program on Immunization (NPI) and the National Primary Health Care Development Agency (NPHCDA) are also of course working on child health services.

102. *Policy work on nutrition has advanced.* Growing recognition that high rates of child malnutrition underlie much child morbidity and mortality led to the creation in 1990 of the National Committee on Food and Nutrition, under the National Planning Commission, reflecting

the multisectoral approach to nutrition. A National Nutrition Policy was adopted in 2002. The FMOH contains a division on nutrition policy which works on standards and protocols.

103. *Nutritional services reach part of the population and there has been progress in particular areas such as breastfeeding promotion and micronutrient supplementation.* The 2001 facility survey found that half of PHC facilities offered growth monitoring, even though this was only available in 10% of facilities on a daily basis (Table 32). Table 33 provides household survey data on the proportions of under-five children in different States who participate in nutritional programs. This shows, first, that such programs are in place in many States, and second, that there are large differences between urban and rural areas and between States in their coverage. Over half of under-five children in urban areas of many States in the south participate in growth monitoring, while only 2% to 10% of children in urban and rural areas of some States in the north are covered.

104. A 2002 World Bank study of five LGAs in 12 States with active nutrition programs found deficiencies in the quality of nutritional interventions at the PHC level. Only 40% of sampled health workers had been trained in breastfeeding promotion, 29% in growth monitoring, and 28% in vitamin A supplementation. About 20% of the workers had access to nutritional protocols or guidelines. The survey found that although 70% of the children brought for consultation are weighed and 68% receive diet advice, only 55% are given information on vitamin A supplementation, and 37% are examined for anemia. (World Bank, 2002a)

105. Despite such deficiencies in quality, overall there has been progress in particular areas such as breastfeeding promotion and micronutrient supplementation. Data from the 2003 NDHS indicate that exclusive breastfeeding has become more common. A study in Osun state found that women were significantly more likely to exclusively breastfeed if they delivered in health centers where breastfeeding was promoted (Ojofeitimi et al., 2000). Salt iodization, advocated by UNICEF, is a preventive health success story in Nigeria, so that the 2003 NDHS found that 97.2% of households now use iodized salt. Vitamin A supplementation has also achieved a boost through distribution through vaccination campaigns.

Population, Reproductive and Maternal Health Services

106. *Building on groundwork in the 1980s and early 1990s, policy development on population and reproductive health has advanced in recent years.* A National Policy on Population was adopted in 1989 and the National Population Commission and Population Activities Fund Agency were created, the latter under the impetus of some international donors (including the World Bank). Along with the FMOH and the NPHCDA, the proliferation of government bodies involved in population and reproductive health issues contributed to duplication and poor coordination at the federal level. Like with nutrition and other areas, after a hiatus due to lack of international and domestic funding during the 1990s, interest and policy work have been revived since 2000. The National Population Commission was reconstituted, with its mandate focused on demographic registration, enumeration, and data issues; the Population Activities Fund Agency disbanded.

107. In 2001 the FMOH took the lead with a new National Reproductive Health Policy and Strategy that reflected the 1994 International Conference on Population and Development consensus in Cairo, which expanded the focus beyond family planning to reproductive health, including emphasis on human rights. The policy and strategy encompass safe motherhood, in particular antenatal and delivery care, family planning, adolescent reproductive health, prevention and treatment of sexually transmitted infections (STIs) and HIV/AIDS, and address harmful practices and reproductive rights.

108. Like child health, a number of different programs have been established to improve family planning, reproductive, and maternal health services. These include family planning programs, the Safe Motherhood Initiative, the Baby Friendly Initiative, Roll Back Malaria, and the national HIV/AIDS program.

Table 34. Reproductive and maternal health service availability, Nigeria, 2001 (% of facilities) (n=674)

	North Central	North East	North West	South East	South South	South West	Nigeria
<i>service is offered</i>							
family planning	61	42	37	38	49	48	46
antenatal care	79	53	46	53	66	78	63
deliveries	71	52	31	48	60	78	56
post-abortion care	18	16	15	15	13	11	15
<i>service is offered daily</i>							
family planning	39	26	10	17	33	35	27
antenatal care	37	16	10	8	27	28	22
deliveries	58	42	28	33	46	55	44
post-abortion care	7	9	9	6	8	4	7

Source is Adeniyi *et al.* (2001).

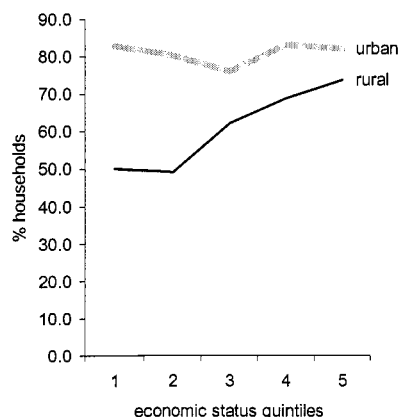
109. *Availability of family planning services expanded in the 1990s, but social, cultural and economic factors keep utilization low.* Also like basic child health interventions, reproductive and maternal health services – particularly family planning and antenatal and delivery care – are integral to the PHC strategy implemented by Nigeria since the 1980s. By the mid 1990s, family planning services had expanded through both public and private providers. Like with other aspects of the health system, international and domestic funding cuts, particularly affecting contraceptive supply, reduced the availability of family planning services by the end of the decade. Nevertheless, the 1999 NDHS indicated that modern contraceptives were available within 5 km to 70-80% of households in urban areas and to over 50% of households in rural areas, even among the poorest quintiles (Figure 45). Consistent with this, a 2001 facility survey found that 46% of facilities offered family planning services (Table 34). Utilization of modern contraceptives is far lower (8.9% of adult women in 2003), suggesting that preferences are more important than availability of services. This is supported by an estimate from the 2003 NDHS that over 80% of currently married women want more children. Although this may indicate that greater information and education efforts are required, structural social, cultural and economic factors are likely determinants. Nevertheless the 2003 DHS also estimates the unmet need for contraception of about 17 % indicating that there may be still some supply issues in certain areas (i.e. it could be a function of women not being able to readily obtain the type of contraceptive they desire).

110. *Antenatal care is a basic element of the PHC strategy, and the service is available in about two-thirds of health facilities.* The 2001 facility survey found that antenatal care is available in 63% of health facilities, although only 22% offered the service daily (Table 34). With regard to utilization, the 2003 NDHS found that around 60% of women received antenatal care during their most recent pregnancy.

111. *The quality of antenatal care could be improved, particularly in rural areas.* The 2003 NDHS collected data on the content of antenatal care which provide indicators for service quality (Table 35). About 80% of the women who receive antenatal care reported having their weight and blood pressure measured. One would expect that such basic diagnostic interventions would be done in all cases, but there may be deficiencies in instrument availability (discussed in a previous section). Only around 66% had urine or blood samples taken, while just over 50% were

informed of signs for pregnancy complications. Overall, this presents a picture of poor quality care. Quality is considerably lower in rural areas, as for example, around 50% of women in rural areas had a urine or blood sample taken, compared to over 80% in rural areas.

Figure 45. Availability of modern contraceptive method within 5 km, Nigeria 1999 (% of households)



Authors' estimates from 1999 NDHS data.

112. *Traditional birth attendants have been trained in about half of communities, but few receive continuing support.* Training of traditional birth attendants (TBA) is also an important element of the PHC strategy adopted by Nigeria in the 1980s. A 2001 survey of 674 villages in 202 LGAs across the country found that 52% of villages had a trained TBA, but only 8% were regularly supplied with delivery kits (see Table 24 above), indicating poor follow-up support by the health system to TBA training programs. The 2003 NDHS found that 20% of deliveries are assisted by a TBA, 24% in rural areas and 12% in urban areas.

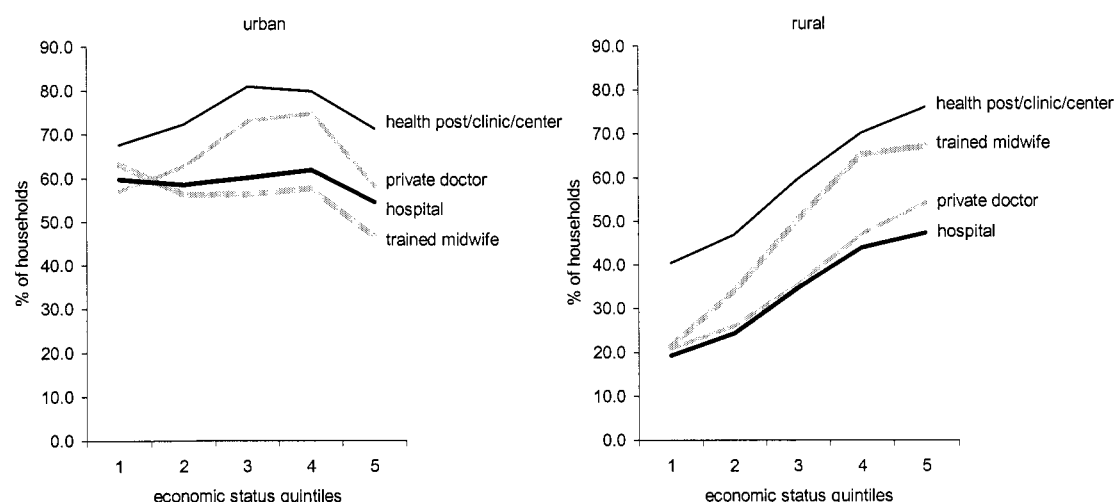
Table 35. Quality of antenatal care, Nigeria, 2003 (% of women who received antenatal care) (n=2,462)

	urban	rural	Nigeria
informed of signs of pregnancy complications	66	48	55
weight measured	92	77	83
height measured	64	51	57
blood pressure measured	91	74	81
urine sample taken	81	53	64
blood sample taken	81	55	65

Source is 2003 NDHS.

113. *Qualified delivery care is available to most urban households and to about two thirds of rural households, but much less available to the poor in rural areas.* The 1999 NDHS found that in urban areas, delivery services by a professional provider were available within 5 km to 88% of households. Overall in rural areas in 1999, 68% of households had delivery services available within 5 km. In urban areas, as could be expected, there is no clear pattern of differences in availability by socio-economic status. However, in rural areas, it is clear that availability of qualified delivery assistance is much lower for the poor, rising monotonically with socio-economic status. (Figure 46) The 1999 data also indicate that both in urban and rural areas, delivery services are most available from PHC facilities, which are mostly public sector. In urban areas, private doctors are the second most available provider, while in rural areas it is trained midwives.

Figure 46. Availability of qualified delivery assistance within 5 km, Nigeria, 1999 (% of households)



Authors' estimates from 1999 NDHS data.

114. *Utilization seems to be somewhat less than availability, likely due to cost and perhaps cultural factors.* The 2003 NDHS found that 36% of deliveries are assisted by qualified personnel – 59% in urban areas and 27% in rural areas. Indeed, regression analysis of data from the 1999 NDHS, controlling for household economic status, indicates that in urban areas, availability of delivery services is not a significant determinant of utilization. In rural areas, however, controlling for economic status, the odds of delivery by a health professional in community where services are available within 5 km are 1.85 times the odds in other communities.

115. *Most health workers have not received training to prevent neonatal mortality.* Training in “life saving skills” is an important strategy for improving neonatal resuscitation and care. A 2003 study of public sector services found that only 5-10% of relevant health care workers had received this training. (Fatusi and Ijadunola, 2003)

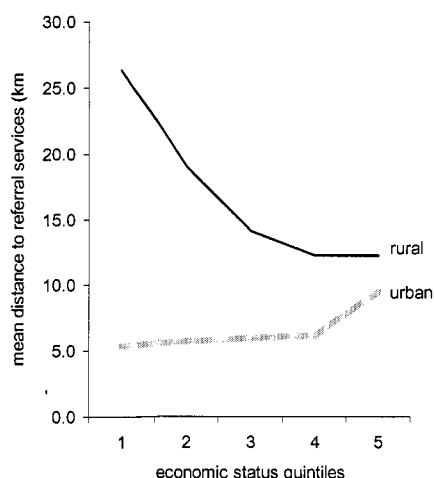
116. *Referral care for delivery complications – a key determinant of maternal mortality – is least available to the poor in rural areas.* Data from the 1999 NDHS on distance to the nearest referral services are described in Figure 47. Overall, in urban areas, the mean reported distance to such services is 6.4 km, while in rural areas it is 16.9 km. However, for households in the poorest quintile in rural areas, the mean distance is over 26 km, compared to 12 km for households in the highest quintile.

117. *Coverage of basic emergency obstetric care is insufficient in most regions, particularly in the north.* A 2003 study of public and private health facilities in 12 states (two in each geopolitical zone) estimated the coverage of basic and comprehensive emergency obstetric care (EOC). Basic EOC involves managed deliveries, particularly administration of drugs and assisted delivery, while comprehensive EOC includes the ability to provide caesarean-sections. Coverage targets cited were 4 basic EOC facilities and 1 comprehensive EOC facility per 500,000 population. This study estimated that only in Lagos the target for basic EOC coverage is met. The states in the North Center and North West had coverage of under 1 facility per 500,000 population. In the North East, Borno state had coverage of under 1 facility, while Taraba was higher, at almost 2 per 500,000 population. Similarly, in the South South zone, Cross River's coverage was under 1, while in Edo it was around 1.5 per 500,000 population. This poor

Chapter 3

coverage is attributed to shortcomings in midwifery training and lack of equipment, particularly in PHC facilities.

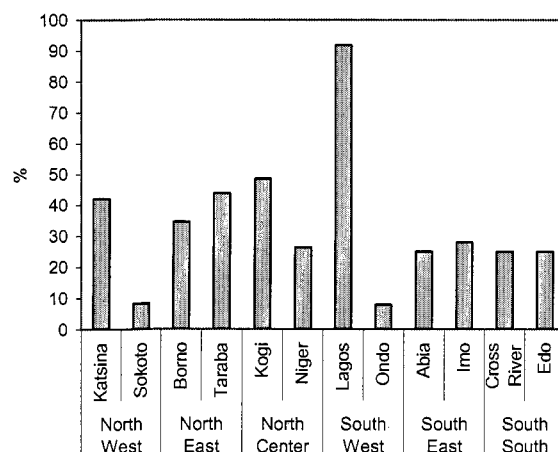
Figure 47. Mean distance to referral services for delivery complications, Nigeria, 1999 (km)



Authors' estimates from 1999 NDHS data.

118. *However, coverage of comprehensive emergency obstetric care is deemed acceptable.* With regard to comprehensive EOC, all surveyed states meet the target of one facility per 500,000 population. The highest coverage is in Lagos (South West) with 18, while the lowest is in Sokoto (North West). The study found that most facilities providing this care are in urban areas.

Figure 48. Comprehensive emergency obstetric care (EOC) services provided by public referral-level facilities, Nigeria, 2003



Source is Fatusi and Ijadanola (2003).

119. *In all states, private sector facilities provide higher comprehensive EOC coverage than do public sector facilities.* For example, in Cross River state (South South) there is 1 public and 4 private facilities per 500,000 which provide comprehensive EOC. In general, the majority of public referral-level facilities do not provide comprehensive EOC, even though they should all normally provide such care. The study found that only 30% of public referral facilities provided comprehensive EOC. Figure 48 shows that only in Lagos does the proportion exceed 50%, while

in most states 30-40% of public referral facilities provide comprehensive EOC. (Fatusi and Ijadunola, 2003)

120. *Quality of EOC is lacking in many facilities.* Deficiencies in equipment are discussed in a previous section, which presents data showing that only a minority of public sector hospitals have more than basic obstetrical equipment and instruments (Table 29). Similarly, assessments of emergency obstetric care services in Jigawa and Benue States have found deficiencies in the quality of such care. In Jigawa State, an assessment of two hospitals found shortages of equipment and inadequate training of staff. (PATHS, 2003d) In Benue State, a study of 100 health facilities found that only 6 could provide a complete set of basic emergency obstetric care services; for example, only 35 could perform cesarean sections and only 1 had forceps for assisted delivery. The case fatality rate was found to be high, at 7% of complicated deliveries (PATHS, 2003f).

HIV/AIDS Policy and Programs

121. *The policy and institutional framework for combating HIV/AIDS has been developed.* A National AIDS Control Program was established under the FMOH in 1986 and it is responsible for the health sector's response to the epidemic. In 2000, political commitment by the President led to the creation of a multisectoral National Action Committee on HIV/AIDS (NACA). State action committees have also been established. In 2001, a three-year strategic plan focused on institutional development and mass awareness campaigns, as well as targeted interventions for high-risk groups.

122. In 2003, a National Policy on HIV/AIDS was adopted with the following components which cover the range of HIV/AIDS activities:

123. prevention of HIV/AIDS transmission: promotion of safe sexual behavior, appropriate use of condoms, blood transfusion safety, voluntary counseling and testing, prevention of mother-to-child transmission, early treatment of sexually transmitted infections (STIs) and youth-focused interventions;

- i) law and ethics: respect for the rights of persons living with and affected by HIV/AIDS;
- ii) care and support to those infected or affected by HIV/AIDS: access to care for persons living with HIV/AIDS, home-based care, treatment of opportunistic infections, access to anti-retroviral therapy, care for orphans and vulnerable children, support for people affected by the disease, and certification of traditional healers and other practitioners;
- iii) communication: improving information and knowledge, and catalyzing community-based responses;
- iv) program development and management: institutional structure for multisectoral response, build capacity, implement programs, and monitoring and evaluation.

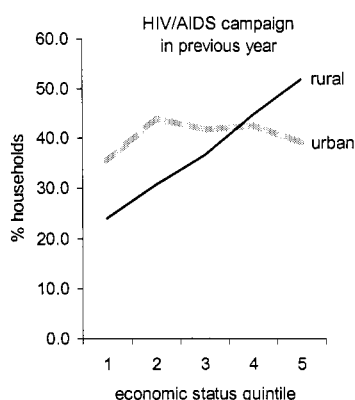
124. *International partners are supporting the national strategy.* The World Bank Multisectoral HIV/AIDS Program (MAP) is supporting a five-year US\$ 90 million project which started in 2002. In 2003, the Global Fund approved grants totaling US\$ 28.2 million over two years to promote the participation of civil society organizations in combating HIV/AIDS and to support the expansion of prevention of mother-to-child transmission and anti-retroviral therapy (ART) services. A number of bilateral donors support HIV/AIDS activities, in particular the US, which in 2004 had a budget of US\$ 55.5 million for prevention, treatment, and care interventions to be implemented by non-governmental actors.

125. *Preventive interventions have expanded but more effort is needed to reach the poor in rural areas.* Data from 1999 indicate that about a third of the population had been exposed to

HIV/AIDS awareness campaigns in the previous year, but the proportion is lower (around a quarter) among the poor in rural areas (Figure 49). Community awareness has expanded since then, suggesting that such campaigns have had an impact. The 1999 NDHS found, for example, that only 17% of women in urban areas and 7% in rural areas knew of condoms as a preventive measure, while in 2003, these proportions had increased to 60% and 40% respectively. A number of small initiatives, often involving non-governmental organizations, are targeting high-risk groups – an efficient strategy for reducing transmission of the virus. A 2001 study of 2,634 sex workers in seven cities in Nigeria found that 84% had been exposed to HIV prevention and condom promotion messages and that such exposure was significantly associated with condom use in a regression analysis controlling for other factors (Oladosu and Ladipo, 2001).

126. Voluntary counseling and testing has reportedly expanded but the authors do not have data on availability of this service.

Figure 49. HIV/AIDS campaign in community in previous year (% of households), Nigeria, 1999



Authors' estimates from 1999 NDHS data.

127. *Anti-retroviral treatment is available to a small number, but scaling-up faces considerable challenges.* In 2002, the FMOH started implementing a government-financed anti-retroviral therapy program with the distribution of drugs to 25 designated centers. In 2003, there were around 13,000 people being treated under the program. There are few patients receiving treatment by the private sector due to the cost. A 2004 assessment of 15 facilities providing treatment found that funding and drug supply problems as well as capacity constraints will need to be addressed in order to effectively scale-up the government program. (Durgavich *et al.*, 2004)

128. Anti-retroviral treatment to HIV positive pregnant women in order to prevent mother-to-child transmission has been introduced but confronts similar challenges to scaling up. It is reported that in 2002, only 141 HIV-positive pregnant women were treated with ARVs to prevent transmission.

129. *A surveillance system is in place and a recent prevalence survey provides important data for program evaluation and planning.* A surveillance system based on testing of antenatal care clients in sentinel sites has been established. In 2004, the government completed a national prevalence survey which provides crucial data for assessing the status of the epidemic and informing strategies and programs.

Malaria Strategy and Programs

130. *Nigeria adopted the Roll Back Malaria strategy in 2000 and developed a strategic plan in 2001.* The National Malaria and Vector Control Division of the FMOH takes the lead. The elements of the strategy are: i) case management; ii) prevention; iii) information, education, and communication and community mobilization; iv) partnerships; v) operational research; and vi) monitoring and evaluation.

131. *Improving case management will depend on progress in PHC services, but Nigeria has also adopted a home-based treatment strategy.* Due to increasing resistance to standard anti-malarial drugs, Nigeria recently changed its drug policy to artemisin combination therapy (ACT) for first-line treatment of uncomplicated malaria. A baseline assessment in 6 LGAs to inform the strategy found that 85% of health facilities in rural areas had stock-outs of anti-malarials during the previous three months, and that malaria treatment guidelines were not available in any facility. Achieving the strategy with regard to case management will be greatly dependent on improvements in the primary health care system. The study found that public facilities were underutilized, with over 80% treating less than 15 patients per day. Consistent with this, it was estimated that 80% of malaria cases are treated at home. Nigeria has therefore adopted a home-base care strategy, intending to make ACTs available directly to households through pharmaceutical retailers.

132. *With regard to prevention, intermittent prevent treatment (IPT) of pregnant women and insecticide-treated nets (ITNs) are the main strategies.* Data on availability of IPT services are not available to the authors. With regard to ITNs, the national program reports that around 1.2 million nets were distributed in 2002 and 1.5 million in 2003, representing a fraction of the total number needed to achieve significant coverage. A 2002 assessment found that local production is limited, and taxes on production materials are as high as 25% (UNICEF, 2002). The tax on imported nets was reduced a few years ago from 25% to 5%.

133. *Implementation of the strategy in some states is supported by the Global Fund.* In 2004, the Global Fund approved a two-year grant of US\$ 41.5 million to scale up the Roll Back Malaria strategy in 12 states and to introduce ACT in 6 states.

134. *Meeting service coverage targets will require significant effort.* Nigeria hosted an international conference in Abuja in 2000 and, by 2005, it committed to achieving 60% access to affordable treatment, 60% access to IPT for pregnant women, and 60% coverage of children and pregnant women with ITNs. Service utilization data from the 2003 NDHS indicate that these targets are unlikely to be met: only 33.9% of febrile children take an anti-malarial drug, 1.0% of pregnant women receive IPT, and 1.2% of under-five children and 1.3% of pregnant women sleep under an ITN.

Tuberculosis Strategy and Programs

135. *In 2002, a strategic plan for tuberculosis (TB) control was adopted, focusing on expansion of coverage of directly-observed treatment (short-course) (DOTS).* The National Tuberculosis and Leprosy Control Program, established in 1991 under the FMOH, takes the lead, with counterparts in each of the states.

136. *There has been progress in increasing DOTS coverage, but case detection is still very low.* In 2003, 2,233 DOTS treatment centers had been set up and 477 microscopy centers were in operation. By 2004, DOTS had been introduced in at least one LGA in each state. However, (smear-positive) case detection under DOTS is estimated to be very low, at 18% in 2003, little changed from 1997 and far from the global goal of 70%. Part of the reason for this is the weakness of public sector PHC services. In Jigawa state for example, the state TB control

program started in 2003 and established 10 treatment centers and 5 microscopy centers within a year. However, the weakness of established PHC services means that although TB activities are running in PHC facilities, utilization is low because most patients seek care elsewhere – in particular hospitals. (PATHS, 2003e) Recognizing this, the national program is working on involving private clinics in delivery of DOTS.

137. DOTS treatment success is reported to be 79%, close to the global goal of 85%.

138. *Government financial support has been limited, so that TB control is dependent on international donors.* In 2003, the national program's budget was US\$ 12.6 million, of which US\$ 3.9 million was budgeted by the federal government, but only US\$ 1.9 million released. A two-year grant of US\$ 9.8 million was approved by the Global Fund in 2003, but withdrawn due to insufficient financial management arrangements and counterpart funding. (WHO, 2005)

HEALTH SECTOR STRATEGY

139. *The public sector health system expanded dramatically in the 1970s and 80s.* At independence in 1960, health services in Nigeria were largely focused on curative care and centered in urban areas. In the 1960s and 70s, government considerably expanded the health care system, and its third national development plan for 1975-80 introduced a health sector development strategy focusing on primary health care. During the early 1980s, the Basic Health Services Scheme (BHSS), in line with the 1978 Alma Ata Declaration, envisioned organizing PHC services on a "district" model, by which one comprehensive health center, four health centers, and 20 clinics would serve a catchment population of 150,000. A new cadre of PHC workers was created and Schools of Health Technology were to be established in each state to train them.

140. *The 1988 National Health Policy further emphasized primary health care, and put in place the structures and division of responsibilities which characterize the system today.* The policy and subsequent directives defined the responsibilities of the federal, state, and local levels of governments, and created the various state and federal programs and parastatal agencies responsible for specific aspects of the sector.

141. In the 1980s and early 1990s, the strategy to improve primary health care involved training PHC workers, infrastructure investment, and setting up a governance structure which involved district and village development committees as well as LGA and state PHC Management Committees. The community-level component of this strategy included training village health workers and traditional birth attendants (TBAs), as well as a household registration and records system. Resources and technical assistance were to be provided to the LGAs by states and the federal government, which established the National Primary Health Care Development Agency (NPHCDA) in 1992 for this purpose. LGAs received federal grants to establish model PHC services on the district model. A large-scale effort to institute Bamako Initiative-type drug revolving funds was funded by a government oil revenue fund and external donors. The 1988 National Health policy specified user fees for curative services but significant subsidies for preventive interventions. Basic PHC services were broadly defined as including health education, adequate nutrition, safe water and sanitation, maternal and child health interventions, family planning, immunization, endemic and epidemic disease control, treatment of common diseases and injuries, and provision of essential drugs and supplies. Health education to promote individual responsibility was stressed.

142. *Progress was achieved in the creation of the new institutional structures, particularly relating to the decentralization of responsibility for PHC to the LGAs.* For example, as noted in previous sections, district and village committees are in place and drug revolving funds are operating in many areas. Similarly, investment in infrastructure, equipment, and training was

considerable, while vertical programs such as immunization achieved substantial coverage. (World Bank, 1991)

143. *However, institutional changes and investments were to a large extent not followed-up with sustained support, as the three levels of government, as well as external donors, reduced funding for health services during the military dictatorship of the 1990s.* Political interference, increased corruption, and general deterioration of public sector governance also severely affected the health system. Development of the system became characterized by one-off investments, in infrastructure or drugs, determined by political criteria, and with little or no provision for sustainability. In general, institutions, such as the various coordination committees at different levels, became non-functional, service availability and quality was reduced, and utilization declined.

