

Pharmaceutical Situation in Saint Lucia

WHO Assessment of Level II - Health Facilities Survey



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Essential Medicines,
Pharmaceutical Policies

Pharmaceutical Situation in Saint Lucia

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Abbreviations

%	Percentage
AF	Affordability
AV	Availability
CRDTL	Caribbean Drug Test Laboratory
DHI	Development Human Index
ECD	Eastern Caribbean dollar
EML	Essential Medicines List
ENSP	Escola Nacional de Saude Publica, National School of Public Health (Brazil)
GA	Geographic Access
GDP	Gross domestic product
HAI	Health Action International
HFS	Health Facilities Survey
HH	Household
Ind.	Indicator
Inj	Injection
INN	International Non-proprietary Name
M	Mixed
MRP	Median ratio price
MSH	Management Sciences for Health
NAF	<i>Nucleo de Assistencia Farmacéutica</i> , Pharmaceutical Services Centre (Brazil)
Nb	Number
NMP	National Medicines Policy
OB	Originator brand
OCPC	Office of Caribbean Programme Coordination
OECS	Organization of the Eastern Caribbean States
OMF	OECS Medicines Formulary
PAHO	Pan American Health Organization
PPS	Pharmaceutical Procurement Service
PSA	Pharmaceutical Situation Assessment
Q	Quartile
QL	Quality
RUM	Rational Use of Medicines
SD	Standard Deviation
SF	Survey Formulary
STG	Standard Treatment Guidelines
US\$	United States Dollar
WHO	World Health Organization

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Conflict of interest statement

None of the authors of this survey or anyone who had influence on the conduct, analysis or interpretation of the results has any competing financial or other interests.

Executive summary

Background

A field study to assess the pharmaceutical situation was undertaken in Saint Lucia from December 2007 to January 2008 using a standardized methodology developed by WHO.

Methods

The survey was conducted in five regions: Gros Islet-Dauphin, Castries, Dennery —Anse-la-Rayé, Soufriere and Vieux Fort. From the four areas a total of twenty four (24) public health pharmacies, ten (10) private pharmacies and four (4) central warehouses were visited. Data entry was performed using designed survey forms. Analysis was done using with Excel ® program.

Key results concerning facility survey

General indicators

Pharmacists were the only dispensers and were found in all facilities, both public and private sector.

Physicians were the only prescribers found, and they were in all public health care facilities. None of them had attended Rational Use of Medicines (RUM) related training within the previous year.

Access

Overall indicators of access show that key essential medicines selected for Saint Lucia are completely available in public health facilities, in warehouses that supply public health system and in private pharmacies. The percentage of dispensed medicines reached a high value.

In the public sector, the procurement agency is purchasing medicines at prices comparable to international reference prices, indicating a fair level of purchasing efficiency.

Concerning geographical accessibility, it took more than 30 minutes to arrive at the public dispensing facility for only few (6.7%) of the patients interviewed at public dispensing facilities and similar results were obtained for private pharmacies.

In treating common conditions using standard regimens, the lowest paid government worker would need between 0.3 (diabetes in adults) and 0.5 (pneumonia in adults) days wages to purchase lowest priced generic medicines from the public sector and 0.9 and 0.2 from the private sector.

Quality

The low percentage of expired medicines and adequate storage practices, are indications of the adequate quality of medicines, despite results could be improved.

Use of medicines

A reasonable level of antibiotics and injectable medicines are prescribed. In health facilities, procedures to promote rational use are not totally in place, since the national Essential Medicines List (EML) was found in 58.3% and Standard Treatment Guidelines (STG) in 54.2% of surveyed health facilities. It was not possible to assess compliance of physicians with standard treatment guidelines. The selling of prescribed medicines without prescription seems not to be a widespread practice, yet there is room for improvement. Most patients were informed on how to take their medicines at public and at private pharmacies.

Lessons learnt

The results of the survey show that the access components such as strategies to improve availability and enhance affordability of medicines should be maintained in order to ensure equity in access to basic medical treatments, especially for the poor. Some strategies, such as storage control and storage conditions should be implemented or improved. Appropriate use of drugs should also be promoted. All these also show that managerial and economic policies concerning pharmaceuticals should be maintained.

Recommendations

Based on the results of the survey, the following recommendations can be made for improving access, quality and rational use of medicines in Saint Lucia:

- 1) It is important to know how affordable medicines are for poor people and establish access mechanisms especially for them.
- 2) A better understanding of markup system in public sector is important.
- 3) If it is not implemented yet generic medicine policies should be considered in order to foster competition and improve access.
- 4) There should be continuing education for physicians in rational drug prescribing and use of International Non-Proprietary Name (INN).
- 5) There should be continuing education and monitoring for Pharmacists and pharmacy staff in the management of drug supply and recording keeping.
- 6) Storerooms be designed so that there can be appropriate ventilation and shelving.
- 7) National treatment guidelines should be developed for ARIs and other diseases.
- 8) EML and STG should be kept updated and disseminated.
- 9) Data collection at the Ministry of Health and health centres must be re-evaluated so as to comply with international standards.

- 10) The survey to be repeated in five (5) years so as to measure if the recommendations made above were implemented and if they made a significant impact on the pharmaceutical situation.

Introduction

From December 2007 to January 2008, the Ministry of Health (MOH) of Saint Lucia conducted a nationwide study of the pharmaceutical situation in public health facilities, private pharmacies, and in warehouses supplying the public sector in Saint Lucia. The main goal of the study was to document the degree of success in achieving strategic pharmaceutical objectives.

This study was conducted using the standardized methodology developed by WHO, to assess pharmaceutical situation at the health facility level - Assessment Level II. This is an indicator-based approach that provides systematic data on access and rational use of quality medicines through a facility-based survey.

The core indicators measure the most important information needed to understand the pharmaceutical situation in Saint Lucia.

The main objectives of the study were to answer the following questions:

- Are medicines available and affordable in public and private dispensing facilities to treat common conditions at primary care level?
- Do people have adequate geographical access to public and private dispensing facilities?
- Are there expired medicines in public and private dispensing facilities?
- Are medicines adequately stored and handled in public health facility dispensaries and warehouses supplying the public sector?
- Are medicines adequately prescribed, labeled and dispensed?
- Are patients informed on how to use their medicines?
- Are pharmacists present at dispensing facilities according to the law?
- Which professional is prescribing and dispensing?
- Do prescribers comply with good prescribing practices?

Saint Lucia background

Saint Lucia is a small-sized country, covering an area of 616km². It is divided into 10 districts. The total population is 170,000. According to the 2001 population census, 83% of the population is of African descent, 3% is of East Indian descent, 1% is Caucasian, and 12% are of mixed ancestry. Most of the population inhabits the coastal areas and less mountainous regions of the north and south, and approximately 41% lives in the district of Castries. The city of Castries is the hub of the country's economic activity and political life.

