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Health services in Angola: Availability, quality and utilisation

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Health Services in Angola

Availability, quality and utilisation



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Acronyms

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care Surveillance
ARV	Anti-Retro Viral
BCG	Bacillus Calmette-Guérin
CEIC	Centro de Estudos e Investigação Científica (Centre for Studies and Scientific Research)
CMI	Chr. Michelsen Institute
DNME	Direcção Nacional de Medicamentos e Equipamentos (National Directorate of Medicines and Medical Supplies)
DNSP	Direcção Nacional de Saúde Pública (Directorate of Public Health)
DOTS	Directly Observed Treatment Short course
DPS	Direcção Provincial de Saúde (Provincial Health Authority)
DPT	Vaccine Against Diphtheria, Pertussis (Whooping Cough) and Tetanus
EPI	Expanded Programme on Immunization
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
HSA	Health System Assessment
IBEP	Inquérito Integrado Sobre o Bem Estar da População (Household Wealth and Expenditure Survey)
IMCI	Integrated Management of Childhood Illnesses
INE	Instituto Nacional de Estatística (National Statistics Institute)
MCH	Maternal and Child Health
MINFAMU	Ministerio da Família e Promoção da Mulher (Ministry of Family and Women)
MINFIN	Ministério do Finanças (Ministry of Finance)
MINPLAN	Ministério do Planeamento (Ministry of Planning)
MINSA	Ministério da Saúde (Ministry of Health)
MSH	Management Sciences for Health
NHS	National Health Services
ORS	Oral Rehydration Solution
PCA	Principal Component Analysis
PCS	Patient Case Simulations
PID	Pelvic Inflammatory Disease
PMTCT	Preventing Mother-to-Child Transmission of HIV
PNS	Política Nacional de Saúde (National Health Policy)
RMS	Repartição Municipal de Saúde (Municipal Health Department)
STD	Sexually Transmitted Disease
TB	Tuberculosis
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNFPA	United Nations Population Fund
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WDI	World Development Indicators
WGI	World Governance Indicators
WHO	World Health Organization

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Executive summary

This report discusses the availability and quality of health services in two provinces of Angola (Luanda and Uíge) and reports how households perceive the level of quality and utilise the existing services. We study a sample of 40 public health facilities located in both rural and urban areas and report which services they offer as well as indicators of the quality of the services. In addition to quality indicators such as the availability of drugs, equipment and other supplies, the report explores the competence of health workers in diagnosing common illnesses. In total, 999 households from the catchment areas of the health facilities were surveyed, focusing on access to and utilisation of health services. We devote particular attention to the relationship between health seeking behaviour and socio-economic status. Data from Luanda are collected in Cazenga, Kilamba Kiaxi and Ingombota districts, while data from Uíge are from Uíge, Quitexe and Puri districts (*district* is our translation of *município*). Six hospitals, 19 health centres and 15 health posts were surveyed.

Key health indicators in Angola are at a poor level. Both maternal mortality and child mortality are high, even though both have been reduced significantly since 2000. In order to improve health indicators, more information is needed about health service delivery, and about the availability, utilisation and quality of these services. This report aims to contribute to this pool of information. Policymakers could use this information to inform and improve health policies. An important and unique feature of our data set is that we have collected data both at the supply side (health facilities and health workers) and the demand side (the users) of the health system.

Access to health services

Health facilities in Luanda provide a much broader range of health services than those located in Uíge. For instance, all health facilities surveyed in Luanda provide immunisation services and nutritional services in the form of routine vitamin A supplements to children. In Uíge, these services are provided by only 80 and 60 per cent of the health facilities, respectively. Maternal health services are also more commonly supplied at health facilities in Luanda. Nine in ten health facilities provide antenatal health services, while only 50 per cent of the surveyed facilities in Uíge provide this service. Delivery services and HIV counselling of services are provided by fewer facilities in both regions, but also in these cases, health facilities in Uíge appear to be less likely to offer any of the services.

Quality of health services

The ultimate indicator of service quality is that people's health conditions are improved. However, in practice, it is extremely difficult to measure how health services influence health outcomes. The usual approach for assessing quality is to focus on factors that are preconditions for high quality health services. Our indicators of quality include the availability of key inputs (trained staff, equipment, drugs, etc.) as well as the quality of health workers' performance.

Availability of key inputs (staff, equipment and drugs)

The distribution of qualified health personnel is rather unequal. Most health facilities in Uíge have neither a general practitioner nor a specialised nurse. A nurse with basic or medium training is the most common cadre in Uíge. All health facilities visited in Luanda had a laboratory technician and 80 per cent had a pharmacist. In Uíge, only 35 per cent had a laboratory technician and 30 per cent had a pharmacist.

Every health facility needs a stethoscope and a thermometer to assist in diagnosis of illnesses. All facilities in Luanda had this basic equipment, while as much as 30 per cent of the facilities in Uíge did not have a single stethoscope and 15 per cent did not have a thermometer. Drugs and vaccines seem to be lacking both in Luanda and Uíge, but again, the situation is considerably worse in Uíge. Antibiotics

were found in stock in 75 per cent of the facilities in Luanda but only in half of the facilities in Uíge. Similarly, 20 per cent of the facilities in Luanda were out of stock of anti-malarias, whereas the stock out rate in Uíge was 35 per cent. Stock outs were high also for essential childhood vaccines (i.e., Bacillus Calmette-Guérin, measles, polio, diphtheria, pertussis and tetanus vaccines). Fifty-five per cent of the facilities in Uíge did not have all these vaccines in stock, whereas as the stock out rate was 25 per cent in Luanda.

Health worker performance

A crucial factor for the provision of quality health services is that clinicians are able to systematically reach a correct diagnosis, prescribe correct treatment and educate patients about how to prevent future illness. In order to be able to do this, the clinician needs to do a careful examination of the patient, asking relevant history taking questions and performing relevant physical examinations and tests.

We interviewed health workers to assess the thoroughness of their diagnostic process and their ability to reach a correct diagnosis for a set of common illnesses. Health workers were presented with five hypothetical patients with clear symptoms of different diseases. They were asked to take the history and do the examinations that would enable them to reach a correct diagnosis. The five diseases were malaria with anaemia, diarrhoea with dehydration, pneumonia, pelvic inflammatory disease and tuberculosis. For each patient, there was a list of relevant questions and examinations that can be conducted. We observed how many of these items that were performed, which is an indicator of the thoroughness of the diagnostic process. We also observed whether the health worker in the end reached the correct diagnosis or not.

A striking observation is that health workers in Luanda appear to do much more careful diagnosis than their colleagues in Uíge. Whereas health workers in Luanda ask 73 per cent of the relevant questions and conduct 62 per cent of the relevant physical examinations, the figures in Uíge are down at 42 per cent and 27 per cent, respectively. The low share of physical examinations performed is particularly a reason for concern, as these examinations are crucial in order to detect severe disease such as severe dehydration, anaemia, severe pneumonia, etc. These conditions are important contributors to child mortality. The less careful diagnostic process followed by health workers in Uíge seems to have consequences for their ability to reach the correct diagnosis. On average, correct diagnosis was reached in 37 per cent of the cases in Uíge, while in Luanda, correct diagnosis was reached in 53 per cent of the cases. Patients in Luanda are more likely to have their illness correctly diagnosed and are therefore probably also more likely to get an appropriate treatment.

Utilisation of public health services

The utilisation of health services is high in both provinces. More than 90 per cent of those who had been sick or had an accident during the last month preceding the survey had visited a health service provider. Public health facilities are utilised by 85 per cent of the households in Luanda and by 95 per cent in Uíge. Around 12 per cent utilise a public provider other than the nearest one and 7 per cent use private providers.

In each household, the last woman who gave birth was interviewed about her utilisation of maternal health services. Utilisation of antenatal care is high in both provinces (96 per cent in Luanda and 80 per cent in Uíge), but only 43 per cent of the women in Uíge gave birth at a health facility, compared to 83 per cent in Luanda. Maternal services are generally utilised by a much lower share of the women in Uíge than in Luanda.

User perceptions of service quality

Each household was asked to rate the quality of the services at their nearest public health provider. Consistent with our measures of provider quality, the households in Uíge tend to rate the quality at a

lower score than do people in Luanda. Thirty-eight per cent of the households in Uíge consider the quality to be poor or very poor, compared to 28 per cent in Luanda. The households were asked to identify specific quality issues at the health facility that they normally used. More people in Luanda than in Uíge express concerns about these quality issues. It is unclear whether this difference reflects true quality differences or differences in expectations, for instance due to a higher level of education in Luanda. The quality concerns that were mentioned by most people are the crowdedness of the health facilities and the long waiting time. Next comes the issue that the facility does not provide drugs, mentioned by close to 40 per cent of the respondents in both provinces. A high share of facilities also appears to have non-functioning toilets (28 and 34 per cent, respectively). Respondents from Luanda mention high costs of services much more frequently than those from Uíge (25 per cent versus 8 per cent). This is probably partly due to the higher utilisation of private providers in Luanda (13 per cent) compared to Uíge (2 per cent), but it can also be related to the apparent higher incidence of informal payments in Luanda. As much as 24 per cent of the patients in Luanda complain that health workers ask for money for the services, compared to 8 per cent in Uíge. A high share of the patients feels that they are not received in a friendly manner by the health workers (36 per cent in Luanda and 21 per cent in Uíge). In Luanda, many patients are also concerned about the low level of effort of the health workers. There seems to be substantial scope for improved patient satisfaction with the services.

Relationships between socio-economic status and health seeking behaviour

Economic well-being can be measured either by income, consumption or by wealth. We measured household wealth based on data on their ownership of more than 30 durable goods, in addition to data on the building materials of the house. There are large differences between Luanda and Uíge in terms of wealth. Less than 4 per cent of the households in Luanda belong to the two lowest wealth quintiles, while in Uíge the corresponding figure is around 75 per cent.

Several variables related to health service utilisation appear to be strongly associated with household wealth. For instance, while 72 per cent of those in the lowest wealth quintile gave birth at home, the figure is only 11 per cent among those in the highest wealth quintile.

Another variable that is strongly associated with household wealth is the knowledge about HIV. Ninety-seven per cent of those who belong to the highest wealth quintile know what HIV is, while only 44 per cent do in the lowest quintile.

1. Introduction

This report discusses the availability and quality of health services in two provinces of Angola (Luanda and Uíge) and reports how households perceive the level of quality and utilise the existing services. We study a sample of 40 health facilities located in both rural and urban areas and report which services they offer as well as indicators of the quality of the services. In addition to quality indicators such as the availability of drugs, equipment and other supplies, the report explores the competence of health workers in diagnosing common illnesses. Furthermore, 999 households from the catchment areas of the health facilities were surveyed, focusing on access to and utilisation of health services. We devote particular attention to how the relationship between health seeking behaviour and socio-economic status.

A focus on health service delivery is of high relevance in Angola due to poor health indicators. Maternal mortality in Angola is among the highest on the African continent and was estimated to 610 per 100,000 live births in 2008 (World Health Organization [WHO] 2010). There has been a huge decline in the maternal mortality rate in Angola, which was estimated at 880 per 100,000 in 2000 (ibid). The number of children dying before the age of five was measured at 193.5 per 1,000 live births in 2008 in the Inquérito Integrado Sobre o Bem Estar da População (IBEP) (Ministério do Planeamento [MINPLAN] & Instituto Nacional de Estatística [INE]). This is a large improvement from the 2001 *Multiple Indicator Cluster Survey* (MICS), where the corresponding figure is 250 per 1,000 live birth (United Nations Children's Fund [UNICEF] & INE 2003). Preventable and easily treatable conditions such as pneumonia, diarrhoea and malaria are the major causes of death in children under five years (Connor et al. 2010). HIV prevalence is low by African standards, only 2 per cent (República de Angola et al. 2010). Nevertheless, life expectancy at birth is as low as 50 years (World Bank 2010).

Table 1: Key health indicators.

Indicator	Definition	Level
Life expectancy	Life expectancy at birth (years)	50 ^a
Infant mortality rate	Infant deaths per 1,000 live births	115.7 ^b
Under five mortality rate	Deaths among children under-five, per 1,000 live births	193.5 ^b
Maternal mortality rate	Maternal deaths per 100,000 live births	610 ^c
HIV prevalence	Percentage of total population with HIV	2 ^d
Malaria prevalence	Percentage of population that have been ill from fever or malaria last 30 days	10.7 ^b

Sources: ^aWDI 2010, ^bMINPLAN & INE 2010, ^cWHO 2010, ^dRepública de Angola et al. 2010.

In many developing countries a low utilisation of health services and/or low quality of health services can be observed. Traditionally, low quality has been associated with the lack of training of health workers. More recently it has been demonstrated that there is a large know-do gap in health service delivery, implying that health workers perform at a much lower level than they are capable of (Leonard et al. 2007; Das & Hammer 2007; Franco et al. 2007). One reason for the know-do gap could be staff shortages and poor management of existing staff (Chen et al. 2004). However, research that has focused on the effect of staff shortages and high workload on performance found no significant association (Mæstad et al. 2010). It is therefore likely that low performance is in part caused by low levels of health worker motivation (Lindkvist et al. 2011).

The main questions addressed in the report are:

- Which health services are accessible in various provinces of Angola?
- What level of quality is provided? What key inputs (qualified staff, equipment, drugs, etc.) are available, and how is the quality of health worker performance?
- To which extent are public health services being utilised?
- What is the relationship between socio-economic status (wealth) and health seeking behaviour?
- How do the users perceive the quality of health services?



Enumerator interviewing mother while children are watching (Source: Nohra Villamil).

1.1 The Angolan Context

1.1.1 Basic facts

The Republic of Angola is located on the west coast of Sub-Saharan Africa, and is one of the continent's largest countries (1.2 million square kilometres). Angola has a population of about 19.1 million (World Bank 2010). The country has 18 provinces, 164 districts and 557 communes. Angola gained independence from Portuguese rule in 1975. Shortly thereafter, a brutal civil war broke out, lasting almost 30 years. The socio-economic situation in Angola is still coloured by the aftermaths of the war.

In 2007 the Angolan Gross Domestic Product (GDP) growth rate was estimated as high as 22.7 per cent. However, following drops in international oil and diamond prices in 2008, the economy experienced a reduction in the growth rate to 2.4 per cent in 2009 (World Bank 2010). IMF forecasts that growth will slowly pick up and reach 3.7 per cent in 2011 (IMF 2011). Large oil and mining revenues make the estimated GDP per capita in Angola more than twice the regional average in Sub-Saharan Africa (US\$5,911 and US\$2,382 in 2011, respectively) (ibid). In 2010, about 47.3 per cent of total GDP could be attributed to mineral extraction. Oil production accounted for 96 per cent of the total exports (Centro de Estudos e Investigação Científica [CEIC] 2011). The agricultural sector, which has the potential to play an important role in poverty reduction, accounted for only 8.9 per cent of GDP in 2010 (CEIC 2011).

While Angola is richly endowed with natural resources, the country has one of the most unequal income distributions in the world, with a Gini coefficient¹ estimated at 58.6 (UNDP 2009). No other place in the country portrays this inequality as clearly as the capital Luanda, where large modern skyscrapers are surrounded by large slum areas. For several years, Luanda has been one of the most expensive cities in world. While Angola is the second largest oil producer in Africa, the uneven distribution of income leaves most Angolans unaffected by the country's richness: about 36.6 per cent of the population lives below the national poverty line (MINPLAN & INE 2010). The difference in poverty rates between rural and urban areas is large: 58.3 and 18.7 per cent, respectively (ibid).

Between 2006 and 2008, 82 per cent of the employment took place in the agricultural sector, 4.3 per cent in market services and 3.6 per cent in construction. Only 0.2 per cent of employees were employed in the oil sector. CEIC estimates the unemployment rate to 27.4 per cent in 2006 and 25.3 per cent in 2007 (CEIC 2009).