Poverty Reduction Strategy and MDG program

144. *The government democratically-elected in 1999 started the difficult process of reversing the deterioration of the health system, including policy development and increasing spending on health.* Its 2004 Poverty Reduction Strategy Paper (PRSP), called the National Economic Empowerment and Development Strategy (NEEDS), includes a “Social Charter,” focusing on human development, including a significant component on the health sector. The overall goal is to improve the health status of Nigerians through strengthening primary health care services and undertaking health sector reforms. The “policy thrusts” are:

- i) to improve the government’s stewardship roles of policy and regulation, resource mobilization, and monitoring and evaluation;
- ii) “to strengthen the national health system and improve its management;”
- iii) to improve availability and management of health system resources;
- iv) to reduce the burden of priority diseases, including malaria, TB, HIV/AIDS, and reproductive conditions;
- v) to improve physical and financial access to quality health services;
- vi) to increase consumers’ awareness of their health rights and obligations; and
- vii) to foster partnership with all actors in the sector.

145. Table 37 lists the actions cited in the NEEDS to achieve these objectives. The more specific actions, such as establishing a National Hospital Services Commission and refurbishing teaching hospitals under an existing plan (VAMED), are related to federal responsibilities. More general intentions, such as improving health system resource management or providing a minimum package of health services, are improvements which depend on all three levels of government. More specifics about how these more general aspirations will be achieved are lacking. Similarly, rationalization of the structures of the FMOH and other federal institutions involved in health is a specific goal, but, aside from the intention to develop LGA capacity, changes in the institutional structure at the state and LGA levels, largely outside of federal control, are not mentioned.

146. *With regard to policy development, a range of important issues are to be addressed in a concrete manner, including national health accounts and insurance, reform of the federal hospital management board, strengthening of drug regulation, and development of a National Health Act.* Less specific are intentions to improve public-private partnerships and community participation. Although a strategy to improve the morale of health workers is mentioned,

development of a health human resource strategy, addressing requirements, training, and labor market incentives in a comprehensive way, is not included.

Table 36. Health sector component of the 2004 NEEDS

Policy	<ul style="list-style-type: none"> redefinition of the roles and responsibilities of the FMOH and other federal structures restructuring of the FMOH and other federal health institutions Review of existing health policies enactment of new National Health Act strengthen FMOH policy capacity strengthen use of evidence and information establish National Hospital Services Commission for management of tertiary hospitals Burden of disease study study private health sector and develop public-private partnership policy enhance coordination of development partners
Financing	<ul style="list-style-type: none"> National Health Accounts develop health care financing strategy National Health Insurance Scheme advocacy for increased budgetary allocation to health at all levels
hospitals and other higher-level Services	<ul style="list-style-type: none"> refurbish teaching hospitals establish mechanism for measuring performance of tertiary hospitals refurbish National Drug Production Laboratory establish National Blood Transfusion system
health system Resources	<ul style="list-style-type: none"> establish systems for efficient management of health resources strategy to improve health workers' attitude, morale and commitment establish reliable supply system for drugs and medical supplies strengthen drug regulation (NAFDAC) enabling environment for local manufacture of 70% of essential drug and ARV needs
primary health Care	<ul style="list-style-type: none"> refurbish PHC facilities strengthen LGA capacity rapid and sustainable increase in routine immunization provision of a minimum package of health services to all Nigerians increase antenatal, postnatal, and family planning services
disease control	<ul style="list-style-type: none"> strategic plans for malaria, TB, reproductive health, etc. develop health sector response to HIV/AIDS strengthen disease-specific initiatives (eg. guinea worm) stop polio transmission by end 2004 detection and response to epidemics
outreach and participation	<ul style="list-style-type: none"> increase consumers' awareness of personal obligations and rights to better health enhance community participation in provision and financing of health services campaign for eradication of harmful traditional practices

147. *A number of states have also developed State Economic Empowerment and Development Strategies (SEEDS). Box 1 discusses examples from Lagos and Enugu States. In addition, in some states, local strategies (LEEDS) are being developed. All of these documents – federal, state, and local – include objectives and actions related to primary health care. This reflects less a lack of clarity about the division of responsibilities – since it is widely accepted that LGAs are responsible for PHC – and more the recognition that LGAs require significant support to fulfill their responsibility. In recent years, such support was largely not forthcoming. As Nigeria moves*

forward, the NEEDS and SEEDs should provide a basis for the different levels of government to work together to improve PHC services.

Box 1. The health components of state poverty reduction strategies

A number of states have developed State Economic Empowerment and Development Strategies (SEEDS) which include actions in the health sector. For example, the Lagos SEEDS devotes a chapter to health and a chapter to HIV/AIDS. The main components of the Lagos strategy are: improving the stewardship role of government, improving health system management, fighting HIV/AIDS, reducing the burden of disease and increasing access to health services, improving resource management, improving quality, increasing consumer awareness and community involvement, and promoting partnership.

Specific actions include instituting a state health insurance scheme, restructuring of the state Ministry of Health, increasing management autonomy for state hospitals, revising the state essential drugs list, and increasing private sector involvement in state hospital services such as radiology and pharmacy. Like the federal NEEDS, specificity is greater with regard to state responsibilities, particularly hospital services, and less with regard to primary health care, the responsibility of local government. For example, the Lagos SEEDS states that an objective is "revitalization of the Primary Health Care (PHC) system to effectively and efficiently deliver a minimum package of health care [...]," but there is little on how this is to be achieved beyond increasing the capacity of LGAs. Nevertheless, the strategy document provides a very good basis for further policy development, assuming strong coordination with and support for the LGAs. The private sector is very strong in Lagos, and the document recognizes that it accounts for 60% of health care. Although the need for partnership is emphasized in a general way, details of how this would occur are not provided, indicating a need for further focus on this issue.

The Enugu SEEDS provides another example. Like the Lagos strategy, the document provides quantitative targets for improvements in health status; for example, infant mortality is to be reduced to 30 per 1,000 by 2009. In contrast to the federal and Lagos documents, the Enugu strategy is less a long list of actions and intentions in various areas and more an outline of structural reforms designed to address the key issues of strengthening PHC and integrating state and LGA actions in the health sector. The Enugu SEEDS states the intention of integrating primary and secondary services on a district model, which would involve joint governance by the state and LGAs in each district. Financing is also to be pooled: "Health resources from the various levels of government and international donor agencies will be consolidated under the Health Fund and applied at the various levels of healthcare." Drug revolving funds are to be instituted to address financing of pharmaceuticals. The strategy also indicates that investment in primary and secondary service infrastructure and equipment will be made, and immunization and disease control programs will be supported. The structural and financing reforms proposed in this state, particularly the sharing of responsibilities and funding between the state and LGAs, represent a serious effort to overcome the structural problems of the health system, will likely confront serious challenges of coordination and political will, and should provide important lessons for reform in other parts of the country.

Sources are Lagos State Government (2004) and Enugu State Government (2004).

148. *In 2004, the federal government developed a program to achieve progress towards the health-related MDGs in 14 target states.* The main areas of action are routine immunization, improving basic child health care (IMCI), improving maternal care, malaria prevention, and HIV/AIDS interventions. The document states that LGAs are primarily responsible for routine immunization and that there should be a "Charter" between the different levels of government on the issue. On maternal mortality, there is an innovative suggestion of collaboration with the National Union of Road Transport Workers on access to emergency obstetric care. Otherwise, implementation modalities on issues which are largely local and state responsibilities are not described. The MDG program also describes the federal government's health sector reform goals, which mirror the actions included in the NEEDS, but also include recognition that health human resource strategy development is needed.

National Health Act

149. *The federal government introduced to parliament in 2004 a National Health Bill which generally codifies the structures put in place by the 1988 Health Policy, answering some of the implementation questions raised by the NEEDS, the MDG program, and other health sector strategy documents.* In general, once it is enacted, the new National Health Act will codify the structures put in place by the 1988 Health Policy, particularly the division of responsibility between the federal, state and local governments, with a significant role in primary health care for federal vertical programs and a parastatal agency.

150. The objective of the Act is to regulate the national health system, including public and private providers, so that services are provided equitably to the population of the country. The objective is stated in realistic terms, indicating that services will depend on available resources and that access will be realized progressively. The national health system is defined as the federal and state ministries of health, federal and state parastatal agencies under the ministries of health, local government health authorities, ward (district) health committees, village health committees, private health providers, and traditional and alternative health providers. In line with the 1988 Policy, the Act states that the federal government is responsible for tertiary services, state governments are responsible for secondary services, and local governments are responsible for primary health care services.

151. *The Act strengthens the federal National Primary Health Care Agency (NPHCDA).* The functions of the federal Ministry of Health include ensuring the provision of tertiary and specialized hospital services, as well as policy development and planning, health information systems, and provision of technical assistance to the states. In addition, the Act suggests significant operational involvement of the federal government in primary health care services. There is a clear provision that the federal level is to ensure routine immunization, and more importantly the Act strengthens the National Primary Health Care Development Agency (NPHCDA).

152. *The Act creates a National Primary Health Care Development Fund, a potentially important instrument to channel federal and state resources to PHC services.* The Act confirms the NPHCDA, first created in 1992. It is to be governed by representatives from each of the three levels of government. The agency is to define the minimum standards of primary health care, carry out regular audits of health care personnel, and produce, in consultation with the states, periodic master plans for development of PHC services. In addition, the agency is to “inquire and advise” federal, state and local governments on funding for PHC. Most importantly, in a departure from the current situation, the Act creates the National Primary Health Care Development Fund, managed by the agency, intended to finance investment and recurrent costs for PHC, including drugs and salaries. The fund is to receive contributions from alcohol, tobacco and other taxes, grants from international donors and the federal government, and “counterpart” funding by state and local governments. The Act specifies that states and local governments which do not contribute their counterpart funding will not receive grants from the Fund.

153. This mechanism has the potential to both channel greater federal and state resources to PHC services. Along with this fund, the NPHCDA also will potentially increase federal involvement in PHC services. With this, the draft Act represents a serious effort to overcome the structural constraints to improving PHC services – particularly the lack of capacity and resources allocated to health at the local level. The amounts to be contributed by federal, state and local governments to the National Primary Health Care Development Fund are not mentioned, nor is a process outlined for how these will be determined.

154. Funds are to be disbursed through State Primary Health Care Boards (also new under the Act) for distribution to local government health authorities. The Act states that 60% will be allocated “on the basis of equality of States” and 40% on the basis of population size, child and maternal mortality, HIV prevalence, and other criteria that may be determined by the board of the NPHCDA.

155. *The functions of the state ministries of health outlined in the Act also suggest significant involvement in primary health care services.* In addition to state-level policy and planning, the state ministries of health are to “coordinate” the funding and financial management of local government health authorities, provide technical and material support to the local level, and generally “facilitate and promote the provision of comprehensive primary health services and community hospital services.”

156. The Act creates State Primary Health Care Boards, including rotating representatives of local governments, to manage the funds which are to come from the National Primary Health Care Development Fund. These boards are to be “responsible for the coordination of planning, budgeting, provision and monitoring of all primary health care services [...]”

157. At the same time, the Act specifies that local governments are “responsible for the coordination of planning, budgeting, provision and monitoring of all primary health care services [...]” This is exactly the same phrase used with regard to the State Primary Health Care Boards. This kind of ambiguity, along with the fact that the Act recognizes the division of responsibility between the three levels of government at the same time as creating federal and state structures to intervene in primary health care, is reminiscent of the current situation.

158. *The Act confirms or sets up a number of governance structures.* These include the National Health Council and State Health Councils which are to bring together federal, state, and local health authorities to advise on policy. Consultative bodies at the federal and state levels are to involve non-governmental stakeholders, including international donors. Consistent with the 1988 Health Policy, the Act confirms Ward (district) Health Committees, at the sub-LGA level, which are to coordinate PHC services in each ward. A Village Health Committee is to be created by local government authorities in each community without a PHC center, and the Act provides quite specific stipulations regarding its functions – including setting up a health post, and selecting, supervising, and remunerating village health workers and traditional birth attendants.

159. *The Act also confirms the existing structure of hospital management boards, setting out government power to approve new public and private hospital services.* It establishes the National Hospital Services Agency, which is to work on hospital policy and standards, and will consider applications and make recommendations to the FMOH on approvals (Certificates of Need) for new public and private tertiary hospitals. State Hospital Management Boards are responsible for the administration and management of state hospitals.

160. *The Act therefore sets out quite a complex structure, with four sets of governance bodies.* First are the federal and state ministries of health themselves, along with the local government health authorities, and ward and village health committees. Second is the National Primary Health Care Development Agency and Fund and the State Primary Health Care Boards. Third are the National and State Health Councils and consultative bodies. Fourth are the federal and state hospital boards.

161. The draft Act deals with a number of other issues. A section sets out the rights and obligations of health care providers and patients. Examples are patient rights to informed consent to treatment and to confidentiality, and the provider obligation to provide information on services and fees.

162. In recognition of the importance of this issue, somewhat neglected by previous policy documents, the draft Act specifies that the National Health Council will develop strategy, policy and regulation on health human resources.

163. *The draft legislation leaves open possibilities for different types of public-private partnerships by stating that health authorities at any level of government may agree with a private or non-governmental provider “in order to achieve any object of this Act.”* A significant section of the Act is devoted to regulation of private health providers, setting out terms and procedures for obtaining “Certificates of Need” from relevant federal and state agencies. A number of criteria to be considered for approval are set out, including consistency with national, state and local planning, and the qualifications of applicants.

164. *The draft National Health Act is a significant development in health policy in Nigeria.* It codifies existing structures which have been in place since the 1980s, reflecting the accepted division of responsibilities between levels of government and continuing the strategy of decentralizing PHC management towards the LGA, ward, and village levels. However, at the same time, the federal and state roles in PHC delivery are strengthened, notably with the creation of national and state funds for PHC services which are to receive resources from the three levels of government. This is the government’s strategy for addressing the key problem in the sector – the weakness of PHC services. Its success will depend on negotiation and coordination between the federal, state, and local government authorities, as well as avoidance of the problems which limited the effectiveness of such parallel structures in the past – particularly, political interference and funding cuts.

CHAPTER 4. THE ROLE OF THE PRIVATE SECTOR IN HEALTH CARE PROVISION IN NIGERIA

1. This chapter will: (a) explore the contribution of the private sector to overall health service delivery in Nigeria; (b) analyze the institutional context in which it operates; and (c) examine potential policy instruments for enhancing its role in increasing the efficiency, accessibility, and quality of health services. In particular, this chapter will deal with the following issues: types of services provided; quality and effectiveness of service delivery; financial issues affecting its development; government's policies and regulation; and potential policy instruments for enhancing its role. The size, scope, and distribution of the private provision of services were already described in the previous chapter. However, to better understand the importance of the private sector in Nigeria, this chapter will summarize some of the issues discussed in detail in Chapter 3.

2. *Private health care providers in Nigeria are heterogeneous, ranging from patent medicine vendors, pharmacies, dental and medical clinics up to tertiary hospitals.* Most of them are registered, but there are also unregistered clinics, drug shops and numerous drug hawkers. This chapter will focus mainly on formal health service providers; it will not address practitioners of traditional medicine and traditional birth attendants. In our discussion, private providers will be divided into two main groups: (a) health clinics and hospitals and (b) pharmaceutical retailers.

PRIVATE HEALTH CLINICS AND HOSPITALS

3. The Health Facilities Database, HFD, (FMOH, 2000) has recorded 9,049 privately owned facilities in 2000, corresponding to 38% of all registered facilities. About 75% of the private facilities are primary health care facilities, while 25% are secondary health facilities. There is only one private tertiary health facility, which is a mission facility. Private facilities comprise 33% of all primary health care facilities and 72% of all secondary health facilities.

4. The private health care sector consists of both non-profit who are mainly faith-based service providers, as well as for-profit providers. Some private employers also provide health care through their own clinics.

Non-profit providers

5. *NGOs, especially faith-based ones, are very active in the Nigerian health sector and represent a large share of the private health providers.* For instance, the Christian Health Association of Nigeria (CHAN) is the umbrella organization for church-sponsored health care programs. CHAN has about 400 registered member institutions throughout Nigeria that provide services through about 3,500 health facilities, ranging from hospitals to PHC programs and mobile and outreach programs³² (CHAN, 2001; CHAN 2004a). In Enugu State it is openly acknowledged that the mission facilities provide the majority of health care services (PATHS, 2004a). CHAN institutions collaborate with Muslim organisations in some areas, e.g. the Inter-faith Forum on HIV/AIDS and Sexual and Reproductive Health of which the Federation of Muslim Women of Nigeria is also a member.

6. Under the Nigerian Supreme Council for Islamic Affairs there are also groups working on health promotion, mainly in relation to sexual and reproductive health and HIV/AIDS, e.g. Aids Programme for Muslims (APMU) and the UMMAH support group. There are also other

³² For example the Evangelical Church of Western Africa has 77 clinics in 11 districts; COCHIN has 75 facilities ranging from health posts to health clinics in Plateau State alone.

independent Muslim organisations that work in the same areas, such as the Muslim Student Society of Nigeria, the Professional Muslim Sisters Organisations (Abuja) and Federation of Muslim Women in Nigeria. Moreover some hospitals or health centres have been established by Muslim communities, for example the Muslim Specialist Hospital in Zaria, Kaduna State. Through the Islamic Medical Association of Nigeria (IMAN) which has branches in most of the Muslim dominated states in the country, doctors render unpaid services. The Ahmadiyya is active in several places, but generally the facilities are established on an individual basis and are not part of a wider organisational network. Information on the number and distribution of these facilities and the services they provide are currently unavailable.

7. In addition to the faith-based NGOs, there is only anecdotal information on smaller NGOs established by the Nigerian Diaspora to supply drugs and sometimes services.

For-profit providers

8. *The majority of private hospitals and clinics in Nigeria are for-profit providers, representing about 20% of the total number of facilities in the country.* The private for profit providers aim to generate an income for the owner(s), as well as sufficient surplus for replacement of capital investments. The private for profit sector ranges widely from basic clinics, comprehensive health centres, small hospitals and maternity and convalescent homes, as well as a few diagnostic and specialised centres (eye, dental). Although the FMOH Health Facilities Data Base did not distinguish between private for profit and non-profit facilities, it is estimated that about 20% of the 9,049 facilities were private for profit and only 15% were non profit³³. Nevertheless, as will be pointed out later, the facilities in the mission/non-profit sector tend to be larger than those in the private for profit sector.

9. *Limited evidence suggests that solo practices rather than group practices predominate in the private, for-profit sector (Ogunbekun et al., 1999; Alub, 2001).* This is a fairly common phenomenon in other countries and is often attributed to the relatively low capital requirements to start operations at that level. Although there are large variations across states in terms of the degree of private health sector activity, evidence from Benue state indicates that private for profit providers tend to be much smaller than the missions. For instance, while 76% of secondary health care facilities are private for profit, they account for only 8% of bed capacity in the state. In contrast, missions own 17% of secondary health care facilities but account for 61% of hospital bed capacity in Benue (International Center for Gender and Social Research, 2004). A similar picture emerges for primary health care: private for profit providers of primary health care have small shops, i.e. almost half of all private for profit facilities are at the level of health posts and dispensaries. Separate diagnostic laboratories engage 6% of the private for profit providers.

Employer-based providers

10. *Several large employers have health benefit schemes for their employees and some also run their own health clinics, e.g. Julius Berger Construction Company, Dantata & Sawoe, Nigerian National Petroleum Corporation.* These schemes are generally not set up for generating profit but as a benefit for employees and their dependents.

³³ The 3,500 CHAN facilities represent about 40% of the total private sector. Assuming that the non-CHAN non-profit services represent a small proportion of total service providers, we obtain the above mentioned percentages.

Human resources:

11. *As mentioned in Chapter 3 a large number of doctors and nurses work in the private sector, especially in the Southern states and the Central Belt.* For example, in Benue State, there are 173 doctors, of which 101 (58%) are working in private practice. 31 of these doctors are working in private hospitals, 70 doctors are spread across private or mission settings, (International Centre for Gender and Social Research, 2004)

12. *Many public sector health professionals work in the private sector after regular office hours.* In addition to full-time staff in the private sector, publicly employed health professionals are allowed to work after hours in private health facilities.

13. *Limited evidence suggests that as a consequence of large staff turnover, mission facilities are more likely to have recently trained staff and a less efficient ratio of clinical to support staff than public facilities.* The clinical to support staff ratio of 1.03 in mission facilities in Benue State appears to be significantly lower than in the public sector (2.54). On the other hand, the percentage of staff trained during the last year was generally much higher for mission facilities than for the public sector (PATHS, 2004b). High staff turnover is a problem as it is difficult to retain staff when government salaries increase and dwindling funds in the mission sector do not allow for similar increases. Lack of staff is considered a larger problem in rural areas than in urban areas.

14. *The limited available information shows large diversity in the state and availability of equipment and infrastructure across private providers.* Overall information is unavailable to indicate diagnostic capacity in terms of X-ray and laboratory facilities in the private sector. The private facilities visited, tend to rely on outsourcing or referral for diagnostics, although basic laboratory facilities were sometimes available. There are, however, wide variations as there are also privately owned hospitals with very advanced equipment, e.g. Abuja clinics offer CT-scan, fluoroscopy, color Doppler, digital ultrasound, dialysis etc. In Benue State, mission facilities were more likely to be well equipped than public facilities, but were still nevertheless in a poor situation. For example, only 48% had a functional fridge, 67% had the necessary OPD equipment, 50% had essential laboratory facilities, etc. (PATHS, 2004b). Mission facilities also have wide variations in the state of their equipment and infrastructure. While there are well equipped and well maintained facilities, there are also those where the operation theaters are in poor condition and rudimentarily equipped (CHAN, 2002). Similarly a survey of 134 mission institutions found the state of repair of infrastructure to be poor or very poor in 7% of urban facilities and 20% of rural facilities (CHAN, 2001). Only 20 % of the facilities were found to be in very good condition in both urban and rural areas.

Table 37. Distribution of CHAN member institutions by bed size (%)

Beds	Urban	Rural	Total
Less than 20	27	50	43
20 – 40	11	17	15
40 - 60	9	7	7
More than 60	52	26	34
Total	100 (N=44)	100 (N=90)	100 (N=134)

Source: (CHAN, 2001)

15. *As mission hospitals tend to have a large number of beds, the capacity of the private sector to provide inpatient care might be larger than the number of facilities indicates.* The capacity of the private sector depends on both the number of facilities, as well as the number of beds in individual facilities. While no overall national figures are available, figures from Benue State suggest that the private sector could represent a larger source for service delivery than indicated

by the number of facilities. About 63% of facilities are privately owned, but (mainly due to some large mission hospitals) account for 69% of the state's total bed capacity (International Centre for Gender and Social Research, 2004). A survey of a representative sample of CHAN member institutions also found these institutions generally to be of considerable size, especially in urban areas, see Table 44 above (CHAN, 2001).

Drugs:

16. *Availability of drugs in sufficient quantities and quality is a problem in mission facilities as elsewhere* (CHAN, 2001; PATHS 2004b). Some mission facilities operate drug revolving funds. These facilities score 63% on availability of drugs compared to 46% for facilities without drug revolving funds. CHAN has its own drug supply system, CHANPharm, which was established in 1979 to ensure safe and affordable, mostly generic, drugs to member institutions. It operates as a revolving drug fund. It has been reorganised and is now autonomous. Although still catering only to CHAN member institutions, it is considering becoming a supplier to other private providers. CHANpharm also provides training in essential drugs management, sound pharmaceutical practices and rational use of medicine. Some facilities still buy drugs in the local market. It is estimated that 61% of urban facilities in 2001 also sourced drugs from private companies and 11% also sourced from the open market (CHAN, 2001). In rural facilities, 33% is estimated to have used private companies for purchase of drugs and 34% also resorted to the open market. CHANpharm has, however, been reorganised since and is now better able to meet the needs.

17. *Anecdotal evidence suggests that private for-profit providers obtain drugs from various sources.* Facilities visited prefer to get them directly from companies in order to avoid fake drugs or to rely on a trusted source.

18. *The FMOH provides free drugs in some states.* Irregular availability of TB-drugs is a particular problem in states where the drugs are not subsidised by the government or donors. It means that patients have to pay and this results in many defaulters, especially among the poor. The government also supplies vaccines free of charge. Records must be submitted prior to receiving the next supply. According to some of the interviewees the process is sometimes considered very cumbersome and the vaccines are often not available.

Services

19. *A wide range of curative services are provided both in NGO facilities and private for profit facilities.* The widest range is probably for NGOs as one of the CHAN member institutions runs a teaching hospital. An illustration of the range of services provided by CHAN member institutions is outlined in Table 6. A survey in Benue state to assess the capacity for emergency obstetric care found that 70% of the EOC was provided by the mission sector. In the private for profit facilities visited the set-up was to have a few in-house doctors, together with a whole range of consultants with various specialties attached to the facility and on-call for specialised cases, thus enabling the provision of various primarily curative services. For example, one hospital visited in Lagos had 5 in house doctors, and 8 specialists working as consultants according to need.

20. *Of the private-for-profit facilities visited, preventive services comprise only a limited share of their portfolio, whereas prevention figures higher on the agenda of the NGO-sector.* For example, most of the 358 CHAN member institutions are engaged in preventive services, with 79% offering immunisation services, 50% offering HIV/AIDS prevention, information and counselling, 56% offering family planning services, and 75% offering growth monitoring (CHAN, 2001). The 1999 NDHS also shows that basic preventive services like ANC, growth monitoring, immunisation and family planning are available from private doctors, clinics and

hospitals, although to a lesser extent than for government facilities. In particular growth monitoring and immunisations and family planning with around three quarters of private providers offering them are relatively low compared to the public sector.

Table 38. Categories of services provided by CHAN member institutions (N=134)

Category	%	Description
A	56	Inpatient and outpatient care, community health programmes, primary health care, other specialised services such as medical clinics, pediatrics, tuberculosis treatment, leprosy, obstetric emergencies.
B	28	Inpatient and outpatient care, primary health care, including counselling, health education, family planning, immunisations, ante natal and post natal care, minor surgery and accident cases
C	4	Outpatient care and community health programmes run by a general practitioner. Treatment of simple diseases, observation of cases, immunisations, ante natal and post natal care.
D	13	Outpatient care run by matrons, nurses, community health worker. Primary health care including immunisations, ante natal and post natal care

Note: Member institutions implement through a network of facilities, so while 56% as organisations provide extensive services, it does not mean that 56% of all mission health facilities provide such services.
Source: (CHAN, 2001)

21. An assessment of the routine immunisation services in Benue state found that 13% of immunised children were immunised in a private clinic and that although the private sector does not invest much in immunisation services there are isolated cases of consistent good performance (Change Agent Programme and Benue State Ministry of Health 2004a). No documentation of sustained co-ordination of immunisation activities to improve service delivery was found. There are no annual planning meetings or annual review meetings between the government and private sector to assess performance, lessons learnt and best practices (Change Agent Programme and Benue State Ministry of Health 2004b). The private facilities offering immunisation are not necessarily part of the reporting system.