Saint Lucia is an upper middle income country with a gross domestic product (GDP) of US\$ 10,900 per capita. The most recent found information on poverty was on PAHO country database (PAHO, 2007a) and refers to 1995, showing 20.9% of population living with less than one dollar per day. The same source indicates an unemployment rate of 21% in 2004. Some general data are summarized in table 1.

Table 1. General profile of Saint Lucia

World view	Data	Year
General		
Surface area (sq. km) (thousands)	0.6	2007
HDI ranking	66/179	2006
Life expectancy at birth, total (years)	74	2007
Fertility rate, total (births per woman)	2.1	2006
Mortality rate, under-5 (per 1,000)	18	2007
Immunization, measles (% of children ages 12-23 months)	94	2007
Prevalence of HIV, total (% of population ages 15-49 years)	0.6	2007
People		
Population, total (millions)	0.17	2007
Population growth (annual %)	1.2	2007
Economy		
GDP (current \$US) (billions)	0.98	2007
GDP growth (annual %)	3.2	2007
Industry, value added (% of GDP)	21	2006
Services, etc., value added (% of GDP)	75	2006
Exports of goods and services (% of GDP)	55	2006
Imports of goods and services (% of GDP)	69	2006
GNI per capita, Atlas method (current \$ US)	5,520	2007
GNI per capita, PPP (current international \$)	9,240	2007
Income group	Upper middle income country	2009
Revenue spent on drugs and medical supplies (\$US millions)	2.03	2008

Health sector

In 2003, the per capita total expenditure on health was US\$ 221 (average exchange rate). Approximately 5% of the GDP is spent on health. Of the total expenditure on health, 68.2% is government expenditures, which represents 10.3% of all government expenditures. The remaining 31.8% of total expenditures on health is represented by private expenditures, of which 100% are out-of-pocket expenditures.

Primary health care services are provided at 34 health centers, a polyclinic, and two district hospitals. These facilities routinely offer medical and pharmaceutical services, maternal and child health care (antenatal and postnatal care as well as immunization of children), prevention and control of sexually transmitted infections, mental health clinics, and services related to diabetes, hypertension, cancer screening, dental care, and food and nutrition (PAHO, 2007b).

Outpatient services are provided at medical clinics at health centers and district hospitals and through the casualty or emergency departments of acute general hospitals. Secondary and specialized services are provided by three institutions: Victoria Hospital, the main hospital, located in the city of Castries and managed by the Ministry of Health; St. Jude's Hospital, located in the south of the island, a quasi-public institution that receives an annual subvention from the Government and many of whose specialists come from overseas and serve on a voluntary basis; and Tapion Hospital, a privately owned facility in the city of Castries. Two specialized institutions operate on the island: the psychiatric facility, Golden Hope Hospital, which offers inpatient and outpatient mental health services; and Turning Point, a drug rehabilitation center.

In addition to the above-mentioned secondary and specialized hospitals, two district hospitals (in Soufrière and in Dennery) provide outpatient, hospitalization, and emergency services, as well as inpatient care for minor medical, surgical, and pediatric problems and maternity care for low-risk deliveries. The psychiatric hospital provides inpatient care and some primary care to outpatients through community psychiatric clinics at the hospital and in seven other locations. Most tertiary care services are provided through health facilities abroad, primarily in Martinique, Barbados, and Trinidad and Tobago (PAHO, 2007b).

Table 2. Facilities that provide primary health care

Facility category	Number of facilities
District hospitals	2
Health centers	34
Policlinics	1

Pharmaceutical sector

The main source of information for this section is the Level I questionnaire answered by Saint Lucia in 2008.

National Medicines Policy

In Saint Lucia, there is not a National Medicines Policy (NMP) officially adopted.

Regulatory system

No formal medicines regulatory authority exists in Saint Lucia. Medicines are not required to be registered to be commercialized in the country as in Saint Lucia there are no legal provisions for marketing authorization.

There are no manufacturers in the country. There is no legal provisions in place for the licensing of wholesalers, distributors/importers, exporters of medicines and pharmacies. These are all regulated by the Pharmacy Council. Nevertheless, public and private medicine outlets are not regularly inspected.

A quality management system with an officially defined protocol for ensuring the quality of medicines is not in place in Saint Lucia. Medicine samples are tested for post-marketing surveillance. Samples are sent to the Caribbean Drug Test Laboratory (CRDTL) in Jamaica. Regulatory procedures are in place for ensuring the quality of imported medicines only for the public sector.

Legal provisions are in place for the licensing and practice of prescribers, nurses, pharmacists and pharmacies. They are under responsibility of the respective professional councils.

Prescribing by generic name is not mandatory in the public or private sector. Generic substitution is encouraged in public pharmacies for therapeutic equivalent medicines. There are no regulations in this regard for the private sector.

There are no provisions in the medicines legislation/regulations covering promotion and/or advertising of medicines.

Medicines supply system

Public sector procurement is pooled at the national level. Most of medicines are procured through the Pharmaceutical Procurement Service of the Organization of the Eastern Caribbean Countries (PPS/OECS) for all the OECS countries.

Public sector medicines procurement is the responsibility of the Ministry of Health through PPS/OECS on behalf of the Ministry of Health. The MOH procures a limited number of non-formulary medicines and health products for specific patients on demand. At public sector medicines distribution is the responsibility of the Ministry of Health.

Public sector procurement is limited to medicines on the OECS Medicines Formulary (OMF) adopted by Saint Lucia as the equivalent of its EML. There are no regulations for local preference in public sector procurement.

There are 20 licensed private retail medicine outlets in the country.

Medicines financing

In 2008, the total public expenditure for medicines was US\$ 15,000,000, representing US\$ 87 per capita. All medicines used in the country are imported.

There is a national policy to provide some medicines free of charge at public primary care facilities. Patients who cannot afford them and children less than 5 years of age receive medicines for free.

Patients that are not part of the above-mentioned categories are charged a fee for medicines provided at primary care facilities.

Revenues from fees or the sale of medicines are never used to pay the salaries or supplement the income of public health personnel in the same facility.

Prescribers in the public sector never dispense medicines, while prescribers in the private sector frequently dispense medicines.

In Saint Lucia, some of the population has public or private health insurance. Both cover some medicines.

There is a policy covering medicine prices that applies to the public sector, but not to the private sector.

There is no national medicine price monitoring system for retail/patient prices. There are no regulations mandating retail/patient medicine price information to be made publicly accessible. There are official written guidelines on medicine donations that provide rules and regulations for donors and provide guidance to the public, private and/or NGO sectors on accepting and handling donated medicines.

Rational use of medicines

Saint Lucia adopted the OECS Medicines Formulary (OMF) as its EML. The 7th edition is the last updated and is valid for the period of 2009-2012.