The war left the country's infrastructure in ruins, the interior heavily mined and the political and economic institutions poorly developed. Even though large efforts to improve the infrastructure have been made and progress has been seen, huge challenges remain in rebuilding the country. Only 42 per cent of the population have access to water suitable for drinking, only 60 per cent have access to proper sanitation, and as few as four out of ten have access to electricity (MINPLAN & INE 2010). Quality of housing is also a problem, especially in urban areas where 90 per cent of the population live in inappropriate houses (ibid).

In 2011 the country was ranked 148 out of 187 on the Human Development Index² (UNDP 2011). Transparency International ranks Angola as number 168 out of 178 on their Corruption Perception Index (Transparency International 2010), while the Worldwide Governance Indicators (WGI) reports that Angola is among the 25 per cent of countries scoring lowest on five of six indicators that measure different dimensions of governance (WGI 2011). This is substantially below the Sub-Saharan average.

1.1.2 Health system

Legislation and policies

The National Health Services (NHS) was established at independence in 1975. From 1975 to 1992, the principle of universal and free primary health care formed the basis of the Angolan national health system. In 1992 the 21-B/92 Law on NHS was approved, and allowed for private sector provision of health services, as well as the introduction of user fees (República de Angola 1992). Since then health

¹The Gini coefficient measures inequality in income. The coefficient ranges between 0 and 100 where a low number represents low inequality and 100 is maximum inequality.

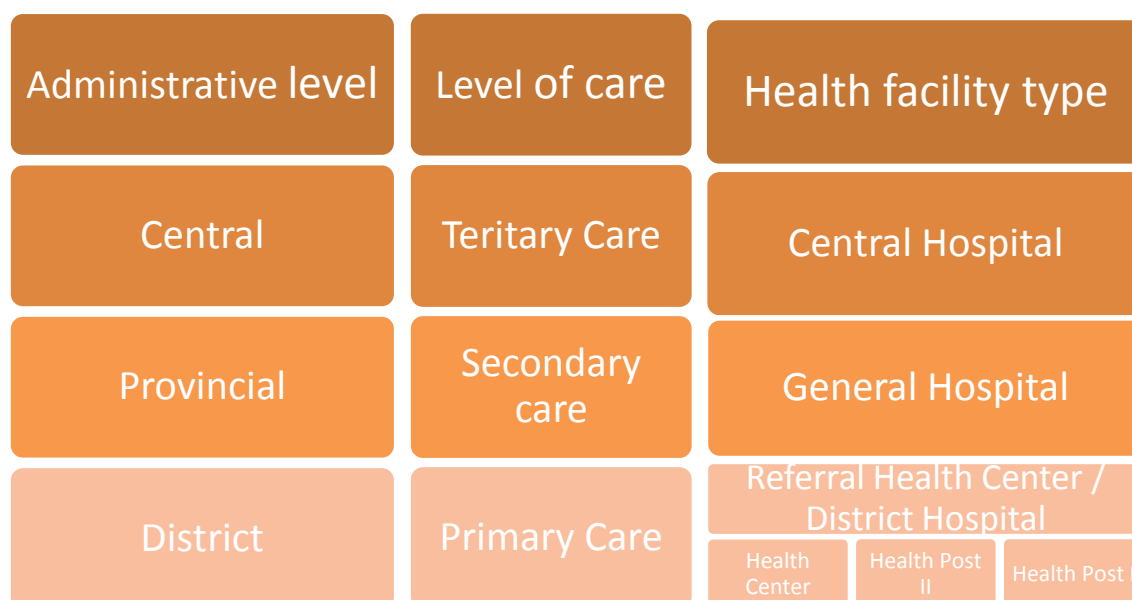
² Human Development Index is a composite measure that captures the income, education and health dimension of human development.

care has been provided by both the public and the private sector (Queza 2010). The new constitution from 2010 states a government responsibility to promote universal and free primary health care (República de Angola 2010).³

In 2003 the 54/03 Law on General Regulations of the Health Clinics in the NHS was approved. It established health services to be delivered at three levels: primary, secondary and tertiary (the two latter levels are defined as specialised care) (República de Angola 2003). This corresponds to the three government levels: district, provincial and national. First level health institutions include health posts, health clinics, district hospitals and referral health centres. The second level includes general hospitals and the third level includes central hospitals (see Figure 1).

The Government of Angola launched administrative reform programmes in 2000, such as O Programa de Reforma Administrativa (República de Angola 2000) and 2001, such as Programa de Reforma Institucional e da Modernização Administrativa (Oliveira 2010; Paulo 2004). These policies called for improved public administration, and the latter pushed for a move towards administrative and fiscal decentralisation to district and provincial governments. The health sector was also influenced by this wave of decentralisation. In 2007 the 2/07 Law on Improvement of District Management established the districts as the basic unit responsible for health service management (República de Angola 2007). The district administrator is supported by a health management department, with members appointed by the administrator. The administrator is appointed by the Provincial Governor, who in turn is appointed by the President (Connor et al. 2010). In 2008, the districts became budget units for the first time, and could spend funds without seeking authorisation from an overseeing institution (Severim de Morais 2008). In 2008 and 2009, 68 districts were chosen to take part in a pilot on fiscal de-concentration. These districts received US\$5 million each, as well as technical assistance from UNDP. The aim was to support the health management departments to develop district strategic and operational plans (Connor et al. 2010). The World Bank and the European Union have one project each supporting the government's district plan during the 2011-2014/15 period, worth about US\$100 million in total (ibid).

Figure 1: The structure of the health system in Angola.



Source: Connor et al. 2010.

³ According to Connor et al. (2010), public primary care facilities no longer charge user fees.

Ministry of Health (MINSA) has developed a new district health strategy: *Revitalização do Sistema de Saúde a nível Municipal* that calls for shifting more resources to the primary health care system. It also emphasises that management responsibility should be moved to Angola's 164 districts (MINSA 2009a). The policy is a commitment to improve primary health care services, and it has a pro-poor approach. The decentralisation of responsibility for primary care from the provincial to the district level constitutes a major transition for the provincial and district governments. In 2007 MINSA introduced provincial health maps, which are meant to inform health infrastructure investments and operational planning and decisions. Such maps have been completed for 11 out of 18 provinces (Connor et al. 2010, MINSA 2007). A new National Medicines Policy was updated and adopted in 2010.

Public health expenditures

Public spending on health increased from US\$55 to US\$181 per capita from 2006 to 2009 (WHO 2009). Ninety-seven per cent of the health care expenditure is funded domestically (ibid). The share of government spending allocated to health is 11 per cent (ibid). Hence, the government is approaching the Abuja target of 15 per cent allocated to health. Table 2 provides a breakdown of public health expenditures in the period 2000 to 2005.

Table 2: Public health expenditure (mill US\$).

Expenditure by category	2000	2001	2002	2003	2004	2005
Salaries and other benefits	79	124	105	120	135	208
Goods and services	67	110	97	148	129	163
Investments	33	29	11	30	50	77
Total amount spent	179	264	213	299	314	447
Total health budget	254	338	244	399	509	664
Budget execution rate	70%	78%	87%	75%	62%	67%

Source: Torres (2007).

From 2001 to 2005, public financing of investment in primary care increased by more than 500 per cent. In the same period the investment in secondary and tertiary care doubled (Table 3).

Table 3: Public investment in health (mill US\$).

Category	2001		2002		2003		2004		2005	
	US\$	%	US\$	%	US\$	%	US\$	%	US\$	%
Primary health care	5.8	20.0	3.0	28.6	19.3	63.8	24.6	48.8	31.2	40.7
Secondary and tertiary care	21.6	74.5	6.8	64.1	9.9	32.9	24.6	48.8	44.1	57.7
Administration	1.1	3.8	0.4	3.9	1.0	3.3	0.8	1.7	0.5	0.7
Formal medical education	0.5	1.7	0.4	3.4	0.0	0.0	0.3	0.7	0.7	0.9
Total	29.0	100.0	10.6	100.0	30.3	100.0	50.3	100.0	76.5	100.0

Source: Torres (2007).

The conversion of districts into budget units may increase the budget execution rate, since these units would not need to seek authorisation from an overseeing institution. However, there is also risk linked

to decentralisation of budgeting and spending. The capacity of districts to plan and manage tends to be weaker than at the provincial level. This may increase the risk of inefficiency. Further, since the responsibility shifts from 18 provinces to 164 districts, the allocation of health funding will become more labour intensive. Without clarifying how capacity and resource limitations will be addressed, the district health strategy shifts responsibility to the district level, and the lack of management capacity in the districts is a major challenge (Connor et al. 2010).

Health facilities at the primary level are not budgetary units and do not track the allocation and utilisation of resources. Operational resources are delivered in-kind. The provincial or district authorities approve payment directly to a service or goods provider, and then this provider delivers the goods or services to the facility. The absence of cash at the facility level implies that even small procurements decisions, such as buying soap, will be taken at a higher level (ibid).

Human resources

The overall ratio of public sector health workers in Angola per 1,000 inhabitants is 2.24 (MINSa 2009b). This is close to the WHO limit of 2.28 that defines a severe health worker shortage (WHO 2006). The health workers are unevenly distributed throughout the country; in Luanda this ratio is 2.78 and in Uíge it is 1.61 (which is the third lowest score in the country) (MINSa 2009b). It appears challenging to attract qualified personnel to remote areas. Furthermore, only a portion of the health workers is considered properly trained and skilled. There is shortage of doctors, although the number of doctors has tripled to 2,956 between 2005 and 2009 (MINSa 2009b). As a short term solution the government has contracted about 1,500 doctors mostly from Cuba for a limited period of time. Five medical schools have been built, and this is likely to help increase the number of doctors. The quality of the education programme is a concern, and staffing is a problem (Connor et al. 2010).

Medical products management

Direcção Nacional de Medicamentos e Equipamentos (DNME), or the National Directorate of Medicines and Medical Supplies, is responsible for planning and implementation related to medicines, diagnostics, surgical supplies and other medical commodities. This includes production, importation, procurement, and use and maintenance of all relevant technologies (Connor et al. 2010).

The National Medicines Policy defines priorities for medical products and the roles and responsibilities of various agents. The policy aims at providing access to safe medicines at an affordable price for the entire population. A National Essential Medicines list is developed and managed by DNME, following WHO guidelines, and forms the basis for MINSa's procurement of medicines. Kits of essential medicines and commodities are distributed to all MINSa health posts (there are three different types of kits, depending on the type of clinic the kit is meant for). Higher-level health centres and hospitals provide MINSa with a request for the medical items they need (based on past consumption). The procurement of essential medicines and kits are centralised and conducted in accordance with international competitive open tender procedures. Provincial health authorities are responsible to ensure the availability of medicines in their hospitals. Medical products required for vertical programmes, such as Anti-Retro Virals (ARVs), reproductive health kits and contraceptives, vaccines and mosquito nets, are managed separately by the donor agencies, such as UNAIDS, UNFPA and UNICEF (ibid).

Angola faces problems with stock-outs of medicines. Breakdown in the procurement of medicines has occurred, and the main reasons reported are lack of data on service utilisation and consumption of medicines, limited capacity to manage inventory at the health clinics and an unpredictable budget.

There is commitment to strengthening the quality assurance system of medicines. A medical product registration programme and a national drug quality control laboratory have been created, but are not yet functional.

Health service delivery

The number of health facilities has almost tripled since 2003 (Connor et al. 2010). Geographical access to health services has increased due to the increase in functional health clinics. The application of health system regulations and introduction of provincial health maps clarified standards for level of care, services and facility types. This is meant to allow for objective evaluation of facility performance (ibid).



Typical health post. Posto de Saúde Cambila (Photo: Nohra Villamil).

1.2 Survey methodology

We collected data on the availability, quality and utilisation of health services in Angola through three different survey tools. A household survey sheds light on basic household characteristics, access to health services, perceptions about the quality of health services and health seeking behaviour, with a particular focus on maternal health. A health facility survey provides information about health facility characteristics, available services, drugs and equipment. A health worker survey sheds light on health workers' knowledge, skills and performance in diagnosing common illnesses.

Data were collected in two provinces: Luanda and Uíge (Figure 2). The locations were chosen in order to illuminate differences between an urban and a rural province. The province of Luanda has approximately 4.8 million inhabitants covering an area of 2,418 square kilometres and is the province with highest population density in the country. The province of Uíge borders the Democratic Republic of Congo and has approximately 1.2 million inhabitants in an area of about 58,700 square kilometres. The province was hard hit by the civil war, with severe damages to the infrastructure. In 2004-5 there was an outbreak of Marburg haemorrhagic fever, a disease closely related to Ebola. Eighty-eight per cent of the 374 cases were fatal (Knipe 2007).

Figure 2: The provinces of Angola.



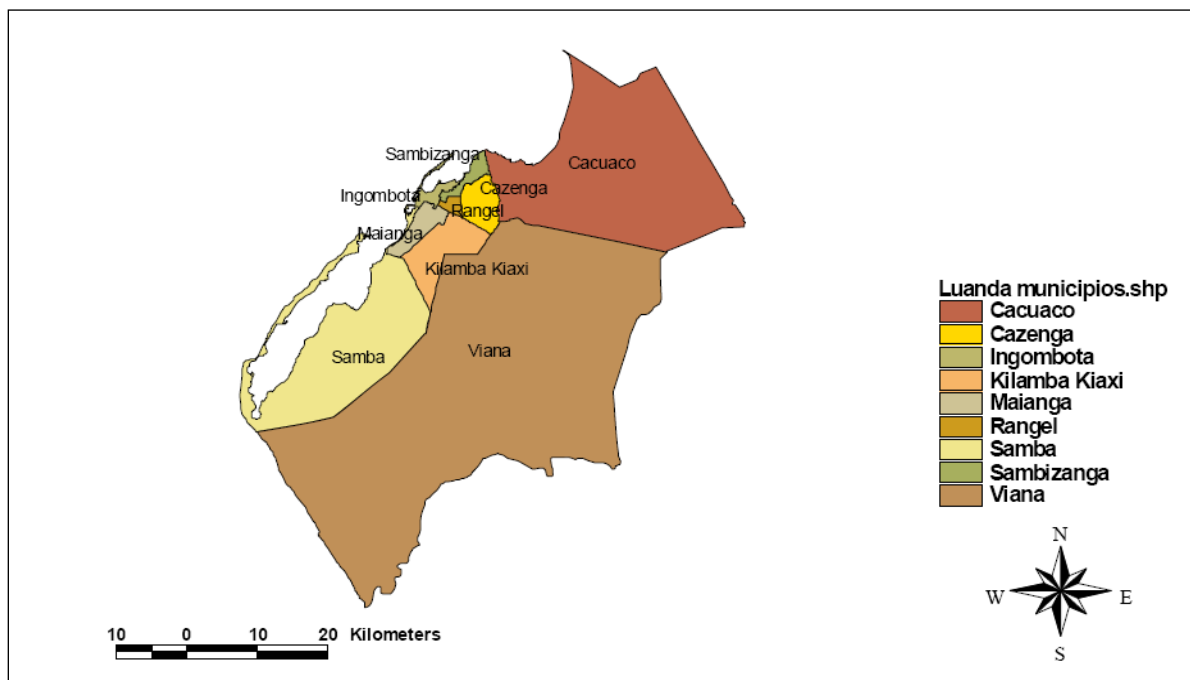
Three districts were selected in each of the provinces. In Luanda, Cazenga, Kilamba Kiayi and Ingombota were included, because they represent a certain variation in income levels (Figure 3). In Uíge, the municipalities of Uíge, Quitexe and Puri were chosen, again with the aim of achieving representativeness (Figure 4). The three districts were chosen in relative proximity to each other due to logistical challenges during the rainy season.

Forty health facilities were surveyed, equally divided between the two provinces. The sample of health facilities includes six hospitals (of which three from Luanda), 19 health centres (12 from Luanda) and 15 health posts (five from Luanda). Health centres and health posts were randomly selected within the respective municipalities. Hospitals were purposively selected in order to fit the objective of the survey.