22. According to the NDHS 2003 the main source of contraception is the private sector (cited by 61% of respondents), followed by the public sector (24%) and 15% are other sources like shops, friends etc. Users of pills and male condoms tend to go to the private sector, whereas users of injectables and IUDs are more likely to choose the public sector.

23. In view of the observation that private doctors tend to opt for small scale facilities, it is not surprising that *not all private providers offer diagnostic services*, but rely on private laboratories and X-ray centres or referral to public hospitals.

24. On HIV/AIDS the CHAN AIDS network and the organisations under the Council of Islamic Affairs, do some work mainly in the areas of promotion, prevention and care. Patients are usually referred to public institutions for tests (CD4 count). Only a few patients can afford treatment in the private sector and are referred to the public sector for treatment (PHRplus and Policy, 2004). In 1999 less than 50% of CHAN member institutions provided services in this area, increasing to about 57% in 2003 (CHAN, 2004b).

Quality and efficiency

25. There is paucity of data on outputs, especially for the for-profit providers, as they rarely file reports on services provided. Thus only little evidence on quality and efficiency of private health care providers exist. The overall picture is that irrational use of drugs and a non-functional referral system presents problems related to quality of care and efficient resource use.

26. *An assessment of the quality of the mission sector suggests a good performance despite wide variations across facilities.* CHAN has started assessing quality and efficiency issues using a Peer and Participatory Rapid Health Appraisal and Action (PPRHAA) methodology, with a view to identifying how to improve the service delivery. Outreach visits were generally regular and

timely. International standard treatment guidelines were generally applied at lower levels of care, but practices and standards varied across doctors at higher levels of care. Availability of Nigerian standard protocols was very low. Most have none, while a few have all of them. Overall, staff were perceived to be friendly and patient flow was thought to be good; privacy was generally observed. Records systems especially for outpatients are generally good, although inpatient records need to be improved as a prerequisite for systematic quality monitoring and improvement. There is also a need to develop systems for clinical audit, patient satisfaction surveys and reporting of adverse incidents.

27. For example, 58% prescribed antibiotics, 41% prescribed smooth muscle relaxant and 29% prescribed IV fluids as first line treatment in moderate cases. While 50% of practitioners would prescribe sugar-salt solution, only 55% of them knew the correct recipe. A recent study among 48 private medical practitioners in Calabar on knowledge, attitude and practices on post abortion care indicate that 23% of them routinely undertake abortions when requested to do so, and 83% regularly treat women with complications to abortions (Etuk et al, 2000). However, only 18% used the standard procedures for abortions or abortion complications.

28. *Irrational use of drugs appears to be a major problem for both for-profit and non-profit providers.* Unnecessary use of antibiotics for treatment of diarrhoea and uncomplicated acute respiratory infections and insufficient use of oral rehydration therapy have been reported. Too many drugs are prescribed and the use of antibiotics and injectables are very high³⁴ (CHAN, 2001). Prescription of brand drugs is preferred over generics, partly as a means to overcome problems related to fake drugs. For private providers in need of income, a desire to please patients combined with inappropriate patient preferences, often results in inappropriate treatment.

29. *There is limited evidence of inefficiencies in the private sector based on low occupancy rates.* The clinics visited generally had a fairly modest patient flow with average outpatient visits per doctor per day ranging from 2.5 to 10. Inefficiencies also exist in the mission sector because only 3 out of 20 facilities had a number of outpatients within the optimum range for OPD visits per capita in their catchment population; similarly only 4 out of 20 facilities were within the optimum range for inpatient visits (CHAN, 2001). Most of the 20 facilities were found to be overstaffed based on a weighted workload index per health worker. Similar results have been found for Benue State (PATHS, 2004b). Furthermore, most hospitals had very low bed occupancy rates with recurrent cost per inpatient day steadily increasing over the past 5 years. While such results cannot be generalised, it might be worthwhile looking deeper into this issue in order to determine whether strategies for downsizing facilities are needed.

Table 39. Workload estimates (PDE/work day) for health facilities in Benue state

Service level	Public sector	Mission sector
Secondary hospitals	2.3	1.1
PHC	9.7	9.7
Other	0.4	1.1

Note: Patient day equivalents weighting 1 inpatient day at 3 outpatient visits have been calculated. The number of workdays is derived from number of health workers assuming an average of 15 work days per month.

Source: (PATHS, 2004b)

³⁴ Too many drugs are being prescribed during the OP visits (2-7.1 per prescription against a WHO standard of 1-2), low use of generic drugs (46-87%) and prescriptions of antibiotics and injections being too high (in 18 out of 20 facilities more than 20% of prescriptions contained antibiotics and in 17 out of 20 facilities more than 10% of prescriptions included injections, in many facilities the average proportion of prescriptions including at least one antibiotic is 91%).

30. *Interviews indicated that cross referral between the private and the public sector is rare and largely dependent on personal relationships.* There are no well-established practices and procedures for referral and when referral takes place, there is usually no feedback. However, referral within the mission sector does take place. Private doctors can refer patients to government hospitals, but as they do not have admission rights, the patients have to go through all the procedures again. In some places, patients do get referred for X-rays and return with X-rays to the private hospital, but this practice does not appear to be systematised, and seems to depend on personal relationships.

Financing

31. *The NGO sector relies mainly on donations to finance their services.* Capital costs are almost purely financed through donations. Resource constraints due to declining charity funds for Africa as new target areas for funding in Eastern Europe and Asia emerged, have resulted in lack of investment in equipment and infrastructure, to the extent that even minor investments cannot be carried out (for example, new boreholes to replace dried ones).

32. *While donations finance a major part of the recurrent expenditures, the collection of user fees also provides a significant source of funds.* The mission health providers, however, have a high level of absconders. While some institutions have funds based on donations to be used to exempt the very poor, these are rarely sufficient and the providers incur deficits.

33. *Previous federal government financial aid to the mission sector has been reduced or eliminated; however, some states offer financial aid.* In the past the FMOH provided direct subsidies in the form of payments for the professionally qualified staff in mission hospitals, but this practice stopped in the 1990s because of the need to save on the wage bill. The federal government also used to provide tariff exemptions on imported drugs through CHANpharm but this practice was stopped three years ago. However, some state governments support mission facilities through monetary grants or through the payment of salaries to some of their staff (CHAN, 2001). It is not known how widespread this practice is. According to the CHAN HIV/AIDS directory 2004 (CHAN, 2004b) 10% of the facilities in five states³⁵, were receiving state funding for AIDS activities.

34. *The establishment of private for-profit clinics is financed from savings and loans.* Access to commercial loans is limited, but loans from relatives and others are common. There are no direct or indirect subsidies from the federal or state governments to establish or operate private for-profit health facilities. Several of the clinics visited operate with a sliding fee scale related to the patient's ability to pay for services (and the need for care). They give credits and from time to time have to write off quite substantial bad debts. Some private clinics have retainerhip arrangements with large employers to service their employees or with an HMO to service its members.

35. In some states, disease control programs provide vaccines for child immunizations and TB-drugs free of charge to private providers who wants to participate in the programs.

Summary

36. Several sources do not provide disaggregated data for-profit and not-for-profit providers. Table 47 is an attempt to summarise and compare the two types of private health care providers.

³⁵ Imo, Benue, Taraba, Plateau and Kogi States.

Table 40. Comparison of characteristics of the not-for profit and for profit health care providers.

Characteristics	Private for-profit	Private non-profit
Objectives	Profit-maximising	Break-even, social objectives
Infrastructure	Small scale activities (small size hospitals, health posts)	Larger scale activities relatively more prevalent (large hospitals, PHC centers)
	Mostly urban or semi-rural	Urban and rural
	Estimated 23% of all health facilities	Estimated 15% of all health facilities
Human resources	Alongside own staff, often relies on personnel from public sector (dual practice)	Rely on specialised personnel from own hospitals
Equipment	Rely to large extent on referring patients for diagnostics	Refer to 'own' hospitals for more than basic diagnostics
Drugs	Tend to prefer sourcing directly from drug companies.	CHANpharm
	Govt. supplies vaccines	Govt supplies vaccines
Services	Main focus on curative services, although preventive services are available	Main focus curative, but also involved extensively in preventive and promotive activities. Also provides tertiary services and training
Quality and efficiency	Quality highly variable; indications of poor quality; incentives for irrational use of drugs	Quality perceived to be higher; measures in place to improve quality, but funding is a problem; training in rational use of drugs
	Very limited access to training	
	Fairly low capacity utilisation	
Financing	Access to loans is limited. Rely on private borrowing. Rely on user payment; insurance claims.	Rely on charity – a diminishing source, and user payment Some states provide grants
Organisation	Weak (only 10% organised and organisation thinly resourced)	Fairly strong, except for Muslim NGOs.

PHARMACEUTICAL RETAIL

37. Pharmaceutical retail takes place in a number of places. Pharmacies are licensed to dispense prescription drugs and patent medicine vendors (PMVs) are licensed to sell over the counter (OTC) drugs. In addition, drugs are sold by drug peddlers, mobile street hawkers, at market stalls, etc. The following section focuses mainly on legal businesses, although the illegal sale of drugs is likely to be considerable in Nigeria.

38. **Pharmacies:** The list of registered pharmacists and registered pharmaceutical premises is updated annually. The total number of registered pharmaceutical premises by December 31 2003 was 2,751 (Pharmacists Council of Nigeria, 2003), a 51% increase from the 1,821 registered pharmacies in 1992 (World Bank, 1996).

39. **Patent Medicine Vendors:** *The exact number of PMVs is not known, but it is thought to be larger than the number of pharmacies.* A census from 1992 estimated that there were 22,640 patent medicine vendors in the country, more than 12 times the number of pharmacies at that time

(World Bank, 1996). In 2001, NAFDAC held a series of meetings for registered PMVs, in which more than 36,000 PMVs (at least 13 times the number of pharmacies) participated³⁶.

40. *PMVs are more widely available especially in rural areas, than primary, secondary, or tertiary facilities.* The situation in three rural villages Idere (Oyo State), Ukehe (Enugu State) and Mbaugwu (Abia State) of approximately 10,000 population each is illustrative (Salako et al, 2001). Each community has a LGA facility that is primarily staffed with community health extension workers and that often suffers from drug stockouts. These facilities are closed in the evening. Furthermore, the communities are rather dispersed and the distance to a facility may be up to 20 km. There are private clinics in two of these villages; in Idere there is one 7 km down the road. Each community, however, has 4 to 8 PMVs that are open throughout the day and in the evenings as well. Similarly, in Benue State there are 48 pharmacies and 1108 PMVs (International Centre for Gender and Social Research, 2004). While there is one primary health care facility for every 10,000 persons and one health post/dispensary for every 5,000 population, there is one PMV per 3,250 persons. The study found that most public health facilities are concentrated in urban and semi-urban areas, whereas patent medicine stores and private dispensaries are closer to the rural population.

41. **Drug hawkers:** *The number of drug hawkers (unregistered and illegal vendors of drugs) is also thought to be large.* A study undertaken in Jigawa State suggests that it is a widespread business in towns and villages with drug hawkers increasingly conducting their businesses in markets, motor parks and along the streets (PATHS, 2004a). Drug hawkers were present in almost all of the markets visited by the researchers and they were particularly prevalent in locations where there were no pharmaceutical chemists.

Inputs

42. In terms of inputs the pharmaceutical retail sector is as heterogeneous as the private health clinics.

43. **Pharmacies:** *The pharmacies visited varied greatly in terms of staffing, as well as scale and quality of infrastructure and equipment.* A pharmacy must have a pharmacist in charge (not necessarily as owner). One pharmacy had four pharmacists and 9 support staff as well as a part-time doctor for consultation on prescriptions. At the other end was a pharmacy with one part-time pharmacist and 4 support staff. The quality of infrastructure and equipment also varied, ranging from small congested and poorly ventilated shops to larger well-organised shops with air-conditioning.

44. *Drug supplies are obtained through a variety of channels, including large retail and wholesale pharmacies in major cities and pharmaceutical companies or their representatives.* In Jos, several pharmacies specialise in wholesale of particular products and then buy from one another. Onitsha is a less expensive place to buy wholesale drugs. There was a general concern about quality of drugs, which resulted in a variety of coping strategies. Some choose to buy most drugs from one single trusted source, while others choose to buy directly from the drug companies and their representatives. One pharmacy used to import drugs directly from Europe, but with new NAFDAC regulations this practice has become difficult.

45. **Patent medicine vendors:** *PMVs generally have smaller shops and have less education than pharmacy staff, but they also vary considerably.* For example, one shop owner interviewed during a site visit is a pharmaceutical technician who worked in a pharmacy for many years,

³⁶ Personal communication Ms. Ijeoma P.C. Nani, Deputy Director, Technical Assistant to Director General, NAFDAC

before setting up his own shop. The shop is middle-sized, has air-conditioning to ensure the temperature does not get too high, and is generally well organised. In contrast, another PMV interviewed claimed to be an auxiliary nurse, but was functionally illiterate. The shop was very small, exposed to heat and the dust from the street, and drugs were lying around disorganised.

46. *Similar to pharmacies, PMVs use several channels for obtaining drugs.* Drugs can be purchased from a single trusted source as well as directly from the drug companies. It seems as if, PMVs who are more concerned about quality are also more likely to choose the more expensive sources.

47. **Drug hawkers:** Results from the earlier mentioned study in Jigawa (PATHS, 2004a) suggest that almost all hawkers lack formal training on drug dispensing, and many of them are illiterate. Drug hawkers in Jigawa mainly purchase from the Sabon Gari market in Kano (78%) or from local patent medicine stores.

Services

48. *Even though pharmacists are not allowed to diagnose, are only licensed to dispense drugs prescribed by a doctor, and to sell OTC drugs, in practice, many of them actually prescribe.* The field visits showed that some pharmacies have examinations rooms and that they do diagnostics alongside dispensing of medicine. This is partly in response to a demand from the patients who do not want to go to the hospital for reasons of convenience and finance. One pharmacy had a part-time doctor whom they could consult for diagnosis and treatment. One pharmacist divided their services into dealing with three categories of clients: (1) those who would come with a prescription, (2) those who would present symptoms and ask for advice, and (3) those who diagnosed themselves and who think they know what they need. The pharmacies visited generally agreed on these categories, but while one claimed that almost all customers brought a prescription, another said that almost none had a prescription.

49. *PMVs are licensed to sell OTC patent medicines in original packages; however, they generally sell all types of drugs.* For instance they sell generic drugs like paracetamol and chloroquin in large tins, i.e. not pre-packaged, and non-OTC drugs like antibiotic and psychotropic drugs that are outside the scope of the PMVs' license. A survey among 46 PMVs in 1996 found that 75% stocked prescription drugs like antibiotics (Adikwu et al., 1996). Similarly, a study from Borno State found that PMVs sell prescription drugs and some even prescribe and effectively run clinics (Igun, 1994). This was also observed during the field visit.

50. A study (Brieger et al, 2004) undertaken in two communities in Oyo State of 720 customers in 149 PMV shops showed that

- most customers (79%) simply asked for specific medicines
- 24.7% presented an illness complaint or a problem
- only 9.0% had a prescription sheet, but customers in urban areas were twice as likely (13.8%) to present a prescription than their rural counterparts (6.1%)
- in 69.3% of cases, the PMV sold the drug requested
- in 30.5% of encounters, the PMV gave his/her own suggestions
- in 18.6% of encounters, PMVs asked for clarifications and history
- communication about the drugs was observed for 20.8 % of encounters (dosage, precautions and side effects)
- in 4.4% of cases, the prescription was filled
- 0.4% of cases was referred to a health facility

Quality and Efficiency

51. **Pharmacies:** Only anecdotal information is available on the quality of pharmacies in the country. For instance, all pharmacies visited claimed to check their shelves for expired drugs. However, at least one pharmacy did not use the last in-last out storage principle. The sales clerks were found generally to have little training, although some learn by experience. For example, in one case, the sales clerks had finished secondary school, and the proprietor- having several shops to look after - could not be around the shop to give advice on a full-time basis. Such cases could raise concerns about the quality of information and advice given. All pharmacists interviewed were concerned about the quality of drugs and raised the issue voluntarily. They expressed general satisfaction with the improvements made after the management change of NAFDAC. The pharmacies are customer-oriented and offer convenient opening hours, in one case from 7 a.m. to 23 p.m.

52. **Patent Medicine Vendors:** *The educational backgrounds of PMVs appear to vary considerably.* The PMV may have a background as an apprentice under a current license holder or in a pharmacy, be a former or current auxiliary health staff (Jimmy et al., 2000). A study undertaken in 1997-98 on the dispensing of anti-malarials by PMVs in an LGA in Rivers State interviewed 40 out of the 50 PMVs in the area (Jimmy et al., 2000). Only 8 had formal training, while 32 had received non-formal or on-the-job training. Only 12 of the PMVs had knowledge of the correct dosage for Chloroquine; 23 of the PMVs suggested a lower dosage. Another study found that shop clerks and owners consider analgesics containing aspirin to be anti-malarial drugs (Brieger et al., 2002). Combined with poor compliance this could have serious consequences. Under-dosage and non-compliance with full course of treatment could, however, also be due poor users not being able to afford the complete treatment.

53. *Knowledge among PMVs about the medications or the common illnesses of customers is often limited.* In a study of 720 encounters just under half of the observed sales took place when a clerk or apprentice was selling (Brieger et al, 2004). While PMVs rarely ask questions about the illness, and vary widely in the amount, accuracy and quality of information they give on how to take the medicines, the actual license holders have been found to be better at communicating information and advice to customers than clerks or apprentices.

54. **Drug hawkers:** *Results from Jigawa suggest that almost all hawkers lack formal training on drug dispensing* (PATHS, 2004a). They learn about the effectiveness of drugs through the prescription leaflets, from feedback from customers and from their peers. Irrational and indiscriminate dispensing of drugs such as providing lower dosages of antibiotics, wrongly perceived action of a drug, as well lack of knowledge about the importance of fluid replacement in diarrhoea illustrate quality problems. However, 62% expressed interest in receiving training on how to diagnose, prescribe and dispense drugs. The drug hawkers seem to recognise the need to protect their business, both in terms of avoiding arrest as well as in terms of maintaining a certain standard, such as not selling expired drugs; they appear to maintain a certain level of professional self-regulation. As for the drugs themselves, only 13% were registered with NAFDAC. About 5% of drugs sold were expired.

Financing

55. *All types of pharmaceutical retail are self-financed, relying solely on payment by customers to cover operating cost, pay back/interest on establishment cost and a surplus to the proprietor.* There are no government subsidies or other support such as tax incentives. Based on the interviews with pharmacies and patent medicine vendors it appears that it is very difficult to

obtain financing to open a pharmacy or a patent medicine shop and that the funds required for ensuring a quality environment for storage of drugs are not insignificant.

56. *It is very difficult to get a bank loan, even for a pharmacist wanting to establish a new pharmacy, so many resort to supplementing savings with private loans or help from relatives.* The financial situation worsens when it takes a long time from the planning and first approval of the premises to the time of final approval following a second site visit by licensing authorities. During this period, no income is generated, but interest on loans would still have to be paid and basic living costs of the pharmacist would still need to be covered. The approval procedure appears to be considerably longer for pharmacies than for PMVs.

57. *Limited evidence suggests that the pricing structure varies depending on the state.* In Abuja, the association of community pharmacist provides guidelines on price margins that range between 35% and 50% depending on distance to town; members generally follow these guidelines. In Jos, there appeared to be no common agreement on the price structure, and the mark-up varied from 20-50% depending on type of drug and from where it was procured. Some pharmacies practice cross-subsidisation, allowing the poorest customers to buy essential medicines at lower rates or on credit to be repaid in instalments. Not all credit lines are repaid, but many are.

58. *PMVs do not seem to have any agreed pricing structure, but their prices are generally lower than in the pharmacies.* Despite the lower prices, PMVs also have customers that find it difficult to pay. The strategies adopted include selling on credit, selling drugs one-by-one rather than as a full-course of treatment, changing brand name drugs to generics, or adjusting the price to the customer's ability to pay.

59. *Drug hawking requires a very small capital outlay and brings a relatively good return* (PATHS, 2004a). One of the reasons for the low capital requirement is that drug hawkers can often obtain the drugs they sell on a credit basis. They themselves also offer credit to their customers. While a number of drug hawkers, mainly see their business as an income source, others have started because there was an unserved need in their community; some were even supported financially by village associations.

PURCHASERS OF PRIVATE SECTOR HEALTH SERVICES

60. **Individual consumers:** *Purchasers of health care from the private sector are mainly individual consumers.* The main source of income for the private health sector is user fees, although the non-profit sector also relies to a large extent on donations. While some of these expenditures relate to services in the public sector, majority relate to the purchase of services in the private sector.

61. **Individual employers:** A study from 1994 found that 4% of rural and 10% of urban respondents claimed that their medical expenses were covered by their employers through employee medical benefits schemes (Ogunbekun et al., 1999). Some employers have direct arrangements with a specific local clinic or hospital through a retainerhip arrangement. Few other employers, mainly in the larger cities, like Lagos and Abuja, engage the services of health maintenance organisations. Such benefit schemes offer an opportunity for active purchasing by the employer on behalf of the employees through negotiations of terms and conditions. However, from the interviews with a few clinics that had retainerhip arrangements, such active purchasing did not appear to take place, except when they were engaged by HMOs.

62. **HMOs/insurance:** In the mid-90s, it was estimated that not more than 0.03% of the population was covered by private health insurance (Ogunbekun et al. 1999). There is, however, an emerging market for health maintenance organisations. There are currently eleven managed care organisations operating in Nigeria under the umbrella of the Health Insurance and Managed

Care Association of Nigeria. Of these, 6 are currently functional, covering an estimated 200,000 members of pre-paid health plans. One example is Total Health Trust Ltd, an HMO operating managed health care services. Total Health Trust Ltd purchases services on behalf of members and have binding contracts with a network of 240 autonomous private clinics nationwide that have been accredited for service delivery to its members. Part of the contract includes submission of data for monitoring and evaluation and mandatory participation in continuing education. Contracts are made with providers on a capitation basis and the basic package to be provided is negotiated.

63. **Government:** *The federal government is not currently buying services from the private sector.* In the past, the government had directly and indirectly (reduction in duty tariffs on drugs) subsidised the private non-profit health care providers, but these subsidies have been removed. Nonetheless the FMOH never had an active purchasing role and no agreement on the services to be delivered seems to have been in place.

64. *Similarly, some state governments still subsidise the private non-profit sector, as do some LGAs.* For example in Jigawa state, LGAs support hospitals with staff, food items, ORT kits, diesel and maintenance (CHAN, 2004a). In these cases, however, the support does not seem to be related to active purchasing or existing contractual arrangements.

INSTITUTIONAL CONTEXT

Government policy on the sector

65. *The Federal Ministry of Health is currently in the process of drafting a new Health Policy, which recognises the importance of the private health care sector.* This new Health Policy also recognizes the need to develop Public Private Partnership in pursuit of a service delivery system that utilises resources better, reaches more people, and provides better quality of care. At present there is only limited interaction or coordination of activities between the public and private health sectors.

66. *In general, coordination and collaboration through planning that is either undertaken jointly or that takes into consideration various stakeholders in the public sector, let alone the private sector, is lacking.* Attempts towards comprehensive sector planning are, however, on-going in some states with support from DFID through the PATHS project. The National HMIS policy and strategic plan from 1996 called for the State HMIS unit to coordinate information flows from both the public and the private sector, which could enable more comprehensive planning. Compliance in the private sector varies, but is generally poor. Lagos State has linked licence renewal to submission of basic health information in a new initiative to strengthen data collection, but it is too early to measure its effects.

67. *The National Health Insurance Scheme (NHIS) gives an important role to the private sector.* NHIS is supposed to be a publicly regulated and private/public driven health scheme. The enabling law³⁷ allows for public and private managed care organisations to use private and public health care providers. A tender for an external company to undertake accreditation assessments of providers has recently been concluded, and the process is expected to start soon. In the private sector there appears to be some uncertainty regarding who is on the list to be assessed and why. It is also not clear to what extent the private sector would be reimbursed.

³⁷ The National Health Insurance Scheme based on Decree 35 in 1999 is supposed to comprise a national pre-payment plan in which participants regularly pay a fixed amount for a pre-determined scope of medical coverage and a social health insurance scheme based on the principles of pooling of resources, cross-subsidisation, elimination of adverse selection and solidarity.

Regulation

68. The key roles that regulation can play in the health sector include control of quality (specifying standards), control of quantity (number and distribution of facilities), and control of prices. The regulatory mechanism includes legislation as well as other formal or informal rules and may be supported by monetary or non-monetary incentives.

69. In Nigeria, as in most countries there is basic legislation regarding market entry aimed at ensuring quality of services. The legislation specifies the physical characteristics required by a facility in order to be allowed to operate and the qualifications and characteristics of its staff.

Professional certification

70. *The quality of the human resources is ensured by semi-autonomous regulatory agencies responsible for professional certification.* Councils of professionals are responsible for the regulation of their respective professions, such as the Medical and Dental Council, the Nurses and Midwifery Council and the Pharmacy Council. The councils are responsible for setting the standards of training (accreditation of training institutions), for registration and licensing of professionals (license to practice, not to open a clinic), for maintaining ethical standards and a few other tasks, e.g. development of standardized prescription forms etc. The regulatory instruments available are related to the power to issue, renew and withdraw licenses. The license to practice is given on an annual basis and there are plans to link the annual renewal to continuing education. The proposal is to make renewal dependant on completion of at least 30 credit hours of continuing education (from an identified list of approved courses) within the preceding two years. Lagos state is also proposing to make renewal dependent on submission of key HMIS data.

71. *Based on complaints from colleagues and the public a professional disciplinary process may be initiated although they do not happen often.* First an investigative panel will determine whether there might be a case, if so the case may be brought to a Tribunal (similar to a court) and if the accused is found guilty three levels of penalties may be applied: warning, suspension for a period of time and withdrawal of the professional certificate. This does, however, not happen very often. The Medical and Dental Council estimate that there are about 38,000 licensed Nigerian doctors (not all may practice in-country, though). The annual production of doctors is approximately 1800. The estimated number of complaints received is around 10 per year. In the past, it has been difficult to put the Tribunal in place and there has been a 5 year backlog. However, since 1999 the Medical and Dental Council has been able to more or less cope and in 2003, it dealt with 20 cases (including backlog), of which 11 went to the Tribunal where 5 have been finalized. One or two of these cases are pending as appeal cases in the Supreme Court.