The national EML is the basis for public sector procurement. There is a Medicines Formulary Committee responsible for the selection of products on the OMF.

The health ministry produces standard treatment guidelines (STG) for major conditions.

The national EML is the basis for public sector procurement. There is a committee responsible for the selection of products on the national EML.

Antibiotics are occasionally sold over the counter without a prescription

Study design and methods

The survey with Level II indicators is a very important part of the pharmaceutical sector assessment. These indicators measure the outcome and impact of strategic pharmaceutical programs in Saint Lucia: improved access, quality and rational use. Access is measured in terms of the availability and affordability of essential medicines, especially to the poor and in the public sector. Measuring the actual quality of medicines by testing samples can be expensive. Instead, the presence of expired medicines on pharmacy shelves as well as the adequate handling and conservation conditions are indicators of the quality of medicines made available to the population. Finally, rational use is measured by examining the prescribing and dispensing habits of health providers and the implementation of key strategies such as standard treatment guidelines (STG) and EML.

Level II indicators are measured in public health facilities, private pharmacies, and in warehouses supplying the public sector.

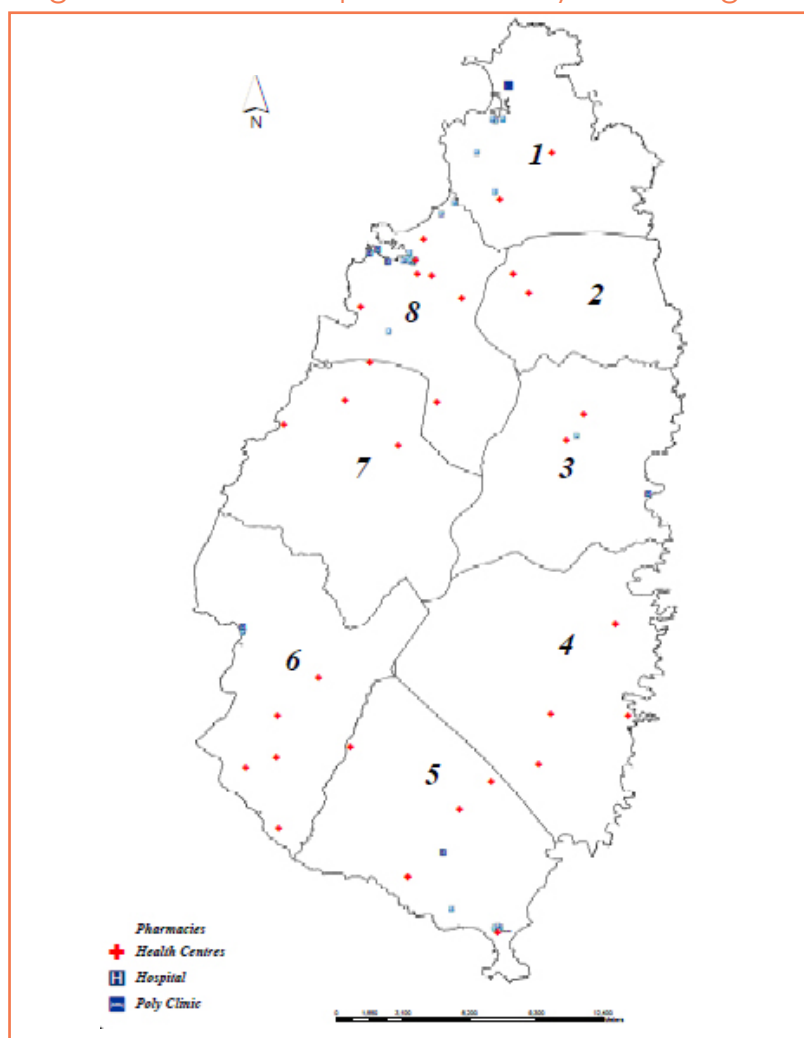
Methods

Initially, five regions were selected as “survey areas” for data collection:

- 1) Gros Islet-Dauphin,
- 2) Castries,
- 3) Dennery –Anse La Raye,
- 4) Soufriere and
- 5) Vieux Fort.

A map is provided in figure 1.

Figure 1. Saint Lucia pharmacies by health regions



Source: Statistical Department, Saint Lucia.

From the five areas, a total of twenty four (24) public health pharmacies, ten (10) private pharmacies and four (4) central warehouses were visited.

In each facility surveyed a set of Survey Forms was applied. This allowed standard method of gathering information to calculate the indicators.

Box 1 summarizes the Level II indicators and lists the corresponding survey forms. Information on data collection and calculation can be found on the respective survey forms.

Box 1. Summary list of indicators and
corresponding survey form used to collect the data

Indicator		Survey form
Access		
1	Availability of key medicines in public health facility dispensaries, private pharmacies and warehouses supplying the public sector (Saint Lucia list)	1, 10, 15
2	% of prescribed medicines dispensed or administered to patients at public health facility dispensaries	6
3	Average stock-out duration in warehouses supplying the public sector	16
4	Adequate record keeping in warehouses supplying the public sector	16
5	Geographical accessibility of public health facility dispensaries and private pharmacies	6, 14
6	Affordability -ration of cost to treat common conditions using standard regiments, to the lowest daily government worker wage for X (condition) and X (condition) (days' wages to purchase lowest priced generic medicines from public and private sector)	2, 11
Quality		
1	% medicines expired in public health facility dispensaries, private pharmacies and warehouses supplying the public sector	1, 10, 15
2	Adequacy of storage conditions and of handling of medicines in public health facility dispensaries and warehouses supplying the public sector	5, 13, 17
Rational use of medicines		
1	% medicines adequately labelled at public health facility dispensaries and private pharmacies	6, 14
2	% patients informed on how to take medicines at public health facility dispensaries and private pharmacies	6, 14
3	Average number of medicines per prescription at public health facility dispensaries and public health facilities	6, 7
4	% patients prescribed antibiotics in public health facilities	7
5	% patients prescribed injections in public health facilities	7
6	% prescribed medicines on the essential medicines list at public health facilities	7
7	% medicines prescribed by generic name (INN) at public health facilities	7
8	Availability of standard treatment guidelines at public health facilities	8
9	Availability of essential medicines list at public health facilities	8
10	% tracer cases treated according to recommended treatment protocol/ guide at public health facilities	9
11	% prescription medicines bought with no prescription	14
Other information		
1	% of facilities that comply with the law (presence of a pharmacist)	Section A, C
2	% facilities with pharmacist, nurse, pharmacy aide/ health assistant or untrained staff dispensing	Section A, C
3	% facilities with doctor, nurse, trained health worker/health aide prescribing	Section B
4	% facilities with prescriber trained in Rational Use of Medicines (RUM)	Section B

Verification of availability, stock out and expired medicines were based on a key medicines list, selected according to the first-line therapeutic choice to most common and important health conditions at the primary health care level (box 2). Verification of the lowest purchasing price by public health facilities and selling price charged in public and private pharmacies were based on a specific list (box 3).

