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## **FOREWORD**

Periodic shortages, high prices and lack of sustainable financing mechanisms are major barriers to access to medicines. Also the quality and safety of medicines are often compromised due to lack of good storage and distributions systems and an effective logistics management procedure.

To ameliorate the situation in the case of our country the Ghana National Drugs Programme was introduced in 1997 as part of a first Five-Year Medium Term Strategic Framework (1997-2001). The aim of the programme was to improve access to essential medicines through a comprehensive master-plan that addresses all issues of management, including the development of a national drug policy and subsequent legislation, procurement and distribution of drugs, financial management of drug revolving funds at various levels and issues concerning rational use of drugs and quality control of drugs. A baseline survey of the pharmaceutical sub-sector was implemented in 1998 to guide introduction of interventions. Although monitoring of the sector was ongoing especially in relation to the rational use of medicines, it became necessary to evaluate the interventions after five years of implementation to establish the current situation as a means of engendering a future strategy for the Drug Programme.

This survey was undertaken in 2002 by the Ministry of Health in collaboration with the World Health Organization to determine the status of the Pharmaceutical sector in relation to the management of the drug supply cycle and rational use of medicines. The survey was important because it provided a clear picture of national and institutional problems inherent in the pharmaceutical sector.

The WHO survey package for monitoring and assessing country pharmaceutical situations was used for this exercise. It provides a cost –effective means of determining availability of essential medicines, the safety, efficacy and quality of those medicines and whether they are rationally used. It helps countries to pinpoint the strengths and weaknesses of their pharmaceutical sector and prioritize areas for intervention. Follow up surveys can be undertaken to assess the impact of interventions and to monitor pharmaceutical trends over time.

This report would serve as a guide to strengthen the pharmaceutical sector and to prioritise strategies. It would assist in defining relevant strategies for technical collaboration and further serve as a guide for advocacy, and Information, Education and Communication about rational use of medicines.

## ACKNOWLEDGEMENTS

This Pharmaceutical Sector Baseline survey was commissioned by the Ministry of Health and conducted with financial and technical assistance of the World Health Organisation, Department of Essential Drugs and Medicines Policy/Drug Action Programme and the WHO Country Office Ghana in collaboration with Health Action International - Africa.

The Ghana National Drugs Programme also provided technical and logistical support. In addition the contribution of the following people at the various stages of the survey is also acknowledged. The support of Mr Sam Boateng, Director of Stores Supplies, and Drug Management and Mr. Felix Yellu, the Chief Pharmacist and Mr Divine Asiama, Programme Manager of the Ghana National Drugs Programme is very much appreciated.

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## ABBREVIATIONS

ARI	Acute Respiratory Infections
C& C	Cash and Carry
CHAG	Christian Health Association of Ghana
CMS	Central Medical Stores
DMS	District Medical Stores
EML	Essential Medicine List
EDM	Essential Drugs and Medicines Policy (WHO)
GDHS	Ghana Demographic and Health Surveys
GNDP	Ghana National Drugs Programme
GDP	Gross Domestic Product
GPRS	Ghana Poverty Reduction Strategy
HAI	Health Action International
HIPC	Highly Indebted Poor Country
INRUD	International Network for Rational Use of Drugs
MoH	Ministry of Health
NDP	National Drugs Policy
NGO	Non-Governmental Organisation
NMIMR	Noguchi Memorial Institute for Medical Research
NPO	National Professional Officer
ORS	Oral Re-hydration Salts
RDF	Revolving Drug Fund
RDU	Rational Drug Use
RMS	Regional Medical Stores
RUM	Rational Use of Medicines
SDP	Service Delivery Point
SOP	Standard Operating Procedure
STG	Standard Treatment Guidelines
TRIPS	Trade Related Aspects of Intellectual Property Rights
WHO	World Health Organisation

## **EXECUTIVE SUMMARY**

Monitoring, evaluating, and assessing the pharmaceutical situation in countries are important for determining if people have access to essential medicines that are safe, efficacious, and of good quality, and that these medicines are being used properly.

The World Health Organization in collaboration with Health Action International – Africa, supported the Ministry of Health in carrying out a baseline survey assessing the pharmaceutical situation based on Levels I and II indicators as described in the Operational Package for Monitoring and Assessing the Pharmaceutical Situation in Countries.

This survey was undertaken in 2002 to describe the current status of the pharmaceutical sector in Ghana in relation to the rational use of medicines, storage and management and people's access to essential medicines.

The method was a cross sectional descriptive drug use indicator study covering both prescribing and dispensing practices on rational use of medicines and drug management, stock management and access to medicines in the community.

Using standard indicators, data were collected for the availability of key essential medicines, duration of stock-outs, rational use of medicines, household health care-seeking behaviour and access to prescribed medicines.

Four regions of the country were selected through a combination of purposive and random sampling based on their geographic and socioeconomic profiles. The study units comprised of public health facilities, pharmacies in the public and private sectors, public drug warehouses and households within 5km of a public health facility. These were surveyed at regional, district and sub-district levels.

The outcome measures were percentage of prescribing indicators, patient care indicators, facility indicators and access to medicines (including availability and affordability).

The median percentage availability of key medicines was 78.6% in public health facilities, and 82.2% in public sector warehouses. The median stock out duration of the basket of key medicines in public health facilities and district warehouses was found to be 78 days (~2.5 months) and 50.7 days (~1.5 months) respectively. The median antibiotic and injection use in public health facilities was found to be 43.3% and 30% respectively.

The majority of the households sought healthcare from public health services, and 98% of the people surveyed could not obtain prescribed drugs due to economic and availability factors.

This baseline survey provides key information that will be used to plan and implement interventions to address under-performing areas identified in the assessment, which affect access, quality and rational use of essential medicines.

Although there have been tremendous improvement in the pharmaceutical sector over the past six years resulting from the activities of GNDP, there is still the need to emphasize the setting up of appropriate systems to monitor the pharmaceutical sector regularly. Greater efforts should be directed at drug management practices in public drug outlets to improve their efficiency

This survey provides a baseline for periodic review of work in the pharmaceuticals area so that adjustments may be made according to needs and performance.

## INTRODUCTION

### A) Demographic and health characteristics

Ghana is a tropical country situated on the west coast of Africa between latitudes 4 and 11 degrees north, and bounded by Côte d'Ivoire on the west, Burkina Faso on the north and Togo on the east. The population of Ghana, according to the 2000 population census, is 18.4 million, out of which 50.2% are female and 49.8% are male. The population growth is 2.6% (2000 census) and the total fertility rate 5.5 (GDHS, 1998). Life expectancy at birth is 57 years, and 46% of the population is below the age of 15. About 60% of the population live in the rural areas. The average population density is 77 per sq km, ranging from 897 in Greater Accra Region to 31 in Northern Region. The principal religions are Christianity, Islam and African traditional religion.

The country has a mixed economy, consisting of a dominant agricultural sector (small-scale peasant farming) which absorbs about 60% of the total adult labour force, a relatively small capital intensive modern sector dominated by mining and a few other industrial activities, and a rapidly expanding informal sector dominated by petty traders, small artisans, technicians and small businessmen.

The national per capita income is about US\$ 400. The inflation level is about 18%, annual growth rate 4% (2001 Budget Statement and Economic Policy, February 2002) and population growth rate around 3%. The national literacy rate is 47.9 with an urban/rural distribution of 63% and 39%; the female literacy rate is 36.4% with urban/rural distribution as 51.7/28.4 (Core Welfare Indicator Questionnaire Survey, 1997).

A decline in economic performance due to internal and external factors has negatively affected the performance of all sectors, including health, with limited resources. The population living below the poverty line has fallen from about 54 % in 1991–1992 to just fewer than 40% in 1998–1999 (Ghana Statistical Services, 2000). Inter-regional inequalities still persist; for example, the incidence of poverty fell most sharply in Accra and the forest localities, whereas it barely declined in savannah areas.

Table 1: key social and economic indicators<sup>1</sup>

Indicator	1998	2001	2002
Population, total	18.4 million	19.7 million	20.1 million
Population growth (annual %)	2.2	1.8	1.6
Life expectancy (years)	..	55.9	54.9
Fertility rate (births per woman)	..	4.1	4.0
Infant mortality rate (per 1,000 live births)	..	57.0	..
Under 5 mortality rate (per 1,000 children)	..	100.0	..
Births attended by skilled health staff (% of total)	44.3	..	..
Child immunization, measles (% of under 12 months)	73.0	81.0	..
Prevalence of HIV (female, % ages 15-24)	..	3.0	..
Illiteracy total (% age 15 and above)	31.0	27.3	26.2
Illiteracy female (% of age 15 and above)	40.0	35.5	34.1
GNI, Atlas method (current US\$)	7.1 billion	5.8 billion	5.4 billion
GNI per capita, Atlas method (current US\$)	390.0	290.0	270.0
GDP (current \$)	7.5 billion	5.3 billion	6.0 billion
GDP growth (annual %)	4.7	4.0	4.5
GDP implicit price deflator (annual % growth)	17.0	34.6	20.2
Value added in agriculture (% of GDP)	36.0	35.9	34.7
Value added in industry (% of GDP)	25.3	25.2	24.9
Value added in services (% of GDP)	38.7	38.9	40.3
Exports of goods and services (% of GDP)	33.9	52.2	51.0
Imports of goods and services (% of GDP)	46.7	70.5	67.1
Gross capital formation (% of GDP)	23.1	24.0	22.7

<sup>1</sup> Source: World Development Indicators database, August 2003

## **B) Health and health policy<sup>2</sup>**

The epidemiological situation of Ghana is similar to other sub-Saharan countries, i.e. a predominance of communicable disease conditions, under-nutrition and poor reproductive health with emerging importance of non-communicable diseases such as neoplasm, diabetes and cardiovascular diseases.

The Ministry of Health is responsible for policy formulation, planning, and donor co-ordination and resource mobilization. The Ghana Health Service is responsible for service delivery under the management of the Director-General. There is a Ghana Health Service Council which oversees the activities of the GHS. The teaching hospitals are autonomous with governing management boards.

There is a variety of providers in the public, private and informal sectors. It is estimated that the private providers account for about 40% of the total patient care nationally.<sup>4</sup> There is also a Coalition of Nongovernmental Organizations (NGOs) working in the health sector. The Christian Health Association of Ghana (CHAG) is an umbrella organization which brings together Christian mission hospitals and clinics. They provide a significant portion of the health services. Overall, more than 60% of the population (92% in urban and 45% in rural areas) have access to health services. Access is defined as living within one hour travel time (by any available means) from the health facility. The government estimates showed that half the population does not have access when the travel time is halved.

In March 2001, the government adopted the Highly-Indebted Poor Country (HIPC) Initiative. A key component of the HIPC Initiative is the Ghana Poverty Reduction Strategy (GPRS). The strategy includes support for human resource development and access to basic services, such as health, HIV/AIDS control, population management, water, sanitation and education. The GPRS outlines interventions for all sectors in the period 2002–2004.<sup>11</sup>

The strategies are as follows:

- Bridging equity gaps in the access to quality health services
- Ensuring sustainable financing arrangements that protect the poor
- Enhancing efficiency in service delivery.

## **C) Health system structure**

Public sector health service provision is offered through a network of hospitals, clinics, health centres and maternity homes that are organised at five levels: community, sub district, district, regional and national. Community and sub district levels offer primary care while secondary services are provided by district and regional levels. At the moment, tertiary services are provided by two teaching hospitals in Accra and Kumasi. Lower level providers are supposed to refer to the level immediately above them but this is not always adhered to.