Licensing private (for-profit) health clinics and hospitals

72. *Anybody can apply to start their own private practice, but certain standards have to be met regarding the physical facilities and qualifications of the staff (which have to be certified by the relevant Council).* Applications are made to the Director of Health Services at State level. At state level, a Private Health Institution Registration, Licensing and Regulating Committee is established with the powers to grant certificates of registration and license, to inspect health facilities and to suspend, revoke or cancel a certificate of registration and licensing where it is deemed necessary and in the public interest to do so. The Committee should ascertain that the facilities have adequate staff, that site, building and general amenities are satisfactory, that equipment are suitable and that the number of beds does not exceed the maximum granted. Inspection should take place at least twice a year.

73. *At state level there are stipulated minimum requirements for the registration and licensing of private hospitals and other health establishments.* The requirements pertain to.

- General requirements, mainly regarding physical facilities (e.g. number and size of rooms, water and sanitation, light, sterilization facilities)
- Specific requirements, mainly regarding physical facilities and staff depending on type of facility (Outpatient clinics, Inpatient facilities with less than 10 beds, Private hospitals with more than 10 beds, Maternity homes, Convalescent homes, Physiotherapy center, Eye clinic, Medical laboratory services, Radio Diagnostic center)

74. In general, facilities should be run by professionally certified personnel. There is a limit as to how far away from the facility the person in-charge or a supervisor can live (10-25 km), as well as to the number of facilities (two) that a person can be in charge of or supervise.

75. In FCT Abuja, 762 applications have been received since 1989, of which 252 ended up being licensed. The rest did not meet the requirements or the applicant changed his/her mind. The licensing procedure requires two inspections, the first to assess the appropriateness of the building and environment and give the approval to go ahead and establish the facility, the second to assess the appropriateness of the fully equipped premises and give the approval to hire staff. Finally, based on the appropriateness of the staff hired a license is issued for display in the facility.

76. *The Committee aims to go on weekly inspections, but resources have been constrained.* Complaints about the private service providers are received from the public, but mainly from the general hospitals (where mistreated patients end up). On average there are about 2-3 complaints of unprofessional conduct per year. Television stations broadcast clinic closures.

77. *Although there are penalties for not complying with regulations, both in terms of fines and suspension and closure of facilities; the fines are not regularly adjusted and generally appear small compared to the potential gain from running an illegal practice.* In practice, the committees may not have sufficient resources to be able to adequately perform their functions. A fee is collected for registration and licensing and there is an annual renewal fee corresponding to 60-75% of the registration and licensing fee. The fees vary with size and scope of facility with OPD clinics paying the lowest fee and private hospitals with more than 25 beds paying the most.

78. *There is no regulation of numbers of facilities in a location, no consideration as to the distribution of facilities and no formal regulation on user fee levels.* The Nigerian Medical Association, however, has issued a Guide to Standardized Medical Services and Approved Minimum Tariffs. It lists the approved **minimum** tariffs, below which no private hospital or clinic must charge. Hospitals and clinics are at liberty to charge higher fees commensurate with their standards and status. However, in exceptional cases a practitioner may charge fees to socially indigent persons or close family relations at his/her own discretion. The guide further stipulates the minimum capitation fee and minimum number of clients to be demanded when entering into agreements regarding managed care or the national health insurance system.

Pharmaceutical retail licensing

79. *The pharmaceutical retail is regulated by the Pharmacy Law*, which distinguishes between different types of licenses. Only pharmacy shops (with trained pharmacists) can dispense prescription drugs. Nigeria has a formal licensing procedure for persons who want to sell over the counter drugs (OTCs). These PMVs are allowed to sell drugs in their original pre-packaged form according to a list which include proprietary drugs that are considered safe to sell to the general public and which include common items like pain-killers, cough syrup, anti-malarials, and vitamins. It is, however, widely reported that PMVs sell and deal beyond OTC drugs (PATHS,

2004d; Igun, 1994). A survey among 46 PMVs in 1996 found that 75% stocked prescription drugs (Adikwu et al., 1996).

80. According to the Pharmacy Law in Nigeria the holder of a PMV licence is required to be at least 21 years old and to submit the names of two references. There is no specified requirement regarding education, but by convention the minimum educational attainment has been primary school (Brieger et al, 2004). All PMV licenses have to be renewed annually.

81. Patent Medicine Vendors previously had to register with the SMOH. The SMOH, however, had very low capacity and failed to enforce regulations. Some years ago, for purposes of quality control the registration was transferred to an independent professional body, the Pharmacy Council, who was to be responsible for supervisory functions and capacity building, whereas the SMOH was to undertake inspections. Now, the Pharmacy Council through State Committees is responsible for renewal of licenses using an inspection process and for ensuring compliance with the regulatory standards. In order to improve quality, entry requirements have been strengthened. Obtaining a license now requires passing a short test and an interview for literacy and basic knowledge.

82. Some PMVs welcome effective regulation in order to strengthen the quality of the profession, others have protested as they do not want to be monitored by the Pharmacy Council contending that the Council has conflicting interests, i.e. to reduce competition for community pharmacies. Court cases have been raised, in which the new guidelines were overruled, then new guidelines were developed, which were also challenged. The concern is that responsibilities are not completely clear and the actual responsibility was only taken up in 2003 (according to FCDA Abuja). In Abuja, this regulatory issue has resulted in a rapid decline in the number of registered PMVs in 2003 and it has also created problems with registrations and regulation in Jigawa State. In order to increase access, there is some pressure towards registering more PMVs in rural areas.

83. *The number, distribution of pharmacies and PMVs, and the prices they charge are not regulated.* Anybody who meets the requirements mentioned above will get a license. The Association of Pharmacists, however, has a guide on the price margin to be applied. In Abuja, the guiding price margin varies with the distance to the city center, with the higher percentage applied at the center.

84. *NAFDAC is responsible for drugs and medical products registration, regulation, import and export and quality control.* As of January 2004, only products registered with NAFDAC can be sold

Private practice by government health staff

85. Private practice within government premises is presently not allowed. Similarly, publicly employed professionals are not allowed to own private health care facilities, but there are no restrictions on after-hours work in the private sector as long as the work in the public health facility does not suffer. Such dual practice appears to be common, but the exact magnitude is not known.

Enforcement

86. *Lack of funds has resulted in problems to undertake regulatory functions.* As already mentioned, it has been difficult to put together the Tribunal. Moreover the Medical and Dental Council are under-resourced in terms of IT equipment to easily keep track of the number of doctors. There are plans to computerize the system to provide easily accessible data as well as to

allow internet access to registration and paper work. There are also plans to create zonal offices to increase accessibility.

87. *Similarly, the authority of the regulatory bodies is often not matched by the resources.* For example, the Committee in FCT Abuja covering 252 registered private facilities has a chairman, a secretary, a personal assistant, and a messenger. The registration system and monitoring is kept manually as the Committee has no computer. A bus or a larger vehicle has to be requested from the FMOH vehicle pool when going on inspection tour, no separate allocation is made for running costs. In principle, it has now been agreed that the office can keep 50% of the fees and fines collected, but it has yet to be practiced. In order to speed up the licensing process, the Association of General and Private Practitioners of Nigeria is offering to assist the SMOH in inspections.

88. *The lack of enforcement results in a lack of respect for the regulation.* For example, a study on abortions found that the main reason for not undertaking abortions was personal conviction, very few respondents referred to the illegal status of the operation (Etuk et al, 2000). For 6 communities in Lagos State the situation was that “In theory patent medicine and chemist shops are expected to obtain government licenses, but experience has shown that this is often not done and that the address of the license holder does not often correspond with the location of the shop. Furthermore small kiosks and market stalls that sell medicines are not registered” (Brieger et al., 2002).

Incentives

89. *At present there are no positive incentives for adhering to regulations or to improve quality.* The government does not contract with private health care providers and as such does not provide any rewards for good practice. Similarly, there is no central policy on provision of positive incentives for private providers to locate in under-served areas

90. *The emerging HMO sector is applying an accreditation policy and monitoring system that is stricter than the government system.* An accredited provider will receive a capitation payment and billing rights for enrolled patients. The capitation payment represents a secured income and as such it may act as a positive incentive for keeping up the standards for continued accreditation.

Conclusion on the Institutional Context

91. *The basic regulatory system is in place but its enforcement is weak due to funding problems.* Based on the field interviews there appears to be awareness of the basic regulation. Regulation of the private health care sector, however, is weak due to under-funding of regulatory bodies. Regulation is mainly exercised through the punitive system, but fines appear low compared to the potential gains of breaking regulations and licences are rarely revoked. Positive incentives are rarely, if ever, used. Moreover centralisation makes monitoring difficult and the complaints and disciplinary procedures seem cumbersome. As a consequence, adherence to the regulations may not always be high. While regulation may be weak, it is not a problem particular to Nigeria, but rather a phenomenon that cuts across Sub-Saharan Africa.

KEY CHALLENGES, CONSTRAINTS AND OPPORTUNITIES

Increasing accessibility

92. *Although not-for profit health care providers tend to operate in remote areas and/or areas with poor populations, the for-profit providers of clinical care tend to serve relatively wealthier urban populations.* Private for profit or self-financing service providers can be expected to set up their shops only in places where there is a sufficient market for sustaining their business costs.

93. *A key constraint to using the private sector for expansion or continuation of services is the lack of financial viability in rural areas.* This issue is also increasingly affecting the faith-based organisations. Moreover the absence of a comprehensive policy, guidelines and plans for private health sector development is a constraint. Finally, the lack of information about the private health care sector limits effective planning.

Increasing efficiency

94. *There is no coordination between the public and private sectors.* There is a lack of integration of service delivery and no strategy for how to use resources across sectors. It may, for example, be possible that existing private non-profit hospitals either purchase services or, as in some countries, use private infrastructure for outreach. The lack of integration is reflected in the lack of inclusion of the private sector in sector planning, which to some extent has been made difficult by the lack of data collection on private sector activities. There is, however, some awareness of this problem and comprehensive planning is being developed in a few states. In an attempt to improve data collection, Lagos state has decided to start linking the renewal of licenses with submission of activity data.

95. *The lack of coordination is also reflected in the absence of an efficient and thought through referral policy and referral system.* Private sector providers may refer their patients to the government hospitals because they do not have the diagnostic facilities required, but it often means that the patients will have to start over in the system duplicating even the basic tests. The doctors working in the private sector do not have admission rights to the public hospitals.

96. *The private sector tends to focus on curative services, which is where the market is and where profits can be made.* If public health needs are to be addressed by private providers this issue may need special attention and possibly contracting arrangements with the State health services.

97. *Irrational use of drugs is prevalent in the private sector, especially at the PMV level.* It creates problems of quality as well as efficiency. It is important for optimal resource use and outcome that patients have the proper dosage of medication appropriate to their condition, for an adequate period of time and at the lowest possible cost. If the effectiveness of private services is low, this creates risks of increased disease transmission and drug resistance.

Increasing quality

98. *The quality of care offered by the private sector is not well-known, but appears highly variable both in the non-profit and for-profit sub-sectors, in clinical services and pharmaceutical retail.* Due to information asymmetries, patients are often not sufficiently qualified to assess the quality of services. Quality is often equated with availability of drugs and short waiting times. Patient demand for drugs and injectables is sometimes an important contributing factor to irrational drug use. The market for private health care is atomised and consumers, even when they

are aware of poor quality, may not have much power to demand improved quality of services. For example, in smaller and remote areas, they may not even have the choice to voice their dissatisfaction by obtaining their health care from other sources. The enforcement of the regulatory system that should protect the consumer and ensure a certain level of quality is weak, mainly due to lack of institutional capacity. The basic regulatory framework is in place with fairly good regulation for entry, but it is more difficult to monitor standards once entry is gained.

99. *The system for monitoring the activities of private sector providers is not functioning.* In principle the private sector is supposed to report to the same HMIS as the public sector, but this rarely takes place. This is a missed opportunity for getting information useful for planning, assessing service coverage and quality and identifying potential areas for collaboration.

100. *Although reportedly increasing, the private sector is only to a limited extent, included in training initiatives to improve quality of services, updating treatment strategies and treatment guidelines.* CHAN has been organising their own training activities for personnel in facilities of member institutions, and have also adopted the Peer and Participatory Rapid Health Appraisal and Action system (PPRHAA) to strengthen quality in clinical work as well as management. Unfortunately they have not been able to continue this due to lack of funding. However, some states who undertake PPRHAA (with DFID support) have also included mission hospitals as part of the process, taking the opportunity to learn from one another. The fairly unorganised private sector has even less access to training and has to mainly rely on pharmaceutical companies for training and guidelines on new developments in diagnosis and treatment.

101. *Enforcement of regulation is a major challenge especially in markets with many small providers.* A key constraint to improving quality is the low capacity of the regulatory bodies. A further constraint is the focus on the use of control to change behaviour and the total absence of positive incentives. Finally, another great challenge is the lack of formal training for patent medicine vendors, who often serve as the frontline health providers in many matters.

Opportunities

102. *The planned NHIS will, in principle, provide an opportunity for increasing intra-sectoral collaboration.* It is an opportunity for purchasing services from both public and private providers. However, much will depend on how the scheme is defined and especially what support is given to various stakeholders to meet the criteria for accreditation. NHIS will need time to develop, but there is an opportunity to take advantage of the steps towards it to achieve a better understanding of the private sector and how gains in efficiency and quality can be made.

103. *Collaboration with the private health care sector already exists to some extent in a few disease control areas and in a few states.* There is an opportunity to build on the good experiences and positive attitude that has been developed in this context.

STRATEGIC OPTIONS

104. *Like many other governments, the Nigerian government (federal and state) has focused most resources on health care services in the public sector in order to improve the health of the population.* The private sector is, however, significant in terms of number of providers and number of activities, as well as level of expenditures.

105. *The challenge for the government is how the resources available in the private sector can be channeled to work towards common objectives and strategies for a comprehensive health sector.* Three basic issues to consider are whether to: (1) take advantage of the private providers that already exist, (2) encourage the expansion of the private sector in terms of range of services

offered, of patients or areas served, and (3) shift public activities to the private sector for more efficient delivery of services. The opportunities for pursuing some commonly used strategies for private sector involvement in health care in Nigeria are discussed below.

Demand side strategies

Improve consumer information

106. *Quality of care is highly variable and while the consumers may be aware of this, they may not have sufficient knowledge to be able to assess the quality of the advice and treatment they receive.* There is also no easy channel for complaints. Patients are presenting demands, for example for injections, based on wrong perceptions of effectiveness. Enabling consumers (for example, using different communication channels such as village meetings and various types of media) to make more informed choices may improve care seeking behavior in terms of appropriateness and timing.

107. *NAFDAC has already started carrying out public awareness campaigns about drug use, quality of drugs especially the risk of fake drugs, and their potential adverse effects.* Based on the concerns raised by the clients of the health care providers interviewed for this study about fake drugs, these campaigns appear to have been fairly effective. This work should be continued and it could be explored whether experiences can be used for general health education and social marketing purposes with a view to making patients better consumers.

Empowering consumers

108. *Consumers can be empowered by implementation of an accreditation system that transparently classifies the hospital or health facility according to certain standards.* At least, where there are several providers to choose between, this can stimulate competition on quality standards and not just on price. Currently, an accreditation process is starting with the NHIS. It is important that this process is transparent and that clear criteria are applied. The accreditation process is an opportunity not just to provide information for NHIS members on whether certain providers qualify for the scheme, but to make a broader assessment available to the general public.

109. *Other strategies include strengthening institutions to give consumers authority to challenge quality/consumer protection, implying a functional complaints system.* Complaints currently have to go through the regulatory bodies in Lagos. Not only do these bodies have low capacity, the centralization makes it more difficult to access the system for patients who want to file a complaint. Decentralization of complaints and disciplinary processes in professional practices would therefore be desirable.

110. *Strengthen consumer organizations to negotiate prices and quality and assist in individual or collective complaints.* Such civil society organizations could obtain bargaining power, for example, by pooling of funding and management and development of negotiating skills.

Supply side strategies

Training

111. Training and sharing of information are intended to improve quality of case management skills among both clinical staff as pharmacy staff.

112. CHAN offers training for health service providers in PHC, including training of village health workers and traditional birth attendants, training in nutrition, immunization, mother and

child health care, growth monitoring, water and sanitation issues, management of STIs and HIV/AIDS as well as management training. The resources are, however, limited.

113. None of the interviewed pharmacists and PMVs have been invited for training or workshops. NAFDAC has, however, started some orientation programmes for PMVs and other private sector providers, mainly related to quality of drugs. Given the relative importance of patent medicine vendors for all users and for the poor in particular, it seems relevant to focus on strengthening this level of service in order to improve accessibility of quality care.

Regulation by control

114. *The capacity of the regulatory bodies is weak and there is a need to strengthen them in order to effectively enforce regulation.* Limiting the number of licenses issued by geographical area, for example depending on population could be a way of spreading private providers especially in combination with positive incentives. However, it could prove to be a challenge to impose such regulation.

Regulation by incentives/resources

115. Regulation by incentives is meant to positively induce change in behaviour, thereby avoiding the information, administrative and political constraints related to regulation by control. Even in the private for-profit sector other motives than profit-maximisation are at work.

116. To make locating in underserved areas more attractive to private for profit providers reducing business costs, increasing expected income, and other incentives are likely to be necessary, although they may be not sufficient conditions.

117. Reducing business costs could be in the form of low interest loans for equipment and infrastructure, provision of office space at a reasonable cost and support to strengthen management. Speeding up or fast tracking licensing procedures for businesses to be set up in underserved areas could also be explored. At the same time limiting the number of licenses by geographical areas would limit the number of more attractive alternatives.

118. Increasing expected income could be in the form of guaranteeing a minimum payment, providing a tax exemption or giving a base capitation payment for a clinic that is set up in an area with no or limited coverage. Other incentives could include the provision of good housing at a reasonable cost. This could be developed in collaboration with local area councils who would like to work actively to attract providers to improve health services in their community. Other non-financial incentives could include access to diagnostic and treatment services in public health facilities and access to training opportunities.

119. Faith-based organisations often operate in rural areas, and are willing to provide services in hardship areas, if service delivery can be self-sustaining. Expansion or even continuation of NGO services in underserved areas may also have to be stimulated in similar ways by subsidising running costs, if the catchment area cannot sustain operations to break-even or to finance much needed capital investment.

120. An accreditation system combines pre-defined standards and financial incentives to increase quality. The current accreditation process with NHIS is an opportunity for developing an accreditation system useful to the whole sector. However, criteria should be reasonable (for example, many private providers in Europe would not be able to meet the criteria proposed in the preliminary NHIS guidelines) and there should be clear guidance regarding what needs to be strengthened for those who do not qualify in the first round. Moreover the selection of these providers should be transparent. Ideally, the accreditation system should eventually be open to all providers.

Service contracts

121. *Development of services contracts in which the government pays for providers for a specified service of a defined quantity and quality at an agreed price could be an option for mission hospitals especially those operating in underserved areas.* It would, however, probably require a fairly long development process of trust and consensus building. Contracting is a business arrangement that may be more politically viable in order to take advantage of the resources that Nigeria has in its NGO network. Contracting with private providers, for example to deliver services in areas of public health concern, is an option that could be part of the basis for the above mentioned 'guaranteed' basic payment in under-served areas.

Governance strategies

122. *There is a need for the government to take an increasing stewardship for the whole sector, to act as an active strategic purchaser with clear priorities regarding where to go and how to use the combined resources available in the health sector.* The FMOH is working on increasing public-private partnership and consensus building. However, because of the federal system, there is a limit to how far the FMOH can go. There is a need also to strengthen the SMOHs to become active stewards of the health sector and not see themselves as mainly providers in competition with the private sector. The situation in the states varies and some states have already started the process. However, this process often also requires a cultural/attitudinal change that takes time. It is, therefore, important to start as soon as possible, ensuring coordination with the FMOH initiatives in order to maximise synergy.

123. *Representatives of the private sector providers are also important stakeholders.* Well-organised professional organisations can play a very important role in self-regulation. One problem when it comes to more formally involving the private health care sector in relation to contracting, developing incentive systems and changing the regulatory system is the relative disorganization of the sector. In such a situation it is less clear with whom one should negotiate and a considerable amount of resources would be used for negotiating with all individual providers. The private sector organisations in place have very little capacity and do not have a very large membership. Thus professional organisations have to be strengthened so that they are empowered to effectively play their respective roles in partnership with the public sector.

CHAPTER 5. HEALTH CARE FINANCING IN NIGERIA

1. *This chapter analyzes health care financing in Nigeria.* Available data on federal, state, and local government spending on the health system are discussed, as well as funding by international donors. Recently available survey data on private spending, particularly household out-of-pocket payments for health services, are analyzed. Overall conclusions on financing patterns are presented and the government's health financing strategy is discussed.

ECONOMIC CONTEXT

2. *Nigeria faces deep-rooted challenges, but government reforms, macroeconomic policy, an oil revenue windfall, and growth in the non-oil economy have contributed to overall economic growth.* Nigeria faces considerable challenges from the legacy of decades of economic mismanagement, including corruption, poor infrastructure and weak institutions. However, government reforms to combat corruption and improve transparency, as well as macroeconomic policies to manage oil revenues, control inflation and stabilize the exchange rate, have contributed to robust economic growth in the past few years. Notably, in 2004 the federal and state governments successfully set aside a portion of their windfall in oil revenues. Nevertheless, there is concern about growth in government spending, as the 2005 government appropriations bill implies a 52% increase in federal spending over the previous year. (IMF, 2005b)

Table 41. GDP growth and GDP per capita, Nigeria, 2001-2005

	2001	2002	2003	2004	2005
real GDP growth (%)	3.3%	1.4%	10.9%	3.6%	7.4%
real oil GDP growth (%)	1.4%	-11.6%	26.5%	1.9%	12.9%
real non-oil GDP growth (%)	4.3%	8.0%	4.4%	4.5%	4.9%
real GDP per capita growth (%)	6.0%	-1.3%	7.9%	0.8%	4.6%
GDP per capita (US\$)	362	341	415	485	582
non-oil GDP per capita (US\$)	199	180	201	204	224

Figures for 2003 and 2004 are estimates and those for 2005 are projections.
Source is IMF (2005a).

3. *Economic growth makes more resources available for the health sector.* Both oil and non-oil GDP have grown significantly since 2003, keeping pace with and exceeding population growth (Table 41). Overall estimated GDP per capita has increased from US\$ 362 in 1999 to US\$ 582 in 2005 (in nominal terms). Estimated non-oil GDP per capita, an indicator of the resources directly available to households,³⁸ has also increased, but at a slower rate, from US\$ 199 in 1999 to US\$ 224 in 2005. In theory, both economic growth and better government policies and management make more overall resources available for the health sector – from both government and households.

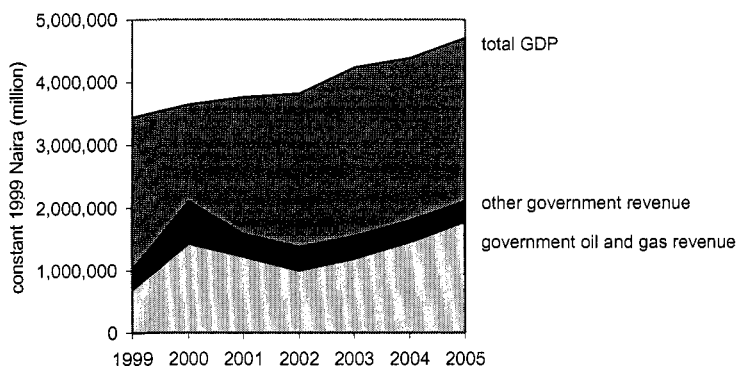
PUBLIC SECTOR HEALTH SPENDING

4. *The Nigerian government at all levels is greatly dependent on oil production revenue.* This has both benefits and drawbacks. On the benefit side, oil revenues allow the Government to control a significant proportion of GDP without the difficulties of collecting taxes from small firms and households. This is a benefit, of course, if these resources are applied to productive uses. Among the drawbacks observed in the case of Nigeria are the apparent reduction in

³⁸ This is assumed in this case because much of the value of petroleum production is translated into either revenues for the producers or royalty and tax revenues for the government.

accountability to taxpayers, the greater opportunity for rent-seeking and other unproductive uses of government revenues, and the volatility of oil revenues. (Sala-i-Martin and Subramanian, 2003). Figure 50 describes trends in real GDP, total government revenue, and government oil and gas revenue between 1999 and 2005. A decrease in oil prices in 2002 caused a decline in overall GDP as well as total government revenue (despite growth in the non-oil economy), illustrating the volatility of Nigerian government's main source of resources.

Figure 50. Real GDP, total government revenues and government oil and gas revenues, Nigeria, 1999-2005 (million Naira at constant 1999 prices)



Authors' calculations from IMF estimates.

5. *GDP growth, particularly in the oil sector, has increased overall government revenue in real terms, at the same time that government revenue as a proportion of GDP has somewhat increased in the past few years.* Since 2002, there has been steady growth in real terms in both total GDP and government revenue. Government revenue as a proportion of GDP has fluctuated around 40%; it was 42% in 2001, decreasing to around 36% in 2002-03 but increasing again to a projected 45% in 2005.

6. *The Federation Account distributes oil and tax revenues between the federal, state and local governments.* Under Nigeria's federal system, the three levels of government receive block transfers from centrally-collected revenues. The Federation Account receives revenues from oil production royalties and a domestic value-added tax. Since 1999, oil revenues have accounted for around 80% of the revenues of the account. In 2003, the allocation formula was 48.5% to the federal government, 24.9% to state governments and 20.6% to local governments.

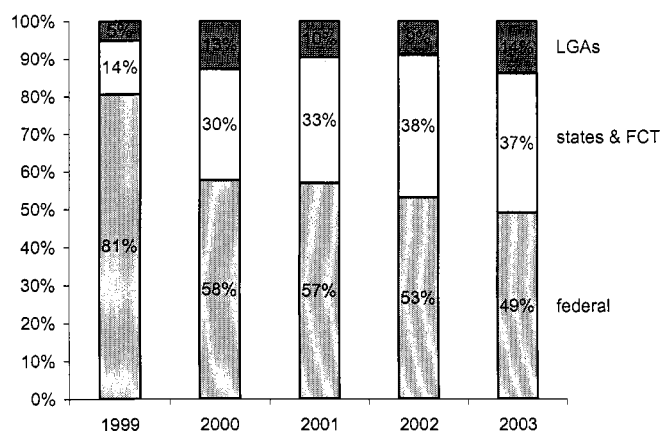
7. *The division of responsibilities for health services makes it difficult to compile data on public sector health spending.* As described in Chapter 3, under Nigeria's federal system, responsibilities for health services are divided between levels of government. The federal government finances public sector tertiary services, state governments finance public sector secondary hospital services, and local governments support public sector primary health care (PHC) services. The federal government also intervenes at the PHC level through a number of vertical programs and parastatal agencies. Data on government health spending is difficult to compile because states and local government authorities (LGAs) are not required to report budgets and expenditures to the federal level.

Federal Government Health Expenditures

8. *Although its share is decreasing, the federal government accounts for most government spending, while local governments account for the least. The large resources available to the federal government are an impetus for federal involvement in basic services.* Figure 51 describes each level of government's share of total government expenditure based on data reported by the Central Bank of Nigeria (CBN). It indicates that in 2003, the federal government accounted for

almost 50% of total expenditures, state governments accounted for about 37%, and local governments for 14%. The federal government's share has decreased somewhat from 2000, mostly to the benefit of the states.³⁹ The large resources available to the federal government are one of the impetuses behind its involvement in basic health and education over the years through various programs and parastatal agencies.