Medicines are listed with their International Non-proprietary Names (INN) and dosage forms as included in the EML that corresponds to the OECS Medicines Formulary (OMF).

Box 2. Key medicines selected for the survey

Medicines (INN)	Dosage form in OMF
Amitriptyline	cap/tab 25 mg
Amoxicillin	cap/tab 500 mg
Atenolol	cap/tab 50 mg
Captopril	cap/tab 25 mg
Ceftriaxone	1 g/vial injection
Ciprofloxacin	cap/tab 500 mg
Co-trimoxazole	cap/tab 480 mg
Co-trimoxazole	8+40 mg/mL Vial
Diazepam	cap/tab 5 mg
Diclofenac	tab 50 mg
Glibenclamide	cap/tab 5 mg
Isoniazid	tab 50 mg
Omeprazole	cap/tab 20 mg
Paracetamol	syrup/susp. 25 mg/mL
Salbutamol aerosol	0.1 mg/dose inhaler
Simvastatin	cap/tab 20 mg
Vitamin A	cap 100 units

Box 3. Key medicines for prices

Medicines (INN)	Dosage form
1. Albendazole	tab 200 mg
2. Albendazole	susp 100 mg/5 ml
3. Amoxicillin	susp 125 mg/5 ml
4. Amoxicillin	cap 250 mg
5. Amoxicillin	cap 500 mg
6. Bendrofluazide	tab 2.5 mg
7. Chloramphenicol	ophtalmic
8. Chlorphenaramine	tab 4 mg
9. Chlorphenaramine	Elixir 2 mg/5 ml
10. Clotrimazole	cream 0.01
11. Cotrimoxazole	tab 480 mg
12. Ferrous sulphate	200 mg
13. Hydrocortisone	cream 0.01
14. Hydrocortisone	ung 0.01
15. Insulin	vial 30/70
16. Metformin	tab 500 mg
17. Metformin	tab 850 mg
18. ORS	sachet
19. Paracetamol	tab 500 mg
20. Ranitidine	tab 300 mg
21. Salbutamol	Inhaler
22. Co-trimoxazole	susp 40+200 mg/5 ml
23. Paracetamol	susp 125 mg/5 ml
24. Cephadroxil	susp 125 mg/5 ml

Verification of affordability of treatment as well as compliance of prescribers to recommended treatment protocol/guide was performed considering tracer health conditions elected by the coordination team (box 4).

Box 4. Tracer conditions for affordability and for compliance of prescribers to recommended treatment protocol/guideline

Tracer conditions for affordability			
Tracer condition	Medication(s)	Treatment schedule	Total amount required
Mild/moderate pneumonia in adults	Amoxicillin 500 mg (cap/tab)	3 per day for 14 days (max)	42 (or 84 Amoxicillin 250 g)
Diabetes (oral treatment)	Metformin 850 mg (tab)	1 per day	30
Tracer conditions for compliance of prescribers to recommended treatment protocol/guideline			
Tracer condition	Medicines tracked	Rationale	Reference
Non-bacterial diarrhea in children under age 5	ORS, antibiotic, anti-diarrheal and/or antispasmodic	Clinical guidelines specifically referred to correct rehydration of acute diarrhea cases	Medicines use in primary care in developing and transitional countries: Fact Book summarizing results from studies reported between 1990 and 2006
Mild/moderate (outpatient) pneumonia in children under age 5	Amoxicillin	Pneumonia was defined as any type of lower respiratory tract infection that authors considered needing antibiotics	Medicines use in primary care in developing and transitional countries: Fact Book summarizing results from studies reported between 1990 and 2006

Data collection methods included patient and health worker interviews after oral consent, check list guided observation and clinical and pharmacy records review.

The survey was conducted after approval by the Ministry of Health. Local health managers were contacted for specific approval and cooperation.

Field team consisted of 10 data collectors, selected according to inform data collectors qualification.

Data collection took place between December 2007 and January 2008.

After review of completed Survey Forms, data were typed in Summary Forms 1-4 and Workbook, both in Excel® and in freeware provided by the WHO survey package and adapted by the Nucleo de Assistencia Farmaceutica/Escuela Nacional de Saude Publica (NAF/ENSP), PAHO/WHO Collaborating Centre on Pharmaceutical Policies. These programmes allowed indicator calculation and generate automatically tables and graphics.

Indicator measures on each survey forms were calculated manually and summaries were entered in an automated excel spread sheet.

Concerning to the analysis, data at national level will be expressed as median, followed by the percentiles 25 and 75. National median was only calculated if there is information from at least four facilities in the category (public or private facilities or warehouses).

Data from patient interview are only considered for health facilities with at least 10 interviews completed. Conversion rate between United States Dollar (US\$) and Eastern Caribbean Dollar (ECD) was assumed as US\$ 1.00 = ECD 2.70 (31/Dec/2007).

Limitations of the data

The study was not intended to give a detailed analysis of the pharmaceutical sector but to provide an overview of the national pharmaceutical situation in the Saint Lucia, to help in policy analysis and in the design of appropriate interventions.

According to the WHO, the Level II core outcome indicator survey is designed to obtain relevant information from a simple-as-possible data collection process and small sample size. Larger samples give more precise results but they are costly, time consuming and require a more complex logistic infrastructure. Sample size is therefore a balance between what is desirable and what is feasible. The best sample size will be the smallest one that will result in estimates with the desired degree of precision. More details on sample bias and error are discussed in the Annex 2b of the Manual (WHO, 2006).

The survey has been designed to provide a picture of the national pharmaceutical situation in Saint Lucia. The regions and facilities selected cumulatively represent the national situation.

The sample sizes used are statistically not large enough to make inter-facility comparisons. For patient care indicators, for example, a minimum sample size of 100 would be necessary in order to make comparisons between facilities. This survey uses a sample size of 30. However, providing that majority of the data is collected and the results are statistically different, comparisons between geographic regions can be made. Regional comparisons may be of interest where there is especially wide variation or contrasts, particularly with a group of related indicators. Regional comparisons should be done sparingly as not all geographic regions are represented and over-emphasizing the five regions included in the study may detract focus from the study's significance as a national survey.

Results and discussion

The results of the Pharmaceutical Situation Assessment (PSA): Health Facility Survey (HFS) Level II are presented in the format of group of indicators. Key issues are highlighted in each group.

The exit outpatients' interviews are presented in table 3. People were approached when leaving public dispensaries or private pharmacies. Categories for age were: (1) Less than 5 years; (2) 5-14 years; (3) 15-59 years and (4) more than 60.