One health worker at the outpatient department of each health facility was selected for a knowledge/practice test, preferably the technical worker in charge of services. In some cases, the person in charge was not present and was replaced by the one who was attending to patients in the outpatient department.

We surveyed 25 households belonging to the catchment area of each health facility. Half of the households selected were located close to the facility, the rest were chosen at a more distant location (about five kilometres from the health facility). In total, 999 households were included: 499 in Luanda and 500 in Uíge.

Figure 3: The province of Luanda.



Source: Ministerio de Saúde 2007.

Figure 4: The province of Uíge.



While Uíge is a typical rural province, it also contains urban areas. These were included in the survey. Hence, 40 per cent of the households interviewed in Uíge live in urban areas while 60 per cent live in rural areas. All households in Luanda are classified as urban households. Table 4 shows the distribution of households included in the survey by municipality.

Table 4. Households by municipality.

	Number of households surveyed	Per cent of total sample
Luanda		
Cazenga	199	19.9
Ingombota	76	7.6
Kilamba Kiaxi	224	22.4
Uíge		
Uíge	254	25.4
Quitexe	121	12.1
Puri	125	12.5
Total	999	100.0

Three data collection teams, each consisting of four enumerators, received five days of training. The questionnaires were piloted by the enumerators in the field, and the experiences from the pilot were discussed, with revisions made as needed. One enumerator in each team had a particular responsibility for quality assurance in order to avoid errors. One team had the responsibility for conducting the health worker and facility surveys. A trained health technician was part of this team. The work was supervised by CEIC and CMI.

Data collection in Luanda took place in April and May while the fieldwork in Uíge took place during September and October 2010. Both in Luanda and Uíge necessary permissions from the health authorities, police, local authorities as well as traditional authorities (in Uíge) were secured.



The police in Uíge was contacted before the survey could start (Photo: Nohra Villamil).



The enumerators for the Luanda fieldwork (Photo: Nohra Villamil).

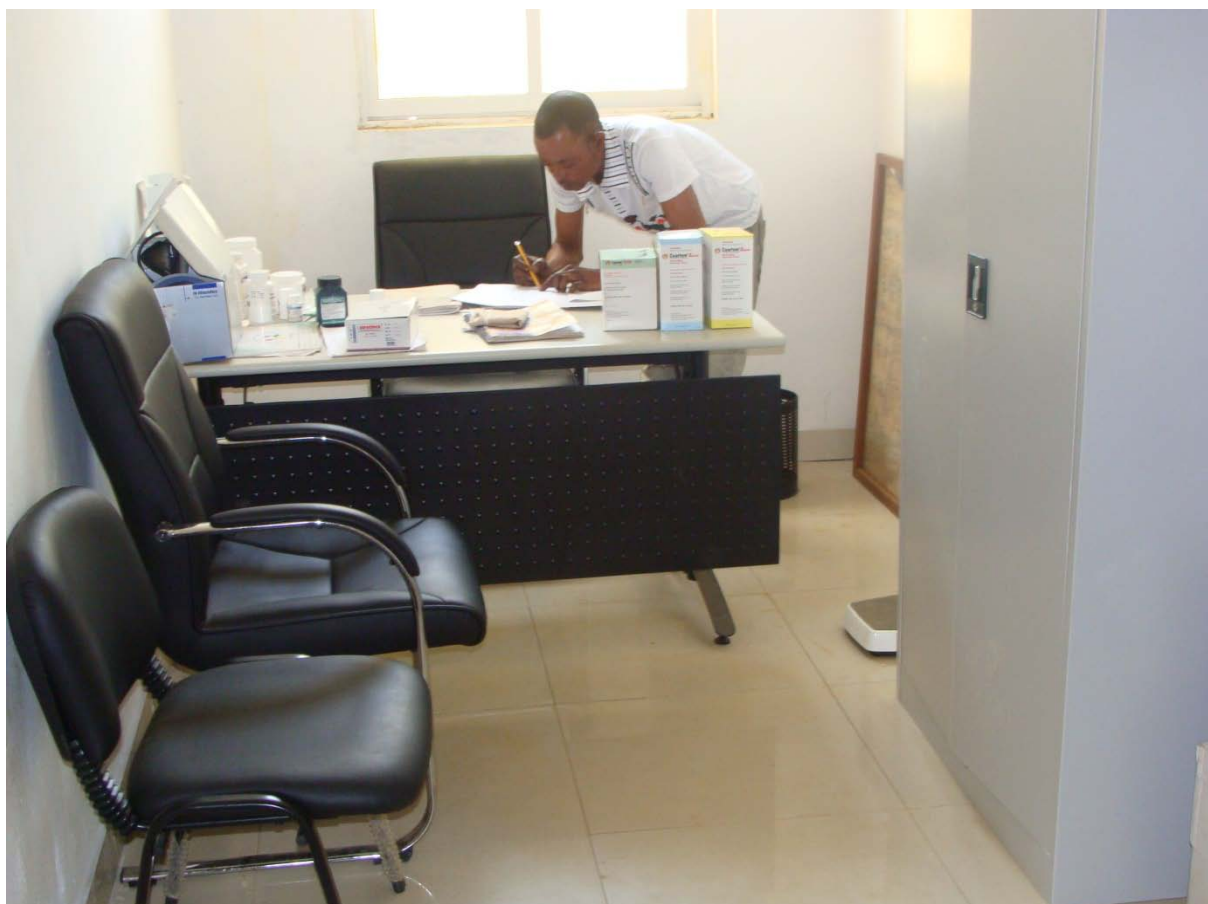
2. Availability of health services

This section presents key findings on service availability at the 40 health facilities surveyed. Our main focus will be on maternal and child health services, as well as services for malaria, tuberculosis (TB) and HIV/AIDS.

The coverage of essential health services is highly variable. While some services are provided in almost every facility, other key services such as Integrated Management of Childhood Illness (IMCI), follow-up visits of new-born infants, delivery services, emergency obstetric care, essential laboratory services, HIV and TB services are much less commonly supplied.

Naturally, hospitals provide a broader set of services than health centres, which again provide more services than the health posts. This implies, of course, that the travelling distance to some key services can become quite long, especially in rural areas.

It is perhaps also not surprising that services are more readily available at health facilities in Luanda than in Uíge. A more significant finding is that the magnitude of the difference is quite large for services such as preventive child health, antenatal care (ANC) and HIV services.



Health clinic in Uíge (Photo: Nohra Villamil).

2.1 Maternal and child health services

A large share of the health facilities provides preventive and curative services for children (Table 5). However, while all health facilities in Luanda provide immunisation services, routine vitamin A supplements and curative consultations for children, the corresponding figures in Uíge are not higher

than 80, 60 and 65 per cent, respectively. IMCI, which is a systematic approach to diagnose and treat child illnesses that cause a large share of child mortality, is not practiced at more than 67.5 per cent of the facilities. The largest share of child deaths occur in the first hours and days after birth. Follow-up of new-born infants is essential to prevent such deaths, but less than half of the facilities provide such services. Especially the lower level facilities, which are closer to the mothers and their babies, rarely provide this service.

Table 5: Child services (share of health facilities providing the service).

	Immuni- sation	Routine vitamin A suppl.	Curative consulta- tions	IMCI services	Follow-up visits of new-borns
Average	0.900	0.800	0.825	0.675	0.475
Province					
Luanda	1.000	1.000	1.000	0.700	0.450
Uíge	0.800	0.600	0.650	0.650	0.500
Facility type					
Hospital	1.000	1.000	1.000	0.833	1.000
Health Centre	1.000	1.000	0.895	0.632	0.579
Health Post	0.733	0.467	0.667	0.667	0.133

Table 6: Maternal services (share of health facilities providing the service).

	Antenatal care (ANC)	Delivery at facility	Delivery service home	Manual removal of placenta	Removal of retained products	Caesarean section
Average	0.700	0.450	0.200	0.450	0.425	0.075
Province						
Luanda	0.900	0.500	0.200	0.500	0.500	0.100
Uíge	0.500	0.400	0.200	0.400	0.350	0.050
Facility type						
Hospital	1.000	1.000	0.500	1.000	1.000	0.500
Health Centre	0.895	0.474	0.211	0.474	0.474	0.000
Health Post	0.333	0.200	0.067	0.200	0.133	0.000

The overall access to maternal health services appears to be somewhat limited, especially in rural areas with a long distance to hospitals. Delivery services are provided at all hospitals, at about half of the health centres, but only at 20 per cent of the health posts (Table 6). Similarly, antenatal care is provided at all hospitals, at most health centres, but only at one third of the health posts. In fact only 50 per cent of health facilities in Uíge provide ANC services, while 90 per cent of the facilities in Luanda do. Most of the health facilities that provide delivery services also provide basic emergency obstetric care (removal of placenta and retained products), but, again, the share of facilities that provide these services is less than 50 per cent. Caesarean sections are conducted in selected hospitals only (50 per cent of the hospitals surveyed). Many women are therefore likely to lack access to timely provision of this critical service.

2.2 Malaria, TB and HIV/AIDS services

Basically all health facilities provide treatment for malaria (Table 7). Malaria can be diagnosed either through a thick blood film (microscopy) or through a rapid test, which are available at 67.5 and 70 per cent of the health facilities, respectively. The underlying data show that basically all facilities provide one of the two tests and more than 40 per cent provide both. The lower level facilities usually only provide the rapid test. However, as will be further discussed below, many facilities do not have drugs for malaria treatment.

Table 7: Malaria services (share of health facilities providing the service).

	Treatment	Thick blood film	Rapid test
Average	0.950	0.675	0.700
Province			
Luanda	0.950	1.000	0.600
Uíge	0.950	0.350	0.800
Facility type			
Hospital	1.000	0.833	1.000
Health Centre	0.947	0.895	0.579
Health Post	0.933	0.333	0.733

Diagnosis of TB requires laboratory services and/or X-ray and is therefore naturally confined to higher-level facilities. Patients who attend lower level facilities with symptoms of TB should normally be referred. But even at the higher levels, the share of facilities that provide diagnostics is surprisingly low (Table 8). TB requires an extremely strict treatment regime (Directly Observed Treatment Short course or DOTS), with direct observation by health professionals each day. This cannot be implemented in practice unless lower facilities are involved in the treatment. In Angola, they do not seem to be, and the TB treatment regime is therefore probably highly ineffective.

Although HIV/AIDS so far has been much less prominent in Angola than in some neighbouring countries, a significant share of the population is infected. Table 9 shows that the availability of HIV/AIDS services is quite low in most places. In particular, preventive services (counselling and testing, and Preventing Mother-to-Child Transmission of HIV or PMTCT services) are in limited

supply, especially in Uíge, where only 20-25 per cent of the facilities provide counselling and testing and only 5 per cent provide PMTCT services.

Table 8: TB services (share of health facilities providing the service).

	Diagnosis through sputum smear micro-scropy	Diagnosis by X-ray	Directly Observed Treatment (DOTS)
Average	0.125	0.050	0.100
Province			
Luanda	0.150	0.050	0.150
Uíge	0.100	0.050	0.050
Facility type			
Hospital	0.333	0.333	0.333
Health Centre	0.158	0.000	0.105
Health Post	0.000	0.000	0.000

An extremely large difference exists between the provinces in terms of provision of curative services (anti-retroviral therapy). While 80 per cent of health facilities in Luanda provide treatment for HIV/AIDS, the share in Uíge is only 5 per cent. HIV/AIDS patients in the rural province thus seems severely disadvantaged in terms of access to these life-saving services.

Table 9: HIV/AIDS services (share of health facilities providing the service).

	HIV counselling	HIV testing	Anti-retroviral therapy (ART)	Preventive mother to child transmission (PMTCT)	Rapid test for HIV	CD4 count
Average	0.300	0.375	0.425	0.175	0.475	0.125
Province						
Luanda	0.400	0.500	0.800	0.300	0.700	0.200
Uíge	0.200	0.250	0.050	0.050	0.250	0.050
Facility type						
Hospital	0.833	0.833	0.667	0.667	0.833	0.667
Health Centre	0.368	0.526	0.579	0.158	0.632	0.053
Health Post	0.000	0.000	0.133	0.000	0.133	0.000

2.3 Other services

Table 10 reports the availability of a few additional services. We notice that only half of the health facilities (52.5 per cent) provide family planning services. In Uíge, the share is down to 40 per cent,

compared to 65 per cent in Luanda. These low figures are closely related to the fact that health posts rarely provide family planning services (only 6.7 per cent according to our estimates).

Treatment for sexually transmitted diseases is however provided in most facilities, but again in a much higher share of the facilities in Luanda (90 per cent) than in Uíge (70 per cent).

One surprising finding is that blood transfusions are provided at as many as 40 per cent of the health posts, while the share is much lower (10.5 per cent) for health centres. Consequently, a larger share of the health facilities in Uíge than in Luanda offers this service. However, only an average of 30 per cent of the facilities provides blood transfusions.

Finally, most facilities appear to provide small surgical services (e.g., wounds), while very few (indeed only 50 per cent of the hospitals) conduct more complicated surgeries (e.g., complicated fractions surgery). Again, patients in Uíge appear to be at a disadvantage compared to those in Luanda.

Table 10: Other services (share of health facilities providing the service).

	Family planning	Treatment of sexually transmitted diseases (STDs)	Blood transfusion	Small surgery	Complicated fractions surgery
Average	0.525	0.825	0.300	0.875	0.075
Province					
Luanda	0.650	0.950	0.200	0.900	0.100
Uíge	0.400	0.700	0.400	0.850	0.050
Facility type					
Hospital	1.000	0.833	0.667	1.000	0.500
Health Centre	0.737	0.895	0.105	0.789	0.000
Health Post	0.067	0.733	0.400	0.933	0.000

3. Quality of health services

The quality of health services is commonly defined as:

The degree to which health services [...] increase the likelihood of desired health outcomes and are consistent with current professional knowledge (*Institute of Medicine, Washington DC*).

In practice, it is extremely difficult to measure how health services influence health outcomes. The usual approach to assessing quality is therefore to focus on those factors that are preconditions for quality health services, such as the availability of qualified staff, infrastructure, equipment, drugs and supplies. These factors are referred to as the inputs of health services delivery.

This report takes one step beyond the usual focus on inputs, by also assessing the quality of health worker performance. More specifically, we interviewed health workers to assess their ability to perform according to professional guidelines and to reach a correct diagnosis for a set of common illnesses.

All health facilities had trained health workers, but the maximum level of training is quite low in many places, especially in Uíge. The distribution of qualified health workers is rather unequal between Luanda and Uíge. Some health facilities in Uíge were found to lack even the most basic equipment, like stethoscopes and thermometers. Drugs and vaccines seem to be lacking both in Luanda and Uíge, but again, the situation is considerably worse in Uíge.

A striking observation is that health workers in Luanda appear to do much more careful diagnoses than their colleagues in Uíge. This difference appears to have strong implications for the ability of health workers to reach correct diagnoses. On average, correct diagnosis was reached in 45 per cent of the cases in Uíge, while in Luanda correct diagnosis was reached in 75 per cent of the cases. Patients in Luanda are thus more likely to have their illness correctly diagnosed and are therefore probably also more likely to get an appropriate treatment and to be cured.

More detailed findings are reported below.

3.1 Availability of key inputs

This section reports the availability of certain key inputs at the health facility level. Our focus is on staffing levels, the physical infrastructure, and the availability of equipment, drugs and medical supplies.

3.1.1 Qualified staff

Availability of qualified and motivated staff is a key factor for quality of health services. Table 11 reports the availability of different staff categories, showing the share of facilities with at least one employee in the respective categories.

Extremely few doctors are operating in Uíge. Among the 20 facilities surveyed in the province, a general practitioner or a specialist was available in only two facilities, in one hospital and in one health centre. Hence, two of the three hospitals surveyed in Uíge did not have a single medical doctor (while all hospitals in Luanda had).