Figure 51. Federal, state and LGA shares of total government expenditures, Nigeria, 1999-2003



Authors' calculations from CBN data.

9. *Federal government health expenditures have increased in real terms in line with growth in GDP and growth in total government spending.* According to CBN reports, federal government health spending has increased from the equivalent of around US\$ 141 million in 1998 to the equivalent of US\$ 288 million in 2003 (Table 42).⁴⁰ Health spending as a proportion of total federal spending declined between 1998 and 2000, but increased in subsequent years, reaching 3.2% by 2003. Most of the real growth in federal health spending (around 100% between 1998 and 2003) seems to be the result of overall growth in GDP and in total government spending.

10. The three sources of data on federal health spending available to the authors are similar except for the year 2002. The Central Bank of Nigeria's figures, reproduced in IMF reports, are shown in Table 42. A National Health Accounts (NHA) study by the University of Ibadan, supported by WHO, provides similar estimates for the period 1998-2001, but not for the year 2002 (Soyibo *et al.*, 2004). Expenditure data for 2001 and 2002 compiled by Fagbemi (2004) from reports from the Office of the Accountant General (cash releases), the FMOH, and individual hospitals and agencies, are similar to the CBN reports and the NHA study for 2001, but also diverge from the CBN for 2002. For 2002, the University of Ibadan NHA study estimates federal health expenditures at Naira 34,539 million, Fagbemi estimates Naira 36,052 million, and the CBN reports 63,171 million. This results in a range of estimates for that year equivalent to US\$ 250 to 450 million, or US\$ 2.10 to 3.80 per capita. For 2003, the only source of data is the CBN, which reports federal health expenditures of Naira 39,686 million, equivalent to US\$ 288 million or US\$ 2.35 per capita.

11. *The 2004 budget suggests a proportional increase from the previous year in health spending but a slight decrease in real terms.* The 2004 budget allocation to the FMOH and National Population Commission accounted for 6.9% of the total budget or Naira 35,300 million, equivalent to US\$ 265 million or US\$ 2.10 per capita. However, the overall budget, including the

³⁹ IMF estimates indicate a higher share for the federal government, although the trend is the same: 80% in 1999, 70% in 2000, 66% in 2001, 66% in 2002, and 59% in 2003.

⁴⁰ Parallel (unofficial) exchange rates are used because the divergence with official rates was so great before 2000 that resulting estimates of health spending in US\$ would not reflect the real purchasing power of health expenditures.

health budget, decreased from 2003 to 2004, so that in real terms we can expect a slight decline in real health expenditures, even though data on budget releases in 2004 are not available to the authors. In other words, the US\$ 2.10 per capita budgeted in 2004 (with some proportion probably not released) is slightly lower than the US\$ 2.35 per capita reported to have been actually spent by the federal government on health in 2003.

Table 42. Federal government health expenditures, Nigeria, 1998-2003 (in current and constant 2003 prices)

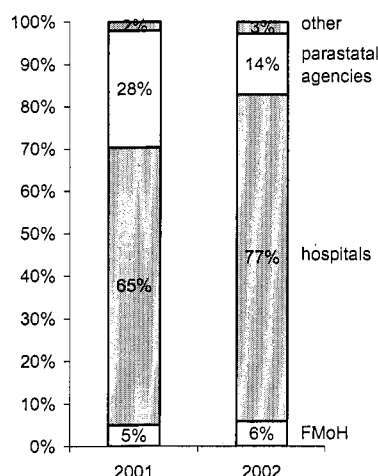
	1998	1999	2000	2001	2002	2003
Naira million at current prices	11,984	16,180	18,182	44,652	63,171	39,686
US\$ million at parallel exchange rate	141	176	150	333	454	288
Annual growth in federal health expenditures in current \$US		25	(15)	122	36	(37)
Growth in federal health expenditures in current \$US 1998-2003 (%)						104
% federal government health expenditures/ total federal expenditures	3.3	4.5	2.7	2.8	3.7	3.2
Federal health expenditures at 2003 prices (naira million), based on the CPI	19,718	24,969	26,236	54,255	67,999	39,686
Real annual growth rate in federal health expenditures (%)		27	5	107	25	(42)
Real growth in federal health expenditures 1998-2003 (%)						101

Authors' calculations from CBN data.

12. *Most federal health spending goes to teaching and specialized hospitals and federal medical centers.* Data on the allocation of funds released for health by the federal government in 2001 and 2002 are presented in Figure 52. In 2002, 77% of federal health expenditures went to federal hospitals – 58% to teaching and specialized hospitals and 19% to the federal medical centers in state capitals. This is somewhat of an increase from 2001, when the proportion was 65%, with most of the difference coming from federal parastatal agencies, whose proportion dropped from 28% in 2001 to 14% in 2002. These include the parastatal agencies most involved in primary health care: the National Primary Health Care Development Agency (NPHCDA) and the National Immunization Program (NPI). The NPHCDA received 7% of total federal health spending in 2001 and 5% in 2002, while the NPI received 18% in 2001 and 6% in 2002. In these years, the drug regulation agency accounted for around 1 to 2% of the total, while the National Health Insurance Scheme received around 1%.

13. *Actual releases of funds for capital spending are less than budgets, while releases for recurrent spending exceed budgeted amounts.* Like in other countries, much budgeted capital spending does not occur, but recurrent needs are better met. Federal fund releases for capital investment in the health sector were 71% of the budgeted amount in 2001 and only 36% in 2002. In contrast, releases for recurrent expenditures were 216% of the budget in 2001 and 116% in 2002 (Authors' estimates from budget data from the Ministry of Finance and cash releases data from the Office of the Accountant General). These patterns indicate a situation where expenditures are determined more by resource availability (tied to inflows of oil revenues) and the pressures from personnel and clients, to meet salaries and other recurrent costs, than by pre-determined budgets. Such "cash budgeting" has been observed at all levels of government in Nigeria (World Bank, 2003a). Nevertheless, unlike some other countries, overall releases are not greatly inferior, and may exceed, budgets. Total releases were 129% of the budget in 2001 and 81% in 2002.

Figure 52. Federal government health expenditures, Nigeria, 2001-2002



Authors' estimates from data from Office of the Accountant General collected by Fagbemi (2004).

14. *Most federal health spending is on salaries.* In 2001 and 2002, between 66% and 75% of federal health expenditures were devoted to personnel costs, while around 5% covered other recurrent costs (suggesting that most drug costs are borne by patients). About a quarter of the total was on capital expenditures (Authors' estimates from Office of the Accountant General data on cash releases).

State Government Health Expenditures

15. *Total state government expenditures are less than federal spending and greatly dependent on transfers from the Federation Account.* As noted above, estimated total state government spending is around a third of total government spending.⁴¹ This compares to the federal government's share, which was around half the total in 2003 (Figure 51). This is because state governments receive around 25% of Federation Account transfers while the federal government receives around 50%. Since 1999, 60 to 70% of total state government revenues have come from the Federation Account (CBN, 2005). Several states are exceptions; for example in 2000 Lagos and Oyo derived 33% and 44% of their revenue respectively from in-state sources (World Bank, 2003a).

16. *Total state government spending has increased dramatically since 1999, although growth has slowed more recently.* Figures reported by the CBN indicate that total state government spending grew at an annual rate of over 50% in real terms between 1999 and 2002. Real growth in state spending has slowed to about 5% in 2003 (Authors' estimates from CBN data).

17. *Comprehensive data on state health spending are not available.* The University of Ibadan NHA study collected data on state government health expenditures from six states in each geopolitical zone as well as Lagos and the Federal Capital Territory (FCT) (Soyibo *et al.*, 2004). Extrapolating from this sample, the study estimated total state health expenditures at Naira 6,162 million in 1998, rising to Naira 20,660 million in 2002. Another source of information is a World Bank study of state finances which collected data on budget allocations to health in 2002 (Table 43). Health budgets in the 13 states, representing around 45% of the country's population, totaled Naira 26,474 million, which already exceeds the NHA estimate for expenditures in all states. This may be due to differences between budgeted amounts and actual expenditures, but may also suggest that the NHA figure is an underestimate.

⁴¹ When referring to states, the Federal Capital Territory (FCT) is included.

Table 43. State government health budgets, Nigeria, 2002

	recurrent	capital	total	% of total state budget
<i>North-West</i>				
Kebbi	501	851	1,352	7%
Sokoto	628	364	992	5%
<i>North-East</i>				
Bauchi	796	803	1,598	8%
Yobe	118	375	493	3%
<i>North-Central</i>				
Kwara	872	717	1,589	8%
<i>South-West</i>				
Lagos	2,583	650	3,233	6%
Ondo	912	1,011	1,923	6%
Oyo	1,784	960	2,744	10%
<i>South-East</i>				
Imo	892	592	1,484	6%
<i>South-South</i>				
Akwa-Ibom	1,764	1,429	3,193	5%
Cross River	863	246	1,109	5%
Delta	1,934	994	2,928	5%
Rivers	2,162	1,675	3,837	6%
total	15,807	10,667	26,474	

Sources: World Bank staff estimates and World Bank (2003a).

Table 44. Implied average state health budgets by region, Nigeria, 2002

	per capita state health budget (Naira)	per capita state health budget (\$US)	% of total state budget
North-West	277	1.99	5.6%
North-East	281	2.02	6.8%
North-Central	792	5.70	8.0%
South-West	472	3.39	7.1%
South-East	461	3.32	6.0%
South-South	761	5.48	5.4%
Nigeria	505	3.63	6.3%

Authors' estimates from data on 13 states in World Bank (2003a).

18. *Available data suggest that state health spending represents a low proportion of total state spending.* The population-weighted average for the proportion of total state budgets represented by the health budget in 2002 in the 13 states for which data were collected by the World Bank study is 6.3%. This is a low proportion when considering that secondary health services are a significant part of state government responsibilities. Applying this percentage to the CBN reported figure for total state expenditures in that year of Naira 724,537 million results in an estimate for total state health expenditures of Naira 45,618 million. This figure can serve as an upper bound for estimated total state health spending in 2002, with the University of Ibadan figure of Naira 20,660 serving as a lower bound. This range is equivalent to US\$ 150 to 330 million, or US\$ 1.25 to 3.75 per capita, and is of comparable order of magnitude to the range of

estimates for federal spending in that year. For 2003, applying the proportion of 6.3% to total reported state expenditures results in an estimate for state health spending in that year of US\$ 58,000 million, equivalent to US\$ 420 million or US\$ 3.50 per capita. Like federal spending, state health spending is likely concentrated on the main area of state responsibility, secondary hospitals, and is also likely mostly on personnel, although data on this are not available.

19. *State government health spending seems to be lowest in the northern regions and highest in the North-Central and South-South zones.* The 2002 state health budget data also provide an indication of regional patterns. Regional estimates implied by the health budget data from 13 states collected by the World Bank state financing study (weighted by state population) are presented in Table 44. Consistent with various health outcome and service indicators, this suggests that state health spending is lowest in the northern regions. The highest state spending may be in the North-Central and South-South zones, where health indicators are better than the north, but not as good as the other southern regions, but where the private sector is not as strong as in the South-East and South-West.

Local Government Health Expenditures

20. *Total local government spending accounts for 10-15% of total government expenditures, is very dependent on transfers from the Federation Account, and has risen along with oil revenues.* Central Bank figures on local government spending indicate that this level of government accounts for around 10-15% of total government expenditures (Figure 51). This is in line with the facts that local governments receive around 20% of transfers from the Federation Account but do not have any significant source of locally-generated revenue. Indeed, the share of local government revenues accounted for by transfers from the Federation Account rose from 70% in 1998 to 80% in 2003. Due to growth in these transfers, based on increases in oil revenues, local government spending has increased in recent years, for example by 80% in real terms between 2002 and 2003.

21. *Estimating health spending by the 774 local governments is a considerable challenge.* The University of Ibadan NHA study collected information on LGA health spending from 7 states and the FCT (Soyibo *et al.*, 2004). Extrapolating from this sample, the study estimates that in 2002 local government health spending was Naira 5,013 million. This represents just 3% of total local government spending reported by the CBN. The only other data points available to the authors are from a World Bank study of 30 LGAs in Lagos and Kogi states which found that on average, LGAs in Lagos allocated 26% of their budgets to health in 1999 and 22% in 2000. The averages in Kogi state were 14% in 1999 and 12% in 2000 (World Bank, 2003b). Applying the 2000 percentages to the reported 2002 Federation Account transfers to local governments in these states results in a figure of Naira 1,850 million, which, for just two states, is already equivalent to over a third of the NHA estimate for health spending by all local governments. This suggests that the NHA figure is an underestimate perhaps due to incomplete administrative data collected in state capitals. Unfortunately details on methodology used in the NHA report are not available.

22. In any case, taking the NHA estimate as a lower bound for a range of estimates for local government health spending in 2002, an upper bound could be obtained by applying the lowest proportion (12%) observed by the Lagos and Kogi study to total reported local government spending. This results in a range of Naira 5,013 to 20,378 million, equivalent to US\$ 35 to 145 million, or US\$ 0.30 to 1.20 per capita.

23. For 2003, the only data available are on total local government expenditures reported by the CBN, which was Naira 326,400 million, or an almost 70% increase in real terms from 2002. If we again assume that 12% was allocated to health, this results in an estimate of Naira 41,568 million, equivalent to US\$ 300 million or US\$ 2.45 per capita.

24. *Like other levels of government, most health spending by local governments is on personnel.* The 2002 study of 30 LGAs in Lagos and Kogi states found that in Lagos, 65% of local government health spending was on personnel, while the proportion in Kogi was 78%. In Lagos, 19% was for other recurrent costs and 16% for capital expenditure. In Kogi, 15% went to other recurrent costs and 7% to capital investment (Khemani, 2004). This indicates that patients bear the bulk of drug costs.

25. *There is a general impression that in past years, local governments did not receive sufficient funding to meet their responsibilities but that the situation has improved recently.* In the 1990s, local governments experienced the phenomenon of “zero allocation” due to Federation Account transfers being deducted at source in order to ensure that primary school teachers were paid. The practice of deduction at source has since been disallowed by the Supreme Court. Central Bank figures on total local government expenditures show that they were low in the 1990s (even not accounting for deductions at source) but that they have increased dramatically in recent years. For example, in 1998, reported total local government expenditures were Naira 44,056 million or the equivalent of US\$ 520 million. By 2003, this had increased to Naira 346,400 million or the equivalent of US\$ 2,510 million. This large increase in overall resources available would suggest a corresponding improvement in local government financing of primary health care services.

26. *Nevertheless there continues to be concern about governance and the commitment of local governments to basic services.* Deduction at source came about because local governments were unable or unwilling to ensure regular salary payment for teachers. There is evidence of a similar lack of commitment to primary health care services during this period. A 1995 assessment of PHC services in Niger State concluded that commitment to health services by LGAs was minimal and reflected in insufficient releases of funds to their Health Departments (Niger State Ministry of Health, 2000). A similar assessment in Benue State found that LGAs “have yet to accept responsibility for the sustainability of health services,” with regard to meeting non-salary recurrent costs (PATHS, 2003j). There is also some evidence on corruption at the LGA level. The 2002 study of health facilities in 30 LGAs in Lagos and Kogi states found that salary delays were not evident in Lagos but more than 42% of staff had not been paid for more than six months in Kogi. Regression analysis found that salary non-payment was not associated either with the total level of resources available to LGAs or to LGA reported wage allocations, suggesting “leakage” of funds intended for wages. (Khemani, 2004).

International Donor Health Expenditures

27. *International support for the health sector is growing and can potentially have substantial impact on specific health issues.* The University of Ibadan NHA study collected data on international donor support to the health sector and estimated that it totaled around US\$125 million in 2002, which is a significant increase since 1999 (Soyibo *et al.*, 2004). Considering available information on planned projects and grants by the World Bank, Global Fund and large bilateral donors, particularly USAID and DFID, annual commitments by international donors to health and HIV/AIDS are currently reaching US\$ 200 million.

28. At an estimated US\$ 1 per capita annually in 2002, international donor assistance to the sector is equivalent to at least one third of total federal government health spending, and to similar proportions or more of state or local health spending. Donor-supported programs are therefore relatively large in relation to any one level of government, and can be influential because they are focused for the most part on specific health issues (such as HIV/AIDS, malaria, family planning or immunization).

Total Public Sector Health Expenditures

29. *Estimates for total public sector health expenditures in 2002 range from US\$5 to 10 per capita, with the federal government spending the most and local governments spending the least.* As discussed above, the University of Ibadan NHA study's estimates for health spending by the three levels of government in 2002 are somewhat lower than CBN-reported federal health expenditures and plausible estimates for state and local health spending. Table 45 presents the range of estimates for 2002. Total domestic public sector health spending is estimated in the range of US\$ 3.65 to 8.75 per capita. This range is 2.9-5.8% of total government spending and 1.2-2.3% of GDP. Adding international assistance to the sector bring the range of total public sector health spending in 2002 to US\$ 4.68 to 9.78 per capita.

Table 45. Range of estimates of public sector health spending, Nigeria, 2002

	Naira (million)	US\$ (million)	US\$ per capita
Federal	34,539 - 63,171	250 - 450	2.10 - 3.80
State	26,474 - 45,618	150 - 330	1.25 - 3.75
Local	5,013 - 20,378	35 - 145	0.30 - 1.20
total domestic	66,026 - 129,167	435 - 925	3.65 - 8.75
international donors	17,104	123	1.03
Total	83,130 - 146,271	558 - 1,048	4.68 - 9.78

Sources are Soyibo et al. (2004) and authors' estimates from World Bank (2003a) and CBN data.

30. Table 46 presents estimates for 2003, based on CBN-reported federal health expenditures, an assumed 6.3% (from 2002 data on the health budgets of 13 states) of total reported state expenditures, and an assumed 12% (from 1999-2000 data on LGA health budgets in Lagos and Kogi) of total reported local government expenditures. CBN-reported federal health expenditures in 2003 are the equivalent of US\$ 2.34 per capita. Applying assumptions about state and local health spending results in an estimate of total domestic public sector health spending of US\$ 8.22 per capita, equivalent to 5.8% of total government spending and 2.1% of GDP.

Table 46. Estimates of public sector health expenditures, Nigeria, 2003

	Naira (million)	US\$ (million)	US\$ per capita	sources and assumptions
Federal	39,686	288	2.34	1
State	58,033	421	3.42	2
Local	41,568	301	2.45	3
total domestic	139,287	1,009	8.22	
international donors	20,850	150	1.22	4
Total	160,137	1,159	9.44	

1. CBN

2. 6.3% (from 2002 budget data from 13 states) of CBN reported total state expenditures in 2003

3. 12% (from 1999-2000 data on LGA budgets in Lagos and Kogi states) of CBN reported total LGA expenditures in 2003

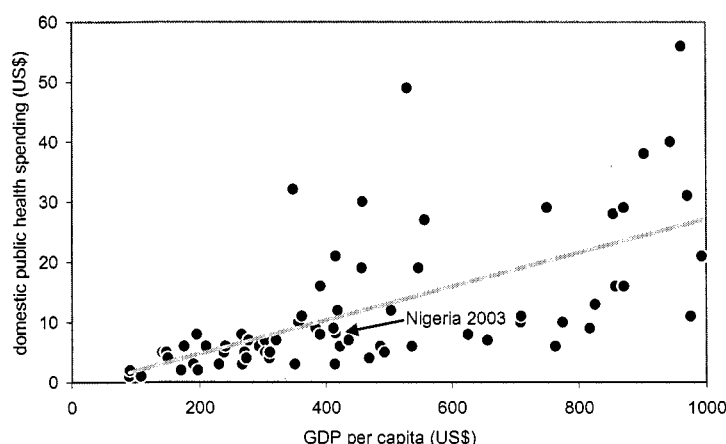
4. assumed increase from Soyibo *et al.* (2004) estimate of US\$ 125 million in 2002.

Authors' estimates.

31. *Plausible estimates for government health spending are somewhat at odds with the prevailing impression of very low public funding for health services.* An estimate of total annual public sector health spending in 2003 of around US\$ 8 is higher than prevailing impressions. The authors suggest that the NHA figure of around US\$ 5 for 2002 (presented as the lower range in Table 45) might be an underestimate, due to unrepresentative and perhaps incomplete information about state and local government health spending. At the same time, growth in total government spending in 2003 and subsequent years, particularly at the state and local levels, suggests that health spending has grown accordingly. In general, impressions about government health spending may not have yet caught up with the increases in overall spending of the past few years.

32. *This level of domestic public sector health spending is consistent with Nigeria's economic growth and per capita GDP.* Figure 53 plots estimated domestic public sector health spending and GDP per capita in 2002 among countries with GDP per capita less than US\$1,000. The US\$ 8 per capita estimate for Nigeria in 2003 is situated on the graph (plotted against the IMF estimate of GDP per capita of US\$ 415). Nigeria is in fact slightly below the trend-line, indicating that in absolute terms this level of domestic government spending on health is consistent with the current size of its economy.

Figure 53. Per capita domestic public sector health spending and GDP per capita, 2002 (countries with GDP per capita less than US\$ 1,000)



Authors' calculations from WHO 2005 and World Development Indicators 2005.

33. *At the same time, it should be remembered that a large proportion of total domestic public sector health spending is allocated to hospitals.* One of the reasons for the general impression of low government spending for health services is that international observers are largely focused on primary health care, while most of the absolute growth in government health spending has gone to hospitals. Federal and state spending are mostly allocated to tertiary and secondary services, accounting for at least two-thirds of total government health spending. Although total local government spending has increased dramatically, indicating that local government health spending on primary health care services has also increased, the plausible estimate for 2003 presented in Table 46 is only US\$ 2.45 per capita for total LGA health sector spending.

PRIVATE SECTOR HEALTH SPENDING

34. Private health spending is composed of direct support for health services by private non-profit organizations and for-profit firms, private insurance, and household out-of-pocket payments.

Private Organizations

35. *Spending by private non-profit organizations is likely substantial in some regions.* Given the importance of private non-profit providers in some parts of the country, particularly hospitals run by religious organizations, capital investments and subsidies financed by these groups are likely to be significant. The University of Ibadan NHA study estimated health expenditures by private non-profit organizations at Naira 6,018 million in 2002, equivalent to about \$US 45 million (Soyibo *et al.*, 2004).⁴²

36. *Some large for-profit firms and parastatal companies, particularly in Lagos and other large cities, directly provide or finance health services for employees and their families.* A survey in the mid-1990s found that 10% of urban residents and 4% of rural residents reported that medical expenses were covered by their employers. A survey of 2,751 private employers in the 1980s found that employee medical benefits accounted for 6.5% of payroll costs. (Ogunbekun, Ogunbekun and Oroboaton, 1999). The University of Ibadan study, which surveyed parastatals and private firms, estimated such spending at Naira 3,981 million in 2002, or the equivalent of around US\$ 28 million.⁴³

Private Insurance

37. *Private health insurance has been very limited and vulnerable to increasing health care costs.* A study in the mid-1990s concluded that around 300,000 people (0.03% of the population) were covered by private medical insurance, mostly employee health benefit schemes. Increasing costs put pressure on these schemes during the last half of the 1990s. The largest private insurance scheme, with 17,000 beneficiaries, collapsed in 1996. (Ogunbekun, Ogunbekun and Oroboaton, 1999). In 2001, it was reported that only four private health insurance companies were operating in the country, with the largest company covering around 18,000 people (Alubo, 2001).

38. *However, it is reported that private insurance has been growing in the past few years.* A more stable economic and political climate may have facilitated a rebound in private health insurance as part of employee benefits and catering to higher-income households. Companies have reportedly started to move away from fee-for-service arrangements in order to control costs, introducing some managed care measures, including capitation and negotiation with health providers on service packages and quality. The University of Ibadan NHA exercise, which surveyed private sector firms and insurance companies, estimated that spending by private health insurance, including employee pooling schemes, totaled Naira 13,836 million in 2002, equivalent to around US\$ 100 million. The study estimates that spending by private health insurance has grown steadily since 1998, when expenditures were estimated to be around one-third the 2002 level in real terms (Soyibo *et al.*, 2004).

39. *Experience with community health insurance is mixed but holds potential.* A number of experiments in community-based health insurance have been implemented in Nigeria, including savings schemes through existing community-based organizations such as women's associations, faith-based organizations, and craft and trade groups. A review of these found that their management capacity, revenue-raising, and negotiation with providers, could be improved, but in general they may have potential for sustainability (Atim *et al.*, 1998).

⁴² The University of Ibadan study treated this category under international donor spending, so it is included in estimates discussed in the previous section. Spending on health by non-profit organizations from domestic sources, particularly churches, may be substantial, but data are not available.

⁴³ Information on methodology was not provided in the report.

40. The National Health Insurance Scheme (NHIS) has supported pilot community health insurance programs in several locations and intends to adopt this strategy in the future to extend insurance coverage beyond formal sector employees. Pilots include village-based mutual health insurance in Niger State and an urban scheme among an association of shoemakers in Abia State. In these pilots, the NHIS pays the premiums for under-five children, the elderly, and disabled, while association members pay a monthly premium. In return, they receive care from providers who are paid by capitation for a package of services. Continuing external subsidies are likely necessary to sustain such arrangements. The government, supported by DFID, intends to undertake a comprehensive documentation and analysis of existing community financing in order to inform the NHIS strategy.

Household Out-of-Pocket Health Expenditures

41. *Recent household survey data indicate that annual out-of-pocket spending on health services exceeds US\$ 20 per capita, representing around 9% of total household expenditures.* The 2004 Nigeria Living Standards Survey (NLSS) collected data on household health expenditures from a representative sample of 19,159 households. The estimate from these data of average annual per capita out-of-pocket spending on health is Naira 2,999, equivalent to around US\$ 22.50. The survey data indicate that this out-of-pocket spending on health services accounts for 8.7% of total household expenditures. This health spending includes expenditure on outpatient care, transportation to health care facilities, and medications.⁴⁴

42. *This is one of the largest shares of health expenditure out of total household expenditure in developing countries for which data are available.* For instance, in countries such as Vietnam, Brazil, and Albania, household health expenditure represents 7% or less of total household expenditure (Table 47). In Ethiopia, expenditure on health represents only about 1% of total expenditure;⁴⁵ Ethiopia is however a much poorer country where almost all health services are offered by the public sector and where exemptions and waiver schemes exist. In Nigeria, the large burden of health expenditure is due to high utilization of private providers, to cost recovery by public facilities with no clear exemptions and waivers, and insufficient health insurance mechanisms.