Preventive health care is also given prominence especially at the district and sub-district levels. There is a strong collaboration here between the Ministry of Health and other health related ministries and agencies such as water and sanitation, local government, agriculture, housing and environment.

The contribution of mission health facilities to Ghana's health care is also significant. This is channelled through the Christian Health Association of Ghana (CHAG). Private clinics and hospitals also operate under the umbrella of Private Medical and Dental Practitioners Association of Ghana. Table 2 below presents a summary of numbers of existing facilities in both government and private sectors.

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<sup>2</sup> WHO cooperation strategy 2002-5



Table 2: Distribution of health facilities in Ghana

<b>Public facilities</b>	
<b>Teaching hospital</b>	<b>2</b>
<b>Regional hospital</b>	<b>9</b>
<b>Government district hospital</b>	<b>81</b>
<b>Quasi governmental district hospital</b>	<b>23</b>
<b>Government polyclinics</b>	<b>10</b>
<b>Quasi governmental polyclinics</b>	<b>0</b>
<b>Government health centres and clinics</b>	<b>863</b>
<b>Quasi governmental health centres and clinics</b>	<b>57</b>
<b>Maternity homes</b>	<b>217</b>
<b>Mission (NGO) and private facilities<sup>3</sup></b>	
<b>Private hospital</b>	<b>89</b>
<b>NGO/mission hospital</b>	<b>52</b>
<b>Private polyclinic</b>	<b>0</b>
<b>Mission health centres and clinics</b>	<b>118</b>
<b>Private health centres and clinics</b>	<b>350</b>

### **Health care financing**

Since independence, public health care services in Ghana has been characterised by state finance. The government provides the bulk of the expenditure but donor assistance also constitutes a substantial source of funding. For example when capital expenditures are excluded, donor pooled funds in 2000 constituted 20% of public health expenditure (Arhinful 2003). Since the mid 1980's economic difficulties have compelled the introduction of user charges. Mechanisms to increase economic accessibility have led to attempts to implement health insurance and encourage generic prescribing. Recent major reforms include the creation of the Ghana Health Service.

### **D) The Pharmaceutical Sector**

Historically the availability of drugs in Ghana has gone through trying times. In order to achieve optimal availability and use of essential drugs, the ministry of health has undertaken a number of measures to improve the situation. The first essential drugs list with therapeutic guidelines was published in 1983 which has subsequently undergone reviews. The current edition was published in 2000.

A comprehensive review of the pharmaceutical sector was also undertaken in 1994, which identified a number of major problems within the sector. Principal among these were inappropriate use of drugs, poor procurement, storage and distribution practices, inadequate financial management systems for drugs, leading to erosion of capital of the revolving drug funds and inappropriate quality assurance. The review process resulted in the formulation of a master plan for the pharmaceutical Sector that formed the basis for the setting up of Ghana National Drugs Programme (GNDP) in 1997. The overall objective has been to strengthen the pharmaceutical sector in order to ensure that all inhabitants in Ghana have access to essential drugs that are safe, effective, and affordable, of good quality and that are rationally used in both public and private sector.

Since its inception, the GNDP has spearheaded the launching of a National Drugs Policy (NDP), clinical pharmacy training programme, and workshops for health personnel in various

<sup>3</sup> 2003 (unpublished)

institutions and retraining of chemical sellers. However, as in most developing countries, inadequate control of drug promotion and drug dispensing by untrained prescribers particularly of herbal drugs has left a wide gap in the promotion of rational drug use. In general while several activities have been carried out to promote rational prescribing and dispensing in the public sector, a lot remains to be done in the private sector. Other factors that hinder rational drug use include lack of objective drug information, drug adverts and promotion on both prescribers and consumers.

An up-coming edition of Ghana's NDP deals with intellectual property rights as contained in the TRIPS agreement (Trade Related Aspects of Intellectual Property Rights). It also covers local production of antiretroviral drugs necessitated by the importance of HIV/AIDS in the disease profile of the country.

## **i) Drugs supply system <sup>4</sup>**

Like many other countries in sub-Saharan Africa in the 1980s, Ghana adopted economic structural adjustment policies, including the introduction of selected cost recovery initiatives in the social sectors. In the health sector, Hospital Fees Legislation was introduced in 1985, and, in 1992, the cash and- carry (C&C) system for pharmaceutical supply to outpatients throughout the MOH system was introduced (Asenso-Okyere et al. 1998).

The C&C system was inspired by structural adjustment programs and the “Bamako Initiative,” spearheaded by UNICEF and implemented in many developing countries, especially Africa. The initiative was based on the theory that charging for drugs would help finance and, therefore, improve the delivery of primary health care services. The scarcity of pharmaceuticals in Ghana’s public sector had led to the organic development of pharmaceutical fee schemes within many MOH facilities, and the idea of improving pharmaceutical supply throughout the system with financing from user fees was easily accepted.

Within the C&C system, each MOH facility was expected to have a self-financing revolving drug fund (RDF) by repurchasing the products with the revenues from the sale of pharmaceuticals. There are a series of RDFs cascading down each institutional level within the MOH. There is a large RDF at the Central Medical Stores (CMSs) level, 10 smaller RDFs in each of the Regional Medical Stores (RMS), and RDFs in every hospital and service delivery point (SDP). At each level of the system, the facility usually marks up the basic purchase price paid for a product. As originally envisioned, these mark-ups were intended to cover the cost of repurchasing the products, including allowances for losses, inflation, duties (at the CMS level), and costs directly related to products, such as insurance and casual labor for handling. Fixed percentages for mark-ups at each level were established by the MOH. However, actual practice has often deviated from these official MOH mark-ups, and the official policies have changed over time.

The Ghana MOH currently has in place a number of vertical public sector supply chains based on the type of health commodity. While integration is currently taking place to look at a more rationale way to combine the essential drug, contraceptive, and non-drug consumable supply chains, policy changes necessary to support this have not yet evolved.

Currently, drugs are purchased by the CMS through international competitive bidding (ICB) and through local private suppliers. The RMS and teaching hospitals are meant to procure drugs through the CMS and from the local private sector. All the regional hospitals and SDPs are, in turn, expected to procure from the RMS in their respective regions. While it is MOH policy for facilities to procure through the public system, except in cases of unavailability, it has been observed that there are significant private sector purchases at all levels. Although integration is taking place, there are still a number of district medical stores who procure from both the RMS and the local private sector. The teaching and regional hospitals and several SDPs are supplied by an RMS, District Medical Stores (DMS), and, in many cases, procure drugs through the local private sector.

The transportation system for essential drugs is undergoing a policy review within the MOH. Currently, lower level facilities are required to either provide their own transportation or pay for the transport of drug procurements. The CMS is now considering providing no-charge transportation to the RMS. Whether those savings will cascade to the SDPs remains unclear. The

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<sup>4</sup> Ghana Pharmaceutical Pricing Study; Policy Analysis and Recommendations July 2003

private sector, however, provides free transportation to facilities that engage in private sector procurement. This, naturally, was a key consideration in decisions by facilities to choose private over public sector suppliers

**ii) Key pharmaceutical indicators**

<b>Date of National Drug Policy</b>	<b>2002</b>
<b>Date of Essential Drug List</b>	<b>2000</b>
<b>Date of National Standard Treatment Guidelines</b>	<b>2000</b>
<b>Public sector drugs expenditure</b>	<b>\$ 90 million (2000)</b>
<b>Public sector per capita drugs expenditure</b>	<b>\$5 (2000)</b>
<b>Pharmaceutical sector market value</b>	
<b>Number of registered pharmacists</b>	<b>1400 (2003)</b>
<b>Number of registered pharmacy technicians</b>	<b>608 (2003)</b>
<b>Number of Pharmacy Technologists</b>	<b>400 (2003)</b>

Annex 1 contains a more detailed overview of the pharmaceutical sector through the completed questionnaire on the structures and processes of the pharmaceutical situation in Ghana (Level I indicators).

**iii) Pharmaceutical sector surveys**

In 1990 and 1993, studies on the pharmaceutical sector were carried out in Ghana with technical support by the Ghana branch of the International Network for Rational Use of Drugs (INRUD). After the inception of the GNDP a baseline study of the pharmaceutical sector was undertaken in 1998. This covered rational use of medicines, procurement and financing medicine requirements. In 2000 another study on knowledge, attitudes, practices and beliefs (KAPB) on community use of medicines was carried out.

Annex 2 contains the results of several previous surveys carried out in the pharmaceutical sector between 1990 and 2000.

## STUDY DESIGN AND METHODOLOGY

### Objectives of the survey

The survey had the following overall objectives:

- To know if people have access to essential drugs
- To determine if essential medicines are being used properly
- To collect baseline information on the pharmaceutical sector from available facility data sets in order to obtain a clear picture of national and institutional problems and thereby identify priorities in the implementation of the revised NDP

### Methodology

The survey was conducted according to the WHO “Operational Package for Monitoring and Assessing the Pharmaceutical Situation in Countries – (Working Draft November 2002). The package contains survey tools for two levels of core indicators and a household survey tool: Level I - Structural and Process Indicators: were used to assess the existing structures and processes in the national pharmaceutical system.

Level II - Outcome indicators: supported Level I indicators by providing specific data about the important pharmaceutical outcomes

The household survey form complemented the level I and II indicators by examining issues on access and use of drugs in the community. Level I and II indicators are almost entirely focused on health structures and people visiting health facilities. This survey tool ensures data are collected about treatment-seeking behaviour and drugs consumption.

The list of indicators is presented below and a description of the purpose of each indicator, together with instructions on how to collect, record and process the data can be found within the operational package.

#### a) Level I indicators

See Annex 1 for the questionnaire (completely filled)

#### b) List of Level II indicators

See Annex 4 for survey forms (Survey forms 1 – 13)

<b>Access</b>
<b>Availability of key drugs in public health facilities and district warehouses supplying the public sector</b>
<b>Stock out duration in public health facilities and district warehouses supplying the public sector</b>
<b>% of prescribed drugs dispensed or administered to patients at public health facility dispensaries</b>
<b>Affordability of key drugs (treating pneumonia without hospitalization) at public health facility dispensaries and private drug outlets</b>
<b>Quality</b>
<b>% of expired drugs in public health facility dispensaries, private drug outlets and district warehouses supplying the public sector</b>
<b>Adequacy of storage in public health facility dispensaries and warehouses supplying the public sector</b>
<b>Rational use of drugs</b>
<b>% of drugs adequately labelled at public health facility dispensaries</b>
<b>% of patients with adequate knowledge on how to take their drugs correctly at public health facility dispensaries</b>
<b>Average number of drugs per prescription at public health facility dispensaries and public health facilities</b>
<b>% of patients prescribed antibiotics at public health facilities</b>
<b>% of patients prescribed injections at public health facilities</b>
<b>% of prescribed drugs on the essential drugs list at public health facilities</b>
<b>Availability of standard treatment guidelines at public health facilities</b>
<b>Availability of essential drugs list at public health facilities</b>
<b>Prescribing according to STG</b>

### c) List of household survey indicators

Also see Annex 4 for survey form (Survey form 14)

<b>Symptoms and source of consultation</b>
Common disease symptoms reported
Sources of consultation
<b>Prescribing and obtaining the prescribed drugs</b>
Proportion of prescribed drugs obtained by patients
Primary reasons for not obtaining all prescribed drugs
<b>Taking the prescribed drugs</b>
Completion of course of prescribed drugs
<b>Family income/expenditure</b>
Average weekly income
Proportion of income spent of drugs

### d) Training and Sampling

Adaptation of the survey forms for Ghana, training of data collectors, field-testing and district and facility sampling were carried out at the training workshop held 11-15 October 2002. Annexes 3 and 4 contain a summary of adaptations, the districts and facilities sampled and the adapted survey forms.

