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DEPARTMENT OF COMPUTER ENGINEERING

DRUG SUPPLY CHAIN MANAGEMENT INFORMATION SYSTEM

SUBMITTED

BY

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DECLARATION

I, hereby declare that this Project Report is original and has not been submitted for any other degree award to any other University before.

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I thank the almighty for incubating this idea in me and giving me good health and power to accomplish this great task. Secondly, I acknowledge the financial support from my parents Mr. Atwine Julius and Miss Kabagweri Theopista, I thank them for that outstanding sacrifice.

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DEDICATION

I dedicate this report to beloved my family; that is the family of Mr/Mrs Atwine Julius and my aunt Miss Beatrice and her family.

LIST OF FIGURES

Figure 3.1 pie chart showing some of the results of the study.....12
Figure 3.2 Block diagram 13
Figure 4.1 Entity relationship diagram 15
Figure 4.2 logical diagram 16
Figure 4.3 communication diagram 17
Figure 4.4 Context flow diagram 17
Figure 4.5 use case diagrams for H/C, NMS and District users 18
Figure 5.1 Code for login of different users 20
Figure 5.2 Code for drug distribution 20
Figure 5.3 code to allow view of specific districts' and H/C's stock levels 21
Figure 5.4 Sample interface as viewed on the local host. 21

LIST OF ACRONYMS

NMS	National Medical Stores.
DSCMIS	Drug Supply Chain Management Information System
HIS	Health Information System.
SMS	Short Message Service
DHO	District Health Officer
NDA	National Drug Authority
PHP	Hypertext Pre-processor
AL	Artemether-lumefantrine
RDT	Rapid Diagnostic Test
H/C	Health Centre

ABSTRACT

In most developing countries, citizens always complain of drug stock-outs in hospitals and health centres. On the other hand, the ministry Health in Ugandan: for example, has employed companies like GREEN LABEL to incinerate expired drugs across all health units in the country. This implies that Uganda's Health Units are not experiencing just drug stock-outs but rather "Right drugs stock-outs".

Research was made through questionnaires, document reviewing and interviewing the health workers in four health units to determine the right solution to the problem. The research showed that the National Medical Stores (NMS) has introduced so far two methods to try eradicate the problem. First is the Push method which involves sending drugs directly to the H/C from NMS and the PULL method which allows health Centre (H/C) workers to make requests for the drugs they want. However the problem still prevails due to a lot of paper work being employed to collect information, make drug requests, reports and making follow ups. Most interviewees embraced the development of the Drug Supply Chain Management Information System (DSCMIS) which appeared to them as the best solution. This is a web based system developed using PHP language to help link the databases with the three interface modules of NMS, Districts and H/Cs. This system was developed to enhance information flow which was the major reason for right drug stock-outs.

In nutshell, there has been less usage of technology in drug distribution chain because many think it is expensive but on contrary the existing ways to collect data is inaccurate and more expensive in the long run. Therefore with the DSCMIS the drug requests can be made easily, monitoring and follow up done remotely which reduces the transport expenses and losses due to extensive drug expiry.

TABLE OF CONTENTS

DECLARATION i
APPROVAL ii
ACKNOWLEDGEMENT iii
LIST OF FIGURES v
LIST OF ACRONYMS vi
ABSTRACT vii
CHAPTER ONE 1
INTRODUCTION 1
1.1 BACKGROUND 1
1.2 PROBLEM STATEMENT 2
1.3 PROJECT OBJECTIVES 2
1.3.1 MAIN OBJECTIVES 2
1.3.2 SPECIFIC OBJECTIVE 2
1.4 JUSITIFICATION 3
1.6 SCOPE 3
1.7 LIMITATIONS 3
CHAPTER TWO 4
LITERATURE REVIEW 4
2.1 KEY TERMS AND RELATED CONCEPTS. 4
2.1.1 Drugs 4
2.1.2 Drug stock-outs 4
2.1.3 Stock cards 4
2.1.4 Drug distribution chain 4
2.1.5 Health information systems 5
2.1.6 Database 5
2.1.7 Short Message Service (SMS) 5
2.1.7 Web service technology 6
2.2 EXISITING SYSTEMS AND POLICIES IN DRUG SUPPLY CHAINS. 6
2.2.1 Push method 7
2.2.2 Push- Pull system (hybrid). 7
2.2.3 MACS software 9
2.2.4 SMS for life study in Kenya 10