Table 47. Health spending as % of total household expenditures (household survey data)

	health spending as % of total household expenditures	GNI per capita US\$
Vietnam 1992/1993	6%	170
Nepal 1996	3%	210
Brazil 1996-97	5%	4,400
Albania 2002	7%	1,440
Ethiopia 2000	1%	110
Nigeria 2004	9%	350

Sources: Vietnam, Nepal, and Brazil come from (Deaton and Zaidi, 2000?), Albania from Albania Poverty Assessment (World Bank, 2002), and Ethiopia from Ethiopia CSR (World Bank, 2004). The Nigerian estimates were obtained from the NLSS 2004. The GNI per capita for Albania, Ethiopia and Nigeria come from the WDI 2005.

⁴⁴ The estimates exclude data on household expenditures for hospitalization. The NLSS collected data on expenditures for hospitalization during the last two weeks. As hospital stays are rare events, it was not possible to annualize these data.

⁴⁵ This is likely to be an underestimation as the survey on which this percentage was calculated did not include some health expenditure.

43. *There are large income differences in terms of health expenditures.* The richest households on average spend a larger share of their total expenditure on health care than the poorest households (Table 48). This is not surprising: as seen in previous chapters, richer households have higher utilization rates than poor ones and they are also more likely to use private providers. On average, a household belonging to the poorest fifth of the population spends about 6.9% of its income on health care, or 530 Naira (equivalent to around US\$ 4) per capita per year; in contrast, a household among the richest fifth spends about 13.4% of its income on health care, or 9,200 Naira (equivalent to about US\$ 70) per capita per year.

Table 48. Health expenditure as percentage of total household expenditure across expenditure quintiles, Nigeria, 2004⁴⁶

	Quintiles					total
	poorest	II	III	IV	richest	
health expenditure as % of per capita household expenditure	6.9%	6.7%	7.6%	8.8%	13.4%	8.7%
per capita annual health expenditure (Naira)	528	957	1,572	2,736	9,200	2,999
share of consultations	16.0%	20.4%	23.2%	21.6%	28.2%	22.3%
share of transportation	5.5%	8.8%	8.5%	8.4%	10.1%	8.4%
share of medication	78.5%	70.9%	68.4%	69.9%	61.7%	69.3%

Authors' estimates from NLSS 2004 data.

44. *Health expenditure also varies across regions.* Regional differences, though, are smaller than income differences. In most regions, households spend 9% of their total expenditure on health care, close to the national average (Table 49). The only exceptions are households in the South East and North West. Households in the South East spend the most on health (about 11%) relative to total expenditure; while households in the North West spend the least (about 7%). Again, this likely reflects a higher utilization of private providers in the South East region and lower utilization of private providers in the North West.

Table 49. Health expenditure (excluding expenditure on inpatient care) as percentage of total household expenditure across regions, Nigeria, 2004

	regions					
	South South	South East	South West	North Central	North East	North West
health expenditure as % of per capita household exp.	9.3%	10.9%	8.2%	9.7%	9.5%	6.7%
per capita health expenditure (Naira)	3,338	5,488	3,170	2,764	2,426	1,928
share of consultations	20.7%	26.5%	13.3%	27.3%	24.7%	23.7%
share of transportation	7.2%	8.1%	4.6%	7.5%	11.1%	11.4%
share of medication	72.2%	65.4%	82.1%	65.2%	64.1%	64.9%

Authors' estimates from NLSS 2004 data.

45. *Expenditure on drugs represents the largest share of household health expenditure.* About two thirds of household per capita health expenditure in Nigeria is expenditure on drugs (Table 48). Pharmaceuticals are readily available throughout the country through pharmacies, patent medicine dealers and street vendors. Similarly, in many instances pharmacies or patent medicine dealers are the first providers sought in case of illness. For example, as shown in Chapter 2, among children that were taken to a health facility in case of ARI or diarrhea, the majority were

⁴⁶ The consumption aggregate used to do these calculations was a modified version of a preliminary one done by the Federal Office of Statistics (FOS); the final consumption aggregate was not available at the time this report was produced. A different consumption aggregate might slightly change these results.

taken to a pharmacy or patent medicine dealer. Data from the NLSS 2004 further indicate that at least 11 percent of all health care consultations in the last two weeks took place with a pharmacy or patent medicine dealer.

46. *Visits to a health care provider for outpatient care represent about 20% of total per capita household health expenditure, and transportation to a health care facility for outpatient care represents as much as 8%.* These shares vary across household income levels and across regions (Table 48 and Table 49). The share of consultations out of total household expenditure increases with income quintiles. This reflects lower utilization rates among poorer households and also lower use of private providers.

Table 50. Catastrophic health expenditure across regions, Nigeria, 2004 (% of households)

	more than 25% of total household expenditures spent on health	more than 50% of total household expenditures spent on health
South South	12.9%	4.0%
South East	14.5%	6.3%
South West	10.3%	4.5%
North Central	15.0%	4.8%
North East	12.7%	4.3%
North West	8.1%	1.8%
Total	11.6%	3.9%

Authors' estimates from NLSS 2004 data.

47. *Many households could fall into poverty or further into it as a consequence of catastrophic health expenditure.* In Nigeria as many as 12% of households had about a fourth of their total expenditures on health care and as many as 4% of households had half of their expenditures on health care (Table 50). In the South East region as many as 6% of households incur catastrophic health expenditure (health care expenditures comprise more than 50% of their total household spending). The situation is alarming as the country is poor, with non-oil per capita GDP estimated at US\$ 224 in 2005 (IMF, 2005a). One of the main objectives of a health system is to assure financial protection against catastrophic health expenditure (Murray & Evans, 2003); in Nigeria the system does not seem to be achieving this goal.

48. *On average, Nigerians pay about 655 Naira (equivalent to about US\$ 5) per outpatient consultation; however, this average masks large regional differences in expenditure.* The NLSS found that costs of outpatient consultations in the South East and South West regions are significantly higher than in any other region in the country (Table 51).⁴⁷ There are no significant differences in consultation payments between the North East and North West regions where the payments are the smallest. Regional differences are partly due to a higher utilization of private providers in the southern regions, especially in the South East where 70% of these consultations took place in a private facility. In contrast, in the North East and North West only about 25% of the consultations took place in a private facility.

⁴⁷ This difference was statistically significant at a 5% level.

Table 51. Average expenditure for outpatient consultations across regions, Nigeria, 2004

Region	average fee per outpatient consultation (Naira)	% at a private for-profit provider
South South	618	48%
South East	1,007	70%
South West	891	54%
North Central	665	34%
North East	452	26%
North West	440	25%
Total	655	42%

Authors' estimates from NLSS 2004 data.

Table 52. Average outpatient consultation expenditure across regions, Nigeria, 2004 (Naira)

	South South	South East	South West	North Central	North East	North West	total
Federal	826	1,733	990	801	652	1,162	1,124
Government	(191)	(341)	(352)	(178)	(174)	(263)	(138)
State	790	1,328	573	659	630	409	656
Government	(120)	(180)	(97)	(100)	(153)	(53)	(52)
Local	364	516	173	617	234	219	355
Government	(84)	(97)	(55)	(123)	(24)	(43)	(42)
Private	650	977	1,165	723	439	390	745
	(69)	(73)	(138)	(95)	(58)	(51)	(40)

Note1: The NLSS also gave information on consultations in religious facilities and others, however as there were not many observations the estimates were not precise and thus they were not included in the table.

Note2: Standard errors in parenthesis.

Authors' estimates from NLSS 2004 data.

49. *Differences in expenditure for outpatient consultations between public and private providers are not always large.* Table 52 presents average outpatient consultation expenditures across regions and across type of provider. It indicates that, except for federal facilities, there is only a small difference in expenditure between public and private providers. In general, federal facilities are tertiary hospitals, state facilities are secondary level hospitals, and LGA facilities primary health care facilities. The level of care available from the private providers is not defined. There is no statistical difference in expenditures on outpatient consultations between state facilities and private for-profit facilities. The only exception is the South West region, where expenditure on outpatient consultations was lower in the state-owned facilities than in private facilities. On average, expenditure on consultations in a local government facility was significantly lower than consultations in a private facility. The exception was the North Central region where there was no statistical difference in expenditure on consultations between private and public facilities. The small differences in expenditure suggest that public facilities are not much more affordable than private ones and financial barriers to access are present throughout the country.

50. *The higher the level of household expenditure, the higher the expenditure on outpatient consultations.* Table 53 presents average outpatient consultation expenditures by quintiles of total household expenditures. Households in the highest quintile spend considerably more than

poorer households. This is not surprising as the higher the expenditure level the more likely the consultation took place at a private provider (Table 52). Data from the NLSS (not shown) also indicate that the higher the income level, the more likely the consultation took place in a hospital and not in a primary level facility.

Table 53. Average outpatient consultation expenditure across household expenditure quintiles, Nigeria, 2004

quintile	average consultation fees (Naira)	% at a private provider
poorest	168	31%
II	226	35%
III	303	40%
IV	511	42%
richest	1,257	49%
total	655	42%

Authors' estimates from NLSS 2004 data.

51. *There are small regional differences in transportation expenditures to outpatient health care services and no regional differences in expenditures on medication.* Differences in transportation expenditures are only statistically significant between the South South and South West regions and all other regions (Table 54). With regard to medication, on average, Nigerians spend about 500 Naira a month on drugs (equivalent to about US\$ 3.75), regardless of the region where they live.

Table 54. Average individual expenditure on health care services across regions, Nigeria, 2004 (Naira)

	Transportation	Hospital stay per day	Medication
South South	191	892	499
South East	341	1,270	507
South West	306	1,378	511
North Central	203	698	415
North East	201	415	474
North West	127	637	458
Total	217	894	482

Authors' estimates from NLSS 2004 data.

52. *There are large regional differences in hospitalization expenditure.* However, as there were not many observations, these estimates are not precise; it is only in the North East where the estimates are significantly different from any other region but the South South (Table 55). On average, the survey found that one day of hospitalization costs 894 Naira, equivalent to about US\$ 6.70. The South East and South West regions have the largest expenditure on hospitalization. The data do not allow for a disaggregation by type of provider, but it is likely that the high expenditure in these two regions reflects a large utilization of private hospitals.

53. *There are large income differences in the average expenditure on transportation, hospitalization and medication; the poor on average spend much less than the rich* (Table 55). These differences are, in general, statistically significant. Although the data do not allow disaggregation, this is likely the result of richer households going to more expensive providers –

both private and higher level public services. In the case of average monthly expenditure on medication, these income level differences might also reflect more quantity and better quality of the products purchased by richer households.

Table 55. Average individual health care expenditure across population expenditure quintiles, Nigeria, 2004 (Naira)

quintile	Transportation	hospital stay per day	Medication
poorest	57	196	188
II	85	192	261
III	103	270	336
IV	167	453	440
richest	412	1286	866
Total	217	894	482

Authors' estimates from NLSS 2004 data.

Table 56. Percentage of individuals that paid for vaccinations, post-natal, or pre-natal care across household expenditure quintiles, Nigeria, 2004

	last vaccination	post-natal care	antenatal care
poorest	33%	63%	82%
II	36%	51%	79%
III	35%	52%	83%
IV	33%	58%	81%
richest	35%	54%	81%
total	34%	55%	81%

Authors' estimates from NLSS 2004 data.

54. *There are no uniform or clear exemption programs or fee waiver mechanisms across the country, even for high-impact preventive services.* Fee exemptions for specified groups in the population can reduce financial barriers to care for the poor and reduce the risk of catastrophic health expenditures. Fee waivers for some types of health services can encourage utilization of interventions with high positive externalities, such as immunization, family planning, and tuberculosis treatment. A 2001 survey of 202 LGAs found that only 22% of LGA sampled had fee waiver mechanisms in place (Adeniyi *et al.*, 2001).

Table 57. Percentage of children paying for last vaccination across places where the vaccination took place, Nigeria, 2004

	percentage paying
health center	43%
hospital	26%
private clinic	79%
mobile unit	15%
school	5%
home	10%

Authors' estimates from NLSS 2004 data.

55. Data from the 2004 NLSS indicate that many patients pay for high-impact child and maternal health interventions. Table 56 indicates that 34% of parents paid for their child's most recent vaccination, 55% of mothers paid for post-natal care, and 81% paid for antenatal care – all services which are often officially free of charge due to their public health impact. Further, there

are no significant differences across household income (expenditure) quintiles, indicating that exemption mechanisms are not successfully distinguishing the poor from the non-poor.

Table 58. Percentage of individuals paying for post-natal care consultations across type of facility, Nigeria, 2004

type of facility	Percentage paying
federal government	53%
state government	53%
local government	47%
religious	79%
industrial	42%
private	87%
other	51%

Authors' estimates from NLSS 2004 data.

56. The NLSS collected information on where children had their last immunization. Table 57 indicates that vaccination offered through outreach (e.g. home, school, and mobile units), such as polio immunization, is more likely to be free. However, immunizations at health facilities, most often routine vaccinations, are not always free of charge.

57. About half of postnatal care consultations require payment to public providers while private providers charge fees for such services in almost all cases. As seen in Table 58, public as well as private facilities charge for post-natal care. About half of the individuals taken to postnatal care consultations in a public facility (federal, state, or local) paid for this service. In the private sector the percentage that paid is much larger, at 87%.

Table 59. Estimates for private health expenditures, Nigeria, circa 2003-04

	Naira million	US\$ million	per capita (US\$)	Source
private organizations	3,982	30	0.24	1
private insurance	13,836	104	0.83	1
private out-of-pocket	377,046	2,835	22.55	2
total private sector	394,864	2,969	23.61	
total public sector	160,137	1,159	9.44	3
Total	555,001	4,128	33.06	

1. University of Ibadan NHA estimate for 2002 (Soyibo *et al.*, 2004).

2. Authors' estimate from 2004 NLSS data.

3. Authors' estimate for 2003 from various sources (Table 46).

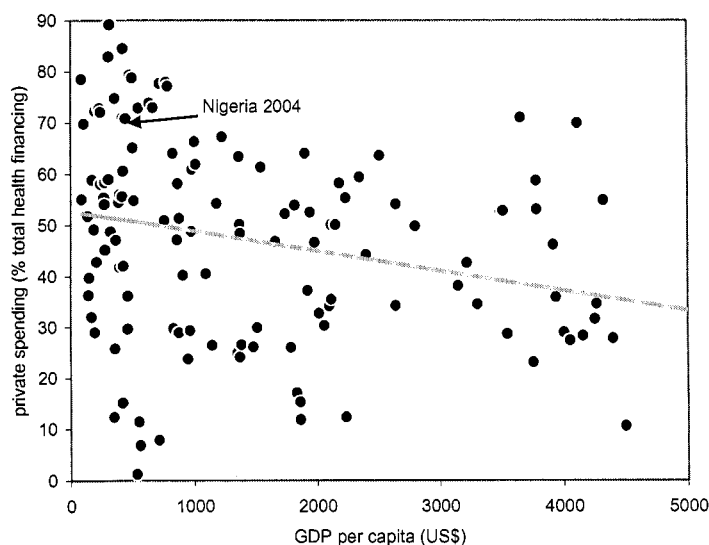
Total Private Health Expenditures

58. *Private expenditures on health services are very large.* Table 59 presents estimates for private health expenditures, using figures from the University of Ibadan's NHA study for expenditures by private organizations and private insurance in 2002, added to the 2004 NLSS estimate for per capita out-of-pocket payments in 2004. It indicates that private health expenditures could be reaching almost US\$ 3 billion per year in Nigeria, or more than US\$ 23 per capita.

59. *Out-of-pocket payment account for 68% of total spending on health services in Nigeria.* These estimates, combined with those for public sector health financing in 2003 presented in

Table 46, suggest that private financing accounts for 71%, and out-of pocket payments for 68%, of total health financing in Nigeria. Out-of-pocket payments by the poor are considered the most regressive form of health care financing because the poor's burden of payments for health services and risk of catastrophic health expenditures are not shared by the rest of the population.

Figure 54. Private spending as a proportion of total health financing and GDP per capita, 2002 (countries with GDP per capita less than US\$ 5,000)



Authors' calculations from WHO 2005 and World Development Indicators 2005.

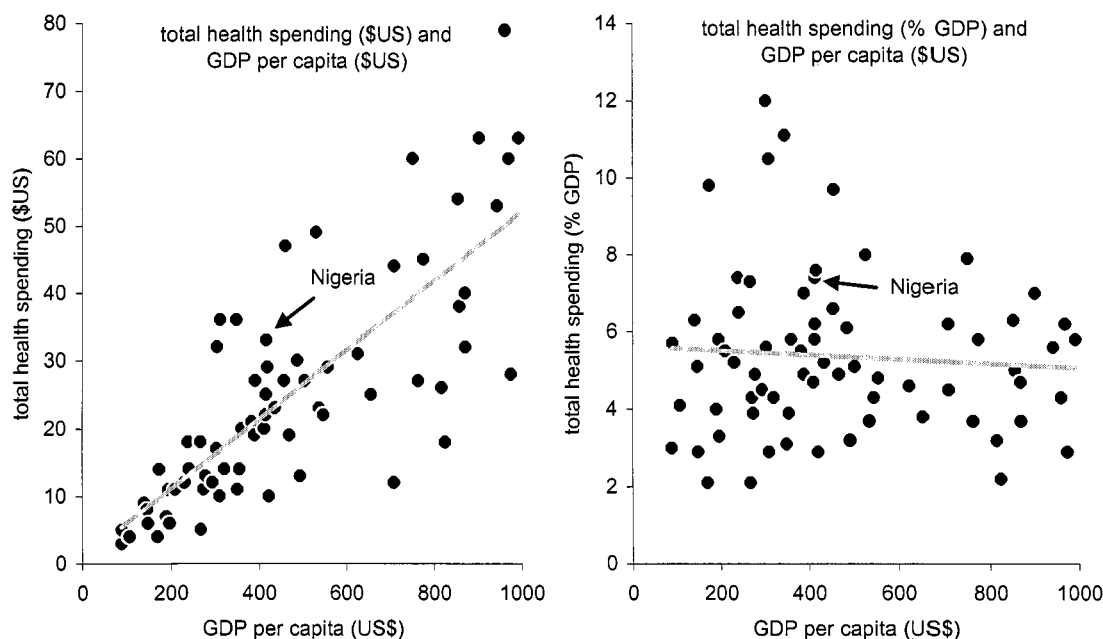
60. Compared to other countries, Nigeria is at the high end of the range with regard to the share of total health financing accounted for by private spending. Figure 54 indicates that the share of total health financing accounted for by private spending decreases as GDP increases. The estimated proportion for Nigeria – 71% – is not inconsistent with other poor countries but it is at the high end of the range.

TOTAL HEALTH SPENDING

61. Total annual health spending in Nigeria is estimated at around US\$ 30 per capita, somewhat higher than other countries of similar GDP per capita and mostly made up of private out-of-pocket spending. Following the discussion above, we have a lower bound estimate of about US\$ 5 per capita for domestic public sector spending from the University of Ibadan's NHA study for 2002. An upper bound of around US\$ 8 comes from assumptions based on information about state and LGA health budgets from World Bank studies. An additional US\$ 1 to 1.50 can be attributed to international donor support to the sector. Estimates for health spending by private organizations and insurance are made by the NHA study and total around US\$ 1 per capita. The 2004 NLSS provides a reliable and representative estimate for private out-of-pocket payments that is equivalent to around US\$ 22.50 per capita.

62. Thus, we have a lower-bound estimate for total health spending of the equivalent of around US\$ 29.50 per capita and an upper-bound estimate of around US\$ 33.00 per capita. These figures represent between 6.5 and 7.4% of GDP. Compared to other countries, these estimated levels of spending are somewhat higher than the trend, both in absolute terms and as a proportion of GDP (Figure 55).

Figure 55. Total health spending (as \$US and as % of GDP) and GDP per capita, 2002 (countries with GDP per capita less than US\$ 1,000)



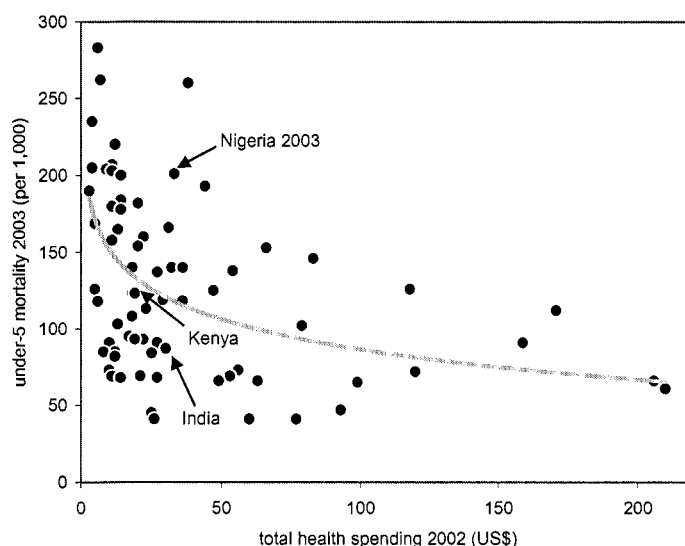
Authors' calculations from WHO 2005 and World Development Indicators 2005.

63. *Health spending in Nigeria is higher than we thought.* The estimates discussed here are also higher than prevailing estimates for health spending; WHO, for example, estimates total health spending in 2002 in Nigeria at US\$19, of which government health spending accounted for US\$ 5 (WHO, 2005b). As discussed above, the higher end of the estimates discussed here for government health spending (around US\$ 8) is consistent with Nigeria's current GDP per capita. The main difference, however, comes from estimates of private out-of-pocket spending, and the estimate here (\$US 22.50) is based on a recent and reliable household survey, while other estimates are based on older data sources with limited representativeness. It seems that with recent economic growth and greater political stability, health spending in Nigeria appears to be higher than generally perceived.

64. *Total health spending is relatively high, but it is inefficiently allocated in that much public and private spending goes to hospitals.* Nigeria's health outcomes are not commensurate with its high health expenditure. Available data indicate that most health spending does not go to primary health care and preventive services which provide the most cost-effective means of improving population health status. Around two-thirds of public spending (i.e. most federal and state government spending) is allocated to hospitals. Similarly, because the better-off spend more and because they tend to go to higher-level hospitals and private providers, it is likely that most private spending is not allocated to PHC and preventive services.

65. *Nigeria's health spending is inefficient in terms of health outcomes.* Figure 56 provides a rough illustration of what Nigeria is buying with its comparatively high level of total health spending. Although under-five mortality has declined since the 1990s, the 2003 NDHS estimate of 201 per 1,000 is much higher than would be expected given Nigeria's level of health spending.

Figure 56. Total health spending and under-5 mortality, 2002-03 (countries with under-5 mortality over 40 per 1,000)



HEALTH FINANCING STRATEGY

66. The above discussion suggests that the following are among the main health financing issues facing Nigeria:

- i) *High-impact preventive and primary health care services need increased funding, both from public and private sources.* The high-end estimate for local government spending on primary health care services is in the order of \$US 1.20 per capita while a large proportion of private spending is on higher-level services and for medications. In comparison to an estimated requirement of extra US\$ 16 per capita to achieve significant progress towards the MDGs (see Chapter 6), this suggests that although local financing for public sector health services has increased in recent years, there is a need for further growth and/or increased efficiency in the health sector that can result in savings. This growth and/or savings will need to be aimed at primary health care services while at the same time working towards channeling private resources into high-impact health interventions.
- ii) *Local governments have the greatest responsibility for primary health care services but have the lowest level of resources, while the federal government commands the greatest share of public finances.* Consistent with the allocation of fiscal transfers from the Federation Account, the federal government accounts for about half of overall government expenditures, states account for about 35% and local governments account for about 15%. This suggests a need to further channel federal and state resources down to the local level in order to support basic health services.
- iii) *Household out-of-pocket spending on health services is very large, representing a significant burden on the poor as they confront high financial barriers to care and the risk of catastrophic health expenditures.* Out-of-pocket spending represents over 66% of total health spending, and around 9% of total household expenditures. Around 7% of the scarce resources of the poorest households go to health services, while around 12% of all households spend more than 25% of their budget on health services. At the same time exemption mechanisms do not seem to be working effectively. This situation is common to many poor countries and policy solutions are not straightforward. Exemption and risk-

pooling schemes are not easy to implement, while increased public subsidies for basic services may not be well-targeted or efficient.

- iv) *Total health spending in Nigeria is somewhat higher than other countries of similar per capita income, but very inefficient in terms of health outcomes.* Total health spending, both in dollar terms and as a proportion of GDP, is higher than the trend when compared to other countries, but under-five mortality is much higher than would be expected given international experience. Three explanations present themselves. First, most government spending is allocated to hospitals which are inefficient in addressing most basic causes of illness and mortality. An obvious policy response would be to channel future increases in public sector health spending towards basic preventive and curative health services. Second, private spending seems to be inefficiently allocated as well, with large proportions going to higher-level service providers and to the purchase of drugs. Policy solutions are less evident, but could involve both supply-side improvements in basic services (attracting private demand) and demand-side pooling and channeling of resources towards better quality and more effective care (through managed-care types of arrangements). Third, mortality is concentrated among the poor, in rural areas, and in the North of the country, although the South South is also disadvantaged in terms of certain indicators, and a large proportion of public and private spending does not benefit these population groups. Policy responses could include more equitable allocation of public resources and pooling of private resources.

67. The Nigerian government is pursuing a variety of strategies to address these health financing challenges.

- i) *The 2004 National Economic Empowerment and Development Strategy (NEEDS) represents the government's commitment to improving the health status of Nigerians, particularly through strengthening primary health care.* This provides the overall strategic framework for increased (pro-poor) spending on health as well as more specific policy initiatives.
- ii) *Government health spending has been increasing substantially.* Government health spending has substantially increased in real terms along with growth of GDP and overall government budgets. Health spending by the federal government (the level of government for which the best data are available) doubled in real terms between 1998 and 2003, while budgets have continued to increase since then. However, channeling increases in federal and state health spending towards basic health services will be a challenge given the needs and political constituencies for further investment in hospital services.
- iii) *The federal government intends to increase support to high-impact health interventions through MDG and disease-specific programs.* Increasing domestic and international public resources are being channeled through programs to support preventive and curative interventions with large impacts on population health. These include the federal government's planned MDG program, its continued lead role in immunization, and current and planned federal, state, and international support for HIV/AIDS, malaria, and tuberculosis programs. This support, by increasing public subsidies for basic services, should also have an effect on reducing the poor's financial barriers to care and risk of catastrophic health expenditures.
- iv) *Provisions of the government's proposed Health Act could increase the resources available for primary health care through greater federal and state involvement in primary health care services.* The Health Bill submitted to the National Assembly in 2004 strengthens the federal parastatal agency designed to support primary health care by

designating a source of financing, the National Primary Health Care Development Fund. Tobacco and alcohol taxes are to be earmarked to this fund, but the most significant potential sources of financing are federal, state and local government contributions. The effectiveness of this mechanism will depend on more detailed negotiations between federal and particularly state governments on contributions to the fund and its allocation and use. This holds potential for channeling federal, and to a lesser extent, state resources to support LGAs and basic health services. This is a revival of a strategy to develop PHC in the early 1990s which achieved partial success but which suffered from over-centralization, lack of consultation, and eventually mismanagement and cuts in funding – suggesting that future success will depend on continuing improvements in governance, consultation, and participation.