In order to ensure a fair representation, the ten regions in Ghana were divided into four categories, according to the following criteria and four of them subsequently selected.

- Socio-economic profile
- Proximity to the Central Medical Stores
- Presence of a particular strong support to the regional drugs programme

The four regional categories comprised the following:

- Greater Accra,
- Eastern region, Central region and Volta region
- Western region, Ashanti and Brong Ahafo
- Northern, Upper-East and Upper West region

Within each region, the following facilities and households were selected based on a combination of purposive and systematic random sampling:

- public health facilities including the regional, a district hospital and 3 health centres (in this survey public health facility refers to either government or private-not-for-profit/NGO health facility)
- 5 private pharmacies/drug outlets/chemical sellers close to the selected public health facility
- 1 central/district drugs warehouse/storage facility
- 15 households within 5km of each selected public health facility.

### e) The survey

The survey was carried out during November 2002. Patients were interviewed and information from patient records in health facilities was collected retrospectively as described in the operational package. Further information was gathered from facility records, observation and interviews of health facility staff, private pharmacies/drug outlet staff and household members.

## **FINDINGS**

### **Note on the use of medians and averages**

Median and average values are presented in the summary table below. However, as averages can be skewed by outlying values, median values are used unless otherwise stated throughout the presentation of results and discussion as a better representation of the midpoint value.

### **Comparisons with previous surveys indicators**

Annex 2 contains a summary of results from previous pharmaceutical surveys. Comparisons within the findings section are limited to those that show a marked difference, as it is not certain that the methodologies were the same and hence the results are not fully comparable.

### **Index of findings section**

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### **Exchange rate**

The exchange rate used is that of the time of the survey (August/September 2002): 1US\$ = 8481 Cedis (November 2002)

### **Level I: Structures and processes of country pharmaceutical situation**

The questionnaire on structures and processes of country pharmaceutical situation (Level I indicators) completed in September 2003, by the Ministry of Health, may be found in Annex 1: Page 32.

## Level II: Core indicator results

### a) Summary of the Level II core indicator results

#### *Public sector facilities*

Indicator	Median	Average	
<b>Access</b>			
Availability of key drugs	78.6%	73.9%	
Average stock out duration	78.0 days	79.5 days	
% of prescribed drugs actually dispensed to patients	89.2%	89.4%	
Affordability: adult	1.17 days	1.16 days	
Affordability: child	1.11 days	1.06 days	
<b>Quality</b>			
Adequacy of storage	68.8%	67.6%	
% of expired drugs	0%	3.7%	
<b>Rational drug use</b>			
Number of drugs prescribed per patient contact	3.33	3.48	
% patients receiving antibiotics	43.3%	42.8%	
% patients receiving injections	30.0%	34.9%	
% drugs prescribed on EDL	96.1%	93.9%	
Adequacy of labelling	0%	7.2%	
Patient knowledge	56.7%	50.5%	
<b>Prescribing according to NSTG</b>			
Diarrhoea in children	% ORS	80.0%	76.6%
	% antibiotics	50.0%	53.1%
	% anti-diarrhoeals and/or anti-spasmodics	0%	0%
Mild/ moderate pneumonia in under 5's	% first line antibiotic	100%	91.1%
	% receiving > 1 antibiotic	33.3%	37.0%
Non-pneumonia ARI	% antibiotics	80%	81.2%
NSTG in the facility	94.4%		
EML in the facility	88.9%		

#### *Warehouses supplying public sector*

Availability of key drugs	82.2%	82.2%
Average stock out duration	50.7 days	39.3 days
Adequacy of storage	50%	66.1%
% of expired drugs	0%	0%

#### *Private drug outlets*

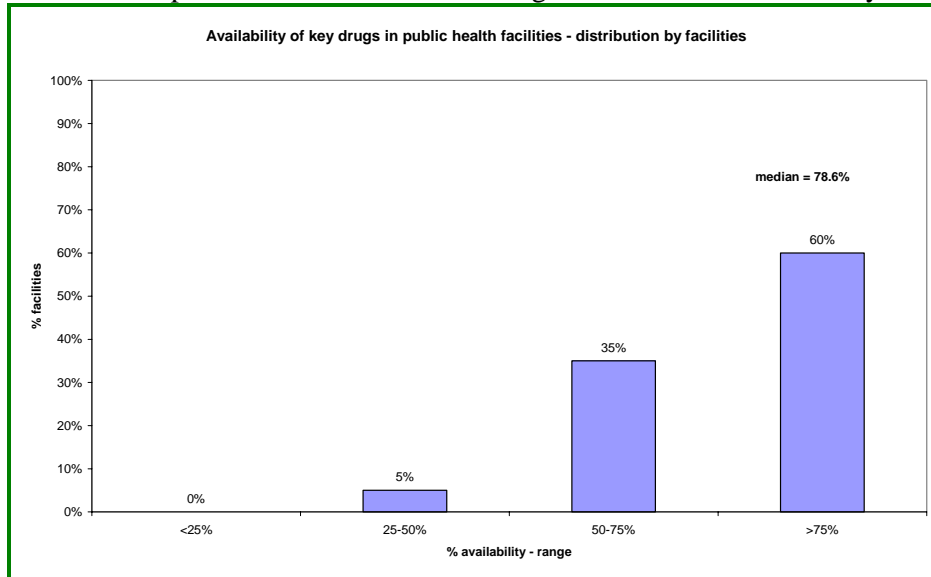
Availability of key drugs	85.7%	83.5%
% of drugs expired	0%	1.8%
Affordability: adult	1.17 days	1.22 days
Affordability: child	1.39 days	1.43 days



## b) Accessibility to drugs

### *Availability of key drugs in public health facilities, private drug outlets and public sector warehouses*

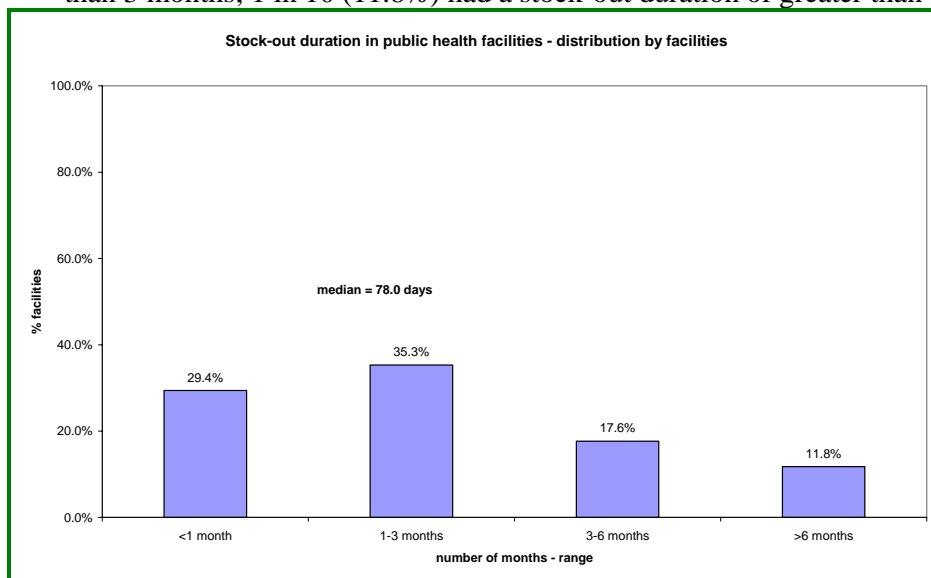
- the median availability in public health facilities private drug outlets and public sector warehouses was found to be 78.6%, 85.7% and 82.2% respectively
- 1 in 20 public health facilities had less than 50% availability
- 60% public health facilities had greater than 75% availability
- all public sector warehouses had greater than 78% availability



Recommendation: Investigate the reasons for the variations in availability in public health facilities - especially the minority of facilities that had less than 50% availability

### *Stock-out duration in public health facilities and public sector warehouses*

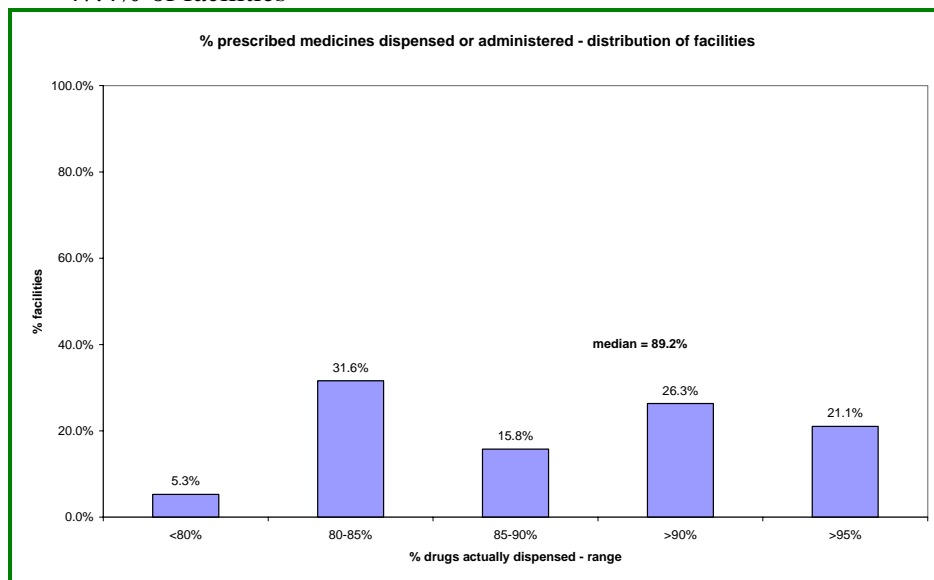
- the median stock-out duration of the basket of key drugs in public health facilities and public sector warehouses was found to be 78.0 days (2.5 months) and 50.7 days (1.5 months) respectively
- Almost 1 in 3 public health facilities (29.4%) had a stock-out duration of greater than 3 months; 1 in 10 (11.8%) had a stock-out duration of greater than 6 months



Recommendation: Investigate the reasons for the large variations in stock out duration in public health facilities - especially the almost one third with a stock out duration of greater than 3 months

**Percentage of prescribed drugs actually dispensed to patients in public health facilities**

- The median percentage of drugs actually dispensed or administered at public health facilities was found to be 89.2%
- More than 80% of drugs prescribed were actually dispensed or administered in 94.8% of facilities
- More than 90% of the drugs prescribed were actually dispensed or administered in 47.4% of facilities



**Affordability of key drugs in public health facilities and private drug outlets**

- Based on this the lowest Government workers salary<sup>5</sup>, the number of hours of work needed to pay for a course of treatment for a child with pneumonia without hospitalisation is on average 25% more in a private drug outlet than a public health facility

Treatment of pneumonia for:	Median number of days work necessary for the lowest paid Government worker for a full course of treatment <sup>6</sup>	
	Public health facility	Private drug outlet
Adult	1.17	1.17
Child	1.11	1.39

<sup>5</sup> 7200 Cedis

<sup>6</sup> See Annex 3 for details of treatment regimens

### c) Quality of drugs

#### *Storage conditions in public health facilities and public sector warehouses*

- The median percentage adequacy of storage conditions from a checklist of minimum storage criteria in public health facilities and public sector warehouses was found to be 70.3% and 50% respectively
- Of the criteria not met, the majority of public health facilities did not have satisfactorily clean shelves (55%), stored drugs on the floor (62.5%), did not store drugs in a systematic way (72.5%) and did not maintain and monitor cold storage with a temperature chart (70%)