Table 3. Characteristics of outpatients interviewed, PSA-HFS Level II, Saint Lucia, 2008

Category of health facilities	Number of outpatients interviewed	% Female	Age	%
Public health facility pharmacies	720	62.4	1) under 5 yrs.	8.5
			2) older children	10.6
			3) adults	37.8
			4) over 60 yrs.	45.7
Private Pharmacies or Retail Drug Outlet	300	68.7	1) under 5 yrs.	6.7
			2) older children	5.0
			3) adults	62.3
			4) over 60 yrs.	25.7
Total	1020	64.2	1) under 5 yrs.	7.9
			2) older children	8.9
			3) adults	45.0
			4) over 60 yrs.	39.8

■ Key comments

- Most of patients interviewed in both public and private sector were female.
- Most of patients interviewed in public facilities were aged 60 years or more while in the private sector the majority were adults.

Health workers at health facilities

In Saint Lucia, the law requires for pharmacies to avail of professional services of a qualified licensed pharmacist.

During the visit, the presence of personnel that interacted with the patients at the moment of handing over medicines was verified.

During dispensing of medicines it is important to have pharmacists and trained assistants, since there are many technical aspects involved in these activities. The dispenser and prescriber profiles are presented respectively in table 4 and table 5.

Table 4. Dispenser profile and compliance with the law,
PSA-HFS Level II, Saint Lucia, 2008

Professional dispensing during the visit	Public sector	Private sector
Pharmacist	100%	100%
Nurse	0.0%	0.0%
Pharmacy aide/ health assistant	0.0%	0.0%
Untrained staff	0.0%	0.0%
Facilities that comply with the law (presence of a pharmacist)	100%	100%

■ Key comments

- Pharmacists were found in all surveyed facilities, both in public and in private sector.
- No other professional was found dispensing in public neither in private sector.

Table 5. Prescribers profile in the public sector,
PSA-HFS Level II, Saint Lucia, 2008

% Facilities where	doctor	nurse	trained health worker/health aide
Professional was present during the visit	100%	0.0%	0.0%
Most senior professional present	100%	NA	NA
Most senior professional attended RUM-related training within the previous year	0.0%	NA	NA

■ Key comments

- Physicians were the only prescribers found in all facilities.
- No interviewed most senior physician declared to have attended a RUM related course within the previous year.

Access

Access to health services or products can be defined as a combination of four dimensions: availability, geographical accessibility, affordability and acceptability. Acceptability was not addressed by this assessment. As for availability, since the key medicines list includes first choices for the most prevalent problems at the primary health care level, results should ideally be close to 100%. Reference for affordability calculation was the day's wage of the lowest paid public worker.

The recorded data of the general indicators for access revealed fairly good results. The median availability in all types of facilities was 100% (table 6 and figure 2). However, 86% of prescribed medicines in public health facilities are actually dispensed and public warehouses have an average stock out duration of 21 days per year.

Geographical accessibility to public health facilities is generally good, taking into account that the majority of patients (93%) reach the facility in less than 30 minutes.

Table 6. General indicators for Access,
PSA-HFS Level II, Saint Lucia, 2008

Indicator	National (median)	25 th percentile	75 th percentile
Availability			
Availability of key medicines in			
public health facility dispensaries	100	93.3	100
private drug outlets	100	93.3	100
warehouses supplying the public sector	100	95.0	100
Percentage of prescribed medicines dispensed or administered to patients at public health facility dispensaries	86.4	78.6	90.3
Average stockout duration in			
warehouses supplying the public sector (days)	20.7	12.5	50.6
Adequate record keeping in			
warehouses supplying the public sector	100	98.3	100
Geographical accessibility			
Percentage of patients taking more than one hour to travel to			
public health facility dispensaries	0.0	0.0	0.8
private drug outlets	5.0	0.8	9.2
Average transportation cost to the (XCD)			
public health facility dispensaries	1.1	0.6	1.8
private drug outlets	6.5	4.1	10.4
Average Transport cost percentage of minimum daily salary %			
public health facility dispensaries	0.1	0.0	0.1
private drug outlets	0.3	0.2	0.4

Figure 2. Availability of key medicines in public health facility dispensaries, in private pharmacies, and in warehouses supplying the public sector, PSA-HFS Level II, Saint Lucia, 2008