- v) *Several states are also starting to commit to and take action on improving basic health services.* A number of states are developing poverty reduction strategies (SEEDS) that are analogous to the NEEDS which include commitments to improving support to primary health care services. In practice this will involve allocating state resources towards LGAs and basic services as well as improving coordination with and technical support to local health administrations. At least one state (Enugu) is working on better integration of secondary and primary services along the classic PHC “district” model.
- vi) *Public health insurance holds the potential to improve the use of private health expenditures, reducing individual risks and improving allocation.* The federal government has formally launched the National Health Insurance Scheme (NHIS) and has expressed strong commitment to its effective implementation. The scheme will start with pooling contributions of public sector employees and then expand coverage to private sector employees. The NHIS strategy also includes a component to support community-based insurance as a strategy to pool health expenditure of non-formal sector and rural agricultural workers.

CHAPTER 6. EXTRA RESOURCES NEEDED TO ACHIEVE THE HEALTH RELATED MDGS

1. In September 2001 at the UN Millennium General Assembly, the international community endorsed the Millennium Development Goals (MDGs) with the aim of promoting poverty reduction and human development. The Nigerian government, following its commitment to achieve the MDGs, created a Presidential Committee to design a strategy to accelerate progress to meet these goals. *This chapter, in line with this strategy, examines the extra financial resources needed to achieve the health related goals in Nigeria.* Using the Marginal Budgeting for Bottlenecks (MBB) tool, it presents cost estimates of increasing the coverage of high impact health interventions as well as the impact of these interventions on maternal and child mortality.
2. Teams from the World Bank, UNICEF and WHO developed the MBB to help plan, cost, and budget incremental allocations to the health sector. This method allows for calculating the extra resources needed to achieve the health related MDGs. This is done by estimating the cost of the extra inputs needed to increase the coverage of a group of effective interventions that improve maternal and child health as well as some interventions needed to prevent and treat malaria, TB, and HIV/AIDS.

APPLYING THE MBB TOOL IN NIGERIA: PROCESS AND METHODOLOGY

3. The estimation of the extra financial resources needed to achieve the health related MDGs in Nigeria was part of a larger study on Financing Options for the MDGs. This study aimed to explore how the country could accelerate the achievement of the goals, including estimating costs and examining financing possibilities: external resources, domestic revenue efforts, and possible debt relief.
4. *The health costing exercise, in particular, built on previous work done by Nigerian authorities.* In August 2004, a Presidential Committee on Achieving the Health Millennium Development Goals designed a strategy to accelerate progress in reaching the health MDGs in 14 pilot states⁴⁸. This strategy includes both short and medium term activities. The actions to be immediately implemented are mainly aimed at improving routine immunization⁴⁹, increasing demand for maternal and reproductive health services, improving the management of childhood diseases, extending MAP and DOT projects to all pilot states, and improving household health behavior. The actions to be implemented in the medium term are aimed at improving the stewardship role of the government, improving the management of the health system, revitalizing PHC, improving availability of health resources and their management, increasing access to quality health care, and improving collaboration among partners (private sector and donor community).
5. The application of the MBB tool in Nigeria was possible because of the collaboration between teams from UNICEF (which started the exercise), The World Bank, and the Nigerian Government. The exercise was led by the Department of Health Systems Planning at the FMOH, in collaboration with the Department of Finance and Supplies, Department of Public Health, Department of Community Development and Population Activities, the Personnel

⁴⁸ FMOH. 2004. "Report of the Presidential Committee on Achieving the Millennium Development Goals in Nigeria."

⁴⁹ In the case of routine immunization the Presidential Committee Report also highlights the importance of increasing its coverage. In the short term the solutions proposed are: better coordination and cost-sharing across the three levels of government; cold chain rehabilitation; reclassification of the vaccine budget from capital to recurrent to accelerate the release of funds, etc.

Management Office, the National Programme on Immunization, and the Primary Health Care Development Agency.

6. Work sessions were organized to discuss different constraints in the delivery of some key health interventions, possible strategies to overcome these constraints, as well as to collect information on baseline coverage data and unit costs. The estimation relies on existing information on the health sector in Nigeria, especially from the Nigerian Demographic and Health Survey 2003 and government documents such as the “Status of PHC in Nigeria”, “The National HIV Sero-prevalence survey”, “National Study on Obstetric Care Facilities in Nigeria”, different national standards of staffing and equipment of health facilities, and others.

7. The analysis follows five steps:

- i) Examination of the health system;
- ii) Identification of high impact health interventions;
- iii) Identification of bottlenecks in the delivery of these interventions
- iv) Formulation of a strategy to eliminate these constraints; and setting of coverage frontiers across time for these services; and
- v) Simulations of the cost and impact of the proposed strategy.

EXAMINATION OF THE HEALTH SYSTEM

8. The first step in the process was to obtain a clear understanding of the organization and functioning of the health system. It benefited from the analysis done in other sections of the CSR as well as from discussions with different actors of the Nigerian health system. This examination included an analysis of: (i) the epidemiological profile of the country; (ii) the organization of the health delivery system; (iii) the standards that guide the distribution of facilities, personnel, and equipment; (iv) the health policies in place; (v) the health outcomes and coverage goals the system aims to attain; and (vi) the health care interventions already offered by the system.

IDENTIFICATION OF HIGH IMPACT INTERVENTIONS

9. The selection of effective interventions to improve child health was based on the Lancet series of child⁵⁰ and neonatal⁵¹ survival (See Table 60). These series offer a review of the literature that identifies both preventive and curative interventions with proven and unequivocal effect in reducing neonatal and child mortality and which are feasible for delivery at high coverage in developing countries. The selection of interventions to improve maternal health was based on a review of the literature done by the World Bank, WHO and UNICEF on the basis of a Cochrane analysis. Finally, the selection of interventions to effectively prevent and treat malaria and HIV/AIDS was based on evidence from the Roll Back Malaria Initiative and UNAIDS respectively.

10. *The interventions used in the Nigerian exercise were based on the epidemiological profile of the country, the effectiveness of the interventions in accelerating progress in achieving the MDGs, and on whether they are already offered by the system, or are planned to be offered.* Many of the interventions selected are already offered by the health system; although a few of them are not currently offered or are offered at a very limited coverage. For instance, Hib vaccine (see Table 60) is one of the more effective interventions in improving child survival.

⁵⁰ Lancet, 2003, Child Survival: 361, 362.

⁵¹ Lancet, 2005, Neonatal Survival. Published on-line, March 3, 2005.

However, this vaccine is not part of the country's immunization program and thus it was not included in the costing exercise as was the case for zinc supplementation. Among those interventions that are not currently offered or whose coverage is very limited the exercise included the following: ACT treatment for malaria, ARV combination treatment for HIV/AIDS and management of resistant AIDS and TB. Some of these latter interventions, such as ARV, were included because of the government's commitment to improve their coverage in the near future.

Table 60. Effective Neonatal, child, and maternal health interventions based on the Lancet Neonatal and Child Survival Series and on a Cochrane review of the literature on effective maternal health interventions.

Neonatal Interventions	Child Interventions	Maternal Health
<i>Pre-conception</i>	<i>Preventive Interventions</i>	Oral contraceptives
Folic Acid Supplementation	Breastfeeding	Condom promotion
<i>Antenatal</i>	Insecticide treated materials	Iron supplementation during pregnancy
Tetanus Toxoid immunization	Complementary feeding	Folate supplementation during pregnancy
Syphilis screening and treatment	Water, sanitation, hygiene	ITN for pregnant women
Pre-eclampsia and eclampsia: prevention (calcium supplementation)	Hib vaccine	Antenatal steroids
Intermittent presumptive treatment of malaria	Zinc	Clean delivery
Detection and treatment of asymptomatic bacteriuria	Vitamin A	Assisted delivery
<i>Intrapartum</i>	Nevirapine and replacement feeding	Access to Basic and Comprehensive Emergency Obstetric Care
Antibiotics for preterm premature rupture of membranes	Measles vaccine	pre-eclampsia detection and management
Corticosteroids for preterm labor	<i>Treatment Interventions</i>	
Detection and management of breech (cesarian section)	Oral rehydration therapy	
Labor surveillance for early diagnosis of complications	Antibiotics for pneumonia	
Clean delivery practice	Antimalarials	
<i>Postnatal</i>	Antibiotics for dysentery	
Resuscitation of newborn baby	Zinc	
Breastfeeding	Vitamin A	
Prevention and management of hypothermia		
Kangaroo mother care		
Community-based pneumonia case management		

Source: Lancet, 2003, Child Survival Series: 362 and Lancet 2005, Neonatal Survival Series, 2005 (Published on-line) and a Cochrane review of maternal health interventions (see Soucat *et. al*: MBB Manual forthcoming).

IDENTIFICATION OF BOTTLENECKS IN THE DELIVERY OF KEY HEALTH CARE INTERVENTIONS

11. *To identify delivery constraints, an analysis was made of bottlenecks that hinder increases in the coverage of the selected interventions.* For this analysis, all the interventions were classified according to the mechanism by which they are delivered and thus according to the inputs and strategies needed in their delivery (See Box 2).

Box 2. Classification of health care interventions according to their delivery mode.

- i. *Family/ community based care:* These interventions, which include some preventive measures and the management of maternal and childhood illnesses, can be delivered by the households or the communities themselves under some guidance by health professionals. Insecticide treated bed nets (ITNs) for pregnant women and children under five, condom use, breastfeeding, and oral re-hydration therapy (ORT) are some examples of interventions that are family or community based.
- ii. *Population oriented services:* These services are delivered to all segments of the population, regardless of whether or not they are currently sick. They are usually delivered through periodic outreach or scheduled clinical services. This delivery mode includes the following preventive care interventions: immunizations, ante-natal care, family planning, etc.
- iii. *Clinical based individual care:* These activities include all type of individual curative care interventions that need to be delivered in a health facility and by a trained health care professional. They are offered in a continuous manner so that they can respond to unpredictable situations: a sudden illness, a delivery, etc.

Source: Soucat *et al.* 2005

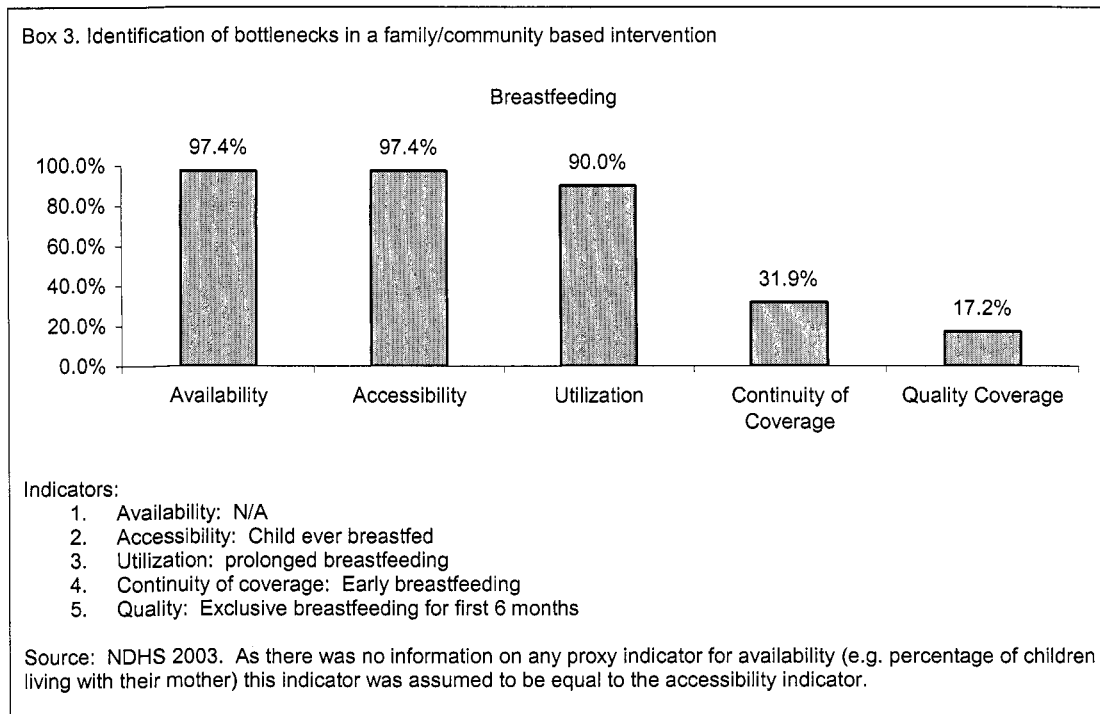
12. Interventions inside each service delivery group share similar constraints in their delivery and thus the analysis of bottlenecks was done for each of these groups. This analysis included an examination of different indicators of the availability, accessibility, utilization, continuity, and quality of these interventions⁵²:

- *Availability:* these indicators assess the availability of critical health system inputs such as drugs, vaccines, supplies, and/or human resources.
- *Accessibility:* these indicators examine physical access to health services, such as access to trained human resources at community level, number of villages regularly reached by outreach services, and time to reach facilities providing basic and emergency obstetric care services.
- *Utilization:* these indicators evaluate the use of health services, in other words they measure first contacts with health service providers, for example, the percentage of children receiving their first dose of DPT immunization.
- *Adequate coverage:* these indicators compare the actual contact with providers relative to optimal number of contacts. For instance, in the case of DPT this indicator will measure the percentage of children of the required age that have received the three doses.
- *Quality:* these indicators examine quality of care by assessing the skills of health workers, for example in terms of their ability to examine the beneficiary, to diagnose, to provide the requisite interventions, to use the equipment and to advice appropriately. One indicator of quality coverage in the case of ante-natal care would be the inclusion of the most important components of ante-natal care (e.g. blood pressure, tetanus toxoid immunization, etc.).

⁵² Soucat *et al.* MBB Manual.

13. Some examples of the analysis of bottlenecks in the delivery of high impact interventions in each delivery mode are detailed in the following paragraphs:

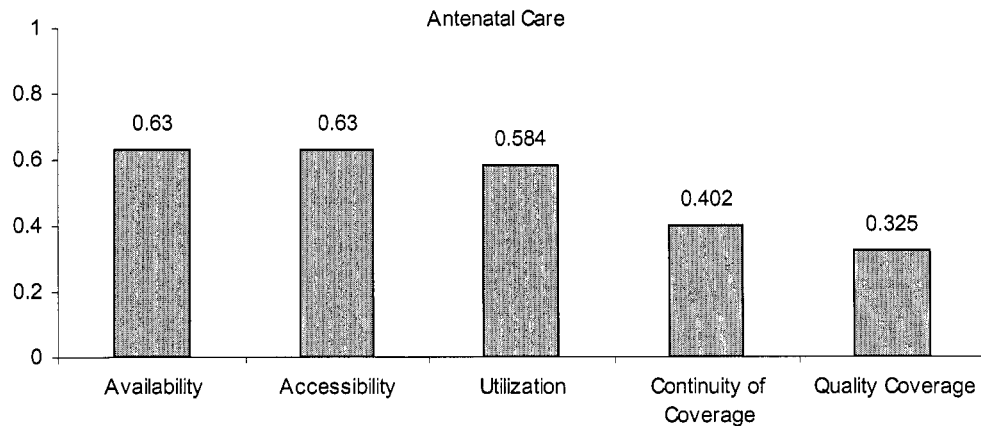
14. Box 3 shows bottlenecks in the delivery of a *family/community based intervention*: breastfeeding. In this case, continuity and quality are major constraints in increasing the coverage of this intervention. Although breastfeeding is a widespread practice in Nigeria, only 32% of children are breastfed within one hour of birth and only 17% are exclusively breastfed in their first six months of life. These two practices limit the health benefits that exclusive breastfeeding brings to children.



15. Other examples of bottlenecks can be illustrated with two *population based interventions*: immunizations and antenatal care. As mentioned before, in the year 2003 only 36% of Nigerian children were immunized against measles and only 13% received all recommended vaccinations. There are many factors behind this very low immunization rate. In 2003, in particular, there was a major vaccine shortage due mostly to procurement issues and delays in the release of funds to buy the vaccines. There are also constraints in the accessibility of immunization services as not all villages have access to outreach EPI programs. Unfortunately, even villages with health posts and health centers do not necessarily benefit from outreach activities. For instance, a PHC facility survey found that only 38% of them offered outreach services (Adeniyi et al., 2001).

16. Box 4 lists some of the bottlenecks in the coverage of ante-natal care services. Accessibility problems and the low continuity and quality of these services are major constraints to increasing the coverage of quality antenatal care services. There is not a large gap between the utilization and access to these services, indicating that utilization might not be the major bottleneck. However, there are large gaps between utilization and continuity and quality of coverage.

Box 4. Identification of bottlenecks in a population outreach activity

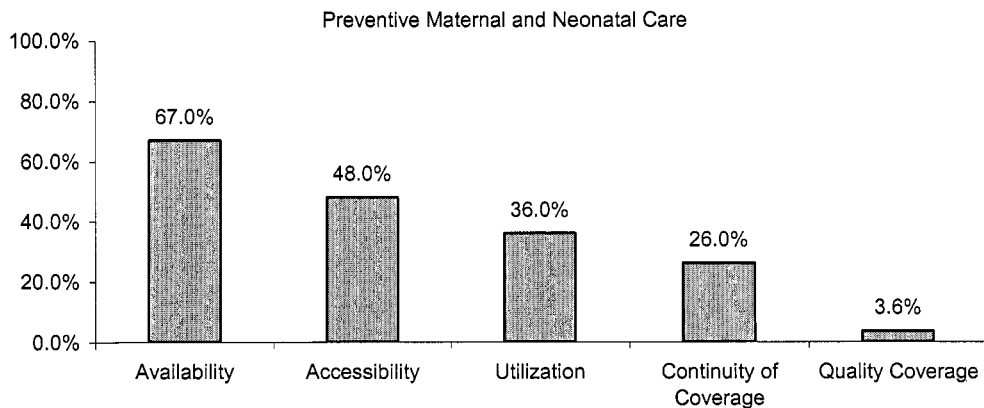


Indicators:

1. Availability: n/a
2. Accessibility: % of health facilities offering ANC
3. Utilization: At least one ANC1
4. Continuity of coverage: at least two doses of tetanus toxoid
5. Quality: Blood pressure taken in ANC

Source: NDHS 2003 for utilization, continuity, and quality. Accessibility was assumed to be equal to availability due to lack of information on any indicator of availability. Accessibility based on a PHC health facility survey (Adeniyi et al, 2001)

Box 5. Identification of bottlenecks in a clinical care intervention



1. Availability: Delivery equipment in PHC facility
2. Accessibility: Health facilities offering daily delivery services
3. Utilization: Assisted delivery (NDHS 2003)
4. Continuity of coverage: percentage of women receiving post-natal care within six days of birth (NDHS 2003).
5. Quality of coverage: Assisted delivery by midwife or physician with life saving skills.

Note: Based on previous MBB worked done by UNICEF, the NDHS 2003, and FMOH study on EOC (2003)

17. Box 5 summarizes current constraints in the delivery of a clinical based health care intervention: preventive maternal and neonatal care. As can be seen in the box, there are significant bottlenecks at all levels, although availability of the services as well as their quality seem to be the largest constraints. Not all facilities have delivery equipment and less than half offer daily delivery services. Utilization is therefore also low, as only about a third of deliveries are assisted by a health professional (doctor, nurse, midwife, or CHEW). Continuity of coverage and quality of this intervention are also low, for instance, only 26% of women and infants receive postnatal care within six days of birth.

FORMULATION OF A STRATEGY TO ELIMINATE THESE CONSTRAINTS

18. *Based on the analysis of bottlenecks, this costing exercise prioritized population-based outreach services, family and community based interventions, and basic clinical services.* Increasing the coverage of individual clinical and referral services presents bigger challenges and has a higher cost than increasing the coverage of interventions delivered through the other modes. Nevertheless, some clinical care and referral interventions aimed at reducing maternal mortality and treating TB, complicated malaria, and HIV/AIDS should be provided.

19. *As seen in Table 60, many of the interventions proven to increase child survival are population based interventions that can be delivered through outreach activities. These interventions were given priority in the costing estimation because they have a high impact on child health and are easy to implement.* In particular, these interventions (e.g. immunization, vitamin A supplementation): (i) serve all eligible population and therefore there are no costs involved in identifying possible beneficiaries; (ii) are standardized which facilitates their implementation, monitoring and evaluation, and the training of personnel delivering them; (iii) are more often offered by the public sector and therefore the transaction costs involved in coordinating with other providers are low; (iv) in contrast to individual clinical care, the degree of asymmetric information between patient and health provider is small; and (v) the public sector already has a wide experience in the delivery of these services.

20. *Family and community based interventions also have a large impact on child mortality, and are also relatively simple to implement. However, because of the low coverage of some of them (e.g. ITN usage) and the need for coordination with different actors outside the public sector it might be costlier to increase their coverage than that of outreach interventions.* Family and community based interventions involve mostly household practices and behavioral changes (e.g. breastfeeding, ORT). These activities can be delivered through information campaigns, social mobilization, peer support, and social marketing. The country counts on many advantages in increasing the coverage of these interventions as: (i) there are already some success stories (e.g. ORT, HIV/AIDS awareness campaigns); (ii) the country has a dynamic private sector with experience in this area; and (iii) there are already village volunteer health workers that could play an active role in increasing the coverage of these activities.

21. *Clinical based care interventions are tailored to the patient and therefore need professional health staff to deliver them. Increasing the coverage of these interventions represents a much larger challenge than increasing the coverage of population or family/community based activities* because they: (i) are usually provided in a health care facility; (ii) require the presence of skilled personnel that can identify illnesses and can also provide treatment; (iii) require equipment and drugs; and (iv) present a large degree of asymmetric information between the patient and the health provider that would require government regulation and quality assurance. Despite the challenges involved, some basic clinical care interventions and access to comprehensive referral care are needed to reduce maternal mortality given that the impact in decreasing maternal deaths of family and population-based health interventions is very small.

22. Finally, interventions to treat HIV/AIDS and resistant TB are very costly and currently have a very low coverage in the country. Under these circumstances, increasing their coverage represents the biggest challenge to the health system. Nevertheless, these interventions were included as they directly affect MDG #6, combating HIV/AIDS, malaria, and other diseases.

23. Based on the system's constraints and the outlined prioritization of service delivery interventions, 6 policy scenarios that gradually eliminate bottlenecks and thus accelerate the progress to meet the MDGs were estimated. These scenarios are in line with the government's strategy as formulated in the "Report of the Presidential Committee on Achieving the Millennium Development Goals in Nigeria". The first scenario is the easiest to implement and the least costly; progressively the scenarios become more difficult and more costly to implement. The six policy scenarios are summarized in Table 61 and are also explained below:

Table 61. Strategic Scenarios for Reaching the MDGs

Scenarios	Component	Main Purpose
1. Improving immunization management and governance	Sufficient supply of vaccines and essential materials; governance issues.	Reduce child mortality
2. Strengthening the capacity of population-based outreach services	Essential package of population based interventions. Capacity building for outreaching mechanisms.	Reduce child mortality
3. Addressing the community-based interventions	Create a supporting environment for households to adopt good practice and behavior	Reduce child mortality, prevent malaria, HIV/AIDS
4. Providing basic clinical services	Accessible and good quality basic primary clinical care	Reduce maternal mortality, treatment of malaria, TB
5. Provide comprehensive referral care (CEOC)	Available and accessible CEOC	Reduce maternal mortality, treatment of malaria, TB
6. Treatment of HIV/AIDS and management of resistant and complicated TB and HIV/AIDS	HAART Antibiotics for opportunistic infections. Second line TB drugs	Treatment of HIV/AIDS and management of resistant and complicated TB

- i) *Improving Immunization management and governance.* This scenario was constructed under the assumption that some of the largest bottlenecks in immunization coverage are problems in the central procurement of vaccines, the timely release of funds, and poor coordination across the three levels of government in the distribution of vaccines. It is not very costly to eliminate these bottlenecks and major changes have already taken place. For instance, the procurement of vaccines was recently transferred to UNICEF which is now in charge of centrally procuring them. Problems in the opportune release of funds were reduced while the costing exercise was in progress. As a result of the low level of immunizations and its decline in the last decade, the national strategy to accelerate progress in achieving the health MDGs has identified the improvement of routine immunization as an urgent priority.
- ii) *Strengthening the capacity for population-based outreach services.* This scenario adds to the previous one the expansion of coverage of population oriented services (e.g. immunization, vitamin A and folate supplementation, antenatal care, family planning, etc). It will remove all constraints that limit the coverage of these activities. Currently there are no functioning outreach mechanisms in the country with the exception of the polio eradication campaign. In the case of routine immunization, this scenario will remove all bottlenecks that have kept vaccinations at

such a low level and that are not related to central management and procurement, such as training of personnel, improving distribution and logistics, etc. Primary health care in Nigeria is probably the weakest part of the health system. This component will therefore require significant effort and investments. The major issues with PHC services are not only the availability of health facilities, but also the lack of equipment, trained personnel, incentives for personnel to engage in outreach activities, transportation, funds, management and planning capacity at the LGA level, etc.

- iii) *Addressing the community based interventions.* This scenario adds to the previous two all health activities and interventions that can be done by households and communities themselves after receiving some guidance (e.g. breastfeeding, oral re-hydration, bednets, condom use, etc). There are three major reasons why this scenario should not be very difficult to implement. First, there are many examples in Nigeria of successful interventions that have spread health knowledge and changed behaviors. For instance, the percentage of children younger than two months that were exclusively breastfed has increased from 2% in 1990 to about 26% by 2003.. During the same period there was an increase of about 20 percent in the number of children with diarrhea that were treated with any ORT, an increase of about 90 percent in the number of married women with knowledge of a modern method of contraception, and an increase of about 15 percent in the number of women that were aware of the HIV/AIDS epidemic⁵³. Second, despite these successful examples, much remains to be done as almost no households owns an insecticide treated bednet, only 17 percent of children who are younger than six months of age are exclusively breastfed, ORT usage is low, and a limited percentage of Nigerians know two methods to prevent the spread of HIV/AIDS. Third, this scenario does not imply major changes on the health system. The health authorities can take advantage of the presence of NGOs and CBOs and can form partnerships with private for profit and non-for-profit organizations for social marketing and distribution of some of these interventions (e.g. ITNs, condoms, ORT packages, etc.), to spread information, and to improve caregiver's knowledge of healthy behaviors and practices.
- iv) *Basic clinical services.* This scenario will add to the previous ones, basic clinical curative services (e.g. prevention of maternal to child transmission of HIV/AIDS, antenatal steroids, treatment of malaria, resuscitation, DOT, antibiotics for premature rupture of membranes, BEOC, etc). This component therefore implies: major rehabilitation and equipment of existent health centers; possibly the construction of new facilities; the training of staff; the procurement of drugs (and not only vaccines and micronutrient supplements); the extension of DOT; and management, planning, and M&E capacity building at the LGA level. PHC facilities currently have serious quality constraints that make many patients bypass them in favor of higher level facilities.
- v) *Comprehensive referral care services.* This scenario will add to the previous ones comprehensive emergency obstetric care and management of complicated malaria. This intervention will take place either at comprehensive health care centers or at the level of general hospitals.
- vi) *Treatment of HIV/AIDS and management of resistant and complicated TB and HIV/AIDS.* This scenario is the most expensive one. It aims to offer treatment to patients suffering from these diseases by providing in the case of HIV/AIDS and TB

⁵³ These data come from NDHS 1990, 1999, and 2003.

patients, antibiotics for opportunistic infections, ARVs, TB combination treatment, and second line TB, and AIDS drugs.