% dispensaries/stores rooms in the facilities meeting each criteria <sup>7</sup>	
Working locks	90%
Storage clean shelves	45%
Pest free	70%
Secured ceiling	95%
Windows have good air vents	92.5%
No direct sunlight access	65%
Moisture free	95%
Drugs not stored on floor	37.5%
Storeroom separate from dispensing room	82.5%
Drugs sorted in a systematic way	27.5%
Stock record system	80%
Cold storage and temperature chart.	30%

Recommendation: Identify storage deficiencies and design interventions for implementation to address these poor or not adequate storage conditions in public health facilities

#### *Presence of expired drugs in public health facilities, private drug outlets and public sector warehouses*

- The median percentage of expired drugs was found to be 0 in public health facilities, public sector warehouses and private drug outlets; however the average % expired drugs was found to be 3.7%, 0% and 1.8% respectively
- 20% of public health facilities and 10% of private drug outlets were found to have some expired drugs on their shelves

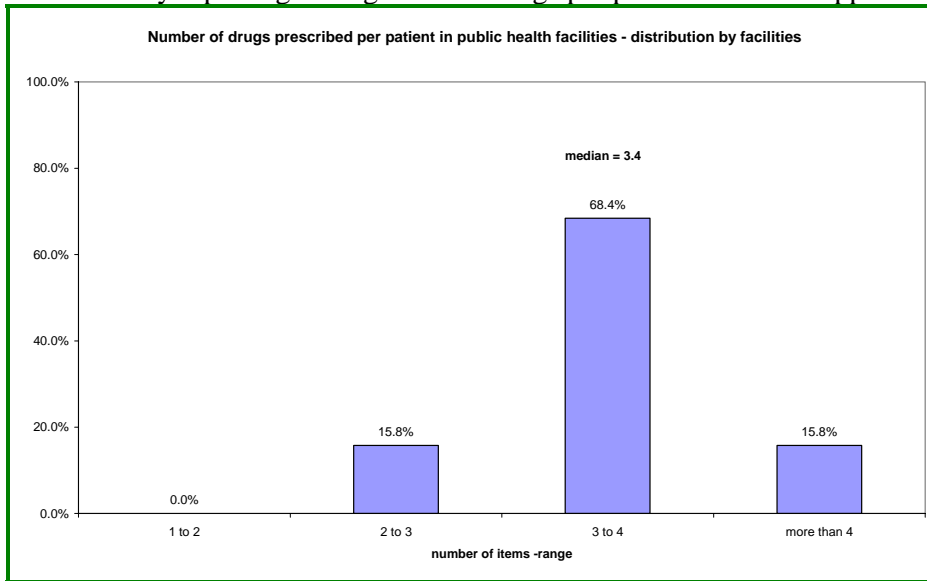
Recommendation: The Ministry of Health should strengthen mechanisms to ensure that no expired drugs are found on the shelves in both the public and private sectors

<sup>7</sup> results for dispensary and store areas combined

#### d) Rational drug use

##### *Number of drugs prescribed per patient contact at public health facilities*

- The median number of drugs prescribed per patient at public health facilities was found to be 3.4 (i.e. each patient received 3 or 4 drugs) (average 3.46)
- 5 out of 6 facilities (84.2%) were prescribing more than 3 drugs to each patient; in 6 (15.8%) prescribing more than 4 drugs per patient; and 1 in 6 (15.8%) prescribing less than 3 drugs per patient; 1
- Results from a similar survey<sup>8</sup> in 1998 reported an average of 4.6 drugs per patient – this survey reporting average of 3.46 drugs per patient shows an apparent improvement

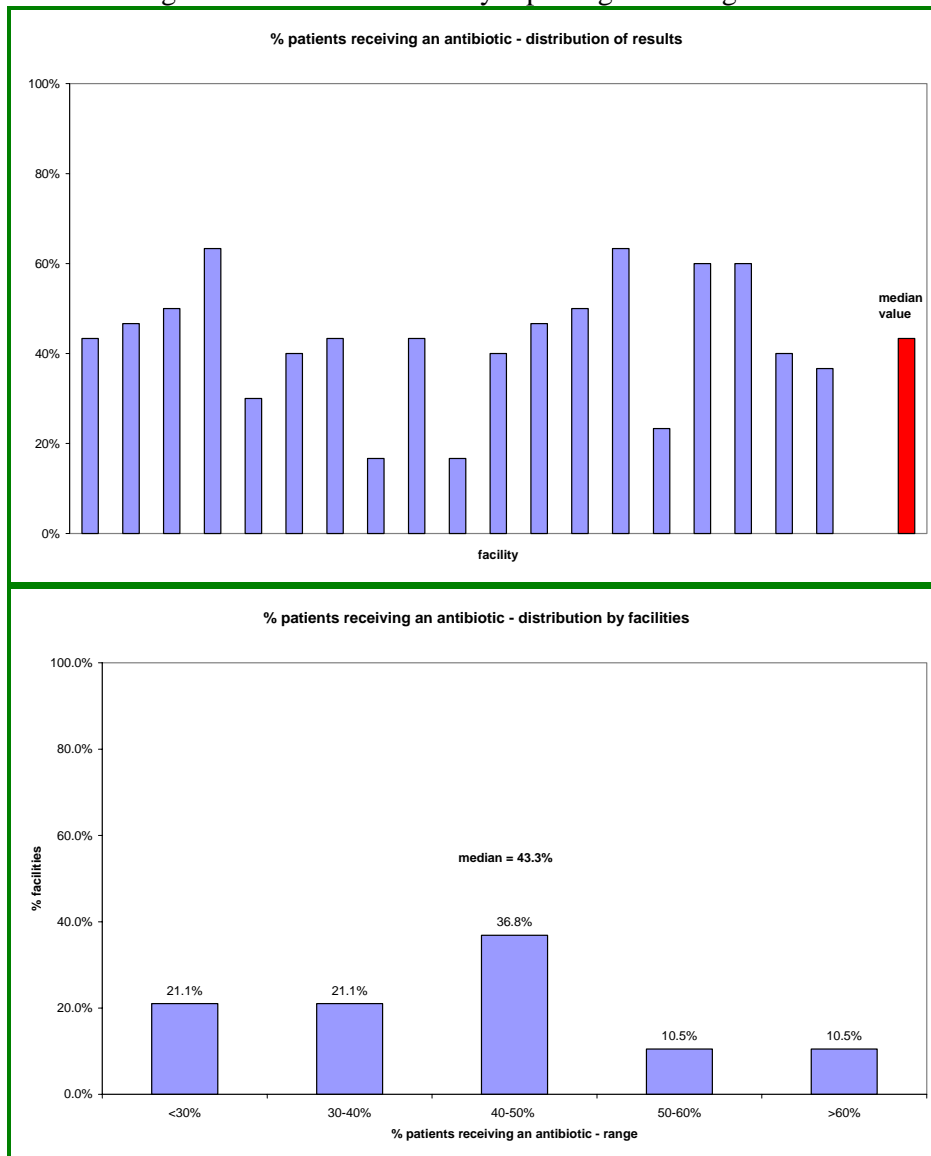


Recommendation: Investigate and develop interventions as to why 1 in 6 facilities can prescribe an average of less than 3 drugs per prescription and why 1 in 6 facilities need to prescribe an average of more than 4 drugs per prescription

<sup>8</sup> See Annex 2 for more detail

### ***Percentage of patients receiving an antibiotic at public health facilities***

- The median percentage of patients receiving one or more antibiotic in public health facilities was found to be 43.3% (average 42.8%)
- In 42.2% of facilities, less than 40% of the patients received an antibiotic, whereas in 21% of facilities more than half the patients received an antibiotic
- Results from a similar survey<sup>9</sup> in 1998 reported an average of 54% of patients receiving an antibiotic – this survey reporting an average of 42.8% shows an improvement



### **Recommendations:**

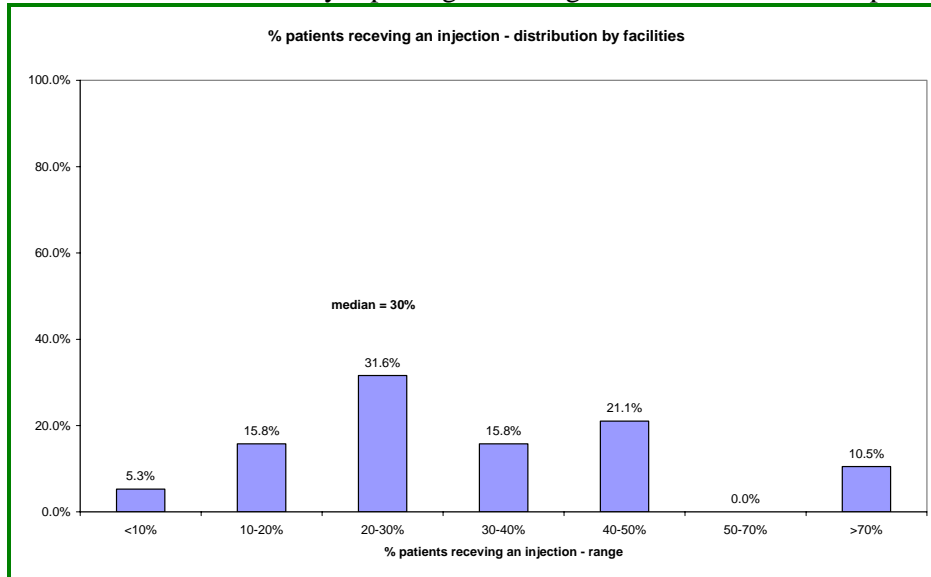
Investigate and develop interventions on the wide variations found in the use of antibiotics – especially why more than 1 in 5 facilities (21%) are prescribing antibiotics to more than half of the patients

Identify, develop and continue implementing interventions to further decrease the number of patients receiving antibiotics

<sup>9</sup> See Annex 2 for more detail

### ***Percentage of patients receiving an injection at public health facilities***

- The median percentage of patients receiving one or more injection in public health facilities was found to be 30% (average 34.9%)
- In 21.1% of facilities, less than 20% of the patients received an injection, whereas in 31.6% of facilities more than 40% the patients received an injection; in 10.5% of facilities, greater than 70% of patients received an injection
- Results from a similar survey<sup>10</sup> in 1998 reported 42% of patients receiving an antibiotic – this survey reporting an average of 34.9% shows an improvement



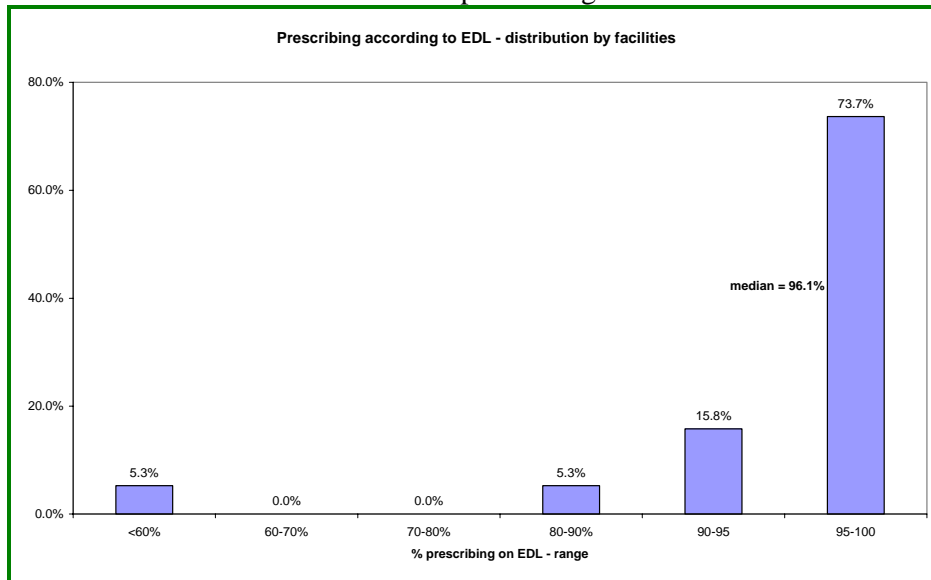
### **Recommendations:**

Investigate and develop interventions on the wide variations found in the use of injections – especially why more than 1 in 10 facilities (10.5%) to greater than 70% of patients receive an injection, whereas in 1 in 5 facilities (21.1%) less than 20% of the patients receive an injection. Identify, develop and continue implementing interventions to further decrease the number of patients receiving injections.