Nearly all health facilities have employed at least one nurse. But Uíge has significantly fewer nurses with higher levels of training (specialised or superior nurses). While 50 per cent of the facilities in Luanda employ this cadre, only 5 per cent of the facilities in Uíge have such personnel.

The substantial inequalities in the availability of qualified personnel between the provinces are evident in all other cadres as well. Notice in particular the low availability in Uíge of nurse/midwives (15 per cent), lab technicians (35 per cent) and pharmacists (30 per cent), compared to Luanda (60, 100 and 80 per cent, respectively).

Table 11: Staffing (share of health facilities with at least one of the following).

	General practitioner	Specialised medical doctor	Nurse, specialised or superior	Nurse, medium or basic	Midwife / Nurse midwife
Average	0.225	0.200	0.275	0.925	0.375
Province					
Luanda	0.400	0.300	0.500	0.850	0.600
Uíge	0.050	0.100	0.050	1.000	0.150
Facility type					
Hospital	0.667	0.667	0.667	1.000	0.833
Health Centre	0.263	0.211	0.316	0.895	0.526
Health Post	0.000	0.000	0.067	0.933	0.000

(continued)

	Lab technician	Lab assistant	Pharmacist	Pharmacy auxiliary	Community health worker	Radio-grapher
Average	0.675	0.225	0.550	0.175	0.200	0.150
Province						
Luanda	1.000	0.350	0.800	0.300	0.250	0.250
Uíge	0.350	0.100	0.300	0.050	0.150	0.050
Facility type						
Hospital	1.000	0.667	0.833	0.500	0.333	0.667
Health Centre	0.895	0.211	0.789	0.211	0.263	0.105
Health Post	0.267	0.067	0.133	0.000	0.067	0.000

3.1.2 Infrastructure

Table 12 reports the availability of selected infrastructure indicators. All the facilities in Luanda report to be connected to the electricity grid, while the same is true for only 15 per cent of the clinics in Uíge. Nevertheless, only 55 per cent of the clinics in Luanda had power available during all opening hours in the week prior to the visit. In Uíge the corresponding figure is 80 per cent. This seems to suggest that the facilities in Uíge have more reliable back-up solutions (although it should be noted that the surveys were conducted at different points in time in the two provinces). Availability of water is essential for hygiene (e.g., hand washing). About 84.2 per cent of the clinics in Luanda report to have water

available within a distance of 500 metres, while this was true for only 55 per cent of the health facilities in Uíge. Unavailability of water is more often a problem at lower level facilities.

Delivery beds are available in 37.5 per cent of the facilities, which is less than the 45 per cent that provide delivery services (see Table 6). A very low share of the facilities has institutional access to telephone services. This is likely to be compensated by private solutions though.

Table 12: Infrastructure (share of health facilities).

	Connected to electricity grid	Power available during all opening hours last week (any source)	Water available within 500m	Delivery beds available	Operating theatre with basic equipment	Landline or cellular phone
Average	0.575	0.675	0.692	0.375	0.075	0.275
Province						
Luanda	1.000	0.550	0.842	0.400	0.100	0.400
Uíge	0.150	0.800	0.550	0.350	0.050	0.150
Facility type						
Hospital	0.833	0.833	1.000	1.000	0.500	0.333
Health Centre	0.737	0.474	0.722	0.316	0.000	0.316
Health Post	0.267	0.867	0.533	0.200	0.000	0.200



Health post in Uíge (Photo: Nohra Villamil).

3.1.3 Equipment

Table 13 summarises the availability of equipment in working order at the time of visit. While the availability of key equipment for diagnosis generally is high, it is noteworthy and a reason for concern that 15 per cent of the facilities in Uíge lack a thermometer and 30 per cent do not have a stethoscope. These are important instruments for the diagnosis of serious diseases. Moreover, 20 per cent of the health posts lack a child weight scale, essential to following child growth and development.

We further notice that only 50 per cent of the hospitals have equipment for the examination of ears and eyes (ophthalmoscope and otoscope) and that almost 50 per cent of the health facilities lack infusion kits for intravenous fluids, which may be important for instance to treat patients who are dehydrated.

Table 13: Availability of equipment in working order (share of health facilities).

	Total	Luanda	Uíge	Hospital	Health Centre	Health Post
Thermometer	0.925	1.000	0.850	1.000	1.000	0.800
Stethoscope	0.850	1.000	0.700	1.000	1.000	0.600
Blood pressure machine	0.900	0.950	0.850	1.000	0.895	0.867
Child weighing scale	0.875	0.950	0.800	1.000	0.895	0.800
Adult weighing scale	0.850	0.950	0.750	1.000	0.947	0.667
Refrigerator	0.675	0.900	0.450	1.000	0.895	0.267
Ophthalmoscope	0.200	0.350	0.050	0.500	0.263	0.000
Otoscope	0.150	0.200	0.100	0.500	0.105	0.067
Infusion kit for IV	0.525	0.750	0.300	0.667	0.684	0.267
Anaesthetic equipment	0.100	0.150	0.050	0.500	0.053	0.000
Oxygen system	0.100	0.150	0.050	0.500	0.053	0.000
AMBU (resuscitator)	0.250	0.350	0.150	0.833	0.211	0.067
ECG	0.150	0.250	0.050	0.500	0.105	0.067
X-ray machine	0.125	0.200	0.050	0.667	0.053	0.000
Ambulance	0.250	0.300	0.200	0.833	0.263	0.000

3.1.4 Drugs and supplies

Different levels of care are supposed to be differently equipped with drugs and medical supplies. Certain core drugs need to be present everywhere, though, like the ones at the top of the list in Table 14. It is striking therefore that only 62.5 per cent of the health facilities had any antibiotic and that only 72.5 per cent had an antimalarial in stock. It is particularly the lower level facilities that experience a serious level of stock outs; these essential drugs were available in less than 50 per cent of the health posts.

Vaccines were also far less available than they ought to be; only 26.7 per cent of the health posts had all the six childhood vaccines for the Expanded Programme on Immunisation or EPI in stock. Low availability of Oral Rehydration Solution or ORS (for the treatment of diarrhoea) and iron (for the treatment on anaemia) at lower level facilities are other serious deficiencies.

Table 14: Availability of drugs (share of health facilities).

	Total	Luanda	Uíge	Hospital	Health Centre	Health Post
Antibiotics	0.625	0.750	0.500	0.833	0.684	0.467
Antimalarial	0.725	0.800	0.650	1.000	0.842	0.467
All EPI vaccines	0.600	0.750	0.450	1.000	0.737	0.267
Oral Rehydration Salts	0.825	0.850	0.800	1.000	0.842	0.733
Multivitamins	0.575	0.450	0.700	0.667	0.632	0.467
Iron	0.625	0.650	0.600	1.000	0.579	0.533
IV fluids	0.625	0.850	0.400	1.000	0.737	0.333
Anti-tuberculosis	0.100	0.150	0.050	0.167	0.158	0.000
Anti-leptosies	0.100	0.150	0.050	0.167	0.105	0.067
Antifungals	0.300	0.400	0.200	0.500	0.474	0.000
Against helminthiasis	0.300	0.300	0.300	0.500	0.421	0.067
Against schistosomiasis	0.175	0.250	0.100	0.333	0.211	0.067
Against filariasis	0.075	0.050	0.100	0.333	0.053	0.000
Against sleep sickness	0.125	0.200	0.050	0.333	0.158	0.000
Analgesics (painkillers)	0.725	0.800	0.650	0.833	0.789	0.600
Antipyretics	0.700	0.800	0.600	0.833	0.684	0.667
Anti-inflammatory	0.600	0.600	0.600	0.833	0.526	0.600
Anti-hypertension	0.425	0.550	0.300	0.833	0.579	0.067
Diuretics	0.375	0.550	0.200	0.667	0.474	0.133
Cardio tonics	0.175	0.300	0.050	0.500	0.211	0.000
Anti-asthmatics	0.375	0.600	0.150	0.833	0.526	0.000
For cough	0.150	0.150	0.150	0.500	0.158	0.000
Anti-histaminic	0.375	0.550	0.200	0.667	0.526	0.067
Antacids	0.475	0.400	0.550	0.667	0.474	0.400
Antispasmodics and diarrheic	0.525	0.500	0.550	1.000	0.526	0.333
Laxants	0.100	0.050	0.150	0.333	0.105	0.000
Oxytocin	0.225	0.400	0.050	0.667	0.263	0.000
Local anaesthetics	0.575	0.700	0.450	1.000	0.632	0.333
General anaesthetics	0.100	0.150	0.050	0.667	0.000	0.000
Anti-epileptic	0.200	0.300	0.100	0.667	0.211	0.000
Sedatives	0.500	0.650	0.350	1.000	0.579	0.200
Anti-infectious drug for skin	0.400	0.400	0.400	0.833	0.421	0.200
Disinfectant for skin	0.650	0.650	0.650	1.000	0.789	0.333
For ear troubles	0.250	0.250	0.250	0.333	0.421	0.000
For ocular use	0.600	0.550	0.650	0.500	0.684	0.533

Availability of drugs is significantly better in health facilities in Luanda than in Uíge. Summarising the figures in Table 14 shows that the overall availability of these drugs is 47 per cent in Luanda and 34 per cent in Uíge (since not all drugs are meant for all levels of care, we should never expect these figures to approach 100 per cent though).

Similarly, Table 15 displays the availability of medical supplies. Again, we do not expect all these supplies at all levels of care. However, essential supplies such as bandages and wound dressing need to be present everywhere. They are not; although all hospitals do have these supplies, they are lacking in one third of the health posts surveyed.

Table 15: Availability of medical supplies (share of health facilities).

	Total	Luanda	Uíge	Hospita l	Health Centre	Health Post
Spatulas	0.450	0.600	0.300	0.667	0.579	0.200
Wound dressings	0.825	0.900	0.750	1.000	0.895	0.667
Bandages	0.725	0.700	0.750	1.000	0.684	0.667
Syringes disposables	0.700	0.750	0.650	1.000	0.737	0.533
Syringes for lumbar aspiration	0.225	0.300	0.150	0.500	0.158	0.200
Catheters for IV	0.500	0.600	0.400	1.000	0.632	0.133
Nasal tubes	0.250	0.350	0.150	0.667	0.316	0.000
Nasogastric tubes	0.250	0.350	0.150	0.667	0.316	0.000
Gloves	0.725	0.850	0.600	1.000	0.895	0.400
Masks	0.575	0.800	0.350	1.000	0.737	0.200
Protection clothes	0.500	0.700	0.300	1.000	0.684	0.067
Camps for surgery	0.175	0.200	0.150	0.500	0.211	0.000
Material for blood testing	0.200	0.350	0.050	0.667	0.211	0.000
Material for urine and stool specimen	0.375	0.500	0.250	0.833	0.526	0.000

3.2 Health worker performance

A crucial factor for the provision of quality health services is that clinicians are able to systematically reach a correct diagnosis, prescribe correct treatment and educate patients about how to prevent future illness. In order to be able to do this, the clinician needs to do a careful examination of the patient, asking relevant patient history questions and performing relevant physical examinations and tests. This section reports the level of health worker performance at the 40 health facilities, both in terms of the thoroughness of the diagnostic process, and in terms of the ability of the clinicians to reach a correct diagnosis for five common illnesses.

We used Patient Case Simulations (PCS) to measure health worker performance. PCS (sometimes referred to as “vignettes”) present the clinician with a set of hypothetical patients. Surveyors (the case study patients) act as a patient with a specific illness. The patient tells the clinician his/her main symptom(s) in response to questions asked by the clinician. If the clinician wants to make an examination, he/she will tell the patient which examination, and the patient will tell him/her what

he/she would find. The clinician then makes a diagnosis, prescribes treatment and provides health education to the case study patient. A second surveyor observes and records what the clinician does during the “consultation.”

PCS have both advantages and disadvantages compared to alternative ways of measuring process quality. The main alternative to PCS in surveys in a low-income context is direct observation of real patient consultations, possibly followed by a re-examination by well-qualified personnel.⁴ The advantages of the PCS are that they are less far less time-consuming (especially if we want to measure the quality of care with less frequent illnesses), they increase comparability by avoiding issues related to differences in case mix and they make judging whether correct diagnosis is reached and correct treatment is prescribed easier.

PCS have shown great promise as a tool for measuring the quality of care, but there are also valid concerns related to the fact that PCS are performed with hypothetical rather than actual patients. Peabody et al. (2000) showed on US data that the quality score in PCS (71.0%) was similar to the quality score with standardised patients (76.2 per cent) (i.e., trained actors who make unannounced visits to the clinic). In a low-income context, Leonard and Masatu (2005) compared PCS with direct clinical observation and found that item by item, PCSs and direct observation produced identical results 63 per cent of the time. Das and Hammer (2005) argue – or presume – that PCS measure competence rather than performance. This view is partly supported by Leonard and Masatu (2005), who show that PCS scores tend to be higher than the scores with direct clinical observation. On the other hand, direct observation has its own measurement problems, since there are certain procedures that a doctor may perform without being noticed by an observer (e.g., looking for lethargy, wasting or paleness of the eyes). Moreover, Leonard and Masatu (2005) also show that there are some procedures that are performed in practice but not on the PCS, implying that the PCS score is likely to underestimate the level of competence.

In summary, the available evidence from low- and middle-income contexts suggests that performance in PCS is highly correlated with performance with real patients. In cases where there is a gap between what health workers know and what they do with real patients, PCS tend to produce performance scores that fall somewhere in between. The standardised nature of the PCS implies that they are particularly useful for measuring *relative performance* across clinicians.

In this study, we used five PCS originally developed by Leonard and Masatu in a Tanzanian context. Following Mæstad et al. (2010), we expanded the list of relevant items to be recorded by including items required by the guidelines for IMCI in cases where the patient was a child. The five simulation cases are (1) child with malaria and anaemia, (2) child with acute diarrhoea and dehydration, (3) child with pneumonia, (4) woman with pelvic inflammatory disease, and (5) man with pulmonary tuberculosis. The cases were chosen to reflect important causes of illness and death. Diarrhoea, pneumonia and malaria are among the most important killers of children in low-income contexts, and tuberculosis causes a high disease burden among adults. The cases were also chosen and designed with varying levels of difficulty. Cases (1) and (2) are somewhat more difficult than straightforward malaria and diarrhoea cases since the malaria patient also had anaemia and the diarrhoea patient was dehydrated. These complications were included in order to test the ability to detect the more severe cases. Case (3) is just a simple case of pneumonia. Case (4) is meant to be a more difficult condition to diagnose, while Case (5) is assumed to be a simple one.

⁴ Other methods include standardised patients, i.e., trained actors who make unannounced visits to the clinic, and chart abstraction. Patient charts are often seriously incomplete in low-income context, and standardised patients would be hard to implement in large-scale surveys in low-income contexts.

3.2.1 Health worker characteristics

One health worker from each of the facilities was included in the performance assessment. In this report, we have however excluded workers from four facilities specialising in maternal health services, because our PSC did not address this patient group. This leaves us with a total of 36 participants. Tables 16 and 17 provide some of their background characteristics. The health workers are on average 40.6 years old and have 10.3 years of clinical experience. Health workers in Luanda have on average 2.3 years more experience than those in Uíge. Note also that workers in the health posts are typically less experienced.

Table 16: Age and years of experience as clinician.

	Age (years)	Years of experience
Average	40.6	10.3
Province		
Luanda	40.2	11.4
Uíge	41.1	9.1
Facility type		
Hospital	42.6	12.7
Health Centre	42.8	13.5
Health Post	38.8	7.7

Table 17: Health workers' level of training.