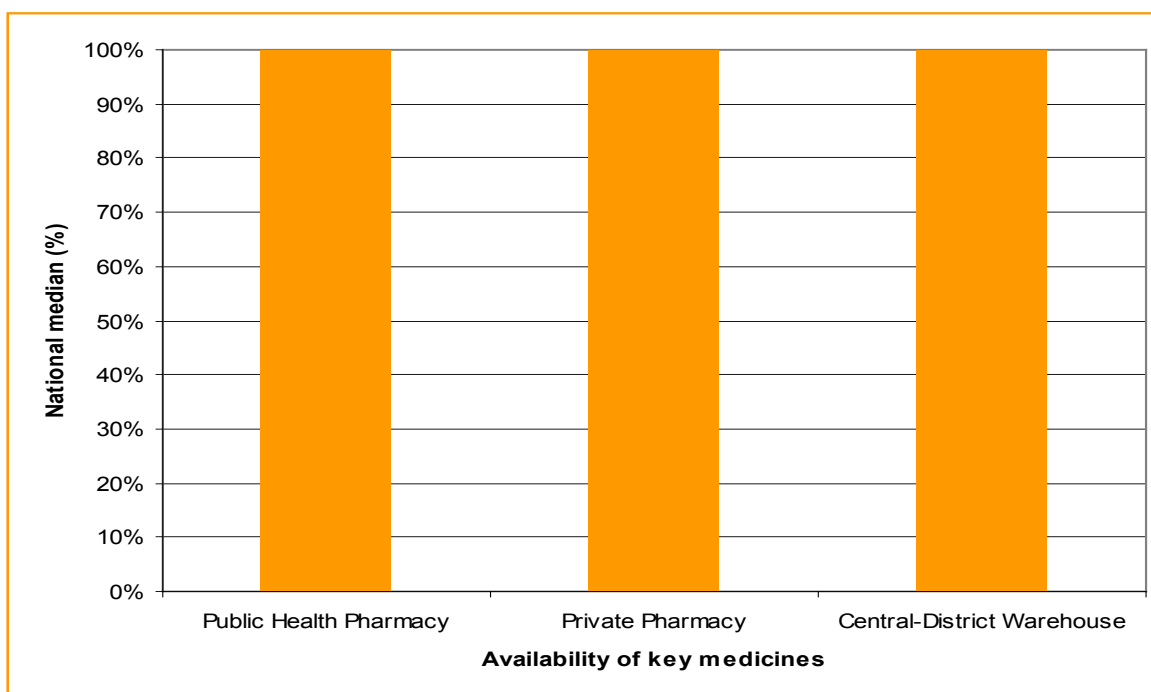
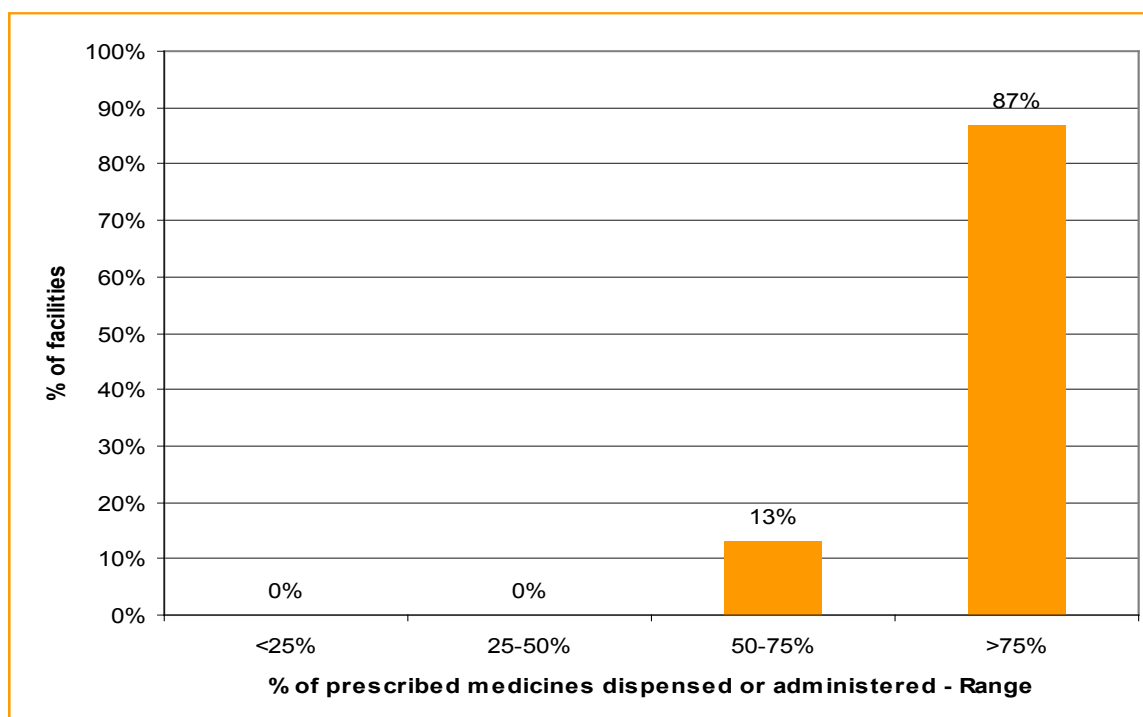


Figure 3. Distribution of public health facility pharmacies according to the percentage of prescribed medicines dispensed or administered, PSA-HFS Level II, Saint Lucia, 2008



■ Key comments

- Availability of key medicines was quite complete.
- Almost 9 in each 10 medicines prescribed were dispensed in public health care facilities.
- Most of facilities were able to dispense more than 75% of prescribed medicines despite 13% of facilities had a fair performance on this indicator dispensing between 50%-75% of medicines prescribed.
- The median duration of stock-out was 20 days per year in the central warehouse.
- It was not found patients living more than one hour from a dispensing facility and only around 7% of patients live more than 30 minutes far from public and private dispensaries.
- Geographical accessibility of public and private dispensaries was quite similar, despite it takes more money for people to achieve private pharmacies in relation to public dispensaries.

The affordability of treatment for 2 common conditions (pneumonia and diabetes, both in adults) was estimated as the number of days' wages of the lowest-paid unskilled government worker needed to purchase medicines prescribed at a standard dose. For acute conditions, treatment duration was defined as a full course of therapy, while for chronic diseases, the affordability of a 30-days' supply of medicines was determined. The daily wage of the lowest-paid unskilled government worker used in the analysis was ECD 24.6429 (Equivalent to US\$ 9.1349).

It should be noted that treatment costs refer to medicines only and do not include the additional costs of consultation and diagnostic tests. Further, many people in Saint Lucia earn less than the lowest government wage; as such even treatments which appear affordable are too costly for the poorest segments of the population. Additionally, in private pharmacies, the lowest available prices corresponding to each medicine's active ingredient, regardless if it was branded or generic. Due to it, depending on generic substitution practices, as there is no regulation in this regard, patients could be offered different either on, consequently, not necessarily obtaining the medicine with the lowest price, even if it was available.

Indicators for prices were calculated only for solid dosage forms, as for other medicines, it was not feasible at that time. Finally, even where individual treatments appear affordable, individuals or families who need multiple medications may quickly face unmanageable drug costs.

The Medicines Price Ratio (MPR) is an indicator proposed by the World Health Organization/Health Action International (WHO/HAI) Medicines Price Survey approach. The MPR is an expression of how much greater or less the local medicine price is than the international reference price, e.g. an MPR of 2 would mean that the local medicine price is twice that of the international reference price. As suggested by the mentioned approach, median prices (procurement price) listed in MSH's International Drug Price Indicator Guide 2008 were used here.

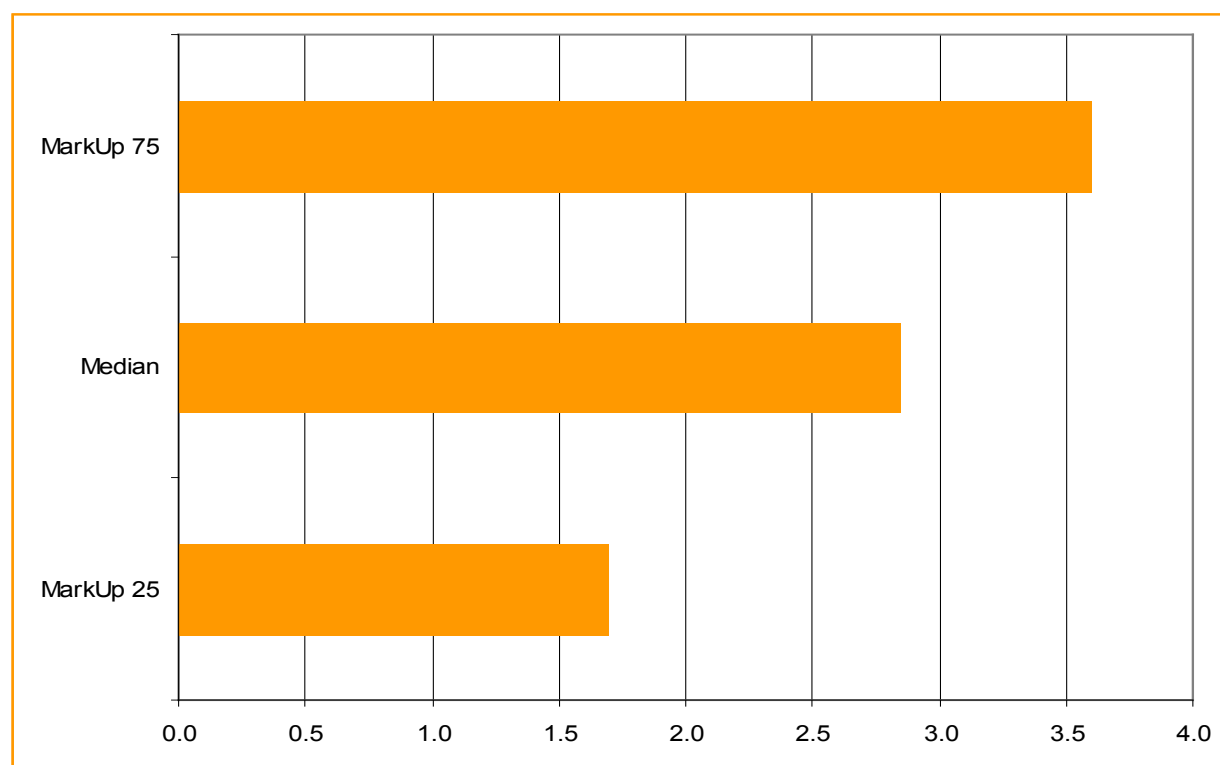
Table 7. Number of days' wages of the lowest paid government worker needed to purchase standard treatments, PSA-HFS Level II, Saint Lucia, 2008