<sup>10</sup> See Annex 2 for more detail

### *Percentage of prescribed drugs on EDL in public health facilities*

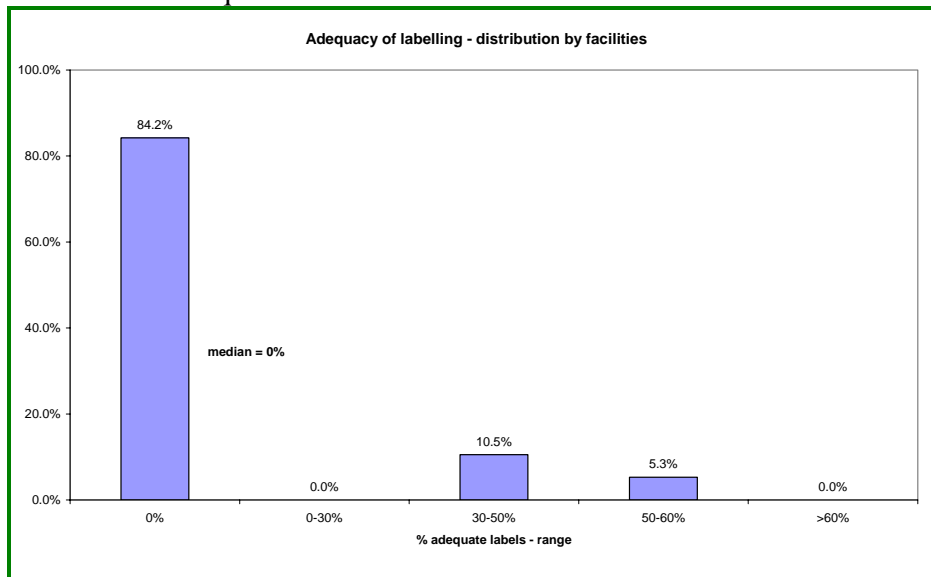
- The median percentage of drugs prescribed that were on the EDL in public health facilities was 96.1% which is consistent with similar surveys carried out in 1998<sup>11</sup>
- In 73.7% of facilities were prescribing from the EDL more than 95% of the time
- In 10.6% of facilities were prescribing from the EDL less than 90% of the time



Recommendation: Investigate and develop interventions as to why a minority of facilities are not prescribing consistently according to the EDL

### *Adequacy of labelling at public health facilities*

- The median adequacy of labelling<sup>12</sup> at public health facilities was found to be zero
- In 84.2% of facilities there were no adequate labels; no facility had more than 60% of labels adequate



Recommendation: Develop, disseminate and enforce clear guidelines and training on the importance of labelling for dispensed drugs. This should include consumer-targeted and community-based information, education and communication campaigns

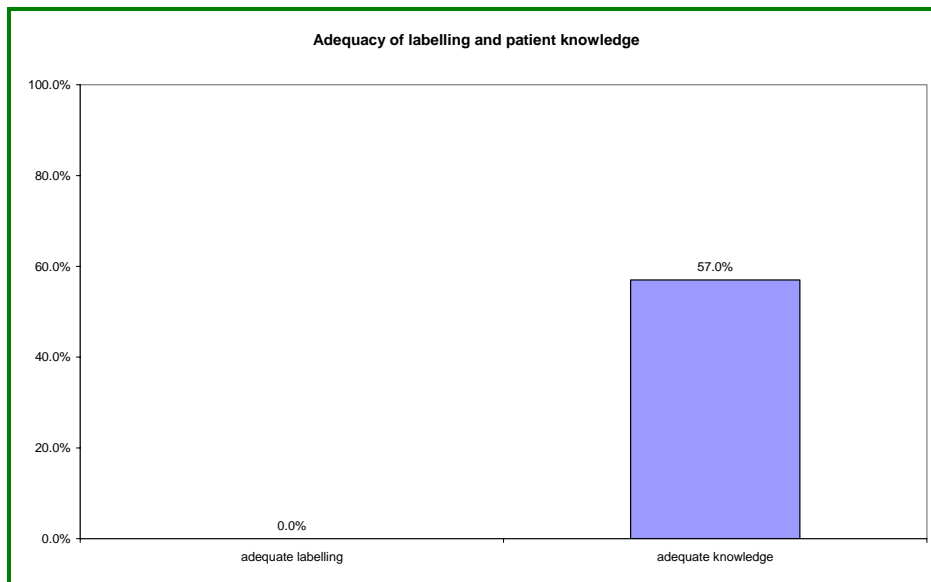
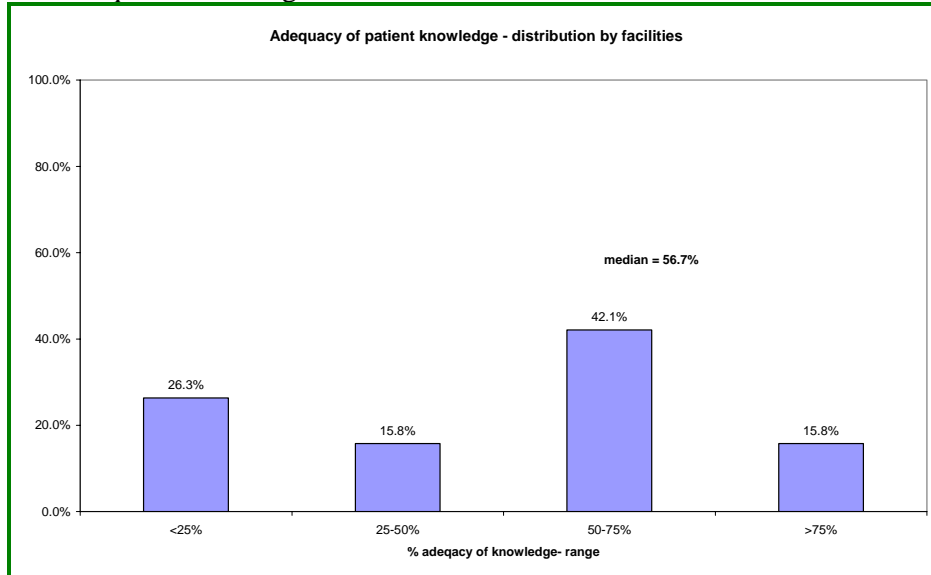
<sup>11</sup> See Annex 2 for more detail

<sup>12</sup> an adequate label was defined as a label containing the name and quantity of drug, the dosage and frequency, and duration of treatment



### ***Adequacy of patient knowledge of how to take drugs at public health facilities***

- The median adequacy of patient knowledge on how to take their drugs<sup>13</sup> at public health facilities was found to be 56.7%
- In 42.1% of facilities less than half of the patients had adequate knowledge
- In only around 1 in 6 facilities (15.8%) did greater than 75% of patients have adequate knowledge



### **Recommendations:**

Develop, disseminate and enforce clear guidelines and training on the importance of ensuring that patients know how to take their drugs correctly.

These initiatives should include consumer-targeted and community-based information, education and communication campaigns.

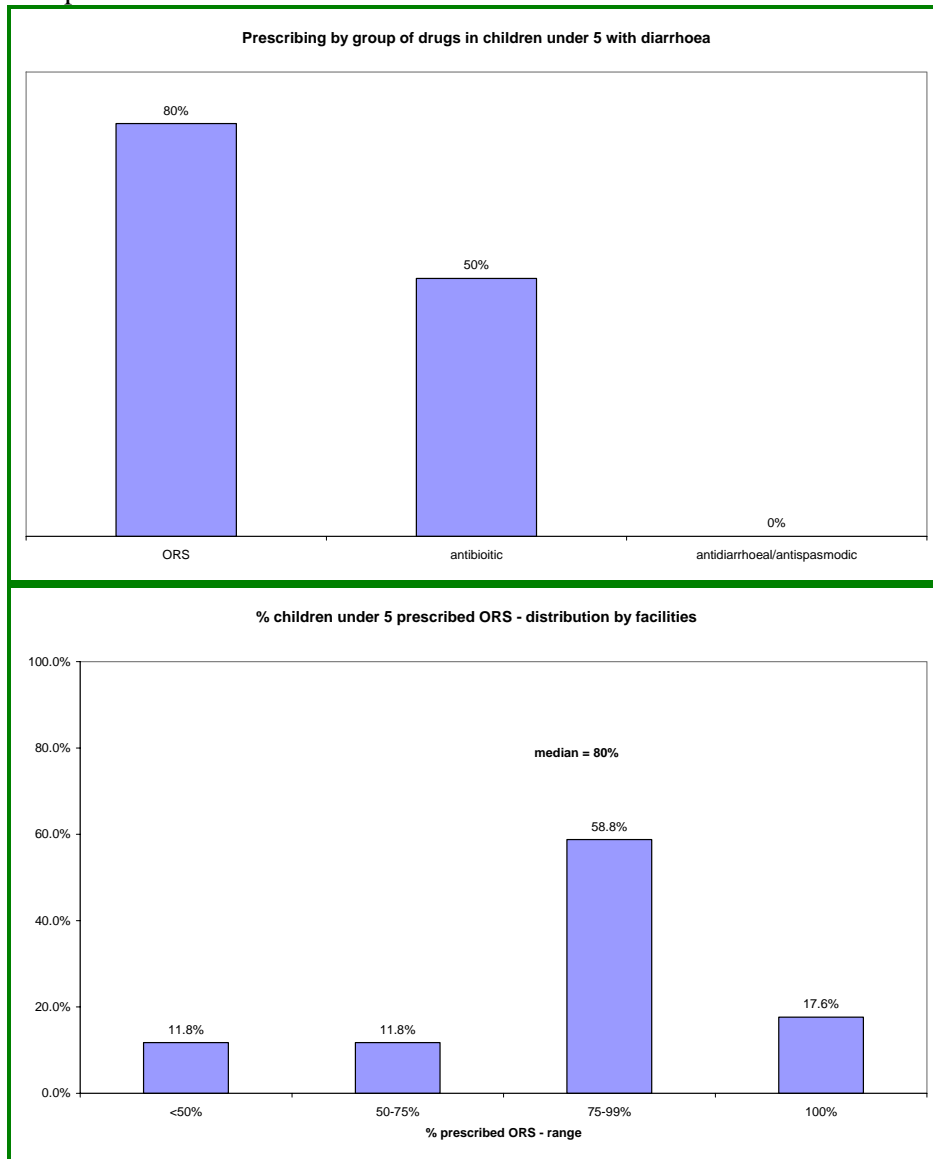
<sup>13</sup> adequate patient knowledge was defined as the patient being able to correctly give the name of all the drugs or state what the drugs are for, and how often they should be taken

**Availability and prescribing according to STG's and EDL at public health facilities**

- The National Standard Treatment Guidelines (2000) were found in 94.4% of the facilities, which compared with 73% in a similar survey in 1998 <sup>14</sup>
- The EDL was found in 96.1% of facilities