	Medical doctor	Nurse, specialised or superior	Nurse, medium or basic	Midwife	Trained in IMCI	Common-ly feel clinical knowledge is lacking
Average	0.028	0.111	0.806	0.028	0.639	0.806
Province						
Luanda	0.000	0.211	0.684	0.053	0.737	0.789
Uíge	0.059	0.000	0.941	0.000	0.529	0.824
Facility type						
Hospital	0.143	0.143	0.571	0.143	0.714	0.857
Health Centre	0.000	0.100	0.900	0.000	0.700	0.900
Health Post	0.000	0.105	0.842	0.000	0.579	0.737

About 81 per cent of the health workers assessed are nurses at medium or basic level. There is a large difference between the provinces in that the share of nurses at basic or medium level constitutes 68.4 per cent of our sample in Luanda while 94.1 per cent in Uíge. In Luanda, there is a significant share of higher-level nurses (21.1 per cent) and midwives (5.3 per cent) among the included health workers. The share of medical doctors included was only 2.8 per cent.

Generally, health workers interviewed in Luanda have more formal training than those in Uíge, and those from the hospitals have on average more training than those from health centres and health posts. A larger share of the health workers from Luanda has received training in IMCI compared to those from Uíge (70 versus 55 per cent).

In order to capture the health workers' subjective evaluation of their own competence, we asked whether they commonly feel they lack sufficient clinical knowledge to reach a correct diagnosis and treatment. The subjective feeling of lack of knowledge is high in both provinces: 82.5 per cent on average.

3.2.2 Overall performance score

On average, across all the five PCS, health workers asked 5.9 relevant patient history questions per case and performed 3.1 relevant physical examinations. Compared to the guidelines that were used to inform the study, this amounted to 58.5 per cent of the relevant questions and 45.2 per cent of the relevant physical examinations (Table 18). Correct diagnosis was reached in less than half the cases (45 per cent).

Table 18: Average performance scores in five patient cases.

	Total	Luanda	Uíge
Relevant patient history question	0.585	0.732	0.421
Relevant physical examinations	0.452	0.620	0.265
Correct diagnosis	0.450	0.526	0.365

Performance levels are remarkably higher in Luanda than in Uíge in all dimensions. In Uíge, correct diagnosis was reached in 36.5 per cent of the cases, while in Luanda, the figure is 52.6 per cent. The difference is even stronger when it comes to questions asked and examinations performed. Health workers in Luanda ask 74 per cent more relevant questions (73.2 relative to 42.1 per cent) and perform 134 per cent more relevant physical examinations (62.0 relative to 26.5 per cent) than their colleagues in Uíge. This implies that they are able to reach correct diagnosis with a much higher level of confidence and are much more likely to be able to distinguish various illnesses from each other. Note that in several of the patient cases, it is quite possible for a health worker to reach the correct diagnosis through a good amount of guesswork. The process indicators (questions and examinations) are therefore better indicators of the level of performance than the share of correct diagnoses. And here the differences between the provinces are large.

3.2.3 Performance: patient history

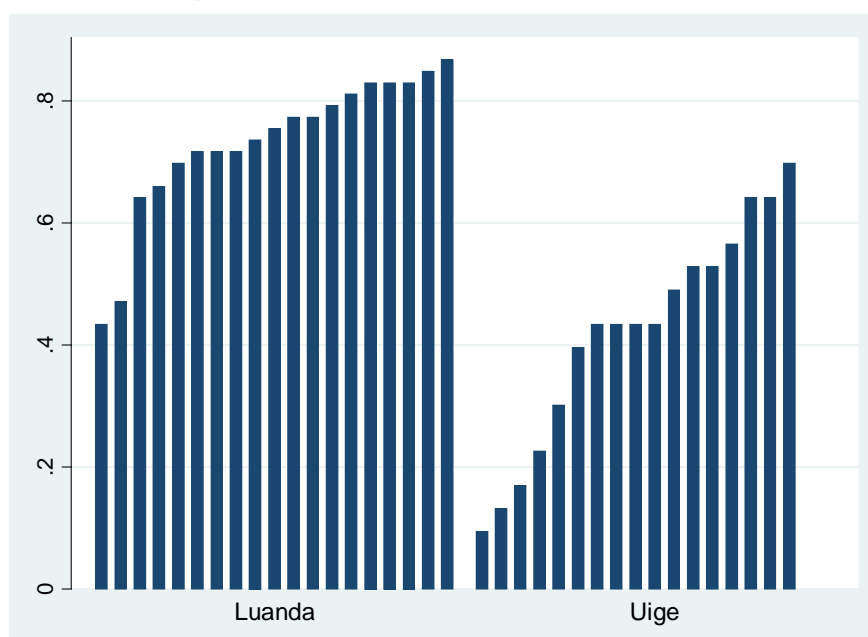
We now turn to a more detailed discussion of each of the cases, also investigating whether there are differences in performance levels across various types of health facilities and across health workers with different levels of experience. With regard to experience, we distinguish between those with more or less than five years of experience as clinicians. Thirty-five per cent of the health workers have five years or less of experience.

Health workers with long experience have substantially higher performance in terms of history taking (65.5 per cent) than the less experienced ones (37.5 per cent). Differences across health facility types are in most cases not very large. There are also not strong differences across the five patient cases (Table 19).

Table 19: Share of relevant history taking questions asked.

	Malaria with anaemia	Acute watery diarrhoea with dehydration	Pneumonia	Pelvic inflammatory disease	Tuberculosis	Total
Total	0.528	0.551	0.688	0.497	0.692	0.585
Province						
Luanda	0.696	0.679	0.829	0.653	0.828	0.732
Uíge	0.339	0.406	0.529	0.324	0.540	0.421
Facility type						
Hospital	0.549	0.571	0.571	0.557	0.532	0.555
Health Centre	0.562	0.564	0.787	0.560	0.782	0.642
Health Post	0.502	0.536	0.678	0.442	0.703	0.566
Years of experience						
Five or less	0.364	0.372	0.568	0.309	0.496	0.413
Six or more	0.600	0.629	0.740	0.580	0.778	0.660

Figure 5 demonstrates the large variation in performance scores both between provinces and within provinces. Each bar represents the average score across the five cases for a single health worker. The Luanda case shows that a number of health workers are able to consistently perform at a very high level across the five cases. The situation in Uíge is more worrying with a number of health workers performing at quite low levels.

Figure 5: Performance score patient history.

3.2.4 Performance: physical examination

Performance levels in terms of physical examinations follow much the same pattern as for patient history questions; much higher performance in Luanda than in Uíge (as already noted), and much higher performance for experienced health workers (54.0 per cent) compared to less experienced ones (25.3 per cent) (Table 20). There is no difference between types of health facilities, and the pattern is quite similar across the five patient cases, although the malaria case and the pelvic inflammatory disease (PID) case belong to the lower end and the TB case belong to the higher end of the performance spectrum.

Table 20: Share of relevant physical examinations performed.

	Malaria with anaemia	Acute watery diarrhoea with dehydration	Pneumonia	Pelvic inflammatory disease	Tuberculosis	Total
Total	0.396	0.463	0.500	0.378	0.572	0.452
Province						
Luanda	0.565	0.626	0.675	0.526	0.758	0.620
Uíge	0.209	0.281	0.304	0.212	0.365	0.265
Facility type						
Hospital	0.325	0.413	0.571	0.457	0.543	0.437
Health Centre	0.473	0.544	0.517	0.400	0.680	0.517
Health Post	0.383	0.439	0.465	0.337	0.526	0.424
Years of experience						
Five or less	0.231	0.283	0.242	0.236	0.273	0.253
Six or more	0.469	0.542	0.613	0.440	0.704	0.540

The variation in the level of performance on physical examinations is substantial within both provinces, ranging between 10 per cent or less, to close to 100 per cent (see Figure 6). This suggests that our performance measure is quite good at distinguishing various levels of performance.

Figure 6: Experience and performance on physical examinations

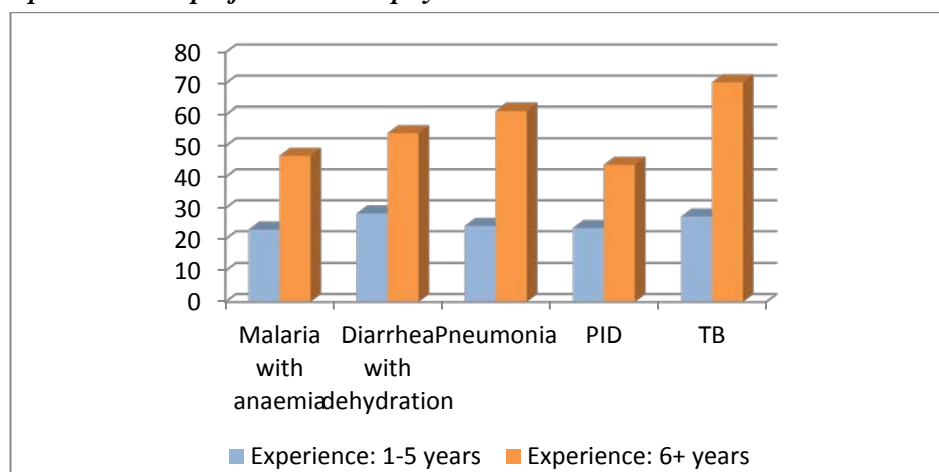
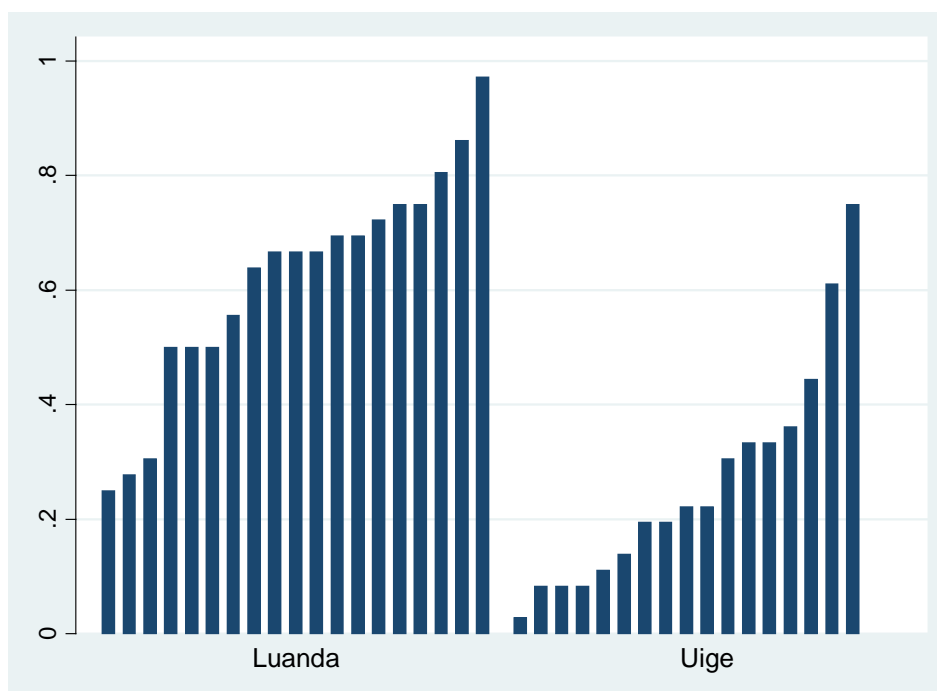


Figure 7 shows a large variation in performance scores for physical examinations both between provinces and within provinces. Each bar represents the average score across the five cases for a single health worker. The low share of physical examinations in Uíge is a reason for concern.

Figure 7: Performance score for physical examinations.



3.2.5 Performance: correct diagnosis

Table 21 displays the share of health workers that were able to reach the correct diagnosis in each of the five patient cases. There is large variation across the cases. While more than 80 per cent of the health workers are able to diagnose tuberculosis correctly, only 25 per cent were able to diagnose pelvic inflammatory disease. This disease is not the simplest one to diagnose, and a relatively low figure here is not unexpected.

It is worrying that less than 50 per cent of the health workers were able to correctly diagnose a simple case of pneumonia. Pneumonia is the biggest killer disease in children less than five years old, and the ability to detect and treat pneumonia before it develops to a critical stage is essential to reduce mortality.

When it comes to malaria and diarrhoea, the main cause of the low performance level is the inability to detect the factors which suggest that these patients need special attention; the presence of anaemia in the malaria patient and the presence of dehydration in the patient with diarrhoea. In order to reduce fatality rates of these diseases, it is crucial that health workers be consistently able to identify the more serious cases. In this perspective, correct diagnosis in only 30.6 per cent of the diarrhoea cases and 41.7 per cent of the malaria cases gives reason for concern.

Table 21: Share of health workers who reached correct diagnosis.

	Malaria with anaemia	Acute diarrhoea with dehydration	Pneumonia	Pelvic inflammatory disease	Tuberculosis	Total
Total	0.417	0.306	0.444	0.250	0.833	0.450
Province						
Luanda	0.474	0.421	0.579	0.368	0.789	0.526
Uíge	0.353	0.176	0.294	0.118	0.882	0.365
Facility type						
Hospital	0.286	0.143	0.429	0.571	0.714	0.429
Health Centre	0.400	0.200	0.200	0.200	0.800	0.360
Health Post	0.474	0.421	0.579	0.158	0.895	0.505
Years of experience						
Five or less	0.455	0.364	0.273	0.091	0.818	0.400
Six or more	0.400	0.280	0.520	0.320	0.840	0.472

Figure 8 displays the differences in diagnostic accuracy across the provinces. Except for the case of TB, which most health workers in both provinces diagnose correctly, health workers in Luanda perform significantly better than those in Uíge. The low rate of detection of potentially fatal case of diarrhoea with dehydration in Uíge (only 17.6 per cent) is a particular concern.

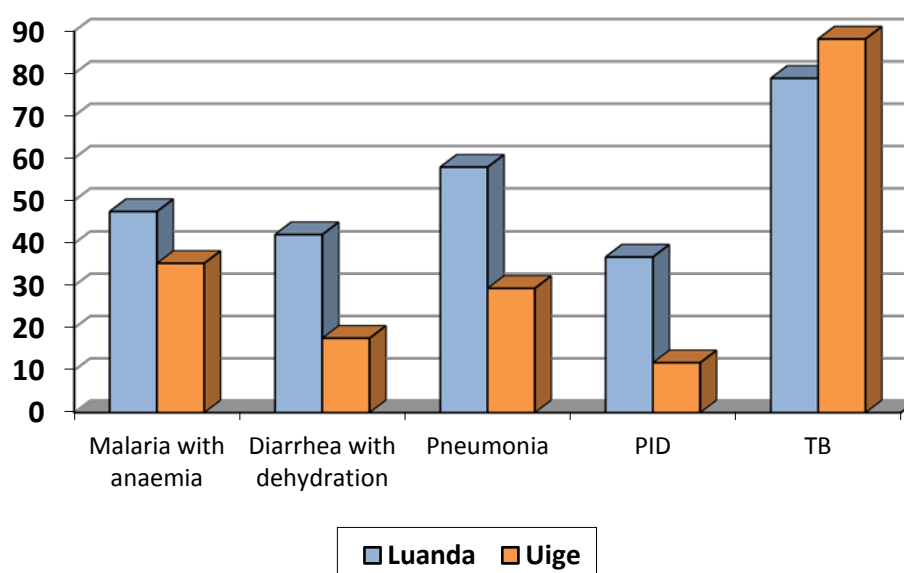
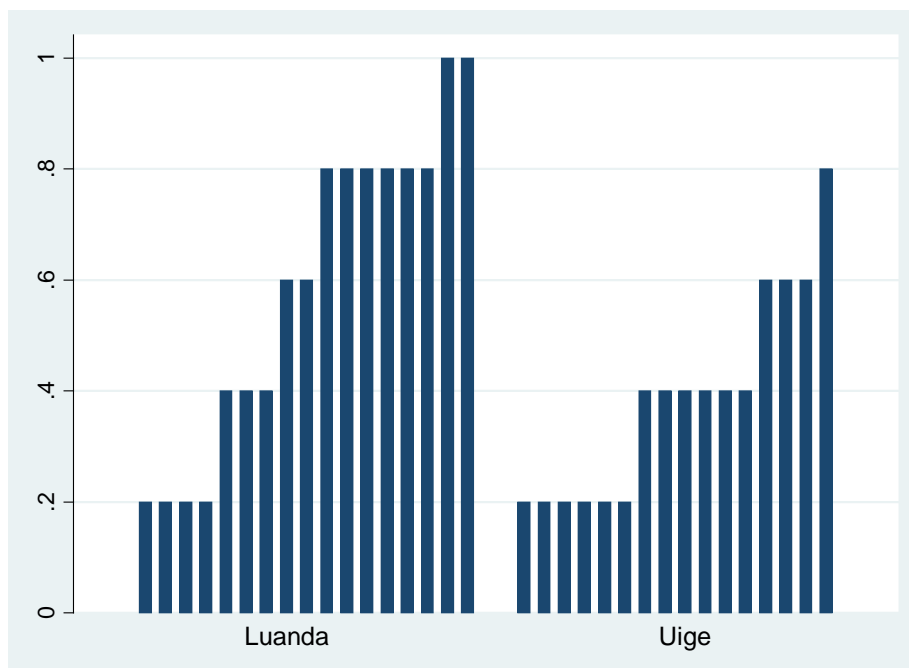
Figure 8: Diagnostic accuracy across provinces.