Disease condition and "standard" treatment		Day's wages to pay for treatment	
Condition (drug name, dosage form, strength)	Treatment schedule	Public sector	Private sector
Mild/moderate pneumonia in adults (Amoxicilin tab/cap 500 mg)	3 tab/day for 14 days	0.5	0.9
Diabetes in adults (Metformin tab 850 mg)	Metformin 850 mg 1 tab/day - 30 days	0.3	0.2

Table 8. Median ratio price (MRP) for public and private sector, PSA Level II, Saint Lucia, 2008

	Public		Private
	Price paid by the patient	Price paid by the facility	
Median MPR	5.8	1.9	6.2
MPR Q 25	3.3	1.0	5.1
MPR Q 75	9.0	3.0	8.1

Figure 4. Ratio price between median selling price and median buying price in public sector, PSA Level II, Saint Lucia, 2008



■ Key comments

- Affordability was better in public sector for mild/moderate pneumonia in adults but worst for oral treatment of diabetes
- MPR efficiency for public procurement was fair, since median MPR for public facilities procurement price was 1.9.
- Median MPR indicates that price paid by the patient is quite similar in the public and private systems; this is around 6 times the MPR.
- For the basket of key medicines, the public sector selling price is about 3 times higher than the procurement price.

Quality of medicines

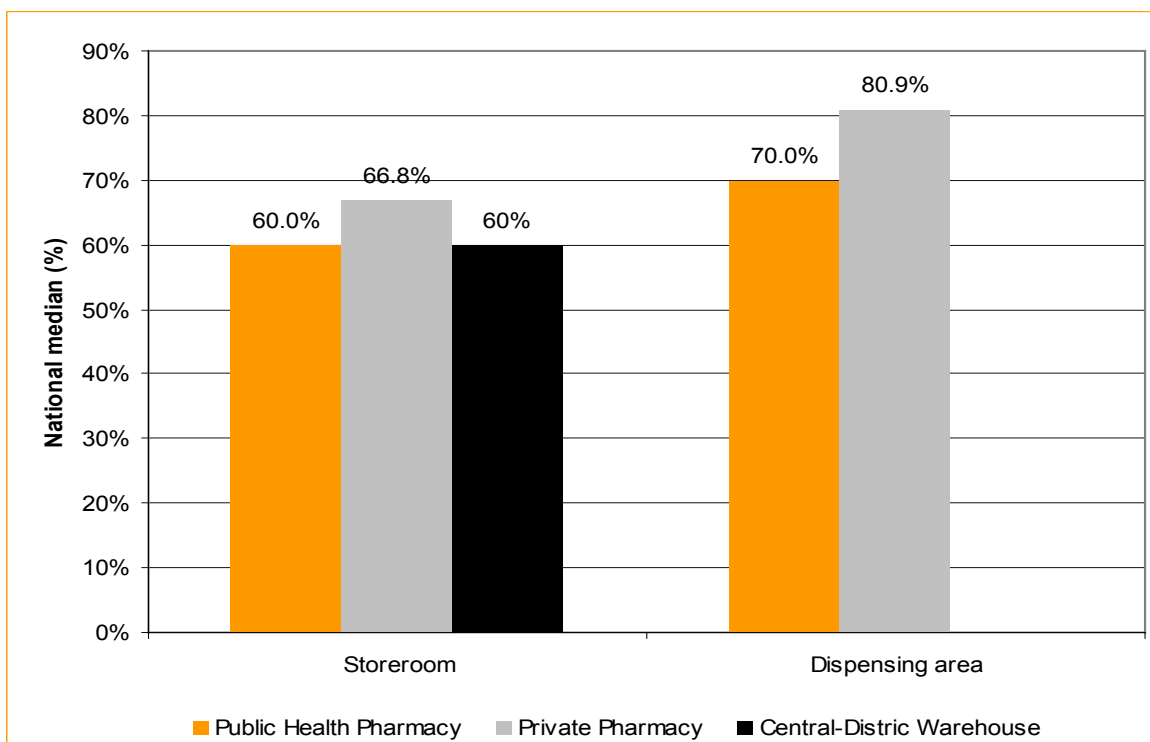
Since direct quality assessment of medicines is expensive and difficult to operate in such a survey, some proxies' indicators were measured. Key medicines selected for verification in the study are supposed to be frequently used, and with a high turnover. Thus, assessing the quantity of expired medicines would not provide the adequate results. However, storage conditions verified in this study are very basic quality standards.

Despite general picture on medicines management is quite good in Saint Lucia, there are possibilities for improvement. In fact, a few expired medicines were found and storage conditions were in some cases not fully adequate (table 9 and figure 5).

Table 9. General indicators for quality of medicines,
PSA-HFS Level II, Saint Lucia, 2008

Indicator	National (median)	25 th percentile	75 th percentile
Percentage of medicines expired in:			
public health facility dispensaries	0.0	0.0	0.0
private pharmacies	0.0	0.0	0.0
warehouses supplying the public sector	3.3	0.0	6.7
Adequacy of storage conditions of medicines in:			
storerooms of public health facility dispensaries	60.0	52.5	70.0
dispensing rooms of public health facility dispensaries	70.0	66.0	80.0
storerooms of private pharmacies	66.8	60.0	80.0
dispensing rooms of private pharmacies	80.9	80.0	90.0
storerooms of warehouses supplying the public sector	60.0	50.0	72.5

Figure 5. Adequacy of infrastructure of conservation conditions of medicines, PSA-HFS Level II, Saint Lucia, 2008



■ Key comments

- There were 3.3% expired medicines in warehouses supplying the public sector.
- In public health dispensaries and private pharmacies, the median percentage of expired medicines was lower than 0.1%. Yet, expired medicines were found in 4 public dispensaries.
- Public and private sectors accomplished 60 to 80 percent of good storage conditions.
- The better performance related to good storage conditions were found in dispensing rooms of private pharmacies.