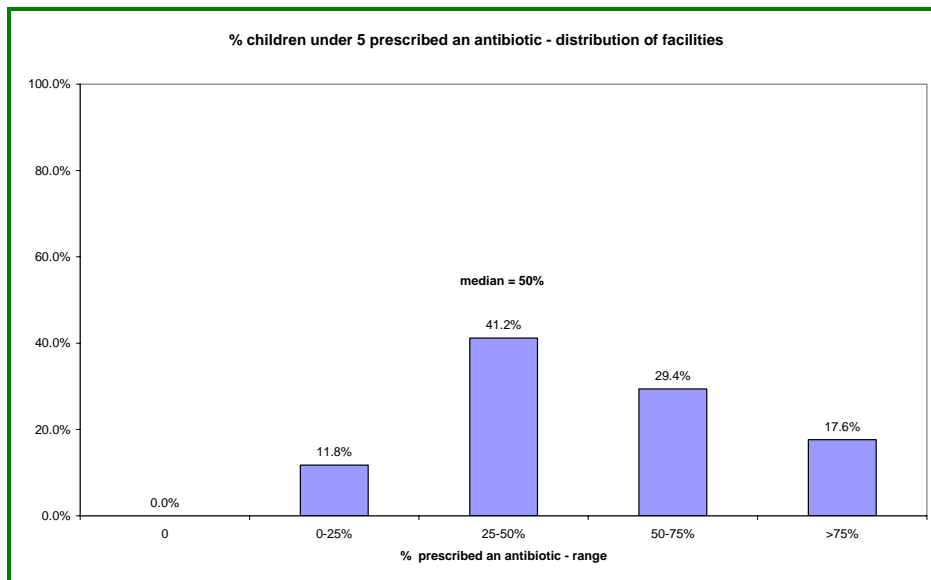
**Diarrhoea in children under 5 years<sup>15</sup>**

- The median percentages of child patients with diarrhoea at public health facilities that were prescribed ORS was 80%
- The median percentages of child patients with diarrhoea at public health facilities prescribed an antibiotic was 50%



<sup>14</sup> See Annex 2 for more detail

<sup>15</sup> National standard treatment guideline for diarrhoea in a child under 5 years recommends: ORS only

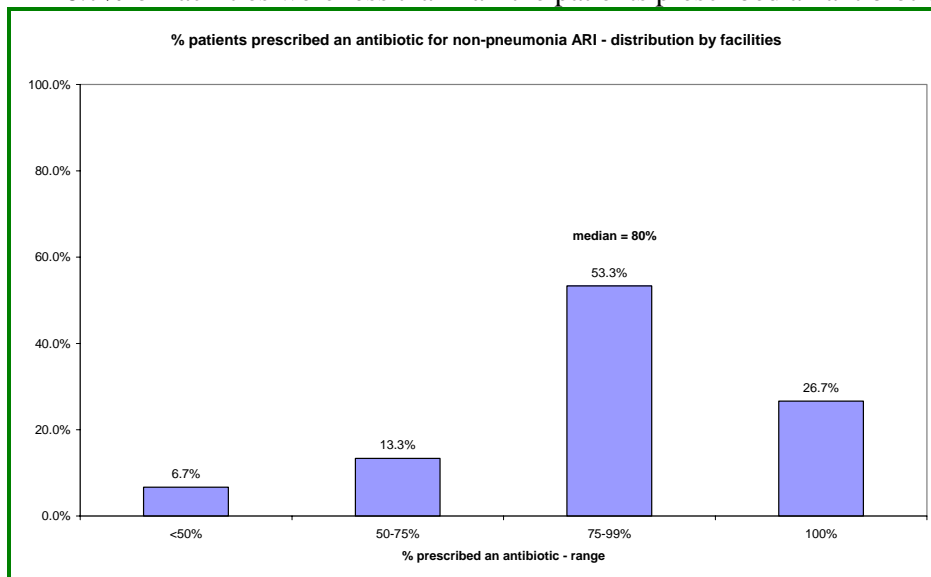


#### Mild/moderate pneumonia in children under 5 years<sup>16</sup>

- In all cases, a first line antibiotic was prescribed, however in 33% of cases, more than 1 antibiotic was prescribed

#### Acute respiratory tract infection<sup>17</sup>

- The median percentage of patients prescribed an antibiotic for ARI was 80%
- In 26.7% of facilities, all patients were prescribed an antibiotic for ARI, only in 6.7% of facilities were less than half the patients prescribed an antibiotic



#### Recommendations

Investigate and develop interventions for the treatment of diarrhoea in children <5 years: why are 50% of children receiving antibiotics and why are 20% of children not receiving ORS?

Investigate and develop interventions why more than one antibiotic is being prescribed from mild/moderate pneumonia in 33% of cases

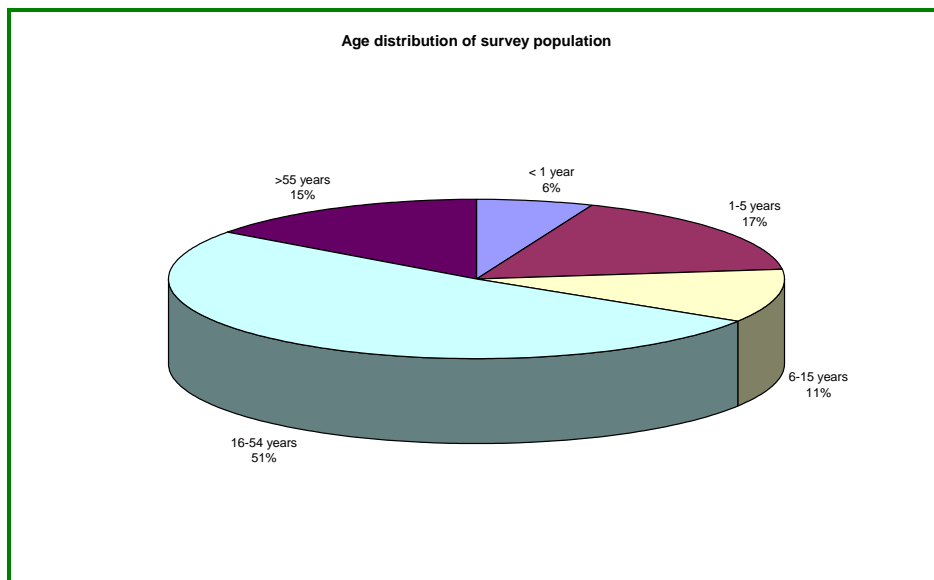
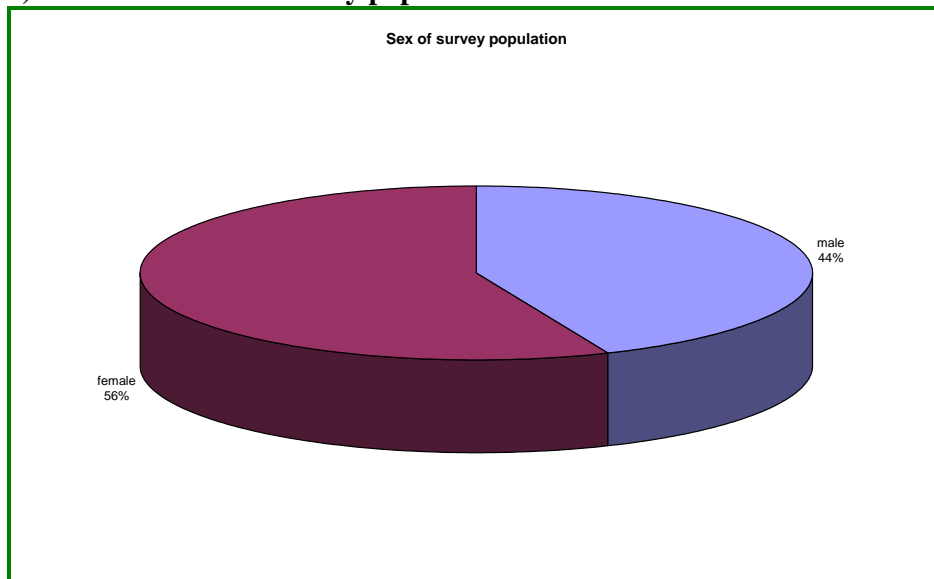
Investigate and develop interventions to address the very poor adherence to the standard treatment guideline for ARI

<sup>16</sup> National standard treatment guideline for mild/moderate pneumonia in a child under 5 years recommends: 1<sup>st</sup> line antibiotic: amoxicillin

<sup>17</sup> National standard treatment guideline for acute respiratory tract infection recommends: no antibiotic

## Household survey results

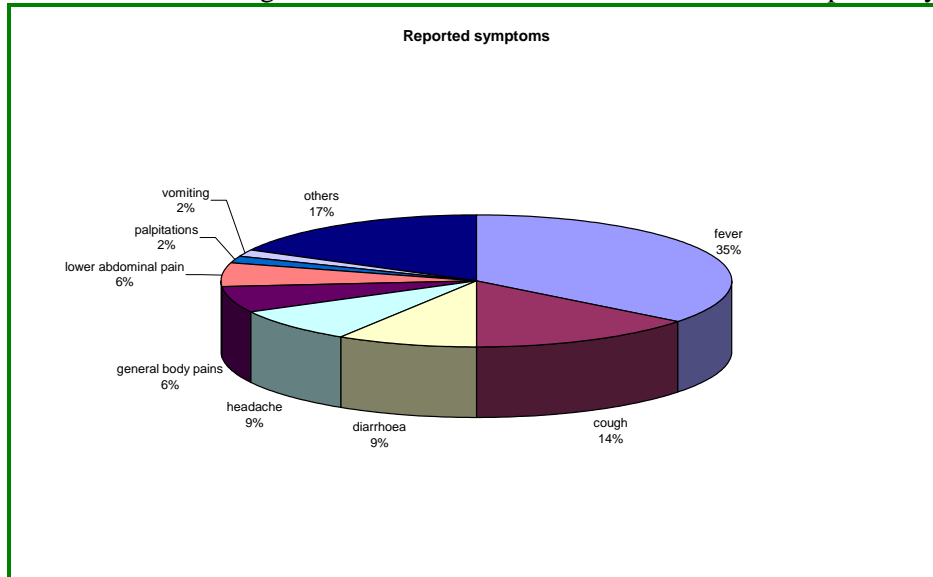
### a) Characteristics of survey population



## b) Symptoms and source of first consultation

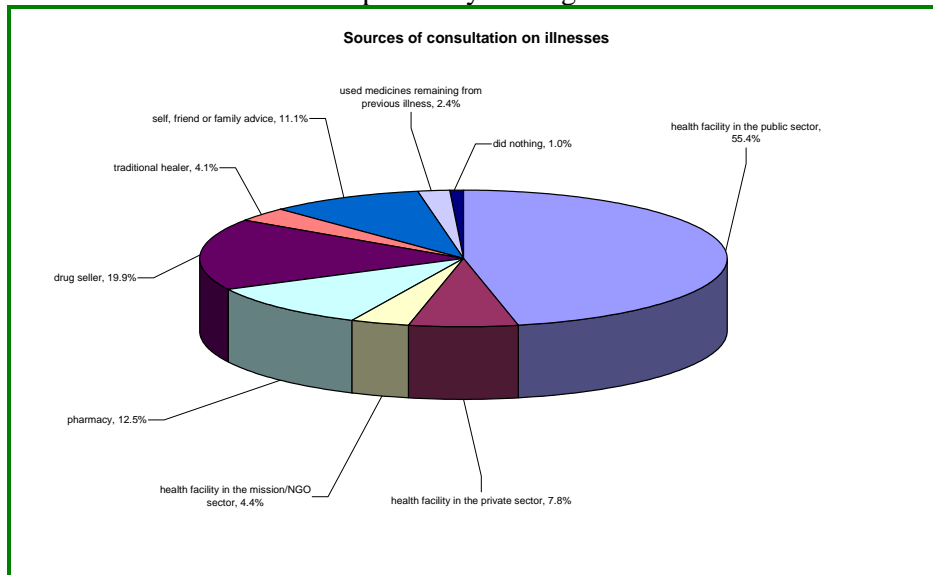
### *Common disease symptoms reported*

- Fever, cough and diarrhoea accounted for 84.4% of the reported symptoms



### *Sources of consultation*

- The 64% consulted a clinic or hospital in the public or private sectors
- 7% consulted a pharmacy or drug seller
- 5% consulted a traditional healer
- 13% self-medicated or used drugs remaining after another illness
- 67.6% consulted a public, private or mission/NGO health facility
- 32.4% consulted a pharmacy or drug seller