Table 62. High impact interventions by service delivery mode in each scenario

Service Delivery Arrangements	Child Health	Maternal and neonatal Health	Malaria	HIV / AIDS	TB
1. Improving immunization management and governance	Availability of vaccines	Supervision of Health Promoters	Supervision of Health extension workers	Supervision of Health Promoters	TB awareness raising
2. Strengthening the capacity for population-based outreach service	Supervision of Health extension workers Family Planning Iron and Folate supplementation Tetanus Toxoid BCG, Measles, DPT3 Vitamin A supplementation Supervised ORS Surveys/HMIS ITNs for children under five	Iron and Folate acid supplementation to pregnant women Births planning and complications readiness ITNs pregnant women Prenatal care, postnatal care Nevirapine and replacement feeding Surveys/HMIS Clean Delivery Condom Promotion Oral Contraceptive ITN for pregnant women	Health extension workers ITNs for children and pregnant women	Management Support and care First Aid Universal Precautions Including nevirapine and replacement feeding	Case identification TB DOTS follow-up
3. Addressing the community -based health interventions	Breastfeeding promotion Safe Water Handling and Storage promotion Hand-Washing promotion ITNs use promotion children less than 5 ORT Advise on Complementary and supplementary Feeding Clean Delivery ACT anti-malarials for children less than 5	Surveys/HMIS Clean Delivery Condom Promotion Oral Contraceptive ITN for pregnant women	ITNs promotion general population Anti-malarials (chloroquine) for children less than 5 and adults	Awareness raising through peer based education Safe Sex Promotion Condoms marketing Condom Promotion Mass media campaigns Support to orphans	-
4. Providing basic clinical services (PH and HP) Health Centers (primary)	Assisted deliveries Antibiotics for pneumonia (ARI tt) Resuscitation Vitamin A treatment Treatment of neonatal sepsis Severe malaria Management of severe prematurity/LBW and neonatal sepsis Management of complicated Malaria	Assisted deliveries Antibiotics PRM Tt of STI Basic to comprehensive EOC Post-abortion care CEOC Blood Safety	ACT Management of complicated Malaria	TT of STI UP	TB identification and DOTS initiation
5. Providing comprehensive referral clinical care					
6. Treatment for HIV/AIDS and management of resistant and complicated TB and HIV/AIDS				HAART follow up Treatment of Opportunistic infections Management of resistant AIDS	Management of Multi drug Resistant TB

24. To simulate the cost and impact of implementing this strategy, coverage frontiers for these health interventions were set for the years 2007, 2011, and 2015. Whenever it was possible the coverage frontiers used were those set by government policy documents. For example, for full immunization the target set by NEEDS (60% in the year 2007) was used. For other interventions delivered in similar manner (e.g. vitamin A supplementation) the same frontier was assumed. For all the other interventions we assumed a 20% reduction in the existing bottlenecks (e.g. gap between access and availability, between availability and utilization, and so on) in the implementation of the health interventions by the year 2007, a 50% reduction by 2011, and a 90% reduction by 2015.

25. For instance, reducing by 20% the bottlenecks of availability, accessibility, utilization, continuity, and quality in the coverage of insecticide treated nets for under-five children results in an increase in coverage of 11 percentage points between now and 2007. This results in a target frontier of 12% in the year 2007. If these bottlenecks are reduced by 50% between the year 2007 and 2011, it is possible to attain a target frontier of 49% in the year 2011. Finally, the MBB tool assumes that interventions delivered in the same mode have the same constraints. Thus eliminating these constraints will permit reaching a similar target for interventions within the same delivery mode. It is for this reason that, for example, all preventive maternal and neonatal care interventions have similar targets for the year 2011 and 2015. Examples of bottleneck analysis and coverage frontiers are presented in Figure 57 and Figure 58.

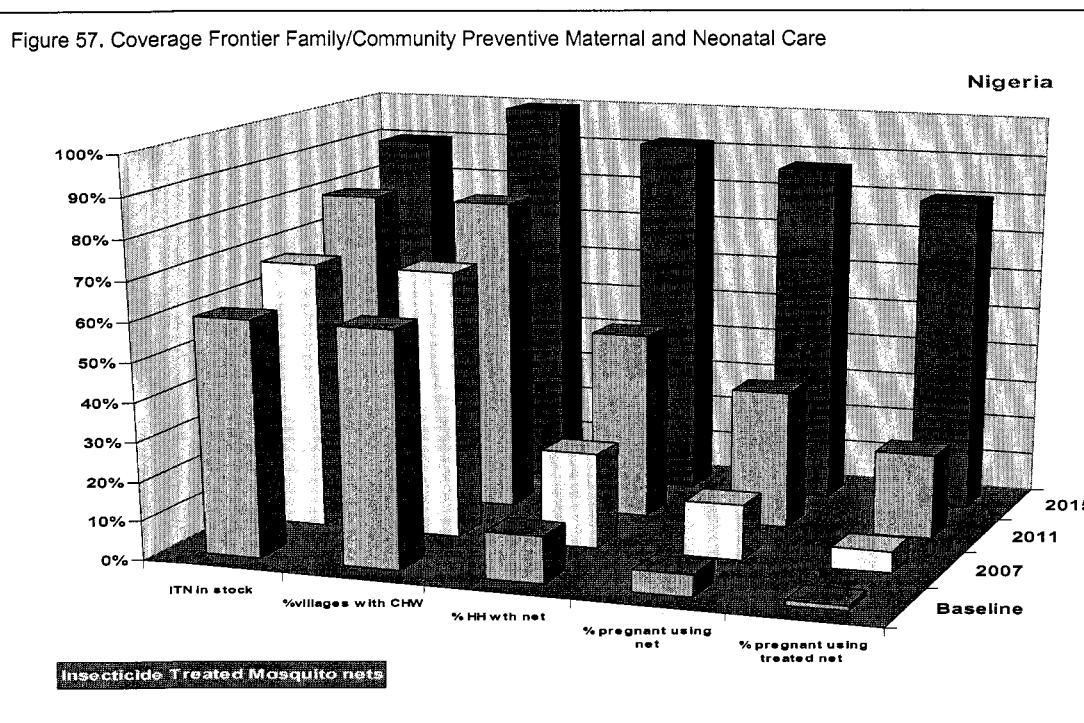
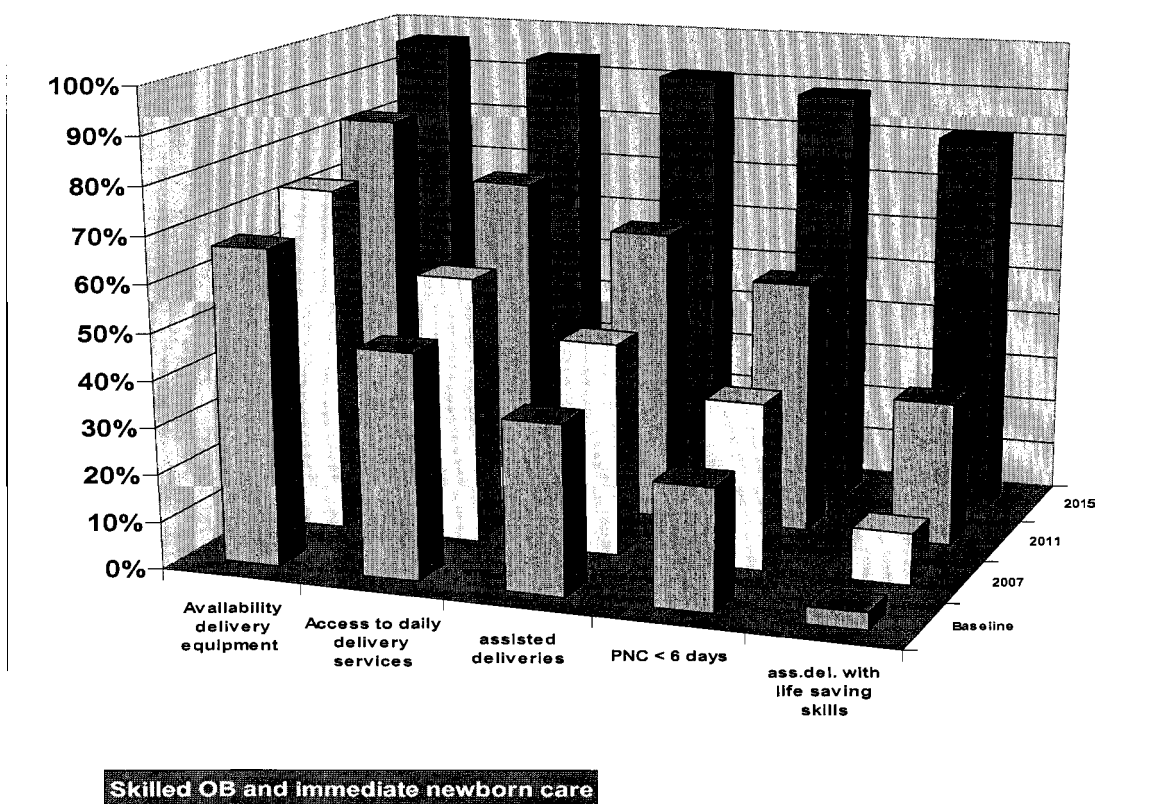


Figure 58. Coverage frontier for clinical preventive maternal and neonatal care



COST AND IMPACT

26. Using the MBB tool some estimates of the cost and impact of the different policy scenarios were made. Table 63 summarizes the simulation results. The cost is expressed in average US \$ per capita per year. Similarly, these estimates are based on needs, in other words they show the total resources needed to reach the MDGs under the assumption that there are no funding constraints. Finally, each policy scenario allows different government's financing strategies (i.e. different annual spending schemes).

27. To implement the first policy scenario, that of improving immunization governance and management will imply an extra cost of US \$ 0.19 per person per year. To implement the second scenario will require on average US\$ 1.36 extra per person per year from the moment the scenario is implemented⁵⁴. The total impact of implementing this scenario is estimated to be a 14 % decrease in under-five child mortality, and in a 2% decrease in maternal mortality. The average cost of addressing community-based interventions (Scenario 3) is an extra US\$ 2.83 per capita per year; this scenario has the largest impact on child mortality with about a 54 % reduction in U5MR⁵⁵. The clinical based services (Scenario 4 and 5) are slightly more expensive but could potentially significantly reduce maternal mortality. The last scenario, which would offer treatment to patients with HIV/AIDS and also with resistant and

⁵⁴ Once the target coverage is attained the cost of maintaining that level might be smaller, however at this point it is assumed that the cost of maintaining the coverage level is similar to that of increasing it.

⁵⁵ Forty percentage points above the previous scenario.

complicated TB is the most expensive one with an average cost of about US\$ 6 per capita per year. Finally, if the government were to implement all the proposed policy scenarios, it would need on average US\$ 15.88 per capita per year from the moment it starts to implement them.

Table 63. Cost and Impact of policy scenarios

Scenario	Impact on under five mortality	Impact on Maternal Mortality	Increasing cost (per capita per year) US \$	Extra resources (per capita per year)
1. Improving immunization management and governance	7%	0%	0.19	0.19
2. Strengthening the capacity for population based outreach services	14%	2%	1.55	1.36
3. Addressing the community-based interventions	54%	7%	4.38	2.83
4. Providing basic clinical services	66%	30%	6.64	2.26
5. Providing Comprehensive referral care (CEOC)	68%	53%	10.16	3.52
6. Treatment of HIV/AIDS and management of resistant and complicated TB and HIV/AIDS	68%	53%	15.88	5.72

Note: The impact on U5M and MMR of the first and last policy scenarios need to be re-estimated.

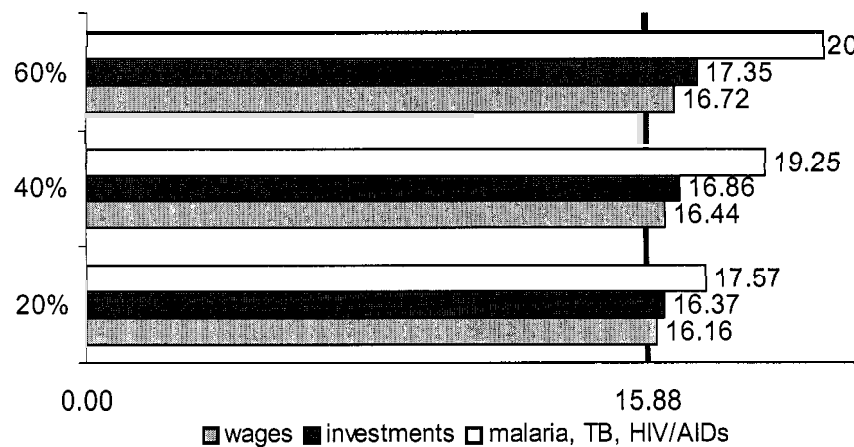
28. As seen in the table above, the MBB simulations show that increasing the coverage of high impact health services will decrease under-five mortality by about 68% and maternal mortality by 53%. These reductions are less than what is needed to achieve the health related MDGs. On the one hand, this is partly due to a possible underestimation of the impact of the selected interventions in maternal and infant mortality as the MBB tool only takes into account the impact of well-proven interventions. On the other hand, it also shows that to achieve the MDGs more than just improvements in the health system are needed as the health status of the population depends on many interrelated factors such as income, education, access to safe water and sanitation infrastructure, etc. This simulation only estimated the cost of the increases in coverage of key health interventions needed to achieve the health related MDGs and not the other related costs (e.g. education, poverty reduction, and others).

Cost sensitivity analysis.

29. To assess how robust this cost estimation is to different assumptions regarding wages, cost of investment, and the cost of certain drugs, a sensitivity analysis was performed. Figure 59 summarizes the results of this analysis. Increasing by 20% the salaries of all health personnel, including the salary of managers and supervisors increases the average annual per capita expenditure by about \$0.28 per person per year. A 20% increase in the cost of all investments

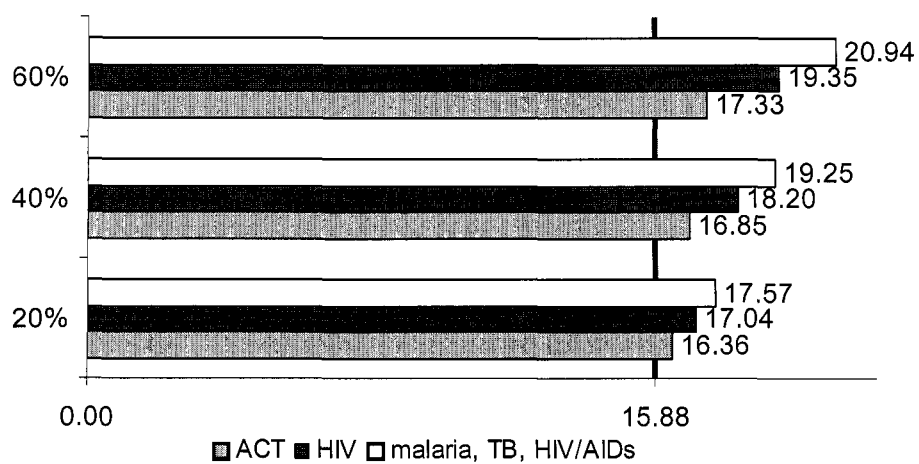
increases the average annual expenditure by about \$0.50 per person per year. However, a 20% increase in the cost of malaria, HIV/AIDS and TB drugs results in an average increase of US\$1.69 per person per year in the extra resources needed to attain the MDGs in Nigeria. In summary, the extra cost needed to reach the health related goals are relatively more sensitive to changes in the cost of consumables than to changes in the cost of both salaries and investment costs. The large sensitivity to the cost of these consumables is in part due to their relatively high price (e.g. HIV/AIDS drugs) and to the high incidence of the illnesses they treat in the population as in the case of malaria.

Figure 59. Change in average cost per person per year



30. To better understand the effect of changes in the cost of some consumables, a sensitivity analysis was done separately for the cost of malaria combination treatment and the treatment of HIV/AIDS. As can be observed in Figure 60 the total cost of reaching the health related MDGs is much more sensitive to the cost of HIV/AIDS drugs. Increasing by 20% the costs of all HIV/AIDS related drugs increases the total costs of reaching the health related MDGs by about US\$ 1.16; increasing the costs of these drugs by 40% results in an increase of US\$ 2.32; and increasing them by 60% entails an increase of about US\$ 3.5 per person per year.

Figure 60. Changes in the average cost per person per year of changes in HIV/AIDS drugs and malaria combination treatment drugs



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ANNEX

Table 64. Variables associated to the probability that a child of less than six month of age is exclusively breastfed (probit analysis)

Children's Characteristics	
female	0.037 (0.024)
age	-0.035 (0.007)***
Birth order number	0.001 (0.005)
Mother's education (none omitted variable)	
primary	0.141 (0.056)**
higher	0.306 (0.198)
Household's characteristics	
Wealth Index (poorest omitted)	
Poorer	-0.070 (0.028)**
Middle	0.012 (0.046)
Richer	-0.022 (0.045)
Richest	-0.039 (0.048)
Number of household members (<6 omitted)	
6-10	0.012 (0.030)
>11	0.027 (0.043)
femalehead	0.005 (0.043)
Region (South West omitted)	
North Central	0.071 (0.064)
North East	-0.059 (0.035)*
North West	-0.085 (0.048)*
South East	-0.077 (0.019)***
South South	-0.069 (0.025)***
urban (rural omitted)	-0.025 (0.032)
Access to services (non-self cluster averages)	
measles vaccination	0.032 (0.083)
delivery in health facility	0.081 (0.085)
>2 pre-natal visits	-0.025 (0.078)
Improved drinking water sources	0.020 (0.048)
Improved sanitation	-0.015 (0.055)
Observations	6.32e+08

Note: Standard errors are in parenthesis.

What is shown is not the coefficient but the change in probability produced by a unit change in the variable.

Table 65. Variables associated to the probability that a child between 12 and 24 months is immunized.

	Measles	DPT3	All polio	All vaccines	Any vaccines
Children's Characteristics					
female	0.056 (0.048)	0.034 (0.026)	0.037 (0.046)	0.044 (0.019)**	0.024 (0.034)
age	0.019 (0.005)***	0.007 (0.004)*	0.012 (0.006)**	0.004 (0.002)	0.004 (0.005)
Birth order number	0.008 (0.009)	-0.003 (0.007)	-0.002 (0.009)	-0.004 (0.004)	0.000 (0.007)
Mother's education (none omitted variable)					
primary	0.157 (0.069)**	0.139 (0.045)***	0.023 (0.072)	0.023 (0.022)	0.062 (0.044)
higher	0.127 (0.110)	0.029 (0.073)	-0.025 (0.115)	-0.052 (0.012)***	0.152 (0.049)***
Household's characteristics					
Wealth Index (poorest omitted)					
Poorer	0.098 (0.066)	-0.009 (0.044)	-0.072 (0.059)	-0.010 (0.023)	0.001 (0.046)
Middle	0.182 (0.068)***	0.029 (0.053)	-0.041 (0.065)	0.035 (0.038)	-0.003 (0.047)
Richer	0.191 (0.081)**	0.034 (0.050)	-0.039 (0.081)	0.012 (0.029)	0.010 (0.055)
Richest	0.254 (0.089)***	0.168 (0.087)*	-0.014 (0.097)	0.090 (0.051)*	0.123 (0.063)*
Number of household members (<6 omitted)					
6-10	-0.019 (0.046)	-0.036 (0.029)	0.004 (0.044)	0.008 (0.016)	0.008 (0.041)
>11	0.077 (0.073)	0.011 (0.044)	0.139 (0.053)***	0.021 (0.030)	0.029 (0.036)
femalehead	0.049 (0.077)	0.031 (0.041)	0.000 (0.081)	0.006 (0.029)	0.019 (0.048)
Region (South West omitted)					
North Central	-0.024 (0.078)	-0.049 (0.040)	-0.201 (0.100)**	0.005 (0.027)	-0.049 (0.128)
North East	-0.099 (0.078)	-0.091 (0.041)**	-0.221 (0.090)**	0.010 (0.030)	-0.059 (0.134)
North West	-0.123 (0.081)	-0.145 (0.049)***	-0.157 (0.095)*	-0.011 (0.030)	-0.063 (0.128)
South East	-0.043 (0.083)	0.016 (0.060)	-0.170 (0.107)	0.082 (0.048)*	-0.233 (0.167)
South South	-0.017 (0.085)	-0.087 (0.036)**	-0.061 (0.098)	0.002 (0.028)	-0.021 (0.128)
urban (rural omitted)	-0.092 (0.044)**	0.032 (0.038)	0.004 (0.046)	0.012 (0.018)	-0.052 (0.042)
Access to services (non-self cluster averages)					
measles vaccination	1.308 (0.135)***	0.319 (0.083)***	0.698 (0.140)***	0.169 (0.053)***	0.794 (0.133)***
delivery in health facility	-0.116 (0.105)	0.146 (0.072)**	0.070 (0.131)	0.030 (0.039)	0.027 (0.100)
>2 pre-natal visits	0.003 (0.085)	-0.029 (0.079)	-0.024 (0.115)	0.068 (0.038)*	-0.073 (0.091)
Observations	1006	1010	1014	1012	1012

Note: Standard errors are in parenthesis.

What is shown is not the coefficient but the change in probability produced by a unit change in the variable.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 66. Variables associated to the probability that the child has received a supplementation of vitamin A in the last six months (probit analysis)

Children's Characteristics	
female	-0.003 (0.054)
age	0.009 (0.001)***
Birth order number	-0.001 (0.013)
Mother's education (none omitted variable)	
primary	0.277 (0.090)***
higher	0.374 (0.176)**
Household's characteristics	
Wealth Index (poorest omitted)	
Poorer	-0.197 (0.112)*
Middle	-0.060 (0.103)
Richer	0.286 (0.109)***
Richest	0.284 (0.126)**
Number of household members (<6 omitted)	
6-10	-0.030 (0.068)
>11	0.017 (0.106)
femalehead	-0.080 (0.094)
Region (South West omitted)	
North Central	-0.659 (0.123)***
North East	-0.661 (0.134)***
North West	-0.912 (0.141)***
South East	-0.303 (0.190)
South South	-0.400 (0.120)***
urban (rural omitted)	-0.049 (0.069)
Constant	-0.865 (0.190)***
Observations	5148

Note: Standard errors are in parenthesis.

What is shown is not the coefficient but the change in probability produced by a unit change in the variable.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 67. Variables associated with the probability of seeking medical care in case a child has had diarrhea or fever/cough in the last two weeks (probit analysis)

	Diarrhea: medical treatment	Fever/cough: medical treatment
Children's Characteristics		
female	-0.050 (0.028)*	-0.019 (0.029)
age	-0.001 (0.001)	-0.002 (0.001)**
Birth order number	-0.009 (0.005)*	-0.020 (0.006)***
Mother's education (none omitted variable)		
primary	0.053 (0.049)	0.038 (0.047)
higher	0.405 (0.155)***	0.119 (0.136)
Household's characteristics		
Wealth Index (poorest omitted)		
Poorer	-0.017 (0.052)	-0.037 (0.043)
Middle	0.072 (0.057)	0.061 (0.049)
Richer	0.170 (0.074)**	0.169 (0.063)***
Richest	0.041 (0.067)	0.233 (0.079)***
Number of household members (<6 omitted)		
6-10	-0.003 (0.036)	0.020 (0.038)
>11	-0.003 (0.048)	0.058 (0.051)
femalehead	-0.107 (0.029)***	-0.039 (0.050)
Region (South West omitted)		
North Central	0.042 (0.074)	0.081 (0.075)
North East	-0.217 (0.062)***	-0.139 (0.066)**
North West	0.031 (0.078)	0.026 (0.075)
South East	-0.055 (0.069)	-0.155 (0.070)**
South South	-0.096 (0.041)**	-0.166 (0.057)***
urban (rural omitted)	-0.006 (0.052)	-0.076 (0.044)*
Access to services (non-self cluster averages)		
measles vaccination	0.091 (0.109)	0.089 (0.100)
>2 pre-natal visits	0.097 (0.095)	0.214 (0.089)**
Observations	912	1555

Note: Standard errors are in parenthesis.

What is shown is not the coefficient but the change in probability produced by a unit change in the variable.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 68. Variables associated with the probability that a women will go to more than two ante-natal care visits, be attended by trained personnel during delivery, and deliver in a health facility (probit analysis).

	More than 2 antenatal visits	Assisted delivery	Birth in health facility
Woman's characteristics			
agebirth	0.002 (0.002)	0.001 (0.002)	0.000 (0.002)
Education (none omitted variable)			
primary	0.115 (0.038)***	0.191 (0.035)***	0.212 (0.031)***
higher	0.174 (0.081)**	0.273 (0.106)***	0.375 (0.101)***
Household's characteristics			
Wealth Index (poorest omitted)			
Poorer	0.022 (0.030)	0.079 (0.039)**	0.006 (0.037)
Middle	0.155 (0.033)***	0.080 (0.039)**	0.022 (0.037)
Richer	0.240 (0.034)***	0.240 (0.045)***	0.102 (0.043)**
Richest	0.250 (0.051)***	0.317 (0.054)***	0.158 (0.052)***
Number of household members (<6 omitted)			
6-10	0.012 (0.029)	-0.015 (0.025)	-0.019 (0.023)
>11	-0.001 (0.040)	-0.070 (0.039)*	0.014 (0.041)
femalehead	-0.040 (0.053)	-0.009 (0.041)	-0.014 (0.038)
Region (South West omitted)			
North Central	-0.100 (0.077)	0.075 (0.045)*	0.076 (0.031)**
North East	-0.156 (0.079)**	0.082 (0.047)*	0.071 (0.034)**
North West	-0.222 (0.079)***	-0.029 (0.048)	-0.005 (0.034)
South East	-0.236 (0.104)**	0.264 (0.057)***	0.151 (0.039)***
South South	-0.127 (0.077)	-0.017 (0.045)	0.011 (0.029)
urban (rural omitted)	0.015 (0.036)	-0.072 (0.027)***	-0.070 (0.020)***
Access to services (non-self cluster averages)			
measles vaccination	0.593 (0.086)***	0.096 (0.051)*	-0.001 (0.036)
Birth delivered in health care facilities			
	0.246 (0.076)***	1.005 (0.061)***	1.081 (0.048)***
Observations	3443	5156	5169

Note: Standard errors are in parenthesis.

What is shown is not the coefficient but the change in probability produced by a unit change in the variable.

