

SURVEY OF THE QUALITYOF SELECTED ANTIRETROVIRAL MEDICINES CIRCULATING IN FIVE AFRICAN COUNTRIES



...............

Survey of the quality of selected antiretroviral medicines circulating in five African countries

2019



Regulatory Systems Strengthening, Regulation of Medicines and other Health Technologies, Essential Medicines and Health Products

©World Health Organization 2019

Some rights reserved. This work is available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; https://creativecommons.org/licenses/by-nc-sa/3.0/igo).

Under the terms of this licence, you may copy, redistribute and adapt the work for non-commercial purposes, provided the work is appropriately cited, as indicated below. In any use of this work, there should be no suggestion that WHO endorses any specific organization, products or services. The use of the WHO logo is not permitted. If you adapt the work, then you must license your work under the same or equivalent Creative Commons licence. If you create a translation of this work, you should add the following disclaimer along with the suggested citation: "This translation was not created by the World Health Organization (WHO). WHO is not responsible for the content or accuracy of this translation. The original English edition shall be the binding and authentic edition".

Any mediation relating to disputes arising under the licence shall be conducted in accordance with the mediation rules of the World Intellectual Property Organization.

Suggested citation. Survey of the quality of selected antiretroviral medicines circulating in five African countries. Geneva: World Health Organization; 2019 (WHO/EMP/RHT/RSS/2019.01). Licence: CC BY-NC-SA 3.0 IGO.

Cataloguing-in-Publication (CIP) data. CIP data are available at http://apps.who.int/iris .

Sales, rights and licensing. To purchase WHO publications, see http://apps.who.int/bookorders. To submit requests for commercial use and queries on rights and licensing, see http://www.who.int/about/licensing.

Third-party materials. If you wish to reuse material from this work that is attributed to a third party, such as tables, figures or images, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

General disclaimers. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by WHO in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

All reasonable precautions have been taken by WHO to verify the information contained in this publication. However, the published material is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall WHO be liable for damages arising from its use.

Contents

Ackr	10wle	dgements	5
Glos	sary (of terms and abbreviations	7
Exec	utive	summary	8
1	Intro	duction	10
	1.1	Background	10
	1.2	Objectives of the survey	12
2	Methodology		
,	2.1	Survey period	14
,	2.2	Selection of medicines for sampling and testing	14
	2.3	Participating countries	15
,	2.4	Selection of sample collection sites	16
,	2.5	Sample collection and transportation	17
,	2.6	Testing laboratories	18
	2.7	Quality tests conducted and test methods and specifications used	19
,	2.8	Compliance of samples with standards	22
3	Resu	lts	23
	3.1	Overview of samples collected.	23
		3.1.1 Medicines collected	
		3.1.2 Manufacturers and batches	23
		3.1.3 Sampling sites and storage conditions	
	3.2	Registration status of sampled products	24
	3.3	WHO prequalification status of sampled products	28
	3.4	Conformity of manufacturing sites, packaging, appearance and shelf life of collected samples with prequalification	20
	3.5	Compliance with specifications	
•	3.3	3.5.1 Overview of results	
		3.5.2 Results for individual medicines	
		•	
		ıssion	
	4.1	Protocol deviations	_
	4.2	Testing methods and data quality	
	4.3	Limitations of methodology	
	4.4	Selection of participating countries and target medicines	
	4.5	Availability of target medicines for sample collection in surveyed countries	
	4.6	Manufacturers and WHO prequalification	
	4.7	Registration status of sampled products	
	4.8	Storage conditions in sites of sample collection	
	4.9	Quality findings	
	4.10	Recommendations from survey wrap-up meeting	
5	Conc	lusions	46
6	Refer	rences	48
Appe	endic	es	49

List of tables and figures

Table 1:	Laboratories performing quality testing	18
Table 2:	Tests conducted and methods and specifications applied for testing of selected medicines.	20
Table 3:	Summary of samples collected in individual countries	
Table 4:	Number of samples, by manufacturers	
Table 5:	Numbers of regions and collection sites in individual countries, with numbers of collected samples	
Table 6:	Registration status of collected samples	
Table 7:	Numbers of products on the WHO prequalification list and numbers collected in the survey, for each target medicine	
Figure 1:	Assay results for tested samples*	42
Figures 2–6:	Content of active pharmaceutical ingredient in samples, by time remaining to expiry	43
- Figure 2:	Efavirenz tablets	
- Figure 3:	Efavirenz/emtricitabine/tenofovir disoproxil fumarate tablets	
- Figure 4:	Lamivudine tablets	
- Figure 5:	Lamivudine/nevirapine/zidovudine tablets : nevirapine content	
- Figure 6:	Lamivudine/zidovudine tablets: content of lamivudine	
Figure 7:	Dissolution results for lamivudine tablets	
Table 8:	Acceptance criteria for dissolution for lamivudine tablets as approved by WHO-PQ	
List of app	pendices	
Appendix 1	Survey protocol	49
Appendix 2	Prequalified products of which samples were collected, with information published by WHO in the list of prequalified medicines/finished pharmaceutical products	76
Appendix 3	Efavirenz 600 mg tablets – test results	79
Appendix 4	Efavirenz/emtricitabine/tenofovir disoproxil fumarate 600/200/300 mg tablets – test results	85
Appendix 5	Lamivudine 150 mg tablets – test results	
Appendix 6	Lamivudine/nevirapine/zidovudine tablets – test results	
Appendix 7	Lamivudine/zidovudine tablets – test results	
Appendix 8	Nevirapine 50 mg dispersible tablets – test results	111

Acknowledgements

The survey was organized by the Prequalification Team (WHO-PQ) of the World Health Organization, Department of Essential Medicines and Health Products. The survey was developed and coordinated and the report was written by Rutendo Kuwana with principal support of Wondiyfraw Zeleke Worku and Milan Smid (all members of WHO-PQ), and with assistance of Jitka Sabartova (consultant).