Figure 9, which shows the share of correct diagnoses for each of the health workers, again points to substantial variation across health workers in their ability to diagnose correctly. While three health workers (i.e., 8.3 per cent) did not conclude correctly in any of the cases, a few were able to do them all. This suggests that our assessment tool is well suited to differentiate between high and low performers.

Figure 9: Share of correct diagnosis for each health worker.



There are significant differences between types of health facilities in their ability to reach the correct diagnosis. Somewhat surprisingly, health workers at health posts outperform their colleagues at hospitals and health centres (50.5 per cent versus 42.9 and 36.0 per cent). Higher-level facilities perform better in the more complicated case of pelvic inflammatory disease, but especially for the cases of malaria, diarrhoea and pneumonia, performance is significantly higher at health posts. This difference seems to require some further explanation. It might be related to the fact that these illnesses are the ones that are most commonly seen at the health posts and that their health workers therefore are more experienced in these cases.

4. Household utilisation and perception of health services

An important and unique feature of our data set on health service delivery in Angola is that we have collected data both at the supply side (health facilities and health workers) and the demand side (the users) of the health system. This section presents the data from the user side, collected from 999 households in Luanda and Uíge.

We are particularly interested in health seeking behaviour at the households level: to what extent do people utilise the public health system when they are ill; to what extent do they use their nearest health provider; and what are their reasons for not using the nearest provider, if any. Furthermore, we are concerned with the users' knowledge of how to prevent illness and with their perception of the quality of health services. We will have a particular focus on maternal health services, and we will also look particularly for differences in behaviour and attitudes between the poor and the non-poor.

4.1 Household characteristics

We start by displaying a few background characteristics of the households included in the survey. We report household composition, level of education and sector of work, and we develop an index of wealth that we later will use to classify the households into socio-economic layers.

4.1.1 Household composition

The average household has 6.2 members (Table 22). There is large variation in household size (Figure 10), with a good number of households with more than 10 members. The households in Luanda tend to be bigger than the ones in Uíge (6.7 and 5.8 members, respectively).

The average household has 1.8 children less than 5 years old, 1.4 children between 6 and 16 years, 0.7 members between 17 and 21 years, and 2.3 adults. The regional differences appear to be small, but the number of adult household members is higher in Luanda than Uíge (2.6 and 1.9 per cent, respectively). The population of Angola is young: about 64 per cent are under 21 years old. Sixteen per cent of the households are female headed (not reported).

Figure 10: Household size (number of members, per cent of households).

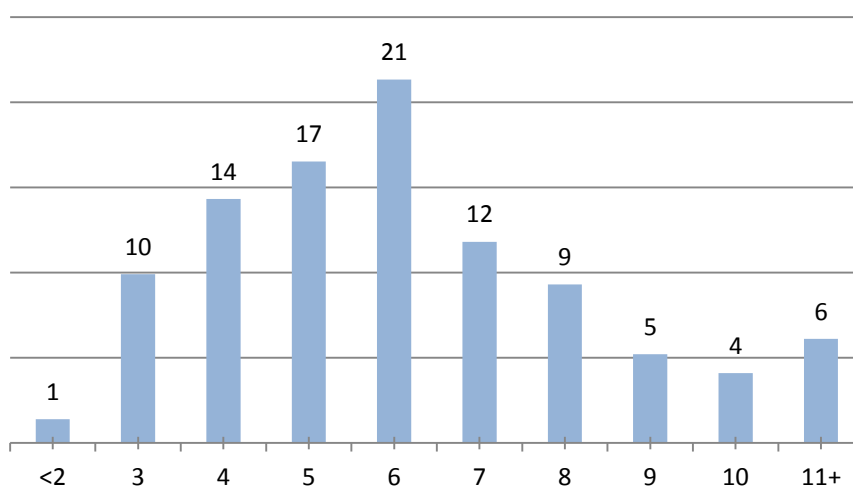


Table 22: Number of members in household.

	Children <5	Children 6-16	Youths 17-21	Adults >21	Total
Average	1.8	1.4	0.7	2.3	6.2
Province					
Luanda	1.8	1.5	0.8	2.6	6.7
Uíge	1.9	1.3	0.6	1.9	5.8
Residence					
Urban	1.8	1.4	0.8	2.4	6.5
Rural	1.9	1.3	0.6	1.9	5.8

4.1.2 Education

The highest level of education for each adult household member was registered. Table 23 shows that 5.5 per cent of the households have at least one member with university level degree, while in most households the highest level of education is either medium level education, professional training or secondary school (20.8, 29.9 and 21.9 per cent, respectively). There are large regional differences in education levels. In Luanda, 9.0 per cent of the households have a member with university level degree and 31.1 per cent has medium level education. The corresponding figures in Uíge are 1.8 per cent and 10.1 per cent. The share with university level degree is higher in urban areas than rural areas (7.5 per cent and 0.6 per cent, respectively), and the same is true for medium level education (27.8 per cent in urban areas compared to 4.1 per cent in rural areas).

Table 23: Highest level of education, adults (share).

	University	Medium	Professional	Secondary	Primary	Primary incomplete
Average	0.055	0.208	0.299	0.219	0.152	0.067
Province						
Luanda	0.090	0.311	0.276	0.148	0.094	0.080
Uíge	0.018	0.101	0.323	0.292	0.212	0.053
Residence						
Urban	0.075	0.278	0.292	0.168	0.113	0.075
Rural	0.006	0.041	0.319	0.340	0.246	0.048

4.1.3 Formal versus informal sector employment

Table 24 shows how household employment is distributed between the formal and the informal sector. Fifty-nine per cent of the employed have informal employment and 41 per cent are employed formally. There are large regional differences. In Uíge, 75.5 per cent have informal employment, while in Luanda 39.7 per cent work informally. The difference is even starker when we distinguish between rural and urban households: 85.4 per cent of rural households and 46.4 per cent of urban households are employed in the informal sector.

Table 24: Sector of employment.

	Formal sector	Informal sector
Average	0.410	0.590
Province		
Luanda	0.603	0.397
Uíge	0.245	0.755
Residence		
Urban	0.536	0.464
Rural	0.146	0.854

4.1.4 Food availability

Table 25 reports the availability of food. Sixty-two per cent had three meals or more on the day preceding the survey, and about 33 per cent had two meals. About five per cent of households have less than two meals a day. It is more common to have three meals or more in Luanda than in Uíge (64.9 and 58.6 per cent, respectively).

About 82 per cent of the households state that they had sufficient food every month last year. In Luanda the figure is 87.2 per cent, and in Uíge 76.6 per cent. Almost 10 per cent of the households had insufficient food for three months or more during last year.

Table 25: Food availability (share of households).

	Sufficient food every month	Insuff. food 1-2 months last year	Insuff. food 3-4 months last year	Insuff. food 5+ months last year	Had less than 2 meals yesterday	Had 2 meals yesterday	Had 3 meals or more yesterday
Average	0.819	0.083	0.057	0.041	0.050	0.325	0.618
Province							
Luanda	0.872	0.060	0.030	0.038	0.042	0.295	0.649
Uíge	0.766	0.106	0.084	0.044	0.058	0.356	0.586
Residence							
Urban	0.845	0.070	0.047	0.037	0.046	0.296	0.648
Rural	0.757	0.113	0.080	0.050	0.060	0.393	0.547

4.1.5 Wealth index

Economic well-being can be measured either by income, consumption or wealth. Here, we use data on household wealth. Our measure of household wealth is based on data on more than 30 durable household possessions, in addition to data on the building materials of the house. We used principal component analysis (PCA) to create an index of household wealth (see Rutstein and Johnson [2004] and further details in the Appendix).

Table 26 shows the wealth distribution according to wealth quintiles. Households are sorted by wealth quintiles, and the quintile called “lowest” represent the 20 per cent poorest segment of the households, while “highest” represents the wealthiest segment. There are huge differences between Luanda and Uíge in terms of wealth (Figure 11). Less than 4 per cent of households in Luanda belong to the two lowest wealth quintile, while in Uíge the corresponding figure is around 75 per cent.

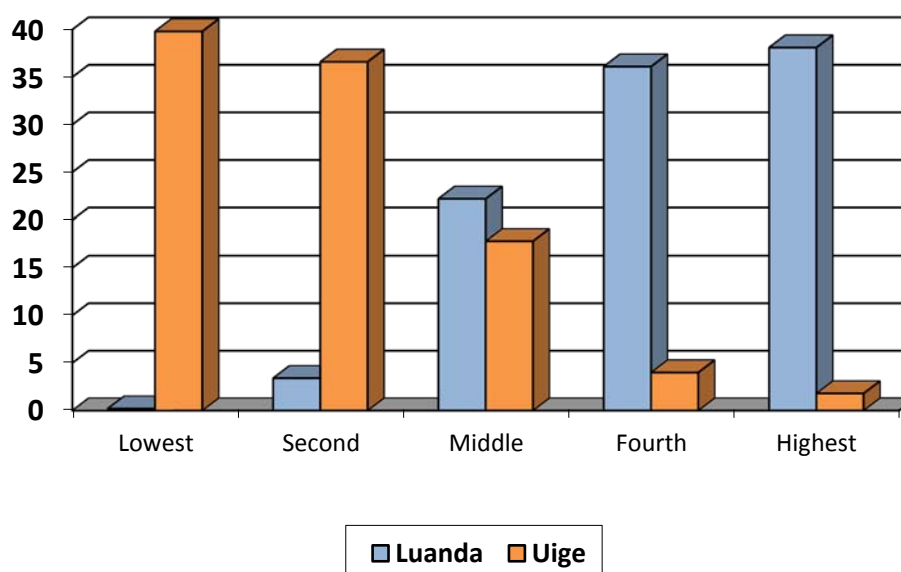
Ninety per cent of the households in rural areas belong to the lowest and second lowest wealth categories.

The wealth distribution for male-headed households is fairly even across the quintiles. Female-headed households are however overrepresented in the lowest wealth quintile; almost 30 per cent of female headed households belong to this category.

Table 26: Wealth distribution, by wealth quintiles.

	Lowest	Second	Middle	Fourth	Highest
Total	0.200	0.200	0.200	0.200	0.199
Province					
Luanda	0.002	0.034	0.222	0.361	0.381
Uíge	0.398	0.366	0.178	0.040	0.018
Residence					
Urban	0.059	0.127	0.246	0.285	0.283
Rural	0.530	0.370	0.093	0.003	0.003
Gender of household head					
Male	0.185	0.220	0.205	0.191	0.199
Female	0.299	0.116	0.177	0.232	0.177

Figure 11: Share of population by wealth quintile, Luanda and Uíge.



In order to test how well the wealth index corresponds to other potential measures of socio-economic status, we investigated the association between food availability and the wealth index (Table 27).

Table 27: Food availability by wealth quintile (share of households).

	Sufficient food every month	Insuff. food 1-2 months last year	Insuff. food 3-4 months last year	Insuff. food 5+ months last year	Had less than 2 meals yesterday	Had 2 meals yesterday	Had 3 meals or more yesterday
Wealth							
Lowest	0.695	0.140	0.095	0.070	0.080	0.440	0.480
Second	0.790	0.120	0.060	0.030	0.030	0.375	0.595
Middle	0.800	0.060	0.080	0.060	0.065	0.370	0.550
Fourth	0.850	0.075	0.040	0.035	0.045	0.315	0.630
Highest	0.960	0.020	0.010	0.010	0.030	0.126	0.834

The strong association between the wealth index and food availability is easily observed. While 96 per cent of the wealthiest households had sufficient food every month, the share of the poorest households with sufficient food was less than 70 per cent. Similarly for the number of meals: 83.4 per cent of the wealthiest households had three meals or more on the day prior to the survey, while only 48.0 per cent of the poorest households had at least three meals. These data suggest that the wealth index captures important information about the socio-economic status of the households.

4.2 Access to and utilisation of health services

The section addresses household health seeking behaviour, including their access to and utilisation of health services and their perceived quality of the serviced received. A section about preventive health, focusing on the use of mosquito nets and knowledge about HIV and other Sexually Transmitted Diseases (STDs) is also included.

4.2.1 Access to health services

Table 28 displays the type of public health facility that is located most closely to the households. Overall, the nearest public health facility for about 29 per cent of the households is a clinical post, for 59 per cent it is a health centre and for 13 per cent it is a hospital. There are large regional differences. In Luanda, the nearest facility is typically a health centre (for 81 per cent of the households), while in Uíge a clinical post is closest to 51 per cent of the households. Especially in the rural areas,

Table 28: Nearest public health facility, share.

	Clinical Post	Health Centre	Hospital
Average	0.294	0.563	0.133
Province			
Luanda	0.076	0.808	0.096
Uíge	0.512	0.318	0.170
Residence			
Urban	0.077	0.718	0.190
Rural	0.800	0.200	0.000
Wealth			
Lowest	0.685	0.205	0.110
Second	0.455	0.415	0.130
Middle	0.175	0.665	0.140
Fourth	0.105	0.780	0.090
Highest	0.050	0.749	0.196

clinical posts are usually the closest provider; 80 per cent of the rural households in our survey had a clinical post as the closest facility, and none had a hospital. The socio-economic gradient is also very clear; the poorest households tend to live closer to a health post while more wealthy groups live closer to a health centre.

Table 29 displays the travelling time to the nearest public health facility. Due to the way the households were selected (half of them in the vicinity of the health facility and half of them at a distance of around five kilometres), these data should not be taken as representative for travelling distances. More than 90 per cent of the households in our sample live less than one hour from the closest health facility. Sixty-nine per cent of the households have a travel time of less than 30 minutes, while 23 per cent have to travel between 30 to 60 minutes. In fact, the poorest quintile seems to have a shorter travel distance than more wealthy groups.

Table 29: Travel time to nearest public health facility, share.

	<30 minutes	30-59 minutes	1-2 hours	>2 hours
Average	0.693	0.227	0.048	0.029
Province				
Luanda	0.629	0.279	0.050	0.038
Uíge	0.756	0.176	0.046	0.020
Residence				
Urban	0.649	0.268	0.052	0.029
Rural	0.793	0.133	0.040	0.030
Wealth				
Lowest	0.750	0.155	0.055	0.035
Second	0.730	0.195	0.045	0.030
Middle	0.690	0.210	0.055	0.040
Fourth	0.660	0.255	0.045	0.035
Highest	0.633	0.322	0.040	0.005

4.2.2 Utilisation of health services

Table 30 shows the number of household members who got sick or had an accident and sought medical care during the 30 days preceding the survey. On average, a household had 0.75 illness episodes with children and 0.68 illness episodes with adults. Medical assistance was sought in more than 90 per cent of the cases.

There are few differences in the utilisation of medical care across provinces, rural and urban areas and socio-economic status. More adults get sick in Luanda than in Uíge per household, but this is probably just a reflection of a larger number of adults per household in Luanda.