2.3 CONCLUSION 10
CHAPTER THREE 11
METHODOLOGY 11
3.1 REQUIREMENTS GATHERING 11
3.1.1 Questionnaires 11
3.1.2Interviews 11
3.1.3 Document review 11
3.2 REQUIREMENTS ANALYSIS 11
3.2.1 Research findings 11
3.3 SYSTEM DESIGN 12
3.3.1 Block diagram of the system. 13
3.4 SYSTEM TESTING 13
CHAPTER FOUR 14
SYSTEM ANALYSIS AND DESIGN 14
4.1 SYSTEM ANALYSIS 14
4.1.1 Functional requirements 14
4.1.2 Non-functional requirements 14
4.1.3 Security requirements 14
4.2 SYSTEM DESIGN 15
4.2.2 Logical diagram 16
4.2.3 Communication diagram 17
4.2.4 Context flow diagram 17
4.2.5 Use case diagram 18
CHAPTER FIVE 19
IMPLEMENTATION AND TESTING 19
5.1 Development tools 19
5.2 Code design 19
5.3 Testing 21
5.4 Verification and validation 22
5.5 Evaluation 23
CHAPTER SIX 24

DISCUSSIONS AND RECCOMANDATIONS 24
6.1 Summary of the project 24
6.2 Lessons learned 24
6.3 Limitations of the project 24
6.4 Recommendations 24
6.5 Conclusion 25
REFERENCES 26
APPENDICES 28

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

Access to medicine has no single clear definition but it can be considered as a collection of interrelated dimensions; availability, accessibility, affordability and acceptability. Availability of medicine is so important as far as reduction of mortality and morbidity associated with disease burden are concerned [1]. However lack of medicine is one of the most serious public health problems. About 30% of the world's population lacks the medicine they need and the situation is worse in Africa where the figure rises to about 50% [2]. In Uganda the national medical stores (NMS) is mandated to procure, store and distribute essential medicine to public health facilities. This was established as a Statutory Corporation in 1993 by Act of Parliament [3]. Under the organ, the PULL SYSTEM of drug supply was introduced in 2003 which replaced the PUSH system and reduced the cases of drug expiry and number of stock-out days at the health centres.

However, there is still a concern country wide of people dying of treatable diseases like malaria because of failure to access medicine while drugs worth billions expire in stores. Thereafter, the government has to spend more on storing and incinerating the expired drugs; For example, drugs worth 6.7b expired between 2005/8 and a monthly cost of 36m was spent on those drugs leading to a loss of 700m to destroy them. Nevertheless, there were no drugs in the health centres [4].

Expiry of drugs in developing countries is still a threat. This cannot be avoided since drugs expire after some time if not used; however, awareness of the distinctive causes would help reduce the problem. Poor communication between the NMS and the health centres was discovered as the major cause of drug expiry cases. Many policies in developing countries addressing the barriers of access to essential drugs have been poorly designed and did only focus on prescriber's and user's perspectives and not on the management of drugs supply systems. For example, a case where a nurse in Buikwe district said she had no antimalarial drugs yet the drugs for other diseases were about to expire at that unit [5], She said the order for the required stock was made more than six weeks before and she had not been replied. This shows that the information flow is too insufficient to be relied on for decision making. According to the reporter in [4], the NMS spends a lot on irrelevant drugs instead of making order according to the situation in the country. This is attributed to little and framed information relied on by NMS to estimate medicine needs.

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