The survey was carried out by WHO in cooperation with the Ministries of Health and National Medicines Regulatory Authorities of Burkina Faso, Democratic Republic of the Congo, Nigeria, Rwanda and Zambia. WHO thanks these Ministries of Health and National Medicines Regulatory Authorities for their important cooperation and assistance. Acknowledgement is due to the country teams and to individuals who developed the national sampling plans and organized collection and dispatch of samples, in particular to:

Nerwaya Eve Ramata Ouedraogo, Responsible of the Post-marketing Quality Control of Health Products, Direction générale de la pharmacie du médicament et des laboratoires, Ministère de la Santé, Burkina Faso;

Paul Kombuma Ndobe, Inspector, Direction de la Pharmacie et du Médicament, Democratic Republic of the Congo;

Ibrahim Otulukpe Ali, Ag. Director, Pharmacovigilance & Post Marketing Surveillance, National Agency for Food Administration and Control, Nigeria;

Alex Gisagara, National Medicines Regulation Officer, Pharmaceutical Services of the Ministry of Health, Rwanda;

Felix P Chizu, Assistant Director, Inspection and Surveillance, Zambia Medicines Regulatory Authority, Zambia; and

Kelvin Mujelemani, Inspector, Zambia Medicines Regulatory Authority, Zambia.

WHO also thanks staff members from WHO offices in participating countries and WHO regional office for Africa who provided invaluable assistance in preparing the survey in countries.

Thanks are also due to the following staff of Ministries of Health and National Medicines Regulatory Authorities in the participating countries and testing laboratories for their valuable cooperation during the results analysis:

Nerwaya Eve Ramata Ouedraogo, Responsible of the Post-marketing Quality Control of Health Products, Direction générale de la pharmacie du médicament et des laboratoires, Ministère de la Santé, Burkina Faso;

Franck Höpper, Laboratory manager - Working Group 1, Institute for Pharmaceutical and Applied Analysis, Germany;

Kenneth Nkemakolam Onu, Principal Regulatory Officer, Technical Services/Baseline Study Project Office, National Agency for Food Administration and Control, Nigeria;

Alex Gisagara, National Medicines Regulation Officer, Pharmaceutical Services of the Ministry of Health, Rwanda;

Siya Augustine Assey, Principal Analyst, Tanzania Food and Drug Authority, Tanzania;

Thi Phuong Thao Nguyen, Head of Department for Planning and General Affairs, National Institute of Drug Quality Control, Viet Nam;

Hachilensa Osborne Kamwale, Post-marketing surveillance officer, Zambia Medicines Regulatory Authority, Zambia; and

Bridget Dube, Head of Chemistry Division, Medicines Control Authority, Zimbabwe

The survey has been organized and this document has been produced with the kind financial assistance of the Bill & Melinda Gates Foundation and UNITAID. The views expressed herein are those of the authors and can in no way be taken to reflect the official opinion of the Bill & Melinda Gates Foundation or UNITAID.

Glossary of terms and abbreviations

Sample for the purposes of this project means an item collected of a medicine's

presentation (identified by the name, content of APIs, dosage form, strength, batch number and manufacturer) at a specific collection site. This means that a product with the same name, content of APIs, dosage form and strength, of the same batch produced by the same manufacturer, but collected at two different

sites, represents two samples.

Procurement centre for the purpose of this project means a point where a medicine enters the

country, a central store and/or a store where a medicine is kept during in-

country distribution.

Treatment centre for the purpose of this project means the final site where a medicine is

delivered and where it is provided to a patient.

Country codes BF - Burkina Faso

DRC - Democratic Republic of the Congo

NG - Nigeria RW - Rwanda ZM - Zambia

Codes for medicines EFV - efavirenz tablets

TEE - efavirenz/emtricitabine/tenofovir disoproxil fumarate tablets

LAT - lamivudine tablets

LNZ - lamivudine/nevirapine/zidovudine tablets

LZT - lamivudine/zidovudine tablets

NEV - nevirapine tablets

AIDS Acquired immune deficiency syndrome
API Active pharmaceutical ingredient

ARV Antiretroviral

BP British Pharmacopoeia

DR Congo Democratic Republic of the Congo

FDC Fixed-dose combination
GMP Good manufacturing practice
HIV Human immunodeficiency virus

HPLC High performance liquid chromatography

INN International Nonproprietary Names for pharmaceutical substances

NGO Non-governmental organization

NLT Not less than

预览已结束, 完整报告链接和二维码如下:

https://www.yunbaogao.cn/report/index/report?reportId=5_25435