It is also noteworthy that the wealthiest quintile has more illness episodes among adults and fewer illness episodes among children than the other groups.

Table 30: Number of household members sick or with accident, and who sought medical assistance during the last 30 days.

	Number of children sick or with accident	Number of children who sought medical care	Number of others sick or with accident	Number of others who sought medical care
Average	0.75	0.70	0.68	0.62
Province				
Luanda	0.75	0.73	0.78	0.73
Uíge	0.75	0.68	0.58	0.52
Residence				
Urban	0.73	0.69	0.72	0.66
Rural	0.79	0.74	0.60	0.54
Wealth				
Lowest	0.83	0.78	0.65	0.57
Second	0.69	0.61	0.52	0.47
Middle	0.78	0.75	0.70	0.65
Fourth	0.80	0.76	0.69	0.61
Highest	0.65	0.63	0.85	0.81



Enumerator interviewing a woman in Uíge (Photo: Nohra Villamil).

Table 31 shows that more than three quarters of the households use the nearest public health facility when they need health services. About 7 per cent use a private health facility and about 12 per cent use another public health facility than the nearest one. The use of private clinics is higher in Luanda than in Uíge (about 13 and 2 per cent of the households, respectively).

The highest wealth quintile is characterised by a significantly lower utilisation of public health facilities than the other groups (64.8 per cent compared to 85.0 per cent for the lowest quintile.) The wealthier group uses partly private facilities (18.6 per cent), but shopping around for other, and presumably better, public health facilities is also common (14.6 per cent).

Table 31: Type of health provider normally used, share.

	Nearest public facility	Private facility	Other health facility	Traditional healer	Other
Average	0.784	0.072	0.115	0.006	0.015
Province					
Luanda	0.752	0.128	0.096	0.004	0.008
Uíge	0.816	0.016	0.134	0.008	0.022
Residence					
Urban	0.800	0.096	0.083	0.006	0.007
Rural	0.747	0.017	0.190	0.007	0.033
Wealth					
Lowest	0.850	0.015	0.075	0.010	0.045
Second	0.775	0.015	0.195	0.000	0.010
Middle	0.800	0.070	0.100	0.010	0.000
Fourth	0.845	0.075	0.060	0.005	0.010
Highest	0.648	0.186	0.146	0.005	0.010

Table 32 provides an overview of the reasons why households choose not to use the nearest public health provider. There are large differences between the provinces. In Luanda, the most common reasons are that the quality of treatment is not perceived as good (33.9 per cent) and that few services are offered (30.6 per cent). In Uíge, the most common reasons are lack of drugs (51.1 per cent), absent health workers (46.7 per cent) and few services offered (33.7 per cent).

Those who belong to the wealthiest segment seem more inclined to use low quality as a reason for not using the closest public health facility, while health worker absenteeism and drugs stock-outs seems to be more important reasons for the poorest segment of the households.

Table 32: Reason for not using nearest public health provider, share (multiple answers allowed).

	Health workers absent	Too few drugs	Too expensive	Quality not good	Few services offered	Other
Average	0.287	0.352	0.028	0.269	0.319	0.282
Province						
Luanda	0.153	0.234	0.024	0.339	0.306	0.379
Uíge	0.467	0.511	0.033	0.174	0.337	0.152
Residence						
Urban	0.157	0.229	0.029	0.336	0.314	0.357
Rural	0.526	0.579	0.026	0.145	0.329	0.145
Wealth						
Lowest	0.367	0.667	0.000	0.133	0.333	0.167
Second	0.511	0.444	0.067	0.089	0.356	0.133
Middle	0.350	0.325	0.000	0.350	0.275	0.125
Fourth	0.129	0.194	0.065	0.355	0.258	0.355
Highest	0.143	0.243	0.014	0.357	0.343	0.486



Children playing in Uíge (Photo: Nohra Villamil).

4.2.3 Utilisation of maternal health services

The last woman who gave birth in each household was interviewed about her utilisation of maternal health services. On average, these respondents had given birth to 3.7 children (4 children in Uíge and 3.4 in Luanda).

Table 33 shows the percentage of women who attended antenatal care (ANC) during their last pregnancy. Overall, 88.2 per cent attended an ANC visit and 85.5 per cent attended ANC services at a public health facility. During the ANC visits, 67.2 per cent were offered treatment to prevent malaria, 62.2 per cent were offered insecticide treated mosquito net and 86.0 per cent received tetanus vaccine.

There are regional differences; in Luanda 96 per cent attended ANC compared to 80.4 per cent in Uíge. More women were offered mosquito nets in Uíge than in Luanda (68.2 versus 56.2 per cent). On the other hand, more women in Luanda than in Uíge were offered treatment to prevent malaria (76.6 versus 57.8 per cent) and received tetanus vaccination (92 versus 80 per cent). There is a strong socio-economic gradient in the utilisation of ANC services. Only 71 per cent attended ANC service in the poorest quintile, compared to 97 per cent in the wealthiest quintile. Households in the highest quintile also receive more preventive health measures, including malaria prevention and tetanus vaccination.



Woman giving her baby a bath while being interviewed (Photo: Nohra Villamil).

Table 33: Antenatal services during last pregnancy in household, share.

	Attended ANC	Attended ANC at a public health facility	Were offered treatment to prevent malaria	Were offered insecticide treated net	Received tetanus vaccine
Average	0.882	0.855	0.672	0.622	0.860
Province					
Luanda	0.960	0.946	0.766	0.562	0.920
Uíge	0.804	0.764	0.578	0.682	0.800
Residence					
Urban	0.927	0.913	0.740	0.600	0.897
Rural	0.777	0.720	0.513	0.673	0.773
Wealth					
Lowest	0.710	0.660	0.475	0.560	0.730
Second	0.885	0.845	0.610	0.765	0.840
Middle	0.885	0.865	0.745	0.590	0.865
Fourth	0.960	0.940	0.790	0.598	0.930
Highest	0.970	0.965	0.739	0.598	0.935

Table 34: Place of delivery, share.

	Home	Public hospital	Other health facility	Other
Average	0.374	0.396	0.233	0.006
Province				
Luanda	0.164	0.510	0.322	0.004
Uíge	0.584	0.282	0.145	0.008
Residence				
Urban	0.226	0.477	0.294	0.006
Rural	0.721	0.205	0.091	0.007
Wealth				
Lowest	0.719	0.216	0.085	0.000
Second	0.596	0.212	0.202	0.010
Middle	0.305	0.426	0.279	0.005
Fourth	0.141	0.518	0.322	0.010
Highest	0.111	0.606	0.278	0.005

Table 34 provides information on the place of delivery. Approximately, 62.9 per cent gave birth at a health facility (39.4 per cent at a public hospital and 23.3 at another health facility) and 37.4 per cent had their last delivery at home. In rural areas, however, 72.1 per cent had their last delivery at home. There are large differences between the provinces. In Luanda 16.4 per cent had their last delivery at home, while the same is true for 58.4 per cent women in Uíge. Fifty-one per cent of the women from Luanda had their last delivery in a public hospital, and in Uíge the corresponding figure is 28.2 per cent.

Place of delivery follows a strong socio-economic gradient. About 72 per cent in the lowest wealth quintile gave birth at home, compared to only 11 per cent in the highest quintile.

Table 35 displays by whom the pregnant mother was assisted during her last delivery. Again, the regional differences are large: in Luanda, a doctor, nurse or midwife attended the last delivery in 87.2 per cent of the cases. The corresponding figure for Uíge is only 45.4 per cent. In Uíge, traditional birth attendants attended 30.4 per cent of the deliveries, while 11.9 per cent of the births were attended by family or friends. In the lowest wealth quintile 31.7 per cent had a doctor/nurse/midwife attending the last delivery, while the figure is 92.8 per cent in the highest quintile.

Table 35: Delivery attended by, share.

	Doctor / nurse / midwife	Comm. health worker	Traditional birth attendant	Family or friends	Other
Average	0.662	0.029	0.177	0.088	0.043
Province					
Luanda	0.872	0.008	0.049	0.057	0.014
Uíge	0.454	0.050	0.304	0.119	0.073
Residence					
Urban	0.809	0.014	0.087	0.066	0.023
Rural	0.320	0.064	0.387	0.138	0.091
Wealth					
Lowest	0.317	0.060	0.347	0.161	0.116
Second	0.444	0.045	0.354	0.111	0.045
Middle	0.760	0.025	0.100	0.095	0.020
Fourth	0.868	0.010	0.056	0.036	0.030
Highest	0.928	0.005	0.026	0.036	0.005

Table 36 reports the main reasons stated why some women did not have their last delivery at a health facility: 22.5 per cent state that the reason was long travel distance, 16.2 per cent state they are more comfortable at home, 12.6 per cent state it is due to tradition, while 42.6 state it is due to other reasons.

Table 36: Reasons for not delivering at health facility, share (multiple answers allowed).

	Long travel	Need to pay health workers	Not well received	More comfortable at home	Tradition	Other
Average	0.225	0.036	0.025	0.162	0.126	0.426
Province						
Luanda	0.338	0.054	0.054	0.108	0.027	0.419
Uíge	0.197	0.031	0.017	0.176	0.152	0.428
Residence						
Urban	0.276	0.033	0.033	0.145	0.099	0.414
Rural	0.189	0.038	0.019	0.175	0.146	0.434
Wealth						
Lowest	0.164	0.043	0.014	0.164	0.171	0.443
Second	0.197	0.017	0.017	0.188	0.128	0.453
Middle	0.400	0.033	0.033	0.133	0.100	0.300
Fourth	0.250	0.071	0.036	0.107	0.000	0.536
Highest	0.263	0.053	0.105	0.158	0.053	0.368



Woman interviewed while surrounded by her children (Photo: Nohra Villamil).

4.2.4 Preventive health: Use of mosquito nets and knowledge of HIV and other STDs

Table 37 reports the use of mosquito net amongst children and adults. Of the respondents, 45.1 per cent of children and 23.5 per cent of the adults slept under a mosquito net during the night preceding the survey. More households use mosquito nets in Uíge compared to Luanda (for children, 51 compared to 38.7 per cent; for adults, 30.7 compared to 17.8 per cent). There seems to be no large difference across the wealth quintiles.

Table 37: Household members sleeping under mosquito nets last night, share.

	Total, children	Total, adults	Insecticide treated nets, children	Insecticide treated nets, adults
Average	0.451	0.235	0.418	0.206
Province				
Luanda	0.387	0.178	0.345	0.147
Uíge	0.510	0.307	0.486	0.280
Residence				
Urban	0.437	0.220	0.395	0.189
Rural	0.482	0.276	0.470	0.253
Wealth				
Lowest	0.410	0.258	0.393	0.228
Second	0.558	0.310	0.536	0.289
Middle	0.439	0.234	0.389	0.207
Fourth	0.424	0.206	0.368	0.171
Highest	0.407	0.188	0.389	0.158

According to the survey findings, 73.6 per cent of the households know what HIV is (Table 38). There is a large difference between Luanda, where 90.4 per cent know what HIV is, and Uíge, where only around 56.8 per cent have this knowledge. About 52 per cent know about other STDs. Also in this case, the difference in knowledge between Luanda and Uíge is large: 71.9 versus 31.6 per cent. Knowledge of where to take an HIV test is significantly higher in Luanda (93.9 per cent) than in Uíge (73.0 per cent). Not surprisingly, therefore, the share of households where someone has taken a test is much higher in Luanda than in Uíge (87.1 versus 58.2 per cent).

When comparing across wealth quintiles, all the variables included in Table 38 show the same pattern. The households in the wealthier quintiles have much higher knowledge of HIV and STDs.

Table 38: Knowledge about HIV and other STDs, share.

	Know what HIV is	Among those who know what HIV is: Think a healthy looking person can have HIV	Among those who know what HIV is: Know of a place to test	Among those who know what HIV is: Have tested at least one in household	Know about other STDs
Average	0.736	0.797	0.859	0.761	0.518
Province					
Luanda	0.904	0.911	0.939	0.871	0.719
Uíge	0.568	0.614	0.730	0.582	0.316
Residence					
Urban	0.854	0.876	0.919	0.850	0.671
Rural	0.460	0.449	0.594	0.370	0.160
Wealth					
Lowest	0.440	0.341	0.557	0.330	0.135
Second	0.565	0.632	0.684	0.561	0.305
Middle	0.790	0.838	0.899	0.774	0.570
Fourth	0.920	0.920	0.957	0.926	0.745
Highest	0.965	0.949	0.969	0.903	0.834

Household members were asked what could be done to prevent HIV. Table 39 reports the responses (only those, who stated that they know what HIV is, are included). Overall, 76.9 per cent of the respondents state that use of condom can prevent HIV infection, 26.4 per cent state avoiding multiple sexual partners, 21 per cent said sexual abstinence and 2.9 per cent state avoiding sex with prostitutes. Similar to the results in Table 37, the knowledge level about HIV is found to be higher in Luanda than in Uíge. Further, comparing the lowest with the highest quintile, households in the highest quintile seem to have more knowledge of HIV than the households in the lower quintile. It is striking that 56.2 per cent of the respondents in the lowest wealth quintile, who do know what HIV is, do not know how to prevent it.

Table 39: Possible actions mentioned to prevent HIV, share of those who know what HIV is.

	Sexual abstinence	Use condom	Avoid multiple sexual partners	Avoid sex with prostitutes
Average	0.210	0.769	0.264	0.029
Province				
Luanda	0.288	0.846	0.315	0.033
Uíge	0.085	0.646	0.183	0.021
Residence				
Urban	0.256	0.836	0.300	0.035
Rural	0.007	0.478	0.109	0.000
Wealth				
Lowest	0.000	0.398	0.125	0.000
Second	0.062	0.675	0.142	0.009
Middle	0.228	0.792	0.189	0.006
Fourth	0.239	0.898	0.293	0.032
Highest	0.349	0.850	0.433	0.068

(continued)

	Avoid un-sterilised syringes	Avoid blood transfusion	Don't know
Average	0.063	0.355	0.131
Province			
Luanda	0.062	0.455	0.024
Uíge	0.063	0.196	0.302
Residence			
Urban	0.075	0.406	0.048
Rural	0.007	0.137	0.489
Wealth			
Lowest	0.023	0.135	0.562
Second	0.053	0.195	0.274
Middle	0.070	0.371	0.069
Fourth	0.054	0.468	0.011
Highest	0.089	0.430	0.016

4.3 Perceived quality of health services

We asked each household to rank the quality of the nearest public health facility, from “very low” to “very high.” More than half the households give “medium quality” ranking, and one third of the households rates quality as “low” or “very low” (see Table 40 and Figure 12).

Households in rural areas rate quality lower than those in urban areas. Almost 50 per cent of rural households consider the quality to be “low” or “very low.”