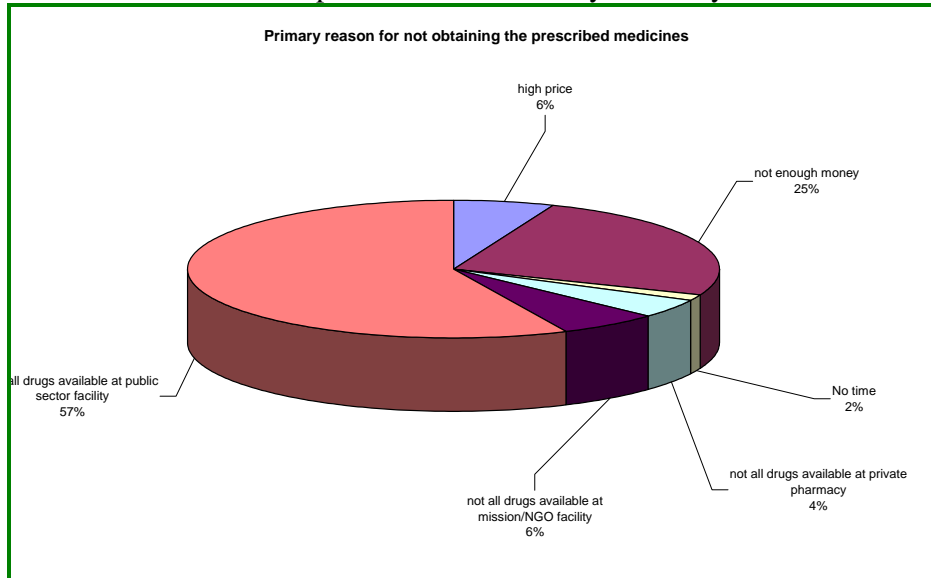
**c) Prescribing and obtaining the prescribed drugs**

- The proportion of consultations that resulted in drugs being prescribed was 95.1%
- Of the drugs prescribed, the following proportions were obtained:

All of the drugs dispensed	73.4%
Some of the drugs dispensed	24.7%
None of the drugs dispensed	1.8%

**Primary reasons for not obtaining all of the prescribed drugs:**

- In 98% of cases, availability and price were stated as the primary factors
- Of these 67% related to availability in either the public or private sectors and
- 31% related to price and/or availability of money



**d) Taking prescribed drugs**

- 1 in every 5 patients did not take the full course of prescribed drug

All was taken	78.7%
Some was taken	20.9%
None was taken	0.4%

**e) Estimated family weekly income/ total weekly household expenses**

- Average household income was found to be Cedis 167,069 (US\$19.70)
- For those reporting ill, the average total amount spent on drugs as a proportion of total household expenses during the period of the last week of the study was 28.5%

## INTERPRETATION OF RESULTS

### Access to Medicines

Availability, long stock out durations and affordability are three major factors that affect access to medicines for most people in resource poor settings, Ghana being no exception. The results of the study clearly show these phenomena especially in public health facilities across the country. This stems from the organizational structure and procurement policies of essential medicines which are based both on the principles of decentralization and the autonomy of each facility within the drug management and distribution system (i.e. CMS»RMS» facility). Each facility is responsible for making its own procurement decisions.

The decentralized aspect of the system has both positive and negative consequences that affect rationale procurement decisions, pricing, and hence availability of medicines.

In general, MOH procurement rules state that a Regional Medical Store must look to the Central Medical Store first to source its pharmaceutical supply needs. If the CMS is unable to meet these needs, and the requested item is out of stock, then the RMS can buy from the open market. For lower level facilities, a similar approach is to be followed by going to the RMS first and then only when the RMS is unable to supply can the health facility turn to the private sector. The results obtained reflect this trend for the public sector. If the availability of medicines in the warehouse is less it affects availability at the facility level.

Another factor which affects availability and stock out duration is distance from the Central Medical Stores. Logistics especially in the area of transportation is a major hindrance to facilities which are situated very far from the CMS. This is usually noted with regions like the three northern regions including upper Upper East region which was part of the survey.

The availability at private drug outlets was better because they are profit oriented institutions and they depend solely on sales for their income and therefore cannot afford not to have the basic drugs on their premises.

Lack of funds to purchase items as they run out is faced by some facilities. The drug revolving funds which are meant solely for drugs are used for other activities that the institutions find to be equally important. In some facilities the internally generated funds from other services is not enough to run the clinics and the heads are forced to borrow funds from the pharmacy to top up for the other services. These funds are sometimes borrowed to be repaid, but most often they are not paid back into the drug revolving funds, resulting in de-capitalization of the RDF leading to non availability and stock out of certain items.

Poor inventory and financial management issues worsen the problem of availability.

In certain facilities prescribing habits hinder availability of some drugs which in turn affects the stock out duration. Only certain drugs are prescribed in certain facilities depending on the prescribing habits of those prescribing in the facility resulting in the expiration of other drugs which are not “favourites” for prescription. The activities of medical representatives who promote certain medicines force some facilities to stock only the medicines which are constantly being promoted. In such a case the pharmacy will stock only those drugs which are fast moving and leave other essential drugs which are slow moving. Poor inventory and financial management could also stem from lack of skills for those in charge of the drug supply management

Affordability of medicines for the poor is a major barrier to access. It is catastrophic for an individual to use a whole days wage to pay for the treatment of pneumonia.

The results of most quality of care surveys have shown that attendance at health care facilities are affected by the inability of clients to pay for health care services.

The government of Ghana recognizes that ensuring equitable, secure and sustainable access to essential medicines is a core element of the national strategy for improving health outcomes of the population. Efforts to improve access continue to face major challenges in a rapidly changing national and international policy environment. In the pursuit of improving access to health care the Government has introduced the National Health Insurance Scheme (NHIS). A key purpose of the NHIS is to share the risk and burden of pharmaceutical and health care costs across the population and therefore, improve equity of access.

The National Health Insurance Scheme was necessitated given the increasing public concerns about the inequities inherent in the system of cost recovery known as “cash and carry”. It is hoped that the National Health Insurance scheme if it is well implemented will reduce the burden of the direct out-of-pocket-at-point-of-service user payments, involved in the “Cash and Carry” system and therefore improve overall access to healthcare including access to medicines

## **Quality**

The absence of quality assurance procedures in healthcare facilities and warehouses is shown in results obtained in the survey, Lack of supervision and the presence of staff who unmotivated is realised in the fact that shelves were found to be dirty and drugs stored on the bare floor. Anybody who works in a store has knowledge of the fact that drugs should not be stored directly on the bare floor. This situation needs to be investigated if the quality of drugs is to be maintained for the end user.

The problem of expired drugs can be attributed to poor inventory management. The presence of expired drugs on the shelves of both public and private facilities is of grave concern. What if expired drugs are being given to unsuspecting patients and such drugs causing other undesired effects in the population. Irrational prescribing could also lead to the presence of expired drugs. If public sector facilities were made to operate in a businesslike manner such situations would scarcely arrive.

## **Rational Use of Medicines**

Indicators for the rational use of medicines are those that are regularly monitored in public health facilities. These indicators have improved over the years since awareness was created, but even so some of the indicators have not done as well as expected.

Even though the Food and Drugs Board have standards for labelling this is not adhered to in public health facilities hence the adequacy of labelling is a far cry from the standard. There is need to enforce labelling standards.

The inadequacy of patients' knowledge on how to take drugs at certain public health facilities could stem from the clarity of the message given, the compactness of the message and the presentation of the message. All these can affect the dispensing time, and considering the fact that there are always a lot of patients waiting at public health facility dispensaries for the medication, the dispensing times can be compromised. This situation even gets worse when the patients start quarrelling that they have been waiting for too long at the dispensary. This is not to find an excuse for the lack of clients' knowledge on how to take their medication at public health facilities. The still remains that if clients do not have adequate knowledge on their medications then all the efforts that is being put into getting patients better is going to waste. There is need for dispensers to have time to collect feedback on messages given to patients to see their understanding of the information given them.



The Standard Treatment Guidelines (STG) and the Essential Medicines Lists were found to be widely available in public health facilities but then the results obtained from prescribing according to the STG did not match the availability of the documents in the facilities. This shows that even though the documents have been widely circulated they are not being used effectively because of the lack of enforcement. The bearing is that the drugs and therapeutics committees in the facilities are not executing their duties efficiently if even they exist. It is necessary to investigate why these documents which cost so much money are not being adhered to and develop interventions to address the poor adherence to the STG.

### **Household Survey**

The majority of the symptoms reported in the household surveys could be due to the period of the year in which the survey was conducted. This was during the harmattan period when a lot of fever and cough symptoms are reported due to the weather conditions.

It is gratifying to note that majority of the people consulted a health facility when they were ill. It has been assumed that the first point of call for community members who are ill is a pharmacy or chemical seller shop but the results obtained here disproves that notion.

The proportion of consultations that resulted in the prescription of drugs (95.1) confirms the anecdote that for every ill there is a pill. The Ghanaian population is used to being given medicines anytime they visit a health facility and if they are not given medicines they tend to feel that the doctor is not a good doctor, this is probably why the number of consultations that resulted in a prescription were so high.

As was found in the health facility and private medicines outlet surveys the main barriers to access are affordability and availability and this has been discussed extensively. Incomes are not too high and this makes healthcare unaffordable to most people since they have to pay out of pocket at the point of service delivery.

Patients' knowledge on taking prescribed medication has a bearing on whether the patient would take the medication or not. The facility surveys show that adequate information is not given to patients on the importance of taking all their medicines and this is reflected in the household surveys where one in every five patients did not take the full course of prescribed drug.

It is well noted that the percentage of family income being used on medicines is too high and this has received considerable attention by government who is doing all it can to improve access to healthcare for its people.