Rational use

According to WHO,¹ the target for indicators measuring the extent of adequate labeling, proportion of prescribed medicines dispensed, adherence to treatment guidelines and availability of key medicines is ideally 100%. Internationally valid standards for other indicators, such as average number of medicines per prescription, and the percentage use of antibiotics and injections, are more complex and have not been empirically established. Targets may require modification over time and between countries, but are currently recommended to be below 2, 30% and 20%, for the average number of medicines per prescription, percentage use of antibiotics and per-

1. WHO (World Health Organization), (2006). Using indicators to measure country pharmaceutical situations: Fact Book on WHO Level I and Level II monitoring indicators. Geneva, WHO.

tage use of injections, respectively. The optimal indicator values in these cases largely depends on the disease patterns, policies and treatment guidelines and therefore may vary from country to country and over time.

Average number of medicines per prescription was addressed by two different methods: patient exit interview and retrospective prescription review.

Table 10. General indicators for Access,
PSA-HFS Level II, Saint Lucia, 2008

Indicator	National (Median)	25 th Percentile	75 th Percentile
Prescribing indicators			
Average number of medicines per prescription at public health facility dispensaries (SF6 - patient exit interview)	3.0	3.0	3.0
Average number of medicines per prescription at public health facilities (SF7)	3.2	2.9	3.4
Patients prescribed antibiotics in public health facilities (%)	21.5	19.2	38.1
Patients prescribed injections in public health facilities (%)	0.0	0.0	0.0
Prescribed medicines on the essential medicines list at public health facilities (%)	92.9	84.2	98.0
Medicines prescribed by generic name (INN) at public health facilities (%)	43.9	30.7	69.2
Patient care indicators			
Medicines adequately labeled at (%)			
Public health facility dispensaries	96.4	93.7	97.4
Private dispensaries	86.4	79.7	98.5
Patients know how to take medicines at (%)			
Public health facility dispensaries	93.3	90.0	97.5
Private dispensaries	98.3	96.6	100
Prescription medicines bought without prescription (%)	13.4	7.4	17.8
Facility specific factors for the rational use of medicines	National percentage		
Availability of standard treatment guidelines at public health facilities (%)	54.2		
Availability of essential medicines list at public health facilities (%)	58.3		

Table 11. Distribution of private pharmacies according to their results on percentage of prescription medicines bought without prescription

Range	Number of facilities	% of facilities
< 25%	10	100
25 - 50%	0	0.0
51 - 75%	0	0.0
> 75%	0	0.0
Total	10	100

■ Key findings on rational use of medicines

- The average number of medicines per prescription at the public facility dispensaries was 3.2, which is somewhat above the recommended standard proposed by WHO.
- The percentage of patients prescribed antibiotics was 21.5%, which may be considered adequate.
- The percentage of patients with injections prescribed in the public facilities was 0%, which may be considered adequate, indicating adequate prescribing patterns for this group of medicines.
- 92.9% of medicines prescribed were found to be included in the national Essential Medicines List. This indicates good adherence of physicians to this list.
- 43.9% of medicines in the surveyed prescriptions were prescribed by generic name. This value is too low and has an implication on access since branded medicines are usually more expensive than generics.
- Performance of medicines labeling was adequate in both public and private sector, with better results in public sector for this indicator.
- A high percentage of patients interviewed knew how to take their medicines in both public (93%) and private sectors (98%).
- The EML and the Standard Treatment Guidelines were found in 58.3% and 54.2% of the public healthcare facilities respectively, indicating that these fundamental documents are not always available to the health care professionals.
- In the private sector, about one in each ten prescription medicines are bought without a prescription.
- A low number of patient records were reviewed for good prescribing practices, not allowing conclusions on this indicator.

Conclusions, recommended interventions and next steps

General survey

Since total number of public health care and facilities and private pharmacies was lower than 30 in each sector, it was possible to survey all facilities in each group.

The majority of patients approached in the exit interview were female and most of them aged as adults or senior people. Children accounted for 16.8% of the total.

Pharmacists were the only professional found dispensing and they were present in all facilities in both public and private sector. Only physicians were found prescribing.

Opportunity for improvement	Recommendation
No interviewed most senior physician declared to have attended a RUM related course within the previous year	To offer training on rational use of medicines in the country

Access to medicines

Availability of medicines showed to be quite good, since almost key medicines were found to be available and most of facilities dispensed more than 75% of prescribed medicines. Geographical accessibility was also good since the majority of patients live less than 30 minutes from the health care facilities. Affordability for tracer conditions was good. Nevertheless it is important to track affordability for more high cost diseases treatment.

Public procurement seems to be efficient since MPR for buying public price was around 1.9 the international reference price.

Opportunity for improvement	Recommendation
Stock control seem not to be in place	Implement Good Distribution and Pharmacy Practices and quality assurance systems, including stock control, are recommended. They are important for promoting accountability and ensure availability and quality of medicines provided.
MPR of lower price key medicines is about 6 times higher both in public and private sector and final price in both sector to key medicines were similar	It is important to know how affordable are medicine for poor people and establish access mechanisms especially for them. A better understanding of mark up system in public sector is important. If it is not implemented yet, generic medicine policies should be consider in order to foster competition and improve access.

Quality of medicines

The total amount of expired medicines was quite low.

Opportunity for improvement	Recommendation
Expired key medicines in some health care facilities as well in warehouses sully the public sector	It is recommended to strengthen the regulation of medicines and pharmaceutical services, including the updating of legal framework and to put in place the enforcement mechanisms. It is highly recommended to prioritise the implementation of Good Distribution and Pharmacy Practices and quality assurance systems are recommended in both public and private facilities, including stock control and storage conditions
Despite results were not soundly bad, there are problems related to storage conditions	

Rational use

Indicators performed quite well in general, since it was found a good adherence of physicians to the EML and general prescription pattern for antibiotics and injections.

Medicines are adequately labeled in both public and private sector.

The majority of patients knew how to take their medicines.

Opportunity for improvement	Recommendation
Prescription by INN was very low	A generic policy should be implemented.
One in each ten prescriptions medicines is bought without a prescription	Good pharmacy practices should be implemented and enforced in the public and private sector
Availability of OMF and STGs was low	OMF and STG should be kept updated and disseminated.

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