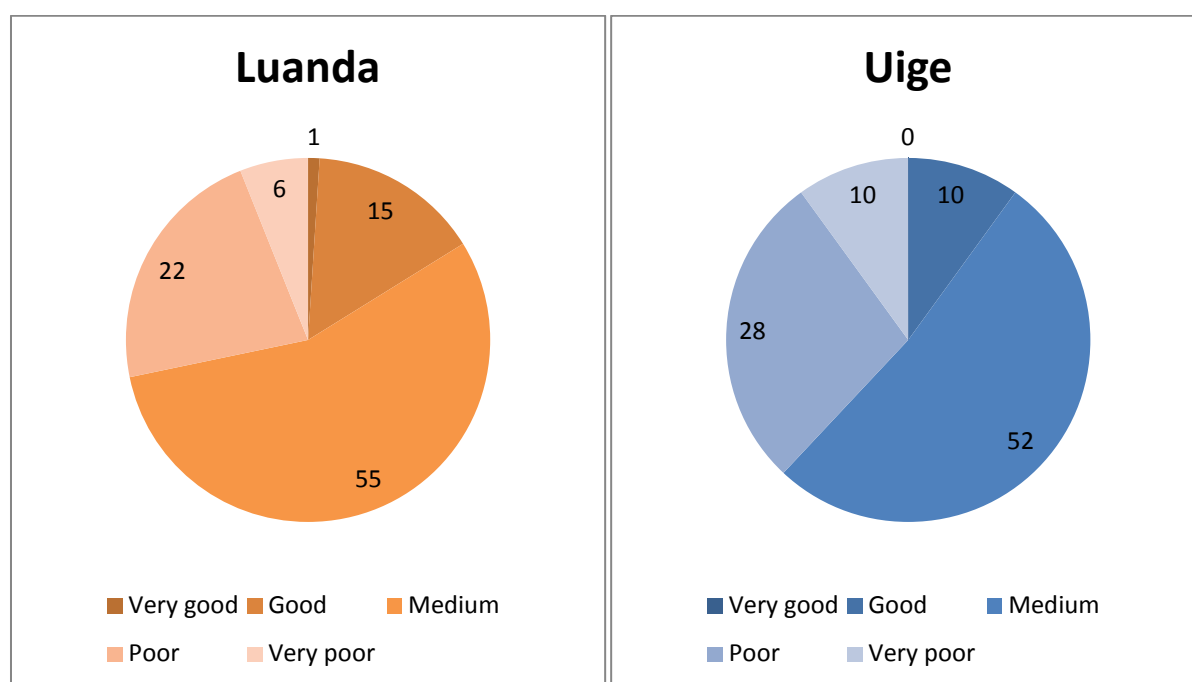
There also seems to be a socio-economic gradient in the perceived quality of the nearest public health provider. A larger share of the least wealthy households perceives the quality of the closest facility to be “low” or “very low.”

Table 40: Perceived quality of nearest public health provider, share.

	Very low	Low	Medium	High	Very high
Average	0.081	0.249	0.537	0.123	0.007
Province					
Luanda	0.060	0.222	0.553	0.148	0.010
Uíge	0.102	0.276	0.520	0.098	0.004
Residence					
Urban	0.057	0.205	0.579	0.144	0.010
Rural	0.137	0.353	0.437	0.073	0.000
Wealth					
Lowest	0.120	0.320	0.485	0.075	0.000
Second	0.100	0.285	0.495	0.115	0.005
Middle	0.060	0.190	0.580	0.160	0.005
Fourth	0.080	0.190	0.545	0.160	0.015
Highest	0.045	0.261	0.578	0.106	0.010

We then asked respondents to express their satisfaction with the services at the health facility that they normally use (which is a public health facility in 85 per cent of the cases in Luanda and 95 per cent of the cases in Uíge). Respondents were asked to agree or disagree with the statements presented in Table 41.

More individuals in Luanda than in Uíge express concerns about the quality issues raised. It is unclear whether this difference reflects true quality differences or differences in expectations, for instance due to a higher level of education in Luanda. The quality issues that were mentioned by most people are the crowdedness of the health facilities (76.8 per cent) and long waiting time (72.1 per cent). Next comes the issue that the facility does not provide drugs, mentioned by close to 40 per cent of the respondents in both provinces. A high share of facilities also appears to have non-functioning toilets (30.9 per cent). High cost of services is mentioned much more frequently by respondents from Luanda (24.8 per cent) than by those from Uíge (8.4 per cent). This is probably partly due to the higher utilisation of private providers in Luanda (12.8 per cent) compared to Uíge (1.6 per cent), but it can also be related to the apparent higher incidence of informal payments in Luanda. As much as 24 per cent of the patients in Luanda complain that health workers (especially the nurses) ask for money for the services, compared to 8 per cent in Uíge.

Figure 12: Perceived quality of nearest public health provider.

Overall, there seems to be substantial scope for improved patient satisfaction with the services.

Table 41. Patient satisfaction, share of respondents reporting the following problems.

	Long waiting time (>30 minutes)	Facility is crowded	Patients not friendly received	Health workers do little (watch TV, talk)	Service is expensive	Lack of hygiene	Toilets do not work
Average	0.721	0.768	0.282	0.119	0.166	0.183	0.309
Province							
Luanda	0.780	0.850	0.357	0.194	0.248	0.188	0.277
Uíge	0.662	0.686	0.208	0.044	0.084	0.178	0.342
Residence							
Urban	0.770	0.844	0.323	0.153	0.195	0.186	0.290
Rural	0.607	0.590	0.187	0.040	0.100	0.177	0.353
Wealth							
Lowest	0.575	0.565	0.175	0.030	0.085	0.195	0.330
Second	0.720	0.745	0.260	0.040	0.110	0.165	0.350
Middle	0.760	0.835	0.310	0.105	0.135	0.140	0.330
Fourth	0.790	0.870	0.350	0.195	0.205	0.235	0.260
Highest	0.759	0.824	0.317	0.226	0.296	0.181	0.276

(continued)

	I usually do not meet a medical doctor	Facility does not provide drugs	Security officers ask for money	Nurses ask for money	Doctors ask for money	I am satisfied with the service
Average	0.401	0.384	0.056	0.119	0.077	0.645
Province						
Luanda	0.357	0.391	0.072	0.198	0.124	0.589
Uíge	0.446	0.378	0.040	0.040	0.030	0.700
Residence						
Urban	0.356	0.392	0.059	0.152	0.094	0.619
Rural	0.507	0.367	0.050	0.043	0.037	0.703
Wealth						
Lowest	0.455	0.330	0.050	0.035	0.030	0.660
Second	0.485	0.380	0.020	0.055	0.030	0.710
Middle	0.335	0.380	0.085	0.115	0.090	0.715
Fourth	0.375	0.430	0.065	0.200	0.115	0.565
Highest	0.357	0.402	0.060	0.191	0.121	0.573

4.4 Health outcomes

4.4.1 Child deaths

We did not measure mortality in any conventional ways. However, we recorded mortality rates among children born during the last five years preceding the survey, which provides a basis for comparing mortality rates across areas and socio-economic groups. Table 42 shows the number of live births and the number of child deaths in the surveyed households. The number of dead children per 1,000 live births is 96 on average, with 61 per 1,000 dying before the age of one year.

Mortality rates are almost twice as high in Uíge as in Luanda. Mortality is particularly high in rural areas (143 children per 1,000, compared to 71 per 1,000 in urban areas).

These mortality figures are derived from a cohort of children with an expected average age of 2.5 years (counting all children born during the last five years). Some of the children still alive will therefore die before age five. Hence, our figures will underestimate under-five mortality. Since mortality is highest during the first year of life, however, we can project that child mortality will be significantly less than twice our figures, i.e., less than 134 per 1,000 in Luanda and less than 242 per 1,000 in Uíge. This corresponds reasonably well with the latest national estimates of under-five mortality of 195 per 1,000 live births.

Table 42: Child mortality among children born during the last five years.

	Number of live births	Number of dead children	Number of children dead before age one	Children dead per 1,000 live births	Children <1 year dead per 1,000 live births
Total	2019	193	123	96	61
Province					
Luanda	932	62	50	67	54
Uíge	1087	131	73	121	67
Residence					
Urban	1336	95	66	71	49
Rural	683	98	57	143	83
Wealth					
Lowest	444	65	31	146	70
Second	443	49	28	111	63
Middle	424	33	31	78	73
Fourth	353	26	22	74	62
Highest	355	20	11	56	31

References

- Centro de Estudos e Investigação Científica. 2011. *Angola Annual Economic Report 2010*. Luanda: Catholic University of Angola.
- _____. 2009. *Angola Annual Economic Report 2008*. Luanda: Catholic University of Angola.
- Chen, L., T. Evans, S. Anand, J. I. Boufford, H. Brown, M. Chowdhury, M. Cueto, L. Dare, G. Dussault, G. Elzinga, E. Fee, D. Habte, P. Hanvoravongchai, M. Jacobs, C. Kurowski, S. Michael, A. Pablos-Mendez, N. Sewankambo, G. Solimano, B. Stilwell, A. de Wal, and S. Wibulpolprasert. 2004. "Human Resources for Health: Overcoming the Crisis." *Lancet* 364 (9449): 1984–1990.
- Connor, C., D. Averbug, and M. Miralles. 2010. *Angola Health System Assessment 2010*. Bethesda, MD: Health Systems 20/20, Abt Associates Inc.
- Das J. and J. Hammer. 2007. "Money for nothing: The dire straits of medical practice in Delhi, India." *Journal of Development Economics* 83: 1–36.
- _____. 2005. "Which Doctor? Combining Vignettes and Item-Response to Measure Doctor Quality." *Journal of Development Economics* 78: 348–83.
- Franco, L.M., S. Bennett, and R. Kanfer. 2002. "Health sector reform and public sector health worker motivation: a conceptual framework." *Social Science & Medicine* 54(8): 1255–1266.
- International Monetary Fund. 2011. *World Economic Outlook April 2011: Tensions from the Two-Speed Recovery: Unemployment, Commodities and Capital Flows*. Washington DC: International Monetary Fund.
- Leonard K., M. Masatu, and A. Vialou. 2007. "Getting doctors to do their best", *The Journal of Human Resources* 42: 682–700.
- Leonard, K. and M. Masatu. 2005. "Comparing Vignettes and Direct Clinician Observation in a Developing Country Context." *Social Science and Medicine* 61(9): 1944–51.
- Lindkvist, I., O. Mæstad, and A. Mwisongo. 2011. "Public service vs. private gain – how health workers explain low performance," in *Health worker motivation and effort in a low-income context*. PhD diss., University of Bergen, Bergen, Norway.
- Knipe, D.M. 2007. *Fields virology*. Lippincott Williams & Wilkins. pp.1411.
<http://books.google.com/books?id=5O0somr0w18C&pg=PA1411#v=onepage&q&f=false>.
- Ministério da Saúde. 2009a. *Revitalização do Sistema Nacional de Saúde a Nível Municipal*. 4º Rascunho (Outubro).
- Ministério da Saúde. Gabinete de Estudos, Planeamento e Estatística. 2007. *Mapa Sanitário da Província de Luanda*.
- Ministério da Saúde & United Nations Children's Fund. 2010. *Relatório final conjunto*.
- Ministério do Planeamento & Instituto Nacional de Estatística Inquérito Integrado Sobre o Bem Estar da População (IBEP)
- Mæstad, O., G. Torsvik, and A. Aakvik. 2010. "Overworked? On the relationship between workload and health worker performance," *Journal of Health Economics* (29), 686–698.
- Oliveira, M.D.S.D. 2010. *Processo de Descentralização do Serviço Nacional de Saúde de Angola*. Tese (Doutorado). Escola Nacional de Saúde Pública Sergio Arouca, Rio de Janeiro.
- Queza, A. J. 2010. *Sistema de Saúde em Angola: Uma Proposta à Luz da Reforma do Serviço Nacional de Saúde em Portugal*. Mestrado Integrado em medicina. 2009/2010. Faculdade de Medicina. Universidade do Porto.

- Paulo, A. R. 2004. *A Reforma Administrativa em Angola: Retrospectiva e Perspectivas*. IX Congreso Internacional del CLAD sobre la Reforma del Estado y de la Administración Pública, Madrid, España.
- Peabody, J.W., et al. 2000. Comparison of vignettes, standardized patients, and chart abstraction. A prospective validation study of 3 methods for measuring quality. *Journal of the American Medical Association* 283(13):1715-22.
- República de Angola. 2010. *Constitution Article 21*.
- _____. 2007. “Decreto-Lei 2/07 de 3 de Janeiro (Atribuições, Competências, e Regime Jurídico de Organização e Funcionamento dos Governos Provinciais, das Administrações Municipais e Comunaes).” *Diário da República no 156*, I série. Luanda.
- _____. 2003. “Decreto-Lei 54/03 de 5 de Agosto (Regulamento Geral das Unidades Sanitárias do Serviço Nacional de Saúde).” *Diário da República no 61*, I série. Luanda.
- _____. 2000. *Programa de Reforma Administrativa do Governo de Angola (PREA)*, MAPESS, Luanda.
- _____. 1992. “Lei de Bases do Sistema Nacional de Saúde. (Lei no 21-B/92 de 28 de Agosto).” *Diário da República no 34*, I série. Luanda, Agosto.
- República de Angola, Instituto Nacional de Luta Contra a SIDA, UNAIDS & MINSA. 2010. *Relatório sobre o Progresso do País para dar Seguimento aos Compromissos da Sessão Especial sobre VIH e SIDA da Assembleia Geral das Nações Unidas*.
- Rutstein, S.O., and K. Johnson. 2004. *The DHS Wealth Index*. DHS Comparative Reports No. 6. Calverton, Maryland: ORC Macro.
- Severim de Moraes, E. L. 2008. “Temos um fundo inicial de cinco milhões de dólares para cada município.” Interview with Angop.
http://www.angonoticias.com/full_headlines.php?id=18396.
- Torres, V. L. 2007. *Angola: Despesa Pública no Sector da Saúde 2000-2006*. Príncipe Editora, Lda. March.
- Transparency International. 2010. *Corruption Perceptions Index 2010*.
- United Nations Children’s Fund & National Institute of Statistics. 2003. Multiple Indicator Cluster Survey. *Assessing the Situation of Angolan Children and Women at the Beginning of the Millennium*. Luanda, Angola.
- United Nations Development Programme. 2011. *Human Development Report 2011. Sustainability and Equity: A Better Future for All*.
- World Governance Indicators. 2011. “Worldwide Governance Indicators: Angola.”
<http://info.worldbank.org/governance/wgi/index.asp>.
- World Bank. 2010. *World development indicators 2010*. Washington, D.C., World Bank Publications.
- World Health Organization. 2010. *Trends in Maternal Mortality: 1990 to 2008. Estimates developed by WHO, UNICEF, UNFPA and the World Bank*.
- _____. 2009. “Health System Financing Profile by country: Angola 2009.”
http://apps.who.int/nha/database/StandardReport.aspx?ID=REPORT_COUNTRY_PROFILE.
- _____. 2006. *World Health Report. Working together for health*.

Appendix

These were the durable goods and building constructions included in the wealth index:

- Building materials walls
- Building materials roof
- Building materials floor
- Table
- Chair
- Bed
- Fridge
- Freezer
- Fan 1
- Fan 2
- Sewing machine
- Gas cooker
- Oil cooker
- Electric stove
- Electric iron
- Coal iron
- Radio/cassette player
- DVD player
- TV (colour)
- TV (black and white)
- Air conditioner
- Clock
- Phone (landline)
- Mobile telephone
- Car
- Motorbike
- Bicycle
- Power generator
- Computer
- Satellite dish
- Washing machine
- Microwave
- Mosquito net not treated

The variables describing the quality of building materials were assigned numerical values as follows, higher values describing higher level of quality:

Building materials walls:

- Cement - 10
- Brick - 10
- Blocks - 7
- Wood and zinc - 5
- Adobe - 5
- Bamboo - 4
- Clay (pau a pique) - 2
- Other - 2

Building materials roof:

- Concrete paving stone - 10
- Tiles - 10
- Lusalite - 10
- Zinc - 6
- Grass - 4
- Other - 2

Building materials floor:

- Wood or planks - 10
- Marble - 10
- Mosaic - 10
- Cement - 8
- Adobe - 6
- Hard court - 4
- Other - 2

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INDEXING TERMS

Angola

Health

Poverty

This report discusses the availability and quality of health services in two provinces of Angola (Luanda and Uíge) and reports how households perceive the level of quality and utilise the existing services. We study a sample of 40 public health facilities located in both rural and urban areas and report which services they offer as well as indicators of the quality of the services. In addition to quality indicators such as the availability of drugs, equipment and other supplies, the report explores the competence of health workers in diagnosing common illnesses. In total, 999 households from the catchment areas of the health facilities were surveyed, focusing on access to and utilisation of health services. We devote particular attention to the relationship between health seeking behaviour and socio-economic status. Data from Luanda are collected in Cazenga, Kilamba Kiaxi and Ingombota districts, while data from Uíge are from Uíge, Quitexe and Puri districts (district is our translation of município). Six hospitals, 19 health centres and 15 health posts were surveyed.