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusions: Positive aspects and areas for improvement identified

Indicator	Positive aspects emanating from the survey	Areas for improvement apparent from the survey
<b>ACCESSIBILITY TO DRUGS</b>		
Availability of key drugs	60% public health facilities had greater than 75% availability	1 in 20 public health facilities had less than 50% availability
Stock-out duration		29.4% of public health facilities had a stock-out duration of greater than 3 months; 11.8% greater than 6 months
% prescribed drugs actually dispensed	More than 80% of drugs prescribed were actually dispensed or administered in 94.8% of the facilities	
Affordability		More than a days wages of the lowest paid government worker are required to pay for a course of treatment of a child with pneumonia in both the public and private sectors
<b>QUALITY OF DRUGS</b>		
Adequacy of storage	Storage conditions overall were found to be reasonable in terms of security, temperature and moisture control and having a stock management system	Unclean shelves, drugs stored on the floor, not organising drugs in a systematic fashion and not properly monitoring the cold chain where common shortfalls in good storage practices
Presence of expired drugs		Expired drugs were found on the shelves of public health facilities and private drug outlets
<b>RATIONAL DRUG USE</b>		
Number of drugs prescribed per patient	There has been an apparent reduction in the average number of drugs prescribed (similar survey in 1998 <sup>18</sup> )	84.2% of facilities are prescribing more than 3 drugs to each patient
% patients receiving an antibiotic	In 42.2% of facilities, less than 40% of the patients received an antibiotic. There has been an apparent reduction in the antibiotic prescribing (similar survey in 1998 <sup>19</sup> )	There are very wide differences in the proportion of patients which receive antibiotics. In 21% of facilities more than half the patients received an antibiotic
% patients receiving an injection	In 21.1% of facilities, less than 20% of the patients received an injection. There has been an apparent reduction in the injection prescribing (similar survey in 1998 <sup>20</sup> )	In 31.6% of facilities more than 40% the patients received an injection

<sup>18</sup> See Annex 2 for more detail

<sup>19</sup> See Annex 2 for more detail

<sup>20</sup> See Annex 2 for more detail

Indicator	Positive aspects emanating from the survey	Areas for improvement apparent from the survey
Prescribing according to the Essential Drugs List	In 73.7% of facilities were prescribing from the EDL more than 95% of the time	In 10.6% of facilities were prescribing from the EDL less than 90% of the time
Adequacy of labelling		Median adequacy of labelling at public health facilities was found to be zero
Adequacy of patient knowledge		In 42.1% of facilities less than half of the patients had adequate knowledge
Availability of NSTGs and EDL	The National Standard Treatment Guidelines (2000) were found in 94.4% of the facilities. The EDL was found in 96.1% of facilities	
Prescribing according to STG	80% of children with diarrhoea were prescribed ORS	50% of children with diarrhoea were prescribed an antibiotic. More than one antibiotic was prescribed in 33% of cases. 80% patients were prescribed an antibiotic for ARI

**b) Summary of recommendations (directly from findings section)**

<b>Access to drugs</b>	<ul style="list-style-type: none"> <li>▪ Investigate the reasons for the variations in availability in public health facilities - especially the minority of facilities that had less than 50% availability</li> <li>▪ Investigate the reasons for the large variations in stock out duration in public health facilities - especially the almost one third with a stock out duration of greater than 3 months</li> </ul>
<b>Quality of drugs</b>	<ul style="list-style-type: none"> <li>▪ Identify storage deficiencies and design interventions for implementation to address these poor or not adequate storage conditions in public health facilities</li> <li>▪ The Ministry of Health should strengthen mechanisms to ensure that no expired drugs are found on the shelves in both the public and private sectors</li> </ul>
<b>Rational drug use</b>	<ul style="list-style-type: none"> <li>▪ Investigate and develop interventions as to why 1 in 6 facilities can prescribe an average of less than 3 drugs per prescription and why 1 in 6 facilities need to prescribe an average of more than 3 drugs per prescription</li> <li>▪ Investigate and develop interventions on the wide variations found in the use of antibiotics – especially why more than 1 in 5 facilities (21%) are prescribing antibiotics to more than half of the patients</li> <li>▪ Identify, develop and continue implementing interventions to further decrease the number of patients receiving antibiotics</li> <li>▪ Investigate and develop interventions on the wide variations found in the use of injections – especially why more than 1 in 10 facilities (10.5%) to greater than 70% of patients receive an injection, whereas in 1 in 5 facilities (21.1%) less than 20% of the patients receive an injection</li> <li>▪ Identify, develop and continue implementing interventions to further decrease the number of patients receiving injections</li> </ul>

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|  | <ul style="list-style-type: none"><li>▪ investigate and develop interventions as to why a minority of facilities are not prescribing consistently according to the EDL</li><li>▪ Develop, disseminate and enforce clear guidelines and training on the importance of labelling for dispensed drugs. This should include consumer-targeted and community-based information, education and communication campaigns</li><li>▪ Develop, disseminate and enforce clear guidelines and training on the importance of ensuring that patients know how to take their drugs correctly.</li><li>▪ These initiatives should include consumer-targeted and community-based information, education and communication campaigns.</li><li>▪ Investigate and develop interventions for the treatment of diarrhoea in children &lt;5 years: why are 50% of children receiving antibiotics and why are 20% of children not receiving ORS?</li><li>▪ Investigate and develop interventions why more than one antibiotic is being prescribed for mild/moderate pneumonia in 33% of cases</li><li>▪ Investigate and develop interventions to address the very poor adherence to the standard treatment guideline for ARI</li></ul> |
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### c) Other (overall) recommendations

- Pharmaceutical sector indicators should be monitored regularly to see the effectiveness of effects of interventions and policies
- Conduct operational research to assess factors that cause specific problems and constraints to best practices
- There is the need to carry a study on the role of peddlers
- Critically investigate the difficulties inherent in the management of drugs from the central level to the periphery, standardise and disseminate SOP's; strengthen information systems
- Provide training to managers within the procurement and distribution chain. This should include training for private sector and private not for profit groups in the pharmaceutical sector. The training should focus on forecasting, procurement, storage and distribution of to prevent stock outs.
- The Ministry of Health, the Ghana Health Service, consumer associations together with the general public to lobby for reduction in prices of essential medicines. Advocacy should aim at reducing/removing tariffs and taxes on all essential medicines both in the public and private sectors.
- Rational drug use concepts should be part of the training curricula of all health professionals and part of ongoing in-service training so as to reinforce the concepts to ensure sustained change
- Private drug outlets should be included in improving the rational use of drugs activities
- Investigate innovative factors that what would motivate better adherence to the Standard Treatment Guidelines to use in the development and launch of the next edition
- There should be regular monitoring of the use of the standard treatment guidelines; dispensers should be encouraged to dialogue and give feedback to prescribers so they would know their prescribing habits and try to improve prescribing to conform to the Standard Treatment Guidelines.
- Improve drug labelling to include visual labelling for illiterate patients
- Public/consumer education should target the social and cultural aspects of medicines use particularly in relation to the consequences of inappropriate and unnecessary use of injections and antibiotics; education on compliance with treatment should be emphasized. The use of the popular media ought to be continued and strengthened. Promote patient rights
- Institutionalize drug and therapeutic committees (DTC) in all health facilities to improve the correct efficient and cost effective management of drugs and also to ensure effective monitoring of the indicators at facility level. DTC members should be adequately trained and empowered to carry out their duties
- Strengthen the national health insurance scheme to improve (financial) access to drugs
- GNDP should direct some of its activities to the private and not-for-profit sectors

## ANNEXES

1	Questionnaire on structures and processes of country pharmaceutical situation (Level I) (completed September 2003)
2	Results of previous surveys in Ghana
3	Designation of Key Drugs, Guidelines and Geographic / Facility Sampling
4	Survey Forms (Level II, Household)

**Annex 1: Questionnaire on structures and processes of country pharmaceutical situation  
(Level 1)**

## Annex 2: Results of previous surveys in Ghana

Comparisons within the findings section are limited to those that show a marked difference, as it is not certain that the methodologies were the same and hence the results are not fully comparable.

Indicator	Year			
	1990	1993	1998	2002
Number of facilities			77	16
Source of data	INRUD SURVEY	INRUD SURVEY	GNDP BASELINE SURVEY	MOH/WHO SURVEY
<b>ACCESS</b>				
Availability of Key Drugs in Public health facilities				73.9%
Availability of Key drugs in Regional Medical Stores				82.2%
Availability of Key Drugs in Private Pharmacies				83.5%
Stock out duration in Public Health Facilities				79.5days
Stock out duration in Regional Medical Stores				39.3 days
% of prescribed drugs dispensed in public health facilities				89.4
Affordability of Key Drugs in public health facilities: adult				1.16 days wage
Affordability of Key Drugs in public health facilities: child				1.06 days wage
Affordability of key drugs in private pharmacies; adult				1.22 days wage
Affordability of key drugs in private pharmacies; child				1.43 days wage
<b>QUALITY</b>				
% of expired drugs in public health facilities				3.7%
% of expired drugs in private pharmacies				1.8%
% expired drugs in regional medical stores				0%
Adequacy of storage in public health facilities				67.6%
Adequacy of storage in regional medical stores				66.1%
<b>RATIONAL USE OF MEDICINES</b>				
Average number of drugs per prescription		4.3	4.6	3.48
% patients prescribed antibiotics		46.6%	54.0%	42.8%
% patients prescribed injections		55.7%	42.0%	34.9%
% drugs prescribed on EML		-	92.0%	93.9%
% drugs prescribed in their generic names		59.4%	74.0%	-
% prescriptions with written diagnosis		-	70.0%	-
% drugs adequately labelled		12.0%	-	7.2%
% of patients with adequate knowledge on dosage		76.0%	-	50.5%
Availability of STG at public health facilities				94.4%
Availability of EML at public health facilities				88.9%
<b>Prescribing according to NSTG:</b>				
Diarrhoea in children % ORS				76.6%
% Antibiotics				53.1%
% anti diarrhoeals and/or antispasmodics				0%
<b>Mild/moderate pneumonia in children &lt;5:</b>				
% first line antibiotic				91.1%
% receiving >1 antibiotic				37%
Non-pneumonia ARI ; % antibiotics				81.2%



### Annex 3: Designation of key drugs, guidelines and geographic /facility sampling

#### List of key drugs (14) (Survey forms 1, 2, 10, 11, 12)

Amoxicillin capsules 250mg
Amoxicillin suspension/syrup 125mg/5ml
Benzoic acid + salicylic acid ointment 6% + 3%
Chloroquine syrup 80mg base/5ml
Chloroquine tablets 150mg base
Cotrimoxazole tablets 480mg
Ferrous sulphate tablets 200mg
Folic acid tablets 5mg
Iodine Solution
Mebendazole tablets 100mg
Oral Rehydration Salts (ORS)
Paracetamol syrup 120mg/5ml
Paracetamol tablets 500mg
Tetracycline eye ointment 1%

#### STGs in force at the time (Survey form 8)

Condition	Document	Year
Diarrhoea	Ghana national standard treatment guideline	2000
Mild/moderate pneumonia: child <5	Ghana national standard treatment guideline	2000
Acute respiratory tract infection	Ghana national standard treatment guideline	2000

#### c) Treatment regimen for drugs to treat outpatient pneumonia (Survey form 4, 9)

Drug	Strength	Unit	No. of units per treatment regimen	Regimen
Adults: amoxicillin capsule	250mg	1	42	500mg three times a day for 7 days
Children: Amoxicillin syrup/suspension	125mg/5ml	100ml	2 x 100ml	250mg three times a day for 7 days

#### d) Designation of Essential Drug List (EDL) and Standard Treatment Guidelines (STG) for Availability of Guidelines Indicator (Survey form 7)

	Document	year
EDL	National	2000
STG	National	2000

*e) Districts and Facilities Sampled*

Region	Health facility
Greater Accra	Mamprobi polyclinic
	Pediatokope HC
	Old Ningo
	Ridge Hospital
Brong Ahafo	Amanten HC
	Yamfo HC
	Abesim HC
	Guaso Hospital
Upper East	Bongo Health Centre
	Zuarungu HC
	Kasina Nankana East HC
	Sandema Hospital
Ashanti	Tepa District Hospital
	Manponteng HC
	Kumawu
	Kumasi South Hospital

## **Annex 4: Survey forms (Level II, Household)**